

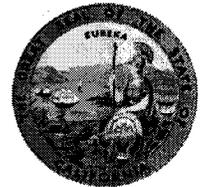


RON CHAPMAN, MD, MPH  
Director

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



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-1132

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 12/19/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 12/07/2011 08:55 Date/Time Received: 12/09/2011 13:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / December 2011

R Number: R 92712

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-1132-001	Canal Effluent	EPA 901.1	K-40	317 ± 17.2	60.2	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received <u>12-9-2011</u>	Lab No. (Leave Blank) <u>NI-1152</u>
	Date & Time Sampled <u>12-7-11 0855</u>	Serial Number <u>R 92712</u>
<b>Collector Information</b> Name: <u>Dee Anderson</u> Dept./Branch: <u>HBPP PG+E</u> Address: Telephone No.: <u>707-444-0746</u>	<b>Reporting Information</b> Name: Dept./Branch: <u>Steve HSU</u> Address: <u>RHB</u> Telephone No.:	
<b>Sample Information</b> System Name / Facility: <u>HBPP</u> Sampling Point (s): <u>Effluent Canal</u> System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			
<input type="checkbox"/> Air Filters	Date/Time _____	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: _____	_____	<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____	_____	<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ) _____	_____	<input type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

**COMMENTS:** (Cautions, etc.): 2011-8525

Field Treatment: Preservatives added: HNO<sub>3</sub>     Cooled/Frozen: \_\_\_\_\_    Other: \_\_\_\_\_

Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_

Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input checked="" type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

**CHAIN OF CUSTODY**

1. Date _____	Name (Print) _____	Signature <u>[Signature]</u>	Date <u>12-7-11</u>
Time Custody Received _____	Organization _____		Time Custody Released <u>1030</u>
2. Date _____	Name (Print) _____	Signature _____	Date _____
Time Custody Received _____	Organization _____		Time Custody Released _____
3. Date <u>12-9-11</u>	Name (Print) <u>UA</u>	Signature <u>[Signature]</u>	Date _____
Time Custody Received <u>13:00</u>	Organization <u>DWR/LB</u>		Time Custody Released _____

**LABORATORY REMARKS (Leave Blank)**

**A. Condition at Time of Receipt:**

<input type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	

**B. Preservatives/Carriers:**

<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable
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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-1133

Analyst: Sony Cai

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 01/04/2012

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 12/07/2011 08:55 Date/Time Received: 12/09/2011 13:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / December 2011

R Number: R 92701

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-1133-001	Canal Effluent	EPA 906.0	Tritium	-48.9 ± 129	223	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 12-9-11	Lab No. (Leave Blank) 111-1133
	Date & Time Sampled 12-7-11 10:30 AM	Serial Number R 92701
<b>Collector Information</b> Name: Dee Anderson Dept./Branch: HBPP PGIE Address:	<b>Reporting Information</b> Name: Steve HSU Dept./Branch: RHB Address:	
Telephone No.: 707-444-0746	Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			

<input type="checkbox"/> Air Filters	Date/Time	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: _____	_____	<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____	_____	<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ) _____		<input type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

**COMMENTS: (Cautions, etc.):** Sample # 2011-8525

Field Treatment: Preservatives added: \_\_\_\_\_ Iced/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_

Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_

Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input checked="" type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

**CHAIN OF CUSTODY**

1.	Date _____	Name (Print) _____	Signature _____	Date 12-7-11
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released 10:30
2.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released _____
3.	Date 12-9-11	Name (Print) VA	Signature _____	Date _____
	Time Custody Received 13:00	Organization DWRLB	Signature Valero M. Ali	Time Custody Released _____

**LABORATORY REMARKS (Leave Blank)**

**A. Condition at Time of Receipt:**

<input type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	

**B. Preservatives/Carriers:**

<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable
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EDMUND G. BROWN JR.  
Governor

**FINAL Analysis Results Report for Task ID. N11-1041**

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 11/16/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 11/02/2011 09:00 Date/Time Received: 11/03/2011 09:40

Site Name: Humboldt Bay NPP

Source Name: HBNPP / November 2011

R Number: R 92555

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-1041-001	Canal Effluent	EPA 901.1	K-40	378 ± 19.5	66.8	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

Sanitation and Radiation Laboratories Branch 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received <u>11-03-11</u>	Lab No. (Leave Blank) <u>N11-1041</u>
	Date & Time Sampled <u>11-2-11 / 0900</u>	Serial Number <u>R 92555</u>
Collector Information Name: <u>Dee Anderson</u> Dept./Branch: <u>HBPP</u> Address: <u>PG:E</u>	Reporting Information Name: <u>Steve Hsu</u> Dept./Branch: <u>RHB</u> Address:	
Telephone No.: <u>787 444-0746</u>	Telephone No.:	
Sample Information System Name / Facility: <u>HBPP</u> Sampling Point (s): <u>Effluent Canal</u>	Billing Agency <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	
System No.:		

**TYPE OF SAMPLE** (Check all applicable boxes)

Drinking Water       Groundwater       Surface Water       Wastewater  
 Raw       Water Treatment Plant (WTP)       Distribution System       Point of Use (POU)  
 Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxizone / Fluoridated / Coagulated / pH Adjusted

Air Filters      Date/Time       Seawater       Sludge (Semi-solid Samples)  
 Finishing: \_\_\_\_\_       Milk       Soil/Sediment  
 Starting: \_\_\_\_\_       Wipes       Biota (Type): \_\_\_\_\_  
 Net (M<sup>3</sup>) \_\_\_\_\_       Radon Canister       Other: \_\_\_\_\_  
 Air Charcoal Cartridge

**COMMENTS:** (Cautions, etc.): 2011-7708

Field Treatment: Preservatives added: H<sub>2</sub>O<sub>2</sub>      Cooled/Frozen: \_\_\_\_\_      Other: \_\_\_\_\_  
 Field Measurement: \_\_\_\_\_ mR/hr       Radionuclide(s), if known: \_\_\_\_\_  
 Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED** (For questions, please call 510-620-2911)

Gross Alpha       Gross Beta       Gamma Scan  
 Total Uranium       Total Beta (SC)       NORM (Gamma)  
 Total Radium       Tritium (<sup>3</sup>H)       Isotopic Americium / Curium  
 Radium-226       Carbon-14       Isotopic Plutonium  
 Radium-228       Iodine-131       Isotopic Thorium  
 Radon-222       Strontium-89, 90       Isotopic Uranium  
 Other (Specify): \_\_\_\_\_       Nickel-63       Iron-55

**CHAIN OF CUSTODY**

1.	Date _____	Name (Print) _____	Signature <u>[Signature]</u>	Date <u>11-2-11</u>
	Time Custody Received _____	Organization _____		Time Custody Released <u>1030</u>
2.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____		Time Custody Released _____
3.	Date <u>11-3-11</u>	Name (Print) <u>NA</u>	Signature _____	Date _____
	Time Custody Received <u>9:40 AM</u>	Organization <u>DURLB</u>	Signature <u>[Signature]</u>	Time Custody Released _____

**LABORATORY REMARKS** (Leave Blank)

4001 MR/HR

A. Condition at Time of Receipt:  
 Acceptable       Broken Container       Leaked in Transit       Improper Container  
 Holding Time Exceeded       Sample Not Cooled       Insufficient Sample

B. Preservatives/Carriers:  
 Added While Sampling       Added in Laboratory       Not Added       Not Applicable



RON CHAPMAN, MD, MPH  
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. N11-1042

Analyst: Sony Cai

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 01/04/2012

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 11/02/2011 09:00 Date/Time Received: 11/03/2011 09:40

Site Name: Humboldt Bay NPP

Source Name: HBNPP / November 2011

R Number: R 92567

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-1042-001	Canal Effluent	EPA 906.0	Tritium	33.2 ± 131	223	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received <u>11-3-11</u>	Lab No. (Leave Blank) <u>ML-1042</u>
	Date & Time Sampled <u>11-2-11 / 1000</u>	Serial Number <u>R 92567</u>
<b>Collector Information</b> Name: <u>Dee Anderson</u> Dept./Branch: <u>HBPP</u> Address: <u>PG:E</u> Telephone No.: <u>707 444 0746</u>	<b>Reporting Information</b> Name: <u>Steve Hsu</u> Dept./Branch: <u>RHB</u> Address: _____ Telephone No.: _____	
<b>Sample Information</b> System Name / Facility: <u>HBPP</u> Sampling Point (s): <u>Effluent Canal</u> System No.: _____	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

- |   |  |  |  |
|---|--|--|--|
| <input type="checkbox"/> Drinking Water   | <input type="checkbox"/> Groundwater                 | <input type="checkbox"/> Surface Water             | <input type="checkbox"/> Wastewater                  |
| <input type="checkbox"/> Raw  | <input type="checkbox"/> Water Treatment Plant (WTP) | <input type="checkbox"/> Distribution System       | <input type="checkbox"/> Point of Use (POU)          |
| <input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted |  |  |  |
| <input type="checkbox"/> Air Filters  | Date/Time _____                                      | <input checked="" type="checkbox"/> Seawater       | <input type="checkbox"/> Sludge (Semi-solid Samples) |
| Finishing: _____  | _____  | <input type="checkbox"/> Milk                      | <input type="checkbox"/> Soil/Sediment               |
| Starting: _____   | _____  | <input type="checkbox"/> Wipes                     | <input type="checkbox"/> Biota (Type): _____         |
| Net (M <sup>3</sup> ) _____   | _____  | <input checked="" type="checkbox"/> Radon Canister | <input type="checkbox"/> Other: _____                |
| <input type="checkbox"/> Air Charcoal Cartridge   |  |  |  |

**COMMENTS:** (Cautions, etc.): 2011-7708

- |  |   |              |
|--|---|--------------|
| <input type="checkbox"/> Field Treatment: Preservatives added: _____                         | Cold/Frozen: _____  | Other: _____ |
| <input type="checkbox"/> Field Measurement: _____ mR/hr                                      | <input type="checkbox"/> Radionuclide(s), if known: _____ |              |
| <input type="checkbox"/> Rush/Priority (should be prearranged and have supervisory approval) |   |              |

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Gross Alpha            | <input type="checkbox"/> Gross Beta                           | <input type="checkbox"/> Gamma Scan                  |
| <input type="checkbox"/> Total Uranium          | <input type="checkbox"/> Total Beta (LSC)                     | <input type="checkbox"/> NORM (Gamma)                |
| <input type="checkbox"/> Total Radium           | <input checked="" type="checkbox"/> Tritium ( <sup>3</sup> H) | <input type="checkbox"/> Isotopic Americium / Curium |
| <input type="checkbox"/> Radium-226             | <input type="checkbox"/> Carbon-14                            | <input type="checkbox"/> Isotopic Plutonium          |
| <input type="checkbox"/> Radium-228             | <input type="checkbox"/> Iodine-131                           | <input type="checkbox"/> Isotopic Thorium            |
| <input type="checkbox"/> Radon-222              | <input type="checkbox"/> Strontium-89, 90                     | <input type="checkbox"/> Isotopic Uranium            |
| <input type="checkbox"/> Other (Specify): _____ | <input type="checkbox"/> Nickel-63                            | <input type="checkbox"/> Iron-55                     |

**CHAIN OF CUSTODY**

1.	Date _____	Name (Print) _____	Signature _____	Date <u>11-2-11</u>
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released <u>1030</u>
2.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released _____
3.	Date <u>11-3-11</u>	Name (Print) <u>VA</u>	Signature _____	Date _____
	Date <u>9:40</u>	Name (Print) <u>DWR/LB</u>	Signature _____	Time Custody Released _____
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released _____

**LABORATORY REMARKS (Leave Blank)**

- A. Condition at Time of Receipt:**
- |  |  |  |   |
|--|--|--|---|
| <input type="checkbox"/> Acceptable            | <input type="checkbox"/> Broken Container  | <input type="checkbox"/> Leaked in Transit   | <input type="checkbox"/> Improper Container |
| <input type="checkbox"/> Holding Time Exceeded | <input type="checkbox"/> Sample Not Cooled | <input type="checkbox"/> Insufficient Sample |   |
- B. Preservatives/Carriers:**
- |   |  |                                    |   |
|---|--|------------------------------------|---|
| <input type="checkbox"/> Added While Sampling | <input type="checkbox"/> Added in Laboratory | <input type="checkbox"/> Not Added | <input type="checkbox"/> Not Applicable |
|---|--|------------------------------------|---|



RON CHAPMAN, MD, MPH  
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. N11-0932**

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 10/17/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 10/05/2011 09:00 Date/Time Received: 10/06/2011 11:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / October 2011

R Number: R 92545

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0932-001	Canal Effluent	EPA 901.1	K-40	343 ± 23.0	85.2	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

Sanitation and Radiation Laboratories Branch 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 10/6/11	Lab No. (Leave Blank) 111-0932
	Date & Time Sampled 10-05-11 / 09:00	Serial Number R 92545
Collector Information Name: Dee Anderson Dept./Branch: HBPP Address: PGE	Reporting Information Name: Steve HSU Dept./Branch: RHB Address:	
Telephone No.: 707 444-0746	Telephone No.:	
Sample Information System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	Billing Agency <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input checked="" type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

TYPE OF SAMPLE (Check all applicable boxes)

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			
<input type="checkbox"/> Air Filters	Date/Time	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: <u>Finished data</u>		<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____		<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ): <u>ent y</u>		<input type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

COMMENTS: (Cautions, etc.):

2011-6993  
 Field Treatment: Preservatives added: HL003 Iced/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_  
 Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_  
 Rush/Priority (should be prearranged and have supervisory approval)

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input checked="" type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input checked="" type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radium-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

CHAIN OF CUSTODY

1.	Date	Name (Print)	Signature	Date	Time Custody Released
			<u>[Signature]</u>	10-5-11	13:30
2.	Date	Name (Print)	Signature	Date	Time Custody Released
3.	Date	Name (Print)	Signature	Date	Time Custody Released
	10/6/11	UA	<u>[Signature]</u>		
	11:00	DWRLB			

LABORATORY REMARKS (Leave Blank)

0.01 MR/HR

A. Condition at Time of Receipt:  
 Acceptable     Broken Container     Leaked in Transit     Improper Container  
 Holding Time Exceeded     Sample Not Cooled     Insufficient Sample

B. Preservatives/Carriers:  
 Added While Sampling     Added in Laboratory     Not Added     Not Applicable



RON CHAPMAN, MD, MPH  
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  
Phone: (510) 620-2911 Fax: (510) 620-2940



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0933

Analyst: Sony Cai

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 12/07/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 10/05/2011 09:00 Date/Time Received: 10/06/2011 11:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / October 2011

R Number: R 92533

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0933-001	Canal Effluent	EPA 906.0	Tritium	-130 ± 157	275	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 10/6/11	Lab No. (Leave Blank) N11-0933
	Date & Time Sampled 10-5-11 09:00	Serial Number R 92533
<b>Collector Information</b> Name: Dec Anderson Dept./Branch: HBPP Address: PG:5 Telephone No.: 707 444-6746	<b>Reporting Information</b> Name: Steve Hsu Dept./Branch: RHB Address: Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent canal System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			
<input type="checkbox"/> Air Filters	Date/Time	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: _____	_____	<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____	_____	<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ) _____		<input type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

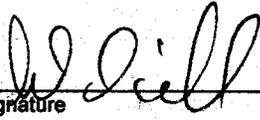
**COMMENTS:** (Cautions, etc.): 2011-6993

<input type="checkbox"/> Field Treatment: Preservatives added: _____	Iced/Frozen: _____	Other: _____
<input type="checkbox"/> Field Measurement: _____ mR/hr	<input type="checkbox"/> Radionuclide(s), if known: _____	
<input type="checkbox"/> Rush/Priority (should be prearranged and have supervisory approval)		

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input checked="" type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

**CHAIN OF CUSTODY**

1.	Date _____	Name (Print) _____	Signature 	Date 10-5-11
	Time Custody Received _____	Organization _____		Time Custody Released _____
2.	Date _____	Name (Print) _____	Signature _____	Date 12:30
	Time Custody Received _____	Organization _____		Time Custody Released _____
3.	Date 10/6/11	Name (Print) J.A.	Signature _____	Date _____
	Time Custody Received 11:00	Organization DWRLB	Signature _____	Time Custody Released _____

**LABORATORY REMARKS (Leave Blank)**

0.01 MR/HR

<b>A. Condition at Time of Receipt:</b>			
<input type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	
<b>B. Preservatives/Carriers:</b>			
<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable



RON CHAPMAN, MD, MPH  
Director

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

Drinking Water and Radiation Laboratory Branch

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



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0854

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 09/19/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: Gary Frank

Date/Time Collected: 09/07/2011 07:50 Date/Time Received: 09/08/2011 11:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / September 2011

R Number: R 92490

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0854-001	Canal Effluent	EPA 901.1	K-40	390 ± 20.1	69.6	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

Sanitation and Radiation Laboratories Branch 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 9/18/11	Lab No. (Leave Blank) N11-0454
	Date & Time Sampled <sup>A</sup> 9/7/11 0750	Serial Number R 92490
Collector Information Name: GARY FRANK Dept./Branch: HBPP Address: PG&E Telephone No.: 707-444-2640	Reporting Information Name: STEVE HSU Dept./Branch: RHB Address: Telephone No.:	
Sample Information System Name / Facility: HBPP Sampling Point (s): EFFLUENT CANAL System No.:	Billing Agency <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

TYPE OF SAMPLE (Check all applicable boxes)

- Drinking Water
- Raw
- Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted
- Groundwater
- Water Treatment Plant (WTP)
- Surface Water
- Distribution System
- Wastewater
- Point of Use (POU)
- Air Filters
- Finishing: \_\_\_\_\_ Date/Time \_\_\_\_\_
- Starting: \_\_\_\_\_
- Net (M<sup>3</sup>) \_\_\_\_\_
- Air Charcoal Cartridge
- Seawater
- Milk
- Wipes
- Radon Canister
- Sludge (Semi-solid Samples)
- Soil/Sediment
- Biota (Type): \_\_\_\_\_
- Other: \_\_\_\_\_

COMMENTS: (Cautions, etc.):

- 2011-6504
- Field Treatment: Preservatives added: HNO3
  - Field Measurement: \_\_\_\_\_ mR/hr
  - Rush/Priority (should be prearranged and have supervisory approval)
  - Cooled/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_
  - Radionuclide(s), if known: \_\_\_\_\_

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

- Gross Alpha
- Total Uranium
- Total Radium
- Radium-226
- Radium-228
- Radon-222
- Other (Specify): \_\_\_\_\_
- Gross Beta
- Total Beta (SC)
- Tritium (<sup>3</sup>H)
- Carbon-14
- Iodine-131
- Strontium-89, 90
- Nickel-63
- Gamma Scan
- NORM (Gamma)
- Isotopic Americium / Curium
- Isotopic Plutonium
- Isotopic Thorium
- Isotopic Uranium
- Iron-55

CHAIN OF CUSTODY

1.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization		Time Custody Released
2.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization		Time Custody Released
3.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization		Time Custody Released

LABORATORY REMARKS (Leave Blank)

- < 0.01 MR/HR
- A. Condition at Time of Receipt:
- Acceptable
  - Holding Time Exceeded
  - Broken Container
  - Sample Not Cooled
  - Leaked in Transit
  - Insufficient Sample
  - Improper Container
- B. Preservatives/Carriers:
- Added While Sampling
  - Added in Laboratory
  - Not Added
  - Not Applicable

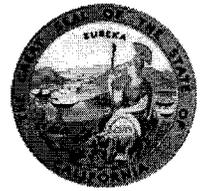


RON CHAPMAN, MD, MPH  
Director

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  
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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0855

Analyst: Sony Cai

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 10/07/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: Gary Frank

Date/Time Collected: 09/07/2011 07:50 Date/Time Received: 09/08/2011 11:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / September 2011

R Number: R 92475

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0855-001	Canal Effluent	EPA 906.0	Tritium	-27.9 ± 157	271	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 9/8/11	Lab No. (Leave Blank) NH-0455
	Date & Time Sampled 9/7/11 @ 0750	Serial Number R 92475
<b>Collector Information</b> Name: GARY FRANK Dept./Branch: HBPP Address: PG&E Telephone No.: 707-444-2640	<b>Reporting Information</b> Name: STEVE HSU Dept./Branch: RHB Address: Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): EFFLUENT CANAL System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

TYPE OF SAMPLE (Check all applicable boxes)

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			
<input type="checkbox"/> Air Filters	Date/Time	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: _____	_____	<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____	_____	<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ) _____		<input type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

COMMENTS: (Cautions, etc.):

2011-6504

Field Treatment: Preservatives added: \_\_\_\_\_ Iced/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_

Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_

Rush/Priority (should be prearranged and have supervisory approval)

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input checked="" type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

CHAIN OF CUSTODY

1.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization		Time Custody Released
2.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	Signature	Time Custody Released
3.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	Signature	Time Custody Released

LABORATORY REMARKS (Leave Blank)

A. Condition at Time of Receipt:

<input type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	

B. Preservatives/Carriers:

<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable
---	--	------------------------------------	---



RON CHAPMAN, MD, MPH  
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  
Phone: (510) 620-2911 Fax: (510) 620-2940



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0764

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 08/22/2011

<b><u>Requestor</u></b>	
Name: Steve Hsu	Organization: Radiologic Health Branch
Address: MS 7610, 1500 Capitol Avenue	
City: Sacramento	State: CA Zip Code: 95814-5006 Phone: 916-440-7940

<b><u>Site and Sample Information</u></b>	
Collector's Name: D. Anderson	Date/Time Collected: 08/03/2011 08:00 Date/Time Received: 08/04/2011 11:30
Site Name: Humboldt Bay NPP	Source Name: HBNPP / Aug 2011
R Number: R 92467	Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0764-001	Canal Effluent	EPA 901.1	K-40	384 ± 18.3	59.7	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 8/4/11	Lab No. (Leave Blank) N11-0764
	Date & Time Sampled 8-3-11 / 10:30 AM <sup>0800</sup>	Serial Number R 92467
<b>Collector Information</b> Name: Dee Anderson Dept./Branch: HBPP Address: PG:E	<b>Reporting Information</b> Name: Steve Hsu Dept./Branch: RHB Address: RHB	
Telephone No.: 707-444-0746	Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

- |   |  |  |  |
|---|--|--|--|
| <input type="checkbox"/> Drinking Water   | <input type="checkbox"/> Groundwater                 | <input type="checkbox"/> Surface Water       | <input type="checkbox"/> Wastewater                  |
| <input type="checkbox"/> Raw  | <input type="checkbox"/> Water Treatment Plant (WTP) | <input type="checkbox"/> Distribution System | <input type="checkbox"/> Point of Use (POU)          |
| <input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted |  |  |  |
| <input type="checkbox"/> Air Filters  | Date/Time  | <input checked="" type="checkbox"/> Seawater | <input type="checkbox"/> Sludge (Semi-solid Samples) |
| Finishing: _____  | _____  | <input type="checkbox"/> Milk                | <input type="checkbox"/> Soil/Sediment               |
| Starting: _____   | _____  | <input type="checkbox"/> Wipes               | <input type="checkbox"/> Biota (Type): _____         |
| Net (M <sup>3</sup> ): _____  | _____  | <input type="checkbox"/> Radon Canister      | <input type="checkbox"/> Other: _____                |
| <input type="checkbox"/> Air Charcoal Cartridge   |  |  |  |

**COMMENTS: (Cautions, etc.):** 2011-6055

- Field Treatment: Preservatives added: H<sub>2</sub>O<sub>2</sub>    Iced/Frozen: \_\_\_\_\_    Other: \_\_\_\_\_
- Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_
- Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Gross Alpha            | <input type="checkbox"/> Gross Beta                | <input checked="" type="checkbox"/> Gamma Scan       |
| <input type="checkbox"/> Total Uranium          | <input type="checkbox"/> Total Beta (LSC)          | <input type="checkbox"/> NORM (Gamma)                |
| <input type="checkbox"/> Total Radium           | <input type="checkbox"/> Tritium ( <sup>3</sup> H) | <input type="checkbox"/> Isotopic Americium / Curium |
| <input type="checkbox"/> Radium-226             | <input type="checkbox"/> Carbon-14                 | <input type="checkbox"/> Isotopic Plutonium          |
| <input type="checkbox"/> Radium-228             | <input type="checkbox"/> Iodine-131                | <input type="checkbox"/> Isotopic Thorium            |
| <input type="checkbox"/> Radon-222              | <input type="checkbox"/> Strontium-89, 90          | <input type="checkbox"/> Isotopic Uranium            |
| <input type="checkbox"/> Other (Specify): _____ | <input type="checkbox"/> Nickel-63                 | <input type="checkbox"/> Iron-55                     |

**CHAIN OF CUSTODY**

1.	Date	Name (Print)			8-2-11
	Time Custody Received	Organization	Signature		0900
2.	Date	Name (Print)			
	Time Custody Received	Organization	Signature		
3.	Date	Name (Print)			
	Time Custody Received	Organization	Signature		

**LABORATORY REMARKS (Leave Blank)**

- < 0.01 MR/HR
- A. Condition at Time of Receipt:**
- |  |  |  |   |
|--|--|--|---|
| <input type="checkbox"/> Acceptable            | <input type="checkbox"/> Broken Container  | <input type="checkbox"/> Leaked in Transit   | <input type="checkbox"/> Improper Container |
| <input type="checkbox"/> Holding Time Exceeded | <input type="checkbox"/> Sample Not Cooled | <input type="checkbox"/> Insufficient Sample |   |
- B. Preservatives/Carriers:**
- |   |  |                                    |   |
|---|--|------------------------------------|---|
| <input type="checkbox"/> Added While Sampling | <input type="checkbox"/> Added in Laboratory | <input type="checkbox"/> Not Added | <input type="checkbox"/> Not Applicable |
|---|--|------------------------------------|---|



RON CHAPMAN, MD, MPH  
Director

State of California - Health and Human Services Agency  
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Drinking Water and Radiation Laboratory Branch

850 Marina Bay Parkway, Richmond, CA 94804  
Phone: (510) 620-2911 Fax: (510) 620-2940



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0765

Analyst: Sony Cai

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 10/07/2011

<b>Requestor</b>	
Name: Steve Hsu	Organization: Radiologic Health Branch
Address: MS 7610, 1500 Capitol Avenue	
City: Sacramento	State: CA      Zip Code: 95814-5006      Phone: 916-440-7940

<b>Site and Sample Information</b>	
Collector's Name: D. Anderson	Date/Time Collected: 08/03/2011 08:00      Date/Time Received: 08/04/2011 11:35
Site Name: Humboldt Bay NPP	Source Name: HBNPP / August 2011
R Number: R 92459	Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0765-001	Canal Effluent	EPA 906.0	Tritium	-148 ± 154	271	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 8/4/11	Lab No. (Leave Blank) 111-0765
	Date & Time Sampled 8-3-11 / 10:30 AM	Serial Number R 92459
<b>Collector Information</b> Name: Dee Anderson Dept./Branch: HBPP Address: P&E	<b>Reporting Information</b> Name: Steve Hsu Dept./Branch: RHB Address: RHB	
Telephone No.: 707-444-0746	Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

TYPE OF SAMPLE (Check all applicable boxes)

- Drinking Water     Groundwater     Surface Water     Wastewater
  - Raw     Water Treatment Plant (WTP)     Distribution System     Point of Use (POU)
  - Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted
- 
- Air Filters    Date/Time \_\_\_\_\_     Seawater     Sludge (Semi-solid Samples)
  - Finishing: \_\_\_\_\_     Milk     Soil/Sediment
  - Starting: \_\_\_\_\_     Wipes     Biota (Type): \_\_\_\_\_
  - Net (M<sup>3</sup>) \_\_\_\_\_     Radon Canister     Other: \_\_\_\_\_
  - Air Charcoal Cartridge

COMMENTS: (Cautions, etc.): 2011-6055

- Field Treatment: Preservatives added: \_\_\_\_\_    Iced/Frozen: \_\_\_\_\_    Other: \_\_\_\_\_
- Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_
- Rush/Priority (should be prearranged and have supervisory approval)

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

- Gross Alpha     Gross Beta     Gamma Scan
- Total Uranium     Total Beta (LSC)     NORM (Gamma)
- Total Radium     Tritium (<sup>3</sup>H)     Isotopic Americium / Curium
- Radium-226     Carbon-14     Isotopic Plutonium
- Radium-228     Iodine-131     Isotopic Thorium
- Radon-222     Strontium-89, 90     Isotopic Uranium
- Other (Specify): \_\_\_\_\_     Nickel-63     Iron-55

CHAIN OF CUSTODY

1.	Date	Name (Print)	Signature	Date
			<i>[Signature]</i>	8-3-11
	Time Custody Received	Organization		Time Custody Released
				6:40
2.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	Signature	Time Custody Released
			<i>[Signature]</i>	
3.	Date	Name (Print)	Signature	Date
	8/4/11	VA	<i>[Signature]</i>	
	11:35	DWRLB		
	Time Custody Received	Organization	Signature	Time Custody Released

LABORATORY REMARKS (Leave Blank)

- A. Condition at Time of Receipt: *C 0.01 MR/HR*
- Acceptable     Broken Container     Leaked in Transit     Improper Container
  - Holding Time Exceeded     Sample Not Cooled     Insufficient Sample
- B. Preservatives/Carriers:
- Added While Sampling     Added in Laboratory     Not Added     Not Applicable

HBPP effluent canal

8/3/11  
8/4/11

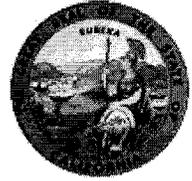


RON CHAPMAN, MD, MPH  
Director

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California Department of Public Health

Drinking Water and Radiation Laboratory Branch

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EDMUND G. BROWN JR.  
Governor

DUPLICATE Analysis Results Report for Task ID. N11-0704

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 07/19/2011

<b>Requestor</b>			
Name: Steve Hsu	Organization: Radiologic Health Branch		
Address: MS 7610, 1500 Capitol Avenue			
City: Sacramento	State: CA	Zip Code: 95814-5006	Phone: 916-440-7940

<b>Site and Sample Information</b>			
Collector's Name: D. Anderson	Date/Time Collected: 07/06/2011 08:05	Date/Time Received: 07/13/2011 11:42	
Site Name: Humboldt Bay NPP	Source Name: HBNPP / July 2011		
R Number: R 92428	Sample Type: Seawater		

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0704-001	Canal Effluent	EPA 901.1	K-40	385 ± 22.1	83.1	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 7/13/11	Lab No. (Leave Blank) N11-0704
	Date & Time Sampled 7-6-11 0805	Serial Number R 92428
<b>Collector Information</b> Name: Dee Anderson Dept./Branch: HBPP Address: PGE Telephone No.: 707-444-2658	<b>Reporting Information</b> Name: Steve Hsu Dept./Branch: RHB Address: Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input checked="" type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

- |   |  |  |  |
|---|--|--|--|
| <input type="checkbox"/> Drinking Water   | <input type="checkbox"/> Groundwater                 | <input type="checkbox"/> Surface Water             | <input type="checkbox"/> Wastewater                  |
| <input type="checkbox"/> Raw  | <input type="checkbox"/> Water Treatment Plant (WTP) | <input type="checkbox"/> Distribution System       | <input type="checkbox"/> Point of Use (POU)          |
| <input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted |  |  |  |
| <input type="checkbox"/> Air Filters  | Date/Time  | <input checked="" type="checkbox"/> Seawater       | <input type="checkbox"/> Sludge (Semi-solid Samples) |
| Finishing: _____  | _____  | <input checked="" type="checkbox"/> Milk           | <input type="checkbox"/> Soil/Sediment               |
| Starting: _____   | _____  | <input type="checkbox"/> Wipes                     | <input type="checkbox"/> Biota (Type): _____         |
| Net (M <sup>3</sup> ) _____   | _____  | <input checked="" type="checkbox"/> Radon Canister | <input type="checkbox"/> Other: _____                |
| <input type="checkbox"/> Air Charcoal Cartridge   |  |  |  |

**COMMENTS: (Cautions, etc.):** 2011-5510

- Field Treatment: Preservatives added: HNO<sub>3</sub>    Iced/Frozen: \_\_\_\_\_    Other: \_\_\_\_\_
- Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_
- Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Gross Alpha            | <input type="checkbox"/> Gross Beta                | <input checked="" type="checkbox"/> Gamma Scan       |
| <input type="checkbox"/> Total Uranium          | <input type="checkbox"/> Total Beta (LSC)          | <input type="checkbox"/> NORM (Gamma)                |
| <input type="checkbox"/> Total Radium           | <input type="checkbox"/> Tritium ( <sup>3</sup> H) | <input type="checkbox"/> Isotopic Americium / Curium |
| <input type="checkbox"/> Radium-226             | <input type="checkbox"/> Carbon-14                 | <input type="checkbox"/> Isotopic Plutonium          |
| <input type="checkbox"/> Radium-228             | <input type="checkbox"/> Iodine-131                | <input type="checkbox"/> Isotopic Thorium            |
| <input type="checkbox"/> Radon-222              | <input type="checkbox"/> Strontium-89, 90          | <input type="checkbox"/> Isotopic Uranium            |
| <input type="checkbox"/> Other (Specify): _____ | <input type="checkbox"/> Nickel-63                 | <input type="checkbox"/> Iron-55                     |

**CHAIN OF CUSTODY**

1.	Date: _____	Name (Print): _____	Signature: _____	Date: 7/6/11	Time Custody Released: _____
2.	Time Custody Received: _____	Organization: _____	Signature: _____	Date: 7/13/11	Time Custody Released: _____
3.	Date: 7/13/11	Name (Print): J.A.	Signature: _____	Date: _____	Time Custody Released: _____
	Date: 7/15	Name (Print): DWRLB	Signature: _____	Date: _____	Time Custody Released: _____

**LABORATORY REMARKS (Leave Blank)**

- A. Condition at Time of Receipt:  $< 0.01$  MR/hr
- |  |  |  |  |
|--|--|--|--|
| <input checked="" type="checkbox"/> Acceptable | <input type="checkbox"/> Broken Container  | <input type="checkbox"/> Leaked in Transit   | <input checked="" type="checkbox"/> Improper Container |
| <input type="checkbox"/> Holding Time Exceeded | <input type="checkbox"/> Sample Not Cooled | <input type="checkbox"/> Insufficient Sample |  |
- B. Preservatives/Carriers:
- |   |  |                                    |   |
|---|--|------------------------------------|---|
| <input type="checkbox"/> Added While Sampling | <input type="checkbox"/> Added in Laboratory | <input type="checkbox"/> Not Added | <input type="checkbox"/> Not Applicable |
|---|--|------------------------------------|---|

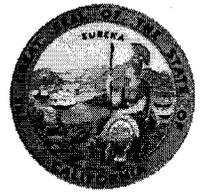


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California Department of Public Health

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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0705

Analyst: Sony Cai

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 10/07/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name:

Date/Time Collected: 07/06/2011 08:05 Date/Time Received: 07/13/2011 11:50

Site Name: Humboldt Bay NPP

Source Name: HBNPP / July 2011

R Number: R 92421

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0705-001	Canal Effluent	EPA 906.0	Tritium	-114 ± 155	271	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

Sanitation and Radiation Laboratories Branch 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 7/13/2011	Lab No. (Leave Blank) N11-0705
	Date & Time Sampled 7-6-11 0805	Serial Number R 92421
Collector Information Name: Dee Anderson Dept./Branch: HBPP Address: PG & E	Reporting Information Name: Steve Hsu Dept./Branch: RHB Address:	
Telephone No.: 510-444-5688	Telephone No.:	
Sample Information System Name / Facility: HBPP Sampling Point (s): Effluent Canal	Billing Agency <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	
System No.:		

TYPE OF SAMPLE (Check all applicable boxes)

Drinking Water  Groundwater  Surface Water  Wastewater  
 Raw  Water Treatment Plant (WTP)  Distribution System  Point of Use (POU)  
 Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted

Air Filters  Seawater  Sludge (Semi-solid Samples)  
 Finishing: \_\_\_\_\_ Date/Time \_\_\_\_\_  Milk  Soil/Sediment  
 Starting: \_\_\_\_\_  Wipes  Biota (Type): \_\_\_\_\_  
 Net (M<sup>3</sup>) \_\_\_\_\_  Radon Canister  Other: \_\_\_\_\_

Air Charcoal Cartridge

COMMENTS: (Cautions, etc.): 2011-5510

Field Treatment: Preservatives added: \_\_\_\_\_ Iced/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_  
 Field Measurement: \_\_\_\_\_ mR/hr  Radionuclide(s), if known: \_\_\_\_\_  
 Rush/Priority (should be prearranged and have supervisory approval)

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

Gross Alpha  Gross Beta  Gamma Scan  
 Total Uranium  Total Beta (LSC)  NORM (Gamma)  
 Total Radium  Tritium (<sup>3</sup>H)  Isotopic Americium / Curium  
 Radium-226  Carbon-14  Isotopic Plutonium  
 Radium-228  Iodine-131  Isotopic Thorium  
 Radon-222  Strontium-89, 90  Isotopic Uranium  
 Other (Specify); \_\_\_\_\_  Nickel-63  Iron-55

CHAIN OF CUSTODY

1.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	Signature	Time Custody Released
2.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	Signature	Time Custody Released
3.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	Signature	Time Custody Released

LABORATORY REMARKS (Leave Blank)

A. Condition at Time of Receipt:  
 Acceptable  Broken Container  Leaked in Transit  Improper Container  
 Holding Time Exceeded  Sample Not Cooled  Insufficient Sample

B. Preservatives/Carriers:  
 Added While Sampling  Added in Laboratory  Not Added  Not Applicable

*Handwritten: < 0.1 < 0.01 MR/HR*



RON CHAPMAN, MD, MPH  
Director

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

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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0615

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 06/10/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 06/01/2011 07:35 Date/Time Received: 06/02/2011 11:30

Site Name: Humboldt Bay NPP

Source Name: HBNPP / June 2011

R Number: R90954

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA95</u>	<u>Units</u>
N11-0615-001	Canal Effluent	EPA 901.1	K-40	355 ± 22.4	80.4	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 6/2/11	Lab No. (Leave Blank) N11-0615
	Date & Time Sampled 6-1-11 0930 DTB	Serial Number R 90954
<b>Collector Information</b> Name: DEE ANDERSON Dept./Branch: HBPP Address: OCEE Telephone No.: 707-444-0746	<b>Reporting Information</b> Name: STEVE HSU Dept./Branch: RHB Address: RHB Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): EFFLUENT CANAL System No.:	<b>Billing Agency</b> <input checked="" type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify)	

TYPE OF SAMPLE (Check all applicable boxes)

- Drinking Water     Groundwater     Surface Water     Wastewater
- Raw     Water Treatment Plant (WTP)     Distribution System     Point of Use (POU)
- Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted
- Air Filters    Date/Time     Seawater     Sludge (Semi-solid Samples)
- Finishing: \_\_\_\_\_    \_\_\_\_\_     Milk     Soil/Sediment
- Starting: \_\_\_\_\_    \_\_\_\_\_     Wipes     Biota (Type): \_\_\_\_\_
- Net (M<sup>3</sup>) \_\_\_\_\_    \_\_\_\_\_     Radon Canister     Other: \_\_\_\_\_
- Air Charcoal Cartridge

COMMENTS: (Cautions, etc.):

- 2011-4291
- Field Treatment: Preservatives added: HNO<sub>3</sub>    Iced/Frozen: \_\_\_\_\_    Other: \_\_\_\_\_
  - Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_
  - Rush/Priority (should be prearranged and have supervisory approval)

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

- Gross Alpha     Gross Beta     Gamma Scan
- Total Uranium     Total Beta (BSC)     NORM (Gamma)
- Total Radium     Tritium (<sup>3</sup>H)     Isotopic Americium / Curium
- Radium-226     Carbon-14     Isotopic Plutonium
- Radium-228     Iodine-131     Isotopic Thorium
- Radon-222     Strontium-89, 90     Isotopic Uranium
- Other (Specify): \_\_\_\_\_     Nickel-63     Iron-55

CHAIN OF CUSTODY

1.	Date 6/2/11	Name (Print) A. TAN	Signature 	Date 6-1-11	Time Custody Released 0930
2.	Time Custody Received 11:30	Organization DW RIB	Signature	Date	Time Custody Released
3.	Date	Name (Print)	Signature	Date	Time Custody Released

LABORATORY REMARKS (Leave Blank)

- 0.01 MR/h
- A. Condition at Time of Receipt:**
    - Acceptable     Broken Container     Leaked in Transit     Improper Container
    - Holding Time Exceeded     Sample Not Cooled     Insufficient Sample
  - B. Preservatives/Carriers:**
    - Added While Sampling     Added in Laboratory     Not Added     Not Applicable



RON CHAPMAN, MD, MPH  
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  
Phone: (510) 620-2911 Fax: (510) 620-2940



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0616

Analyst: Malkiat Gohal

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 06/29/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 06/01/2011 07:35 Date/Time Received: 06/02/2011 11:30

Site Name: Humboldt Bay NPP

Source Name: HBNPP / June 2011

R Number: R90949

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA95</u>	<u>Units</u>
N11-0616-001	Canal Effluent	EPA 906.0	Tritium	3.92 ± 152	260	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received <u>6/2/11</u>	Lab No. (Leave Blank) <u>R11-0616</u>
	Date & Time Sampled <u>6-1-11 0735</u>	Serial Number <u>R 90949</u>
<b>Collector Information</b> Name: <u>LEE ANDERSON</u> Dept./Branch: <u>HBPP</u> Address: <u>PG#E</u> Telephone No.: <u>707-444-0746</u>	<b>Reporting Information</b> Name: _____ Dept./Branch: <u>STEVE HSU</u> Address: <u>RHB</u> Telephone No.: _____	
<b>Sample Information</b> System Name / Facility: <u>HBPP</u> Sampling Point (s): <u>EFFLUENT CANAL</u> System No.: _____	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

Drinking Water     Groundwater     Surface Water     Wastewater  
 Raw     Water Treatment Plant (WTP)     Distribution System     Point of Use (POU)

Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted

Air Filters    Date/Time \_\_\_\_\_     Seawater     Sludge (Semi-solid Samples)  
 Finishing: \_\_\_\_\_     Milk     Soil/Sediment  
 Starting: \_\_\_\_\_     Wipes     Biota (Type): \_\_\_\_\_  
 Net (M<sup>3</sup>) \_\_\_\_\_     Radon Canister     Other: \_\_\_\_\_

Air Charcoal Cartridge

**COMMENTS: (Cautions, etc.):** 2011-4291

Field Treatment: Preservatives added: \_\_\_\_\_ Iced/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_  
 Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_  
 Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

Gross Alpha     Gross Beta     Gamma Scan  
 Total Uranium     Total Beta (LSC)     NORM (Gamma)  
 Total Radium     Tritium (<sup>3</sup>H)     Isotopic Americium / Curium  
 Radium-226     Carbon-14     Isotopic Plutonium  
 Radium-228     Iodine-131     Isotopic Thorium  
 Radon-222     Strontium-89, 90     Isotopic Uranium  
 Other (Specify): HBPP     Nickel-63     Iron-55

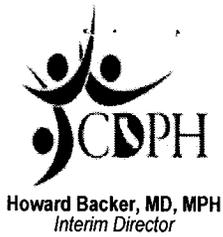
**CHAIN OF CUSTODY**

1.	Date	Name (Print)	Signature	Date	Time Custody Released
		<u>Canal Effluent</u>	<u>[Signature]</u>	<u>6-1-11</u>	<u>0930</u>
2.	Time Custody Received	Organization	Signature	Date	Time Custody Released
		<u>Sea Water</u>	<u>[Signature]</u>	<u>6/2/11</u>	
3.	Date	Name (Print)	Signature	Date	Time Custody Released
	<u>6/2/11</u>	<u>A TAN</u>	<u>[Signature]</u>		
	Time Custody Received	Organization	Signature	Date	Time Custody Released
	<u>11:30</u>	<u>DWR/LB</u>	<u>Angela Tan</u>		

**LABORATORY REMARKS (Leave Blank)**

**A. Condition at Time of Receipt:**  
 Acceptable     Broken Container     Leaked in Transit     Improper Container  
 Holding Time Exceeded     Sample Not Cooled     Insufficient Sample

**B. Preservatives/Carriers:**  
 Added While Sampling     Added in Laboratory     Not Added     Not Applicable



Drinking Water and Radiation Laboratory Branch

850 Marina Bay Parkway, Richmond, CA 94804  
Phone: (510) 620-2911 Fax: (510) 620-2940



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0544

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 06/01/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 05/04/2011 07:40 Date/Time Received: 05/05/2011 13:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / May 2011

R Number: R92406

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0544-001	Effluent Canal	EPA 901.1	K-40	300 ± 23.5	91.9	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

Sanitation and Radiation Laboratories Branch 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received <u>5/5/11</u>	Lab No. (Leave Blank) <u>N11-0544</u>
	Date & Time Sampled <u>5-4-11 0740</u>	Serial Number <u>R 92406</u>
Collector Information Name: <u>DEE ANDERSON</u> Dept./Branch: <u>H3PP</u> Address: <u>PG&amp;E</u> Telephone No.: <u>707-444-0116</u>	Reporting Information Name: <u>STEVE HSU</u> Dept./Branch: <u>RHS</u> Address: <u>RHS</u> Telephone No.: <u></u>	
Sample Information System Name / Facility: <u>H3PP</u> Sampling Point (s): <u>EFFLUENT CANAL</u> System No.: <u></u>	Billing Agency <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) <u></u>	

TYPE OF SAMPLE (Check all applicable boxes)

- Drinking Water
- Raw
- Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted
- Groundwater
- Water Treatment Plant (WTP)
- Air Filters
- Finishing: \_\_\_\_\_ Date/Time \_\_\_\_\_
- Starting: \_\_\_\_\_ Date/Time \_\_\_\_\_
- Net (M<sup>3</sup>) \_\_\_\_\_
- Air Charcoal Cartridge
- Surface Water
- Distribution System
- Seawater
- Milk
- Wipes
- Radon Canister
- Wastewater
- Point of Use (POU)
- Sludge (Semi-solid Samples)
- Soil/Sediment
- Biota (Type): \_\_\_\_\_
- Other: \_\_\_\_\_

COMMENTS: (Cautions, etc.):

- 2011-3447
- Field Treatment: Preservatives added: HAD3  Cooled/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_
  - Field Measurement: \_\_\_\_\_ mR/hr  Radionuclide(s), if known: \_\_\_\_\_
  - Rush/Priority (should be prearranged and have supervisory approval)

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

- Gross Alpha
- Total Uranium
- Total Radium
- Radium-226
- Radium-228
- Radon-222
- Other (Specify): \_\_\_\_\_
- Gross Beta
- Total Beta (LSC)
- Tritium (<sup>3</sup>H)
- Carbon-14
- Iodine-131
- Strontium-89, 90
- Nickel-63
- Gamma Scan
- NORM (Gamma)
- Isotopic Americium / Curium
- Isotopic Plutonium
- Isotopic Thorium
- Isotopic Uranium
- Iron-55

CHAIN OF CUSTODY

1.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	<u>[Signature]</u>	<u>5-4-11</u>
2.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	<u>[Signature]</u>	<u>0825</u>
3.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	<u>[Signature]</u>	

LABORATORY REMARKS (Leave Blank)

- A. Condition at Time of Receipt:
- Acceptable
  - Holding Time Exceeded
  - Broken Container
  - Sample Not Cooled
  - Leaked in Transit
  - Insufficient Sample
  - Improper Container
- B. Preservatives/Carriers:
- Added While Sampling
  - Added in Laboratory
  - Not Added
  - Not Applicable



RON CHAPMAN, MD, MPH  
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. N11-0545

Analyst: Malkiat Gohal

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 06/29/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 05/04/2011 07:40 Date/Time Received: 05/05/2011 13:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / May 2011

R Number: R92414

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0545-001	Effluent Canal	EPA 906.0	Tritium	-64.6 ± 150	260	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

Sanitation and Radiation Laboratories Branch 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received <u>5/11/11</u>	Lab No. (Leave Blank) <u>N11-0545</u>
	Date & Time Sampled <u>5/4/11 0740</u>	Serial Number <u>R 92414</u>
Collector Information Name: <u>DRE ANDERSON</u> Dept./Branch: <u>HBPP</u> Address: <u>PG&amp;E</u>	Reporting Information Name: <u>STEVE HSU</u> Dept./Branch: <u>RHB</u> Address:	
Telephone No.: <u>707-444-0746</u>	Telephone No.:	
Sample Information System Name / Facility: <u>HBPP</u> Sampling Point (s): <u>EFFLUENT CANAL</u>	Billing Agency <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	
System No.:		

**TYPE OF SAMPLE** (Check all applicable boxes)

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input checked="" type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			

<input type="checkbox"/> Air Filters	Date/Time	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: _____	_____	<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____	_____	<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ) _____		<input type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

**COMMENTS:** (Cautions, etc.): 2011-3143

Field Treatment: Preservatives added: \_\_\_\_\_ Cooled/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_

Field Measurement: \_\_\_\_\_ mR/hr  Radionuclide(s), if known: \_\_\_\_\_

Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED** (For questions, please call 510-620-2911)

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input checked="" type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input checked="" type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

**CHAIN OF CUSTODY**

1.	Date _____	Name (Print) _____	Signature <u>[Signature]</u>	Date <u>5-4-11</u>
	Time Custody Received _____	Organization _____		Time Custody Released <u>0830</u>
2.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____		Time Custody Released _____
3.	Date <u>5/5/11</u>	Name (Print) <u>A. TAN</u>	Signature <u>[Signature]</u>	Date _____
	Time Custody Received <u>13:07</u>	Organization <u>DWR/LS</u>	Signature <u>[Signature]</u>	Time Custody Released _____

**LABORATORY REMARKS** (Leave Blank)

A. Condition at Time of Receipt:

<input type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	

B. Preservatives/Carriers:

<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable
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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

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EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0385

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 06/01/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 04/06/2011 09:30 Date/Time Received: 04/07/2011 10:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / April 2011

R Number: R91112

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0385-001	Canal Effluent	EPA 901.1	K-40	372 ± 21.9	82.9	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

Sanitation and Radiation Laboratories Branch 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 4/7/11	Lab No. (Leave Blank) M11-0385
	Date & Time Sampled 4-6-11 / 09:30	Serial Number R 91112
Collector Information Name: Dee Anderson Dept./Branch: HBPP Address: PG:E Telephone No.: 707 444-0746	Reporting Information Name: Steve Hsu Dept./Branch: RHB Address: Telephone No.:	
Sample Information System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	Billing Agency <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE** (Check all applicable boxes)

Drinking Water       Groundwater       Surface Water       Wastewater  
 Raw       Water Treatment Plant (WTP)       Distribution System       Point of Use (POU)  
 Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted

Air Filters      Date/Time       Seawater       Sludge (Semi-solid Samples)  
 Finishing: \_\_\_\_\_ Starting: \_\_\_\_\_  
 Milk       Soil/Sediment  
 Wipes       Biota (Type): \_\_\_\_\_  
 Radon Canister       Other: \_\_\_\_\_

Air Charcoal Cartridge

**COMMENTS:** (Cautions, etc.): 2011-2603

Field Treatment: Preservatives added: HNO3      Cooled/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_  
 Field Measurement: \_\_\_\_\_ mR/hr       Radionuclide(s), if known: \_\_\_\_\_  
 Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED** (For questions, please call 510-620-2911)

Gross Alpha       Gross Beta       Gamma Scan  
 Total Uranium       Total Beta (LSC)       NORM (Gamma)  
 Total Radium       Tritium (<sup>3</sup>H)       Isotopic Americium / Curium  
 Radium-226       Carbon-14       Isotopic Plutonium  
 Radium-228       Iodine-131       Isotopic Thorium  
 Radon-222       Strontium-89, 90       Isotopic Uranium  
 Other (Specify): \_\_\_\_\_       Nickel-63       Iron-55

**CHAIN OF CUSTODY**

1.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization		Time Custody Released
2.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization		Time Custody Released
3.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization		Time Custody Released

**LABORATORY REMARKS** (Leave Blank)

A. Condition at Time of Receipt:  
 Acceptable       Broken Container       Leaked in Transit       Improper Container  
 Holding Time Exceeded       Sample Not Cooled       Insufficient Sample

B. Preservatives/Carriers:  
 Added While Sampling       Added in Laboratory       Not Added       Not Applicable



RON CHAPMAN, MD, MPH  
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. N11-0386

Analyst: Malkiat Gohal

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 07/07/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 04/06/2011 09:30 Date/Time Received: 04/07/2011 10:00

Site Name: Humboldt Bay NPP

Source Name: HBNPP / April 2011

R Number: R91118

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0386-001	Canal Effluent	EPA 906.0	Tritium	-84.2 ± 168	293	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 4/7/11	Lab No. (Leave Blank) N11-0386
	Date & Time Sampled 4-6-11 / 09:30	Serial Number R 91118
<b>Collector Information</b> Name: Dee Anderson Dept./Branch: HBPP Address: PG&E Telephone No.: 707-444-0746	<b>Reporting Information</b> Name: Steve Hsu Dept./Branch: RHB Address: Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			

<input type="checkbox"/> Air Filters	Date/Time	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: _____	_____	<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____	_____	<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ) _____	_____	<input type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

**COMMENTS: (Cautions, etc.):** 2011-2603

Field Treatment: Preservatives added: \_\_\_\_\_ Iced/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_

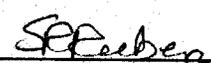
Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_

Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input checked="" type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-90, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

**CHAIN OF CUSTODY**

1.	Date _____	Name (Print) _____	Signature 	Date 4-6-11
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released 11:30
2.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released _____
3.	Date 4/7/11	Name (Print) S. Ruben	Signature 	Date _____
	Date 10:00	Name (Print) DWRLB	Signature _____	Time Custody Released _____

**LABORATORY REMARKS (Leave Blank)**

**A. Condition at Time of Receipt:**

<input type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	

**B. Preservatives/Carriers:**

<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable
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MARK B. HORTON, MD, MSPH  
Director

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

Drinking Water and Radiation Laboratory Branch

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



EDMUND G. BROWN, JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0253

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 03/17/2011

**Requestor**

Name: Steve Hsu Organization: Radiologic Health Branch  
Address: MS 7610, 1500 Capitol Avenue  
City: Sacramento State: CA Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: Steve Hsu Date/Time Collected: 03/09/2011 08:30 Date/Time Received: 03/14/2011 12:58  
Site Name: Humboldt Bay NPP Source Name: HBNPP / March 2011  
R Number: N11-0253 Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0253-001	Canal Effluent	EPA 901.1	K-40	304 ± 20.3	79.7	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

Sanitation and Radiation Laboratories Branch 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received 3/14/11 11:00	Lab No. (Leave Blank) N11-0253
	Date & Time Sampled 3-9-11 / 08:30	Serial Number R 91031
Collector Information Name: Dee Anderson Dept./Branch: HBPP Address: PG&E Telephone No.: 767 444-0746	Reporting Information Name: Steve Hsu Dept./Branch: RHB Address: Telephone No.:	
Sample Information System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	Billing Agency <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

TYPE OF SAMPLE (Check all applicable boxes)

Drinking Water  Groundwater  Surface Water  Wastewater  
 Raw  Water Treatment Plant (WTP)  Distribution System  Point of Use (POU)  
 Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted

Air Filters \_\_\_\_\_ Date/Time \_\_\_\_\_  Seawater  Sludge (Semi-solid Samples)  
 Finishing: \_\_\_\_\_ Starting: \_\_\_\_\_  Milk  Soil/Sediment  
 Net (M<sup>3</sup>) \_\_\_\_\_  Wipes  Biota (Type): \_\_\_\_\_  
 Air Charcoal Cartridge  Radon Canister  Other: \_\_\_\_\_

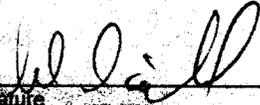
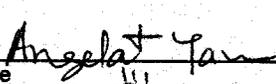
COMMENTS: (Cautions, etc.): 2011-1831

Field Treatment: Preservatives added: H<sub>2</sub>O<sub>2</sub>  Cooled/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_  
 Field Measurement: \_\_\_\_\_ mR/hr  Radionuclide(s), if known: \_\_\_\_\_  
 Rush/Priority (should be prearranged and have supervisory approval)

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

Gross Alpha  Gross Beta  Gamma Scan  
 Total Uranium  Total Beta (LSC)  NORM (Gamma)  
 Total Radium  Tritium (<sup>3</sup>H)  Isotopic Americium / Curium  
 Radium-226  Carbon-14  Isotopic Plutonium  
 Radium-228  Iodine-131  Isotopic Thorium  
 Radon-222  Strontium-89, 90  Isotopic Uranium  
 Other (Specify): \_\_\_\_\_  Nickel-63  Iron-55

CHAIN OF CUSTODY

1. Date: _____	Name (Print): _____	Signature: 	Date: 3-9-11
Time Custody Received: _____	Organization: _____	Signature: _____	Date: 13:30
2. Date: _____	Name (Print): _____	Signature: _____	Date: _____
Time Custody Received: _____	Organization: _____	Signature: _____	Date: _____
3. Date: 3/14/11	Name (Print): A. TAN	Signature: 	Date: _____
Time Custody Received: 11:57	Organization: SRIB-N	Signature: _____	Date: _____

LABORATORY REMARKS (Leave Blank)

A. Condition at Time of Receipt:  
 Acceptable  Broken Container  Leaked in Transit  Improper Container  
 Holding Time Exceeded  Sample Not Cooled  Insufficient Sample

B. Preservatives/Carriers:  
 Added While Sampling  Added in Laboratory  Not Added  Not Applicable



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

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



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0254

Analyst: Sony Cai

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 05/25/2011

**Requestor**

Name: D. Anderson

Organization: Radiologic Health Branch

Address: PG and E

City:

State: CA

Zip Code:

Phone: 707-444-0851

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 03/09/2011 08:30 Date/Time Received: 03/14/2011 13:39

Site Name: Humboldt Bay NPP

Source Name: HBNPP / March 2011

R Number: R 91043

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0254-001	Canal Effluent	EPA 906.0	Tritium	-67.2 ± 150	260	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received <b>3/14/11 11:00</b>	Lab No. (Leave Blank) <b>ML-0259</b>
	Date & Time Sampled <b>3-9-11 / 08:30</b>	Serial Number <b>R 91043</b>
<b>Collector Information</b> Name: <b>Doc Anderson</b> Dept./Branch: <b>HBPP</b> Address: <b>PG: E</b> Telephone No.: <b>707 444-0746</b>	<b>Reporting Information</b> Name: <b>Steve Hsu</b> Dept./Branch: <b>RHB</b> Address: Telephone No.:	
<b>Sample Information</b> System Name / Facility: <b>HBPP</b> Sampling Point (s): <b>Effluent canal</b> System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			
<input type="checkbox"/> Air Filters	Date/Time	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: _____	_____	<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____	_____	<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ) _____		<input checked="" type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

**COMMENTS: (Cautions, etc.):** 2011: 6831

Field Treatment: Preservatives added: \_\_\_\_\_ Iced/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_  
 Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_  
 Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input checked="" type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

*HBPP - Eff. canal*

**CHAIN OF CUSTODY**

1.	Date _____	Name (Print) _____	Signature <i>[Signature]</i>	Date <u>3-9-11</u>
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released <u>13:30</u>
2.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released _____
3.	Date <u>3/14/11</u>	Name (Print) <u>A TAN</u>	Signature <i>[Signature]</i>	Date _____
	Time Custody Received <u>11:00</u>	Organization <u>SRIB-N</u>	Signature <i>[Signature]</i>	Time Custody Released _____

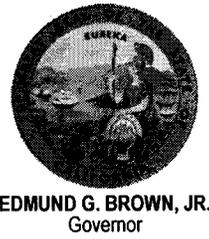
**LABORATORY REMARKS (Leave Blank)**

**A. Condition at Time of Receipt:**

<input type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	

**B. Preservatives/Carriers:**

<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable
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### Drinking Water and Radiation Laboratory Branch

850 Marina Bay Parkway, Richmond, CA 94804  
Phone: (510) 620-2911 Fax: (510) 620-2940

## FINAL Analysis Results Report for Task ID. N11-0191

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 03/11/2011

<b>Requestor</b>	
Name: Steve Hsu	Organization: Radiologic Health Branch
Address: MS 7610, 1500 Capitol Avenue	
City: Sacramento	State: CA      Zip Code: 95814-5006      Phone: 916-440-7940

<b>Site and Sample Information</b>	
Collector's Name: Humboldt County	Date/Time Collected: 02/02/2011 10:00      Date/Time Received: 02/28/2011 09:17
Site Name: Humboldt Bay NPP	Source Name: HBNPP / February 2011
R Number: R91498	Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0191-001	Effluent Canal	EPA 901.1	K-40	392 ± 22.7	86.3	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received	Lab No. (Leave Blank) N11-0191
	Date & Time Sampled 02-02-11 / 10:00	Serial Number R 91498
<b>Collector Information</b> Name: DEE ANDERSON Dept./Branch: HBPP Address: PGE	<b>Reporting Information</b> Name: Steve Hsu Dept./Branch: RHB Address:	
Telephone No.: 707 447-0793	Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent Canal	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	
System No.:		

TYPE OF SAMPLE (Check all applicable boxes)

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System.	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			
<input type="checkbox"/> Air Filters	Date/Time	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: _____	_____	<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____	_____	<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ) _____		<input type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

COMMENTS: (Cautions, etc.): 2011-0732

Field Treatment: Preservatives added: HNO3    Iced/Frozen: \_\_\_\_\_    Other: \_\_\_\_\_

Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_

Rush/Priority (should be prearranged and have supervisory approval)

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input checked="" type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

3/4/2011

CHAIN OF CUSTODY

1.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization		Time Custody Released
2.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	Signature	Time Custody Released
3.	Date	Name (Print)	Signature	Date
	Time Custody Received	Organization	Signature	Time Custody Released

LABORATORY REMARKS (Leave Blank)

0-01MR/hr

A. Condition at Time of Receipt:

<input type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	

B. Preservatives/Carriers:

<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable
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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  
Phone: (510) 620-2911 Fax: (510) 620-2940



EDMUND G. BROWN JR.  
Governor

FINAL Analysis Results Report for Task ID. N11-0192

Analyst: Sony Cai

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 05/25/2011

<b>Requestor</b>	
Name: Steve Hsu	Organization: Radiologic Health Branch
Address: MS 7610, 1500 Capitol Avenue	
City: Sacramento	State: CA      Zip Code: 95814-5006      Phone: 916-440-7940

<b>Site and Sample Information</b>	
Collector's Name: Humboldt County	Date/Time Collected: 02/02/2011 10:00      Date/Time Received: 02/28/2011 09:20
Site Name: Humboldt Bay NPP	Source Name: HBNPP / February 2011
R Number: R91492	Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0192-001	Effluent Canal	EPA 906.0	Tritium	-125 ± 148	260	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received	Lab No. (Leave Blank) N11-019
	Date & Time Sampled 02-02-11 / 16:00	Serial Number R 91492
<b>Collector Information</b> Name: DEE ANDERSON Dept./Branch: HBPP Address: PG:E Telephone No.: 707 444-0732	<b>Reporting Information</b> Name: Steve Hsu Dept./Branch: RMB Address: Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE (Check all applicable boxes)**

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			
<input type="checkbox"/> Air Filters Finishing: _____ Starting: _____ Net (M <sup>3</sup> ): _____	Date/Time: _____	<input checked="" type="checkbox"/> Seawater <input type="checkbox"/> Milk <input type="checkbox"/> Wipes <input type="checkbox"/> Radon Canister	<input type="checkbox"/> Sludge (Semi-solid Samples) <input type="checkbox"/> Soil/Sediment <input type="checkbox"/> Biota (Type): _____ <input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

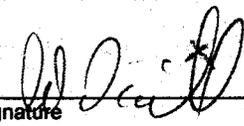
**COMMENTS:** (Cautions, etc.): 2010-0732

Field Treatment: Preservatives added: \_\_\_\_\_    Cooled/Frozen: \_\_\_\_\_    Other: \_\_\_\_\_  
 Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_  
 Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED (For questions, please call 510-620-2911)**

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input checked="" type="checkbox"/> Tritium ( <sup>3</sup> H)	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

**CHAIN OF CUSTODY**

1.	Date: _____	Name (Print): _____	Signature: 	Date: 02-02-11
	Time Custody Received: _____	Organization: _____		Time Custody Released: 1330
2.	Date: _____	Name (Print): _____	Signature: _____	Date: _____
	Time Custody Received: _____	Organization: _____		Time Custody Released: _____
3.	Date: _____	Name (Print): _____	Signature: _____	Date: _____
	Time Custody Received: _____	Organization: _____		Time Custody Released: _____

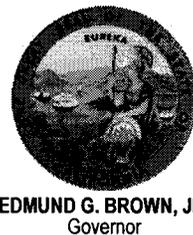
**LABORATORY REMARKS (Leave Blank)**

**A. Condition at Time of Receipt:**

<input checked="" type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	

**B. Preservatives/Carriers:**

<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable
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### Drinking Water and Radiation Laboratory Branch

850 Marina Bay Parkway, Richmond, CA 94804  
Phone: (510) 620-2911 Fax: (510) 620-2940

## FINAL Analysis Results Report for Task ID. N11-0175

Analyst: Angela Tan

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 03/11/2011

#### Requestor

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

#### Site and Sample Information

Collector's Name: Wayne Dossett

Date/Time Collected: 01/05/2011 09:15 Date/Time Received: 02/25/2011 11:48

Site Name: Humboldt Bay NPP

Source Name: HBNPP / January 2011

R Number: R91429

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA<sub>95</sub></u>	<u>Units</u>
N11-0175-001	Canal Effluent	EPA 901.1	K-40	264 ± 21.2	81.7	pCi/L

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.

REQUEST FOR SAMPLE ANALYSIS (Radiochemical)

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received	Lab No. (Leave Blank) N11-0175
	Date & Time Sampled 01/05/11 0915	Serial Number R 91429
<b>Collector Information</b> Name: Dee Anderson Dept./Branch: HBPP Address: PG:E	<b>Reporting Information</b> Name: Steve Hsu Dept./Branch: RHB Address:	
Telephone No.: 707 444-0746	Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent canal System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

TYPE OF SAMPLE (Check all applicable boxes)

- Drinking Water     Groundwater     Surface Water     Wastewater
  - Raw     Water Treatment Plant (WTP)     Distribution System     Point of Use (POU)
  - Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted
- |                                      |           |  |  |
|--------------------------------------|-----------|--|--|
| <input type="checkbox"/> Air Filters | Date/Time | <input checked="" type="checkbox"/> Seawater | <input type="checkbox"/> Sludge (Semi-solid Samples) |
| Finishing: _____                     | _____     | <input type="checkbox"/> Milk                | <input type="checkbox"/> Soil/Sediment               |
| Starting: _____                      | _____     | <input type="checkbox"/> Wipes               | <input type="checkbox"/> Biota (Type): _____         |
| Net (M <sup>3</sup> ) _____          |           | <input type="checkbox"/> Radon Canister      | <input type="checkbox"/> Other: _____                |
- Air Charcoal Cartridge

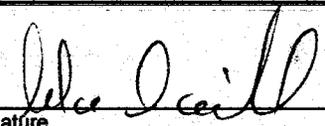
COMMENTS: (Cautions, etc.): 2011-0028

- Field Treatment: Preservatives added: HVO3    Iced/Frozen: \_\_\_\_\_    Other: \_\_\_\_\_
- Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_
- Rush/Priority (should be prearranged and have supervisory approval)

ANALYSIS REQUESTED (For questions, please call 510-620-2911)

- Gross Alpha     Gross Beta     Gamma Scan
- Total Uranium     Total Beta (TSC)     NORM (Gamma)
- Total Radium     Tritium (<sup>3</sup>H)     Isotopic Americium / Curium
- Radium-226     Carbon-14     Isotopic Plutonium
- Radium-228     Iodine-131     Isotopic Thorium
- Radon-222     Strontium-89, 90     Isotopic Uranium
- Other (Specify): \_\_\_\_\_     Nickel-63     Iron-55

CHAIN OF CUSTODY

1.	Date _____	Name (Print) _____	 Signature _____	Date 1-5-11
	Time Custody Received _____	Organization _____		Time of Custody Released 10:00
2.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released _____
3.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released _____

LABORATORY REMARKS (Leave Blank)

- 000P MRE/HR
- A. Condition at Time of Receipt:
- Acceptable     Broken Container     Leaked in Transit     Improper Container
  - Holding Time Exceeded     Sample Not Cooled     Insufficient Sample
- B. Preservatives/Carriers:
- Added While Sampling     Added in Laboratory     Not Added     Not Applicable



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



EDMUND G. BROWN JR.  
Governor

**FINAL Analysis Results Report for Task ID. N11-0176**

Analyst: Sony Cai

Analysis Approved By: Shiyamalie Ruberu

Analysis Approval Date: 05/25/2011

**Requestor**

Name: Steve Hsu

Organization: Radiologic Health Branch

Address: MS 7610, 1500 Capitol Avenue

City: Sacramento

State: CA

Zip Code: 95814-5006 Phone: 916-440-7940

**Site and Sample Information**

Collector's Name: D. Anderson

Date/Time Collected: 01/05/2011 09:15 Date/Time Received: 02/25/2011 11:50

Site Name: Humboldt Bay NPP

Source Name: HBNPP / January 2011

R Number: R91438

Sample Type: Seawater

<u>Sample ID</u>	<u>Sampling Point</u>	<u>Method</u>	<u>Parameter</u>	<u>Result ± CE</u>	<u>MDA95</u>	<u>Units</u>
N11-0176-001	Canal Effluent	EPA 906.0	Tritium	7.47 ± 152	260	pCi/L

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.

**REQUEST FOR SAMPLE ANALYSIS (Radiochemical)**

<b>Sanitation and Radiation Laboratories Branch</b> 850 Marina Bay Parkway, G164 Richmond, CA 94804 510-620-2911	Date Received	Lab No. (Leave Blank) N11-0176
	Date & Time Sampled 11/05/11 09:15	Serial Number R 91438
<b>Collector Information</b> Name: Dee Anderson Dept./Branch: HBPP Address: PG: E Telephone No.: 707-444-0746	<b>Reporting Information</b> Name: Steve Hsu Dept./Branch: RBH Address: Telephone No.:	
<b>Sample Information</b> System Name / Facility: HBPP Sampling Point (s): Effluent Canal System No.:	<b>Billing Agency</b> <input type="checkbox"/> DWFOB ( ) <input checked="" type="checkbox"/> RHB <input type="checkbox"/> RWQCB ( ) <input type="checkbox"/> DTSC <input type="checkbox"/> DWTPB <input type="checkbox"/> FDB <input type="checkbox"/> DWR <input type="checkbox"/> CDFG <input type="checkbox"/> EMB <input type="checkbox"/> Other (Specify) _____	

**TYPE OF SAMPLE** (Check all applicable boxes)

<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Surface Water	<input type="checkbox"/> Wastewater
<input type="checkbox"/> Raw	<input type="checkbox"/> Water Treatment Plant (WTP)	<input type="checkbox"/> Distribution System	<input type="checkbox"/> Point of Use (POU)
<input type="checkbox"/> Treated (circle one): Chlorinated / Chloraminated / Chlorine Dioxide / Ozonated / Peroxzone / Fluoridated / Coagulated / pH Adjusted			
<input type="checkbox"/> Air Filters	Date/Time	<input checked="" type="checkbox"/> Seawater	<input type="checkbox"/> Sludge (Semi-solid Samples)
Finishing: _____	_____	<input type="checkbox"/> Milk	<input type="checkbox"/> Soil/Sediment
Starting: _____	_____	<input type="checkbox"/> Wipes	<input type="checkbox"/> Biota (Type): _____
Net (M <sup>3</sup> ) _____	_____	<input type="checkbox"/> Radon Canister	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Air Charcoal Cartridge			

**COMMENTS:** (Cautions, etc.): 2011-0018

Field Treatment: Preservatives added: \_\_\_\_\_ Iced/Frozen: \_\_\_\_\_ Other: \_\_\_\_\_

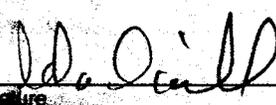
Field Measurement: \_\_\_\_\_ mR/hr     Radionuclide(s), if known: \_\_\_\_\_

Rush/Priority (should be prearranged and have supervisory approval)

**ANALYSIS REQUESTED** (For questions, please call 510-620-2911)

<input type="checkbox"/> Gross Alpha	<input type="checkbox"/> Gross Beta	<input type="checkbox"/> Gamma Scan
<input type="checkbox"/> Total Uranium	<input type="checkbox"/> Total Beta (LSC)	<input type="checkbox"/> NORM (Gamma)
<input type="checkbox"/> Total Radium	<input checked="" type="checkbox"/> Tritium (H <sup>3</sup> )	<input type="checkbox"/> Isotopic Americium / Curium
<input type="checkbox"/> Radium-226	<input checked="" type="checkbox"/> Carbon-14	<input type="checkbox"/> Isotopic Plutonium
<input type="checkbox"/> Radium-228	<input type="checkbox"/> Iodine-131	<input type="checkbox"/> Isotopic Thorium
<input type="checkbox"/> Radon-222	<input type="checkbox"/> Strontium-89, 90	<input type="checkbox"/> Isotopic Uranium
<input type="checkbox"/> Other (Specify): _____	<input type="checkbox"/> Nickel-63	<input type="checkbox"/> Iron-55

**CHAIN OF CUSTODY**

1.	Date _____	Name (Print) _____	Signature 	Date 1-5-11
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released 10:00
2.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released _____
3.	Date _____	Name (Print) _____	Signature _____	Date _____
	Time Custody Received _____	Organization _____	Signature _____	Time Custody Released _____

**LABORATORY REMARKS** (Leave Blank)

**A. Condition at Time of Receipt:**

<input type="checkbox"/> Acceptable	<input type="checkbox"/> Broken Container	<input type="checkbox"/> Leaked in Transit	<input type="checkbox"/> Improper Container
<input type="checkbox"/> Holding Time Exceeded	<input type="checkbox"/> Sample Not Cooled	<input type="checkbox"/> Insufficient Sample	

**B. Preservatives/Carriers:**

<input type="checkbox"/> Added While Sampling	<input type="checkbox"/> Added in Laboratory	<input type="checkbox"/> Not Added	<input type="checkbox"/> Not Applicable
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