



Howard Backer, MD, MPH  
Interim Director

State of California - Health and Human Services Agency  
California Department of Public Health

Drinking Water and Radiation Laboratory Branch

850 Marina Bay Parkway, Richmond, CA 94804



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0495

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/13/2011

**Requestor**

Name: \_\_\_\_\_ Organization: Radiologic Health Branch

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/25/2011 13:00 Date/Time Received: 04/26/2011 11:38

Site Name: Los Angeles / Air Source Name: \_\_\_\_\_

R Number: R 91129 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
91114.5	04/22/2011 12:30	91581.3	04/25/2011 13:00	466.8

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0495-001	Los Angeles	HASL Ga-01-R	Ba-140	0.0268 ± 0.0160	0.0796	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	Ce-141	-0.0167 ± 0.0123	0.0225	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	Ce-144	-0.136 ± 0.0580	0.0817	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	Cs-134	0.00751 ± 0.00706	0.0270	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	Cs-137	0.0106 ± 0.00660	0.0303	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	DOE RP 710	Gross Alpha	0.00210 ± 0.00110	0.00120	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	DOE RP 710	Gross Beta	0.0112 ± 0.00200	0.00240	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	I-131	-0.000331 ± 0.00760	0.0245	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	I-132	-0.00283 ± 0.0104	0.0293	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	Ru-103	-0.00868 ± 0.00919	0.0225	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	Ru-106	-0.175 ± 0.117	0.213	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	Te-132	-0.00745 ± 0.00678	0.0198	pCi/m <sup>3</sup>
N11-0495-001	Los Angeles	HASL Ga-01-R	Zr-95	-0.0251 ± 0.0252	0.0446	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0495

N11-0495-002

Los Angeles

HASL Ga-01-R

Iodine-131

0.00795 ± 0.00944

0.0329

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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850 Marina Bay Parkway, Richmond, CA 94804



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0496

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/13/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: CA Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/25/2011 15:45 Date/Time Received: 04/26/2011 11:42  
Site Name: San Onofre / Air Source Name: \_\_\_\_\_  
R Number: R 87400 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
11498.4	04/22/2011 16:30	11968.7	04/25/2011 15:45	470.3

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0496-001	San Onofre	HASL Ga-01-R	Ba-140	0.0398 ± 0.0272	0.0991	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	Ce-141	0.0104 ± 0.00759	0.0240	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	Ce-144	0.0165 ± 0.0354	0.0998	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	Cs-134	-0.000207 ± 0.00730	0.0214	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	Cs-137	0.00774 ± 0.00850	0.0303	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	DOE RP 710	Gross Alpha	0.00380 ± 0.00150	0.00120	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	DOE RP 710	Gross Beta	0.0124 ± 0.00200	0.00240	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	I-131	-0.00287 ± 0.00696	0.0202	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	I-132	-0.00429 ± 0.0108	0.0293	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	Ru-103	-0.00135 ± 0.00838	0.0231	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	Ru-106	-0.115 ± 0.0977	0.220	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	Te-132	-0.00575 ± 0.00714	0.0194	pCi/m <sup>3</sup>
N11-0496-001	San Onofre	HASL Ga-01-R	Zr-95	0.00989 ± 0.0134	0.0465	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0496

N11-0496-002

San Onofre

HASL Ga-01-R

Iodine-131

0.0201 ± 0.00906

0.0377

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0497

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/13/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/25/2011 09:46 Date/Time Received: 04/26/2011 11:46  
Site Name: San Luis Obispo / Air Source Name: \_\_\_\_\_  
R Number: R 85061 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
70034.1	04/23/2011 13:55	70355.6	04/24/2011 09:46	321.5

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0497-001	San Luis Obispo	HASL Ga-01-R	Ba-140	0.0215 ± 0.0386	0.116	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	Ce-141	-0.000273 ± 0.0157	0.0440	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	Ce-144	-0.0107 ± 0.0686	0.189	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	Cs-134	0.0118 ± 0.0107	0.0395	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	Cs-137	0.00598 ± 0.0144	0.0434	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	DOE RP 710	Gross Alpha	0.00410 ± 0.00190	0.00170	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	DOE RP 710	Gross Beta	0.0100 ± 0.00260	0.00350	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	I-131	0.0172 ± 0.00993	0.0362	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	I-132	-0.0216 ± 0.0186	0.0451	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	Ru-103	-0.00591 ± 0.0124	0.0286	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	Ru-106	0.0193 ± 0.0989	0.329	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	Te-132	-0.0328 ± 0.0147	0.0320	pCi/m <sup>3</sup>
N11-0497-001	San Luis Obispo	HASL Ga-01-R	Zr-95	-0.0193 ± 0.0211	0.0541	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0497

N11-0497-002

San Luis Obispo

HASL Ga-01-R

Iodine-131

0.00338 ± 0.0167

0.0513

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, 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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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0498

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/13/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/25/2011 10:19 Date/Time Received: 04/26/2011 13:39  
Site Name: Avila Beach / Air Source Name: \_\_\_\_\_  
R Number: R 85062 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
31015.4	04/23/2011 14:25	31334.3	04/25/2011 10:19	318.9

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	Ba-140	0.0144 ± 0.0511	0.161	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	Ce-141	-0.00552 ± 0.0154	0.0368	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	Ce-144	-0.119 ± 0.0766	0.137	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	Cs-134	-0.0168 ± 0.0187	0.0460	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	Cs-137	-0.0269 ± 0.0179	0.0326	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	DOE RP 710	Gross Alpha	0.00420 ± 0.00190	0.00180	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	DOE RP 710	Gross Beta	0.00980 ± 0.00260	0.00360	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	I-131	-0.00165 ± 0.0124	0.0386	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	I-132	0.00248 ± 0.0147	0.0446	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	Ru-103	0.00557 ± 0.00767	0.0299	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	Ru-106	0.0729 ± 0.104	0.374	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	Te-132	-0.00796 ± 0.00907	0.0263	pCi/m <sup>3</sup>
N11-0498-001	Diablo Canyon NPP	HASL Ga-01-R	Zr-95	-0.0101 ± 0.0327	0.0547	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0498

N11-0498-002

Diablo Canyon NPP

HASL Ga-01-R

Iodine-131

0.00964 ± 0.0169

0.0555

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



Howard Backer, MD, MPH  
Interim Director

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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0499

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/13/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/24/2011 09:40 Date/Time Received: 04/26/2011 13:44  
Site Name: Eureka / Air Source Name: \_\_\_\_\_  
R Number: R 91209 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
21924.6	04/22/2011 09:55	22282.9	04/24/2011 09:40	358.3

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0499-001	Eureka	HASL Ga-01-R	Ba-140	0.0679 ± 0.0249	0.122	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	Ce-141	0.00996 ± 0.00925	0.0289	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	Ce-144	0.0607 ± 0.0355	0.120	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	Cs-134	-0.00620 ± 0.0115	0.0302	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	Cs-137	-0.00291 ± 0.0121	0.0337	pCi/m <sup>3</sup>
N11-0499-001	Eureka	DOE RP 710	Gross Alpha	0.00100 ± 0.00100	0.00160	pCi/m <sup>3</sup>
N11-0499-001	Eureka	DOE RP 710	Gross Beta	0.0117 ± 0.00240	0.00320	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	I-131	0.00849 ± 0.00749	0.0287	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	I-132	-0.00699 ± 0.0164	0.0429	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	Ru-103	0.00112 ± 0.00747	0.0234	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	Ru-106	0.150 ± 0.0589	0.304	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	Te-132	0.0131 ± 0.00782	0.0292	pCi/m <sup>3</sup>
N11-0499-001	Eureka	HASL Ga-01-R	Zr-95	0.0244 ± 0.0171	0.0502	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0499

N11-0499-002

Eureka

HASL Ga-01-R

Iodine-131

0.0126 ± 0.0152

0.0523

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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Interim Director

State of California - Health and Human Services Agency  
California Department of Public Health

Drinking Water and Radiation Laboratory Branch  
850 Marina Bay Parkway, Richmond, CA 94804



EDMUND G. BROWN JR.  
Governor

**FINAL Analysis Results Report for Task ID. N11-0500**

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/13/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/23/2011 15:35 Date/Time Received: 04/26/2011 13:48  
Site Name: Humboldt Bay / Air Source Name: \_\_\_\_\_  
R Number: R 90478 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
79972.5	04/21/2011 11:32	80349.5	04/23/2011 15:35	377.0

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	Ba-140	-0.0700 ± 0.0511	0.102	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	Ce-141	0.0128 ± 0.00884	0.0315	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	Ce-144	-0.00827 ± 0.0397	0.117	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	Cs-134	0.00813 ± 0.00731	0.0260	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	Cs-137	0.0154 ± 0.00387	0.0280	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	DOE RP 710	Gross Alpha	0.000200 ± 0.000700	0.00150	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	DOE RP 710	Gross Beta	0.00910 ± 0.00220	0.00300	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	I-131	0.000866 ± 0.00962	0.0283	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	I-132	-0.0118 ± 0.0211	0.0471	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	Ru-103	-0.00667 ± 0.0100	0.0245	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	Ru-106	0.00776 ± 0.0933	0.261	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	Te-132	0.0109 ± 0.0106	0.0352	pCi/m <sup>3</sup>
N11-0500-001	Humboldt Bay NPP	HASL Ga-01-R	Zr-95	0.0293 ± 0.00786	0.0461	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0500

N11-0500-002

Humboldt Bay NPP

HASL Ga-01-R

Iodine-131

0.00641 ± 0.0163

0.0495

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



Howard Backer, MD, MPH  
Interim Director

State of California - Health and Human Services Agency  
California Department of Public Health

Drinking Water and Radiation Laboratory Branch  
850 Marina Bay Parkway, Richmond, CA 94804



EDMUND G. BROWN JR.  
Governor

**FINAL Analysis Results Report for Task ID. N11-0501**

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/13/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/25/2011 13:25 Date/Time Received: 04/26/2011 13:52  
Site Name: Humboldt Bay / Air Source Name: \_\_\_\_\_  
R Number: R 90479 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
80349.5	04/23/2011 15:35	80681.1	04/25/2011 13:25	331.6

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	Ba-140	0.00210 ± 0.0534	0.157	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	Ce-141	0.00812 ± 0.0117	0.0345	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	Ce-144	-0.0539 ± 0.0720	0.160	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	Cs-134	-0.0337 ± 0.0207	0.0350	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	Cs-137	-0.0162 ± 0.0182	0.0426	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	DOE RP 710	Gross Alpha	0.00110 ± 0.00110	0.00170	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	DOE RP 710	Gross Beta	0.0108 ± 0.00260	0.00340	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	I-131	0.0209 ± 0.00648	0.0361	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	I-132	0.0124 ± 0.0134	0.0497	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	Ru-103	-0.00281 ± 0.0129	0.0386	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	Ru-106	-0.0291 ± 0.136	0.348	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	Te-132	-0.0145 ± 0.0102	0.0264	pCi/m <sup>3</sup>
N11-0501-001	Humboldt Bay NPP	HASL Ga-01-R	Zr-95	-0.00167 ± 0.0248	0.0595	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0501

N11-0501-002

Humboldt Bay NPP

HASL Ga-01-R

Iodine-131

0.0181 ± 0.0147

0.0539

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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Interim Director

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California Department of Public Health

Drinking Water and Radiation Laboratory Branch

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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0502

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/13/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/25/2011 12:13 Date/Time Received: 04/26/2011 13:56  
Site Name: San Diego / Air Source Name: \_\_\_\_\_  
R Number: R 90624 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
84626.6	04/22/2011 14:59	85099.3	04/25/2011 12:13	472.7

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0502-001	San Diego	HASL Ga-01-R	Ba-140	0.0138 ± 0.0293	0.0875	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	Ce-141	-0.00284 ± 0.0101	0.0279	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	Ce-144	0.0212 ± 0.0384	0.116	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	Cs-134	0.00921 ± 0.00694	0.0266	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	Cs-137	0.000329 ± 0.00722	0.0228	pCi/m <sup>3</sup>
N11-0502-001	San Diego	DOE RP 710	Gross Alpha	0.00150 ± 0.00100	0.00120	pCi/m <sup>3</sup>
N11-0502-001	San Diego	DOE RP 710	Gross Beta	0.0114 ± 0.00200	0.00240	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	I-131	0.00397 ± 0.00895	0.0263	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	I-132	0.00672 ± 0.00702	0.0270	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	Ru-103	-0.00348 ± 0.00882	0.0213	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	Ru-106	-0.104 ± 0.0861	0.223	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	Te-132	0.00892 ± 0.00614	0.0212	pCi/m <sup>3</sup>
N11-0502-001	San Diego	HASL Ga-01-R	Zr-95	-0.00135 ± 0.0154	0.0470	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0502

N11-0502-002

San Diego

HASL Ga-01-R

Iodine-131

-0.00567 ± 0.0126

0.0325

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



Howard Backer, MD, MPH  
Interim Director

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EDMUND G. BROWN JR.  
Governor

**FINAL Analysis Results Report for Task ID. N11-0521**

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/28/2011 10:00 Date/Time Received: 05/02/2011 11:36  
Site Name: Eureka / Air Source Name: \_\_\_\_\_  
R Number: R 91211 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
22632.9	04/26/2011 08:10	22973.1	04/28/2011 10:00	340.2

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0521-001	Eureka	HASL Ga-01-R	Ba-140	-0.0583 ± 0.0528	0.117	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	Ce-141	-0.00363 ± 0.0112	0.0272	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	Ce-144	0.00379 ± 0.0454	0.123	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	Cs-134	0.00753 ± 0.00897	0.0319	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	Cs-137	-0.00408 ± 0.0130	0.0355	pCi/m3
N11-0521-001	Eureka	DOE RP 710	Gross Alpha	-0.000200 ± 0.000600	0.00160	pCi/m3
N11-0521-001	Eureka	DOE RP 710	Gross Beta	0.00160 ± 0.00200	0.00330	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	I-131	-0.00396 ± 0.0112	0.0325	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	I-132	-0.00247 ± 0.0235	0.0689	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	Ru-103	0.0103 ± 0.00566	0.0262	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	Ru-106	0.0133 ± 0.0762	0.245	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	Te-132	-0.0175 ± 0.0187	0.0505	pCi/m3
N11-0521-001	Eureka	HASL Ga-01-R	Zr-95	-0.00153 ± 0.0171	0.0515	pCi/m3

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0521

N11-0521-002

Eureka

HASL Ga-01-R

Iodine-131

0.00576 ± 0.0179

0.0571

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0522

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

<b>Requestor</b>			
Name:	Organization:		
Address:			
City:	State:	Zip Code:	Phone:

<b>Site and Sample Information</b>			
Collector's Name:	Date/Time Collected: 04/30/2011 10:05	Date/Time Received: 04/30/2011 10:05	
Site Name: Richmond / Air	Source Name:		
R Number: R 91151	Sample Type: Air Filter		

<b>Air Filter Information</b>				
<u>Start Volume</u>	<u>Start Date/Time</u>	<u>End Volume (M )<sup>3</sup></u>	<u>End Date/Time</u>	<u>Net Air Volume (M )<sup>3</sup></u>
10569.4	04/28/2011 10:00	10900.0	04/30/2011 10:05	330.6

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0522-001	Richmond	HASL Ga-01-R	Ba-140	-0.0480 ± 0.0612	0.134	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	Ce-141	0.00494 ± 0.0124	0.0374	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	Ce-144	-0.0410 ± 0.0691	0.185	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	Cs-134	-0.00172 ± 0.00873	0.0623	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	Cs-137	0.0193 ± 0.0116	0.0454	pCi/m3
N11-0522-001	Richmond	DOE RP 710	Gross Alpha	0 ± 0.00100	0.00220	pCi/m3
N11-0522-001	Richmond	DOE RP 710	Gross Beta	0.00320 ± 0.00240	0.00380	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	I-131	0.0197 ± 0.0102	0.0368	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	I-132	-0.0401 ± 0.0168	0.0334	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	Ru-103	-0.00263 ± 0.0146	0.0352	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	Ru-106	-0.111 ± 0.125	0.347	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	Te-132	0.0156 ± 0.00769	0.0272	pCi/m3
N11-0522-001	Richmond	HASL Ga-01-R	Zr-95	0.00289 ± 0.0224	0.0702	pCi/m3

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0522

N11-0522-002

Richmond

HASL Ga-01-R

Iodine-131

-0.00350 ± 0.00921

0.0253

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0523

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/29/2011 15:45 Date/Time Received: 05/02/2011 11:41  
Site Name: San Onofre / Air Source Name: \_\_\_\_\_  
R Number: R 87902 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
12293.6	04/27/2011 16:00	12615.1	04/29/2011 15:45	321.5

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0523-001	San Onofre	HASL Ga-01-R	Ba-140	0.0317 ± 0.0353	0.120	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	Ce-141	0.0207 ± 0.0113	0.0404	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	Ce-144	0.117 ± 0.0511	0.182	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	Cs-134	0.00341 ± 0.0122	0.0396	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	Cs-137	-0.0187 ± 0.0159	0.0399	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	DOE RP 710	Gross Alpha	0.00750 ± 0.00240	0.00170	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	DOE RP 710	Gross Beta	0.0219 ± 0.00310	0.00350	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	I-131	0.0110 ± 0.0145	0.0450	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	I-132	0.0218 ± 0.0199	0.0732	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	Ru-103	-0.00267 ± 0.0130	0.0339	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	Ru-106	-0.0692 ± 0.131	0.353	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	Te-132	0.00435 ± 0.0190	0.0551	pCi/m <sup>3</sup>
N11-0523-001	San Onofre	HASL Ga-01-R	Zr-95	-0.0552 ± 0.0421	0.0692	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0523

N11-0523-002

San Onofre

HASL Ga-01-R

Iodine-131

0.0318 ± 0.0115

0.0579

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



Howard Backer, MD, MPH  
Interim Director

State of California - Health and Human Services Agency  
California Department of Public Health

Drinking Water and Radiation Laboratory Branch

850 Marina Bay Parkway, Richmond, CA 94804



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0524

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name:

Organization:

Address:

City:

State:

Zip Code:

Phone:

**Site and Sample Information**

Collector's Name:

Date/Time Collected: 04/29/2011 12:33

Date/Time Received: 05/02/2011 13:19

Site Name: San Diego / Air

Source Name:

R Number: R 90644

Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
85424.6	04/27/2011 11:33	85754.0	04/29/2011 12:33	329.4

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0524-001	San Diego	HASL Ga-01-R	Ba-140	-0.0659 ± 0.0498	0.0861	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	Ce-141	0.0202 ± 0.00983	0.0372	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	Ce-144	-0.0388 ± 0.0493	0.133	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	Cs-134	0.0228 ± 0.00759	0.0354	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	Cs-137	-0.00918 ± 0.0146	0.0320	pCi/m <sup>3</sup>
N11-0524-001	San Diego	DOE RP 710	Gross Alpha	0.00510 ± 0.00200	0.00170	pCi/m <sup>3</sup>
N11-0524-001	San Diego	DOE RP 710	Gross Beta	0.0156 ± 0.00280	0.00350	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	I-131	-0.00233 ± 0.0124	0.0349	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	I-132	-0.0179 ± 0.0256	0.0539	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	Ru-103	0.0141 ± 0.00871	0.0319	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	Ru-106	-0.177 ± 0.156	0.299	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	Te-132	0.00191 ± 0.0128	0.0376	pCi/m <sup>3</sup>
N11-0524-001	San Diego	HASL Ga-01-R	Zr-95	-0.0162 ± 0.0265	0.0528	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0524

N11-0524-002

San Diego

HASL Ga-01-R

Iodine-131

-0.00549 ± 0.0217

0.0594

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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Interim Director

State of California - Health and Human Services Agency  
California Department of Public Health

Drinking Water and Radiation Laboratory Branch  
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EDMUND G. BROWN JR.  
Governor

**FINAL Analysis Results Report for Task ID. N11-0525**

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: CA Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/29/2011 10:43 Date/Time Received: 05/02/2011 13:24  
Site Name: San Luis Obispo / Air Source Name: \_\_\_\_\_  
R Number: R 85065 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
70700.2	04/27/2011 08:17	71074.0	04/29/2011 10:43	373.8

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0525-001	San Luis Obispo	HASL Ga-01-R	Ba-140	0.00713 ± 0.0458	0.128	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	Ce-141	0.0141 ± 0.0123	0.0398	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	Ce-144	-0.0645 ± 0.0602	0.152	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	Cs-134	0.00718 ± 0.0112	0.0401	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	Cs-137	-0.00593 ± 0.0129	0.0362	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	DOE RP 710	Gross Alpha	0.000300 ± 0.00100	0.00190	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	DOE RP 710	Gross Beta	0.00730 ± 0.00230	0.00340	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	I-131	0.0201 ± 0.00996	0.0380	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	I-132	0.00837 ± 0.0173	0.0568	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	Ru-103	-0.0200 ± 0.0142	0.0265	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	Ru-106	0.0616 ± 0.0805	0.294	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	Te-132	0.00440 ± 0.0152	0.0453	pCi/m <sup>3</sup>
N11-0525-001	San Luis Obispo	HASL Ga-01-R	Zr-95	0.0248 ± 0.0130	0.0585	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0525

N11-0525-002

San Luis Obispo

HASL Ga-01-R

Iodine-131

-0.0135 ± 0.0209

0.0547

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



Howard Backer, MD, MPH  
Interim Director

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California Department of Public Health

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850 Marina Bay Parkway, Richmond, CA 94804



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0526

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/29/2011 11:18 Date/Time Received: 05/02/2011 13:28  
Site Name: Avila Beach / Air Source Name: \_\_\_\_\_  
R Number: R 85066 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
31675.2	04/27/2011 08:46	32047.3	04/29/2011 11:18	372.1

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	Ba-140	-0.00857 ± 0.0404	0.117	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	Ce-141	0.0169 ± 0.0118	0.0370	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	Ce-144	0.0481 ± 0.0444	0.136	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	Cs-134	-0.0222 ± 0.0165	0.0303	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	Cs-137	0.0169 ± 0.00897	0.0415	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	DOE RP 710	Gross Alpha	0.00390 ± 0.00170	0.00150	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	DOE RP 710	Gross Beta	0.0151 ± 0.00250	0.00310	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	I-131	-0.00666 ± 0.0115	0.0328	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	I-132	0.0297 ± 0.0130	0.0686	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	Ru-103	-0.00572 ± 0.0119	0.0334	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	Ru-106	0.137 ± 0.0402	0.291	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	Te-132	0.000938 ± 0.0113	0.0371	pCi/m <sup>3</sup>
N11-0526-001	Diablo Canyon NPP	HASL Ga-01-R	Zr-95	-0.00229 ± 0.0174	0.0443	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0526

N11-0526-002

Diablo Canyon NPP

HASL Ga-01-R

Iodine-131

0.0331 ± 0.0146

0.0606

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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Interim Director

State of California - Health and Human Services Agency  
California Department of Public Health

Drinking Water and Radiation Laboratory Branch  
850 Marina Bay Parkway, Richmond, CA 94804



EDMUND G. BROWN JR.  
Governor

**FINAL Analysis Results Report for Task ID. N11-0527**

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 05/02/2011 10:56 Date/Time Received: 05/03/2011 08:05  
Site Name: Livermore / Air Source Name: \_\_\_\_\_  
R Number: R 91062 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
38982.0	04/29/2011 09:00	39495.5	05/02/2011 10:56	513.5

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0527-001	Livermore	HASL Ga-01-R	Ba-140	-0.0243 ± 0.0291	0.0680	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	Ce-141	0.00120 ± 0.00759	0.0232	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	Ce-144	0.0325 ± 0.0263	0.0912	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	Cs-134	0.0120 ± 0.00657	0.0246	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	Cs-137	0.00701 ± 0.00618	0.0227	pCi/m <sup>3</sup>
N11-0527-001	Livermore	DOE RP 710	Gross Alpha	0.00570 ± 0.00170	0.00140	pCi/m <sup>3</sup>
N11-0527-001	Livermore	DOE RP 710	Gross Beta	0.00165 ± 0.00220	0.00250	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	I-131	-0.00167 ± 0.00749	0.0211	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	I-132	0.00396 ± 0.00868	0.0266	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	Ru-103	0.00326 ± 0.00570	0.0178	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	Ru-106	-0.110 ± 0.0880	0.169	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	Te-132	-0.0125 ± 0.00794	0.0185	pCi/m <sup>3</sup>
N11-0527-001	Livermore	HASL Ga-01-R	Zr-95	0.0339 ± 0.0153	0.0439	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0527

N11-0527-002

Livermore

HASL Ga-01-R

Iodine-131

0.00736 ± 0.0101

0.0333

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



Howard Backer, MD, MPH  
Interim Director

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California Department of Public Health

Drinking Water and Radiation Laboratory Branch

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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0528

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/29/2011 08:00 Date/Time Received: 05/03/2011 11:26  
Site Name: Humboldt Bay / Air Source Name: \_\_\_\_\_  
R Number: R 90481 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
81011.8	04/27/2011 11:19	81335.1	04/29/2011 08:00	323.3

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	Ba-140	-0.00400 ± 0.0499	0.134	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	Ce-141	-0.00504 ± 0.0164	0.0439	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	Ce-144	0.00626 ± 0.0678	0.189	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	Cs-134	-0.0125 ± 0.0137	0.0375	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	Cs-137	-0.00894 ± 0.0151	0.0425	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	DOE RP 710	Gross Alpha	-0.000200 ± 0.00100	0.00220	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	DOE RP 710	Gross Beta	0.00260 ± 0.00240	0.00390	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	I-131	0.0105 ± 0.0140	0.0441	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	I-132	0.0507 ± 0.0197	0.0929	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	Ru-103	0.0118 ± 0.00847	0.0312	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	Ru-106	0.169 ± 0.0699	0.335	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	Te-132	0.0466 ± 0.0186	0.0707	pCi/m <sup>3</sup>
N11-0528-001	Humboldt Bay NPP	HASL Ga-01-R	Zr-95	-0.0111 ± 0.0301	0.0670	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0528

N11-0528-002

Humboldt Bay NPP

HASL Ga-01-R

Iodine-131

-0.0296 ± 0.0264

0.0621

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



Howard Backer, MD, MPH  
Interim Director

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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0529

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

<b>Requestor</b>			
Name:	Organization:		
Address:			
City:	State:	Zip Code:	Phone:

<b>Site and Sample Information</b>			
Collector's Name:	Date/Time Collected: 05/02/2011 14:30	Date/Time Received: 05/03/2011 11:31	
Site Name: Los Angeles / Air	Source Name:		
R Number: R 91132	Sample Type: Air Filter		

<b>Air Filter Information</b>				
<u>Start Volume</u>	<u>Start Date/Time</u>	<u>End Volume (M )<sup>3</sup></u>	<u>End Date/Time</u>	<u>Net Air Volume (M )<sup>3</sup></u>
92232.4	04/25/2011 13:00	92714.4	05/02/2011 14:30	482.0

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0529-001	Los Angeles	HASL Ga-01-R	Ba-140	-0.0598 ± 0.0434	0.0866	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	Ce-141	-0.00902 ± 0.0111	0.0290	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	Ce-144	-0.0147 ± 0.0468	0.129	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	Cs-134	0.000562 ± 0.00720	0.0233	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	Cs-137	0.0107 ± 0.00675	0.0276	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	DOE RP 710	Gross Alpha	0.00440 ± 0.00160	0.00150	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	DOE RP 710	Gross Beta	0.0202 ± 0.00240	0.00260	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	I-131	-0.00317 ± 0.00839	0.0219	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	I-132	-0.00337 ± 0.0103	0.0291	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	Ru-103	-0.00246 ± 0.00900	0.0231	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	Ru-106	-0.0739 ± 0.0795	0.211	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	Te-132	-0.00491 ± 0.00823	0.0216	pCi/m <sup>3</sup>
N11-0529-001	Los Angeles	HASL Ga-01-R	Zr-95	-0.00335 ± 0.0134	0.0404	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0529

N11-0529-002

Los Angeles

HASL Ga-01-R

Iodine-131

-0.00798 ± 0.0118

0.0301

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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EDMUND G. BROWN JR.  
Governor

**FINAL Analysis Results Report for Task ID. N11-0530**

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/30/2011 09:04 Date/Time Received: 05/03/2011 11:37  
Site Name: Eureka / Air Source Name: \_\_\_\_\_  
R Number: R 91212 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
65915.4	04/28/2011 16:02	66176.6	04/30/2011 09:04	261.2

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0530-001	Eureka	HASL Ga-01-R	Ba-140	-0.136 ± 0.0915	0.160	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	Ce-141	-0.0135 ± 0.0222	0.0582	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	Ce-144	-0.0587 ± 0.0847	0.224	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	Cs-134	0.00312 ± 0.0150	0.0482	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	Cs-137	0.0110 ± 0.0146	0.0501	pCi/m <sup>3</sup>
N11-0530-001	Eureka	DOE RP 710	Gross Alpha	0.000900 ± 0.00150	0.00270	pCi/m <sup>3</sup>
N11-0530-001	Eureka	DOE RP 710	Gross Beta	0.00530 ± 0.00300	0.00480	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	I-131	-0.0291 ± 0.0224	0.0503	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	I-132	-0.00661 ± 0.0242	0.0713	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	Ru-103	0.0168 ± 0.0142	0.0466	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	Ru-106	0.106 ± 0.130	0.442	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	Te-132	0.0255 ± 0.0190	0.0643	pCi/m <sup>3</sup>
N11-0530-001	Eureka	HASL Ga-01-R	Zr-95	0.000291 ± 0.0254	0.0801	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0530

N11-0530-002

Eureka

HASL Ga-01-R

Iodine-131

0.0254 ± 0.0200

0.0748

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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EDMUND G. BROWN JR.  
Governor

**FINAL Analysis Results Report for Task ID. N11-0531**

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 05/02/2011 08:45 Date/Time Received: 05/03/2011 11:41  
Site Name: Eureka / Air Source Name: \_\_\_\_\_  
R Number: R 91213 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
66176.6	04/30/2011 09:04	66486.5	05/02/2011 08:45	309.9

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0531-001	Eureka	HASL Ga-01-R	Ba-140	0.0583 ± 0.0337	0.130	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	Ce-141	0.00857 ± 0.00967	0.0329	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	Ce-144	0.0201 ± 0.0469	0.148	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	Cs-134	-0.00621 ± 0.0153	0.0376	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	Cs-137	-0.000552 ± 0.0129	0.0350	pCi/m <sup>3</sup>
N11-0531-001	Eureka	DOE RP 710	Gross Alpha	0.000600 ± 0.00120	0.00230	pCi/m <sup>3</sup>
N11-0531-001	Eureka	DOE RP 710	Gross Beta	0.00630 ± 0.00270	0.00410	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	I-131	-0.00382 ± 0.0112	0.0308	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	I-132	0.000551 ± 0.0162	0.0452	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	Ru-103	-0.0275 ± 0.0152	0.0283	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	Ru-106	-0.130 ± 0.163	0.316	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	Te-132	-0.00400 ± 0.0101	0.0276	pCi/m <sup>3</sup>
N11-0531-001	Eureka	HASL Ga-01-R	Zr-95	-0.0144 ± 0.0249	0.0531	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0531

N11-0531-002

Eureka

HASL Ga-01-R

Iodine-131

0.00571 ± 0.0156

0.0502

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



Howard Backer, MD, MPH  
Interim Director

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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0532

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

<b>Requestor</b>			
Name:	Organization:		
Address:			
City:	State:	Zip Code:	Phone:

<b>Site and Sample Information</b>			
Collector's Name:	Date/Time Collected: 05/01/2011 16:01	Date/Time Received: 05/03/2011 11:45	
Site Name: Humboldt Bay / Air	Source Name:		
R Number: R 90482	Sample Type: Air Filter		

<b>Air Filter Information</b>				
<u>Start Volume</u>	<u>Start Date/Time</u>	<u>End Volume (M )<sup>3</sup></u>	<u>End Date/Time</u>	<u>Net Air Volume (M )<sup>3</sup></u>
3886.4	04/29/2011 08:12	4300.7	05/01/2011 06:01	414.3

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	Ba-140	0.00590 ± 0.0304	0.0858	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	Ce-141	-0.00247 ± 0.00916	0.0268	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	Ce-144	-0.0248 ± 0.0372	0.0983	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	Cs-134	0.000453 ± 0.0107	0.0264	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	Cs-137	-0.00711 ± 0.00976	0.0206	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	DOE RP 710	Gross Alpha	0.000300 ± 0.000900	0.00170	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	DOE RP 710	Gross Beta	0.00370 ± 0.00190	0.00310	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	I-131	0.00206 ± 0.00614	0.0195	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	I-132	0.0131 ± 0.00980	0.0379	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	Ru-103	-0.00196 ± 0.00746	0.0200	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	Ru-106	0.188 ± 0.0381	0.262	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	Te-132	0.0101 ± 0.00746	0.0250	pCi/m <sup>3</sup>
N11-0532-001	Humboldt Bay NPP	HASL Ga-01-R	Zr-95	-0.0141 ± 0.0211	0.0492	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0532

N11-0532-002

Humboldt Bay NPP

HASL Ga-01-R

Iodine-131

0.00834 ± 0.0128

0.0432

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0533

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name:

Organization:

Address:

City:

State:

Zip Code:

Phone:

**Site and Sample Information**

Collector's Name:

Date/Time Collected: 05/02/2011 16:00

Date/Time Received: 05/03/2011 13:18

Site Name: San Onofre / Air

Source Name:

R Number: R 87903

Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
12615.1	04/29/2011 15:45	13098.3	05/02/2011 16:00	483.2

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0533-001	San Onofre	HASL Ga-01-R	Ba-140	0.0148 ± 0.0325	0.0940	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	Ce-141	0.0226 ± 0.00857	0.0315	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	Ce-144	0.0565 ± 0.0362	0.122	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	Cs-134	-0.0135 ± 0.0104	0.0278	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	Cs-137	0.00795 ± 0.00803	0.0294	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	DOE RP 710	Gross Alpha	0.00550 ± 0.00180	0.00150	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	DOE RP 710	Gross Beta	0.0191 ± 0.00240	0.00260	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	I-131	-0.00808 ± 0.0104	0.0257	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	I-132	-0.00933 ± 0.0109	0.0279	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	Ru-103	0.00858 ± 0.00622	0.0221	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	Ru-106	0.0846 ± 0.0545	0.223	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	Te-132	-0.000756 ± 0.00788	0.0218	pCi/m <sup>3</sup>
N11-0533-001	San Onofre	HASL Ga-01-R	Zr-95	-0.0314 ± 0.0202	0.0451	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0533

N11-0533-002

San Onofre

HASL Ga-01-R

Iodine-131

-0.00454 ± 0.0121

0.0328

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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Interim Director

State of California - Health and Human Services Agency  
California Department of Public Health

Drinking Water and Radiation Laboratory Branch

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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0534

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 05/02/2011 12:52 Date/Time Received: 05/03/2011 13:23  
Site Name: San Diego / Air Source Name: \_\_\_\_\_  
R Number: R 90625 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
85754.0	04/29/2011 12:35	86246.2	05/02/2011 12:52	492.2

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0534-001	San Diego	HASL Ga-01-R	Ba-140	-0.0159 ± 0.0377	0.0932	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	Ce-141	-0.00159 ± 0.0109	0.0306	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	Ce-144	-0.0189 ± 0.0441	0.120	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	Cs-134	-0.00655 ± 0.00906	0.0258	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	Cs-137	-0.00340 ± 0.00885	0.0246	pCi/m <sup>3</sup>
N11-0534-001	San Diego	DOE RP 710	Gross Alpha	0.00810 ± 0.00210	0.00150	pCi/m <sup>3</sup>
N11-0534-001	San Diego	DOE RP 710	Gross Beta	0.0187 ± 0.00230	0.00260	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	I-131	-0.0184 ± 0.0110	0.0236	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	I-132	0.00414 ± 0.00871	0.0295	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	Ru-103	-0.00268 ± 0.00795	0.0201	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	Ru-106	0.129 ± 0.0467	0.230	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	Te-132	0.0169 ± 0.00591	0.0235	pCi/m <sup>3</sup>
N11-0534-001	San Diego	HASL Ga-01-R	Zr-95	0.00556 ± 0.0106	0.0386	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0534

N11-0534-002

San Diego

HASL Ga-01-R

Iodine-131

-0.00176 ± 0.0113

0.0313

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0539

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 05/01/2011 14:43 Date/Time Received: 05/04/2011 13:12  
Site Name: San Luis Obispo / Air Source Name: \_\_\_\_\_  
R Number: R 85067 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
71074.0	04/29/2011 10:47	71458.0	05/01/2011 14:43	384.0

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0539-001	San Luis Obispo	HASL Ga-01-R	Ba-140	-0.0690 ± 0.0544	0.110	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	Ce-141	-0.0149 ± 0.0135	0.0324	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	Ce-144	-0.0295 ± 0.0557	0.150	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	Cs-134	0.00716 ± 0.0105	0.0366	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	Cs-137	0.00542 ± 0.0106	0.0358	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	DOE RP 710	Gross Alpha	0.000600 ± 0.00110	0.00190	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	DOE RP 710	Gross Beta	0.00770 ± 0.00230	0.00330	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	I-131	0.00700 ± 0.0136	0.0400	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	I-132	0.0353 ± 0.0127	0.0612	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	Ru-103	0.0165 ± 0.00949	0.0338	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	Ru-106	-0.0231 ± 0.0915	0.281	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	Te-132	0.0114 ± 0.0132	0.0403	pCi/m <sup>3</sup>
N11-0539-001	San Luis Obispo	HASL Ga-01-R	Zr-95	-0.00282 ± 0.0156	0.0477	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0539

N11-0539-002

San Luis Obispo

HASL Ga-01-R

Iodine-131

0.0318 ± 0.0104

0.0523

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0540

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name:

Organization:

Address:

City:

State:

Zip Code:

Phone:

**Site and Sample Information**

Collector's Name:

Date/Time Collected: 05/01/2011 15:15

Date/Time Received: 05/04/2011 13:20

Site Name: Avila Beach / Air

Source Name:

R Number: R 85068

Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
32047.3	04/29/2011 11:24	32427.3	05/01/2011 15:15	380.0

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	Ba-140	-0.0410 ± 0.0513	0.117	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	Ce-141	-0.0119 ± 0.0135	0.0350	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	Ce-144	-0.0129 ± 0.0560	0.155	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	Cs-134	-0.00898 ± 0.0106	0.0296	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	Cs-137	-0.00190 ± 0.0107	0.0325	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	DOE RP 710	Gross Alpha	0.000900 ± 0.00110	0.00190	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	DOE RP 710	Gross Beta	0.00790 ± 0.00230	0.00330	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	I-131	0.0226 ± 0.00911	0.0368	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	I-132	0.0176 ± 0.0172	0.0629	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	Ru-103	-0.00503 ± 0.0118	0.0291	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	Ru-106	-0.0255 ± 0.0889	0.257	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	Te-132	-0.0121 ± 0.0151	0.0392	pCi/m <sup>3</sup>
N11-0540-001	Diablo Canyon NPP	HASL Ga-01-R	Zr-95	-0.00731 ± 0.0287	0.0642	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0540

N11-0540-002

Diablo Canyon NPP

HASL Ga-01-R

Iodine-131

0.0141 ± 0.0154

0.0537

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.



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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0550

Analyst: \_\_\_\_\_

Analysis Approved By: \_\_\_\_\_

Analysis Approval Date: 05/23/2011

**Requestor**

Name: \_\_\_\_\_ Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

**Site and Sample Information**

Collector's Name: \_\_\_\_\_ Date/Time Collected: 04/29/2011 13:00 Date/Time Received: 05/06/2011 10:28  
Site Name: Los Angeles / Air Source Name: \_\_\_\_\_  
R Number: R 91131 Sample Type: Air Filter

**Air Filter Information**

Start Volume	Start Date/Time	End Volume (M ) <sup>3</sup>	End Date/Time	Net Air Volume (M ) <sup>3</sup>
91916.8	04/27/2011 14:00	92232.4	04/29/2011 13:00	315.6

Sample ID	Sampling Point	Method	Parameter	Result ± CE	MDA <sub>95</sub>	Units
N11-0550-001	Los Angeles	HASL Ga-01-R	Ba-140	0.0366 ± 0.0535	0.188	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	Ce-141	0.0146 ± 0.0128	0.0401	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	Ce-144	-0.0148 ± 0.0615	0.149	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	Cs-134	-0.00561 ± 0.0174	0.0441	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	Cs-137	-0.0555 ± 0.0306	0.0462	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	DOE RP 710	Gross Alpha	0.00110 ± 0.00120	0.00180	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	DOE RP 710	Gross Beta	0.0128 ± 0.00280	0.00360	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	I-131	-0.0133 ± 0.0209	0.0609	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	I-132	-0.0666 ± 0.0715	0.169	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	Ru-103	0.00435 ± 0.0111	0.0381	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	Ru-106	-0.406 ± 0.254	0.382	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	Te-132	-0.00756 ± 0.0274	0.0884	pCi/m <sup>3</sup>
N11-0550-001	Los Angeles	HASL Ga-01-R	Zr-95	0.00469 ± 0.0241	0.0767	pCi/m <sup>3</sup>

1. Precision criteria for these methods 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. MDA<sub>95</sub> is the sample specific minimum detectable activity at the 95% confidence level, which is the LLD<sub>95</sub> divided by 2.22, the efficiency and the yield, and may include factors for abundance, decay and ingrowth, depending on the particular radionuclide. LLD<sub>95</sub> is defined in section 7020C, 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.

# FINAL Analysis Results Report for Task ID. N11-0550

N11-0550-002

Los Angeles

HASL Ga-01-R

Iodine-131

0.000102 ± 0.0181

0.0563

pCi/m3

- 
1. Precision criteria for these methods 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, depending on the particular radionuclide. LLD95 is defined in section 7020C, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where  $S_b$  is the square root of the instrument background count rate.