



February 14, 2013

Mike Gross
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333 SW First Avenue
PO Box 2946
Portland, Oregon 97208-2946

Subject: FINAL Analytical Results for Sediment, Clams and Bass collected from Forebay
September/October 2011 and Bass collected from Reference Area August 2011,
Bradford Island Pre-Feasibility Study
Bonneville Dam Forebay, Cascade Locks, Oregon
Contract No W9128F-04-D-0001, Task Order No. DT-02

Dear Mr. Gross:

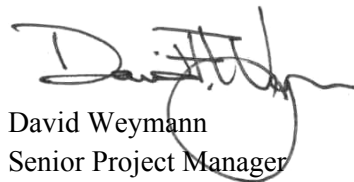
This Final Report presents a comprehensive summary of all analytical results for sediment, clam and smallmouth bass samples collected from the Forebay and smallmouth bass samples collected from the Reference Area during the pre-feasibility study sampling events in August, September, and October 2011. All sediment, clam and bass samples collected from the Forebay and Reference Area were submitted for PCB (Aroclors and 209 congeners), metal, PAH, pesticide, butyltin, and SVOC analysis. The samples were analyzed in accordance with the Quality Assurance Project Plan (QAPP), River Operable Unit Remedial Investigation, prepared by URS, dated September 2007.

This summary report consists of the following:

- Sample location maps showing sediment, clam and smallmouth bass sampling stations.
- Summary tables showing the analytical data results and the associated relevant screening criteria, as well as tabulated PCB totals summed as detected Aroclors and as congeners.
- Tables showing the complete list of 209 congeners for each sample.
- Quality control summary reports for both tissue and sediment matrices.
- Field reports and data sheets.

The original laboratory data deliverables in both the .pdf and electronic versions are available upon request. This information will be utilized in the River OU feasibility study, as well as in an evaluation of Upland OU source control for erosional/mass wasting Upland OU areas.

Sincerely,
URS CORPORATION



David Weymann
Senior Project Manager



Heather Patterson
Risk Assessor

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Attachments:

Figure 1 Smallmouth Bass Reference Sample Locations

Figure 2 Smallmouth Bass Forebay Sample Locations

Figure 3 Clam and Sediment Forebay Sample Locations

Table 1 Reference Area Smallmouth Bass – Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Table 2 Forebay Smallmouth Bass – Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Table 3 Forebay Clam – Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Table 4 Forebay Sediment – Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Table 5 Reference Area Smallmouth Bass – Analytical Results and Screening Criteria for PCB Congeners

Table 6 Forebay Smallmouth Bass – Analytical Results and Screening Criteria for PCB Congeners

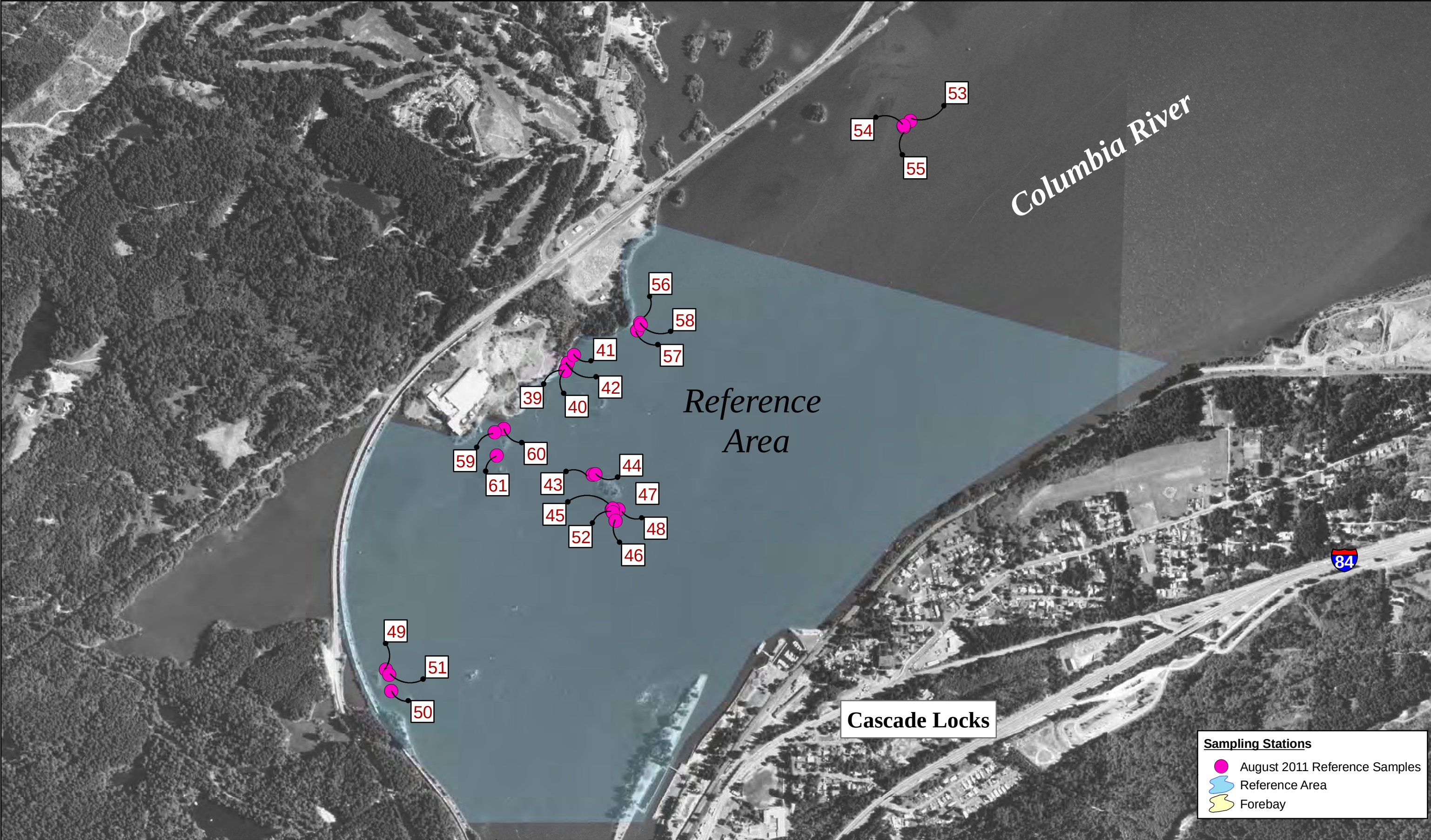
Table 7 Forebay Clam – Analytical Results and Screening Criteria for PCB Congeners

Table 8 Forebay Sediment – Analytical Results and Screening Criteria for PCB Congeners

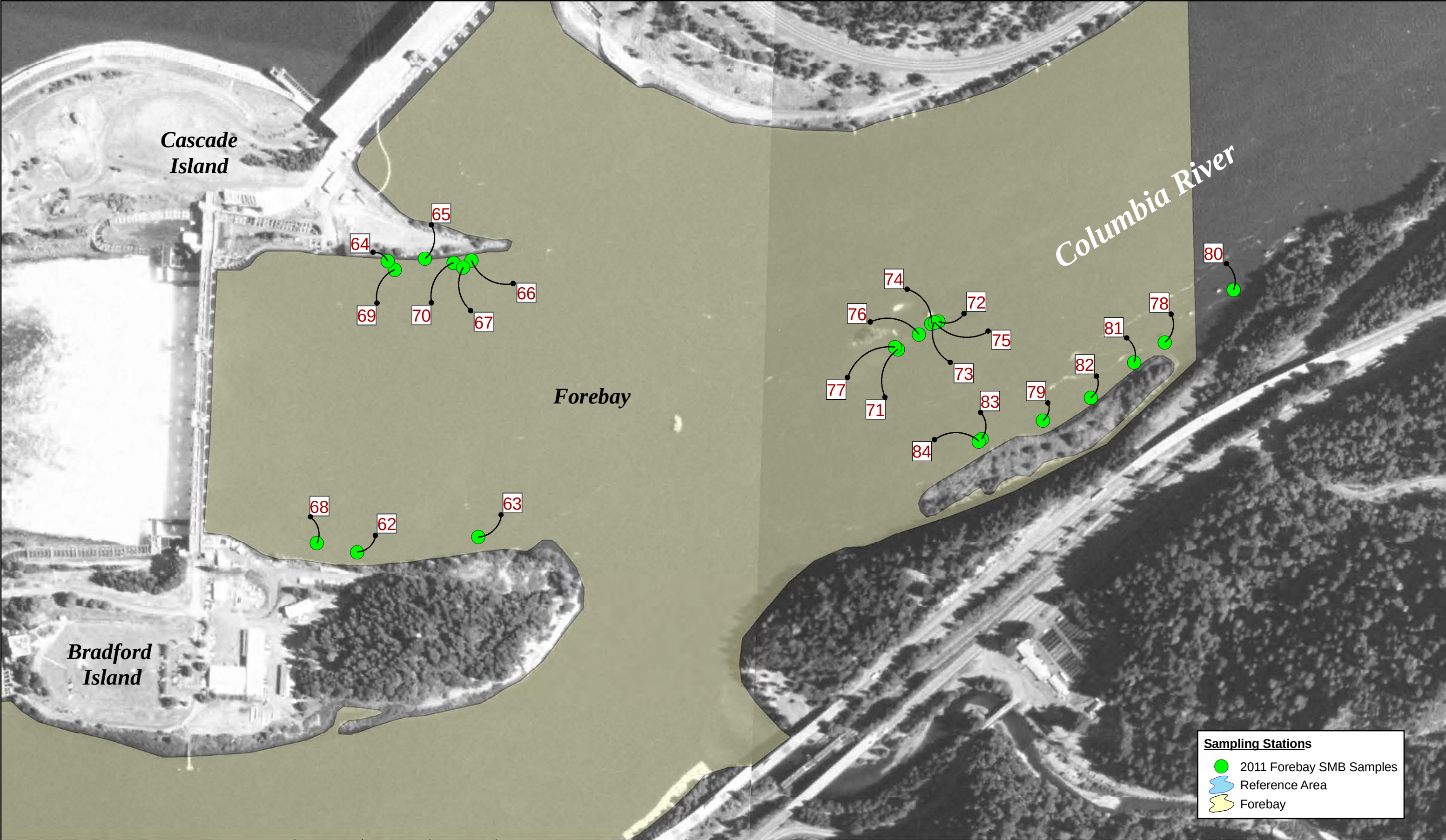
Final Quality Control Summary Report for Analytical Chemistry

Field Reports and Field Data Sheets

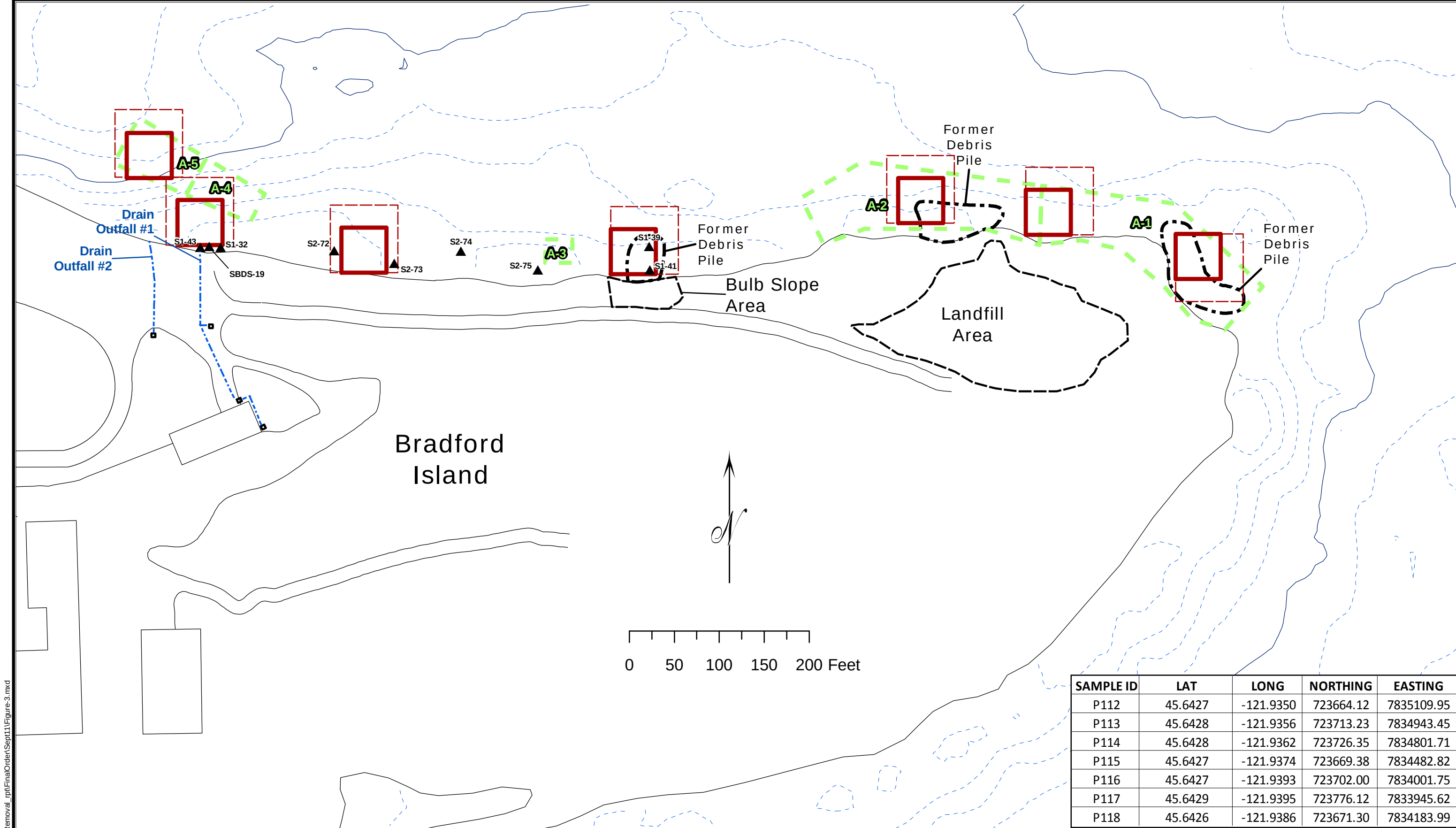
FIGURES



	JOB No. 25696528	DESIGNED: LSM	PROJ. ENGINEER: LSM			BRADFORD ISLAND	RIVER OPERABLE UNIT 2011 SMALLMOUTH BASS REFERENCE SAMPLING STATIONS	DRAWING NUMBER: FIGURE 1	
		DRAWN BY: BR	APPROVED BY: MP			GIS FILE NUMBER: FIG 1			
		CHECKED BY: SB	DATE: Aug 2011			111 S.W. Columbia, Suite 1500 Portland, Oregon 97201 (tel) 503-222-7200 (fax) 503-222-4292 www.urscorp.com		CASCADE LOCKS, OREGON	SHEET:



	JOB No. 25696528	DESIGNED: LSM	PROJ. ENGINEER: LSM			BRADFORD ISLAND	RIVER OPERABLE UNIT	DRAWING NUMBER: FIGURE 2	
		DRAWN BY: BR	APPROVED BY: MP			GIS FILE NUMBER: FIG 2			
		CHECKED BY: SB	DATE: Aug 2011			111 S.W. Columbia, Suite 1500 Portland, Oregon 97201 (tel) 503-222-7200 (fax) 503-222-4292 www.urscorp.com		BONNEVILLE DAM, OREGON	SMALLMOUTH BASS FOREBAY SAMPLE COLLECTION LOCATIONS



SAMPLE ID	LAT	LONG	NORTHING	EASTING
P112	45.6427	-121.9350	723664.12	7835109.95
P113	45.6428	-121.9356	723713.23	7834943.45
P114	45.6428	-121.9362	723726.35	7834801.71
P115	45.6427	-121.9374	723669.38	7834482.82
P116	45.6427	-121.9393	723702.00	7834001.75
P117	45.6429	-121.9395	723776.12	7833945.62
P118	45.6426	-121.9386	723671.30	7834183.99

Sampling Stations:

▲

Historical Sample Location

●

Clam & Sediment Sample 2008

50'X50' Proposed Sample Station

75'x75' Alternate Sample Station (If Necessary)

2007 Removal Areas

Debris Piles

JOB No.
25695254.00002

Base Map provided by USACE

DESIGNED:
MN

DRAWN BY:
CW

CHECKED BY:
—

PROJ. ENGINEER:
—

APPROVED BY:
JTW

DATE:
SEPT 11

URS

111 S.W. Columbia, Suite 1500
Portland, Oregon 97201
(tel) 503-222-7200
(fax) 503-222-4292

Bonneville Dam Forebay

CASCADE LOCKS, OREGON

Proposed Sampling Locations

DRAWING NUMBER:
FIGURE 3

GIS FILE NUMBER:
Figure-3.mxd

SHEET:

REV.

TABLES

Table 1
Reference Area Smallmouth Bass - Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Area	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Selected SLV	SLV Source
Site ID	39	41	42	43	44	45	46	47	48	49	50		
Sample ID	R08202011SB39	R08202011SB41	R08202011SB42	R08202011SB43	R08202011SB44	R08202011SB45	R08202011SB46	R08202011SB47	R08202011SB48	R08202011SB49	R08202011SB50		
Sample Date	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011		
Percent Lipids	2.9	1.7	2.6	4.2	4.0	2.2	0.89	3.9	4.3	4.1	1.7		
PCB Aroclors (µg/kg wet)													
Aroclor 1016	2.80 U	2.80 U	2.80 U	2.80 U	3.10 U	3.00 U	2.80 U	2.90 U	5.00 U	2.80 U	3.40 U	0.570	HH
Aroclor 1221	9.70 U	3.50 U	6.70 U	2.80 U	7.00 U	17.0 U	4.80 U	7.00 U	6.50 U	2.80 U	5.00 U	0.570	HH
Aroclor 1232	9.10 U	2.80 U	2.80 U	2.80 U	4.90 U	10.0 U	3.80 U	2.80 U	6.90 U	2.80 U	2.80 U	0.570	HH
Aroclor 1242	2.80 U	3.20 U	3.40 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	9.30 U	2.80 U	3.30 U	0.570	HH
Aroclor 1248	2.80 U	6.60 U	5.40 U	2.80 U	9.40 U	2.80 U	4.20 U	3.60 U	6.30 U	2.80 U	5.40 U	0.570	HH
Aroclor 1254	12.0 U	42.0 U	29.0 U	36.0	20.0 U	18.0 U	12.0 U	18.0 U	21.0 U	220	21.0 U	0.570	HH
Aroclor 1260	8.00 U	37.0 U	20.0 U	2.80 U	11.0 U	14.0 U	13.0 U	12.0 U	18.0 U	2.80 U	23.0 U	0.570	HH
Aroclor 1262	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1268	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Total PCBs as Aroclors	12.0 U	42.0 U	29.0 U	36.0	20.0 U	18.0 U	13.0 U	18.0 U	21.0 U	220	23.0 U	0.570	HH
Metals (mg/kg wet)													
Aluminum	1.25	2.71 U	5.29	0.580 U	0.560 U	11.3	3.02	9.24	1.34	5.39	1.48	--	--
Antimony	0.00330 J	0.0132 U	0.0076 J	0.0141 U	0.0141 U	0.0129 U	0.0131 U	0.0144 U	0.0146 U	0.0159 U	0.1290 U	--	--
Arsenic	0.383	0.264	0.390	0.403	0.501	0.457	0.348	0.728	0.664	0.484	0.409	0.000760	HH
Barium	1.74	1.78	1.63	0.778	0.934	3.13	2.29	3.42	1.55	1.77	1.11	--	--
Beryllium	0.000800 U	0.000800 U	0.000900 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000900 U	0.000900 U	0.00100 U	0.000800 U	--	--
Cadmium	0.00570	0.0108	0.00940	0.00840	0.00390 J	0.0101	0.00670	0.00940	0.00710	0.0107	0.0105	0.150	Eco
Chromium	0.0200 U	0.0500 J	0.170	0.0300 U	0.0300 U	0.130	0.400	0.100	0.0300 U	0.0700	0.0800	--	--
Cobalt	0.00700	0.0120	0.0140	0.00900	0.00800	0.0160	0.0170	0.0170	0.00700	0.0100	0.00700	--	--
Copper	0.438	0.476	0.618	0.457	0.250 U	0.543	0.454	0.488	0.388	0.729	0.503	--	--
Lead	0.00710 U	0.150	0.0116 U	0.00560 U	0.00560 U	0.0169 U	0.00930 U	0.0165 U	0.0141 U	0.00640 U	0.0206 U	0.120	Eco
Mercury	0.0659	0.176 J	0.142	0.527	0.0828	0.0445	0.362	0.0446	0.184	0.127	0.635	0.0490	HH
Nickel	0.0540	0.0570	0.102	0.0460 J	0.0560 U	0.0550 U	0.200	0.100	0.0580 U	0.0640 U	0.0630	--	--
Thallium	0.0153	0.00830	0.0109	0.00880	0.0183	0.0286	0.00880	0.0268	0.0160	0.0120	0.00750	--	--
Vanadium	0.0240 J	0.0200 J	0.0540 J	0.0360 J	0.0180 J	0.0810	0.0750	0.0860	0.0380 J	0.0550 J	0.0210 J	--	--
Zinc	14.0	11.5	13.9	13.1	13.6	15.5	14.2	16.3	12.3	13.4	15.0	--	--
Butyltins (µg/kg wet)													
Dibutyltin Cation	-	0.110 U	0.110 U	0.110 U	0.110 U	-	0.110 U	3.00	0.110 U	0.110 U	0.110 UJ	--	--
Monobutyltin	-	0.180 U	0.180 U	0.180 U	0.180 U	-	0.180 U	0.700 U	0.180 U	0.180 U	0.180 UJ	--	--
Tetrabutyltin	-	0.150 U	0.150 U	0.150 UJ	0.150 U	-	0.150 U	0.150 U	0.150 U	0.150 U	0.150 UJ	--	--
Tri-n-butyltin	-	0.110 U	4.10 U	0.110 U	0.110 U	-	0.110 U	1.10 U	0.110 U	0.110 U	0.110 UJ	150	ATLs
Pesticides (µg/kg wet)													
4,4'-DDD	3.50	4.70	8.90	9.60	4.80	3.90	1.90	6.80	6.90	8.20	5.40	--	--
4,4'-DDE	39.0	79.0	87.0	85.0	60.0	57.0	33.0	87.0	82.0	89.0	62.0 J	--	--
4,4'-DDT	3.80 J	9.20 U	6.70 J	9.80 U	4.50 J	3.10 J	3.20 J	4.70 U	6.00 J	17.0 J	6.80 J	3.40	ATLs
Aldrin	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	--	--
BHC (alpha)	0.160 U	0.220 U	0.160 U	0.220 U	0.170 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	--	--
BHC (beta)	0.620 J	0.520 J	0.540 U	3.60	2.30	3.60	0.700 J	2.00 U	3.90	4.10 U	2.50	--	--
BHC (delta)	0.200 U	0.200 U	0.200 U	0.970 U	0.260 U	0.200 U	0.200 U	0.200 U	0.930 U	1.40 U	0.930 U	--	--
BHC (gamma) Lindane	0.210 U	0.900 U	1.00	1.40 U	0.940 U	1.00 U	0.280 U	0.540 J	1.30 U	1.10 U	0.940	--	--
Chlordane (alpha)	0.250 U	0.250 U	0.250 U	0.250 U	0.340 J	0.360 J	0.250 U	0.250 U	0.310 J	0.920 U	0.250 U	3.30	ATLs
Chlordane (gamma)	0.260 U	1.20 U	0.260 U	1.50	0.310 J	0.370 J	0.260 U	0.290 J	0.630 J	4.20	0.520 J	3.30	ATLs
Dieldrin	0.910 U	0.830 J	0.750 U	0.970 U	0.940 U	1.00 U	0.270 J	0.950 U	0.930 U	3.10 U	0.930 U	0.0720	ATLs
Endosulfan I	0.300 U	0.220 U	0.220 U	0.970 U	0.970 U	0.510 U	0.220 U	0.760 U	1.70 U	2.00	1.10 U	--	--
Endosulfan II	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.650 U	0.240 U	0.240 U	0.240 U	--	--
Endosulfan Sulfate	0.530 U	0.530 U	0.530 U	0.530 U	0.560 J	0.530 U	0.530 U	0.590 J	0.530 U	0.530 U	0.530 U	--	--
Endrin	0.280 U	0.900 U	0.280 U	0.400 J	0.280 U	0.280 U	0.320 J	0.280 U	0.280 U	0.860 J	0.360 U	--	--
Endrin Aldehyde	0.620 U	0.620 U	0.620 U	0.620 U	0.620 U	0.620 U	0.620 U	0.620 U	0.620 U	1.10	0.620 U	--	--
Endrin Ketone	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	--	--
Heptachlor	0.270 U	0.270 U	0.270 U	0.270 U	0.270 U	1.00 U	0.270 U	0.270 U	0.270 U	0.270 U	0.270 U	--	--
Heptachlor Epoxide	0.180 U	0.420 U	0.180 U	0.280 U	0.300 J	0.180 U	0.180 U	0.180 U	0.500 U	1.30 U	0.180 U	--	--
Methoxychlor	0.480 U	1.10 U	0.480 U	0.750 J	0.480 U	0.480 U	1.10 U	0.480 U	0.570 U	0.800 U	1.10 U	--	--
Toxaphene	26.0 U	110 U	53.0 U	93.0 U	31.0 U	25.0 U	31.0 U	27.0 U	43.0 U	190 U	55.0 U	--	--
SVOCs (µg/kg wet)													
Acenaphthene	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	0.240 J	0.0950 J	0.940 U	0.940 U	0.940 U	0.940 U	15,000	HH
Anthracene	2.00 J	3.10 J	3.60 J	0.760 U	0.760 U	0.100 J	0.0470 J	2.70 J	0.800 U	4.10 J	1.90 J	15,000	HH
Benzo(a)anthracene	1.60 J	1.50 U	0.760 U	0.760 U	0.760 U	0.0580 U	0.0380 U	0.760 U	0.760 U	0.760 U	0.760 U	1.57	HH
Benzo(a)pyrene	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	0.120 U	0.0730 U	1.50 U	1.50 U	1.50 U	1.50 U	0.157	HH
Benzo(b)fluoranthene	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	0.110 U	0.0660 U	1.40 U	1.40 U	1.40 U	1.40 U	1.57	HH
Benzo(g,h,i)perylene	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	0.150 U	0.0950 U	1.90 U	1.90 U	1.90 U	1.90 U	15.7	HH
Benzo(k)fluoranthene	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	0.0870 U	0.0570 U	1.20 U	1.20 U	1.20 U	1.20 U	15.7	HH
Bis(2-ethylhexyl) Phthalate	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	81.9	HH
Butyl Benzyl Phthalate	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	310	Eco
Carbazole	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	--	--
Chrysene	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U	0.0840 U	0.0550 U	1.10 U	1.10 U	1.10 U	1.10 U	157	HH
Dibenz(a,h)anthracene	1.80 U	1.80 U	1.80 U	1.80 U	20.0 U	0.140 U	0.0860 U	1.80 U	1.80 U	1.80 U	1.80 U	0.157	HH
Di-n-butyl Phthalate	97.0 U	8.20 U	8.20 U	8.20 U	8.20 U	8.20 U	8.20 U	8.20 U	8.20 U	99.0 U	98.0 U	626	Eco
Di-n-octyl Phthalate	5.40 U	5.40 U	5.40 U	5.40 U	5.40 U	39.0 U	5.40 U	40.0 U	5.40 U	5.40 U	5.40 U	626	Eco
Fluoranthene	1.50 J	1.80 J	1.50 J	2.00 J	2.20 J	0.350 J	0.160 J	1.60 J	2.20 J	1.90 J	1.60 J	19,000	Eco
Fluorene	5.90 J	5.10 J	4.40 J	6.10 J	5.70 J	1.00	0.270 J	5.40 J	6.30 J	5.50 J	4.00 J	15,000	HH
Indeno(1,2,3-cd)pyrene	2.00 U	2.00 U	2.00 U	2.00 U	8.10 U	0.150 U	0.0960 U	2.00 U	2.00 U	2.00 U	2.00 U	1.57	HH
p-cresol (4-Methylphenol)	21.0 J	7.60 U	7.60 U	7.60 U	7.60 U	7.60 U	7.60 U	26.0 J	7.60 U	7.60 U	7.60 U	--	--
Phenanthrene	7.30 J	7.00 J	7.40 J	8.60 J	7.80 J	1.50	0.780 U	8.00 J	8.10 J	8.60 J	6.60 J	15,000	HH
Pyrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	0.190 J	0.0720 J	1.00 U	1.00 U	1.00 U	1.00 U	1,000	Eco

Notes:

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
Eco = Ecological SLV, Bradford RI
HH = Human Health, Bradford RI
MDL = method detection limit
SLV = screening level value
- = Not Analyzed
-- = SLV for analyte not available

ATLs = Lowest ATL for Human Receptors, Table 3 of Oregon DEQ Guidance for Assessing
Bioaccumulative Chemicals of Concern in Sediment, April 2007

ND = Non Detect

J = The reported value is an estimate.

U = The analyte was not detected at or above the MDL

UJ = The analyte was not detected. The reported MDL is an estimate.

bold = analyte detected above MDL

= The reported concentration exceeds the selected SLV

Table 1
Reference Area Smallmouth Bass - Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Area	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Selected SLV	SLV Source
Site ID	52	55	56	57	58	59	60	61		
Sample ID	R08202011SB52	R08212011SB55	R08212011SB56	R08212011SB57	R08212011SB58	R08212011SB59	R08212011SB60	R08212011SB61		
Sample Date	8/20/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011		
Percent Lipids	2.0	3.0	3.4	2.9	5.4	2.7	3.8	3.8		
PCB Aroclors (µg/kg wet)										
Aroclor 1016	2.90 U	6.10 U	2.90 U	3.00 U	9.70 U	3.40 U	4.70 U	3.00 U	0.570	HH
Aroclor 1221	11.0 U	8.30 U	6.80 U	12.0 U	11.0 U	5.40 U	16.0 U	12.0 U	0.570	HH
Aroclor 1232	3.30 U	3.30 U	5.20 U	10.0 U	3.80 U	3.10 U	8.00 U	4.30 U	0.570	HH
Aroclor 1242	2.80 U	5.70 U	4.70 U	2.80 U	9.70 U	9.70 U	9.70 U	2.80 U	0.570	HH
Aroclor 1248	9.70 U	6.80 U	3.80 U	2.80 U	9.70 U	3.30 U	9.70 U	3.10 U	0.570	HH
Aroclor 1254	25.0 U	36.0 U	13.0 U	11.0 U	20.0 U	15.0 U	23.0 U	9.80 U	0.570	HH
Aroclor 1260	19.0 U	26.0 U	9.70 U	12.0 U	15.0 U	12.0 U	14.0 U	8.90 U	0.570	HH
Aroclor 1262	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1268	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Total PCBs as Aroclors									0.570	HH
Metals (mg/kg wet)										
Aluminum	5.04	1.00	3.95	6.79	0.580 U	2.66	9.60	4.69	--	--
Antimony	0.0138 U	0.0148 U	0.0133 U	0.0125 U	0.0145 U	0.0130 U	0.0138 U	0.0140 U	--	--
Arsenic	0.311	0.295	0.376	0.501	0.682	0.292	0.363	0.557	0.000760	HH
Barium	2.76	0.897	1.39	2.31	1.05	1.74	4.52	2.64	--	--
Beryllium	0.000800 U	0.000900 U	0.000800 U	0.000700 U	0.000900 U	0.000800 U	0.000800 U	0.000800 U	--	--
Cadmium	0.0110	0.00720	0.00820	0.0107	0.00410 J	0.00480 J	0.0131	0.00800	0.150	Eco
Chromium	0.0400 J	0.0500 J	0.0400 J	0.0500 J	0.0300 U	0.0200 U	0.170	0.0300 J	--	--
Cobalt	0.0150	0.0100	0.0100	0.0130	0.00700	0.00900	0.0250	0.0140	--	--
Copper	0.818	0.436	0.321	0.906	0.395	0.594	1.38	0.981	--	--
Lead	0.0162 U	0.0351	0.0187 U	0.0084 U	0.0149 U	0.00830 U	0.0125 U	0.00650 U	0.120	Eco
Mercury	0.211	0.245	0.0749	0.0566	0.0834	0.0882	0.0663	0.0622	0.0490	HH
Nickel	0.0810	0.0660	0.0620	0.0760	0.058 U	0.0520 U	0.116	0.0560 U	--	--
Thallium	0.0103	0.00980	0.0165	0.0166	0.0230	0.0124	0.0162	0.0180	--	--
Vanadium	0.0750	0.0470 J	0.0300 J	0.0300 J	0.0150 J	0.0300 J	0.0600	0.0400 J	--	--
Zinc	14.4	15.9	14.0	13.5	13.7	13.1	15.6	15.4	--	--
Butyltins (µg/kg wet)										
Dibutyltin Cation	0.110 U	0.110 U	0.110 U	-	0.110 U	0.110 U	0.110 U	0.110 U	--	--
Monobutyltin	0.180 U	0.180 U	0.180 U	-	0.180 U	0.180 U	0.180 U	0.180 U	--	--
Tetrabutyltin	0.150 U	0.150 U	0.150 U	-	0.150 U	0.150 U	0.150 U	0.150 U	--	--
Tri-n-butyltin	0.110 U	0.110 U	0.110 U	-	0.110 U	0.110 U	0.110 U	0.110 U	150	ATLs
Pesticides (µg/kg wet)										
4,4'-DDD	4.70	9.40	3.50	3.50	7.10	4.40	6.50	3.90	--	--
4,4'-DDE	72.0	100	29.0	54.0	83.0	49.0	59.0	50.0	--	--
4,4'-DDT	4.10 U	5.80 J	3.00 J	3.90 J	5.70 J	3.60 J	4.40 J	3.60 J	3.40	ATLs
Aldrin	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	--	--
BHC (alpha)	0.160 U	0.160 U	0.160 U	0.160 U	0.970 U	0.160 U	0.160 U	0.160 U	--	--
BHC (beta)	2.40 U	3.30 U	2.20	3.30	4.70	3.10	2.80	3.40	--	--
BHC (delta)	0.250 U	0.960	0.220 U	0.290 U	1.60	0.410 U	0.330 U	0.280 U	--	--
BHC (gamma) Lindane	0.750 J	1.00	0.960 U	1.00 U	2.90 U	1.10 U	0.970 U	0.960 U	--	--
Chlordane (alpha)	0.250 U	0.250 U	0.250 U	0.250 U	0.970 U	0.250 U	0.280 J	0.250 U	3.30	ATLs
Chlordane (gamma)	0.260 U	0.790 J	0.350 J	0.440 J	0.770 J	0.400 J	0.260 U	0.390 J	3.30	ATLs
Dieldrin	0.970 U	0.920 U	0.960 U	1.00 U	0.970 U	0.970 U	0.970 U	0.960 U	0.0720	ATLs
Endosulfan I	0.710 J	1.30 U	0.960 U	0.510 U	3.50 U	0.870 U	0.600 U	0.410 U	--	--
Endosulfan II	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	--	--
Endosulfan Sulfate	0.530 U	0.530 U	0.530 U	0.530 U	0.530 U	0.530 U	0.530 U	0.530 U	--	--
Endrin	0.280 U	0.280 U	0.280 U	0.280 U	0.320 J	0.280 U	0.280 U	0.280 U	--	--
Endrin Aldehyde	0.620 U	0.620 U	0.620 U	0.620 U	0.620 U	0.620 U	0.620 U	0.620 U	--	--
Endrin Ketone	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	--	--
Heptachlor	0.270 U	0.270 U	0.270 U	0.270 U	0.270 U	0.270 U	0.970 U	0.270 U	--	--
Heptachlor Epoxide	0.210 U	0.330 U	0.260 J	0.220 U	0.180 U	0.180 U	0.180 U	0.190 U	--	--
Methoxychlor	0.480 U	1.00 U	0.480 U	0.740 U	0.480 U	0.480 U	0.480 U	0.550 U	--	--
Toxaphene	36.0 U	64.0 U	20.0 U	23.0 U	36.0 U	33.0 U	51.0 U	39.0 U	--	--
SVOCs (µg/kg wet)										
Acenaphthene	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	15,000	HH
Anthracene	2.80 J	5.30 J	3.60 J	2.00 J	0.760 U	3.80 J	3.30 J	2.20 J	15,000	HH
Benzo(a)anthracene	0.760 U	0.760 U	0.760 U	0.760 U	0.760 U	0.760 U	0.760 U	1.40 U	1.57	HH
Benzo(a)pyrene	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	0.157	HH
Benzo(b)fluoranthene	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.57	HH
Benzo(g,h,i)perylene	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	15.7	HH
Benzo(k)fluoranthene	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	15.7	HH
Bis(2-ethylhexyl) Phthalate	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	81.9	HH
Butyl Benzyl Phthalate	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	310	Eco
Carbazole	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	--	--
Chrysene	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U	157	HH
Dibenz(a,h)anthracene	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	0.157	HH
Di-n-butyl Phthalate	100.0 U	98.0 U	100.0 U	98.0 U	100.0 U	99.0 U	98.0 U	98.0 U	626	Eco
Di-n-octyl Phthalate	5.40 U	5.40 U	5.40 U	5.40 U	5.40 U	5.40 U	5.40 U	5.40 U	626	Eco
Fluoranthene	1.30 J	1.50 J	1.60 J	0.980 U	2.50 J	2.10 J	1.80 J	1.80 J	19,000	Eco
Fluorene	5.30 J	4.80 J	5.10 J	2.20 J	6.90 J	6.00 J	5.30 J	5.10 J	15,000	HH
Indeno(1,2,3-cd)pyrene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	1.57	HH
p-cresol (4-Methylphenol)	18.0 J	7.60 U	7.60 U	7.60 U	7.60 U	7.60 U	7.60 U	7.60 U	--	--
Phenanthrene	6.70 J	7.60 J	6.90 J	5.60 J	9.60 J	8.10 J	8.00 J	7.30 J	15,000	HH
Pyrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1,000	Eco

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
Eco = Ecological SLV, Bradford RI
HH = Human Health, Bradford RI
MDL = method detection limit
SLV = screening level value
- = Not Analyzed
-- = SLV for analyte not available

ATLs = Lowest ATL for Human Receptors, Table 3 of Oregon DEQ Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment, April 2007
ND = Non Detect
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL
UJ = The analyte was not detected. The reported MDL is an estimate.
bold = analyte detected above MDL
 = The reported concentration exceeds the selected SLV

Table 2
Forebay Smallmouth Bass - Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Area	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Selected SLV	SLV Source
Site ID	62	63	64	65	67	68	69	70	71	72		
Sample ID	R09032011SB62	R09032011SB63	R09032011SB64	R09032011SB65	R09032011SB67	R09032011SB68	R09032011SB69	R09032011SB70	R09042011SB71	R09042011SB72		
Sample Date	9/3/2011	9/3/2011	9/3/2011	9/3/2011	9/3/2011	9/3/2011	9/3/2011	9/3/2011	9/4/2011	9/4/2011		
Percent Lipids	4.2	3.4	1.9	3.4	3.6	3.1	2.5	3.1	3.4	2.1		
PCB Aroclors (µg/kg wet)												
Aroclor 1016	280 U	280 U	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1221	280 U	280 U	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1232	280 U	280 U	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1242	280 U	280 U	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1248	280 U	280 U	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1254	13,000	29,000	32.0	20.0	21.0	65,000	37.0	17.0	26.0	5.80 U	0.570	HH
Aroclor 1260	280 U	280 U	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1262	280 U	280 U	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1268	280 U	280 U	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Total PCBs as Aroclors (NDs at MDL) ¹	13,000	29,000	32.0	20.0	21.0	65,000	37.0	17.0	26.0	5.80 U	0.570	HH
Metals (mg/kg wet)												
Aluminum	1.52	4.54	4.47	3.03	3.13	0.490 J	4.57	9.52	2.97	6.36	--	--
Antimony	0.00370 J	0.0107 J	0.00660 J	0.00810 J	0.0132	0.0107 J	0.00310 J	0.00900 J	0.0258	0.00800 J	--	--
Arsenic	0.388	0.314	0.530	0.432	0.345	0.341	0.314	0.302	0.385	0.410	0.000760	HH
Barium	1.95	3.07	2.46	3.60	2.40	1.33	3.01	3.38	2.82	6.40	--	--
Beryllium	0.000900 U	0.000700 U	0.000700 U	0.000700 U	0.000700 U	0.000800 U	0.000600 U	0.000700 U	0.000800 U	0.000700 U	--	--
Cadmium	0.00560 J	0.0122	0.00970	0.0118	0.0143	0.00550	0.00850	0.00940	0.00810	0.0183	0.150	Eco
Chromium	0.0500 J	0.0400 J	0.0900	0.110	0.0700	0.0200 U	0.0200 J	0.0600	0.760	0.290	--	--
Cobalt	0.00800	0.0110	0.0110	0.0120	0.00800	0.00600	0.0110	0.0210	0.0140	0.0130	--	--
Copper	0.656	1.24	0.616	0.925	1.01	0.415	0.663	1.18	0.739	1.76	--	--
Lead	0.0185	0.0139 U	0.00770 U	0.0136 U	0.0111 U	0.00820 U	0.00980 U	0.0103 U	0.00580 U	0.00960 U	0.120	Eco
Mercury	0.452	0.118	0.0662	0.128	0.122	0.155	0.0599	0.111	0.131	0.0899	0.0490	HH
Nickel	0.0480 J	0.0620	0.0830	0.0660	0.0470 J	0.0510	0.0600	0.0870	0.344	0.0900	--	--
Thallium	0.00800	0.0131	0.0198	0.0122	0.0127	0.0121	0.0114	0.0110	0.0118	0.0122	--	--
Vanadium	0.0380 J	0.0360 J	0.0630	0.0490	0.0600	0.0310 J	0.0570	0.0780	0.0530 J	0.0710	--	--
Zinc	15.0	15.2	13.3	13.9	12.6	13.3	11.4	12.9	11.6	12.7	--	--
Butyltins (µg/kg wet)												
Dibutyltin Cation	0.110 U	-	-	-	-	0.110 U	-	0.110 U	0.110 U	-	--	--
Monobutyltin	0.180 U	-	-	-	-	0.180 U	-	0.180 U	0.180 U	-	--	--
Tetrabutyltin	0.150 U	-	-	-	-	0.150 U	-	0.150 U	0.150 U	-	--	--
Tri-n-butyltin	0.110 U	-	-	-	-	0.110 U	-	0.110 U	0.110 U	-	150	ATLs
Pesticides (µg/kg wet)												
4,4'-DDD	20.0 U	2.70 U	2.80	3.10	2.50	4.80	1.70	2.10	3.40	1.30	--	--
4,4'-DDE	200 U	34.0 U	29.0	25.0	20.0	35.0 U	13.0	18.0	23.0	14.0	--	--
4,4'-DDT	2,300 U	6,800 U	4.70 U	1.00 U	3.10 J	16,000 U	4.90 J	2.10 U	4.50 J	1.10 U	3.40	ATLs
Aldrin	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	--	--
BHC (alpha)	0.160 U	0.160 U	0.990 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	--	--
BHC (beta)	0.410 U	0.870 U	0.990 U	0.410 U	1.00 U	0.410 U	0.770 J	0.990 U	0.410 U	0.410 U	--	--
BHC (delta)	0.200 U	1.30 U	0.200 U	0.200 U	0.200 U	3.90 U	0.200 U	0.200 U	0.200 U	0.200 U	--	--
BHC (gamma) Lindane	0.760 J	0.410 J	0.210 U	0.210 U	0.210 U	2.50	0.210 U	0.210 U	0.210 U	0.210 U	--	--
Chlordane (alpha)	28.0 UJ	0.250 U	0.250 U	0.250 U	0.250 U	220 U	0.250 U	0.250 U	0.250 U	0.250 U	3.30	ATLs
Chlordane (gamma)	660	1,600	1.10	0.630 J	0.720 J	5,000	1.30	0.400 J	1.00	0.260 U	3.30	ATLs
Dieldrin	370	950	0.720 J	0.200 U	0.260 U	2,900	0.830 J	0.200 U	0.690 U	0.200 U	0.0720	ATLs
Endosulfan I	95.0 J	210	0.220 U	0.220 U	0.220 U	5.50 U	0.390 J	0.220 U	0.220 U	0.220 U	--	--
Endosulfan II	4.90 U	11.0 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	--	--
Endosulfan Sulfate	1.00 U	87.0 U	0.530 U	0.530 U	0.530 U	140 U	0.530 U	0.530 U	0.530 U	0.530 U	--	--
Endrin	220	540	0.500 J	0.280 U	0.280 J	1,200	0.450 J	0.280 U	0.560 J	0.280 U	--	--
Endrin Aldehyde	210	600	0.620 U	0.620 U	0.620 U	1,200	0.620 U	0.620 U	0.620 U	0.620 U	--	--
Endrin Ketone	15.0 U	87.0 U	0.390 U	0.390 U	0.390 U	140 U	0.390 U	0.390 U	0.390 U	0.390 U	--	--
Heptachlor	0.270 U	0.270 U	0.270 U	0.850 U	0.270 U	5.10 U	0.380 U	0.280 U	0.270 U	0.270 U	--	--
Heptachlor Epoxide	5.70 U	18.0 U	0.400 U	0.180 U	0.180 U	94.0 U	0.410 U	0.180 U	0.180 U	0.180 U	--	--
Methoxychlor	3.90 U	7.50 U	0.480 U	0.480 U	0.480 U	17.0 U	0.480 U	0.480 U	0.480 U	0.480 U	--	--
Toxaphene	31,000 U	79,000 U	52.0 U	35.0 U	48.0 U	220,000 U	69.0 U	32.0 U	69.0 U	17.0 U	--	--
SVOCs (µg/kg wet)												
Acenaphthene	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	0.940 U	15,000	HH
Anthracene	4.80 J	2.70 J	1.40 J	1.50 J	3.10 J	3.90 J	1.30 J	3.20 J	6.70 J	2.50 J	15,000	HH
Benzo(a)anthracene	0.760 U	0.760 U	0.760 U	0.760 U	0.760 U	4.40 J	1.60 U	0.760 U	0.760 U	1.30 U	1.57	HH
Benzo(a)pyrene	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	0.157	HH
Benzo(b)fluoranthene	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.57	HH
Benzo(g,h,i)perylene	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	15.7	HH
Benzo(k)fluoranthene	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	15.7	HH
Bis(2-ethylhexyl) Phthalate	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	81.9	HH
Butyl Benzyl Phthalate	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	310	Eco
Carbazole	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	--	--
Chrysene	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U	1.50 U	1.10 U	1.10 U	1.90 U	157	HH
Dibenz(a,h)anthracene	6.50 U	2.10 U	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	0.157	HH
Di-n-butyl Phthalate	8.20 U	8.20 U	98.0 U	99.0 U	100.0 U	98.0 U	98.0 U	100.0 U	8.20 U	99.0 U	626	Eco
Di-n-octyl Phthalate	40.0 U	40.0 U	39.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	626	Eco
Fluoranthene	1.70 J	1.60 J	1.30 J	1.20 J	0.980 U	1.70 J	1.40 J	1.20 J	1.90 J	0.980 U	19,000	Eco
Fluorene	3.20 J	3.30 J	3.20 J	2.10 J	1.40 J	4.50 J	3.70 J	2.40 J	5.20 J	2.20 J	15,000	HH
Indeno(1,2,3-cd)pyrene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	1.57	HH
p-cresol (4-Methylphenol)	8.80 J	30.0 J	11.0 J	33.0 J	25.0 J	11.0 J	51.0	34.0 J	56.0	74.0	--	--
Phenanthrene	6.20 J	7.00 J	6.20 J	5.60 J	4.50 J	7.90 J	6.40 J	5.90 J	8.00 J	4.90 J	15,000	HH
Pyrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1,000	Eco

Notes:

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
Eco = Ecological SLV, Bradford RI
HH = Human Health, Bradford RI
MDL = method detection limit
SLV = screening level value
- = Not Analyzed
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ATLs = Lowest ATL for Human Receptors, Table 3 of Oregon DEQ Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment, April 2007
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J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL
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bold = analyte detected above MDL
 = The reported concentration exceeds the selected SLV

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Forebay Smallmouth Bass - Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Area	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Selected SLV	SLV Source
Site ID	73	74	76	78	79	81	82	83	84		
Sample ID	R09042011SB73	R09042011SB74	R09042011SB76	R09042011SB78	R09042011SB79	R09042011SB81	R09042011SB82	R09042011SB83	R09042011SB84		
Sample Date	9/4/2011	9/4/2011	9/4/2011	9/4/2011	9/4/2011	9/4/2011	9/4/2011	9/4/2011	9/4/2011		
Percent Lipids	2.6	3.7	3.4	2.9	3.5	3	0.71	3	6.4		
PCB Aroclors (µg/kg wet)											
Aroclor 1016	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1221	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1232	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1242	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1248	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1254	5.00 U	38.0	12.0	27,000	190	23.0 U	16.0 U	9.20 U	50.0	0.570	HH
Aroclor 1260	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1262	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Aroclor 1268	2.80 U	2.80 U	2.80 U	280 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	0.570	HH
Total PCBs as Aroclors (NDs at MDL) ¹										0.570	HH
Metals (mg/kg wet)											
Aluminum	0.470 J	3.80	3.87	5.18	1.89	0.340 J	0.910	4.82	0.570 J	--	--
Antimony	0.00710 J	0.00950 J	0.00530 J	0.0105 J	0.00390 J	0.0107 J	0.00730 J	0.00800 J	0.00290 J	--	--
Arsenic	0.257	0.419	0.373	0.289	0.275	0.236	0.225	0.278	0.393	0.000760	HH
Barium	1.72	3.27	5.50	2.22	1.96	1.71	2.47	6.12	1.09	--	--
Beryllium	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000900 U	0.000700 U	0.000700 U	0.000900 U	--	--
Cadmium	0.00810	0.0196	0.0204	0.0101	0.00820	0.00590	0.00960	0.0208	0.00540 J	0.150	Eco
Chromium	0.0200 U	0.160	0.140	0.180	0.500	0.0400 J	0.0800	0.0700	0.0300 U	--	--
Cobalt	0.00800	0.0120	0.0150	0.0120	0.0130	0.00800	0.0180	0.0150	0.00800	--	--
Copper	0.518	1.68	1.69	1.08	0.806	0.349	0.507	2.02	0.297	--	--
Lead	0.0133 U	0.00790 U	0.00990 U	0.0155	0.0114 U	0.0112 U	0.00980 U	0.0132 U	0.00840 U	0.120	Eco
Mercury	0.122	0.228	0.0967	0.0941	0.178	0.220	0.234	0.105	0.127	0.0490	HH
Nickel	0.0380 J	0.0820	0.0860	0.0780	0.183	0.0490 J	0.0980	0.0820	0.0390 J	--	--
Thallium	0.0131	0.0132	0.0123	0.0121	0.0126	0.0105	0.0100	0.0101	0.0128	--	--
Vanadium	0.0380 J	0.0570	0.0360 J	0.0310 J	0.0400 J	0.0330 J	0.0470 J	0.0430 J	0.0230 J	--	--
Zinc	13.0	13.4	13.7	13.5	16.5	11.7	14.3	13.7	11.4	--	--
Butyltins (µg/kg wet)											
Dibutyltin Cation	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	--	--
Monobutyltin	0.180 U	0.180 U	0.220 J	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	--	--
Tetrabutyltin	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	--	--
Tri-n-butyltin	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	150	ATLs
Pesticides (µg/kg wet)											
4,4'-DDD	1.70	4.50	2.80	3.00 U	8.60	6.00	3.90	3.20	8.60	--	--
4,4'-DDE	16.0	36.0	22.0	23.0 U	76.0	72.0	38.0	21.0	68.0	--	--
4,4'-DDT	1.30 U	11.0 U	2.90 J	5,000 U	17.0 J	4.30 U	2.80 J	1.70 U	9.30 U	3.40	ATLs
Aldrin	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	0.740 U	--	--
BHC (alpha)	0.200 U	0.210 U	0.160 U	0.220 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	--	--
BHC (beta)	0.410 U	0.700 J	0.870 U	0.460 J	0.670 J	1.30 U	0.410 U	1.20	2.00	--	--
BHC (delta)	0.200 U	0.200 U	0.200 U	0.200 U	0.220 U	0.230 U	0.200 U	0.200 U	0.200 U	--	--
BHC (gamma) Lindane	0.210 U	0.210 U	0.210 U	0.210 U	0.970 J	0.970 U	0.210 U	0.960 U	0.940 U	--	--
Chlordane (alpha)	0.250 U	0.250 U	0.250 U	72.0 U	0.250 U	0.250 U	0.250 U	0.250 U	0.300 J	3.30	ATLs
Chlordane (gamma)	0.260 U	2.00	0.460 J	1,200	3.70	0.560 J	0.550 U	0.290 U	0.990	3.30	ATLs
Dieldrin	0.200 U	1.50	0.200 U	740	2.40 U	0.970 U	0.200 U	0.270 J	0.940 U	0.0720	ATLs
Endosulfan I	0.220 U	0.220 U	0.220 U	190	1.50	0.530 U	0.220 U	0.220 U	0.440 U	--	--
Endosulfan II	0.240 U	0.240 U	0.240 U	8.60 U	0.240 U	0.240 U	0.240 U	0.240 U	0.940 U	--	--
Endosulfan Sulfate	0.530 U	0.530 U	0.530 U	0.530 U	0.530 U	0.530 U	0.530 U	0.530 U	0.530 U	--	--
Endrin	0.280 U	0.620 J	0.280 U	390	0.940 J	0.300 J	0.280 U	0.280 U	0.940 U	--	--
Endrin Aldehyde	0.620 U	1.00	0.620 U	440	1.30	0.620 U	0.620 U	0.620 U	0.620 U	--	--
Endrin Ketone	0.390 U	0.390 U	0.390 U	19.0 U	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U	--	--
Heptachlor	0.270 U	0.270 U	0.270 U	0.270 U	0.620 U	0.270 U	0.270 U	0.270 U	0.940 U	--	--
Heptachlor Epoxide	0.180 U	0.180 U	0.180 U	12.0 U	0.980 U	0.180 U	0.180 U	0.180 U	0.180 U	--	--
Methoxychlor	0.480 U	0.480 U	0.480 U	4.40 U	0.480 U	0.800 J	0.840 U	0.480 U	0.900 J	--	--
Toxaphene	24.0 U	93.0 U	38.0 U	64,000 U	220 U	68.0 U	41.0 U	23.0 U	130 U	--	--
SVOCs (µg/kg wet)											
Acenaphthene	0.940 U	0.980 J	1.10 J	0.940 U	0.940 U	0.960 J	0.0860 J	0.940 U	1.10 J	15,000	HH
Anthracene	4.70 J	0.760 U	4.30 J	2.70 J	2.60 J	3.70 J	0.0470 J	3.50 J	0.980 U	15,000	HH
Benzo(a)anthracene	1.90 U	0.760 U	2.00 U	0.760 U	0.760 U	0.760 U	0.0380 U	1.70 U	0.760 U	1.57	HH
Benzo(a)pyrene	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	0.0730 U	1.50 U	1.50 U	0.157	HH
Benzo(b)fluoranthene	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	0.0660 U	1.40 U	1.40 U	1.57	HH
Benzo(g,h,i)perylene	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	1.90 U	0.0950 U	1.90 U	1.90 U	15.7	HH
Benzo(k)fluoranthene	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	0.0570 U	1.20 U	1.20 U	15.7	HH
Bis(2-ethylhexyl) Phthalate	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	390 U	81.9	HH
Butyl Benzyl Phthalate	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	12.0 U	310	Eco
Carbazole	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	6.20 U	--	--
Chrysene	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U	0.0550 U	1.10 U	1.10 U	157	HH
Dibenz(a,h)anthracene	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	1.80 U	0.0860 U	1.80 U	1.80 U	0.157	HH
Di-n-butyl Phthalate	99.0 U	97.0 U	97.0 U	97.0 U	99.0 U	97.0 U	220 J	98.0 U	8.20 U	626	Eco
Di-n-octyl Phthalate	40.0 U	5.40 U	39.0 U	39.0 U	40.0 U	5.40 U	40.0 U	5.40 U	5.40 U	626	Eco
Fluoranthene	1.10 J	1.50 J	2.00 J	1.90 J	1.00 J	1.70 J	0.150 J	1.50 J	2.10 J	19,000	Eco
Fluorene	1.70 J	3.00 J	4.90 J	4.30 J	2.90 J	4.30 J	0.500 U	3.40 J	3.60 J	15,000	HH
Indeno(1,2,3-cd)pyrene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	0.0960 U	2.00 U	2.00 U	1.57	HH
p-cresol (4-Methylphenol)	26.0 J	25.0 J	59.0	27.0 J	22.0 J	7.60 U	16.0 J	130	23.0 J	--	--
Phenanthrene	5.00 J	6.60 J	8.10 J	6.80 J	5.90 J	6.90 J	0.740 U	6.20 J	8.60 J	15,000	HH
Pyrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	0.0600 J	1.00 U	1.00 U	1,000	Eco

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
Eco = Ecological SLV, Bradford RI
HH = Human Health, Bradford RI
MDL = method detection limit
SLV = screening level value
- = Not Analyzed
-- = SLV for analyte not available

ATLs = Lowest ATL for Human Receptors, Table 3 of Oregon DEQ Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment, April 2007
ND = Non Detect
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL
UJ = The analyte was not detected. The reported MDL is an estimate.
bold = analyte detected above MDL
= The reported concentration exceeds the selected SLV

Table 3
Forebay Clam - Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Area	Forebay	Forebay	Forebay	Forebay	Forebay	Selected SLV	SLV Source
Site ID	P112	P113	P114	P115	P118		
Sample ID	111019P112TC	111019P113TC	111019P114TC	111018P115TC	111018P118TC		
Sample Date	10/19/2011	10/19/2011	10/19/2011	10/18/2011	10/18/2011		
Percent Lipids	1.2	1.6	1.7	1.8	-		
PCB Aroclors (µg/kg wet)							
Aroclor 1016	3.40 U	28.0 U	3.40 U	3.40 U	-	0.570	HH
Aroclor 1221	3.40 U	28.0 U	3.40 U	3.40 U	-	0.570	HH
Aroclor 1232	3.40 U	28.0 U	3.40 U	3.40 U	-	0.570	HH
Aroclor 1242	3.40 U	28.0 U	3.40 U	3.40 U	-	0.570	HH
Aroclor 1248	3.40 U	28.0 U	3.40 U	3.40 U	-	0.570	HH
Aroclor 1254	800	1,200	620	370	-	0.570	HH
Aroclor 1260	3.40 U	28.0 U	3.40 U	3.40 U	-	0.570	HH
Aroclor 1262	3.40 U	28.0 U	3.40 U	3.40 U	-	0.570	HH
Aroclor 1268	3.40 U	28.0 U	3.40 U	3.40 U	-	0.570	HH
Total PCBs as Aroclors (NDs at MDL) ¹	800	1,200	620	370		0.570	HH
Metals (mg/kg wet)							
Aluminum	207	116	176	262	157	--	--
Antimony	0.00440 J	0.00430 J	0.00480 J	0.00480 J	0.00530 J	--	--
Arsenic	1.64	1.71	1.98	1.96	2.24	0.000760	HH
Barium	2.69	2.34	2.34	3.19	2.84	--	--
Beryllium	0.00530	0.00370	0.00480	0.00720	0.00510	--	--
Cadmium	0.319	0.286	0.314	0.308	0.395	0.150	Eco
Chromium	0.520	1.02	0.553	0.805	0.795	--	--
Cobalt	0.137	0.0925	0.114	0.145	0.123	--	--
Copper	6.45	6.65	8.30	7.93	8.78	--	--
Lead	0.105	0.0740	0.107	0.148	0.107	0.120	Eco
Mercury	0.00700	0.00620	0.00660	0.00540	-	0.0490	HH
Methyl Mercury	0.00240	0.00250	0.00280	0.00280	0.00300	0.0490	HH
Nickel	0.317	0.297	0.244	0.361	0.240	--	--
Thallium	0.0100	0.00940	0.0107	0.0100	0.0100	--	--
Vanadium	0.564	0.324	0.429	0.610	0.422	--	--
Zinc	22.3	21.7	22.9	25.0	22.4	--	--
Butyltins (µg/kg wet)							
Dibutyltin Cation	-	0.110 U	-	-	-	--	--
Monobutyltin	-	0.180 U	-	-	-	--	--
Tetrabutyltin	-	0.150 U	-	-	-	--	--
Tri-n-butyltin	-	0.110 U	-	-	-	150	ATLs
Pesticides (µg/kg wet)							
4,4'-DDD	2.00	2.70	2.20	1.20 J	-	--	--
4,4'-DDE	8.40	8.00	9.50	10.0	-	--	--
4,4'-DDT	110 J	110 J	89.0 J	24.0 J	-	3.40	ATLs
Aldrin	0.890 U	0.740 U	0.890 U	0.890 U	-	--	--
BHC (alpha)	0.620 J	0.590 J	0.750 J	0.810 J	-	--	--
BHC (beta)	1.30 U	1.50	1.50 U	2.10 U	-	--	--
BHC (delta)	1.20 U	0.500 U	0.610 J	1.20 U	-	--	--
BHC (gamma) Lindane	0.260 U	0.210 U	0.260 U	0.360 J	-	--	--
Chlordane (alpha)	1.50 U	1.60 U	1.20 U	0.300 U	-	3.30	ATLs
Chlordane (gamma)	16.0	18.0	12.0	5.90	-	3.30	ATLs
Dieldrin	9.30 U	8.60 U	6.70 U	3.10 U	-	0.0720	ATLs
Endosulfan I	5.30 U	1.70	2.70	0.850 J	-	--	--
Endosulfan II	0.290 U	1.00 U	0.290 U	0.290 U	-	--	--
Endosulfan Sulfate	0.640 U	0.530 U	0.640 U	0.640 U	-	--	--
Endrin	3.80	4.10	2.90	1.40	-	--	--
Endrin Aldehyde	2.30	2.90	2.30	1.00 J	-	--	--
Endrin Ketone	0.470 U	0.390 U	0.470 U	0.470 U	-	--	--
Heptachlor	0.360 U	0.400 U	0.510 U	0.570 U	-	--	--
Heptachlor Epoxide	4.40 U	4.30 U	3.20 U	1.50 U	-	--	--
Methoxychlor	0.580 U	1.00 U	1.20 U	1.20 U	-	--	--
Toxaphene	150 U	160 U	150 U	170 U	-	--	--
SVOCs (µg/kg wet)							
Acenaphthene	-	0.740 J	-	-	-	15,000	HH
Anthracene	-	2.70 J	-	-	-	15,000	HH
Benzo(a)anthracene	-	3.50 J	-	-	-	1.57	HH
Benzo(a)pyrene	-	2.70 J	-	-	-	0.157	HH
Benzo(b)fluoranthene	-	3.20 J	-	-	-	1.57	HH
Benzo(g,h,i)perylene	-	2.50 J	-	-	-	15.7	HH
Benzo(k)fluoranthene	-	2.50 J	-	-	-	15.7	HH
Bis(2-ethylhexyl) Phthalate	-	390 U	-	-	-	81.9	HH
Butyl Benzyl Phthalate	-	12.0 U	-	-	-	310	Eco
Carbazole	-	6.20 U	-	-	-	--	--
Chrysene	-	6.10	-	-	-	157	HH
Dibenz(a,h)anthracene	-	4.20 J	-	-	-	0.157	HH
Di-n-butyl Phthalate	-	8.20 U	-	-	-	626	Eco
Di-n-octyl Phthalate	-	5.40 U	-	-	-	626	Eco
Fluoranthene	-	12.0	-	-	-	19,000	Eco
Fluorene	-	2.20 J	-	-	-	15,000	HH
Indeno(1,2,3-cd)pyrene	-	2.60 J	-	-	-	1.57	HH
p-cresol (4-Methylphenol)	-	7.60 U	-	-	-	--	--
Phenanthrene	-	10.0	-	-	-	15,000	HH
Pyrene	-	6.50 J	-	-	-	1,000	Eco

Notes:

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
Eco = Ecological SLV, Bradford RI
HH = Human Health, Bradford RI
MDL = method detection limit
SLV = screening level value
- = Not Analyzed
-- = SLV for analyte not available

ATLs = Lowest ATL for Human Receptors, Table 3 of Oregon DEQ Guidance for A:
Bioaccumulative Chemicals of Concern in Sediment, April 2007
ND = Non Detect
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL
UJ = The analyte was not detected. The reported MDL is an estimate.
bold = analyte detected above MDL
 = The reported concentration exceeds the selected SLV

Table 4
Forebay Sediment - Analytical Results and Screening Criteria for PCB Aroclors, Metals, PAHs, Pesticides, Butyltins, and SVOCs

Area	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Forebay	Selected SLV	SLV Source
Site ID	P112	P113	P114	P115	P116	P117	P118		
Sample ID	111019P112SD	111019P113SD	111019P114SD	111018P115SD	111018P116SD	111018P117SD	111018P118SD		
Sample Date	10/19/2011	10/19/2011	10/19/2011	10/18/2011	10/18/2011	10/18/2011	10/18/2011	Selected SLV	SLV Source
PCB Aroclors (µg/kg dry)									
Aroclor 1016	21.0 U	21.0 U	2.10 U	2.10 U	2.10 U	2.10 U	2.10 U	0.0480	HH
Aroclor 1221	21.0 U	21.0 U	2.10 U	2.10 U	2.10 U	2.10 U	2.10 U	0.0480	HH
Aroclor 1232	21.0 U	21.0 U	2.10 U	2.10 U	2.10 U	2.10 U	2.10 U	0.0480	HH
Aroclor 1242	21.0 U	21.0 U	2.10 U	2.10 U	2.10 U	2.10 U	2.10 U	0.0480	HH
Aroclor 1248	21.0 U	21.0 U	2.10 U	2.10 U	2.10 U	2.10 U	2.10 U	0.0480	HH
Aroclor 1254	670	1,900 J	320	11.0	11.0	86.0	10.0	0.0480	HH
Aroclor 1260	21.0 U	21.0 U	2.10 U	2.10 U	2.10 U	2.10 U	2.10 U	0.0480	HH
Aroclor 1262	21.0 U	21.0 U	2.10 U	2.10 U	2.10 U	2.10 U	2.10 U	0.0480	HH
Aroclor 1268	21.0 U	21.0 U	2.10 U	2.10 U	2.10 U	2.10 U	2.10 U	0.0480	HH
Total PCBs as Aroclors (NDs at MDL) ¹	670	1,900 J	320	11.0	11.0	86.0	10.0	0.0480	HH
Metals (mg/kg dry)									
Aluminum	7,760	6,890	6,940	7,950	8,650	9,340	6,890	38,000	UPL
Antimony	0.698 J	0.317 J	0.108 J	0.0700 J	0.131 J	0.0990 J	0.0850 J	3.00	Eco
Arsenic	2.75	4.72	18.9	2.73	2.61	3.76	2.88	6.00	Eco
Barium	95.9	64.5	88.9	108	156	139	84.7	315	UPL
Beryllium	0.244	0.271	0.227	0.236	0.264	0.224	0.234	0.847	UPL
Cadmium	0.171	0.237	0.249	0.242	0.443	0.265	0.255	0.674	UPL
Chromium	44.6	17.1	18.7	14.3	13.8	15.6	12.5	37.0	Eco
Cobalt	10.4	17.5	8.70	7.21	7.77	8.89	6.92	15.2	UPL
Copper	24.2	46.0 J	23.3	22.6	15.1	14.7	13.6	55.6	UPL
Lead	4.81	11.0 J	9.69	12.0	9.59	7.76	8.72	35.0	Eco
Mercury	0.0250	0.0250	0.0180	0.0400	0.536	0.0370	0.106	0.214	UPL
Nickel	17.5	21.4	14.6	14.2	14.3	19.6	12.4	21.2	UPL
Thallium	0.0910	0.129	0.143	0.105	0.172	0.134	0.115	0.354	UPL
Vanadium	39.5	47.1	47.5	47.9	43.3	52.8	46.6	70.6	UPL
Zinc	191	87.7 J	80.8	95.3	108	109	100	123	Eco
Petroleum Hydrocarbons (mg/kg dry)									
Diesel Range Organics	2.30 J	4.70 J	3.30 J	13.0 J	5.90 J	2.50 J	3.60 J	-	-
Residual Range Organics	5.90 J	39.0	16.0 J	52.0	30.0 J	15.0 J	22.0 J	-	-
Butyltins (µg/kg dry)									
Dibutyltin Cation	0.230 U	0.210 U	0.240 U	0.220 U	0.260 U	0.250 U	0.270 U	-	-
Monobutyltin	0.320 U	0.290 UJ	0.330 U	0.300 U	0.350 U	0.330 U	0.370 U	-	-
Tetrabutyltin	0.530 U	0.490 U	0.550 U	0.510 U	0.590 U	0.560 U	0.620 U	-	-
Tri-n-butyltin	0.520 U	0.480 U	0.540 U	0.500 U	0.570 U	0.550 U	0.600 U	2.3	Eco
Pesticides (µg/kg dry)									
2,4,5-T	4.00 U	4.00 U	4.00 U	4.00 U	4.60 U	4.00 U	4.20 U	-	-
2,4,5-TP (Silvex)	4.50 U	4.50 U	4.50 U	4.50 U	5.20 U	4.50 U	4.70 U	-	-
2,4-D	4.00 U	4.00 U	4.00 U	4.00 U	4.60 U	4.00 U	4.20 U	-	-
2,4-DB	3.70 U	3.70 U	3.70 U	3.70 U	4.30 U	3.70 U	3.90 U	-	-
Dalapon	6.10 U	6.10 U	6.10 U	6.10 U	7.00 U	6.10 U	6.30 U	-	-
Dicamba	4.40 U	4.40 U	4.40 U	4.40 U	5.10 U	4.40 U	4.60 U	-	-
Dichloroprop	9.10 U	9.10 U	9.10 U	9.10 U	11.0 U	9.10 U	9.40 U	-	-
Dinoseb	2.70 U	2.70 U	2.70 U	2.70 U	3.10 U	2.70 U	2.80 U	-	-
MCPA	2,600 U	2,600 U	2,600 U	2,600 U	3,000 U	2,600 U	2,700 U	-	-
MCPP	2,600 U	2,600 U	2,600 U	2,600 U	3,000 U	2,600 U	2,700 U	-	-
4,4'-DDD	0.110 U	0.620 U	0.110 U	0.110 U	0.150 J	0.110 U	0.110 U	0.040	HH
4,4'-DDE	15.0 U	58.0 U	0.110 U	0.130 U	0.360 J	0.660 U	0.290 J	0.040	HH
4,4'-DDT	41.0 J	140 J	31.0 U	1.40 J	0.900 J	6.50 U	0.660 U	0.040	HH
Aldrin	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U	40	Eco
BHC (alpha)	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.90	Eco
BHC (beta)	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.180 U	0.90	Eco
BHC (delta)	0.0940 U	0.320 U	0.0740 U	0.0740 U	0.0740 U	0.0740 U	0.0740 U	0.90	Eco
BHC (gamma) Lindane	0.0800 J	0.220 J	0.0800 U	0.0800 U	0.0800 U	0.0800 U	0.0800 U	0.90	Eco
Chlordane (alpha)	1.90 U	4.70 U	1.30 U	0.100 U	0.260 U	0.660 U	0.210 U	0.046	HH
Chlordane (gamma)	10.0	44.0 J	6.50	0.250 J	0.230 J	1.90	0.160 J	0.046	HH
Dieldrin	6.90 U	29.0 U	4.30 U	0.190 U	0.140 U	1.30 U	0.140 U	0.001	HH
Endosulfan I	2.10 U	5.40 U	1.40 U	0.0630 U	0.0630 U	0.660 U	0.0630 U	0.001	HH
Endosulfan II	0.140 U	0.620 U	0.140 U	0.140 U	0.140 U	0.140 U	0.140 U	0.001	HH
Endosulfan Sulfate	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.110 U	0.001	HH
Endrin	2.70	7.40	1.90	0.0940 U	0.0940 U	0.540 J	0.0940 U	3.0	Eco
Endrin Aldehyde	3.20	8.20	2.20	0.120 U	0.120 U	0.670	0.120 U	3.0	Eco
Endrin Ketone	0.590 U	0.620 U	0.320 J	0.0930 U	0.0930 U	0.0930 U	0.0930 U	3.0	Eco
Heptachlor	0.190 U	0.360 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.001	HH
Heptachlor Epoxide	3.50 U	0.440 J	0.620 U	0.0890 U	0.0840 U	0.0840 U	0.0840 U	0.6	Eco
Methoxychlor	0.190 U	0.620 U	0.620 U	0.190 U	0.190 U	0.190 U	0.190 U	-	-
Toxaphene	170 U	1,900 U	99.0 U	16.0 U	14.0 U	83.0 U	7.50 U	-	-
SVOCs (µg/kg dry)									
Bis(2-ethylhexyl) Phthalate	7.00 U	7.50 J	8.50 J	79.0	350	7.00 U	7.00 U	750	Eco
Butyl Benzyl Phthalate	3.20 U	3.20 U	3.20 U	3.20 U	3.20 U	3.20 U	3.20 U	110	Eco
Di-n-butyl Phthalate	7.90 U	7.90 U	7.90 U	7.90 U	8.80 J	7.90 U	7.90 U	110	Eco
Di-n-octyl Phthalate	1.70 U	1.70 U	1.70 U	1.70 U	1.70 U	1.70 U	1.70 U	110	Eco
p-cresol (4-Methylphenol)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	-	-
General Chemistry Parameters (%)									
Carbon, Total Organic	0.132	0.0890	0.134	0.186	0.468	0.203	0.379	-	-
Gravel	41.7	35.7	16.4	10.7	3.57	15.1	3.88	-	-
Sand, Very Coarse	16.2	22.8	16.8	5.17	1.45	4.30	0.530	-	-
Sand, Coarse	8.92	11.8	18.4	11.7	1.13	8.62	0.980	-	-
Sand, Medium	7.33	8.78	12.3	16.5	2.50	15.6	12.4	-	-
Sand, Fine	14.6	13.1	22.3	36.7	38.6	41.4	46.5	-	-
Sand, Very Fine	6.15	3.36	5.92	9.13	29.4	8.77	17.5	-	-
Silt, Medium	3.40	3.64	3.96	4.87	12.6	3.99	7.95	-	-
Clay, Medium	1.18	1.99	2.16	1.84	3.88	2.16	2.95	-	-

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
Eco = Ecological SLV, Bradford RI
HH = Human Health, Bradford RI
MDL = method detection limit
SLV = screening level value
- = Not Analyzed
-- = SLV for analyte not available

ATLs = Lowest ATL for Human Receptors, Table 3 of Oregon DEQ Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment, April 2007
ND = Non Detect
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL
UJ = The analyte was not detected. The reported MDL is an estimate.
bold = analyte detected above MDL
 = The reported concentration exceeds the selected SLV

Table 5
Reference Area Smallmouth Bass - Analytical Results and Screening Criteria for PCB Congeners
August 2011 Sampling

		R08202011SB 39 8/20/2011	R08202011SB 41 8/20/2011	R08202011SB 42 8/20/2011	R08202011SB 43 8/20/2011	R08202011SB 44 8/20/2011	R08202011SB 45 8/20/2011	R08202011SB 46 8/20/2011	R08202011SB 47 8/20/2011	R08202011SB 48 8/20/2011
IUPAC #	COELUTING CONGENERS ¹									
Individual Congeners in pg/g (ng/kg), wet weight										
1		1.38 J	0.644 J	0.610 J	0.794 J	0.829 J	0.759 J	0.743 J	2.090 U	1.29 J
2		0.615 J	1.980 U	0.579 J	0.874 J	0.834 J	0.493 J	0.600 J	0.678 J	0.809 J
3		1.17 J	1.980 U	1.940 U	1.950 U	2.140 U	2.090 U	2.090 U	2.090 U	2.090 U
4		4.68	2.38	2.90	3.73	3.78	2.71	1.97 J	2.01 J	4.38
5		0.195 J	0.130 U	0.196 U	0.204 J	0.169 U	0.140 U	0.248 U	0.179 U	0.174 J
6		1.66 J	0.817 J	1.25 J	2.09	1.46 J	0.952 J	1.54 J	0.891 J	1.79 J
7		0.751 J	0.486 J	0.494 J	0.599 J	0.641 J	0.571 J	0.388 J	0.290 J	0.614 J
8		6.90	3.69	6.30	9.81	6.94	4.48	2.92	4.78	8.24
9		0.665 J	0.402 J	0.525 J	0.720 J	0.623 J	0.444 J	0.248 J	0.306 J	0.707 J
10		0.249 J	0.123 J	0.160 U	0.193 J	0.186 J	0.148 J	0.200 U	0.144 U	0.221 J
11		203	118	157	257	307	162	67.6	433	343
12	12 + 13	0.183 C U	0.128 C U	0.186 C U	0.190 C U	0.170 C U	0.141 C U	1.10 C J	0.180 C U	0.131 C U
13	12 + 13	C12	C12	C12	C12	C12	C12	C12	C12	C12
14		0.172 U	0.121 U	0.175 U	0.180 U	0.156 U	0.130 U	0.230 U	0.166 U	0.120 U
15		2.22	1.57 J	2.25	4.15	3.09	1.87 J	1.12 J	3.35	3.22
16		4.76	2.80	7.28	11.6	6.73	3.31	1.95 J	4.87	7.73
17		7.47	4.48	12.2	23.5	12.0	5.71	3.69	8.17	14.0
18	18 + 30	14.2 C	9.47 C	23.8 C	43.7 C	22.9 C	9.96 C	6.63 C	15.4 C	27.3 C
19		1.46 J	0.807 J	1.65 J	2.42	1.66 J	1.16 J	0.737 J	1.20 J	1.78 J
20	20 + 28	61.5 C	76.6 C	151 C	240 C	120 C	54.9 C	50.2 C	111 C	153 C
21	21 + 33	11.0 C	10.9 C	23.9 C	42.5 C	20.5 C	9.13 C	7.17 C	15.1 C	24.0 C
22		12.1	17.2	27.2	47.2	21.7	12.3	11.0	22.4	26.0
23		0.0540 U	0.0670 J	0.148 U	0.212 J	0.132 J	0.0524 U	0.0522 U	0.0870 J	0.144 J
24		0.262 J	0.206 J	0.498 J	0.713 J	0.397 J	0.231 EMPC	0.109 EMPC	0.259 EMPC	0.541 J
25		1.88 J	2.33	4.57	12.0	3.56	2.22	1.57 J	3.94	4.27
26	26 + 29	6.95 C	7.75 C	15.3 C	31.0 C	13.3 C	6.37 C	5.09 C	11.9 C	15.7 C
27		1.39 J	0.858 J	1.72 J	3.32	1.82 J	1.02 J	0.638 J	1.35 J	2.15
28	20 + 28	C20	C20	C20	C20	C20	C20	C20	C20	C20
29	26 + 29	C26	C26	C26	C26	C26	C26	C26	C26	C26
30	18 + 30	C18	C18	C18	C18	C18	C18	C18	C18	C18
31		28.6	31.2	70.0	122	55.7	29.1	19.9	54.6	69.0
32		2.23	1.56 J	3.58	9.77	3.98	1.64 J	1.12 J	2.30	4.48
33	21 + 33	C21	C21	C21	C21	C21	C21	C21	C21	C21
34		0.168 J	0.204 J	0.304 J	0.722 J	0.443 J	0.154 J	0.135 J	0.302 J	0.523 J
35		1.930 U	1.9800 U	0.160 U	0.155 U	0.197 J	0.169 J	0.0522 U	0.485 J	0.224 J
36		0.0536 U	0.0495 U	0.147 U	0.142 U	0.0536 U	0.0522 U	0.0522 U	0.311 J	0.0869 U
37		6.72	6.47	9.52	17.6	7.29	7.30	3.41	12.6	9.97
38		0.109 EMPC	0.358 EMPC	0.340 J	0.452 J	0.0536 U	0.0530 U	0.0522 U	0.0694 U	0.0891 U
39		0.462 J	1.42 J	1.25 J	1.91 J	0.951 J	0.439 J	0.595 J	0.935 J	1.22 J
40	40 + 41 + 71	22.1 C	78.7 C	54.8 C	98.6 C	42.8 C	19.8 C	22.5 C	39.6 C	48.1 C
41	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40	C40	C40
42		17.8	69.3	44.7	92.5	31.1	17.1	26.6	33.9	37.7
43		4.17	11.4	10.9	15.7	7.17	2.55	4.54	5.89	8.46
44	44 + 47 + 65	121 C	460 C	306 C	533 C	211 C	97.1 C	159 C	212 C	275 C
45	45 + 51	6.68 C	9.74 C	12.7 C	25.5 C	10.1 C	5.59 C	4.69 C	9.33 C	11.8 C
46		1.51 J	1.17 J	2.83	5.21	2.06 J	1.25 J	0.949 J	2.44	2.67
47	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44	C44	C44
48		15.1	48.8	38.4	64.9	26.6	11.7	18.9	24.2	32.7
49	49 + 69	93.4 C	364 C	244 C	420 C	171 C	74.7 C	126 C	170 C	211 C
50	50 + 53	4.50 C	6.35 C	10.3 C	25.4 C	7.57 C	4.83 C	3.66 C	8.54 C	9.09 C
51	45 + 51	C45	C45	C45	C45	C45	C45	C45	C45	C45
52		224 U	553	555	843	400	177	245	417	502
53	50 + 53	C50	C50	C50	C50	C50	C50	C50	C50	C50
54		0.150 EMPC	0.0700 J	0.173 EMPC	0.369 J	0.146 J	0.0990 J	0.0630 J	0.134 J	0.160 J
55		0.465 U	0.175 U	0.206 U	0.341 U	0.571 U	0.315 U	0.492 U	0.312 U	0.530 U
56		22.6 U	82.7	65.3	116	38.9	33.5	31.9	56.0	49.0
57		0.905 J	4.07	2.80	3.49	1.73 J	0.809 J	1.75 J	1.84 J	2.19
58		0.770 J	2.01	2.12	1.86 J	1.24 J	0.815 J	1.68 J	1.80 J	1.35 J
59	59 + 62 + 75	10.9 C	36.8 C	29.4 C	43.6 C	19.7 C	9.21 C	15.1 C	20.1 C	25.9 C
60		56.5	300	166	250	104	49.0	106	106	147
61	61 + 70 + 74 + 76	332 C U	1,290 C	942 C	1,630 C	602 C	327 C	592 C	667 C	832 C
62	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59	C59	C59
63		16.6	76.5	43.6	71.0	26.6	13.4	39.4	26.6	38.9
64		58.1	212	165	241	112	45.8	78.9	107	134
65	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44	C44	C44
66		268	1,190	761	1,270	445	228	548	450	661
67		2.40	9.45	8.23	12.1	4.85	3.47	5.38	6.43	5.77
68		5.02	12.0	10.7	15.7	7.00	4.17	10.5	7.60	9.14
69	49 + 69	C49	C49	C49	C49	C49	C49	C49	C49	C49
70	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61
71	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40	C40	C40
72		4.81	17.9	13.1	20.3	8.99	4.34	12.2	9.45	12.6
73		0.0482 U	0.0495 U	0.0487 U	0.0488 U	0.0536 U	0.0522 U	0.0522 U	0.0523 U	0.0523 U
74	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61
75	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59	C59	C59
76	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61
77		13.5	30.3	36.6	64.6	20.6	13.1	23.0	25.0	32.9
78		0.465 U	0.182 U	0.206 U	0.356 U	0.580 U	0.320 U	0.499 U	0.317 U	0.538 U
79		4.68 U	24.0	12.7	23.3	7.92	6.45	12.2	12.2	10.5
80		0.415 U	0.157 U	0.984 J	1.06 J	0.524 U	0.344 EMPC	0.451 U	0.287 U	0.487 U
81		0.901 EMPC	1.93 EMPC	1.73 EMPC	2.57 EMPC	0.864 J	0.778 J	1.42 J	1.22 J	1.56 J
82		22.0 U	147	50.5 U	108	27.8	25.8	35.8	46.0	30.7
83	83 + 99	897 C	4,170 C	2,370 C	4,410 C	1,310 C	682 C	2,110 C	1,440 C	2,110 C
84		38.6 U	183	104	205	57.1	48.1	58.6	88.5	69.1
85	85 + 116 + 117	271 C	1,330 C	675 C	1,150 C	415 C	200 C	556 C	399 C	617 C
86	86 + 87 + 97 + 108 + 119 + 125	383 C U	2,070 C	930 C	1,600 C	543 C	350 C	672 C	712 C	678 C
87	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86
88	88 + 91	46.2 C U	292 C	124 C	211 C	66.6 C	49.6 C	79.6 C	93.9 C	82.4 C
89		0.997 J	9.12	2.89	4.90	2.12 J	1.44 J	1.32 J	2.61	2.37
90	90 + 101 + 113	913 C U	3,960 C	2,280 C	3,420 C	1,360 C	801 C	1,620 C	1,680 C	1,810 C
91	88 + 91	C88	C88	C88	C88	C88	C88	C88	C88	C88
92		206	811	530	684	312	166	348	359	430
93	93 + 95 + 98 + 100 + 102	280 C U	1,110 C	712 C	1,180 C	444 C	261 C	409 C	529 C	539 C
94		0.438 U	1.86 J	1.27 J	2.35	0.671 J	0.679 J	0.462 J	1.24 J	0.806 J
95	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93
96		1.30 J	4.95	2.79	4.43	1.90 J	0.796 J	1.16 J	1.93 J	2.36
97	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86
98	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93
99	83 + 99	C83	C83	C83	C83	C83	C83	C83	C83	C83
100	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93
101	90 + 101 + 113	C90	C90	C90	C90	C90	C90	C90	C90	C90
102	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93
103		4.18	20.8	10.8	15.9	6.82	4.70	7.52	9.33	8.30
104		0.104 U	0.141 J	0.105 U	0.263 J	0.103 J	0.0550 J	0.117 U	0.145 EMPC	0.0860 EMPC
105		598 U	2,590	1,420	2,660	817	454	1,270	906	1,290
106		0.327 U	0.414 U	0.447 U	0.592 U	0.439 U	0.316 U	0.443 U	0.380 U	0.474 U
107	107 + 124	33.0 C U	122 C	84.5 C	125 C	49.6 C	32.0 C	61.0 C	63.5 C	69.2 C
108	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86
109		152	571	363	582	200	122	425	228	343
110	110 + 115	660 C U	3,250 C	1,730 C	2,740 C	1,040 C	597 C	1,100 C	1,300 C	1,340 C
111		1.96	9.44	5.13	9.44	3.01	1.79 J	6.80	2.73	5.29
112		0.321 U	0.631 U	0.378 U	0.333 U	0.190 U	0.312 U	0.292 U	0.252 U	0.118 U
113	90 + 101 + 113	C90	C90	C90	C90	C90	C90	C90	C90	C90
114		46.1 U	212	103	206	54.6	32.4	128	58.3	102
115	110 + 115	C110	C110	C110	C110	C110	C110	C110	C110	C110
116	85 + 116 + 117	C85	C85	C85	C85	C85				

Table 5
Reference Area Smallmouth Bass - Analytical Results and Screening Criteria for PCB Congeners
August 2011 Sampling

IUPAC #	COELUTING CONGENERS ¹	39 R08202011SB 39 8/20/2011	41 R08202011SB 41 8/20/2011	42 R08202011SB 42 8/20/2011	43 R08202011SB 43 8/20/2011	44 R08202011SB 44 8/20/2011	45 R08202011SB 45 8/20/2011	46 R08202011SB 46 8/20/2011	47 R08202011SB 47 8/20/2011	48 R08202011SB 48 8/20/2011	
165		1.94	11.6	5.34	8.63	2.78	1.84 J	6.25	2.98	5.14	
166	128 + 166	C128	C128	C128	C128	C128	C128	C128	C128	C128	
167		103	295	233	467	120	76.8	331	124	231	
168	153 + 168	C153	C153	C153	C153	C153	C153	C153	C153	C153	
169		1.41 U	4.46 U	3.68 U	6.87 U	1.69 U	0.818 U	2.95 U	1.51 U	2.87 U	
170		332	2,270	834	1,380	447	242	919	401	815	
171	171 + 173	130 C	866 C	337 C	678 C	154 C	98.3 C	372 C	159 C	294 C	
172		71.2	518	173	267	81.6	51.0	154	79.8	141	
173	171 + 173	C171	C171	C171	C171	C171	C171	C171	C171	C171	
174		87.9	630	225	301	97.7	105	188	139	141	
175		14.5	71.1	32.1	51.3	14.9	12.1	37.5	19.1	25.2	
176		12.0	84.5	32.8	56.4	12.0	18.2	35.8	23.5	19.0	
177		165	899	411	643	171	188	541	256	316	
178		140	623	359	668	159	112	426	189	296	
179		97.8	381	251	335	111	83.4	191	148	167	
180	180 + 193	940 C	6,640 C	2,380 C	4,760 C	1,220 C	724 C	3,350 C	1,130 C	2,420 C	
181		7.03	37.6	16.2	36.3	7.58	4.92	20.3	7.62	14.2	
182		4.66	26.0	11.2	16.5	6.12	3.42	11.1	4.97 J	8.82	
183	183 + 185	324 C	2,110 C	797 C	1,490 C	375 C	232 C	948 C	392 C	668 C	
184		4.11	13.6	8.84	17.6	4.64 J	2.80	9.64	4.56 J	9.00	
185	183 + 185	C183	C183	C183	C183	C183	C183	C183	C183	C183	
186		0.0666 U	0.114 U	0.0794 U	0.115 U	0.0617 U	0.0522 U	0.0876 U	0.0894 U	0.0593 U	
187		921	3,730	2,200	3,950	936	810	3,370	1,190	1,880	
188		2.31	10.2	5.64	9.65	2.72 J	2.02 J	7.53	2.96 J	5.10	
189		15.4	94.4	36.4	70.6	17.9	10.4	43.5	15.8	35.9	
190		126	641	312	657	154	87.2	412	143	309	
191		17.8	119	40.7	83.6	19.3	12.3	54.3	18.5	37.3	
192		0.0809 U	0.135 U	0.0964 U	0.137 U	0.0719 U	0.0536 U	0.107 U	0.104 U	0.0724 U	
193	180 + 193	C180	C180	C180	C180	C180	C180	C180	C180	C180	
194		102	960	260	531	159	99.8	431	129	333	
195		60.9	401	159	337	88.3	52.0	249	74.3	197	
196		74.1	552	172	326	86.2	47.4	202	70.9	158	
197	197 + 200	18.7 C	121 C	42.5 C	86.6 C	16.2 C	13.5 C	45.9 C	18.8 C	32.4 C	
198	198 + 199	162 C	1,040 C	387 C	638 C	182 C	116 C	401 C	175 C	303 C	
199	198 + 199	C198	C198	C198	C198	C198	C198	C198	C198	C198	
200	197 + 200	C197	C197	C197	C197	C197	C197	C197	C197	C197	
201		24.6	110	55.4	107	26.4	19.9	72.6	28.6	48.6	
202		69.5	367	192	404	92.8	57.4	245	89.6	176	
203		160	1,140	399	915	191	106	473	159	363	
204	0.339 EMPC	1.71 J	0.960 J	1.60 J	0.394 J	0.223 J	0.999 J	0.370 EMPC	0.719 J		
205		7.48	53.7	17.9	45.7	9.59	5.66	25.6	8.02	19.6	
206		53.0	339	131	284	63.0	35.6	145	51.0	119	
207		12.2	56.5	29.5	62.6	15.5	8.77	39.0	13.0	30.4	
208		19.3	92.4	47.8	82.8	23.2	14.8	48.5	21.4	41.0	
209		24.0	93.3	60.4	137	28.0	21.3	78.5	25.6	63.9	
Maximum Detected Concentration		3,190 C	17,000 C	9,480 C	19,200 C	4,070 C	2,560 C	13,400 C	4,440 C	8,950 C	Total PCB SLV
Minimum Detected Concentration		0.109 EMPC	0.0670 J	0.173 EMPC	0.193 J	0.103 J	0.0550 J	0.0630 J	0.0870 J	0.0860 EMPC	pg/g
Total of Detected Concentrations		17,155 J	105,973 J	55,610 J	101,215 J	29,089 J	18,067 J	60,324 J	32,926 J	49,848 J	570

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
¹= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit

Table 5
Reference Area Smallmouth Bass - Analytical Results and Screening Criteria for PCB Congeners
August 2011 Sampling

		49 R0820201LSB 49 8/20/2011	50 R0820201LSB 50 8/20/2011	52 R0820201LSB 52(Duplicate) 8/20/2011	55 R0821201LSB 55 8/21/2011	56 R0821201LSB 56 8/21/2011	57 R0821201LSB 57 8/21/2011	58 R0821201LSB 58 8/21/2011	59 R0821201LSB 59 8/21/2011	60 R0821201LSB 60 8/21/2011	61 R0821201LSB 61 8/21/2011
IUPAC #	COELUTING CONGENERS ¹										
Individual Congeners in pg/g (ng/kg), wet weight											
1		1.25 J	3.18	0.561 J	0.771 J	1.14 J	1.53 J	1.26 J	0.865 J	0.715 J	0.907 J
2		0.801 J	1.47 J	1.990 U	1.38 J	0.807 J	0.644 J	0.852 J	1.34 J	0.818 J	0.644 J
3		2.120 U	2.10 U	1.990 U	2.130 U	2.250 U	2.150 U	2.200 U	2.180 U	2.200 U	2.130 U
4		3.99	715	2.30	3.45	2.98	3.47	4.16	3.03	2.72	2.83
5		0.172 U	0.252 U	0.294 U	0.181 J	0.173 U	0.117 U	0.164 U	0.222 U	0.147 J	0.143 U
6		1.62 J	125	0.972 J	2.16	1.15 J	1.09 J	1.58 J	1.45 J	1.14 J	0.895 J
7		0.538 J	169	0.300 J	0.466 J	0.282 J	0.290 J	0.361 J	0.297 J	0.340 J	0.259 J
8		7.76	212	4.63	9.22	5.78	4.79	7.80	7.55	5.85	4.71
9		0.612 J	303	0.503 J	0.581 J	0.417 J	0.394 J	0.589 J	0.532 J	0.469 J	0.341 J
10		0.199 J	31.1	0.240 U	0.143 J	0.148 U	0.152 J	0.206 J	0.189 U	0.116 U	0.143 J
11		336	403	108	183	308	225	437	217	346	270
12	12 + 13	0.174 C U	14.8 C	0.279 C U	0.797 C J	0.184 C U	0.125 C U	0.174 C U	0.581 C J	0.689 C J	0.151 C U
13	12 + 13	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12
14		0.160 U	0.245 U	0.262 U	0.147 U	0.168 U	0.114 U	0.159 U	0.215 U	0.132 U	0.138 U
15		3.16	55.8	1.99 U	3.87	2.80	2.12 J	3.44	2.51	3.16	2.36
16		7.05	74.3	4.87	10.8	5.39	3.87	8.21	6.41	7.32	3.84
17		12.5	2,580	8.18	16.8	8.19	5.53	13.4	12.7	11.6	6.07
18	18 + 30	24.8 C	1,350 C	15.5 C	34.8 C	16.3 C	11.1 C	27.0 C	25.3 C	22.6 C	12.4 C
19		1.65 J	779	1.24 J	2.49	1.21 J	0.977 J	1.83 J	1.40 J	1.53 J	1.08 J
20	20 + 28	148 C	1,230 C	88.2 C	215 C	94.4 C	58.9 C	140 C	123 C	113 C	74.1 C
21	21 + 33	23.5 C	133 C	14.2 C	36.8 C	15.9 C	10.1 C	23.0 C	26.5 C	20.6 C	11.2 C
22		25.5	112	18.8	44.8	17.0	10.9	24.2	25.2	21.6	13.8
23		0.139 J	1.47 J	0.0800 J	0.222 J	0.0870 J	0.0640 EMPC	0.111 J	0.0960 J	0.102 J	0.0710 J
24		0.535 J	0.0524 U	0.294 EMPC	0.604 J	0.266 EMPC	0.224 J	0.461 EMPC	0.433 J	0.410 J	0.211 J
25		4.09	512	3.21	9.17	2.85	1.85 J	3.70	3.96	3.81	2.28
26	26 + 29	15.0 C	1,520 C	9.69 C	23.9 C	9.86 C	6.13 C	14.3 C	13.3 C	12.7 C	7.71 C
27		1.89 J	930	1.27 J	2.47	1.35 J	0.896 J	2.18 J	1.83 J	1.81 J	0.992 J
28	20 + 28	C20	C20	C20	C20	C20	C20	C20	C20	C20	C20
29	26 + 29	C26	C26	C26	C26	C26	C26	C26	C26	C26	C26
30	18 + 30	C18	C18	C18	C18	C18	C18	C18	C18	C18	C18
31		66.8	812	43.9	113	43.4	26.7	58.9	62.7	58.7	34.0
32		4.06	804	2.53	6.25	2.32	1.49 J	3.97	4.48	3.24	1.75 J
33	21 + 33	C21	C21	C21	C21	C21	C21	C21	C21	C21	C21
34		0.491 J	20.4	0.253 J	0.784 J	0.366 J	0.193 J	0.529 J	0.393 J	0.449 J	0.229 J
35		0.227 EMPC	0.496 U	0.0840 U	0.105 U	0.177 J	0.146 J	0.252 J	0.0900 EMPC	0.207 J	0.292 J
36		0.0751 U	0.440 U	0.0768 U	0.0931 U	0.102 EMPC	0.0538 U	0.0718 U	0.0738 U	0.0719 U	0.0540 U
37		9.73	70.0	6.99	17.1	7.75	6.48	8.53	7.92	10.0	7.29
38		0.0770 U	2.21	0.176 J	0.474 J	0.119 J	0.126 J	0.259 J	0.212 EMPC	0.230 J	0.145 J
39		1.27 J	11.9	0.689 J	1.77 J	0.686 J	0.427 J	0.962 J	0.863 J	0.896 J	0.499 J
40	40 + 41 + 71	49.8 C	1,570 C	35.2 C	93.5 C	31.6 C	21.2 C	47.6 C	43.0 C	47.3 C	22.2 C
41	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40	C40	C40	C40
42		38.1	670	30.3	84.4	23.7	15.9	35.7	30.7	36.5	17.5
43		9.07	117	6.16	11.7	5.23	3.25	7.73	6.60	6.83	3.56
44	44 + 47 + 65	275 C	7,040 C	179 C	470 C	158 C	107 C	249 C	193 C	219 C	121 C
45	45 + 51	11.0 C	646 C	9.66 C	22.2 C	6.81 C	5.12 C	10.5 C	9.39 C	11.5 C	5.19 C
46		2.38	132	2.34	4.76	1.85 J	1.30 J	2.42	2.29	2.72	1.23 J
47	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44	C44	C44	C44
48		33.0	346	22.3	54.2	20.0	13.3	31.7	27.3	28.6	13.9
49	49 + 69	210 C	4,900 C	139 C	377 C	126 C	85.9 C	199 C	156 C	177 C	99.1 C
50	50 + 53	8.59 C	1,960 C	7.76 C	20.0 C	5.86 C	4.18 C	8.36 C	6.82 C	9.85 C	4.23 C
51	45 + 51	C45	C45	C45	C45	C45	C45	C45	C45	C45	C45
52		497	15,700	309	772	304	209	484	345	414	250
53	50 + 53	C50	C50	C50	C50	C50	C50	C50	C50	C50	C50
54		0.182 J	84.3	0.127 J	0.347 EMPC	0.111 J	0.113 J	0.165 J	0.109 J	0.145 J	0.0840 J
55		0.483 U	0.766 U	0.275 U	0.335 U	0.249 U	0.373 U	0.386 U	0.354 U	0.421 U	0.374 U
56		50.5	1,200	48.0	132	29.9	20.9	41.6	36.3	43.9	26.4
57		2.30	18.5	1.70 J	3.86	1.31 J	0.963 J	1.99 J	1.60 J	1.56 J	1.14 J
58		1.85 J	0.718 U	1.56 J	3.54	1.19 J	0.818 J	1.75 J	1.40 J	1.31 J	0.923 J
59	59 + 62 + 75	26.0 C	201 C	16.8 C	39.9 C	14.4 C	9.66 C	22.2 C	17.8 C	19.8 C	11.1 C
60		148	748	83.8	205	71.5	58.0	122	96.7	94.1	65.2
61	61 + 70 + 74 + 76	853 C	15,500 C	576 C	1,360 C	471 C	346 C	673 C	551 C	612 C	390 C
62	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59	C59	C59	C59
63		41.4	205	29.5	54.0	21.6	16.4	30.2	26.1	23.6	17.4
64		137	1,880	93.1	240	81.5	53.7	130	100	112	59.7
65	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44	C44	C44	C44
66		664	5,040	466	935	369	285	565	430	438	307
67		6.31	141	5.64	14.5	3.49	2.47	4.68	4.40	5.36	3.18
68		9.96	61.0	8.38	16.5	5.98	4.53	7.88	6.38	6.87	4.71
69	49 + 69	C49	C49	C49	C49	C49	C49	C49	C49	C49	C49
70	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61	C61
71	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40	C40	C40	C40
72		12.5	83.4	7.61	18.2	6.90	4.95	10.4	7.32	8.31	5.45
73		0.0531 U	0.0912 U	0.0497 U	0.0532 U	0.0562 U	0.0538 U	0.0551 U	0.0544 U	0.0551 U	0.0533 U
74	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61	C61
75	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59	C59	C59	C59
76	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61	C61
77		32.0	107	35.6	59.8	17.5	15.0	23.5	21.2	22.0	15.1
78		0.491 U	0.780 U	0.275 U	0.341 U	0.253 U	0.379 U	0.393 U	0.361 U	0.429 U	0.380 U
79		12.0	268	8.54 U	23.8	4.86	4.18	8.35	6.05	8.19	4.15
80		1.02 J	0.682 U	0.674 J	1.15 J	0.222 U	0.380 J	0.752 J	0.418 J	0.594 J	0.375 J
81		1.73 J	5.43	1.84 EMPC	3.70	0.751 J	0.867 J	1.40 J	0.925 J	1.19 J	0.897 J
82		30.1	2,710	40.8 U	127	22.7	17.4	32.9	25.0	41.9	18.3
83	83 + 99	2,170 C	18,600 C	1,270 C	3,100 C	1,060 C	901 C	1,770 C	1,220 C	1,290 C	926 C
84		69.3	6,050	86.5	225	46.0	36.5	74.3	50.6	82.5	32.4
85	85 + 116 + 117	609 C	5,530 C	364 C	942 C	327 C	294 C	535 C	385 C	399 C	272 C
86	86 + 87 + 97 + 108 + 119 + 125	680 C	20,900 C	595 C U	1,520 C	431 C	345 C	714 C	469 C	631 C	365 C
87	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86	C86
88	88 + 91	82.7 C	3,420 C	94.4 C	250 C	52.1 C	39.6 C	86.7 C	56.9 C	91.2 C	39.0 C
89		2.46	123	2.00	5.15	1.56 J	1.16 J	2.55	1.85 J	3.06	0.989 J
90	90 + 101 + 113	1,790 C	30,400 C	1,330 C	3,400 C	1,050 C	845 C	1,840 C	1,150 C	1,490 C	926 C
91	88 + 91	C88	C88	C88	C88	C88	C88	C88	C88	C88	C88
92		424	4,620	276	672	238	199	426	269	313	209
93	93 + 95 + 98 + 100 + 102	558 C	20,900 C	471 C	1,210 C	331 C	257 C	555 C	366 C	506 C	266 C
94		0.886 J	85.1	1.01 J	3.20	0.495 J	0.384 J	0.691 J	0.488 J	1.05 J	0.325 J
95	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93	C93
96		2.27	95.0	1.41 J	3.55	1.36 J	1.12 J	2.67	1.80 J	2.09 J	1.04 J
97	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86	C86
98	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93	C93
99	83 + 99	C83	C83	C83	C83	C83	C83	C83	C83	C83	C83
100	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93	C93
101	90 + 101 + 113	C90	C90	C90	C90	C90	C90	C90	C90	C90	C90
102	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93	C93
103		8.29	124	7.65	19.3	5.03	3.99	8.16	5.47	8.02	4.40
104		0.0910 J	1.89 J	0.121 J	0.331 J	0.0774 U	0.0637 U	0.0910 J	0.0897 U	0.0987 U	0.0533 U
105		1.240	12,800	782 U	1,950	674	590	1,120	759	798	595
106		0.333 U	1.29 U	0.414 U	0.694 U	0.254 U	0.400 U	0.392 U	0.3		

Table 5
Reference Area Smallmouth Bass - Analytical Results and Screening Criteria for PCB Congeners
August 2011 Sampling

IUPAC #	COELUTING CONGENERS ¹	49 F0820201LSB 49 8/20/2011	50 F0820201LSB 50 8/20/2011	52 F0820201LSB 52(Duplicate) 8/20/2011	55 F0821201LSB 55 8/21/2011	56 F0821201LSB 56 8/21/2011	57 F0821201LSB 57 8/21/2011	58 F0821201LSB 58 8/21/2011	59 F0821201LSB 59 8/21/2011	60 F0821201LSB 60 8/21/2011	61 F0821201LSB 61 8/21/2011	
179		188	605	143	376	96.2	76.5	179	115	134	73.9	
180	180 + 193	2,390 C	5,290 C	1,590 C	3,100 C	1,030 C	976 C	1,650 C	1,310 C	1,180 C	879 C	
181		15.3	67.4	10.7	23.8	6.18	5.87	10.1	8.01	6.87	5.06	
182		9.19 J	34.8	6.34	16.9	4.48	3.89	6.85	5.78	5.25	3.56	
183	183 + 185	730 C	1,740 C	445 C	958 C	304 C	271 C	514 C	377 C	350 C	254 C	
184		9.13 J	10.9 J	3.83	9.60	3.81	3.38	6.40	4.07	4.30	3.03	
185	183 + 185	C183	C183	C183	C183	C183	C183	C183	C183	C183	C183	
186		0.212 U	2.01 J	0.0877 U	0.240 U	0.0562 U	0.0539 U	0.0728 U	0.0792 U	0.0614 U	0.0533 U	
187		1,930	3,410	2,010	2,880	851	745	1,410	1,160	1,030	765	
188		4.45 EMPC	7.76 J	4.58	7.06 J	2.39	2.15 J	4.10	2.83	3.00	2.21	
189		34.3	118	23.7	52.5	15.7	15.4	25.7	20.0	18.0	13.5	
190		305	576	184	322	122	118	212	152	141	105	
191		39.7	112	26.5	50.8	16.1	15.6	26.8	20.8	18.2	13.6	
192		0.271 J	0.852 U	0.107 U	0.280 U	0.0562 U	0.0632 U	0.0853 U	0.0927 U	0.0719 U	0.0533 U	
193	180 + 193	C180	C180	C180	C180	C180	C180	C180	C180	C180	C180	
194		311	608	153	407	138	110	183	167	130	95.3	
195		165	259	97.5	175	75.1	71.2	130	86.0	88.0	65.1	
196		164	310	106	205	71.5	72.6	124	93.8	81.2	66.9	
197	197 + 200	33.8 C	83.7 C	29.3 C	59.8 C	15.8 C	13.8 C	26.2 C	17.6 C	21.3 C	13.4 C	
198	198 + 199	313 C	645 C	272 C	594 C	161 C	144 C	262 C	197 C	212 C	142 C	
199	198 + 199	C198	C198	C198	C198	C198	C198	C198	C198	C198	C198	
200	197 + 200	C197	C197	C197	C197	C197	C197	C197	C197	C197	C197	
201		52.2	100	43.7	79.7	23.1	20.7	40.1	29.3	28.6	20.6	
202		169	254	98.0	243	79.6	66.3	134	89.0	96.5	65.4	
203		366	578	211	466	158	149	267	184	185	139	
204		0.639 EMPC	1.41 J	0.443 J	1.03 EMPC	0.240 J	0.329 J	0.592 J	0.448 J	0.403 J	0.283 J	
205		19.4	33.7	10.7	23.2	8.32	7.42	13.2	9.34	9.37	6.63	
206		112	218	69.3	180	61.8	52.4	87.8	67.4	69.2	46.5	
207		29.5	46.2	18.9	35.9	13.2	12.6	21.4	17.0	15.2	11.6	
208		38.2	66.0	30.4	76.5	22.5	18.7	34.0	24.8	27.6	17.6	
209		57.3	67.2	43.1	74.9	30.2	26.5	44.5	34.1	36.8	24.7	
Maximum Detected Concentration		8,560 C	33,900 C	5,760 C	10,200 C	3,570 C	3,000 C	5,680 C	4,250 C	3,950 C	2,920 C	Total PCB SLV
Minimum Detected Concentration		0.0910 J	1.41 J	0.0800 J	0.143 J	0.0870 J	0.0640 EMPC	0.0910 J	0.0900 EMPC	0.102 J	0.0710 J	pg/g
Total of Detected Concentrations		49,215 J	407,012 J	33,178 J	75,508 J	24,302 J	20,676 J	39,535 J	28,363 J	30,017 J	20,416 J	570

Notes:

C = Concentration represents coeluting congeners.

U = The analyte was not detected above the RDL.

J = The reported value is an estimate.

UJ = The analyte was not detected. The RDL is an estimate.

ng/kg = nanogram/kilogram

pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.

¹= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.

RDL = Reported detection limit

Table 6
Forebay Smallmouth Bass - Analytical Results and Screening Criteria for PCB Congeners
August 2011 Sampling

IPAC #	COELUTING CONGENERS ¹	62 F06032011SB 62 9/3/2011	63 F06032011SB 63 9/3/2011	64 F06032011SB 64 9/3/2011	65 F06032011SB 65 9/3/2011	67 F06032011SB 67 9/3/2011	68 F06032011SB 68 9/3/2011	69 F06032011SB 69 9/3/2011	70 F06032011SB 70 9/3/2011	71 F06032011SB 71 9/4/2011
Individual Congeners in pp/g (ng/kg, wet weight)										
1		31.1 U	27.0 J	1.01 J	1.18 J	1.09 J	45.3 J	1.59 J	0.777 J	0.658 J
2		42.2 U	28.6 U	0.551 J	0.711 J	0.579 J	32.0 U	0.513 J	0.488 J	0.704 J
3		40.4 U	28.9 J	2.380 U	2.50 U	2.62 U	53.3 J	2.410 U	2.320 U	2.370 U
4		263 U	217 U	4.68	5.80	3.17	341 J	4.74	3.88	2.10 J
5		199 U	167 U	0.130 U	0.142 J	0.176 U	203 U	0.226 U	0.125 U	0.145 U
6		178 U	150 U	1.37 J	1.62 J	0.962 J	188 J	1.33 J	1.17 J	0.793 J
7		186 U	156 U	0.368 J	0.448 J	0.323 J	189 U	0.239 J	0.275 J	0.215 J
8		268 J	141 U	5.23	6.62	4.24	676 J	5.22	4.67	3.83
9		175 U	148 U	1.06 J	1.42 J	0.408 J	313 J	0.964 J	0.912 J	0.315 J
10		167 U	141 U	0.212 J	0.332 J	0.169 J	171 U	0.210 J	0.188 J	0.117 J
11		220 J	167 U	117	282	176	202 U	132	163	226
12	12 + 13	206 C U	173 C U	0.631 C J	0.697 C J	0.180 C U	210 C U	0.223 C U	0.573 C J	0.148 C U
13	12 + 13	C12	C12	C12	C12	C12	C12	C12	C12	C12
14		189 U	159 U	0.114 U	0.109 U	0.166 U	193 U	0.211 U	0.110 U	0.137 U
15		203 U	217 J	2.27 J	2.48 J	2.48 J	410 J	2.46	2.74	2.85
16		584 J	168 J	3.58	5.79	3.05	1,800 J	4.20	4.15	3.47
17		9,160	4,520	22.8	32.9	7.17	29,900	4.20	23.3	8.57
18	18 + 30	6,760 C	7,130 C	25.8 C	37.2 C	11.7 C	27,500 C	26.8 C	27.0 C	14.0 C
19		978 J	143 J	4.17	5.66	1.08 J	2,310	4.04	4.34	1.30 J
20	20 + 28	20,000 C	51,800 C	82.0 C	105 C	71.0 C	131,000 C	80.3 C	73.7 C	65.7 J
21	21 + 33	1,140 C J	2,730 C	7.88 C	11.1 C	6.47 C	7,100 C	7.82 C	7.33 C	8.95 C
22		403 J	2,150	9.10	11.7	6.91	4,270	7.38	9.39	9.39
23		45.7 U	62.8 U	0.0594 U	0.0626 U	0.0736 U	98.1 U	0.0760 U	0.0580 U	0.0754 U
24		27.3 U	23.3 U	0.204 J	0.316 J	0.215 J	54.4 U	0.226 J	0.205 J	0.226 J
25		1,020 J	4,960	4.60	5.19	2.34 J	11,800	5.03	4.70	2.78
26	26 + 29	4,600 C	9,900 C	13.6 C	16.5 C	7.56 C	25,800 C	14.0 C	12.9 C	8.72 C
27		2,750	1,030 J	6.40	9.46	1.64 J	9,170	6.94	6.78	1.76 J
28	20 + 28	C20	C20	C20	C20	C20	C20	C20	C20	C20
29	26 + 29	C26	C26	C26	C26	C26	C26	C26	C26	C26
30	18 + 30	C18	C18	C18	C18	C18	C18	C18	C18	C18
31		3,090	31,400	34.6	40.9	24.4	54,800	35.5	31.1	28.0
32		3,660	1,860	8.68	12.3	2.46 J	14,200	9.33	9.38	2.91
33	21 + 33	C21	C21	C21	C21	C21	C21	C21	C21	C21
34		81.9 J	151 J	0.269 J	0.325 J	0.153 J	508 J	0.273 J	0.272 J	0.207 J
35		50.3 U	69.2 U	0.164 EMPC	0.261 J	0.164 J	108 U	0.274 J	0.185 EMPC	0.130 EMPC
36		45.3 U	62.3 U	0.0594 U	0.0626 U	0.0742 U	97.2 U	0.0755 U	0.0580 U	0.0761 U
37		1,320 J	3,790	9.14	17.1	11.0	11,800	12.8	11.5	8.57
38		46.7 U	64.3 U	0.144 J	0.159 J	0.159 EMPC	444 J	0.0860 J	0.0780 EMPC	0.119 J
39		404 J	618 J	0.575 J	1.01 J	0.577 J	2,130	0.971 J	0.555 J	0.704 J
40	40 + 41 + 71	39,800 C	48,900 C	63.7 C	69.2 C	33.6 C	196,000 C	66.5 C	54.6 C	40.5 C
41	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40	C40	C40
42		22,400	54,300	40.8	48.2	24.2	123,000	47.5	34.8	27.0
43		4,980	6,720	7.39	8.10	4.19	22,100	8.23 EMPC	5.38	5.28
44	44 + 47 + 65	247,000 C	533,000 C	396 C	449 C	214 C	1,490,000 C	464 C	359 C	269 C
45	45 + 51	5,270 C	4,380 C	9.70 C	13.7 C	6.41 C	23,700 C	6.90 C	10.1 C	6.68 C
46		1,600 J	661 J	2.76	4.27	1.77 J	7,240	3.48	3.52	1.82 J
47	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44	C44	C44
48		12,600	21,700	21.9	26.8	13.1	54,700	26.1	17.3	16.1
49	49 + 69	200,000 C	614,000 C	345 C	359 C	174 C	1,300,000 C	377 C	276 C	212 C
50	50 + 53	17,000 C	13,900 C	26.6 C	36.2 C	12.5 C	76,600 C	32.2 C	29.9 C	12.9 C
51	45 + 51	C45	C45	C45	C45	C45	C45	C45	C45	C45
52		700,000	2,150,000	1,290	1,350	631	5,170,000	1,390	1,080	775
53	50 + 53	C50	C50	C50	C50	C50	C50	C50	C50	C50
54		150 J	114 J	0.334 J	0.430 J	0.143 J	628 J	0.345 J	0.292 J	0.115 J
55		112 U	218 U	0.605 U	0.497 U	0.411 U	263 U	0.324 U	0.331 U	0.410 U
56		8,460	194,000	83.2	70.6	41.7	250,000	100	53.6	49.6
57		263 J	640 J	0.781 J	1.14 J	0.540 J	1,560 J	0.816 J	0.675 J	0.712 J
58		104 U	202 U	0.579 U	0.591 J	0.387 U	244 U	0.310 U	0.351 J	0.386 U
59	59 + 62 + 75	4,670 C	10,900 C	12.1 C	13.6 C	6.85 C	23,000 C	12.2 C	8.18 C	9.15 C
60		64,600	209,000 C	123	115	63.3	375,000 C	140	81.0	90.7
61	61 + 70 + 74 + 76	639,000 C	3,870,000 C	1,480 C	1,330 C	808 C	6,350,000 C	1,640 C	991 C	1,130 C
62	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59	C59	C59
63		17,100	54,400	31.7	37.2	21.8	91,800	37.3	28.3	33.0
64		81,800	167,000	136	153	74.3	444,000	154	115	98.6
65	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44	C44	C44
66		401,000	1,390,000	726	739	440	2,490,000	833	505	649
67		397 J	3,220	3.24	3.96	2.60 J	5,210	3.48	2.09 J	2.36 J
68		335 J	2,330	4.05	5.80	4.20	2,850	6.03	9.02	5.26
69	49 + 69	C49	C49	C49	C49	C49	C49	C49	C49	C49
70	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61
71	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40	C40	C40
72		1,120 J	3,900	4.34	4.78	2.86	6,310	6.65	3.06	4.35
73		11.7 U	22.0 U	0.0594 U	0.0626 U	0.0656 U	56.8 U	0.0602 U	0.0580 U	0.0592 U
74	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61
75	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59	C59	C59
76	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61
77		2,730	17,500	17.4	33.1	20.2	24,500	35.5	22.3	26.1
78		115 U	224 U	0.593 U	0.487 U	0.429 U	270 U	0.338 U	0.325 U	0.428 U
79		26,700	104,000	32.3	25.8	25.8	206,000	38.9	17.5	27.8
80		101 U	197 U	0.550 U	0.452 U	0.379 U	238 U	0.291 U	0.301 U	0.378 U
81		93.4 U	691 EMPC	0.825 J	1.24 J	1.17 J	1,530 EMPC	1.47 EMPC	1.17 J	1.4 J
82		174,000	499,000	188	161	144	977,000	241	126	164
83	83 + 99	1,840,000 C	6,250,000 C	2,240 C	1,760 C	1,580 C	11,300,000 C	2,540 C	1,180 C	2,560 C
84		243,000	411,000	251	265	187	1,240,000	316	207	272
85	85 + 116 + 117	573,000 C	1,870,000 C	738 C	605 C	529 C	3,200,000 C	796 C	419 C	712 C
86	86 + 87 + 97 + 108 + 119 + 125	1,470,000 C	4,920,000 C	1,730 C	1,360 C	1,250 C	9,550,000 C	2,100 C	1,000 C	1,440 C
87	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86
88	88 + 91	181,000 C	470,000 C	203 C	182 C	142 C	983,000 C	250 C	136 C	159 C
89		5,860	4,230	3.67	4.47	4.10	26,800	6.36	4.00	4.41
90	90 + 101 + 113	2,100,000 C	7,090,000 C	2,510 C	1,950 C	1,810 C	14,100,000 C	2,990 C	1,420 C	2,190 C
91	88 + 91	C88	C88	C88	C88	C88	C88	C88	C88	C88
92		303,000	806,000	395	313	270	1,550,000	418	219	358
93	93 + 95 + 98 + 100 + 102	862,000 C	2,440,000 C	1,180 C	1,070 C	832 C	6,320,000 C	1,400 C	840 C	941 C
94		2,490	2,140	2.08 J	2.14 J	1.72 J	12,000	2.56	1.88 J	1.80 J
95	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93
96		2,780	2,290	2.57	3.32	2.37 J	14,900	3.82	2.73	2.72
97	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86
98	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93
99	83 + 99	C83	C83	C83	C83	C83	C83	C83	C83	C83
100	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93
101	90 + 101 + 113	C90	C90	C90	C90	C90	C90	C90	C90	C90
102	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93
103		6,140	15,700	8.60	7.64	5.60	30,000	9.15	5.73	6.43
104		33.5 U	52.6 U	0.0786 U	0.0987 U	0.0838 U	90.4 U	0.0840 J	0.0666 U	0.0822 U
105		1,520,000	5,650,000	1,780	1,310	1,270	9,040,000	2,020 J	857	2,010
106		256 U	371 U	0.637 U	0.461 U	0.484 U	551 U	0.393 U	0.358 U	0.586 U
107	107 + 124	57,100 C	373,000 C	113 C	81.0 C	83.4 C	542,000 C	135 C	53.9 C	107 C
108	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86
109		264,000	780,000	334	298	260	1,270,000	364	203	414
110	110 + 115	2,010,000 C	5,760,000 C	2,110 C	1,780 C	1,600 C	12,000,000 C	2,510 C	1,290 C	1,980 C
111		206 U	388 U	1.04 EMPC	2.15 J	0.982 EMPC	449 U	0.891 J	1.61 EMPC	2.41
112		194 U	366 U	0.207 U	0.240 U	0.120 U	424 U	0.207 U	0.113 U	0.414 U
113	90 + 101 + 113	C90	C90	C90	C90	C90	C90	C90	C90	C90
114		101,000	318,000	125	107	97.9	504,000	142	75.5	163
115	110 + 115	C110	C110	C110	C110	C110	C			

Table 6
Forebay Smallmouth Bass - Analytical Results and Screening Criteria for PCB Congeners
August 2011 Sampling

IUPAC #	COELUTING CONGENERS ¹	62 R09032011SB 62 9/3/2011	63 R09032011SB 63 9/3/2011	64 R09032011SB 64 9/3/2011	65 R09032011SB 65 9/3/2011	67 R09032011SB 67 9/3/2011	68 R09032011SB 68 9/3/2011	69 R09032011SB 69 9/3/2011	70 R09032011SB 70 9/3/2011	71 R09032011SB 71 9/4/2011
174		80,700	349,000	217	145	154	550,000	196	88.9	143
175		6,120	19,600	16.9	13.5	12.1	30,700	16.3	9.38	15.7
176		8,330	29,800	28.8	18.5	17.4	54,100	23.5	12.0	12.5
177		72,300	272,000	274	229	212	415,000	250	152	241
178		20,800	70,900	115	101	82.8	103,000	81.6	65.7	117
179		19,000	41,200	111	71.0	54.9	78,300	62.3	45.0	64.6
180	180 + 193	371,000 C	1,170,000 C	1,070 C	1,220 C	1,170 C	1,730,000 C	1,040 C	923 C	1,780 C
181		8,270	25,600	9.44	7.65	8.93	40,000	13.6	5.35	14.6
182		1,480 J	3,720	4.58	3.65	2.87	5,990	3.31	2.47	4.94
183	183 + 185	101,000 C	322,000 C	294 C	239 C	220 C	505,000 C	255 C	163 C	364 C
184		173 J	348 J	2.43	1.65 J	1.31 J	636 J	1.11 J	1.12 J	2.36 J
185	183 + 185	C183	C183	C183	C183	C183	C183	C183	C183	C183
186		34.2 J	40.3 U	0.0612 U	0.0727 U	0.0717 U	57.0 U	0.115 U	0.0580 U	0.0674 U
187		128,000	462,000	995	1,100	1,010	673,000	942	825	1,340
188		201 J	616 J	2.10 J	2.52	2.12 J	896 J	2.04 J	1.69 J	2.50
189		12,900	37,300	20.2	21.7	21.1	57,800	24.2	15.1	32.8
190		40,500	119,000	101	104	97.3	183,000	109	71.2	166
191		9,620	29,500	17.5	16.9	16.1	44,100	20.7	12.4	26.8
192		36.5 U	47.9 U	0.0681 U	0.0808 U	0.0836 U	67.7 U	0.137 U	0.0580 U	0.0786 U
193	180 + 193	C180	C180	C180	C180	C180	C180	C180	C180	C180
194		28,100	94,200	121	125	124	137,000	101	96.9	204
195		10,700	33,600	58.4	67.7	55.7	48,100	48.0	46.5	88.3
196		14,000	46,200	65.3	71.4	63.3	66,700	59.5	54.9	99.8
197	197 + 200	2,270 C	8,500 C	18.2 C	14.2 C	12.9 C	13,900 C	14.9 C	9.56 C	14.5 C
198	198 + 199	28,500 C	105,000 C	144 C	160 C	146 C	147,000 C	139 C	115 C	195 C
199	198 + 199	C198	C198	C198	C198	C198	C198	C198	C198	C198
200	197 + 200	C197	C197	C197	C197	C197	C197	C197	C197	C197
201		3,320	11,500	26.3	25.9	23.1	17,900	21.4	18.2	30.5
202		5,490	18,600	51.4	47.9	37.9	28,000	33.4	28.7	51.3
203		20,600	56,000	107	110	92.6	77,400	86.9	74.0	160
204		19.6 U	31.5 J	0.192 J	0.190 J	0.186 EMPC	54.2 J	0.224 J	0.129 EMPC	0.301 EMPC
205		1,160 J	3,450	6.11	6.46	5.15	5,020	5.12	4.51	8.26
206		8,400	23,900	44.8	46.2	38.9	38,400	34.9	32.0	69.4
207		1,280 J	4,430	10.8	12.7	11.4	7,480	8.97	9.85	17.3
208		2,020	6,180	17.6	20.4	17.5	10,800	14.9	14.4	24.0
209		1,090 J	2,930	22.9	29.4	25.4	4,310	21.5	23.7	35.3

Maximum Detected Concentration	4,040,000	12,600,000	4,660 C	3,800 C	4,210 C	21,500,000 C	5,000 C	2,490 C	6,400 C	Total PCB SLV
Minimum Detected Concentration	34.2 J	27.0 J	0.144 J	0.142 J	0.143 J	45.3 J	0.0840 J	0.0780 EMPC	0.115 J	pg/g
Total of Detected Concentrations	30,490,201 J	101,475,637 J	43,892 J	37,833 J	34,613 J	183,139,653 J	48,036 J	26,058 J	49,701 J	570

Notes:
C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
¹= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit

Table 6
Forebay Smallmouth Bass - Analytical Results and Screening Criteria for PCB Congeners
August 2011 Sampling

IUPAC #	COELUTING CONGENERS ¹	72 R09042011SB 72 9/4/2011	73 R09042011SB 73 9/4/2011	74 R09042011SB 74 9/4/2011	76 R09042011SB 76 9/4/2011	78 R09042011SB 78 9/4/2011	79 R09042011SB 79 9/4/2011	81 R09042011SB 81 9/4/2011	82 R09042011SB 82 9/4/2011	83 R09042011SB 83 9/4/2011	84 R09042011SB 84 9/4/2011
Individual Congeners in pg/g (ng/kg), wet weight											
1		0.759 J	0.661 J	0.701 J	0.474 J	30.7 J	0.846 J	2.180 U	0.435 J	0.440 J	0.766 J
2		2.520 U	0.511 J	0.560 J	2.580 U	33.1 U	0.936 J	0.577 J	0.282 EMPC	0.500 J	0.947 J
3		2.520 U	2.300 U	2.660 U	2.580 U	43.1 J	2.19 U	2.180 U	1.910 U	2.400 U	1.950 U
4		2.42 J	2.08 J	2.37 J	1.83 J	267 U	2.66 J	1.85 J	1.11 J	1.78 J	3.61
5		0.123 U	0.112 U	0.138 U	0.197 U	209 U	0.593 U	0.106 U	0.222 U	0.257 U	0.200 U
6		0.904 J	0.730 J	0.999 J	0.710 J	188 U	1.68 J	0.749 J	0.511 J	0.699 J	1.85 J
7		0.225 J	0.218 J	0.257 J	0.180 J	196 U	0.541 U	0.260 J	0.203 U	0.234 U	0.400 J
8		4.08	3.28	4.56	3.32	176 U	5.87	3.88	2.16	3.90	8.29
9		0.339 J	0.278 J	0.356 J	0.260 J	185 U	0.509 U	0.302 J	0.191 U	0.341 J	0.542 J
10		0.120 J	0.102 J	0.110 U	0.160 U	177 U	0.506 U	0.0859 U	0.190 U	0.219 U	0.206 J
11		90.0	165	266	250	209 U	141	178	32.5	152	397
12	12 + 13	0.504 C J	0.610 C J	0.126 C U	0.202 C U	217 C U	0.795 C J	0.109 C U	0.268 C J	0.782 C J	0.197 C U
13	12 + 13	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12
14		0.108 U	0.0984 U	0.119 U	0.187 U	199 U	0.553 U	0.101 U	0.207 U	0.239 U	0.186 U
15		1.98 J	2.62	3.05	2.50 J	219 U	2.18 J	2.14 J	0.622 J	2.07 J	4.67
16		2.97	2.34	4.50	3.39	94.6 U	7.61	4.08	2.20	3.66	9.91
17		3.69	2.82	6.70	4.76	760 J	14.5	9.57	4.63	12.4	17.8
18	18 + 30	7.72 C	6.49 C	13.7 C	10.4 C	1,470 C J	28.4 C	16.3 C	7.92 C	14.6 C	32.0 C
19		0.891 J	0.770 J	1.21 J	0.826 J	79.3 U	1.51 J	0.969 J	0.398 J	1.62 J	2.28
20	20 + 28	24.6 C	23.8 C	61.7 C	51.9 C	18,700 C	149 C J	118 C	56.5 C	54.6 C	148 C
21	21 + 33	5.31 C	4.08 C	11.2 C	8.48 C	834 C J	25.2 C	22.0 C	13.4 C	8.82 C	25.9 C
22		5.34	4.85	12.2	9.78	859 J	25.8	23.2	14.0	9.52	26.8
23		0.0631 U	0.0575 U	0.0664 U	0.0646 U	66.2 U	0.155 J	0.0831 U	0.0580 U	0.0661 U	0.140 J
24		0.161 J	0.142 J	0.292 J	0.203 J	60.3 U	0.509 EMPC	0.312 J	0.0740 EMPC	0.155 EMPC	0.587 EMPC
25		1.16 J	0.852 J	2.27 J	1.62 J	1,660 J	6.09	3.93	2.23	2.36 J	4.41
26	26 + 29	3.14 C	2.71 C	7.13 C	5.45 C	3,510 C	16.8 C	12.5 C	7.38 C	7.79 C	15.5 C
27		0.617 J	0.558 J	1.08 J	0.834 J	65.8 J	2.42 J	1.10 J	0.606 J	2.48	2.62
28	20 + 28	C20	C20	C20	C20	C20	C20	C20	C20	C20	C20
29	26 + 29	C26	C26	C26	C26	C26	C26	C26	C26	C26	C26
30	18 + 30	C18	C18	C18	C18	C18	C18	C18	C18	C18	C18
31		12.7	10.9	29.7	24.4	15,600	83.9	54.8	25.7	25.4	72.7
32		1.35 J	0.740 J	2.02 J	1.29 J	367 J	4.91	3.87	1.95	4.13	4.83
33	21 + 33	C21	C21	C21	C21	C21	C21	C21	C21	C21	C21
34		0.0760 J	0.0710 J	0.205 J	0.157 J	62.0 U	0.583 J	0.282 J	0.159 J	0.178 J	0.611 J
35		0.128 J	0.109 EMPC	0.154 EMPC	0.127 J	72.8 U	0.190 J	0.0960 U	0.0628 U	0.127 EMPC	0.187 J
36		0.0631 U	0.0575 U	0.0664 U	0.0646 U	65.6 U	0.143 U	0.0838 U	0.0576 U	0.0810 J	0.137 EMPC
37		7.32	8.95	12.0	9.09	1,770 J	15.0	9.69	4.15	8.54	14.6
38		0.0631 U	0.0575 U	0.183 J	0.101 J	67.7 U	0.586 J	0.256 J	0.116 J	0.0671 U	0.297 EMPC
39		0.231 J	0.229 J	0.685 J	0.450 J	460 J	2.38	1.15 J	0.680 J	0.556 J	1.05 J
40	40 + 41 + 71	9.10 C	7.96 C	33.0 C	17.4 C	25,000 C	247 C	54.0 C	45.3 C	32.4 C	52.1 C
41	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40	C40	C40	C40
42		6.95	6.36	21.4	14.2	38,500	135	44.3	33.8	22.6	37.9
43		1.24 J	1.12 J	5.57	2.98	121 U	24.7	6.81	6.04	4.61	8.90
44	44 + 47 + 65	48.5 C	41.0 C	232 C	99.5 C	344,000 C	1,690 C	247 C	198 C	189 C	244 C
45	45 + 51	2.92 C	2.58 C	6.49 C	4.55 C	551 C J	23.6 C	11.7 C	9.06 C	7.60 C	12.9 C
46		0.757 J	0.727 J	1.64 J	1.19 J	105 U	4.16	2.15 J	2.00	1.96 J	3.14
47	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44	C44	C44	C44
48		4.73	4.44	18.2	11.0	15,800	88.0	30.3	23.5	14.5	31.5
49	49 + 69	37.3 C	30.0 C	313 C	80.8 C	442,000 C	1,210 C	201 C	164 C	165 C	191 C
50	50 + 53	3.48 C	2.60 C	6.18 C	4.17 C	3,530 C	37.8 C	9.77 C	8.53 C	14.5 C	11.1 C
51	45 + 51	C45	C45	C45	C45	C45	C45	C45	C45	C45	C45
52		122	81.6	866	222	1,590,000	4,540 U	455	434 U	541 U	474 U
53	50 + 53	C50	C50	C50	C50	C50	C50	C50	C50	C50	C50
54		0.0631 U	0.0575 U	0.112 J	0.0860 J	63.6 U	0.161 U	0.0850 J	0.0720 J	0.217 J	0.154 J
55		0.191 U	0.257 U	0.545 U	0.303 U	211 U	0.614 U	0.346 U	0.124 U	0.499 U	0.107 U
56		13.6	9.39	25.8	28.4	154,000	247	62.5	49.5 U	30.9 U	53.0
57		0.318 J	0.394 J	0.925 J	0.787 J	197 U	1.99 J	1.83 J	1.18 J	0.631 J	1.84 J
58		0.208 J	0.355 J	0.522 J	0.532 J	196 U	0.587 U	1.28 J	0.119 U	0.581 J	1.44 J
59	59 + 62 + 75	2.85 C	3.14 C	12.9 C	8.03 C	7,030 C	48.3 C	19.5 C	14.3 C	8.33 C	21.2 C
60		19.0	22.0	132	51.7	130,000 C	350	128	69.5	58.4	116
61	61 + 70 + 74 + 76	197 C	178 C	1,020 C	498 C	2,600,000 C	7,730 C	848 C	694 C U	548 C U	822 C
62	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59	C59	C59	C59
63		10.9	14.0	50.7	20.4	32,400	98.4	41.3	24.9	20.9	35.1
64		20.6	19.5	135	49.1	138,000	670	128	87.5	74.5	125
65	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44	C44	C44	C44
66		141	171	787	331	831,000	2,300	644	409	341	599
67		0.998 J	1.20 J	2.92	2.51 J	1,390 J	11.2	6.32	5.02	2.73	5.53
68		3.35	4.54	10.4	5.43	965 J	15.1	11.4	7.42	4.31	9.24
69	49 + 69	C49	C49	C49	C49	C49	C49	C49	C49	C49	C49
70	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61	C61
71	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40	C40	C40	C40
72		1.75 J	2.07 J	6.12	4.09	1,800 J	17.0	8.13	5.69	3.66	9.09
73		0.0631 U	0.0575 U	0.0664 U	0.0646 U	69.8 U	0.167 U	0.0545 U	0.0477 U	0.0600 U	0.0487 U
74	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61	C61
75	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59	C59	C59	C59
76	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61	C61	C61	C61
77		14.3	18.0	35.9	26.6	9,640	56.3	42.0	23.2	20.2	38.3
78		0.188 U	0.252 U	0.534 U	0.316 U	217 U	0.641 U	0.362 U	0.130 U	0.521 U	0.111 U
79		4.40	3.23	10.0	16.5	66,200	237	13.5	17.0	11.7 U	10.9 U
80		0.174 U	0.233 U	0.495 U	0.280 U	191 U	0.551 U	0.785 J	0.112 U	0.448 U	0.0957 U
81		0.718 J	1.07 J	2.71	1.38 J	189 U	3.38 EMPC	2.31	1.26 EMPC	1.06 EMPC	1.44 EMPC
82		24.4	15.1	37.3	83.0	444,000	1,840	66.3	107 U	67.8 U	59.4 U
83	83 + 99	389 C	419 C	6,830 C	1,400 C	3,990,000 C	12,000 C	1,650 C	1,400 C	1,000 C	1,650 C
84		35.0	22.2	60.0	59.0	317,000	3,080	113	129	114	107
85	85 + 116 + 117	133 C	124 C	2,070 C	433 C	1,300,000 C	3,770 C	496 C	421 C	306 C U	506 C
86	86 + 87 + 97 + 108 + 119 + 125	228 C	158 C	2,450 C	866 C	3,630,000 C	14,700 C	838 C	1,010 C	667 C U	830 C U
87	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86	C86
88	88 + 91	31.8 C	21.0 C	122 C	82.7 C	396,000 C	2,030 C	132 C	144 C	99.5 C U	112 C
89		0.625 EMPC	0.355 J	2.99	1.00 J	413 U	84.1	2.14 J	1.97	26.0	3.13
90	90 + 101 + 113	397 C	327 C	5,620 C	1,530 C	5,700,000 C	21,500 C	1,790 C	1,700 C	1,150 C	1,770 C
91	88 + 91	C88	C88	C88	C88	C88	C88	C88	C88	C88	C88
92		74.3	57.6	1,140	259	718,000	3,290	309	289	196	354
93	93 + 95 + 98 + 100 + 102	178 C	115 C	1,450 C	402 C	2,030,000 C	11,600 C	612 C	725 C	541 C U	614 C
94		0.396 J	0.246 U	0.289 U	0.387 J	669 J	28.2	1.19 J	1.41 J	1.42 J	1.21 J
95	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93	C93
96		0.456 J	0.342 EMPC	3.99	0.714 J	141	30.1	1.29 J	1.37 J	2.05 J	2.36
97	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86	C86	C86	C86
98	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93	C93
99	83 + 99	C83	C83	C83	C83	C83	C83	C83	C83	C83	C83
100	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93	C93
101	90 + 101 + 113	C90	C90	C90	C90	C90	C90	C90	C90	C90	C90
102	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93	C93	C93	C93
103		1.88 EMPC	1.76 J	12.2	4.72	12,400	65.3	7.79	9.32	5.20	8.22
104		0.110 U	0.0889 U	0.0698 U	0.103 U	149 U	0.404 UJ	0.0703 U	0.0810 J	0.0925 U	0.0960 J
105		295	303	5,160	1,140	3,3					

Table 6
Forebay Smallmouth Bass - Analytical Results and Screening Criteria for PCB Congeners
August 2011 Sampling

IUPAC #	COELUTING CONGENERS ¹	72 R09042011SB 72 9/4/2011	73 R09042011SB 73 9/4/2011	74 R09042011SB 74 9/4/2011	76 R09042011SB 76 9/4/2011	78 R09042011SB 78 9/4/2011	79 R09042011SB 79 9/4/2011	81 R09042011SB 81 9/4/2011	82 R09042011SB 82 9/4/2011	83 R09042011SB 83 9/4/2011	84 R09042011SB 84 9/4/2011	
182		2.56	2.77	11.9	4.56	2,510	19.8	6.25	5.15	2.81	6.97	
183	183 + 185	163 C	179 C	732 C	357 C	205,000 C	1,260 C	594 C	427 C	204 C	493 C	
184		1.38 J	1.40 J	4.13	2.96	238 J	6.76	4.70	3.73	1.62 J	5.73	
185	183 + 185	C183	C183	C183	C183	C183	C183	C183	C183	C183	C183	
186		0.0631 U	0.0575 U	0.0734 U	0.0843 U	50.3 U	0.267 U	0.0683 U	0.0866 U	0.0896 U	0.0853 U	
187		850	968	2,340	1,410	254,000	3,050	2,790	2,100	885	1,790	
188		1.88 J	2.03 J	5.03	2.74	379 J	6.87 J	5.79	4.92	2.45	3.90	
189		12.5	16.9	75.6	25.2	20,900	119	38.9	28.5	15.3	27.8	
190		71.7	84.3	310	152	76,700	497	251	170	99.6	212	
191		10.9	13.8	57.0	22.9	17,700	97.5	36.5	27.8	14.6	29.6	
192		0.0631 U	0.0575 U	0.0817 U	0.0982 U	59.8 U	0.319 U	0.0796 U	0.103 U	0.107 U	0.102 U	
193	180 + 193	C180	C180	C180	C180	C180	C180	C180	C180	C180	C180	
194		87.8	123	303	170	41,600	347	302	192	92.8	188	
195		40.5	53.7	144	77.4	15,300	166	157	95.7	47.0	108	
196		49.3	63.9	157	91.3	19,200	195	150	120	53.4	115	
197	197 + 200	10.4 C	9.36 C	20.6 C	17.5 C	4,050 C	54.2 C	32.7 C	30.0 C	12.5 C	29.6 C	
198	198 + 199	111 C	135 C	296 C	201 C	42,100 C	409 C	371 C	295 C	132 C	265 C	
199	198 + 199	C198	C198	C198	C198	C198	C198	C198	C198	C198	C198	
200	197 + 200	C197	C197	C197	C197	C197	C197	C197	C197	C197	C197	
201		20.8	21.6	52.1	32.2	4,580	58.8	61.9	45.5	19.5	40.5	
202		31.8	33.5	79.3	64.5	7,230	141	138	84.3	40.9	109	
203		79.9	98.5	227	157	23,500	314	270	203	98.0	247	
204		0.194 J	0.213 EMPC	0.566 EMPC	0.276 J	17.5 U	0.629 J	0.515 J	0.543 J	0.262 EMPC	0.596 J	
205		4.24	5.95	14.9	7.36	1,900	23.7	15.1	11.2	5.29	12.3	
206		32.9	44.5	95.7	61.8	9,020	112	100	72.7	35.4	84.5	
207		9.25	12.2	26.6	16.4	1,510 J	22.0	26.3	19.8	9.26	19.5	
208		14.4	16.8	36.5	23.6	2,220	43.3	43.6	31.4	16.8	31.8	
209		23.0	29.6	60.3	34.5	1,060 J	49.7	57.1	46.9	26.0	46.9	
Maximum Detected Concentration		1,930 C	2,750 C	15,200 C	5,140 C	8,130,000	28,400 C	8,970 C	5,170 C	2,730 C	6,220 C	Total PCB SLV pg/g
Minimum Detected Concentration		0.0760 J	0.0710 J	0.112 J	0.0860 J	30.7 J	0.155 J	0.0850 J	0.0720 J	0.0810 J	0.0960 J	
Total of Detected Concentrations		13,219 J	14,633 J	106,339 J	35,481 J	69,271,672 J	277,333 J	51,588 J	35,991 J	17,985 J	39,743 J	

Notes:
C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
¹= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit

Table 7
Forebay Clam - Analytical Results and Screening Criteria for PCB Congeners
October 2011 Sampling

IUPAC #	COELUTING CONGENERS ¹	P112 111019P112T C 10/19/2011	P113 111019P113T C 10/19/2011	P114 111019P114T C 10/19/2011	P115 111018P115T C 10/19/2011	P117 111018P117T C 10/19/2011	P118 111018P118T C 10/19/2011
Individual Congeners in pg/g (ng/kg), wet weight							
1		42.2	50.4	7.11	2.78	1.75 J	5.40
2		2.24	1.93 J	1.48 J	1.33 J	1.40 J	1.20 J
3		3.58	3.01	0.990 J	1.39 J	2.170 U	2.210 U
4		1,900	3,820	1,290	325	190	512
5		6.60	4.61	2.05 J	0.868 J	0.734 J	0.858 J
6		201	122	81.0	22.4	13.8	22.7
7		36.2	13.0	4.17	1.34 J	0.672 J	1.21 J
8		408	323	111	50.0	34.2	45.5
9		82.3	35.8	11.0	3.39	1.94 J	3.18
10		106	139	25.0	8.90	3.05	10.2
11		3,040	3,270	3,100	2,920	3,360	3,660
12	12 + 13	66.8 C	48.0 C	30.6 C	21.8 C	12.6 C	19.8 C
13	12 + 13	C12	C12	C12	C12	C12	C12
14		0.158 J	0.225 U	0.137 EMPC	0.140 U	0.125 U	0.118 U
15		187	113	37.2	16.4	13.4	13.3
16		537	380	277	111	69.4	91.5
17		3,050	2,740	1,640	708	215	383
18	18 + 30	3,640 C	2,690 C	1,720 C	710 C	258 C	406 C
19		1,170	1,160	313	137	58.6	89.1
20	20 + 28	1,360 C	855 C	470 C	200 C	133 C	164 C
21	21 + 33	549 C	343 C	231 C	135 C	62.8 C	77.3 C
22		620	422	374	142	105	130
23		1.43 J	1.12 U	0.615 U	1.74 J	0.258 U	0.254 U
24		16.0	11.3	7.08	2.67	2.43	2.30
25		603	450	237	97.3	35.8	59.0
26	26 + 29	905 C	582 C	289 C	131 C	59.3 C	84.3 C
27		1,740	1,500	817	387	105	195
28	20 + 28	C20	C20	C20	C20	C20	C20
29	26 + 29	C26	C26	C26	C26	C26	C26
30	18 + 30	C18	C18	C18	C18	C18	C18
31		1,730	1,210	534	181	114	138
32		937	754	290	130	54.5	87.1
33	21 + 33	C21	C21	C21	C21	C21	C21
34		7.65	4.09	2.54	2.30	0.568 J	0.654 J
35		11.2	7.87	7.29	5.30	7.03	6.87
36		1.97 J	1.98 J	1.38 J	1.05 J	0.970 J	1.07 J
37		326	211	146	70.7	49.5	55.4
38		7.15	5.40	4.11	1.80 J	0.994 J	1.47 J
39		50.7	51.4	29.0	13.6	4.24	7.72
40	40 + 41 + 71	7,030 C	6,300 C	3,320 C	1,410 C	449 C	753 C
41	40 + 41 + 71	C40	C40	C40	C40	C40	C40
42		5,930	4,670	3,090	1,170	449	868
43		352	354	168	48.5	18.6	25.2
44	44 + 47 + 65	68,500 C	57,000 C	32,700 C	11,400 C	4,460 C	7,970 C
45	45 + 51	1,290 C	1,060 C	558 C	253 C	83.7 C	137 C
46		281	197	75.0	24.3	12.2	15.4
47	44 + 47 + 65	C44	C44	C44	C44	C44	C44
48		1,780	1,710	1,040	454	134	263
49	49 + 69	18,000 C	15,600 C	8,570 C	2,940 C	945 C	1,770 C
50	50 + 53	6,600 C	5,400 C	3,120 C	1,420 C	378 C	688 C
51	45 + 51	C45	C45	C45	C45	C45	C45
52		90,300	80,400	41,000	12,700	4,360	7,300
53	50 + 53	C50	C50	C50	C50	C50	C50
54		29.3	16.1 J	5.28 J	2.95	1.12 J	1.15 J
55		20.6 U	22.1 U	15.5 U	26.0	12.0	14.1
56		7,980	7,420	4,190	1,680	633	1,000
57		19.5 U	20.9 U	14.2 U	4.14	1.52 U	1.74 U
58		100	80.5	142	15.8	1.59 J	1.77 U
59	59 + 62 + 75	488 C	379 C	243 C	94.5 C	43.8 C	71.2 C
60		2,760	2,580	1,480	560	256	334
61	61 + 70 + 74 + 76	76,400 C	69,700 C	33,500 C	11,300 C	4,360 C	6,820 C
62	59 + 62 + 75	C59	C59	C59	C59	C59	C59
63		645	591	353	154	63.6	86.6
64		7,930	7,120	3,590	1,190	468	787
65	44 + 47 + 65	C44	C44	C44	C44	C44	C44
66		24,000	21,800	12,600	5,170	2,120	3,020
67		132	82.2	67.6	42.9	13.9	23.7
68		71.6	37.3	33.1	17.4	7.98	10.0
69	49 + 69	C49	C49	C49	C49	C49	C49
70	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61
71	40 + 41 + 71	C40	C40	C40	C40	C40	C40
72		66.6	37.9	28.8	14.5	7.26	9.06
73		207	127	68.8	21.5	12.8	15.5
74	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61
75	59 + 62 + 75	C59	C59	C59	C59	C59	C59
76	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61
77		286	269	209	110	57.5	64.2
78		20.9 U	22.4 U	15.6 U	2.95 U	1.57 U	1.80 U
79		3,060	2,880	1,820	708	262	538
80		18.6 U	19.9 U	14.0 U	2.68 U	1.43 U	1.63 U
81		37.4 EMPC	66.9 EMPC	40.1 EMPC	8.76 EMPC	3.95 EMPC	5.19 EMPC
82		6,370	6,510	2,920	926	422	561
83	83 + 99	91,600 C	91,100 C	59,300 C	24,400 C	7,380 C	13,200 C
84		16,700	16,100	6,740	2,180	936	1,350
85	85 + 116 + 117	21,300 C	21,500 C	12,800 C	5,250 C	1,970 C	2,920 C
86	86 + 87 + 97 + 108 + 119 + 125	108,000 C	101,000 C	58,800 C	22,000 C	8,970 C	15,900 C
87	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86
88	88 + 91	13,600 C	13,400 C	6,920 C	2,800 C	945 C	1,690 C
89		476	486	226	79.5	31.5	50.1
90	90 + 101 + 113	196,000 C	179,000 C	79,900 C	35,400 C	11,900 C	21,400 C
91	88 + 91	C88	C88	C88	C88	C88	C88
92		15,400	15,200	8,160	3,180	1,080	1,860
93	93 + 95 + 98 + 100 + 102	122,000 C	114,000 C	63,300 C	23,900 C	7,950 C	15,700 C
94		191	183	84.8	26.9	9.29	17.3
95	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93
96		213	207	86.8	23.4	11.4	15.3
97	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86
98	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93
99	83 + 99	C83	C83	C83	C83	C83	C83
100	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93
101	90 + 101 + 113	C90	C90	C90	C90	C90	C90
102	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93
103		246	221	114	38.5	11.5	25.5
104		2.19 J	1.75 J	0.770 J	1.29 J	0.205 EMPC	0.343 J
105		56,500	55,900	36,400	15,400	6,140	8,170
106		16.7 U	18.1 U	17.1 U	7.08 U	5.33 U	6.51 U
107	107 + 124	4,800 C	4,910 C	2,940 C	1,230 C	471 C	686 C
108	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86
109		7,590	7,600	4,680	2,210	908	1,140
110	110 + 115	183,000 C	169,000 C	68,100 C	29,700 C	11,100 C	18,200 C
111		10.0 U	10.2 U	6.31 U	1.34 U	0.197 U	1.23 U
112		9.61 U	9.80 U	5.86 U	1.35 U	0.198 U	1.24 U
113	90 + 101 + 113	C90	C90	C90	C90	C90	C90
114		3,320	3,280	2,290	1,020	426	533
115	110 + 115	C110	C110	C110	C110	C110	C110
116	85 + 116 + 117	C85	C85	C85	C85	C85	C85
117	85 + 116 + 117	C85	C85	C85	C85	C85	C85
118		237,000 J	224,000 J	118,000 J	65,000 J	29,900 J	44,500 J
119	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86
120		23.5	22.2	16.7 J	13.0	5.96	10.9 EMPC
121		9.43 U	9.61 U	6.02 U	1.34 U	0.196 U	1.22 U
122		875	824	481	216	89.2	117
123		3,890	3,760	2,560	1,070	591	817
124	107 + 124	C107	C107	C107	C107	C107	C107
125	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86
126		42.3	56.5	35.1	14.0	6.78	10.3
127		161	166	115	52.3	20.3	27.5
128	128 + 166	15,300 C	14,700 C	8,970 C	3,300 C	1,470 C	1,870 C
129	129 + 138 + 160 + 163	173,000 C	165,000 C	114,000 C	45,300 C	20,800 C	29,900 C
130		5,520	5,350	3,420	1,360	584	748
131		1,250	1,200	679	263	91.9	150
132		21,000	20,400	11,100	4,090	1,710	2,390
133		794	782	541	222	86.3	121
134	134 + 143	3,320 C	3,280 C	1,960 C	679 C	266 C	392 C
135	135 + 151 + 154	13,900 C	13,300 C	7,830 C	2,900 C	1,000 C	1,820 C
136		5,510	5,250	2,690	969	404	583
137		6,640	6,660	4,460	2,190	823	1,120
138	129 + 138 + 160 + 163	C129	C129	C129	C129	C129	C129
139	139 + 140	1,980 C	1,970 C	1,220 C	469 C	136 C	270 C
140	139 + 140	C139	C139	C139	C139	C139	C139
141		2,920	3,640	1,880	889	344	426
142		13.3 J	18.3 J	19.9 U	4.25 U	4.78 U	3.65 U
143	134 + 143	C134	C134	C134	C134	C134	C134

Table 7
Forebay Clam - Analytical Results and Screening Criteria for PCB Congeners
October 2011 Sampling

IUPAC #	COELUTING CONGENERS ¹	P112 111019P112T C 10/19/2011	P113 111019P113T C 10/19/2011	P114 111019P114T C 10/19/2011	P115 111018P115T C 10/18/2011	P117 111018P117T C 10/18/2011	P118 111018P118T C 10/18/2011
144		2,300	2,250	1,350	498	169	298
145		33.7	32.8	16.1 J	5.83	2.19	3.56
146		14,800	14,200	10,700	5,270	2,060	3,030
147	147 + 149	70,600 C	69,400 C	44,900 C	16,900 C	6,570 C	11,200 C
148		36.4	37.3	20.9 J	8.76	1.69 J	5.90
149	147 + 149	C147	C147	C147	C147	C147	C147
150		53.7	52.5	29.9	10.5	3.76	6.91
151	135 + 151 + 154	C135	C135	C135	C135	C135	C135
152		64.2	63.0	33.0	10.3	3.68	6.72
153	153 + 168	183,000 C	149,000 C	120,000 C	47,400 C	23,000 C	46,500 C
154	135 + 151 + 154	C135	C135	C135	C135	C135	C135
155		1.28 EMPC	0.814 J	1.15 EMPC	1.25 J	0.736 J	0.708 J
156	156 + 157	15,500 C	14,700 C	11,100 C	4,820 C	2,120 C	2,960 C
157	156 + 157	C156	C156	C156	C156	C156	C156
158		13,000	12,800	8,460	3,540	1,230	1,980
159		25.5	38.1	22.7	8.23	4.56	4.94 EMPC
160	129 + 138 + 160 + 163	C129	C129	C129	C129	C129	C129
161		8.68 U	6.75 U	14.0 U	2.97 U	3.34 U	2.55 U
162		279	276	171	72.8	34.1	40.4
163	129 + 138 + 160 + 163	C129	C129	C129	C129	C129	C129
164		3,170	3,360	1,990	737	273	398
165		9.35 J	8.43 EMPC	16.0 U	3.46 U	3.89 U	3.19
166	128 + 166	C128	C128	C128	C128	C128	C128
167		9,110	7,680	6,090	2,500	1,320	2,530
168	153 + 168	C153	C153	C153	C153	C153	C153
169		9.50 U	7.01 U	15.5 U	3.10 U	2.79 U	2.63 U
170		1,780	1,760	1,130	496	214	232
171	171 + 173	1,880 C	1,800 C	1,150 C	481 C	235 C	303 C
172		129	137	85.9	35.2	22.9	20.6
173	171 + 173	C171	C171	C171	C171	C171	C171
174		850	975	491	217	114	122
175		166	164	109	48.4	17.1	29.2
176		494	488	299	132	63.7	89.9
177		2,620	2,470	1,690	735	397	483
178		696	662	486	224	93.1	155
179		1,110	1,110	649	308	164	229
180	180 + 193	6,310 C	5,720 C	4,300 C	2,130 C	1,180 C	1,960 C
181		224	210	144	60.2	23.2	33.3
182		23.9	25.7	16.4	8.15	1.74 J	3.62
183	183 + 185	3,540 C	3,370 C	2,390 C	1,110 C	453 C	736 C
184		7.09	7.04	4.76	2.63	0.784 J	2.10 J
185	183 + 185	C183	C183	C183	C183	C183	C183
186		1.17 J	1.48 J	0.746 J	0.316 EMPC	0.182 EMPC	0.164 J
187		5,520	4,920	3,770	1,890	831	1,280
188		6.45	6.42	4.46	2.26	1.31 J	1.66 J
189		85.1	84.8	55.7	23.8	10.6	11.9
190		1,540	1,390	981	447	276	342
191		203	200	130	62.6	28.1	32.9
192		0.460 U	0.316 U	0.201 U	0.140 U	0.181 U	0.130 U
193	180 + 193	C180	C180	C180	C180	C180	C180
194		79.1	69.6	53.2	28.0	24.9	17.8
195		171	161	118	66.7	48.3	45.7
196		114	108	74.3	47.1	23.5	27.7
197	197 + 200	53.6 C	47.4 C	34.2 C	22.0 C	9.74 C	14.0 C
198	198 + 199	189 C	193 C	123 C	84.7 C	43.0 C	47.4 C
199	198 + 199	C198	C198	C198	C198	C198	C198
200	197 + 200	C197	C197	C197	C197	C197	C197
201		110	92.4	74.1	41.9	16.1	29.4
202		225	193	155	84.6	55.7	69.9
203		573	531	371	229	132	238
204		0.169 U	0.206 EMPC	0.151 EMPC	0.0710 EMPC	0.0690 U	0.0790 EMPC
205		25.9	22.6	17.4	9.16	5.26	7.18
206		80.5	67.8	52.0	31.1	17.3	20.5
207		15.5	12.5	10.2	6.46	2.84	4.42
208		23.7	20.9	16.9	11.1	7.05	7.83
209		13.7	14.4	11.8	8.33	8.21	9.34

Maximum Detected Concentration	237,000 J	224,000 J	120,000 C	65,000 J	29,900 J	46,500 C	Total PCB SLV
Minimum Detected Concentration	0.158 J	0.206 EMPC	0.137 EMPC	0.0710 EMPC	0.182 EMPC	0.0790 EMPC	pg/g
Total of Detected Concentrations	2,028,891 J	1,878,113 J	1,081,706 J	449,113 J	184,887 J	303,131 J	570

Notes:

C = Concentration represents coeluting congeners.

U = The analyte was not detected above the RDL.

J = The reported value is an estimate.

UJ = The analyte was not detected. The RDL is an estimate.

ng/kg = nanogram/kilogram

pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.

¹= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.

RDL = Reported detection limit

Table 8
Forebay Sediment - Analytical Results and Screening Criteria for PCB Congeners
October 2011 Sampling

IUPAC #	COELUTING CONGENERS ¹	P112 111019P112SD 10/19/2011	P113 111019P113SD 10/19/2011	P114 111019P114SD 10/19/2011	P115 111019P115SD 10/19/2011	P116 111019P116SD 10/19/2011	P117 111019P117SD 10/19/2011	P118 111019P118SD 10/18/2011
Individual Congeners in pg/g (ng/kg), wet weight								
1		6.85	7.17	11.8	0.877 J	0.408 J	1.23 J	0.847 J
2		0.853 EMPC	1.53 J	0.464 EMPC	0.844 J	4.39	0.428 EMPC	2.72
3		6.62	6.38	3.07	4.87	1.950 U	1.910 U	1.980 U
4		103	219	146	15.2	3.79	6.81	5.31
5		0.488 U	8.04	0.849 EMPC	0.265 U	0.188 U	0.177 U	0.180 U
6		14.9	91.1	26.0	6.52	0.986 J	1.25 J	0.524 J
7		22.2	26.6	12.4	23.2	0.426 EMPC	0.638 EMPC	0.238 EMPC
8		70.0	439	127	13.0	3.75	5.72	3.68
9		34.8	62.7	19.0	26.8	0.444 EMPC	1.29 J	0.508 J
10		29.8	26.2	6.76	34.1	0.239 EMPC	0.589 J	0.244 EMPC
11		4.12	7.80	7.02	8.10	25.1	10.8	19.4
12	12 + 13	13.1 C	68.1 C	12.3 C	23.5 C	0.528 C EMPC	1.10 C EMPC	1.19 C J
13	12 + 13	C12	C12	C12	C12	C12	C12	C12
14		0.439 U	0.282 J	0.253 U	0.239 U	0.178 U	0.167 U	0.170 U
15		86.7	900	118	121	4.79	8.31	7.27
16		43.2	555	99.5	16.4	1.83 J	3.57	1.40 J
17		360	900	346	180	10.4	21.4	7.73
18	18 + 30	331 C	1,890 C	445 C	115 C	9.34 C	20.0 C	6.54 C
19		282	387	226	183	3.20	9.57	4.01
20	20 + 28	436 C	3,870 C	947 C	222 C	26.7 C	38.3 C	33.9 C
21	21 + 33	104 C	1,240 C	175 C	40.6 C	22.4 C	9.87 C	28.2 C
22		56.3	1,170	145	44.6	3.72	5.31	4.97
23		0.657 J	3.32	0.904 J	0.234 U	0.0607 U	0.0600 J	0.0495 U
24		2.05	32.5	3.84	0.0472 U	0.0680 J	0.0478 U	0.0860 EMPC
25		108	351	178	74.6	2.84	7.55	4.76
26	26 + 29	144 C	522 C	304 C	100 C	4.07 C	11.4 C	4.86 C
27		144	212	208	149	3.11	8.72	3.31
28	20 + 28	C20	C20	C20	C20	C20	C20	C20
29	26 + 29	C26	C26	C26	C26	C26	C26	C26
30	18 + 30	C18	C18	C18	C18	C18	C18	C18
31		807	4,500	688	215	15.9	37.9	45.5
32		211	869	341	111	5.33	11.6	5.06
33	21 + 33	C21	C21	C21	C21	C21	C21	C21
34		2.94	9.09	5.22	1.07 J	0.697 J	0.299 J	0.305 J
35		2.14 EMPC	25.0	3.60	1.06 EMPC	0.335 J	0.249 J	0.786 J
36		0.347 U	1.38 U	0.337 U	0.225 U	0.0619 U	0.0487 U	0.0495 U
37		74.2	899	134	38.5	5.21	6.04	17.0
38		5.12 EMPC	16.6 EMPC	2.25 EMPC	0.728 EMPC	0.113 EMPC	0.193 EMPC	0.757 EMPC
39		18.9	61.5	11.1	2.49	0.412 J	0.970 J	3.75
40	40 + 41 + 71	2,690 C	9,510 C	1,330 C	375 C	42.3 C	94.3 C	411 C
41	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40
42		1,110	0.300 U	467	182	27.6	36.1	193
43		149	411	112	24.0	3.92	8.74	24.2
44	44 + 47 + 65	17,000 C	84,900 C	4,780 C	2,130 C	204 C	474 C	2,630 C
45	45 + 51	338 C	1,200 C	374 C	110 C	8.67 C	16.2 C	20.1 C
46		145	467	123	45.6	3.96	5.25	7.20
47	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44
48		529	2,010	339	78.7	10.1	24.4	88.0
49	49 + 69	8,650 C	45,400 C	2,980 C	1,250 C	176 C	283 C	1,650 C
50	50 + 53	1,160 C	3,160 C	989 C	298 C	0.0531 C U	52.5 C	57.9 C
51	45 + 51	C45	C45	C45	C45	C45	C45	C45
52		41,300	227,000	11,000	5,150	425	1,150	6,480
53	50 + 53	C50	C50	C50	C50	C50	C50	C50
54		21.0	23.6	31.5	12.2	0.660 EMPC	1.29 J	0.585 J
55		6.87 U	11.3 U	6.01 U	2.62 U	2.89	1.18 U	2.20 U
56		3,470	17,800	1,110	465	50.6 J	126	1,180
57		6.53 U	10.7 U	5.71 U	2.49 U	0.203 EMPC	1.01 U	1.88 U
58		6.62 U	10.9 U	5.79 U	2.53 U	1.33 EMPC	1.06 U	1.97 U
59	59 + 62 + 75	154 C	595 C	130 C	33.6 C	8.88 C	7.58 C	28.3 C
60		1,460	5,350	491	202	19.6 J	52.6	509
61	61 + 70 + 74 + 76	45,200 C	213,000 C	14,100 C	5,390 C	534 C J	1,490 C	12,500 C
62	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59
63		307	1,060	121	46.0	11.5	15.0	105
64		5,090	0.216 U	1,420	624	74.2	155	1,020
65	44 + 47 + 65	C44	C44	C44	C44	C44	C44	C44
66		9,590	50,300	3,140	1,300	261	416	3,520
67		24.5	178	40.3	5.94 EMPC	1.15 J	1.63 EMPC	1.72 U
68		7.96	10.4 U	17.0	4.43	4.18	0.974 U	1.82 U
69	49 + 69	C49	C49	C49	C49	C49	C49	C49
70	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61
71	40 + 41 + 71	C40	C40	C40	C40	C40	C40	C40
72		15.5	34.6	24.2	5.63	5.71	1.90 J	4.00
73		0.450 U	0.215 U	0.0667 U	0.105 U	0.0487 U	0.0478 U	0.0495 U
74	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61
75	59 + 62 + 75	C59	C59	C59	C59	C59	C59	C59
76	61 + 70 + 74 + 76	C61	C61	C61	C61	C61	C61	C61
77		131	530	66.4	22.6	8.40	7.35	56.7
78		14.0 EMPC	48.5	6.42 U	2.80 U	0.156 U	1.21 U	6.71 EMPC
79		866	10.4 U	204	92.2	10.1	30.8	385
80		6.72 U	11.1 U	5.87 U	2.56 U	0.140 U	1.09 U	2.03 U
81		5.89 U	32.0 EMPC	5.36 U	2.40 U	0.196 EMPC	0.974 U	1.75 U
82		6,850	35,600	2,160	952	72.7 J	244	2,630
83	83 + 99	34,800 C	174,000 C	11,300 C	4,780 C	801 C J	1,310 C	16,500 C
84		16,700	84,000	4,910	2,220	222 J	519	5,010
85	85 + 116 + 117	11,100 C	51,600 C	3,700 C	1,610 C	154 C J	435 C	4,500 C
86	86 + 87 + 97 + 108 + 119 + 125	46,200 C	227,000 C	13,700 C	6,370 C	525 C J	1,520 C	18,400 C
87	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86
88	88 + 91	8,110 C	38,900 C	2,580 C	1,090 C	132 C J	281 C	2,830 C
89		399	1,350	126	51.3	5.39	14.4	140
90	90 + 101 + 113	67,800 C	338,000 C	20,500 C	8,840 C	1,020 C J	2,110 C	27,700 C
91	88 + 91	C88	C88	C88	C88	C88	C88	C88
92		8,900	47,400	3,010	1,330	165 J	343	3,760
93	93 + 95 + 98 + 100 + 102	51,000 C	263,000 C	14,400 C	6,290 C	659 C J	1,480 C	15,600 C
94		170	553	71.0	24.2	2.95	6.80	49.2
95	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93
96		221	756	76.4	32.2	3.25 EMPC	7.64	50.9
97	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86
98	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93
99	83 + 99	C83	C83	C83	C83	C83	C83	C83
100	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93
101	90 + 101 + 113	C90	C90	C90	C90	C90	C90	C90
102	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93	C93	C93	C93
103		186	709	79.8	30.8	7.12	8.55	60.7
104		1.15 U	4.71	1.04 J	0.271 J	0.0610 EMPC	0.0760 EMPC	0.402 EMPC
105		23,800	98,400	8,300	3,740	370 J	1,110	11,500
106		41.7 U	173 U	14.5 U	7.06 U	1.09 U	3.36 U	20.1 U
107	107 + 124	2,150 C	8,820 C	815 C	355 C	26.2 C J	102 C	992 C
108	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86
109		3,270	16,500	1,210	536	77.1	170	1,570
110	110 + 115	96,500 C	446,000 C	27,200 C	10,300 C	923 C J	2,610 C	37,300 C
111		4.31 U	10.8 U	1.46 U	0.832 U	0.265 EMPC	0.260 U	0.742 U
112		4.33 U	10.8 U	1.47 U	0.835 U	0.209 U	0.248 U	0.707 U
113	90 + 101 + 113	C90	C90	C90	C90	C90	C90	C90
114		1,310	5,340	474	201	23.2 J	62.4	679
115	110 + 115	C110	C110	C110	C110	C110	C110	C110
116	85 + 116 + 117	C85	C85	C85	C85	C85	C85	C85
117	85 + 116 + 117	C85	C85	C85	C85	C85	C85	C85
118		52,900	233,000	19,600	8,690	1,040 J	2,470	25,800
119	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86
120		9.84	28.7 EMPC	5.11 EMPC	1.73 EMPC	2.75	0.520 J	2.87 EMPC
121		4.24 U	10.6 U	1.43 U	0.818 U	0.207 U	0.245 U	0.699 U
122		600	2,230	220	95.3	8.02	30.3	287
123		868	3,130	297	147	14.5	38.1	411
124	107 + 124	C107	C107	C107	C107	C107	C107	C107
125	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86	C86	C86	C86
126		53.3 U	209 U	17.1 U	9.20 U	1.38 U	3.74 U	28.7 U
127		87.6	358	34.4	15.5	2.51	5.71	36.7
128	128 + 166	10,300 C	70,500 C	3,600 C	1,810 C	176 C J	428 C	5,270 C
129	129 + 138 + 160 + 163	67,500 C	425,000 C	18,600 C	11,000 C	1,300 C	2,290 C	30,400 C
130		3,020	12,900	1,090	580	62.4	138	1,430
131		858	3,270	273	149	10.3	29.7	360
132		19,100	155,000	6,020	3,430	274 J	651	8,600
133		435	1,750	151	87.5	11.9	19.5	184
134	134 + 143	2,570 C	9,880 C	913 C	475 C	41.9 C J	95.5 C	1,060 C
135	135 + 151 + 154	8,130 C	63,900 C	2,810 C	1,610 C	215 C	325 C	3,510 C
136		4,490	18,600	1,480	831	99.2 J	148	1,980
137		4,010	16,400	1,510	794	78.7	176	1,860
138	129 + 138 + 160 + 163	C129	C129	C129	C129	C129	C129	C129
139	139 + 140	1,130 C	4,520 C	393 C	225 C	15.7 C	42.9 C	489 C
140	139 + 140	C139	C139	C139	C139	C139	C139	C139
141		6,220	50,900	2,170	1,220	162	273	3,080

Table 8
Forebay Sediment - Analytical Results and Screening Criteria for PCB Congeners
October 2011 Sampling

IUPAC #	COELUTING CONGENERS ¹	P112 111019P112SD 10/19/2011	P113 111019P113SD 10/19/2011	P114 111019P114SD 10/19/2011	P115 111018P115SD 10/18/2011	P116 111018P116SD 10/18/2011	P117 111018P117SD 10/18/2011	P118 111018P118SD 10/18/2011	
158		5,570	43,000	1,990	1,100	102	236	2,780	
159		59.6	259	19.6	8.70	6.71	4.47	31.4	
160	129 + 138 + 160 + 163	C129	C129	C129	C129	C129	C129	C129	
161		10.8 U	33.7 U	7.27 U	2.47 U	0.887 U	1.54 U	5.63 U	
162		165	677	58.2	27.0	4.34	8.81	79.8	
163	129 + 138 + 160 + 163	C129	C129	C129	C129	C129	C129	C129	
164		2,660	11,700	899	509	63.1	118	1,230	
165		12.8 U	40.0 U	8.62 U	2.93 U	1.05 U	1.83 U	6.67 U	
166	128 + 166	C128	C128	C128	C128	C128	C128	C128	
167		1,880	8,540	715	348	56.2	91.3	974	
168	153 + 168	C153	C153	C153	C153	C153	C153	C153	
169		11.1 U	36.3 U	7.58 U	2.16 U	1.02 U	1.62 U	6.80 U	
170		3,200	15,800	1,290	650	249	173	1,650	
171	171 + 173	1,020 C	4,660 C	367 C	115 C	72.7 C	51.3 C	479 C	
172		404	1,820	135	52.8	42.1	22.6	207	
173	171 + 173	C171	C171	C171	C171	C171	C171	C171	
174		1,780	9,000	614	258	206	107	885	
175		79.7	420	32.0	15.9	9.00	5.71	38.6	
176		232	1,120	83.3	42.4	22.6	16.1	110	
177		1,100	5,330	477	146	130	68.8	526	
178		225	1,380	101	53.4	38.7	19.7	112	
179		523	2,800	231	115	66.0	44.3	211	
180	180 + 193	3,920 C	25,400 C	1,700 C	970 C	516 C	246 C	2,090 C	
181		88.5	426	34.2	9.75	3.35	4.66	43.4	
182		23.0	104	8.02	3.12	1.23 J	1.43 EMPC	12.3	
183	183 + 185	1,320 C	7,230 C	509 C	211 C	164 C	88.8 C	636 C	
184		2.57 EMPC	11.7	0.961 J	0.488 EMPC	0.140 EMPC	0.138 J	1.29 J	
185	183 + 185	C183	C183	C183	C183	C183	C183	C183	
186		2.28	8.71	0.771 J	0.292 EMPC	0.0487 U	0.114 J	1.20 J	
187		1,420	9,280	630	346	294	131	811	
188		2.85	12.0	0.976 EMPC	0.509 J	0.169 EMPC	0.171 J	1.41 J	
189		154	741	60.4	30.4	10.3	8.55	82.7	
190		475	2,460	189	83.6	50.5	30.0	263	
191		107	517	41.2	17.0	10.6	6.73	56.7	
192		0.250 U	0.513 U	0.0788 U	0.0668 U	0.0516 U	0.0567 U	0.0698 U	
193	180 + 193	C180	C180	C180	C180	C180	C180	C180	
194		282	2,840	169	141	102 J	25.0	154	
195		100	933	60.1	49.0	43.1 J	10.4	58.7	
196		93.4	1,190	75.7	61.1	47.4 J	9.80	51.7	
197	197 + 200	25.6 C	387 C	27.9 C	16.2 C	18.5 C	3.95 C	15.4 C	
198	198 + 199	158 C	3,180 C	162 C	137 C	93.3 C J	22.0 C	73.6 C	
199	198 + 199	C198	C198	C198	C198	C198	C198	C198	
200	197 + 200	C197	C197	C197	C197	C197	C197	C197	
201		16.9	326	21.5	11.8	11.2	3.03	8.37	
202		25.3	626	37.6	27.5	14.2	5.55	11.1	
203		124	2,020	129	99.2	56.1	14.5	59.5	
204		0.129 U	0.507 J	0.0636 U	0.0774 U	0.0487 U	0.0478 U	0.0660 EMPC	
205		14.3	110	7.78	5.33	4.37	1.15 J	6.94	
206		71.3	1,480	75.1	61.1	23.3	8.27	31.9	
207		7.39	214	11.3	9.19	3.97	1.21 J	2.87	
208		12.1	334	17.9	15.0	6.13	2.36 U	5.98	
209		21.3	151	13.2	8.13	7.01	3.08 U	12.0	
Maximum Detected Concentration		96,500 C	446,000 C	27,200 C	11,000 C	1,300 C	2,610 C	37,300 C	Total PCB SLV
Minimum Detected Concentration		0.657 J	0.282 J	0.124 J	0.271 J	0.0610 EMPC	0.0600 J	0.0660 EMPC	pg/g
Total of Detected Concentrations		807,866 J	4,311,623 J	258,016 J	118,796 J	15,271 J	28,826 J	314,513 J	48

Notes:
C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
¹= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit

Final Quality Control Summary for Analytical Chemistry

**SUPPLEMENTAL SAMPLING RIVER OPERABLE UNIT REMEDIAL
INVESTIGATION**

QUALITY CONTROL SUMMARY REPORT FOR ANALYTICAL CHEMISTRY

RIVER OPERABLE UNIT SAMPLING – August-September 2011

FEBRUARY 2013

Prepared by:

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URS

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1.0 Executive Summary

The overall assessment of the sampling results show the quality of the data is acceptable to support project objectives. The contracted laboratory provided all requested analyses and the delivered data reports were complete. Some data were qualified as estimated and flagged with a 'J' or 'UJ'. Some data were qualified as not detected and flagged with a 'U'. All data qualifiers resulting from this review have been added to both the project database and the data tables within the main body of the attached report.

2.0 Project Description

URS collected 46 smallmouth bass samples from within both the forebay and reference area and seven co-located sediment and clam samples from the footprint of the 2007 sediment removal action in support of the Bradford Island Bonneville Lock and Dam Project, Supplemental Sampling River Operable Unit Remedial Investigation. The fish were collected on August 20th and 21st, 2011 and September 3rd and 4th, 2011. The sediment and clam samples were collected on October 18th and 19th, 2011. Table 1 summarizes the matrix, area, site identification number, URS sample identification number, collection date, laboratory identification numbers and requested analyses for each sample.

3.0 Sampling and Analytical Procedures

Samples were collected according to the Quality Assurance Project Plan (QAPP) *Upland Operable Unit Remedial Investigation* (URS 2008). Deviations from the QAPP (i.e. sample number and volume collected at each pre-determined location) are addressed in *Work Plan Memorandum Supplemental Sampling River Operable Unit* (URS 2011). In some instances, as indicated in Table 1, insufficient sample volume was available to analyze the full suite of analytes requested.

All samples were frozen following sampling at the URS warehouse. Samples were submitted to Columbia Analytical Services (CAS) of Kelso, Washington and logged in under three CAS sample delivery group (SDG) numbers (K1109541, K1109547, and K1110302). Fish and clam samples were stored frozen (-20 degrees Celsius, °C) upon receipt. Sediment samples were stored in a refrigerator at 4 °C. The stomach contents of the small mouth bass were removed and photographed. Whole-body bass, clams and sediment samples were homogenized by CAS using an industrial blender.

An aliquot of the homogenized samples were sent to Axys Analytical Services Ltd. of Sidney, British Columbia, Canada (Axys) to perform the PCB congener analysis by EPA Method 1668A, *Chlorinated Biphenyl Congeners in Water, Soil, Sediment and Tissue by high Resolution Gas Chromatography/High Resolution Mass Spectrometry*. The Axys analytical data report includes a summary of the Axys Method 1668A modifications. Samples were logged in by Axys under three SDGs (DPWG38456, DPWG38798, and DPWG388864).

The following table lists the parameters analyzed on one or more of the samples:

Method	Analytical Parameter
EPA 1668A	Polychlorinated Biphenyls (PCBs) as congeners
EPA 8082M	PCBs as Aroclors
EPA 6000/7000 series	Metals ¹
EPA 7471A	Total Mercury
EPA 1630mod	Methyl Mercury
NWTPH-Dx (Ecology 1997)	Northwest Total Petroleum Hydrocarbon – Diesel and Residual Range (NWTPH-Dx)
EPA 8270C/ 8270D-SIM	Semi-Volatile Organic Compounds (SVOCs)
EPA 8270D-SIM	Polynuclear Aromatic Hydrocarbons
CAS SOP	Butylins
EPA 8151	Herbicides
EPA 8081B	Pesticides
NOAA	Percent Lipids
Plumb (Plumb 1981) EPA 415.1	Total Organic Carbon (TOC)
Gravimetric	Percent Solids – Sediment Matrix
Freeze Dry	Percent Solids – Tissues Matrices
PSEP (PSEP 1996)	Grain Size

¹ = Aluminum, Antimony, Arsenic, barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Thallium, Vanadium, Zinc

Table 1 summarizes the specific requested analyses for each sample by URS and laboratory identification numbers.

4.0 Data Validation

Analyses were performed in general accordance with the above-referenced methods. The analytical results for all samples were subjected to a quality assurance/quality control (QA/QC) review. This QA/QC review includes evaluation of representativeness (sample collection/handling), accuracy (spike and/or standard recoveries), analytical precision (duplicate relative percent difference), comparability (use of standard methods), and completeness (percent of usable data). Specifically, the following items were reviewed when appropriate: compliance with the QAPP, chain-of-custody (COC), laboratory case narrative, proper sample preservation and handling procedures, holding times, quantitation limits, matrix/matrix spike duplicate (MS/MSD) recoveries, laboratory duplicate results, blank spike recoveries (laboratory control samples [LCS/LCSD]), data completeness and format, data qualifiers assigned by the laboratory, and analyte identification. The following items were reviewed on 20% or greater of the data: primary and secondary column verification, initial and continuing calibration verification, instrument calibration, and verification of the reported electronic data with the hard copy deliverable. If inconsistencies in the above listed items were identified during the 20% data review a complete review would have been performed, however, no inconsistencies were identified.

The data were reviewed in accordance with the QAPP (URS 2008). Sediment and tissue results were reviewed on a dry and wet weight basis, respectively, in accordance with the QAPP. The data results were reviewed in accordance with the criteria contained in the DoD QSM (DoD 2006), the above-listed methods, and the following EPA guidance documents, as applicable; EPA's *Contract Laboratory*

Program National Functional Guidelines (EPA NFGs) for Organic Data Review (USEPA 2008) and EPA's *NFGs for Inorganic Superfund Data Review* (USEPA 2010) in that order. Additionally, because the QAPP referenced does not discuss PCB congeners, the data review process utilized guidance from EPA's *NFGs for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs Data Review* (USEPA 2005), *EPA Region 10 Standard Operating Procedure (SOP) for the Validation of Method 1668 Toxic, Dioxin-like, PCB Data* (USEPA 1995), and *USEPA Region II Data Validation SOP for EPA Method 1668, Revision A, August 2003 and Statement of Work for Analysis of Chlorinated Biphenyl Congeners, May 2005 (EPA, 2008)* as appropriate for the method performed. In the case of disagreement between the guidance documents and the analytical method, method criteria were utilized for the purposes of this data review. Project-specific QC criteria are listed in the QAPP.

A summary of qualifiers assigned to results in this investigation is included in Table 2 for all non-congener analyses. Qualifiers assigned by Apex, in addition to, qualifiers assigned to congener results as part of this review are included in Table 3. Samples are referenced in the qualifier summary tables by their URS sample identification assigned in the field.

Qualifiers that may be assigned to the results of this investigation include the following:

- U – The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- J – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- EMPC – The analyte was not positively identified; the associated numerical value is the approximate Estimated Maximum Potential Concentration (EMPC) of the analyte in the sample. This qualifier is used only for PCB congener results.
- UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- DNR – Do Not Report. Another result is available that is more reliable or appropriate.

Final sample results and qualifiers are presented in the analytical tables provided in the results report.

4.1 Chain-of-Custody, Sample Preservation and Holding Time

Non-congener Results

COC forms indicated samples were maintained under chain-of-custody protocols and forms were signed upon release and receipt. All coolers were submitted to CAS at temperatures within the EPA-recommended temperature range of 6°C or below. All samples were analyzed within the technical and contracted holding times.

Congener Results

The COC forms for the CAS to Axys delivery indicate the samples were maintained under proper custody and the forms were signed upon release and receipt. The condition and temperature of the samples upon receipt by Axys was appropriate and all samples listed on the COC form were present. Axys noted two COC discrepancies during sample receipt:

- The bass sample label for sample R08202011SB50 with CAS ID K1109547-007 had an incorrect URS sample ID.
- The clam sample 111018P117TC had two labels on the jar and one label did not match the identification listed on the COC.

In both instances the laboratory notified CAS to resolve the discrepancy and the sample was logged in according to the COC.

All samples were analyzed within the technical and contracted holding times.

4.2 Instrument Calibration

The laboratory performed initial multipoint calibrations for all target and surrogate compounds as required by the analytical methods. Initial calibrations (ICALs) and continuing calibrations (CCALs) were analyzed at the proper frequency and at the appropriate concentrations required by the methods. Instrument calibrations were acceptable for all sample analyses.

4.3 Review of Blanks

Method blanks were used to check for laboratory contamination and instrument bias. The laboratory analyzed at least one method blank for each analysis and for each analytical batch, per QAPP requirements. Initial calibration and continuing calibration blanks are also analyzed when appropriate per analytical method to check for laboratory contamination and instrument bias. Field blanks were not collected as part of this supplemental sampling analytical program. Qualification of samples due to method blank contamination followed guidelines set forth in the EPA NFGs as discussed below.

Non-congener Results

Non-congener organic sample results less than five times (5x) and inorganic sample results and common organic laboratory contaminants less than ten times (10x) the associated blank concentration, and between the method detection limit (MDL) and the method reporting limit (MRL) or limit of quantitation (LOQ) were qualified as non-detect and flagged with a 'U' at the MRL. When sample results were less than 5x (or 10x) the blank concentration but above the MRL or LOQ, the reported result was qualified as non-detect and flagged with a 'U' at either the MRL, LOQ, or the reported concentration, whichever is higher. Target compounds detected in the method blank but reported as not detected in the associated samples were not qualified. Target compounds reported with concentrations greater than 5x (or 10x) the blank concentration were not qualified.

All method blanks analyzed were non-detect with the following exceptions:

Delivery Group	Matrix	Laboratory ID	Analyte	Concentration	Qualification
Metals-mg/kg (wet)					
K1110302	Clam	K110302-MB	Copper	0.003	None. Associated sample results >10x method blank
			Lead	0.0004	

Delivery Group	Matrix	Laboratory ID	Analyte	Concentration	Qualification	
			Zinc	0.011	contamination.	
K1109541	Fish	K1109541-MB2	Aluminum	0.38	Results reported <10x method blank concentration are reported as non-detect and flagged ‘U’ at the either the reporting limit or the reported concentration, whichever is higher.	
		K1109541-MB2	Antimony	0.0007		
		K1109541-MB1	Lead	0.0015		
		K1109541-MB2	Lead	0.0031		
K1109547		K1109547-MB1	Aluminum	0.07		
			Antimony	0.0036		
			Barium	0.0049		
			Copper	0.029		
			Lead	0.0035		
			Nickel	0.006		
		Zinc	0.33			
Metals-mg/kg (dry)						
K1110302	Sediment	K1110302-MB	Aluminum	0.6	None. Associated sample results >10x method blank contamination.	
			Beryllium	0.003		
			Cadmium	0.007		
			Cobalt	0.010		
			Lead	0.016		
			Nickel	0.06		
		Thallium	0.005			
SVOC-ug/kg (wet)						
K1109541	Fish	KWG1110776-5	Di-n-butyl Phthalate	10	Results reported <10x method blank concentration are reported as non-detect and flagged ‘U’ at the either the reporting limit or the reported concentration, whichever is higher.	
			Di-n-octyl Phthalate	8.2		
K1109547		KWG1110777-5	Di-n-butyl Phthalate	12		
			Di-n-octyl Phthalate	11		
K1110302	Clam	KWG1111604-3	Di-n-butyl Phthalate	18	None. Associated sample result is non-detect.	
PAH-mg/kg (wet)						
K1109541	Fish	KWG1110741-5	Phenanthrene	0.13	None. Associated sample results >10x method blank contamination or not-detected.	
		KWG1110910-3		0.12		
		KWG1110740-5	Benz(a)anthracene	0.055		Results reported <10x method blank concentration are reported as non-detect and flagged ‘U’ at the either the limit of quantitation or the reported concentration, whichever is higher.
			Fluorene	0.066		
			Phenanthrene	0.18		
K1109547		KWG1110741-5	Phenanthrene	0.13		
K1110302		Clam	KWG1111601-3	Phenanthrene	0.11	None. Associated sample result is >10x method blank contamination.

Congener Results

There were several low level method blank detections in the congener analyses. Congener sample results that were reported as detected at a concentration less than 5x the associated method blank concentration were qualified as non-detect and flagged 'U' at the reported concentration, the method blank concentration

or the lowest method calibration limit (LMCL), whichever is higher. Target compounds reported with concentrations greater than 5x the blank concentration were not qualified. EMPCs were considered detections when qualifying results. Target compounds detected in the method blank but reported as not detected in the associated samples were not qualified. Results qualified based on method blank concentrations are included in Table 3.

4.4 Surrogate Recovery Review (non-congener analysis only)

For non-congener analysis each sample analyzed for organic compounds was spiked with surrogates (i.e., system monitoring compounds). Surrogate recoveries are a measure of accuracy for the overall analysis of each individual sample.

When only one surrogate per fraction was spiked, all sample results associated with that fraction were qualified when the surrogate recovery was outside DoD QSM sample criteria. For SVOC and PAH analysis, results were qualified if two or more surrogate recoveries for a given fraction were outside DoD QSM sample criteria.

Surrogate recoveries were acceptable for all analyses with the following exceptions:

- The PAH fluorene-d10 surrogate recovery was below the lower DOD QSM control limit of 60% in the analysis of samples R09032011SB64 (58%), R09042011SB82 (57%), and R08202011SB45 (57%). Since two of the three spiked surrogates were within the control limits, no qualification is necessary.
- The PAH terphenyl-d14 surrogate recovery exceeded the upper DOD QSM control limit of 125% in the analysis of samples R09042011SB84 (129%) and R08202011SB43 (128%). Since two of the three surrogates are within the control limits, no qualification is necessary.
- The PCB decachlorobiphenyl surrogate recovery exceeded the DOD QSM control limit of 125% in sample 111018P113SD (126%). The Aroclor 1254 result, the only Aroclor detected, was qualified as estimated and flagged 'J' due to a potential high bias.

4.5 Labeled Internal Standard Recovery Review (congener analysis only)

Samples analyzed for PCB congeners are spiked with labeled internal (quantification) standards. These standards are used to quantitate target congeners and the calculations of target compound concentrations are designed to compensate for low extraction and/or cleanup efficiencies. In addition, their recovery is measured against injection standards added after extraction and cleanup to evaluate extraction and/or cleanup efficiency, which could affect sensitivity and could also affect target compounds not quantitated against chemically identical, isotopically labeled standard. The labeled standards percent recoveries were compared to limits set forth in EPA Method 1668A and those set by Axys detailed in Table 1 of the Axys narrative. All labeled internal standard recoveries were acceptable with the following exceptions:

- The labeled compound 13C12-2,2',4,4',6,6'-HxCB 155L (19.4%) recovery was below the laboratory limit of 25% in the analysis of sample 111018P117TC. The associated sample result was qualified as estimated and flagged 'J' to account for the potential low bias.
- The labeled internal standard compounds 13C12-2,2'-DiCB 4L (22.6%) , 13C12-2,2',4,6,6'-PeCB 104L (24.1%) and 13C12-2,2',3,4',5,6,6'-HpCB 188L (24.3%) and cleanup standards 13C12-2,4,4'-TriCB 28L (28.3%), 13C12-2,3,3',5,5'-PeCB 111L (28.6%), and 13C12-2,2',3,3',5,5',6-HpCB 178L (28.1%) percent recoveries were below the laboratory limits of

25% and 30%, respectively, in the analysis of sample R09042011SB79 due to a laboratory incident in which 50% of the sample was lost. The associated sample results were qualified as estimated and flagged 'J/UJ' to account for the potential low bias.

Results qualified based on the labeled internal standard recoveries are included in Table 3.

4.6 Blank Spike Recoveries

LCS/LCSD samples and standard reference materials (SRM) are used to monitor the laboratory's day-to-day performance of routine analytical methods independent of matrix effects and to assess accuracy for the target compounds. At least one LCS for each analysis and for each batch was analyzed per method requirements. In addition, CAS performed a LCS/LCSD analyses where sample volume was not available for laboratory duplicate or MS/MSD analyses.

Spiked blanks are used in place of LCS for congener analysis to monitor laboratory performance.

Non-congener Results

All non-congener LCS or LCS/LCSD, and spiked blank analyses met acceptance criteria.

No project specific percent recoveries were included in the QAPP for SRMs. SRMs are evaluated based on established certified reference values. All SRMs met acceptance criteria with the following exceptions:

Delivery Group	Laboratory Id	Analyte	Result (Certified reference values)	Qualification
Metals-Clams				
K1110302	K1110302-SRM1	Lead	0.215 mg/kg (0.276 – 0.534 mg/kg)	None. As the LCS and one of the two batch SRMs are in control, no qualification is necessary.

Congener Results

For Method 1668A, Ongoing Precision and Recovery (OPR) samples are used in place of an LCS to monitor laboratory performance. Project limits for OPR recoveries were not provided in the QAAP. OPR recoveries were compared to laboratory limits and were acceptable for all congener analyses with the following exceptions:

Delivery Group	Laboratory Id	IUPAC No.	Compound	%Recovery (Laboratory Limits)	Qualification
Fish					
DPWG38798	WG38157-102	118	2,3',4,4',5-Pentachlorobiphenyl	158 (50-150)	The associated samples were qualified as estimated and flagged 'J' to account for the potential high bias.
DPWG38456	WG38050-102	118	2,3',4,4',5-Pentachlorobiphenyl	152 (50-150)	The associated detected samples were qualified as estimated and flagged 'J'

Delivery Group	Laboratory Id	IUPAC No.	Compound	%Recovery (Laboratory Limits)	Qualification
		105	2,3,3',4,4'-Pentachlorobiphenyl	246 (50-150)	to account for the potential high bias.

Results qualified due to OPR are included in Table 3.

4.7 Matrix Spike/Matrix Spike Duplicate Review

MS/MSD samples are analyzed to assess the ability of the laboratory to recover the target compounds from the sample matrix. Additional sample volume was not collected for project-specific MS/MSD analysis during the supplemental sediment sampling. MS/MSD analysis is not required by Method 1668A for congener analysis. Where project sample volume was available, Apex analyzed at least one MS/MSD or one MS for each applicable non-congener analysis for each batch per method requirements. Samples without associated MS analyses could not be evaluated for accuracy with respect to the site-specific sample matrix.

As applicable, qualifiers have been applied to the parent samples when the recoveries were outside the QAPP limits. In addition, the site-specific MS and MSD results were assessed collectively to evaluate potentially systematic matrix effects and to determine the need for qualification of associated sample results of similar matrix. MS/MSD recoveries for samples with concentrations greater than four times (4x) the spike amount added are not considered to be a representative measure of accuracy. All other MS/MSD recoveries were acceptable for all analytical tests with the following exceptions:

Delivery Group	URS Sample Id	Analyte	%Recovery (Project Limits)	%RPD (Project Limit)	Qualification
Metals-Fish					
K1109541	R08202011SB41	Mercury	61/-- (80-120)	--	The LCS was in control, indicating the analytical batch was in control. As the potential bias was low, only the parent sample result was qualified as estimated and flagged 'J'.
Metals-Sediments					
K1110302	111018P113SD	Antimony	33/30 (80-120)	--	The laboratory noted the low recoveries are due to a method defect. All associated results are qualified as estimated and flagged 'J' to account for the low bias.
		Copper	41/886 (80-120)	130 (25)	The LCS was in control, indicating the analytical batch was in control. The associated parent sample results were qualified as estimated and flagged 'J' to account for the potential bias due to sample matrix.
		Lead	--/147 (80-120)	32.6 (25)	
		Zinc	128/-- (80-120)	--	
Butyltins-Fish					
K1109541	R08202011SB43	Tetra-n-butyltin	21/31 (35-131)*	44	The LCS was in control, indicating the analytical batch was in control. The associated

Delivery Group	URS Sample Id	Analyte	%Recovery (Project Limits)	%RPD (Project Limit)	Qualification
				(40)*	parent sample result was qualified as estimated and flagged 'UJ' to account for the potential low bias.
K1109547	R08202011SB50	Tetra-n-butyltin	--	52 (40)*	The spike recoveries and LCS were in control, indicating the analytical batch was in control. The associated result for the parent sample were qualified as estimated and flagged 'UJ' to account for precision.
		Tri-n-butyltin Cation	--	44 (40)*	
		Di-n-butyltin Cation	--	73 (40)*	
		n-Butyltin Cation	--	61 (40)*	
Butlytins-Sediments					
K1110302	111019P113SD	n-Butyltin Cation	--	96 (40)*	The remaining spike recoveries and LCS were in control, indicating the analytical batch was in control. The associated parent sample result was qualified as estimated and flagged 'UJ' to account for precision.
Pesticides-Fish					
K1109541	R09032011SB62	alpha-chlordane	38/19 (39-113)*	78 (40)*	The LCS was in control, indicating the analytical batch was in control. The parent sample result was qualified as estimated and flagged 'UJ' to account for the potential low bias.
		4,4'-DDE	543/676 (33-134)*	--	None. As the potential bias is high, and the parent sample results are non-detect, no qualification is necessary.
		4,4'-DDD	191/-- (35-126)*	--	
		Endrin ketone	156/164 (27-128)*	--	
K1109547	R08202011SB50	4,4'-DDE	17/-- (33-134)*	--	The LCS was in control, indicating the analytical batch was in control. The associated parent sample result was qualified as estimated and flagged 'J' to account for the

Delivery Group	URS Sample Id	Analyte	%Recovery (Project Limits)	%RPD (Project Limit)	Qualification
					potential low bias.
Pesticides-Sediments					
K1110302	111019P113SD	gamma-chlordane	-254/-158 (24-133)*	56 (40)	The LCS was in control, indicating the analytical batch was in control. The associated parent sample result was qualified as estimated and flagged 'J' to account for the potential high bias.
		Toxaphene	--/195 (20-155)	96 (40)	None. As the potential bias is high and the parent sample result is non-detect no qualification is necessary.
		4,4'-DDT	--	99 (40)	None. Result is considered estimate and flagged 'J' due to PCB interference, see Laboratory Notes section.
PCBs-Fish					
K1109541	R08202011SB43	Aroclor 1016	--/141 (40-140)	--	None. As the potential bias is high and the sample results are non-detect no qualification is necessary.
		Aroclor 1260	200/230 (60-130)	--	
PCBs-Sediments					
K1110302	111019P113SD	Aroclor 1260	302/824 (60-130)	92 (30)*	None. As the potential bias is high and the associated parent sample result is non-detect no qualification is necessary.
SVOCs-Fish					
K1109541	R09032011SB62	Di-n-butyl phthalate	--/142 (55-110)	72 (60)	None. As the potential bias is high and the sample result is non-detect no qualification is necessary.

*Project limits not specified in QAPP, laboratory limits used for data review are shown.

4.8 Laboratory Duplicate Results

Non-congener Results

Evaluation of MS/MSD RPD results is included in section 4.7 above.

Laboratory duplicate analyses were performed on all batches in accordance with the method criteria. Sufficient volume was not provided to perform project-specific laboratory duplicates. The laboratory duplicate relative percent difference (RPDs) were evaluated when the sample results were greater than 5x the MRL and were compared to QAPP criteria. All non-congener duplicate data were acceptable.

Congener Results

Laboratory duplicate analysis is not required by Method 1668A for congener analysis. Axys performed a laboratory duplicate analyses on samples 111018P116SD, R09042011SB79 and R08202011SB52. Axys evaluated the RPD when the sample results were greater than 10x the reported detection limit (RDL). Sample R08202011SB52 was lost during chromatographic clean-up; therefore, the duplicate analyses could not be evaluated. On average the RPD value of below 40% was observed between primary and duplicate sample results for 111018P116SD and R09042011SB79 indicating good overall analytical precision. Axys reviewed calculations and chromatography in the cases where the RPD was greater than 40% and noted that high RPD values may be associated with matrix. The parent and duplicate results greater than 10x the LMCL, that exceeded the 40% laboratory RPD were qualified as estimated and flagged 'J'. Results qualified based on the laboratory duplicate RPD are included in Table 3.

4.9 Second Column Confirmation

Non-congener Results

Second column confirmation data was acceptable except where noted below:

- The primary evaluation criteria were not met on the confirmation column for some butyltin CCV analytes reported in CAS SDG K1109541, K1109547 and K1110302. The results were reported from the column with an acceptable CCV. No data qualification is necessary.
- The dual column confirmation criteria were not met for the endrin ketone in ICV CAL11027 reported in SDG K1109541. Results were reported from the passing column, no qualification is necessary.
- The internal standard criterion was not met on the confirmation column for toxaphene in sample R09032011SB67 reported in SDG K1109541. There were not detections for this analyte in associated samples. The MRL was raised to reflect the non-target background inference. No qualification is necessary.
- The laboratory noted that in several cases the confirmation criteria of 40% for at least one analyte was exceeded during the analysis of pesticides by Method 8081b in SDGs K1109541, K1190947 and K1110302. The lower of the two values was reported because no evidence of matrix interference was observed. No qualification is necessary.

4.10 Target Compound Identification

Congener Results

Ion abundance ratios are used to identify PCB congeners. Axys identified a target compound when the following criteria were met: peak responses were at least 2.5 times the background noise level, all peaks were acquired in the appropriate acquisition windows, when compared to the standard, peak centroids for the quantification and confirmation ions coincided within two seconds, and the relative ion abundance ratios were within 15% of the expected ratio. Results that did not meet all the criteria for identification as the target analyte were flagged in the laboratory report with a "K" flag. Those results flagged "K" are considered estimated maximum possible concentrations of the analyte present and were re-flagged 'EMPC' during this review as shown on Table 3. EMPC results should be considered by the data users as part of evaluating the data for end-use objectives.

Additionally, the laboratory-assigned flag "C" was used in laboratory reports to indicate co-eluting PCB isomers for congener analysis. The concentrations of the co-eluting isomers were reported as a

group, eliminating the need for any data qualification as part of this review.

4.11 Laboratory Notes

- CAS noted that the detected 4,4'-DDT results reported in SDG K1109541, K1109547 and K1110302 have contribution from confirmed PCB interferences on both columns within the established retention time window, resulting in reported values with a high bias. All previously unqualified 4,4'-DDT results were qualified as estimated and flagged 'J'.
- CAS noted the residual range organics chromatographic fingerprint for sample 111018P115SD did resemble a petroleum product. This comment is available in the laboratory report, no further qualification is necessary.
- CAS noted the residual range organics chromatographic fingerprint for sample 111018P113SD resembles an oil, but did not match the calibration standard. This comment is available in the laboratory report, no qualification is necessary.
- CAS noted that the PCB results reported in SDG K1109541 appeared to be subjected to environmental stresses such as weathering, causing pattern degradation and changing peak ratios. Care was taken by the laboratory to report the Aroclor with the best pattern match. No qualification is necessary.
- CAS noted that the di-n-butyl phthalate result for sample R09042011SB82 and pyrene result for 111018P113TC may contain a slight high bias due to the presence of non-target background components. The laboratory flagged these results with an "X". Sample R09042011SB82 was previously qualified as non-detect and flagged 'U'. The pyrene result for 111018P113TC was qualified as estimated and flagged 'J' to remain consistent with this review.
- CAS noted that one or more PAH analytes reported in SDG K1109541 and K110547 may contain a slight bias due to the presence of non-target background components. The laboratory flagged these results with an "X". These results were detected at concentrations below the MRL but above the MDL, and flagged 'J' as discussed below. No further qualification is necessary.
- Axys noted that in the several instances the concentrations in the initial instrumental analysis of several PCB congeners were above the calibrated linear range of the instrument. The sample extracts were therefore diluted and re-analyzed, as indicated by the suffix "W" in the laboratory reports. A further dilution and refortification with labeled standards was performed when concentrations were still above the calibration range, Axys indicated this by the suffix "NK" added to the laboratory reports. The affected congeners have been reported from the dilution analyses. Sample data for the "NK" flagged dilutions were recovery corrected using the original labeled compound recoveries, to account for losses during extraction. Only the relevant concentrations from both the undiluted and diluted analytical results are reported within the data deliverable and project database.
- Axys noted that in some cases re-analysis was required due to instrument disruption or not all instrumental method acceptance criteria were met during the initial analysis. The re-analysis was successful and data was reported from the re-analysis. Instrumental re-analysis is indicated by the suffix "i", "i2" or "i3" in the laboratory reports.

- An Axys analyst noted that samples R09032011SB70 and R09042011SB74 went dry prior to cleanup on the alumina column and the solvent had gone dry during the extraction concentration procedure on sample 111018P112SD. The recovery values of the labeled standards were within the method control limits, indicating data are not significantly affected. No further action was required.
- Axys noted sample R08202011SB52 was lost during chromatographic clean-up. No sample volume was available to repeat analysis on this sample; however, this sample was analyzed in duplicate. The laboratory duplicate results are reported. No further action was required.

4.12 Reporting Limits

CAS reported analytical results above the MDL but below the MRL or LOQ. These results were flagged 'J' by CAS, these 'J' qualifiers are not included in Table 2. The Axys RDL is either the sample-specific detection limit (SDL) or 0.5 picograms absolute, whichever is higher. Axys qualified results as estimated and flagged them 'J' if they were detected at concentrations between the RDL and the LMCL. All CAS and Axys 'J' qualifiers are included in the database and are included in the data tables in the main body of this report.

The sensitivity (i.e., reporting limits) of the analytical methods is driven by project specific objectives. In some instances, analyte MDLs and RDLs were above the levels specified in the QAPP due to dilution required for matrix interference, high levels of non-target background components and/or sample volume available.

5.0 Completeness

The laboratory reported all requested analyses when sample volume was available. Table 1 provides summary of analysis requested and highlights results that are unavailable due to insufficient sample quantity. Data report deliverables were complete. Completeness is defined as the percentage of usable data out of the total amount of data generated. For all samples collected and analyzed, no data were judged to be invalid. Some data were qualified as estimated and flagged with a 'J' or a 'UJ'. Some data were qualified as not detected and flagged with a 'U.' A summary of qualifiers can be found in Tables 2 and 3. Completeness for the overall investigation is 100%.

The electronic and portable delivery format (.pdf) versions of the deliverables were cross-checked for accuracy at a frequency of 20% or greater. Any minor discrepancies found between the deliverables were reported to the laboratory and corrected by updating the database to reflect the .pdf deliverable.

6.0 References

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- PSEP 1996. Puget Sound Estuary Program *Recommended Protocols for Measuring Selected Environmental Variables in Puget Sound*, January 1996 and subsequent chapter revisions.
- URS 2008. Quality Assurance Project Plan, *River Operable Unit Remedial Investigation*, Bradford Island, Bonneville Lock and Dam Project, Cascade Locks, Oregon. 2008.
- URS 2011. Work Plan Memorandum, *Supplemental Sampling-River Operable Unit*, Bradford Island, Bonneville Lock and Dam Project, Cascade Locks, Oregon. August 2011.
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- USEPA 2008. U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines for Organic Data Review. June 2008.
- USEPA 2008. U.S. Environmental Protection Agency (USEPA) Region II Data Validation SOP for EPA Method 1668, Revision A, August 2003 and Statement of Work for Analysis of Chlorinated Biphenyl Congeners, May 2005. September 2008.
- USEPA 2010. U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review. January 2010.

Table 1 Sampling ID and Analysis Summary

Quality Control Summary Report for Analytical Chemistry River Operable Unit Supplemental Sampling Event – August/September/October 2011

Analytes																				
Matrix	Area	Site ID	URS Sample ID	Date Collected	Axys Sample ID (congeners)	Axys Work Group	CAS Lab Sample ID	PCB Congeners	PCB Aroclors	Metals	Methyl Mercury	NWTPH-Dx	SVOCs	Butylins	Herbicides	Pesticides	Lipids	TOC	Percent Solids	Grain Size
SB	Forebay	62	R09032011SB62	9/3/2011	L17046-1	WG38340	K1109541-001	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Forebay	63	R09032011SB63	9/3/2011	L17046-2	WG38340	K1109541-002	X	X	X	\	\	X	O	\	X	X	\	X	\
SB	Forebay	64	R09032011SB64	9/3/2011	L17046-3	WG38339	K1109541-003	X	X	X	\	\	X	O	\	X	X	\	X	\
SB	Forebay	65	R09032011SB65	9/3/2011	L17046-4	WG38339	K1109541-004	X	X	X	\	\	X	O	\	X	X	\	X	\
SB	Forebay	66	R09032011SB66	9/3/2011	Not Logged In	Not Logged In	K1109541-005	Hold												
SB	Forebay	67	R09032011SB67	9/3/2011	L17046-5	WG38339	K1109541-006	X	\	\	X	O	\	X	X	\	X	\	X	\
SB	Forebay	68	R09032011SB68	9/3/2011	L17046-6	WG38340	K1109541-007	X	\	\	X	X	\	X	X	\	X	\	X	\
SB	Forebay	69	R09032011SB69	9/3/2011	L17046-7	WG38050	K1109541-008	X	\	\	X	O	\	X	X	\	X	\	X	\
SB	Forebay	70	R09032011SB70	9/3/2011	L17046-8	WG38339	K1109541-009	X	\	\	X	X	\	X	X	\	X	\	X	\
SB	Forebay	71	R09042011SB71	9/4/2011	L17046-9	WG38339	K1109541-010	X	\	\	X	X	\	X	X	\	X	\	X	\
SB	Forebay	72	R09042011SB72	9/4/2011	L17046-10	WG38339	K1109541-011	X	\	\	X	O	\	X	X	\	X	\	X	\
SB	Forebay	73	R09042011SB73	9/4/2011	L17046-11	WG38339	K1109541-012	X	\	\	X	X	\	X	X	\	X	\	X	\
SB	Forebay	74	R09042011SB74	9/4/2011	L17046-12	WG38339	K1109541-013	X	\	\	X	X	\	X	X	\	X	\	X	\

Analytes																					
Matrix	Area	Site ID	URS Sample ID	Date Collected	Axys Sample ID (congeners)	Axys Work Group	CAS Lab Sample ID	PCB Congeners	PCB Aroclors	Metals	Methyl Mercury	NWTPH-Dx	SVOCs	Butylins	Herbicides	Pesticides	Lipids	TOC	Percent Solids	Grain Size	
SB	Forebay	75	R09042011SB75	9/4/2011	Not Logged In	Not Logged In	K1109541-014	Hold													
SB	Forebay	76	R09042011SB76	9/4/2011	L17046-13	WG38339	K1109541-015	X	X	X	\	\	X	X	\	X	X	\	X	\	
SB	Forebay	77	R09042011SB77	9/4/2011	Not Logged In	Not Logged In	K1109541-016	Hold													
SB	Forebay	78	R09042011SB78	9/4/2011	L17046-14	WG38340	K1109541-017	X	X	X	\	\	X	X	\	X	X	\	X	\	
SB	Forebay	79	R09042011SB79	9/4/2011	L17046-15	WG38050	K1109541-018	X	X	X	\	\	X	X	\	X	X	\	X	\	
SB	Forebay	80	R09042011SB80	9/4/2011	Not Logged In	Not Logged In	K1109541-019	Hold													
SB	Forebay	81	R09042011SB81	9/4/2011	L17046-16	WG38339	K1109541-020	X	X	X	\	\	X	X	\	X	X	\	X	\	
SB	Forebay	82	R09042011SB82	9/4/2011	L17046-17	WG38050	K1109541-021	X	X	X	\	\	X	X	\	X	X	\	X	\	
SB	Forebay	83	R09042011SB83	9/4/2011	L17046-18	WG38050	K1109541-022	X	X	X	\	\	X	X	\	X	X	\	X	\	
SB	Forebay	84	R09042011SB84	9/4/2011	L17046-19	WG38050	K1109541-023	X	X	X	\	\	X	X	\	X	X	\	X	\	
SB	Reference	39	R08202011SB39	8/20/2011	L17046-20	WG38052	K1109541-024	X	X	X	\	\	X	○	\	X	X	\	X	\	
SB	Reference	40	R08202011SB40	8/20/2011	Not Logged In	Not Logged In	K1109541-025	Hold													
SB	Reference	41	R08202011SB41	8/20/2011	L17046-21	WG38052	K1109541-026	X	X	X	\	\	X	X	\	X	X	\	X	\	
SB	Reference	42	R08202011SB42	8/20/2011	L17046-22	WG38052	K1109541-027	X	X	X	\	\	X	X	\	X	X	\	X	\	

Analytes																				
Matrix	Area	Site ID	URS Sample ID	Date Collected	Axys Sample ID (congeners)	Axys Work Group	CAS Lab Sample ID	PCB Congeners	PCB Aroclors	Metals	Methyl Mercury	NWTPH-Dx	SVOCs	Butylins	Herbicides	Pesticides	Lipids	TOC	Percent Solids	Grain Size
SB	Reference	43	R08202011SB43	8/20/2011	L17046-23	WG38052	K1109541-028	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	44	R08202011SB44	8/20/2011	L17046-24	WG38338	K1109547-001	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	45	R08202011SB45	8/20/2011	L17046-25	WG38338	K1109547-002	X	X	X	\	\	X	○	\	X	X	\	X	\
SB	Reference	46	R08202011SB46	8/20/2011	L17046-26	WG38338	K1109547-003	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	47	R08202011SB47	8/20/2011	L17046-27	WG38338	K1109547-004	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	48	R08202011SB48	8/20/2011	L17046-28	WG38338	K1109547-005	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	49	R08202011SB49	8/20/2011	L17046-29	WG38338	K1109547-006	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	50	R08202011SB50	8/20/2011	L17046-30	WG38338	K1109547-007	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	51	R08202011SB51	8/20/2011	Not Logged In	Not Logged In	K1109547-008	Hold												
SB	Reference	52	R08202011SB52	8/20/2011	L17046-31	WG38052	K1109547-009	X ¹	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	53	R08202011SB53	8/20/2011	Not Logged In	Not Logged In	K1109547-010	Hold												
SB	Reference	54	R08212011SB54	8/21/2011	Not Logged In	Not Logged In	K1109547-011	Hold												
SB	Reference	55	R08212011SB55	8/21/2011	L17046-32	WG38338	K1109547-012	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	56	R08212011SB56	8/21/2011	L17046-33	WG38338	K1109547-013	X	X	X	\	\	X	X	\	X	X	\	X	\

Analytes																				
Matrix	Area	Site ID	URS Sample ID	Date Collected	Axys Sample ID (congeners)	Axys Work Group	CAS Lab Sample ID	PCB Congeners	PCB Aroclors	Metals	Methyl Mercury	NWTPH-Dx	SVOCs	Butylins	Herbicides	Pesticides	Lipids	TOC	Percent Solids	Grain Size
SB	Reference	57	R08212011SB57	8/21/2011	L17046-34	WG38338	K1109547-014	X	X	X	\	\	X	○	\	X	X	\	X	\
SB	Reference	58	R08212011SB58	8/21/2011	L17046-35	WG38338	K1109547-015	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	59	R08212011SB59	8/21/2011	L17046-36	WG38338	K1109547-016	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	60	R08212011SB60	8/21/2011	L17046-37	WG38338	K1109547-017	X	X	X	\	\	X	X	\	X	X	\	X	\
SB	Reference	61	R08212011SB61	8/21/2011	L17046-38	WG38338	K1109547-018	X	X	X	\	\	X	X	\	X	X	\	X	\
SD	Forebay	P112	111019P112SD	10/19/2011	L17122-7	WG38156	K1110302-007	X	X	X	\	X	X	X	X	X	\	X	X	X
SD	Forebay	P113	111019P113SD	10/19/2011	L17122-6	WG38156	K1110302-006	X	X	X	\	X	X	X	X	X	\	X	X	X
SD	Forebay	P114	111019P114SD	10/19/2011	L17122-5	WG38156	K1110302-005	X	X	X	\	X	X	X	X	X	\	X	X	X
SD	Forebay	P115	111018P115SD	10/18/2011	L17122-4	WG38156	K1110302-004	X	X	X	\	X	X	X	X	X	\	X	X	X
SD	Forebay	P116	111018P116SD	10/18/2011	L17122-2	WG38156	K1110302-002	X	X	X	\	X	X	X	X	X	\	X	X	X
SD	Forebay	P117	111018P117SD	10/18/2011	L17122-1	WG38156	K1110302-001	X	X	X	\	X	X	X	X	X	\	X	X	X
SD	Forebay	P118	111018P118SD	10/18/2011	L17122-3	WG38156	K1110302-003	X	X	X	\	X	X	X	X	X	\	X	X	X
TC	Forebay	P112	111019P112TC	10/19/2011	L17117-6	WG38157	K1110302-014	X	X	X	X	\	○	○	\	X	X	\	X	\
TC	Forebay	P113	111019P113TC	10/19/2011	L17117-5	WG38157	K1110302-013	X	X	X	X	\	X	X	\	X	X	\	X	\
TC	Forebay	P114	111019P114TC	10/19/2011	L17117-4	WG38157	K1110302-012	X	X	X	X	\	○	○	\	X	X	\	X	\
TC	Forebay	P115	111018P115TC	10/18/2011	L17117-3	WG38157	K1110302-011	X	X	X	X	\	○	○	\	X	X	\	X	\

Analytes																				
Matrix	Area	Site ID	URS Sample ID	Date Collected	Axys Sample ID (congeners)	Axys Work Group	CAS Lab Sample ID	PCB Congeners	PCB Aroclors	Metals	Methyl Mercury	NWTPH-Dx	SVOCs	Butylins	Herbicides	Pesticides	Lipids	TOC	Percent Solids	Grain Size
TC	Forebay	P116	111018P116TC	10/18/2011	Not Logged In	Not Logged In	K1110302-009	O	O	O	O	\	O	O	\	O	O	\	O	\
TC	Forebay	P117	111018P117TC	10/18/2011	L17117-1	WG38157	K1110302-008	X	O	O	O	\	O	O	\	O	O	\	O	\
TC	Forebay	P118	111018P118TC	10/18/2011	L17117-2	WG38157	K1110302-010	X	O	X	X	\	O	O	\	O	O	\	X	\

NOTES:

SB = Smallmouth Bass

SD = Sediment

TC = Clam

ID = Identification Number

Axys = Axys Analytical Services, Ltd.

CAS = Columbia Analytical Services

PCBs = Polychlorinated Biphenyls

NWTPH = Northwest Total Petroleum Hydrocarbons

Dx = Diesel Range Hydrocarbons

SVOCs = Semivolatile Organic Compounds

TOC = Total Organic Carbon

X = Analyzed

O = Analysis requested but results not available due to insufficient sample quantity

\ = Analysis for this analyte not requested

1 = Primary sample results not available. Laboratory Duplicate results from this sample reported.

Table 2 Non-congener Sample Qualification Summary

URS ID	Analyte	Data Qualifier	Rationale
R08202011SB39	4,4'-DDT	J	PCB matrix interference
	Lead	0.0071-U	Method blank
	Di-n-butyl phthalate	97-U	
R08202011SB41	Aluminum	2.71-U	Method blank
	Antimony	0.0132-U	
	Mercury	J	MS recovery
R08202011SB42	Lead	0.0116-U	Method blank
	4,4'-DDT	J	PCB matrix interference
R08202011SB43	Aluminum	0.58-U	Method blank
	Antimony	0.0141-U	
	Lead	0.0056-U	
	Tetra-n-butyltin	UJ	MS/MSD recoveries and RPD
R08202011SB44	Aluminum	0.56-U	Method blank
	Antimony	0.0141-U	
	Copper	0.250-U	
	Lead	0.0056-U	
	Nickel	0.056-U	
	4,4'-DDT	J	PCB matrix interference
R08202011SB45	Antimony	0.0129-U	Method blank
	Lead	0.0169-U	
	Nickel	0.055-U	
	Di-n-octyl phthalate	39-U	
	4,4'-DDT	J	PCB matrix interference
R08202011SB46	Antimony	0.0131-U	Method blank
	Lead	0.0093-U	
	Phenanthrene	0.78-U	
	4,4'-DDT	J	PCB matrix interference
R08202011SB47	Antimony	0.0144-U	Method blank
	Lead	0.0165-U	
	Di-n-octyl phthalate	40-U	
R08202011SB48	Antimony	0.0146-U	Method blank
	Lead	0.0141-U	
	Nickel	0.058-U	
	4,4'-DDT	J	PCB matrix interference
R08202011SB49	Antimony	0.0159-U	Method blank
	Lead	0.0064-U	

URS ID	Analyte	Data Qualifier	Rationale
	Nickel	0.064-U	PCB matrix interference
	Di-n-butyl phthalate	99-U	
	4,4'-DDT	J	
R08202011SB50	Antimony	0.0129-U	Method blank
	Lead	0.0206-U	MS/MSD recoveries and RPD
	Tetra-n-butyltin	UJ	
	Tri-n-butyltin Cation	UJ	
	Di-n-butyltin Cation	UJ	
	n-butyltin Cation	UJ	PCB matrix interference
	4,4'-DDT	J	
	4,4'-DDE	J	
	Di-n-butyl phthalate	98-U	Method blank
R08202011SB52	Antimony	0.0138-U	Method blank
	Lead	0.0162-U	
	Di-n-butyl phthalate	100-U	
R08212011SB55	Antimony	0.0148-U	Method blank
	Di-n-butyl phthalate	98-U	Method blank
	4,4'-DDT	J	PCB matrix interference
R08212011SB56	Antimony	0.0133-U	Method blank
	Lead	0.0187-U	
	Di-n-butyl phthalate	100-U	
	4,4'-DDT	J	PCB matrix interference
R08212011SB57	Antimony	0.0125-U	Method blank
	Lead	0.0084-U	
	Di-n-butyl phthalate	98-U	
	4,4'-DDT	J	PCB matrix interference
R08212011SB58	Aluminum	0.58-U	Method blank
	Antimony	0.0145-U	
	Lead	0.0149-U	
	Nickel	0.058-U	
	Di-n-butyl phthalate	100-U	
	4,4'-DDT	J	PCB matrix interference
R08212011SB59	Antimony	0.0130-U	Method blank
	Nickel	0.052-U	
	Lead	0.0083-U	

URS ID	Analyte	Data Qualifier	Rationale
	Di-n-butyl phthalate	99-U	PCB matrix interference
	4,4'-DDT	J	
R08212011SB60	Antimony	0.0138-U	Method blank
	Lead	0.0125-U	
	Di-n-butyl phthalate	98-U	
	4,4'-DDT	J	PCB matrix interference
R08212011SB61	Antimony	0.0140-U	Method blank
	Lead	0.0065-U	
	Nickel	0.056-U	
	Di-n-butyl phthalate	98-U	
	4,4'-DDT	J	PCB matrix interference
R09042011SB62	alpha-chlordane	UJ	MS recovery
	Di-n-octyl phthalate	40-U	Method blank
R09042011SB63	Lead	0.0139-U	Method blank
	Di-n-octyl phthalate	40-U	
R09042011SB64	Lead	0.0077-U	Method blank
	Di-n-butyl phthalate	98-U	
	Di-n-octyl phthalate	39-U	
R09042011SB65	Lead	0.0136-U	Method blank
	Di-n-butyl phthalate	99-U	
	Di-n-octyl phthalate	40-U	
R09042011SB67	Lead	0.0111-U	Method blank
	Di-n-butyl phthalate	100-U	
	Di-n-octyl phthalate	40-U	
	4,4'-DDT	J	PCB matrix interference
R09042011SB68	Lead	0.0082-U	Method blank
	Di-n-butyl phthalate	98-U	
	Di-n-octyl phthalate	40-U	
R09042011SB69	Lead	0.0098-U	Method blank
	Di-n-butyl phthalate	98-U	
	Di-n-octyl phthalate	40-U	
	4,4'-DDT	J	PCB matrix interference
R09042011SB70	Lead	0.0103-U	Method blank
	Di-n-butyl phthalate	100-U	
	Di-n-octyl phthalate	40-U	
R09042011SB71	Lead	0.0058-U	Method blank

URS ID	Analyte	Data Qualifier	Rationale
	Di-n-octyl phthalate	40-U	PCB matrix interference
	4,4'-DDT	J	
R09042011SB72	Lead	0.0096-U	Method blank
	Di-n-butyl phthalate	99-U	
	Di-n-octyl phthalate	40-U	
R09042011SB73	Lead	0.0133-U	Method blank
	Di-n-butyl phthalate	99-U	
	Di-n-octyl phthalate	40-U	
R09042011SB74	Lead	0.0079-U	Method blank
	Di-n-butyl phthalate	97-U	
R09042011SB76	Lead	0.0099-U	Method blank
	Di-n-butyl phthalate	97-U	
	Di-n-octyl phthalate	39-U	
	4,4'-DDT	J	PCB matrix interference
R09042011SB78	Di-n-butyl phthalate	97-U	Method blank
	Di-n-octyl phthalate	39-U	
R09042011SB79	Lead	0.0114-U	Method blank
	Di-n-butyl phthalate	99-U	
	Di-n-octyl phthalate	40-U	
	4,4'-DDT	J	PCB matrix interference
R09042011SB81	Lead	0.0112-U	Method blank
	Di-n-butyl phthalate	97-U	
R09042011SB82	Lead	0.0098-U	Method blank
	Di-n-octyl phthalate	40-U	
	Fluorene	0.50-U	
	Phenanthrene	0.74-U	
	Di-n-butyl phthalate	J	Matrix interference
	4,4'-DDT	J	PCB matrix interference
R09042011SB83	Lead	0.0132-U	Method blank
	Di-n-butyl phthalate	98-U	
R09042011SB84	Lead	0.0084-U	Method blank
111019P112SD	Antimony	J	MS/MSD recoveries
	4,4'-DDT	J	PCB matrix interference
111019P113SD	Antimony	J	MS/MSD recoveries
	Copper	J	MS/MSD recoveries
	Lead		

URS ID	Analyte	Data Qualifier	Rationale
	Zinc	J	and RPD
	Gamma-chlordane	J	
	n-butyltin cation	UJ	MS/MSD RPD
	4,4'-DDT	J	PCB matrix interference
	Aroclor 1254	J	Surrogate recovery
111019P114SD	Antimony	J	MS/MSD recoveries
111018P115SD	Antimony	J	MS/MSD recoveries
	4,4'-DDT	J	PCB matrix interference
111018P116SD	Antimony	J	MS/MSD recoveries
	4,4'-DDT	J	PCB matrix interference
111018P117SD	Antimony	J	MS/MSD recoveries
111018P118SD	Antimony	J	MS/MSD recoveries
111019P112TC	4,4'-DDT	J	PCB matrix interference
111019P113TC	4,4'-DDT	J	PCB matrix interference
	Pyrene	J	Matrix interference
111019P114TC	4,4'-DDT	J	PCB matrix interference
111018P115TC	4,4'-DDT	J	PCB matrix interference

TABLE 3. Congener Qualifier Summary																									
IUPAC #	R09032011SB69				R09042011SB79				R09042011SB82				R09042011SB83				R09042011SB84				R09042011SB79(Duplicate)				
	Axys Qualifier	URS Review Qualifier	Rationale		Axys Qualifier	URS Review Qualifier	Rationale		Axys Qualifier	URS Review Qualifier	Rationale		Axys Qualifier	URS Review Qualifier	Rationale		Axys Qualifier	URS Review Qualifier	Rationale						
Individual Congeners in pg/g (ng/kg)																									
1	1.59 J				0.846 J				0.435 J					0.44 J				0.766 J				0.663 J			
2	0.513 J				0.936 J				0.282 K J	EMPC	TCI			0.5 J				0.947 J				0.715 J			
3	2.41 J	U		MB	2.19 J	U		MB	1.91 J	U	MB			2.40 J	U		MB	1.95 J	U		MB	2.25 J	U		MB
4	4.74				2.66 J	J		IS	1.11 J					1.78 J				3.61				2.18 J			
5	0.226 U				0.593 U				0.222 U					0.257 U				0.2 U				0.223 U			
6	1.33 J				1.66 J				0.511 J					0.699 J				1.85 J				1.47 J			
7	0.239 J				0.541 U				0.203 U					0.234 U				0.4 J				0.276 J			
8	5.22				5.87				2.16					3.9				8.29				5.53			
9	0.964 J				0.509 U				0.191 U					0.341 J				0.542 J				0.447 J			
10	0.21 J				0.506 U				0.19 U					0.219 U				0.206 J				0.191 U			
11	132				141				32.5					152				397				124			
12	0.223 C U				0.795 C J				0.268 C J					0.782 C J				0.197 C U				0.872 C J			
13	C12				C12				C12					C12				C12				C12			
14	0.211 U				0.553 U				0.207 U					0.239 U				0.186 U				0.208 U			
15	2.46				2.18 J				0.622 J					2.07 J				4.67				1.85 J			
16	4.2				7.61				2.2					3.66				9.91				7.22			
17	23.2				14.5				4.63					12.4				17.8				13.8			
18	26.8 C				28.4 C				7.92 C					14.6 C				32 C				27.3 C			
19	4.08				1.51 J				0.398 J					1.62 J				2.28				1.73 J			
20	80.3 C				149 C	J		IS	56.5 C					54.6 C				148 C				139 C			
21	7.82 C				25.2 C				13.4 C					8.82 C				25.9 C				22.7 C			
22	7.63				25.8				14					9.52				26.8				23.4			
23	0.076 U				0.155 J				0.058 U					0.0661 U				0.14 J				0.108 U			TCI
24	0.226 J				0.509 K J	EMPC	TCI		0.074 K J	EMPC	TCI			0.155 K J	EMPC	TCI		0.587 K J	EMPC	TCI		0.529 K J	EMPC	TCI	
25	5.03				6.09				2.23					2.36 J				4.41				5.88			
26	14 C				16.8 C				7.38 C					7.79 C				15.5 C				16.1 C			
27	6.94				2.42				0.606 J					2.48				2.62				2.51			
28	C20				C20				C20					C20				C20				C20			
29	C26				C26				C26					C26				C26				C26			
30	C18				C18				C18					C18				C18				C18			
31	35.5				83.9				25.7					25.4				72.7				75.9			
32	9.33				4.91				1.95					4.13				4.83				4.88			
33	C21				C21				C21					C21				C21				C21			
34	0.273 J				0.583 J				0.159 J					0.178 J				0.611 J				0.471 J			
35	0.274 J				0.19 J				0.0628 U					0.127 K J	EMPC	TCI		0.187 J				0.117 U			
36	0.0755 U				0.143 U				0.0576 U					0.081 J				0.137 K J	EMPC	TCI		0.107 U			
37	12.8				15				4.15					8.54				14.6				13.1			
38	0.086 J				0.586 J				0.116 J					0.0671 U				0.297 K J	EMPC	TCI		0.528 J			
39	0.971 J				2.38				0.66 J					0.556 J				1.05 J				2.03 J			
40	66.5 C				247 C				45.3 C					32.4 C				52.1 C				216 C			
41	C40				C40				C40					C40				C40				C40			
42	47.5				135				33.8					22.6				37.9				114			
43	8.23 K	EMPC	TCI		24.7				6.04					4.61				8.9				23.2			
44	464 C				1690 C				198 C					189 C				244 C				1540 C			
45	6.9 C				23.6 C				9.06 C					7.6 C				12.9 C				22 C			
46	3.48				4.16				2					1.96 J				3.14				3.9			
47	C44				C44				C44					C44				C44				C44			
48	26.1				88				23.5					14.5				31.5				76.8			
49	377 C				1210 C				164 C					165 C				191 C				1100 C			
50	32.2 C				37.8 C				8.53 C					14.5 C				11.1 C				36.2 C			
51	C45				C45				C45					C45				C45				C45			
52	1390				4540				434	U	MB			541	U	MB		474	U	MB		4330			
53	C50				C50				C50					C50				C50				C50			
54	0.345 J				0.161 U				0.072 J					0.217 J				0.154 J				0.0746 U			
55	0.324 U				0.614 U				0.124 U					0.499 U				0.107 U				0.193 U			
56	100				247				49.5	U	MB			30.9	U	MB		53				258			
57	0.816 J				1.99 J				1.18 J					0.631 J				1.84 J				1.46 J			
58	0.31 U				0.587 U				0.119 U					0.581 J				1.44 J				0.185 U			
59	12.2 C				48.3 C				14.3 C					8.33 C				21.2 C				41.2 C			
60	140				350				69.5					58.4				116				398			
61	1640 C				7730 C				694 C	U	MB			548 C	U	MB		822 C				7450 C	D		
62	C59				C59				C59					C59				C59				C59			
63	37.3				98.4				24.9					20.9				35.1				89.3			
64	154				670				87.5					74.5				125				598			
65	C44				C44				C44					C44				C44				C44			
66	833				2300				409					341				599				2310			
67	3.48				11.2				5.02					2.73				5.53				9.95			
68	6.03				15.1				7.42					4.31				9.24				13.7			
69	C49				C49				C49					C49				C49				C49			
70	C61				C61				C61					C61				C61				C61			
71	C40				C40				C40					C40				C40				C40			
72	6.65				17				5.69					3.66				9.09				15.3			
73	0.0602 U				0.167 U				0.0477 U					0.06 U				0.0487 U				0.0762 U			
74	C61				C61				C61					C61				C61				C61			
75	C59				C59				C59					C59				C59				C59			
76	C61				C61				C61					C61				C61				C61			
77	35.5				56.3				23.2					20.2											

TABLE 3. Congener Qualifier Summary

IUPAC #	R09032011SB69 Axs URS Review Qualifier Rationale	R09042011SB79 Axs URS Review Qualifier Rationale	R09042011SB82 Axs URS Review Qualifier Rationale	R09042011SB83 Axs URS Review Qualifier Rationale	R09042011SB84 Axs URS Review Qualifier Rationale	R09042011SB79(Duplicat e) Axs URS Review Qualifier Rationale
110	2510 C	22800 C D	1470 C	941 C U MB	1510 C	22500 C D
111	0.891 J	1.62 U UJ IS	3.64	1.85 J	4.01	0.896 U
112	0.207 U	1.6 U	0.537 U	0.368 U	0.27 U	0.884 U
113	C90	C90	C90	C90	C90	C90
114	142	577	90.5	63.8	97.6	536
115	C110	C110	C110	C110	C110	C110
116	C85	C85	C85	C85	C85	C85
117	C85	C85	C85	C85	C85	C85
118	4970 D J OPR	23800 D J OPR	3130 J OPR	2270 J OPR	3460 D J OPR	21500 D J OPR
119	C86	C86	C86	C86	C86	C86
120	8.28	22.1	18.4	9.29	20.9	21.8
121	0.201 U	1.55 U	1.35 J	0.483 J	1.85 J	0.858 U
122	28.2	124	14.9 U MB	8.46 U MB	8.71 U MB	122
123	83.2	406	70.7	40.4	66.8	356
124	C107	C107	C107	C107	C107	C107
125	C86	C86	C86	C86	C86	C86
126	6.88	16	6.58	4.08	9.09	15.6
127	0.406 U	1.84 U	0.413 U	0.345 U	0.342 U	0.804 U
128	773 C	5140 C	536 C	316 C	682 C	4560 C
129	5000 C	28400 C D	4070 C	2340 C	5050 C	26800 C D
130	282	1680	190	123	204	1480
131	34.6	315	17.1	10.9 U MB	12.1 U MB	300
132	592	7380	399	211 U MB	317	7210
133	60.2	298	76.3	44.7	89.7	267
134	125 C	1110 C	76.4 C	43.9 C U MB	65.7 C	1020 C
135	493 C	4430 C	580 C	291 C	698 C	4150 C
136	106	1640	93.9	59.3	111	1720
137	396	1850	241	165	240	1610
138	C129	C129	C129	C129	C129	C129
139	74.7 C	508 C	50.6 C	32.6 C	68.9 C	467 C
140	C139	C139	C139	C139	C139	C139
141	414	3460	266	155	319	3120
142	0.477 U	2.24 U	0.539 U	0.398 U	0.639 U	1.62 U
143	C134	C134	C134	C134	C134	C134
144	94.5	723	63.3	36.5	57.3	689
145	0.555 J	8.88	0.299 J	0.214 K J EMPC TCI	0.303 J	9.04
146	784	4090	910	512	960	3120
147	1590 C	13800 C	1380 C	592 C	992 C	14000 C D
148	2.1 J	16.9	5.67	1.75 J	5.37	15.2
149	C147	C147	C147	C147	C147	C147
150	2 J	18.7	3.92	1.11 J	1.93 J	18.2
151	C135	C135	C135	C135	C135	C135
152	0.873 J	10.3	0.62 J	0.57 K J EMPC TCI	1.42 J	10.5
153	4170 C	20700 C	5170 C	2730 C	6220 C	18800 C D
154	C135	C135	C135	C135	C135	C135
155	0.821 J	5.29	3.3	1.55 K J EMPC TCI	4.87	4.73
156	746 C	3840 C	508 C	329 C	559 C	3590 C
157	C156	C156	C156	C156	C156	C156
158	424	2840	250	159	330	2520
159	8.39	53.1	9.94	4.31	8.24	47.1
160	C129	C129	C129	C129	C129	C129
161	0.335 U	1.57 U	0.378 U	0.279 U	0.448 U	1.14 U
162	23.1	108	21.3	14.5	25	95.7
163	C129	C129	C129	C129	C129	C129
164	193	1330	122	72.4	131	1180
165	1.25 J	5.21	3.55	1.53 J	3.72	5.57
166	C128	C128	C128	C128	C128	C128
167	239	1140	217	128	208	1050
168	C153	C153	C153	C153	C153	C153
169	1.28 U	3.62 U	1.76 U	1.15 U	2.55 U	3.4 U
170	430	2460	491	256	549	2260
171	113 C	726 C	147 C	78.1 C	204 C	751 C
172	70.8	385	101	52.3	109	378
173	C171	C171	C171	C171	C171	C171
174	196	1220	237	100	173	1300
175	16.3	74.8	23.1	10.8	21.3	79.9
176	23.5	167	34	14.1	25.8	172
177	250	1290	380	191	308	1160
178	81.6	361 J IS	177	83.9	209	373
179	62.3	437	131	61.2	162	473
180	1040 C	4270 C	1730 C	847 C	1740 C	3920 C
181	13.6	57.3	10.8	7.16	12.5	60
182	3.31	19.8	5.15	2.81	6.97	20.5
183	255 C	1260 C	427 C	204 C	493 C	1310 C
184	1.11 J	6.76	3.73	1.62 J	5.73	6.5
185	C183	C183	C183	C183	C183	C183
186	0.115 U	0.267 U	0.0866 U	0.0896 U	0.0853 U	0.735 J
187	942	3050	2100	885	1790	2860
188	2.04 J	6.87 J IS	4.92	2.45	3.9	6.28
189	24.2	119	28.5	15.3	27.8	114
190	109	497	170	99.6	212	486
191	20.7	97.5	27.8	14.6	29.6	95.6
192	0.137 U	0.319 U	0.103 U	0.107 U	0.102 U	0.177 U
193	C180	C180	C180	C180	C180	C180
194	101	347	192	92.8	188	366
195	48	166	95.7	47	108	180
196	59.5	195	120	53.4	115	197
197	14.9 C	54.2 C	30 C	12.5 C	29.6 C	58 C
198	139 C	409 C	295 C	132 C	265 C	455 C
199	C198	C198	C198	C198	C198	C198
200	C197	C197	C197	C197	C197	C197
201	21.4	58.8	45.5	19.5	40.5	62.9
202	33.4	141	84.3	40.9	109	130
203	86.9	314	203	98	247	323
204	0.224 J	0.629 J	0.543 J	0.262 K J EMPC TCI	0.596 J	0.656 J
205	5.12	23.7	11.2	5.29	12.3	21.5
206	34.9	112	72.7	35.4	84.5	103
207	8.97	22	19.8	9.26	19.5	21.4
208	14.9	43.3	31.4	16.8	31.8	39.2
209	21.5	49.7	46.9	26	46.9	49

Rationale Notes:
MB = Method Blank
IS = Internal Standard
TCI = Target Compound Identification
OPR = Ongoing Precision and Recovery
DUP = Laboartory Duplicate

TABLE 3. Congener Qualifier Summary																								
IUPAC #	R08202011SB39	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB41	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB42	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB43	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB52(Duplicate)	Axys Qualifier	URS Review Qualifier	Rationale	111019P112SD	Axys Qualifier	URS Review Qualifier	Rationale
Individual Congeners																								
1	1.38	J			0.644	J			0.61	J			0.794	J			0.561	J			6.85			
2	0.615	J			1.98	J		MB	0.579	J			0.874	J			1.99	J	U	MB	0.853	K J	EMPC	TCI
3	1.17	J			1.98	J	U	MB	1.94	J	U	MB	1.95	J	U	MB	1.99	J	U	MB	6.62			
4	4.68				2.38				2.9				3.73				2.3				103			
5	0.195	J			0.13	U			0.196	U			0.204	J			0.294	U			0.488	U		
6	1.66	J			0.817	J			1.25	J			2.09				0.972	J			14.9			
7	0.751	J			0.486	J			0.494	J			0.599	J			0.3	J			22.2			
8	6.9				3.69				6.3				9.81				4.63				70			
9	0.665	J			0.402	J			0.525	J			0.72	J			0.503	J			34.8			
10	0.249	J			0.123	J			0.16	U			0.193	J			0.24	U			29.8			
11	203				118				157				257				108				4.12			
12	0.183	C U			0.128	C U			0.186	C U			0.19	C U			0.279	C U			13.1	C		
13		C12				C12				C12				C12				C12				C12		
14	0.172	U			0.121	U			0.175	U			0.18	U			0.262	U			0.439	U		
15	2.22				1.57	J			2.25				4.15				1.99	J	U	MB	86.7			
16	4.76				2.8				7.28				11.6				4.87				43.2			
17	7.47				4.48				12.2				23.5				8.18				360			
18	14.2	C			9.47	C			23.8	C			43.7	C			15.5	C			331	C		
19	1.46	J			0.807	J			1.65	J			2.42				1.24	J			282			
20	61.5	C			76.6	C			151	C			240	C			88.2	C			436	C		
21	11	C			10.9	C			23.9	C			42.5	C			14.2	C			104	C		
22	12.1				17.2				27.2				47.2				18.8				56.3			
23	0.054	U			0.067	J			0.148	U			0.212	J			0.08	J			0.657	J		
24	0.262	J			0.206	J			0.498	J			0.713	J			0.294	K J	EMPC	TCI	2.05			
25	1.88	J			2.33				4.57				12				3.21				108			
26	6.95	C			7.75	C			15.3	C			31	C			9.69	C			144	C		
27	1.39	J			0.858	J			1.72	J			3.32				1.27	J			144			
28		C20				C20				C20				C20				C20				C20		
29		C26				C26				C26				C26				C26				C26		
30		C18				C18				C18				C18				C18				C18		
31	28.6				31.2				70				122				43.9				807			
32	2.23				1.56	J			3.58				9.77				2.53				211			
33		C21				C21				C21				C21				C21				C21		
34	0.168	J			0.204	J			0.304	J			0.722	J			0.253	J			2.94			
35	1.93	K J	U	MB	1.98	J	U	MB	0.16	U			0.155	U			0.084	U			2.14	K	EMPC	TCI
36	0.0536	U			0.0495	U			0.147	U			0.142	U			0.0768	U			0.347	U		
37	6.72				6.47				9.52				17.6				6.99				74.2			
38	0.109	K J	EMPC	TCI	0.358	K J	EMPC	TCI	0.34	J			0.452	J			0.176	J			5.12	K	EMPC	TCI
39	0.462	J			1.42	J			1.25	J			1.91	J			0.689	J			18.9			
40	22.1	C			78.7	C			54.8	C			98.6	C			35.2	C			2690	C		
41		C40				C40				C40				C40				C40				C40		
42	17.8				69.3				44.7				92.5				30.3				1110			
43	4.17				11.4				10.9				15.7				6.16				149			
44	121	C			460	C			306	C			533	C			179	C			17000	C		
45	6.68	C			9.74	C			12.7	C			25.5	C			9.66	C			338	C		
46	1.51	J			1.17	J			2.83				5.21				2.34				145			
47		C44				C44				C44				C44				C44				C44		
48	15.1				48.8				38.4				64.9				22.3				529			
49	93.4	C			364	C			244	C			420	C			139	C			8650	C		
50	4.5	C			6.35	C			10.3	C			25.4	C			7.76	C			1160	C		
51		C45				C45				C45				C45				C45				C45		
52	224		U	MB	553				555				843				309				41300	D		
53		C50				C50				C50				C50				C50				C50		
54	0.15	K J	EMPC	TCI	0.07	J			0.173	K J	EMPC	TCI	0.369	J			0.127	J			21			
55	0.465	U			0.175	U			0.206	U			0.341	U			0.275	U			6.87	U		
56	22.6		U	MB	82.7				65.3				116				48				3470			
57	0.905	J			4.07				2.8				3.49				1.7	J			6.53	U		
58	0.77	J			2.01				2.12				1.86	J			1.56	J			6.62	U		
59	10.9	C			36.8	C			29.4	C			43.6	C			16.8	C			154	C		
60	56.5				300				166				250				83.8				1460			
61	332	C	U	MB	1290	C			942	C			1630	C			576	C			45200	C D		
62		C59				C59				C59				C59				C59				C59		
63	16.6				76.5				43.6				71				29.5				307			
64	58.1				212				165				241				93.1				5090			
65		C44				C44				C44				C44				C44				C44		
66	268				1190				761				1270				466				9590			
67	2.4				9.45				8.23				12.1				5.64				24.5			
68	5.02				12				10.7				15.7				8.38				7.96			
69		C49				C49				C49				C49				C49				C49		
70		C61				C61				C61				C61				C61				C61		
71		C40				C40				C40				C40				C40				C40		
72	4.81				17.9				13.1				20.3				7.61				15.5			
73	0.0482	U			0.0495	U			0.0487	U			0.0488	U			0.0497	U			0.45	U		
74		C61				C61				C61				C61				C61				C61		
75		C59				C59				C59				C59				C59				C59		
76		C61				C61				C61				C61				C61				C61		
77	13.5				30.3				36.6				64.6				35.6				131			
78	0.465	U			0.182	U			0.206	U			0.356	U			0.275	U			14	K	EMPC	TCI
79	4.68		U	MB	24				12.7				23.3				8.54		U	MB	866			
80	0.415	U			0.157	U			0.984	J			1.06	J			0.674	J			6.72	U		
81	0.901	K J	EMPC	TCI	1.93	K J	EMPC	TCI	1.73	K J	EMPC	TCI	2.57	K	EMPC	TCI	1.84	K J	EMPC	TCI	5.89	U		
82	22		U	MB	147				50.5		U	MB	108				40.8		U	MB	6850			
83	897	C			4170	C D			2370	C			4410	C			1270	C			34800	C D		
84	38.6		U	MB	183				104															

TABLE 3. Congener Qualifier Summary

IUPAC #	R08202011SB39	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB41	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB42	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB43	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB52(Duplicate)	Axys Qualifier	URS Review Qualifier	Rationale	I11019P112SD	Axys Qualifier	URS Review Qualifier	Rationale
110	660	C	U	MB	3250	C D			1730	C			2740	C			1050	C			96500	C D		
111	1.96				9.44				5.13				9.44				3.54				4.31	U		
112	0.321	U			0.631	U			0.378	U			0.333	U			0.29	U			4.33	U		
113		C90				C90				C90				C90				C90				C90		
114	46.1		U	MB	212				103				206				75.1				1310			
115		C110				C110				C110				C110				C110				C110		
116		C85				C85				C85				C85				C85				C85		
117		C85				C85				C85				C85				C85				C85		
118	1700				5970	D			4070				8790	D			2930				52900	D		
119		C86				C86				C86				C86				C86				C86		
120	10.8				33.3				27.9				49.8				20.8				9.84			
121	1.16	K J	EMPC	TCI	4.32				3.23				4.42				1.7	J			4.24	U		
122	4.64				18.5				11.6				17.8				9.43				600			
123	32.5				109				61.5				138				54.6				868			
124		C107				C107				C107				C107				C107				C107		
125		C86				C86				C86				C86				C86				C86		
126	4.34				10.5				11.6				20.9				8.79				53.3	U		
127	0.336	U			0.428	U			0.46	U			0.612	U			0.426	U			87.6			
128	408	C			1940	C			1020	C			1830	C			449	C			10300	C		
129	2910	C			14400	C D			7800	C			13500	C D			4240	C			67500	C D		
130	115				476				272				361				179				3020			
131	5.32		U	MB	36.6				12.9		U	MB	27.8				11.3		U	MB	858			
132	133		U	MB	924				373				638				285				19100			
133	54.2				235				132				232				82.4				435			
134	29.1	C	U	MB	144	C			77	C			122	C			57.9	C			2570	C		
135	428	C			1800	C			1050	C			1560	C			609	C			8130	C		
136	60.1				236				151				232				89.5				4490			
137	132				689				277				573				187				4010			
138		C129				C129				C129				C129				C129				C129		
139	45	C			220	C			106	C			199	C			53.5	C			1130	C		
140		C139				C139				C139				C139				C139				C139		
141	210				1160				500				652				241				6220			
142	0.379	U			0.923	U			0.747	U			0.846	U			0.364	U			16.2	U		
143		C134				C134				C134				C134				C134				C134		
144	32.7				174				74.8				114				49.3				1440			
145	0.121	J			0.88	J			0.372	J			0.706	J			0.191	J			23.8			
146	551				2510				1320				2280				968				4670			
147	412	C	U	MB	3310	C			1190	C			1990	C			1030	C			28200	C		
148	3.76				17.4				8.81				11.7				4.95				20.6			
149		C147				C147				C147				C147				C147				C147		
150	0.956	J			6.06				2.57				4.55				2.47				37.2			
151		C135				C135				C135				C135				C135				C135		
152	0.928	J			4.25				2.17				2.96				1.21	J			57.3			
153	3190	C			17000	C D			9480	C			19200	C D			5760	C			34500	C D		
154		C135				C135				C135				C135				C135				C135		
155	2.75				10.7				6.94				11.7				3.47				0.617	U		
156	281	C	U	MB	1350	C			635	C			1300	C			415	C			6910	C		
157		C156				C156				C156				C156				C156				C156		
158	205				1280				539				1050				247				5570			
159	4.17				26.7				10.5				12.5				8.07				59.6			
160		C129				C129				C129				C129				C129				C129		
161	0.264	U			0.648	U			0.52	U			0.594	U			0.254	U			10.8	U		
162	13				62.3				32.8				59.8				20.9				165			
163		C129				C129				C129				C129				C129				C129		
164	85.5				357				192				225				100				2660			
165	1.94				11.6				5.34				8.63				3.71				12.8	U		
166		C128				C128				C128				C128				C128				C128		
167	103				295				233				467				195				1880			
168		C153				C153				C153				C153				C153				C153		
169	1.41	U			4.46	U			3.68	U			6.87	U			1.75	U			11.1	U		
170	332				2270				834				1380				457				3200			
171	130	C			866	C			337	C			678	C			162	C			1020	C		
172	71.2				518				173				267				95.1				404			
173		C171				C171				C171				C171				C171				C171		
174	87.9				630				225				301				186				1780			
175	14.5				71.1				32.1				51.3				21.4				79.7			
176	12				84.5				32.8				56.4				29				232			
177	165				899				411				643				351				1100			
178	140				623				359				668				202				225			
179	97.8				381				251				335				143				523			
180	940	C			6640	C D			2380	C			4760	C D			1580	C			3920	C		
181	7.03				37.6				16.2				36.3				10.7				88.5			
182	4.66				26				11.2				16.5				6.34				23			
183	324	C			2110	C			797	C			1490	C			445	C			1320	C		
184	4.11				13.6				8.84				17.6				3.83				2.57	K	EMPC	TCI
185		C183				C183				C183				C183				C183				C183		
186	0.0666	U			0.114	U			0.0794	U			0.115	U			0.0877	U			2.28			
187	921				3730	D			2200				3950				2010				1420			
188	2.31				10.2				5.64				9.65				4.58				2.85			
189	15.4				94.4				36.4				70.6				23.7				154			
190	126				641				312				657				184				475			
191	17.8				119				40.7				83.6				26.5				107			
192	0.0809	U			0.135	U			0.0964	U			0.137	U			0.107	U			0.25	U		
193		C180				C180				C180				C180				C180				C180		
194	102				960				260				531				153				282			
195	60.9				401				159				337				97.5				100			
196	74.1				552				172				326				106				93.4			
197	18.7	C			121	C			42.5	C														

TABLE 3. Congener Qualifier Summary																								
IUPAC #	111019P113SD	Axys Qualifier	URS Review Qualifier	Rationale	111019P114SD	Axys Qualifier	URS Review Qualifier	Rationale	111018P115SD	Axys Qualifier	URS Review Qualifier	Rationale	111018P116SD	Axys Qualifier	URS Review Qualifier	Rationale	111018P117SD	Axys Qualifier	URS Review Qualifier	Rationale	111018P118SD	Axys Qualifier	URS Review Qualifier	Rationale
Individual Con																								
1	7.17				11.8				0.877 J				0.408 J				1.23 J				0.847 J			
2	1.53 J				0.464 K J	EMPC	TCI		0.844 J				4.39				0.428 K J	EMPC	TCI		2.72			
3	6.38				3.07				4.87				1.95 J	U	MB		1.91 J	U	MB		1.98 J	U	MB	
4	219				146				15.2				3.79				6.81				5.31			
5	8.04				0.849 K J	EMPC	TCI		0.265 U				0.188 U				0.177 U				0.18 U			
6	91.1				26				6.52				0.986 J				1.25 J				0.524 J			
7	26.6				12.4				23.2				0.426 K J	EMPC	TCI		0.638 K J	EMPC	TCI		0.238 K J	EMPC	TCI	
8	439				127				13				3.75				5.72				3.68			
9	62.7				19				26.8				0.444 K J	EMPC	TCI		1.29 J				0.508 J			
10	26.2				6.76				34.1				0.239 K J	EMPC	TCI		0.589 J				0.244 K J	EMPC	TCI	
11	7.8				7.02				8.1				25.1				10.8				19.4			
12	68.1 C				12.3 C				23.5 C				0.528 C K J	EMPC	TCI		1.1 C K J	EMPC	TCI		1.19 C J			
13	C12				C12				C12				C12				C12				C12			
14	0.282 J				0.253 U				0.239 U				0.178 U				0.167 U				0.17 U			
15	900				118				121				4.79				8.31				7.27			
16	555				99.5				16.4				1.83 J				3.57				1.4 J			
17	900				346				180				10.4				21.4				7.73			
18	1890 C				445 C				115 C				9.34 C				20 C				6.54 C			
19	387				226				183				3.2				9.57				4.01			
20	3870 C				947 C				222 C				26.7 C				38.3 C				33.9 C			
21	1240 C				175 C				40.6 C				22.4 C				9.87 C				28.2 C			
22	1170				145				44.6				3.72				5.31				4.97			
23	3.32				0.904 J				0.234 U				0.0607 U				0.06 J				0.0495 U			
24	32.5				3.84				0.0472 U				0.068 J				0.0478 U				0.086 K J	EMPC	TCI	
25	351				178				74.6				2.84				7.55				4.76			
26	522 C				304 C				100 C				4.07 C				11.4 C				4.86 C			
27	212				208				149				3.11				8.72				3.31			
28		C20			C20				C20				C20				C20				C20			
29		C26			C26				C26				C26				C26				C26			
30		C18			C18				C18				C18				C18				C18			
31	4500				688				215				15.9				37.9				45.5			
32	869				341				111				5.33				11.6				5.06			
33		C21			C21				C21				C21				C21				C21			
34	9.09				5.22				1.07 J				0.697 J				0.299 J				0.305 J			
35	25				3.6				1.06 K J	EMPC	TCI		0.335 J				0.249 J				0.786 J			
36	1.38 U				0.337 U				0.225 U				0.0619 U				0.0487 U				0.0495 U			
37	899				134				38.5				5.21				6.04				17			
38	16.6 K	EMPC	TCI		2.25 K	EMPC	TCI		0.728 K J	EMPC	TCI		0.113 K J	EMPC	TCI		0.193 K J	EMPC	TCI		0.757 K J	EMPC	TCI	
39	61.5				11.1				2.49				0.412 J				0.97 J				3.75			
40	9510 C				1330 C				375 C				42.3 C				94.3 C				411 C			
41		C40			C40				C40				C40				C40				C40			
42	0.3 U				467				182				27.6				36.1				193			
43	411				112				24				3.92				8.74				24.2			
44	84900 C D				4780 C				2130 C				204 C				474 C				2630 C			
45	1200 C				374 C				110 C				8.67 C				16.2 C				20.1 C			
46	467				123				45.6				3.96				5.25				7.2			
47		C44			C44				C44				C44				C44				C44			
48	2010				339				78.7				10.1				24.4				88			
49	45400 C D				2980 C				1250 C				176 C				283 C				1650 C			
50	3160 C				989 C				298 C				0.0531 C U				52.5 C				57.9 C			
51		C45			C45				C45				C45				C45				C45			
52	227000 D				11000				5150				425				1150				6480			
53		C50			C50				C50				C50				C50				C50			
54	23.6				31.5				12.2				0.66 K J	EMPC	TCI		1.29 J				0.585 J			
55	11.3 U				6.01 U				2.62 U				2.89				1.18 U				2.2 U			
56	17800 D				1110				465				50.6	J	DUP		126				1180			
57	10.7 U				5.71 U				2.49 U				0.203 K J	EMPC	TCI		1.01 U				1.88 U			
58	10.9 U				5.79 U				2.53 U				1.33 K J	EMPC	TCI		1.06 U				1.97 U			
59	595 C				130 C				33.6 C				8.88 C				7.58 C				28.3 C			
60	5350				491				202				19.6	J	DUP		52.6				509			
61	213000 C D				14100 C D				5390 C				534 C	J	DUP		1490 C				12500 C D			
62		C59			C59				C59				C59				C59				C59			
63	1060				121				46				11.5				15				105			
64	0.216 U				1420				624				74.2				155				1020			
65		C44			C44				C44				C44				C44				C44			
66	50300 D				3140				1300				261				416				3520			
67	178				40.3				5.94 K	EMPC	TCI		1.15 J				1.63 K J	EMPC	TCI		1.72 U			
68	10.4 U				17				4.43				4.18				0.974 U				1.82 U			
69		C49			C49				C49				C49				C49				C49			
70		C61			C61				C61				C61				C61				C61			
71		C40			C40				C40				C40				C40				C40			
72	34.6				24.2				5.63				5.71				1.9 J				4			
73	0.215 U				0.0667 U				0.105 U				0.0487 U				0.0478 U				0.0495 U			
74		C61			C61				C61				C61				C61				C61			
75		C59			C59				C59				C59				C59				C59			
76		C61			C61				C61				C61				C61				C61			
77	530				66.4				22.6				8.4				7.35				56.7			
78	48.5				6.42 U				2.8 U				0.156 U				1.21 U				6.71 K	EMPC	TCI	
79	10.4 U				204				92.2				10.1				30.8				385			
80	11.1 U				5.87 U				2.56 U				0.14 U				1.09 U				2.03 U			
81	32 K	EMPC	TCI		5.36 U				2.4 U				0.196 K J	EMPC	TCI		0.974 U				1.75 U			
82	35600 D				2160				952				72.7	J	DUP		244				2630			
83	174000 C D				11300 C				4780 C				801 C	J	DUP		1310 C				16500 C D			
84	84000 D				4910				2220				222	J	DUP		519				5010			
85	51600 C D				3700 C				1610 C				154 C	J										

TABLE 3. Congener Qualifier Summary

IUPAC #	111019P113SD	Axys Qualifier	URS Review Qualifier	Rationale	111019P114SD	Axys Qualifier	URS Review Qualifier	Rationale	111018P115SD	Axys Qualifier	URS Review Qualifier	Rationale	111018P116SD	Axys Qualifier	URS Review Qualifier	Rationale	111018P117SD	Axys Qualifier	URS Review Qualifier	Rationale	111018P118SD	Axys Qualifier	URS Review Qualifier	Rationale
110	446000	C D			27200	C D			10300	C			923	C	J	DUP	2610	C			37300	C D		
111	10.8	U			1.46	U			0.832	U			0.265	K J	EMPC	TCI	0.26	U			0.742	U		
112	10.8	U			1.47	U			0.835	U			0.209	U			0.248	U			0.707	U		
113		C90				C90				C90				C90				C90				C90		
114	5340				474				201				23.2		J	DUP	62.4				679			
115		C110				C110				C110				C110				C110				C110		
116		C85				C85				C85				C85				C85				C85		
117		C85				C85				C85				C85				C85				C85		
118	233000	D			19600	D			8690	D			1040		J	DUP	2470				25800	D		
119		C86				C86				C86				C86				C86				C86		
120	28.7	K	EMPC	TCI	5.11	K	EMPC	TCI	1.73	K J	EMPC	TCI	2.75				0.52	J			2.87	K	EMPC	TCI
121	10.6	U			1.43	U			0.818	U			0.207	U			0.245	U			0.699	U		
122	2230				220				95.3				8.02				30.3				287			
123	3130				297				147				14.5				38.1				411			
124		C107				C107				C107				C107				C107				C107		
125		C86				C86				C86				C86				C86				C86		
126	209	U			17.1	U			9.2	U			1.38	U			3.74	U			28.7	U		
127	358				34.4				15.5				2.51				5.71				36.7			
128	70500	C D			3600	C			1810	C			176	C	J	DUP	428	C			5270	C		
129	425000	C D			18600	C			11000	C			1300	C			2290	C			30400	C D		
130	12900				1090				580				62.4				138				1430			
131	3270				273				149				10.3				29.7				360			
132	155000	D			6020				3430				274		J	DUP	651				8600			
133	1750				151				87.5				11.9				19.5				184			
134	9880	C			913	C			475	C			41.9	C	J	DUP	95.5	C			1060	C		
135	63900	C D			2810	C			1610	C			215	C			325	C			3510	C		
136	18600				1480				831				99.2		J	DUP	148				1980			
137	16400				1510				794				78.7				176				1860			
138		C129				C129				C129				C129				C129				C129		
139	4520	C			393	C			225	C			15.7	C			42.9	C			489	C		
140		C139				C139				C139				C139				C139				C139		
141	50900	D			2170				1220				162				273				3080			
142	50.5	U			10.9	U			3.69	U			1.17	U			2.04	U			7.43	U		
143		C134				C134				C134				C134				C134				C134		
144	5840				499				283				31.1				56				612			
145	83.6				8.73				4.69				0.38	K J	EMPC	TCI	1.01	J			0.0495	U		
146	21100				1650				949				176				250				2880			
147	237000	C D			9300	C			4940	C			601	C			1040	C			12500	C		
148	84.3				7.41				3.89				0.0597	U			0.785	J			9.14			
149		C147				C147				C147				C147				C147				C147		
150	147				13.9				7.33				0.77	J			1.33	J			17.3			
151		C135				C135				C135				C135				C135				C135		
152	193				19				9.16				0.73	K J	EMPC	TCI	1.72	J			25.4			
153	242000	C D			11000	C			6030	C			962	C			1380	C			16000	C		
154		C135				C135				C135				C135				C135				C135		
155	0.75	J			0.124	J			0.0472	U			0.0487	U			0.0478	U			0.0495	U		
156	47000	C D			2600	C			1280	C			189	C			332	C			3540	C		
157		C156				C156				C156				C156				C156				C156		
158	43000	D			1990				1100				102				236				2780			
159	259				19.6				8.7				6.71				4.47				31.4			
160		C129				C129				C129				C129				C129				C129		
161	33.7	U			7.27	U			2.47	U			0.887	U			1.54	U			5.63	U		
162	677				58.2				27				4.34				8.81				79.8			
163		C129				C129				C129				C129				C129				C129		
164	11700				899				509				63.1				118				1230			
165	40	U			8.62	U			2.93	U			1.05	U			1.83	U			6.67	U		
166		C128				C128				C128				C128				C128				C128		
167	8540				715				348				56.2				91.3				974			
168		C153				C153				C153				C153				C153				C153		
169	36.3	U			7.58	U			2.16	U			1.02	U			1.62	U			6.8	U		
170	15800				1290				650				249				173				1650			
171	4660	C			367	C			115	C			72.7	C			51.3	C			479	C		
172	1820				135				52.8				42.1				22.6				207			
173		C171				C171				C171				C171				C171				C171		
174	9000				614				258				206				107				885			
175	420				32				15.9				9				5.71				38.6			
176	1120				83.3				42.4				22.6				16.1				110			
177	5330				477				146				130				68.8				526			
178	1380				101				53.4				38.7				19.7				112			
179	2800				231				115				66				44.3				211			
180	25400	C D			1700	C			970	C			516	C			246	C			2090	C		
181	426				34.2				9.75				3.35				4.66				43.4			
182	104				8.02				3.12				1.23	J			1.43	K J	EMPC	TCI	12.3			
183	7230	C			509	C			211	C			164	C			88.8	C			636	C		
184	11.7				0.961	J			0.488	K J	EMPC	TCI	0.14	K J	EMPC	TCI	0.138	J			1.29	J		
185		C183				C183				C183				C183				C183				C183		
186	8.71				0.771	J			0.292	K J	EMPC	TCI	0.0487	U			0.114	J			1.2	J		
187	9280				630				346				294				131				811			
188	12				0.976	K J	EMPC	TCI	0.509	J			0.169	K J	EMPC	TCI	0.171	J			1.41	J		
189	741				60.4				30.4				10.3				8.55				82.7			
190	2460				189				83.6				50.5				30				263			
191	517				41.2				17				10.6				6.73				56.7			
192	0.513	U			0.0788	U			0.0668	U			0.0516	U			0.0567	U			0.0698	U		
193		C180				C180				C180				C180				C180				C180		
194	2840				169				141				102		J	DUP	25				154			
195	933				60.1				49				43.1		J	DUP	10.4				58.7			
196	1190				75.7																			

TABLE 3. Congener Qualifier Summary

IUPAC #	LAB 111018P116SD(Duplicate J) WG38156-1	Axys Qualifier	URS Review Qualifier	Rationale	111019P112TC	Axys Qualifier	URS Review Qualifier	Rationale	111019P113TC	Axys Qualifier	URS Review Qualifier	Rationale	111019P114TC	Axys Qualifier	URS Review Qualifier	Rationale	111018P115TC	Axys Qualifier	URS Review Qualifier	Rationale	111018P117TC	Axys Qualifier	URS Review Qualifier	Rationale
Individual Con																								
1	0.405	K J	EMPC	TCI	42.2				50.4				7.11				2.78				1.75	J		
2	4.44				2.24				1.93	J			1.48	J			1.33	J			1.4	J		
3	1.96	K J	U	MB	3.58				3.01				0.99	J			1.39	J			2.17	J	U	MB
4	3.87				1900				3820				1290				325				190			
5	0.16	U			6.6				4.61				2.05	J			0.868	J			0.734	J		
6	0.888	J			201				122				81				22.4				13.8			
7	0.402	K J	EMPC	TCI	36.2				13				4.17				1.34	J			0.672	J		
8	3.74				408				323				111				50				34.2			
9	0.563	J			82.3				35.8				11				3.39				1.94	J		
10	0.212	J			106				139				25				8.9				3.05			
11	25.1				3040				3270				3100				2920				3360			
12	0.568	C K J	EMPC	TCI	66.8	C			48	C			30.6	C			21.8	C			12.6	C		
13		C12				C12				C12				C12				C12				C12		
14	0.151	U			0.158	J			0.225	U			0.137	K J	EMPC	TCI	0.14	U			0.125	U		
15	4.76				187				113				37.2				16.4				13.4			
16	1.67	J			537				380				277				111				69.4			
17	9.53				3050				2740				1640				708				215			
18	8.9	C			3640	C			2690	C			1720	C			710	C			258	C		
19	3.43				1170				1160				313				137				58.6			
20	26.3	C			1360	C			855	C			470	C			200	C			133	C		
21	21.1	C			549	C			343	C			231	C			135	C			62.8	C		
22	3.68				620				422				374				142				105			
23	0.0524	U			1.43	J			1.12	U			0.615	U			1.74	J			0.258	U		
24	0.088	J			16				11.3				7.08				2.67				2.43			
25	2.72				603				450				237				97.3				35.8			
26	3.82	C			905	C			582	C			289	C			131	C			59.3	C		
27	2.88				1740				1500				817				387				105			
28		C20				C20				C20				C20				C20				C20		
29		C26				C26				C26				C26				C26				C26		
30		C18				C18				C18				C18				C18				C18		
31	15.7				1730				1210				534				181				114			
32	5.74				937				754				290				130				54.5			
33		C21				C21				C21				C21				C21				C21		
34	0.582	J			7.65				4.09				2.54				2.3				0.568	J		
35	0.362	J			11.2				7.87				7.29				5.3				7.03			
36	0.0535	U			1.97	J			1.98	J			1.38	J			1.05	J			0.97	J		
37	5.76				326				211				146				70.7				49.5			
38	0.116	K J	EMPC	TCI	7.15				5.4				4.11				1.8	J			0.994	J		
39	0.508	J			50.7				51.4				29				13.6				4.24			
40	60.6	C			7030	C D			6300	C D			3320	C D			1410	C			449	C		
41		C40				C40				C40				C40				C40				C40		
42	32.7				5930	D			4670	D			3090	D			1170				449			
43	4.65	K	EMPC	TCI	352	D			354	D			168	D			48.5				18.6			
44	261	C			68500	C D			57000	C D			32700	C D			11400	C D			4460	C		
45	9.62	C			1290	C D			1060	C D			558	C D			253	C			83.7	C		
46	4.04				281	D			197	D			75	D			24.3				12.2			
47		C44				C44				C44				C44				C44				C44		
48	14.5				1780	D			1710	D			1040	D			454				134			
49	220	C			18000	C D			15600	C D			8570	C D			2940	C			945	C		
50	24.1	C			6600	C D			5400	C D			3120	C D			1420	C			378	C		
51		C45				C45				C45				C45				C45				C45		
52	569				90300	D			80400	D			41000	D			12700	D			4360			
53		C50				C50				C50				C50				C50				C50		
54	0.715	K J	EMPC	TCI	29.3	D			16.1	D J			5.28	D J			2.95				1.12	J		
55	0.176	U			20.6	U D			22.1	U D			15.5	U D			26				12			
56	86		J	DUP	7980	D			7420	D			4190	D			1680				633			
57	0.15	U			19.5	U D			20.9	U D			14.2	U D			4.14				1.52	U		
58	0.157	U			100	D			80.5	D			142	D			15.8				1.59	J		
59	9.73	C			488	C D			379	C D			243	C D			94.5	C			43.8	C		
60	35.9		J	DUP	2760	D			2580	D			1480	D			560				256			
61	922	C	J	DUP	76400	C D			69700	C D			33500	C D			11300	C D			4360	C D		
62		C59				C59				C59				C59				C59				C59		
63	14.9				645	D			591	D			353	D			154				63.6			
64	100				7930	D			7120	D			3590	D			1190				468			
65		C44				C44				C44				C44				C44				C44		
66	381				24000	D			21800	D			12600	D			5170	D			2120			
67	1.55	J			132	D			82.2	D			67.6	D			42.9				13.9			
68	4.24				71.6	D			37.3	D			33.1	D			17.4				7.98			
69		C49				C49				C49				C49				C49				C49		
70		C61				C61				C61				C61				C61				C61		
71		C40				C40				C40				C40				C40				C40		
72	6.2				66.6	D			37.9	D			28.8	D			14.5				7.26			
73	0.0491	U			207	D			127	D			68.8	D			21.5				12.8			
74		C61				C61				C61				C61				C61				C61		
75		C59				C59				C59				C59				C59				C59		
76		C61				C61				C61				C61				C61				C61		
77	9.14				286	D			269	D			209	D			110				57.5			
78	0.342	J			20.9	U D			22.4	U D			15.6	U D			2.95	U			1.57	U		
79	18.7				3060	D			2880	D			1820	D			708				262			
80	0.163	U			18.6	U D			19.9	U D			14	U D			2.68	U			1.43	U		
81	0.163	K J	EMPC	TCI	37.4	K D	EMPC	TCI	66.9	K D	EMPC	TCI	40.1	K D	EMPC	TCI	8.76	K	EMPC	TCI	3.95	K	EMPC	TCI
82	138		J	DUP	6370	D			6510	D			2920	D			926				422			
83	1350	C	J	DUP	91600	C D			91100	C D			59300	C D			24400	C D			7380	C D		
84	372		J	DUP	16700	D			16100	D			6740	D			2180				936			
85	267	C	J	DUP	21300	C D			21500	C D			12800	C D			5250	C			1970	C		
86	969	C	J	DUP	108000	C D																		

TABLE 3. Congener Qualifier Summary

IUPAC #	LAB 111018P116SD(Duplicate JWG38156-1	Axys Qualifier	URS Review Qualifier	Rationale	111019P1127C	Axys Qualifier	URS Review Qualifier	Rationale	111019P1137C	Axys Qualifier	URS Review Qualifier	Rationale	111019P1147C	Axys Qualifier	URS Review Qualifier	Rationale	111018P1157C	Axys Qualifier	URS Review Qualifier	Rationale	111018P1177C	Axys Qualifier	URS Review Qualifier	Rationale
110	1590	C	J	DUP	183000	C D			169000	C D			68100	C D			29700	C D			11100	C D		
111	0.221	U			10	U D			10.2	U D			6.31	U D			1.34	U			0.197	U		
112	0.211	U			9.61	U D			9.8	U D			5.86	U D			1.35	U			0.198	U		
113		C90				C90				C90				C90				C90				C90		
114	38.7		J	DUP	3320	D			3280	D			2290	D			1020				426			
115		C110				C110				C110				C110				C110				C110		
116		C85				C85				C85				C85				C85				C85		
117		C85				C85				C85				C85				C85				C85		
118	1700		J	DUP	237000	D	J	OPR	224000	D	J	OPR	118000	D	J	OPR	65000	D	J	OPR	29900	D	J	OPR
119		C86				C86				C86				C86				C86				C86		
120	2.71				23.5	D			22.2	D			16.7	D J			13				5.96			
121	0.208	U			9.43	U D			9.61	U D			6.02	U D			1.34	U			0.196	U		
122	16.5				875	D			824	D			481	D			216				89.2			
123	29.3				3890	D			3760	D			2560	D			1070				591			
124		C107				C107				C107				C107				C107				C107		
125		C86				C86				C86				C86				C86				C86		
126	2.45	U			42.3	D			56.5	D			35.1	D			14				6.78			
127	2.77				161	D			166	D			115	D			52.3				20.3			
128	279	C	J	DUP	15300	C D			14700	C D			8970	C D			3300	C			1470	C		
129	1810	C			173000	C D			165000	C D			114000	C D			45300	C D			20800	C D		
130	93.3				5520	D			5350	D			3420	D			1360				584			
131	19.4				1250	D			1200	D			679	D			263				91.9			
132	443		J	DUP	21000	D			20400	D			11100	D			4090				1710			
133	15				794	D			782	D			541	D			222				86.3			
134	68	C	J	DUP	3320	C D			3280	C D			1960	C D			679	C			266	C		
135	278	C			13900	C D			13300	C D			7830	C D			2900	C			1000	C		
136	153		J	DUP	5510	D			5250	D			2690	D			969				404			
137	111				6640	D			6660	D			4460	D			2190				823			
138		C129				C129				C129				C129				C129				C129		
139	29	C			1980	C D			1970	C D			1220	C D			469	C			136	C		
140		C139				C139				C139				C139				C139				C139		
141	206				2920	D			3640	D			1880	D			889				344			
142	0.663	U			13.3	D J			18.3	D J			19.9	U D			4.25	U			4.78	U		
143		C134				C134				C134				C134				C134				C134		
144	43.5				2300	D			2250	D			1350	D			498				169			
145	0.0491	U			33.7	D			32.8	D			16.1	D J			5.83				2.19			
146	215				14800	D			14200	D			10700	D			5270				2060			
147	841	C			70600	C D			69400	C D			44900	C D			16900	C D			6570	C		
148	0.754	J			36.4	D			37.3	D			20.9	D J			8.76				1.69	J		
149		C147				C147				C147				C147				C147				C147		
150	1.39	K J	EMPC	TCI	53.7	D			52.5	D			29.9	D			10.5				3.76			
151		C135				C135				C135				C135				C135				C135		
152	1.3	J			64.2	D			63	D			33	D			10.3				3.68			
153	1130	C			183000	C D			149000	C D			120000	C D			47400	C D			23000	C D		
154		C135				C135				C135				C135				C135				C135		
155	0.06	K J	EMPC	TCI	1.28	K D J	EMPC	TCI	0.814	D J			1.15	K D J	EMPC	TCI	1.25	J			0.736	J	J	IS
156	237	C			15500	C D			14700	C D			11100	C D			4820	C			2120	C		
157		C156				C156				C156				C156				C156				C156		
158	151				13000	D			12800	D			8460	D			3540				1230			
159	5.71				25.5	D			38.1	D			22.7	D			8.23				4.56			
160		C129				C129				C129				C129				C129				C129		
161	0.502	U			8.68	U D			6.75	U D			14	U D			2.97	U			3.34	U		
162	6.17				279	D			276	D			171	D			72.8				34.1			
163		C129				C129				C129				C129				C129				C129		
164	89.4				3170	D			3360	D			1990	D			737				273			
165	0.594	U			9.35	D J			8.43	K D J	EMPC	TCI	16	U D			3.46	U			3.89	U		
166		C128				C128				C128				C128				C128				C128		
167	67.9				9110	D			7680	D			6090	D			2500				1320			
168		C153				C153				C153				C153				C153				C153		
169	0.58	U			9.5	U D			7.01	U D			15.5	U D			3.1	U			2.79	U		
170	202				1780				1760				1130				496				214			
171	57.5	C			1880	C			1800	C			1150	C			481	C			235	C		
172	31.5				129				137				85.9				35.2				22.9			
173		C171				C171				C171				C171				C171				C171		
174	164				850				975				491				217				114			
175	6.57				166				164				109				48.4				17.1			
176	17.5				494				488				299				132				63.7			
177	93.7				2620				2470				1690				735				397			
178	25.9				696				662				486				224				93.1			
179	49.8				1110				1110				649				308				164			
180	368	C			6310	C D			5720	C D			4300	C			2130	C			1180	C		
181	3.4				224				210				144				60.2				23.2			
182	1.6	J			23.9				25.7				16.4				8.15				1.74	J		
183	117	C			3540	C			3370	C			2390	C			1110	C			453	C		
184	0.09	K J	EMPC	TCI	7.09				7.04				4.76				2.63				0.784	J		
185		C183				C183				C183				C183				C183				C183		
186	0.0491	U			1.17	J			1.48	J			0.746	J			0.316	K J	EMPC	TCI	0.182	K J	EMPC	TCI
187	206				5520				4920				3770				1890				831			
188	0.231	K J	EMPC	TCI	6.45				6.42				4.46				2.26				1.31	J		
189	8.9				85.1				84.8				55.7				23.8				10.6			
190	38.3				1540				1390				981				447				276			
191	8.3				203				200				130				62.6				28.1			
192	0.0522	U			0.46	U			0.316	U			0.201	U			0.14	U			0.181	U		
193		C180				C180				C180				C180				C180				C180		
194	62.7		J	DUP	79.1				69.6				53.2				28				24.9			
195	27.2		J	DUP	171				161															

TABLE 3. Congener Qualifier Summary																								
IUPAC #	111018P118TC	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB44	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB45	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB46	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB47	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB48	Axys Qualifier	URS Review Qualifier	Rationale
Individual Con																								
1	5.4				0.829	J			0.759	J			0.743	J			2.09	J	U	MB	1.29	J		
2	1.2	J			0.834	J			0.493	J			0.6	J			0.678	J			0.809	J		
3	2.21	J	U	MB	2.14	J	U	MB	2.09	J	U	MB	2.09	J	U	MB	2.09	J	U	MB	2.09	J	U	MB
4	512				3.78				2.71				1.97	J			2.01	J			4.38			
5	0.858	J			0.169	U			0.14	U			0.248	U			0.179	U			0.174	J		
6	22.7				1.46	J			0.952	J			1.54	J			0.891	J			1.79	J		
7	1.21	J			0.641	J			0.571	J			0.388	J			0.29	J			0.614	J		
8	45.5				6.94				4.48				2.92				4.78				8.24			
9	3.18				0.623	J			0.444	J			0.248	J			0.306	J			0.707	J		
10	10.2				0.186	J			0.148	J			0.2	U			0.144	U			0.221	J		
11	3660				307				162				67.6				433				343			
12	19.8	C			0.17	C U			0.141	C U			1.1	C J			0.18	C U			0.131	C U		
13		C12				C12				C12				C12				C12				C12		
14	0.118	U			0.156	U			0.13	U			0.23	U			0.166	U			0.12	U		
15	13.3				3.09				1.87	J			1.12	J			3.35				3.22			
16	91.5				6.73				3.31				1.95	J			4.87				7.73			
17	383				12				5.71				3.69				8.17				14			
18	406	C			22.9	C			9.96	C			6.63	C			15.4	C			27.3	C		
19	89.1				1.66	J			1.16	J			0.737	J			1.2	J			1.78	J		
20	164	C			120	C			54.9	C			50.2	C			111	C			153	C		
21	77.3	C			20.5	C			9.13	C			7.17	C			15.1	C			24	C		
22	130				21.7				12.3				11				22.4				26			
23	0.254	U			0.132	J			0.0524	U			0.0522	U			0.087	J			0.144	J		
24	2.3				0.397	J			0.231	K J	EMPC	TCI	0.109	K J	EMPC	TCI	0.259	K J	EMPC	TCI	0.541	J		
25	59				3.56				2.22				1.57	J			3.94				4.27			
26	84.3	C			13.3	C			6.37	C			5.09	C			11.9	C			15.7	C		
27	195				1.82	J			1.02	J			0.638	J			1.35	J			2.15			
28		C20				C20				C20				C20				C20				C20		
29		C26				C26				C26				C26				C26				C26		
30		C18				C18				C18				C18				C18				C18		
31	138				55.7				29.1				19.9				54.6				69			
32	87.1				3.98				1.64	J			1.12	J			2.3				4.48			
33		C21				C21				C21				C21				C21				C21		
34	0.654	J			0.443	J			0.154	J			0.135	J			0.302	J			0.523	J		
35	6.87				0.197	J			0.169	J			0.0522	U			0.485	J			0.224	J		
36	1.07	J			0.0536	U			0.0522	U			0.0522	U			0.311	J			0.0869	U		
37	55.4				7.29				7.3				3.41				12.6				9.97			
38	1.47	J			0.0536	U			0.053	U			0.0522	U			0.0694	U			0.0891	U		
39	7.72				0.951	J			0.439	J			0.595	J			0.935	J			1.22	J		
40	753	C			42.8	C			19.8	C			22.5	C			39.6	C			48.1	C		
41		C40				C40				C40				C40				C40				C40		
42	868				31.1				17.1				26.6				33.9				37.7			
43	25.2				7.17				2.55				4.54				5.89				8.46			
44	7970	C D			211	C			97.1	C			159	C			212	C			275	C		
45	137	C			10.1	C			5.59	C			4.69	C			9.33	C			11.8	C		
46	15.4				2.06	J			1.25	J			0.949	J			2.44				2.67			
47		C44				C44				C44				C44				C44				C44		
48	263				26.6				11.7				18.9				24.2				32.7			
49	1770	C			171	C			74.7	C			126	C			170	C			211	C		
50	688	C			7.57	C			4.83	C			3.66	C			8.54	C			9.09	C		
51		C45				C45				C45				C45				C45				C45		
52	7300	D			400				177				245				417				502			
53		C50				C50				C50				C50				C50				C50		
54	1.15	J			0.146	J			0.099	J			0.063	J			0.134	J			0.16	J		
55	14.1				0.571	U			0.315	U			0.492	U			0.312	U			0.53	U		
56	1000				38.9				33.5				31.9				56				49			
57	1.74	U			1.73	J			0.809	J			1.75	J			1.84	J			2.19			
58	1.77	U			1.24	J			0.815	J			1.68	J			1.8	J			1.35	J		
59	71.2	C			19.7	C			9.21	C			15.1	C			20.1	C			25.9	C		
60	334				104				49				106				106				147			
61	6820	C D			602	C			327	C			592	C			667	C			832	C		
62		C59				C59				C59				C59				C59				C59		
63	86.6				26.6				13.4				39.4				26.6				38.9			
64	787				112				45.8				78.9				107				134			
65		C44				C44				C44				C44				C44				C44		
66	3020				445				228				548				450				661			
67	23.7				4.85				3.47				5.38				6.43				5.77			
68	10				7				4.17				10.5				7.6				9.14			
69		C49				C49				C49				C49				C49				C49		
70		C61				C61				C61				C61				C61				C61		
71		C40				C40				C40				C40				C40				C40		
72	9.06				8.99				4.34				12.2				9.45				12.6			
73	15.5				0.0536	U			0.0522	U			0.0522	U			0.0523	U			0.0523	U		
74		C61				C61				C61				C61				C61				C61		
75		C59				C59				C59				C59				C59				C59		
76		C61				C61				C61				C61				C61				C61		
77	64.2				20.6				13.1				23				25				32.9			
78	1.8	U			0.58	U			0.32	U			0.499	U			0.317	U			0.538	U		
79	538				7.92				6.45				12.2				12.2				10.5			
80	1.63	U			0.524	U			0.344	K J	EMPC	TCI	0.451	U			0.287	U			0.487	U		
81	5.19	K	EMPC	TCI	0.864	J			0.778	J			1.42	J			1.22	J			1.56	J		
82	561				27.8				25.8				35.8				46				30.7			
83	13200	C D			1310	C			682	C			2110	C			1440	C			2110	C		
84	1350				57.1				48.1				58.6				88.5				69.1			
85	2920	C			415																			

TABLE 3. Congener Qualifier Summary

IUPAC #	111018P118TC	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB44 Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB45 Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB46 Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB47 Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB48 Axys Qualifier	URS Review Qualifier	Rationale
110	18200	C D			1040	C		597	C		1100	C		1300	C		1340	C	
111	1.23	U			3.01			1.79	J		6.8			2.73			5.29		
112	1.24	U			0.19	U		0.312	U		0.292	U		0.252	U		0.118	U	
113		C90				C90			C90			C90			C90			C90	
114	533				54.6			32.4			128			58.3			102		
115		C110				C110			C110			C110			C110			C110	
116		C85				C85			C85			C85			C85			C85	
117		C85				C85			C85			C85			C85			C85	
118	44500	D	J	OPR	2240	D		1240			5270	D		2380	D		4150	D	
119		C86				C86			C86			C86			C86			C86	
120	10.9	K	EMPC	TCI	15.3			9.54			39.3			16.2			28.8		
121	1.22	U			1.99	J		1.01	J		2.36			1.98	J		2.84		
122	117				5.42			6.9			8.53			10.2			7.77		
123	817				34.4			22.8			74.7			38.4			62.4		
124		C107				C107			C107			C107			C107			C107	
125		C86				C86			C86			C86			C86			C86	
126	10.3				6.25			3.02			9.87			6.72			10.5		
127	27.5				0.475	U		0.342	U		0.479	U		0.411	U		0.513	U	
128	1870	C			530	C		313	C		966	C		547	C		933	C	
129	29900	C D			3860	C		2560	C		8480	C D		4440	C		6910	C D	
130	748				146			120			294			218			224		
131	150				5.96			7.18			13.4			11.9			7.74		
132	2390				170			179			282			298			221		
133	121				70.2			45.9			160			81.2			127		
134	392	C			38.7	C		32.4	C		60.9	C		61.7	C		49.9	C	
135	1820	C			546	C		348	C		833	C		659	C		823	C	
136	583				78.6			47.7			86			95.5			101		
137	1120				140			89			333			149			275		
138		C129				C129			C129			C129			C129			C129	
139	270	C			59.4	C		33.3	C		105	C		63.3	C		99.7	C	
140		C139				C139			C139			C139			C139			C139	
141	426				274			158			328			303			393		
142	3.65	U			0.666	U		0.744	U		0.474	U		0.297	U		0.647	U	
143		C134				C134			C134			C134			C134			C134	
144	298				40			32.5			65.7			57.9			55		
145	3.56				0.138	J		0.108	J		0.158	J		0.238	J		0.25	J	
146	3030				701			485			1720			844			1220		
147	11200	C D			548	C		662	C		1180	C		1020	C		771	C	
148	5.9				4.38			3.1			7.38			6			6.67		
149		C147				C147			C147			C147			C147			C147	
150	6.91				1.1	J		1.29	J		2.29			1.97	J		1.54	J	
151		C135				C135			C135			C135			C135			C135	
152	6.72				1.18	J		0.507	J		1.12	J		1.16	J		1.64	J	
153	46500	C D			4070	C		2440	C		13400	C D		4420	C		8950	C D	
154		C135				C135			C135			C135			C135			C135	
155	0.708	J			4.29			2.37			7.39			4.25			7.26		
156	2960	C			334	C		191	C		782	C		333	C		623	C	
157		C156				C156			C156			C156			C156			C156	
158	1980				288			173			573			331			513		
159	4.94	K	EMPC	TCI	5.13			5.09			10.2			7.8			8.02		
160		C129				C129			C129			C129			C129			C129	
161	2.55	U			0.484	U		0.541	U		0.345	U		0.216	U		0.471	U	
162	40.4				17.4			10.1			44.3			17.6			33.3		
163		C129				C129			C129			C129			C129			C129	
164	398				115			66.8			126			130			149		
165	3.19				2.78			1.84	J		6.25			2.98			5.14		
166		C128				C128			C128			C128			C128			C128	
167	2530				120			76.8			331			124			231		
168		C153				C153			C153			C153			C153			C153	
169	2.63	U			1.69	U		0.818	U		2.95	U		1.51	U		2.87	U	
170	232				447	D		242			919			401	D		815		
171	303	C			154	C D		98.3	C		372	C		159	C D		294	C	
172	20.6				81.6	D		51			154			79.8	D		141		
173		C171				C171			C171			C171			C171			C171	
174	122				97.7	D		105			188			139	D		141		
175	29.2				14.9	D		12.1			37.5			19.1	D		25.2		
176	89.9				12	D		18.2			35.8			23.5	D		19		
177	483				171	D		188			541			256	D		316		
178	155				159	D		112			426			189	D		296		
179	229				111	D		83.4			191			148	D		167		
180	1960	C			1220	C D		724	C		3350	C D		1130	C D		2420	C D	
181	33.3				7.58	D		4.92			20.3			7.62	D		14.2		
182	3.62				6.12	D		3.42			11.1			4.97	D J		8.82		
183	736	C			375	C D		232	C		948	C		392	C D		668	C	
184	2.1	J			4.64	D J		2.8			9.64			4.56	D J		9		
185		C183				C183			C183			C183			C183			C183	
186	0.164	J			0.0617	U D		0.0522	U		0.0876	U		0.0894	U D		0.0593	U	
187	1280				936	D		810			3370	D		1190	D		1880		
188	1.66	J			2.72	D J		2.02	J		7.53			2.96	D J		5.1		
189	11.9				17.9	D		10.4			43.5			15.8	D		35.9		
190	342				154	D		87.2			412			143	D		309		
191	32.9				19.3	D		12.3			54.3			18.5	D		37.3		
192	0.13	U			0.0719	U D		0.0536	U		0.107	U		0.104	U D		0.0724	U	
193		C180				C180			C180			C180			C180			C180	
194	17.8				159	D		99.8			431			129	D		333		
195	45.7				88.3	D		52			249			74.3	D		197		
196	27.7				86.2	D		47.4			202			70.9	D		158		
197	14	C			16.2	C D		13.5	C		45.9	C		18.8	C D		32.4	C	
198	47.4	C			182	C D		116	C		401	C		175	C D		303	C	
199		C198				C198			C198			C198			C198			C198	
200		C197				C197			C197			C197			C197			C197	
201	29.4				26.4	D		19.9			72.6			28.6	D		48.6		
202	69.9				92.8	D		57.4			245			89.6	D		176		
203	238				191	D		106			473			159	D		363		
204	0.079	K J	EMPC	TCI	0.394	D J		0.223	J		0.999	J		0.37	K D J	EMPC	TCI	0.719	J
205	7.18				9.59	D		5.66			25.6			8.02	D		19.6		
206	20.5				63	D		35.6			145			51	D		119		
207	4.42				15.5	D		8.77			39			13	D		30.4		
208	7.83				23.2	D		14.8			48.5			21.4	D		41		
209	9.34				28	D		21.3			78.5			25.6	D		63.9		

Rationale Notes:
MB = Method Blank
IS = Internal Standard
TCI = Target Compound Identification
OPR = Ongoing Precision and Recovery
DUP = Laboartory Duplicate

TABLE 3. Congener Qualifier Summary																			
IUPAC #	R08202011SB49 Axs Qualifier	URS Review Qualifier	Rationale	R08202011SB50 Axs Qualifier	URS Review Qualifier	Rationale	R08212011SB55 Axs Qualifier	URS Review Qualifier	Rationale	R08212011SB56 Axs Qualifier	URS Review Qualifier	Rationale	R08212011SB57 Axs Qualifier	URS Review Qualifier	Rationale	R08212011SB58 Axs Qualifier	URS Review Qualifier	Rationale	
Individual Con																			
1	1.25 J			3.18			0.771 J			1.14 J			1.53 J			1.26 J			
2	0.801 J			1.47 J			1.38 J			0.807 J			0.644 J			0.852 J			
3	2.12 J	U	MB	2.10 J	U	MB	2.13 J	U	MB	2.25 J	U	MB	2.15 J	U	MB	2.20 J	U	MB	
4	3.99			715			3.45			2.98			3.47			4.16			
5	0.172 U			0.252 U			0.181 J			0.173 U			0.117 U			0.164 U			
6	1.62 J			125			2.16			1.15 J			1.09 J			1.58 J			
7	0.538 J			169			0.466 J			0.282 J			0.29 J			0.361 J			
8	7.76			212			9.22			5.78			4.79			7.8			
9	0.612 J			303			0.581 J			0.417 J			0.394 J			0.589 J			
10	0.199 J			31.1			0.143 J			0.148 U			0.152 J			0.206 J			
11	336			403			183			308			225			437			
12	0.174 C U			14.8 C			0.797 C J			0.184 C U			0.125 C U			0.174 C U			
13	C12			C12			C12			C12			C12			C12			
14	0.16 U			0.245 U			0.147 U			0.168 U			0.114 U			0.159 U			
15	3.16			55.8			3.87			2.12 J			2.12 J			3.44			
16	7.05			74.3			10.8			5.39			3.87			8.21			
17	12.5			2580			16.8			8.19			5.53			13.4			
18	24.8 C			1350 C			34.8 C			16.3 C			11.1 C			27 C			
19	1.65 J			779			2.49			1.21 J			0.977 J			1.83 J			
20	148 C			1230 C			215 C			94.4 C			58.9 C			140 C			
21	23.5 C			133 C			36.8 C			15.9 C			10.1 C			23 C			
22	25.5			112			44.8			17			10.9			24.2			
23	0.139 J			1.47 J			0.222 J			0.087 J	EMPC	TCI	0.064 K J	EMPC	TCI	0.111 J	EMPC	TCI	
24	0.535 J			0.0524 U			0.604 J			0.266 K J	EMPC	TCI	0.224 J			0.461 K J	EMPC	TCI	
25	4.09			512			9.17			2.85			1.85 J			3.7			
26	15 C			1520 C			23.9 C			9.86 C			6.13 C			14.3 C			
27	1.89 J			930			2.47			1.35 J			0.896 J			2.18 J			
28	C20			C20			C20			C20			C20			C20			
29	C26			C26			C26			C26			C26			C26			
30	C18			C18			C18			C18			C18			C18			
31	66.8			812			113			43.4			26.7			58.9			
32	4.06			804			6.25			2.32			1.49 J			3.97			
33	C21			C21			C21			C21			C21			C21			
34	0.491 J			20.4			0.784 J			0.366 J			0.193 J			0.529 J			
35	0.227 K J	EMPC	TCI	0.496 U			0.105 U			0.177 J	EMPC	TCI	0.146 J			0.252 J			
36	0.0751 U			0.44 U			0.0931 U			0.102 K J	EMPC	TCI	0.0538 U			0.0718 U			
37	9.73			70			17.1			7.75			6.48			8.53			
38	0.077 U			2.21			0.474 J			0.119 J			0.126 J			0.259 J			
39	1.27 J			11.9			1.77 J			0.686 J			0.427 J			0.962 J			
40	49.8 C			1570 C			93.5 C			31.6 C			21.2 C			47.6 C			
41	C40			C40			C40			C40			C40			C40			
42	38.1			670			84.4			23.7			15.9			35.7			
43	9.07			117			11.7			5.23			3.25			7.73			
44	275 C			7040 C D			470 C			158 C			107 C			249 C			
45	11 C			646 C			22.2 C			6.81 C			5.12 C			10.5 C			
46	2.38			132			4.76			1.85 J			1.3 J			2.42			
47	C44			C44			C44			C44			C44			C44			
48	33			346			54.2			20			13.3			31.7			
49	210 C			4900 C			377 C			126 C			85.9 C			199 C			
50	8.59 C			1960 C			20 C			5.86 C			4.18 C			8.36 C			
51	C45			C45			C45			C45			C45			C45			
52	497			15700 D			772			304			209			484			
53	C50			C50			C50			C50			C50			C50			
54	0.182 J			84.3			0.347 K J	EMPC	TCI	0.111 J			0.113 J			0.165 J			
55	0.483 U			0.766 U			0.335 U			0.249 U			0.373 U			0.386 U			
56	50.5			1200			132			29.9			20.9			41.6			
57	2.3			18.5			3.86			1.31 J			0.963 J			1.99 J			
58	1.85 J			0.718 U			3.54			1.19 J			0.818 J			1.75 J			
59	26 C			201 C			39.9 C			14.4 C			9.66 C			22.2 C			
60	148			748			205			79.3			58			122			
61	853 C			15500 C D			1360 C			471 C			346 C			673 C			
62	C59			C59			C59			C59			C59			C59			
63	41.4			205			54			21.6			16.4			30.2			
64	137			1880			240			81.5			53.7			130			
65	C44			C44			C44			C44			C44			C44			
66	664			5040 D			935			369			285			565			
67	6.31			141			14.5			3.49			2.47			4.68			
68	9.96			61			16.5			5.98			4.53			7.88			
69	C49			C49			C49			C49			C49			C49			
70	C61			C61			C61			C61			C61			C61			
71	C40			C40			C40			C40			C40			C40			
72	12.5			83.4			18.2			6.9			4.95			10.4			
73	0.0531 U			0.0912 U			0.0532 U			0.0562 U			0.0538 U			0.0551 U			
74	C61			C61			C61			C61			C61			C61			
75	C59			C59			C59			C59			C59			C59			
76	C61			C61			C61			C61			C61			C61			
77	32			107			59.8			17.5			15			23.5			
78	0.491 U			0.78 U			0.341 U			0.253 U			0.379 U			0.393 U			
79	12			268			23.8			4.86			4.18			8.35			
80	1.02 J			0.682 U			1.15 J			0.222 U			0.38 J			0.752 J			
81	1.73 J			5.43			3.7			0.751 J			0.867 J			1.4 J			
82	30.1			2710			127			22.7			17.4			32.9			
83	2170 C			18600 C D			3100 C			1060 C			901 C			1770 C			
84	69.3			6050			225			46			36.5			74.3			
85	609 C			5530 C D			942 C			327 C			294 C			535 C			
86	680 C			20900 C D			1520 C			431 C			345 C			714 C			
87	C86			C86			C86			C86			C86			C86			
88	82.7 C			3420 C			250 C			52.1 C			39.6 C			86.7 C			
89	2.46			123			5.15			1.56 J			1.16 J			2.55			
90	1780 C			30400 C D			3400 C			1050 C			845 C			1840 C			
91	C88			C88			C88			C88			C88			C88			
92	424			4620			672			238			199			426			
93	558 C			20900 C D			1210 C			331 C			257 C			555 C			
94	0.886 J			85.1			3.2			0.495 J			0.384 J			0.691 J			
95	C93			C93			C93			C93			C93			C93			
96	2.27			95			3.55			1.36 J			1.12 J			2.67			
97	C86			C86			C86			C86			C86			C86			
98	C93			C93			C93			C93			C93			C93			
99	C83			C83			C83			C83			C83			C83			
100	C93			C93			C93			C93			C93			C93			
101	C90			C90			C90			C90			C90			C90			
102	C93			C93			C93			C93			C93			C93			
103	8.29			121			19.3			5.03			3.99			8.16			
104	0.091 J			1.89 J			0.331 J			0.0774 U	</								

TABLE 3. Congener Qualifier Summary

IUPAC #	R08202011SB49	Axys Qualifier	URS Review Qualifier	Rationale	R08202011SB50	Axys Qualifier	URS Review Qualifier	Rationale	R08212011SB55	Axys Qualifier	URS Review Qualifier	Rationale	R08212011SB56	Axys Qualifier	URS Review Qualifier	Rationale	R08212011SB57	Axys Qualifier	URS Review Qualifier	Rationale	R08212011SB58	Axys Qualifier	URS Review Qualifier	Rationale
110	1330	C			33900	C D			2960	C			833	C			652	C			1410	C		
111	4.96				2.52	U			6.09				2.56				1.99	J			3.67			
112	0.205	U			2.41	U			0.12	U			0.16	U			0.14	U			0.121	U		
113		C90				C90				C90				C90				C90				C90		
114	97.4				731				170				47.4				43.6				75.8			
115		C110				C110				C110				C110				C110				C110		
116		C85				C85				C85				C85				C85				C85		
117		C85				C85				C85				C85				C85				C85		
118	4020	D			30600	D			6150	D			1880				1680				3000			
119		C86				C86				C86				C86				C86				C86		
120	27.7				35.8				29				12.9				11.1				20			
121	2.82				2.45	U			3.87				1.41	J			1.17	J			2.36			
122	6.89				263				20.9				4.63				3.63				5.91			
123	66.2				507				118				31.6				26				47.7			
124		C107				C107				C107				C107				C107				C107		
125		C86				C86				C86				C86				C86				C86		
126	9.22				19.6				13.9				4.25				4.7				7.28			
127	0.361	U			1.4	U			0.754	U			0.276	U			0.435	U			0.425	U		
128	921	C			6050	C			1230	C			437	C			381	C			746	C		
129	6660	C D			33100	C D			9360	C			3280	C			2980	C			5380	C		
130	230				1770				372				118				101				198			
131	8.19				344				27.9				5.02				3.75				7.42			
132	226				7960				764				142				107				233			
133	129				342				149				57				50.5				93.9			
134	53.5	C			1150	C			136	C			32.5	C			24.2	C			54.9	C		
135	863	C			4910	C			1450	C			476	C			402	C			831	C		
136	108				2060				232				68.9				52.8				121			
137	271				2130				561				128				121				205			
138		C129				C129				C129				C129				C129				C129		
139	103	C			653	C			130	C			46.3	C			40.3	C			79.1	C		
140		C139				C139				C139				C139				C139				C139		
141	406				3520				659				218				180				366			
142	0.587	U			4.69				0.797	U			0.774	U			0.682	U			1.04	U		
143		C134				C134				C134				C134				C134				C134		
144	56.9				751				130				34.2				28.7				59.5			
145	0.242	J			10.2				0.714	J			0.173	J			0.099	J			0.268	J		
146	1230				3600				1670				581				495				895			
147	804	C			14200	C D			2780	C			442	C			355	C			711	C		
148	7.03				22.7				13.3				4.02				3.27				6.26			
149		C147				C147				C147				C147				C147				C147		
150	1.6	J			22.2				6.69				1.08	J			0.796	J			1.56	J		
151		C135				C135				C135				C135				C135				C135		
152	1.73	J			23.6				2.46				0.975	K J	EMPC	TCI	0.843	J			1.84	J		
153	8560	C D			25100	C D			10200	C D			3570	C			3000	C			5680	C		
154		C135				C135				C135				C135				C135				C135		
155	7.1				7.45				8.67				3.05				2.76				5.36			
156	611	C			4260	C			1120	C			294	C			275	C			482	C		
157		C156				C156				C156				C156				C156				C156		
158	521				3280				679				232				199				390			
159	8.24				47.7				24.2				4.99				4.21				7.6			
160		C129				C129				C129				C129				C129				C129		
161	0.427	U			1.81	U			0.58	U			0.564	U			0.497	U			0.76	U		
162	32.9				112				42.8				13.6				12.2				21.8			
163		C129				C129				C129				C129				C129				C129		
164	159				1590				244				86.9				70.4				154			
165	5.47				8.67				5.98				2.27				2	J			3.59			
166		C128				C128				C128				C128				C128				C128		
167	226				1200				380				109				102				172			
168		C153				C153				C153				C153				C153				C153		
169	3.18	U			4.52	U			3.83	U			1.5	U			1.4	U			3.17	U		
170	773	D			2640	D			1090	D			390				360				621			
171	308	C D			892	C D			390	C D			128	C			111	C			218	C		
172	140	D			381	D			206	D			67.8				58.9				108			
173		C171				C171				C171				C171				C171				C171		
174	146	D			1160	D			501	D			91.1				68				139			
175	29	D			93.2	D			46.7	D			11.9				11				21			
176	21.6	D			178	D			77.8	D			11.6				9.29				18.4			
177	323	D			1060	D			696	D			155				136				263			
178	323	D			535	D			412	D			138				120				237			
179	188	D			605	D			376	D			96.2				76.5				179			
180	2390	C D			5290	C D			3100	C D			1030	C			976	C			1650	C		
181	15.3	D			67.4	D			23.8	D			6.18				5.87				10.1			
182	9.19	D J			34.8	D			16.9	D			4.48				3.89				6.85			
183	730	C D			1740	C D			958	C D			304	C			271	C			514	C		
184	9.13	D J			10.9	D J			9.6	D			3.81				3.38				6.4			
185		C183				C183				C183				C183				C183				C183		
186	0.212	U D			2.01	D J			0.24	U D			0.0562	U			0.0539	U			0.0728	U		
187	1930	D			3410	D			2880	D			851				745				1410			
188	4.45	K D J	EMPC	TCI	7.76	D J			7.06	D J			2.39				2.15	J			4.1			
189	34.3	D			118	D			52.5	D			15.7				15.4				25.7			
190	305	D			576	D			322	D			122				118				212			
191	39.7	D			112	D			50.8	D			16.1				15.6				26.8			
192	0.271	D J			0.852	U D			0.28	U D			0.0562	U			0.0632	U			0.0853	U		
193		C180				C180				C180				C180				C180				C180		
194	311	D			608	D			407	D			138				110				183			
195	165	D			259	D			175	D			75.1				71.2				130			
196	164	D			310	D			205	D			71.5				72.6				124			
197	33.8	C D			83.7	C D			59.8															

TABLE 3. Congener Qualifier Summary

IUPAC #	R08212011SB59 Axs Qualifier	URS Review Qualifier	Rationale	R08212011SB60 Axs Qualifier	URS Review Qualifier	Rationale	R08212011SB61 Axs Qualifier	URS Review Qualifier	Rationale	R09032011SB64 Axs Qualifier	URS Review Qualifier	Rationale	R09032011SB65 Axs Qualifier	URS Review Qualifier	Rationale	R09032011SB67 Axs Qualifier	URS Review Qualifier	Rationale
Individual Con																		
1	0.865 J			0.715 J			0.907 J			1.01 J			1.18 J			1.09 J		
2	1.34 J			0.818 J			0.644 J			0.551 J			0.711 J			0.579 J		
3	2.18 J	U	MB	2.20 J	U	MB	2.13 J	U	MB	2.38 J	U	MB	2.50 J	U	MB	2.62 J	U	MB
4	3.03			2.72			2.83			4.68			5.8			3.17		
5	0.222 U			0.147 J			0.143 U			0.13 U			0.142 J			0.176 U		
6	1.45 J			1.14 J			0.895 J			1.37 J			1.62 J			0.962 J		
7	0.297 J			0.34 J			0.259 J			0.368 J			0.448 J			0.323 J		
8	7.55			5.85			4.71			5.23			6.62			4.24		
9	0.532 J			0.469 J			0.341 J			1.06 J			1.42 J			0.408 J		
10	0.189 U			0.116 U			0.143 J			0.212 J			0.332 J			0.169 J		
11	217			346			270			117			282			176		
12	0.581 C J			0.689 C J			0.151 C U			0.631 C J			0.697 C J			0.18 C U		
13	C12			C12			C12			C12			C12			C12		
14	0.215 U			0.132 U			0.138 U			0.114 U			0.109 U			0.166 U		
15	2.51			3.16			2.36			2.27 J			4.11			2.48 J		
16	8.41			7.32			3.84			3.58			5.79			3.05		
17	12.7			11.6			6.07			22.8			32.9			7.17		
18	25.3 C			22.6 C			12.4 C			25.8 C			37.2 C			11.7 C		
19	1.4 J			1.53 J			1.08 J			4.17			5.66			1.09 J		
20	123 C			113 C			74.1 C			82 C			105 C			71 C		
21	26.5 C			20.6 C			11.2 C			7.88 C			11.1 C			6.47 C		
22	25.2			21.6			13.8			9.1			11.7			6.91		
23	0.096 J			0.102 J			0.071 J			0.0594 U			0.0626 U			0.0736 U		
24	0.433 J			0.41 J			0.211 J			0.204 J			0.316 J			0.215 J		
25	3.96			3.81			2.28			4.6			5.19			2.34 J		
26	13.3 C			12.7 C			7.71 C			13.6 C			16.5 C			7.56 C		
27	1.83 J			1.81 J			0.992 J			6.4			9.46			1.64 J		
28	C20			C20			C20			C20			C20			C20		
29	C26			C26			C26			C26			C26			C26		
30	C18			C18			C18			C18			C18			C18		
31	62.7			58.7			34			34.6			40.9			24.4		
32	4.48			3.24			1.75 J			8.68			12.3			2.46 J		
33	C21			C21			C21			C21			C21			C21		
34	0.393 J			0.449 J			0.229 J			0.269 J			0.325 J			0.153 J		
35	0.09 K J	EMPC	TCI	0.207 J			0.292 J			0.164 K J	EMPC	TCI	0.261 J			0.164 J		
36	0.0738 U			0.0719 U			0.054 U			0.0594 U			0.0626 U			0.0742 U		
37	7.92			10			7.29			9.14			17.1			11		
38	0.212 K J	EMPC	TCI	0.23 J			0.145 J			0.144 J			0.159 J			0.159 K J	EMPC	TCI
39	0.863 J			0.896 J			0.499 J			0.675 J			1.01 J			0.577 J		
40	43 C			47.3 C			22.2 C			53.7 C			69.2 C			33.6 C		
41	C40			C40			C40			C40			C40			C40		
42	30.7			36.5			17.5			40.8			48.2			24.2		
43	6.6			6.83			3.56			7.39			8.1			4.19		
44	193 C			219 C			121 C			396 C			449 C			214 C		
45	9.39 C			11.5 C			5.19 C			9.7 C			13.7 C			6.41 C		
46	2.29			2.72			1.23 J			2.76			4.27			1.77 J		
47	C44			C44			C44			C44			C44			C44		
48	27.3			28.6			13.9			21.9			26.8			13.1		
49	156 C			177 C			99.1 C			345 C			359 C			174 C		
50	6.82 C			9.85 C			4.23 C			26.6 C			36.2 C			12.5 C		
51	C45			C45			C45			C45			C45			C45		
52	345			414			250			1290			1350			631		
53	C50			C50			C50			C50			C50			C50		
54	0.109 J			0.145 J			0.084 J			0.334 J			0.43 J			0.143 J		
55	0.354 U			0.421 U			0.374 U			0.605 U			0.497 U			0.411 U		
56	36.3			43.9			26.4			83.2			70.6			41.7		
57	1.6 J			1.56 J			1.14 J			0.781 J			1.14 J			0.54 J		
58	1.4 J			1.31 J			0.923 J			0.579 U			0.591 J			0.387 U		
59	17.8 C			19.8 C			11.1 C			12.1 C			13.6 C			6.85 C		
60	96.7			94.1			65.2			123			115			63.3		
61	551 C			612 C			390 C			1480 C			1330 C			808 C		
62	C59			C59			C59			C59			C59			C59		
63	26.1			23.6			17.4			31.7			37.2			21.8		
64	100			112			59.7			136			153			74.3		
65	C44			C44			C44			C44			C44			C44		
66	430			438			307			726			739			440		
67	4.4			5.36			3.18			3.24			3.96			2.6 J		
68	6.38			6.87			4.71			4.05			5.8			4.2		
69	C49			C49			C49			C49			C49			C49		
70	C61			C61			C61			C61			C61			C61		
71	C40			C40			C40			C40			C40			C40		
72	7.32			8.31			5.45			4.34			4.78			2.86		
73	0.0544 U			0.0551 U			0.0533 U			0.0594 U			0.0626 U			0.0656 U		
74	C61			C61			C61			C61			C61			C61		
75	C59			C59			C59			C59			C59			C59		
76	C61			C61			C61			C61			C61			C61		
77	21.2			22			15.1			17.4			33.1			20.2		
78	0.361 U			0.429 U			0.38 U			0.593 U			0.487 U			0.429 U		
79	6.05			8.19			4.15			32.3			25.8			25.8		
80	0.418 J			0.594 J			0.375 J			0.55 U			0.452 U			0.379 U		
81	0.925 J			1.19 J			0.897 J			0.825 J			1.24 J			1.17 J		
82	25			41.9			18.3			198			161			144		
83	1220 C			1290 C			926 C			2240 C			1760 C			1580 C		
84	50.6			82.5			32.4			251			256			187		
85	385 C			399 C			272 C			738 C			605 C			529 C		
86	469 C			631 C			365 C			1730 C			1360 C			1250 C		
87	C86			C86			C86			C86			C86			C86		
88	56.9 C			91.2 C			39 C			203 C			182 C			142 C		
89	1.85 J			3.06			0.989 J			3.67			4.47			4.1		
90	1150 C			1490 C			926 C			2510 C			1950 C			1810 C		
91	C88			C88			C88			C88			C88			C88		
92	269			313			209			395			313			270		
93	366 C			506 C			266 C			1180 C			1070 C			832 C		
94	0.488 J			1.05 J			0.325 J			2.08 J			2.14 J			1.72 J		
95	C93			C93			C93			C93			C93			C93		
96	1.8 J			2.09 J			1.04 J			2.57			3.32			2.37 J		
97	C86			C86			C86			C86			C86			C86		
98	C93			C93			C93			C93			C93			C93		
99	C83			C83			C83			C83			C83			C83		
100	C93			C93			C93			C93			C93			C93		
101	C90			C90			C90			C90			C90			C90		
102	C93			C93			C93			C93			C93			C93		
103	5.47			8.02			4.4			8.6			7.64			5.6		
104	0.0897 U			0.0987 U			0.0533 U			0.0786 U			0.0987 U			0.0838 U		
105	759			798			585			1780			1310			1270		
106	0.362 U			0.33 U			0.											

TABLE 3. Congener Qualifier Summary

IUPAC #	R08212011SB59 AxyS Qualifier				R08212011SB60 AxyS Qualifier				R08212011SB61 AxyS Qualifier				R09032011SB64 AxyS Qualifier				R09032011SB65 AxyS Qualifier				R09032011SB67 AxyS Qualifier			
	URS Review Qualifier		Rationale		URS Review Qualifier		Rationale		URS Review Qualifier		Rationale		URS Review Qualifier		Rationale		URS Review Qualifier		Rationale		URS Review Qualifier		Rationale	
110	918	C			1250	C			652	C			2110	C			1780	C			1600	C		
111	2.85				2.94				2.12	K J	EMPC	TCI	1.04	K J	EMPC	TCI	2.15	J			0.982	K J	EMPC	TCI
112	0.173	U			0.186	U			0.104	U			0.207	U			0.24	U			0.12	U		
113		C90				C90				C90				C90				C90				C90		
114	61.4				53.8				41.7				125				107				97.9			
115		C110				C110				C110				C110				C110				C110		
116		C85				C85				C85				C85				C85				C85		
117		C85				C85				C85				C85				C85				C85		
118	2230				2130				1620				4510	D			3760				3480			
119		C86				C86				C86				C86				C86				C86		
120	14.9				14.4				11.2				6.85				9.96				6.73			
121	1.73	J			1.8	J			1.22	J			0.63	J			0.496	J			0.378	J		
122	5.38				6.6				4.66				27.1				18.5				17.8			
123	35.5				35.9				28.4				72.1				67.7				68.8			
124		C107				C107				C107				C107				C107				C107		
125		C86				C86				C86				C86				C86				C86		
126	6.4				5.36				4.61				4.53				6.17				4.08			
127	0.393	U			0.358	U			0.556	U			0.658	U			0.476	U			0.542	U		
128	541	C			532	C			353	C			746	C			471	C			551	C		
129	3750	C			3870	C			2800	C			4660	C			3730	C			4210	C		
130	130				160				105				266				198				215			
131	5.06				8.81				3.91				25.7				17.9				24.8			
132	147				257				99.9				509				347				423			
133	67.8				65.5				49.3				64.9				57.2				52.9			
134	33.5	C			51.3	C			23.3	C			110	C			78.8	C			93.1	C		
135	533	C			625	C			409	C			564	C			416	C			393	C		
136	76.4				101				52				98.5				81.6				83.3			
137	157				151				107				342				258				296			
138		C129				C129				C129				C129				C129				C129		
139	53.4	C			55.8	C			38.6	C			68.8	C			47.5	C			50.4	C		
140		C139				C139				C139				C139				C139				C139		
141	234				274				177				351				234				274			
142	0.914	U			1.2	U			0.751	U			1.28	U			0.588	U			0.909	U		
143		C134				C134				C134				C134				C134				C134		
144	37.7				50.1				30.3				81				55.4				66.4			
145	0.135	J			0.107	U			0.148	K J	EMPC	TCI	0.374	J			0.374	J			0.274	J		
146	665				651				519				784				736				725			
147	464	C			816	C			347	C			1590	C			1090	C			1290	C		
148	4.27				5.2				3.52				3.73				2.74				1.86	J		
149		C147				C147				C147				C147				C147				C147		
150	1.09	J			1.91	J			0.724	J			2.3	J			1.67	J			1.42	J		
151		C135				C135				C135				C135				C135				C135		
152	1.04	J			1.1	J			0.704	J			0.835	J			0.676	J			0.765	J		
153	4250	C			3950	C			2920	C			3940	C			3800	C			3720	C		
154		C135				C135				C135				C135				C135				C135		
155	3.27				3.68				2.69				1.79	J			1.45	J			1.01	J		
156	372	C			331	C			250	C			587	C			479	C			578	C		
157		C156				C156				C156				C156				C156				C156		
158	253				271				187				368				234				286			
159	5.28				7.31				3.6				9.04				6.98				6.9			
160		C129				C129				C129				C129				C129				C129		
161	0.666	U			0.876	U			0.548	U			0.899	U			0.414	U			0.654	U		
162	17.6				16				11.6				19.4				16.8				18.3	K	EMPC	TCI
163		C129				C129				C129				C129				C129				C129		
164	96.9				112				70.7				178				132				153			
165	2.52				2.62				1.78	J			1.81	J			1.92	J			1.53	J		
166		C128				C128				C128				C128				C128				C128		
167	134				121				97.4				197				179				200			
168		C153				C153				C153				C153				C153				C153		
169	2.05	U			1.77	U			1.29	U			1.02	U			1.42	U			1.35	U		
170	456				434				317				402				363				404			
171	152	C			148	C			101	C			119	C			77.7	C			78.4	C		
172	79.1				80.7				54.9				64.5				51.8				53.1			
173		C171				C171				C171				C171				C171				C171		
174	92				136				63.4				217				145				154			
175	15.2				15.6				10.8				16.9				13.5				12.1			
176	12.2				20.3				8.29				28.8				18.5				17.4			
177	190				226				134				274				229				212			
178	164				164				118				115				101				82.8			
179	115				134				73.9				111				71				54.9			
180	1310	C			1180	C			879	C			1070	C			1220	C			1170	C		
181	8.01				6.87				5.06				9.44				7.65				8.93			
182	5.78				5.25				3.56				4.58				3.65				2.87			
183	377	C			350	C			254	C			294	C			239	C			220	C		
184	4.07				4.3				3.03				2.43				1.65	J			1.31	J		
185		C183				C183				C183				C183				C183				C183		
186	0.0792	U			0.0614	U			0.0533	U			0.0612	U			0.0727	U			0.0717	U		
187	1160				1030				765				995				1100				1010			
188	2.83				3				2.21				2.1	J			2.52				2.12	J		
189	20				18				13.5				20.2				21.7				21.1			
190	152				141				105				101				104				97.3			
191	20.8				18.2				13.6				17.5				16.9				16.1			
192	0.0927	U			0.0719	U			0.0533	U			0.0681	U			0.0808	U			0.0836	U		
193		C180				C180				C180				C180				C180				C180		
194	167				130				95.3				121				125				124			
195	86				88				65.1				58.4				6							

TABLE 3. Congener Qualifier Summary																									
IUPAC #	R09032011SB70 Axs Qualifier				R09042011SB71 Axs Qualifier				R09042011SB72 Axs Qualifier				R09042011SB73 Axs Qualifier				R09042011SB74 Axs Qualifier				R09042011SB76 Axs Qualifier				
	URS Review Qualifier			Rationale	URS Review Qualifier			Rationale	URS Review Qualifier			Rationale	URS Review Qualifier			Rationale	URS Review Qualifier			Rationale	URS Review Qualifier			Rationale	
Individual Con																									
1	0.777	J			0.658	J			0.759	J			0.661	J			0.701	J			0.474	J			
2	0.488	J			0.704	J			2.52	J		U	0.511	J			0.56	J			2.58	J		U	MB
3	2.32	J	U	MB	2.37	J	U	MB	2.52	J	U	MB	2.30	J	U	MB	2.66	J	U	MB	2.58	J	U	MB	
4	3.88				2.1	J			2.42	J			2.08	J			2.37	J			1.83	J			
5	0.125	U			0.145	U			0.123	U			0.112	U			0.136	U			0.197	U			
6	1.17	J			0.793	J			0.904	J			0.73	J			0.999	J			0.71	J			
7	0.275	J			0.215	J			0.225	J			0.218	J			0.257	J			0.18	J			
8	4.67				3.83				4.08				3.28				4.56				3.32				
9	0.912	J			0.315	J			0.339	J			0.278	J			0.356	J			0.26	J			
10	0.188	J			0.117	J			0.12	J			0.102	J			0.11	U			0.16	U			
11	163				226				90				165				266				250				
12	0.573	C J			0.148	C U			0.504	C J			0.61	C J			0.126	C U			0.202	C U			
13		C12				C12				C12				C12				C12				C12			
14	0.11	U			0.137	U			0.108	U			0.0984	U			0.119	U			0.187	U			
15	2.74				2.85				1.98	J			2.62				3.05				2.5	J			
16	4.15				3.47				2.97				2.34				4.5				3.39				
17	23.3				8.57				3.69				2.82				6.7				4.76				
18	27	C			14	C			7.72	C			6.49	C			13.7	C			10.4	C			
19	4.04				1.2	J			0.891	J			0.77	J			1.21	J			0.826	J			
20	73.7	C			65.7	C			24.6	C			23.8	C			61.7	C			51.9	C			
21	7.33	C			8.95	C			5.31	C			4.08	C			11.2	C			8.48	C			
22	7.38				9.39				5.34				4.85				12.2				9.78				
23	0.058	U			0.0754	U			0.0631	U			0.0575	U			0.0664	U			0.0646	U			
24	0.205	J			0.226	J			0.161	J			0.142	J			0.292	J			0.203	J			
25	4.7				2.78				1.16	J			0.852	J			2.27	J			1.62	J			
26	12.9	C			8.72	C			3.14	C			2.71	C			7.13	C			5.45	C			
27	6.78				1.76	J			0.617	J			0.558	J			1.08	J			0.834	J			
28		C20				C20				C20				C20				C20				C20			
29		C26				C26				C26				C26				C26				C26			
30		C18				C18				C18				C18				C18				C18			
31	31.1				28				12.7				10.9				29.7				24.4				
32	9.38				2.91				1.35	J			0.74	J			2.02	J			1.29	J			
33		C21				C21				C21				C21				C21				C21			
34	0.272	J			0.207	J			0.076	J			0.071	J			0.205	J			0.157	J			
35	0.185	K J	EMPC	TCI	0.13	K J	EMPC	TCI	0.128	J			0.109	K J	EMPC	TCI	0.154	K J	EMPC	TCI	0.127	J			
36	0.058	U			0.0761	U			0.0631	U			0.0575	U			0.0664	U			0.0646	U			
37	11.5				11.2				7.32				8.95				12				9.09				
38	0.078	K J	EMPC	TCI	0.119	J			0.0631	U			0.0575	U			0.183	J			0.101	J			
39	0.555	J			0.704	J			0.231	J			0.229	J			0.665	J			0.45	J			
40	54.6	C			40.5	C			9.1	C			7.96	C			33	C			17.4	C			
41		C40				C40				C40				C40				C40				C40			
42	34.8				27				6.95				6.36				21.4				14.2				
43	5.38				5.28				1.24	J			1.12	J			5.57				2.98				
44	359	C			269	C			48.5	C			41	C			232	C			99.5	C			
45	10.1	C			6.68	C			2.92	C			2.58	C			6.49	C			4.55	C			
46	3.52				1.82	J			0.757	J			0.727	J			1.64	J			1.19	J			
47		C44				C44				C44				C44				C44				C44			
48	17.3				16.1				4.73				4.44				18.2				11				
49	276	C			212	C			37.3	C			30	C			313	C			80.8	C			
50	29.9	C			12.9	C			3.48	C			2.6	C			6.18	C			4.17	C			
51		C45																							

TABLE 3. Congener Qualifier Summary

IUPAC #	R09032011SB70 Axs Qualifier				R09042011SB71 Axs Qualifier				R09042011SB72 Axs Qualifier				R09042011SB73 Axs Qualifier				R09042011SB74 Axs Qualifier				R09042011SB76 Axs Qualifier			
			URS Review Qualifier	Rationale			URS Review Qualifier	Rationale			URS Review Qualifier	Rationale			URS Review Qualifier	Rationale			URS Review Qualifier	Rationale			URS Review Qualifier	Rationale
110	1290	C			1980	C			334	C			247	C			3960	C			1280	C		
111	1.61	K J	EMPC	TCI	2.41				1.39	J			1.9	J			3.43				2.4	J		
112	0.113	U			0.414	U			0.149	U			0.179	U			0.211	U			0.201	U		
113		C90				C90				C90				C90				C90				C90		
114	75.5				163				32.7				43.9				371				92.2			
115		C110				C110				C110				C110				C110				C110		
116		C85				C85				C85				C85				C85				C85		
117		C85				C85				C85				C85				C85				C85		
118	2430				5940				1160				1430				14500	D			3590			
119		C86				C86				C86				C86				C86				C86		
120	7.69				12.1				6.84				9.58				21.2				12.7			
121	0.4	K J	EMPC	TCI	0.581	J			0.301	J			0.435	J			1.01	K J	EMPC	TCI	0.821	J		
122	11.2				18.8				3.64				3.42				11.8				19.2			
123	51.8				86.4				24.5				31.7				99.7				60.6			
124		C107				C107				C107				C107				C107				C107		
125		C86				C86				C86				C86				C86				C86		
126	3.33				5.72				3.05				4.61				9.9				5.45			
127	0.369	U			0.657	U			0.258	U			0.369	U			0.987	U			0.529	U		
128	286	C			880	C			181	C			172	C			2800	C			668	C		
129	2350	C			6030	C			1630	C			1830	C			15200	C D			4810	C		
130	122				273				86.9				79.3				493				217			
131	12.9				22.7				4.71				3.01				15.8				24.2			
132	238				436				114				65.3				231				392			
133	37.2				82.9				33				38.3				194				69.5			
134	54.6	C			99.3	C			23.3	C			14.1	C			69	C			79.9	C		
135	267	C			515	C			185	C			128	C			1180	C			485	C		
136	56.4				110				28.7				16.4				230				72.2			
137	166				475				108				138				1350				292			
138		C129				C129				C129				C129				C129				C129		
139	30.1	C			88.9	C			17.4	C			17	C			343	C			62.7	C		
140		C139				C139				C139				C139				C139				C139		
141	143				378				92.1				77				1480				331			
142	0.886	U			0.676	U			0.765	U			0.699	U			0.672	U			0.594	U		
143		C134				C134				C134				C134				C134				C134		
144	37				71.1				19.1				13.6				120				64.5			
145	0.198	K J	EMPC	TCI	0.321	J			0.129	U			0.0877	U			0.317	K J	EMPC	TCI	0.119	U		
146	484				1040				418				517				2330				885			
147	697	C			1100	C			435	C			279	C			781	C			1060	C		
148	1.71	J			2.43				1.49	J			1.35	J			6.89				2.78			
149		C147				C147				C147				C147				C147				C147		
150	1.1	J			1.11	J			0.702	J			0.461	J			1.72	J			1.25	J		
151		C135				C135				C135				C135				C135				C135		
152	0.53	J			1.14	J			0.245	K J	EMPC	TCI	0.11	K J	EMPC	TCI	5.83				0.558	K J	EMPC	TCI
153	2490	C			6400	C			1930	C			2750	C			14100	C D			5140	C		
154		C135				C135				C135				C135				C135				C135		
155	0.919	J			1.62	J			0.871	J			1.07	J			2.57	J			2.14	J		
156	308	C			998	C			219	C			273	C			2470	C			642	C		
157		C156				C156				C156				C156				C156				C156		
158	145				485				84.8				76.5				1590				362			
159	4.38				5.87				4.37				3.19				6.84				6.66			
160		C129				C129				C129				C129				C129				C129		
161	0.624	U			0.486	U			0.539	U			0.493	U			0.474	U			0.427	U		
162	11.7				30.3				10				12.6				71.3				22			
163		C129				C129				C129				C129				C129				C129		
164	74.8				191				49.7				32.9				445				156			
165	1.25	J			2.34	J			1.14	J			1.58	J			4.76				2.31	J		
166		C128				C128				C128				C128				C128				C128		
167	119				291				93.2				120				479				231			
168		C153				C153				C153				C153				C153				C153		
169	0.924	U			1.21	U			1.11	U			1.38	U			2.95	U			1.41	U		
170	253				687				223				277				1450				528			
171	50.1	C			141	C			48.7	C			48.3	C			354	C			132	C		
172	34.7				83.8				36.3				39.7				177				77.2			
173		C171				C171				C171				C171				C171				C171		
174	88.9				143				91.7				59.9				150				152			
175	9.38				15.7				9.86				9.76				33.3				16.7			
176	12				12.5				11				6.11				14.3				17			
177	152				241				165				145				352				238			
178	65.7				117				69.3				66.1				210				138			
179	45				64.6				52.7				23.7				110				76.1			
180	923	C			1780	C			772	C			1010	C			3350	C			1510	C		
181	5.35				14.6				4.92				6.11				39.5				11.3			
182	2.47				4.94				2.56				2.77				11.9				4.56			
183	163	C			364	C			163	C			179	C			732	C			357	C		
184	1.12	J			2.36	J			1.38	J			1.4	J			4.13				2.96			
185		C183				C183				C183				C183				C183				C183		
186	0.058	U			0.0674	U			0.0631	U			0.0575	U			0.0734	U			0.0843	U		
187	825				1340				850				968				2340				1410			
188	1.69	J			2.6				1.88	J			2.03	J			5.03				2.74			
189	15.1				32.8				12.5				16.9				75.6				25.2			
190	71.2				166				71.7				84.3				310				152			
191	12.4				26.8				10.9				13.8				57				22.9			
192	0.058	U			0.0786	U			0.0631	U			0.0575	U			0.0817	U			0.0982	U		
193		C180				C180				C180				C180				C180				C180		
194	96.9				204				87.8				123				303				170			
195	46.5				88.3	</																		

TABLE 3. Congener Qualifier Summary																				
IUPAC #	R09042011SB81				R09032011SB62				R09032011SB63				R09032011SB68				R09042011SB78			
	Axys Qualifier	URS Review Qualifier		Rationale	Axys Qualifier	URS Review Qualifier		Rationale	Axys Qualifier	URS Review Qualifier		Rationale	Axys Qualifier	URS Review Qualifier		Rationale	Axys Qualifier	URS Review Qualifier		Rationale
Individual Con																				
1	2.18	J	U	MB	31.1	U			27	J			45.3	J			30.7	J		
2	0.577	J			42.2	U			28.6	U			32	U			33.1	U		
3	2.18	J	U	MB	40.4	U			28.9	J			53.3	J			43.1	J		
4	1.85	J			263	U			217	U			341	J			267	U		
5	0.106	U			199	U			167	U			203	U			209	U		
6	0.749	J			178	U			150	U			188	J			188	U		
7	0.26	J			186	U			156	U			189	U			196	U		
8	3.88				268	J			141	U			676	J			176	U		
9	0.302	J			175	U			148	U			313	J			185	U		
10	0.0859	U			167	U			141	U			171	U			177	U		
11	178				220	J			167	U			202	U			209	U		
12	0.109	C U			206	C U			173	C U			210	C U			217	C U		
13		C12				C12				C12				C12				C12		
14	0.101	U			189	U			159	U			193	U			199	U		
15	2.14	J			203	U			217	J			410	J			219	U		
16	4.08				584	J			168	J			1800	J			94.6	U		
17	9.57				9160				4520				29900				760	J		
18	16.3	C			6760	C			7130	C			27500	C			1470	C J		
19	0.969	J			978	J			143	J			2310				79.3	U		
20	118	C			20000	C			51800	C			131000	C			18700	C		
21	22	C			1140	C J			2730	C			7100	C			834	C J		
22	23.2				403	J			2150				4270				859	J		
23	0.0831	U			45.7	U			62.8	U			98.1	U			66.2	U		
24	0.312	J			27.3	U			23.3	U			54.4	U			60.3	U		
25	3.93				1020	J			4960				11800				1660	J		
26	12.5	C			4600	C			9900	C			25800	C			3510	C		
27	1.1	J			2750				1030	J			9170				65.8	J		
28		C20				C20				C20				C20				C20		
29		C26				C26				C26				C26				C26		
30		C18				C18				C18				C18				C18		
31	54.8				3090				31400				54800				15600			
32	3.87				3660				1860				14200				367	J		
33		C21				C21				C21				C21				C21		
34	0.282	J			81.9	J			151	J			508	J			62	U		
35	0.096	U			50.3	U			69.2	U			108	U			72.8	U		
36	0.0838	U			45.3	U			62.3	U			97.2	U			65.6	U		
37	9.69				1320	J			3790				11800				1770	J		
38	0.256	J			46.7	U			64.3	U			444	J			67.7	U		
39	1.15	J			404	J			618	J			2130				460	J		
40	54	C			39800	C			48900	C			196000	C			25000	C		
41		C40				C40				C40				C40				C40		
42	44.3				22400				54300				123000				38500			
43	6.81				4980				6720				22100				121	U		
44	247	C			247000	C			533000	C			1490000	C			344000	C		
45	11.7	C			5270	C			4380	C			23700	C			551	C J		
46	2.15	J			1600	J			661	J			7240				105	U		
47		C44				C44				C44				C44				C44		
48	30.3				12600				21700				54700				15800			
49	201	C			200000	C			614000	C			1300000	C			442000	C		
50	9.77	C			17000	C			13900	C			76600	C			3530	C		
51		C45				C45				C45				C45				C45		
52	455				700000				2150000				5170000	D			1590000			
53		C50				C50				C50				C50				C50		
54	0.085	J			150	J			114	J			628	J			63.6	U		
55	0.346	U			112	U			218	U			263	U			211	U		
56	62.5				8460				194000				250000				154000			
57	1.83	J			263	J			640	J			1560	J			197	U		
58	1.28	J			104	U			202	U			244	U			196	U		
59	19.5	C			4670	C			10900	C			23000	C			7030	C		
60	128				64600				209000				375000				130000			
61	848	C			639000	C			3870000	C D			6350000	C D			2600000	C		
62		C59				C59				C59				C59				C59		
63	41.3				17100				54400				91800				32400			
64	128				81800				167000				444000				138000			
65		C44				C44				C44				C44				C44		
66	644				401000				1390000				2490000				831000			
67	6.32				397	J			3220				5210				1390	J		
68	11.4				335	J			2330				2850				965	J		
69		C49				C49				C49				C49				C49		
70		C61				C61				C61				C61				C61		

TABLE 3. Congener Qualifier Summary

IUPAC #	R09042011SB81				R09032011SB62				R09032011SB63				R09032011SB68				R09042011SB78			
	Axys Qualifier	URS Review Qualifier		Rationale	Axys Qualifier	URS Review Qualifier		Rationale	Axys Qualifier	URS Review Qualifier		Rationale	Axys Qualifier	URS Review Qualifier		Rationale	Axys Qualifier	URS Review Qualifier		Rationale
110	1510	C			2010000	C			5760000	C D			12000000	C D			5070000	C D		
111	4.51				206	U			388	U			449	U			328	U		
112	0.129	U			194	U			366	U			424	U			310	U		
113		C90				C90				C90				C90				C90		
114	131				101000				318000				504000				189000			
115		C110				C110				C110				C110				C110		
116		C85				C85				C85				C85				C85		
117		C85				C85				C85				C85				C85		
118	4590				4040000	D			12600000	D			20000000	D			8130000	D		
119		C86				C86				C86				C86				C86		
120	24.1				433	J			1040	K J	EMPC	TCI	2060	K	EMPC	TCI	591	K J	EMPC	TCI
121	1.9	J			194	U			366	U			424	U			310	U		
122	10.9				6590				87000				96300				65600			
123	85.1				46200				217000				298000				123000	K	EMPC	TCI
124		C107				C107				C107				C107				C107		
125		C86				C86				C86				C86				C86		
126	9.97				998	J			4900				6440				2710			
127	0.473	U			284	U			411	U			610	U			689	U		
128	694	C			593000	C			1910000	C			3380000	C			1310000	C		
129	6230	C			3420000	C			12400000	C D			21500000	C D			7520000	C		
130	294				182000				617000				1060000				422000			
131	15.1				27100				80200				169000				65900			
132	416				472000				1240000				2570000				1110000			
133	115				34600				97400				151000				63900			
134	74.6	C			92900	C			299000	C			575000	C			240000	C		
135	671	C			281000	C			835000	C			1580000	C			730000	C		
136	89.3				90800				150000				436000				116000			
137	365				324000				982000				1580000				622000			
138		C129				C129				C129				C129				C129		
139	63.7	C			59300	C			156000	C			281000	C			117000	C		
140		C139				C139				C139				C139				C139		
141	317				295000				848000				1580000				690000			
142	0.612	U			572	U			331	U			940	U			549	U		
143		C134				C134				C134				C134				C134		
144	68.2				64500				211000				371000				163000			
145	0.093	J			588	J			342	J			2120				143	U		
146	1540				346000				1120000				1850000				678000			
147	1710	C			894000	C			3670000	C			6670000	C			2970000	C		
148	5.74				700	J			1600	J			3300				1260	J		
149		C147				C147				C147				C147				C147		
150	2.61				1030	J			3150				6290				2750			
151		C135				C135				C135				C135				C135		
152	0.586	J			1020	J			751	J			5000				124	U		
153	8970	C			2400000	C			8650000	C D			14400000	C D			4830000	C		
154		C135				C135				C135				C135				C135		
155	3.78				53.4	J			36.5	U			72.8	U			101	U		
156	821	C			568000	C			1640000	C			2640000	C			983000	C		
157		C156				C156				C156				C156				C156		
158	361				341000				1010000				1780000				679000			
159	10.8				3340				13600				22300				10100			
160		C129				C129				C129				C129				C129		
161	0.44	U			418	U			242	U			688	U			402	U		
162	34.9				14300				40600				64100				24500			
163		C129				C129				C129				C129				C129		
164	150				139000				508000				859000				350000			
165	4.25				506	J			1060	J			2170				659	J		
166		C128				C128				C128				C128				C128		
167	323				135000				461000				735000				280000			
168		C153				C153				C153				C153				C153		
169	2.31	U			412	U			608	U			945	U			389	U		
170	794				249000				729000				1230000				451000			
171	199	C			60500	C			174000	C			291000	C			124000	C		
172	119				27600				92800				138000				58200			
173		C171				C171				C171				C171				C171		
174	251				80700				349000				550000				243000			
175	29.3				6120				19600				30700				12700			
176	37.5				8330				29800				54100				24400			
177	579				72300				272000				415000				172000			
178	260				20800				70900				103000				42000			
179	159				19000				41200				78300				35200			
180	2790	C			371000	C			1170000	C			1730000	C			603000	C		
181	14.6				8270				25600				40000				16500			
182	6.25				1480	J			3720				5990				2510			
183	594	C			101000	C			322000	C			505000	C			205000	C		
184	4.7				173	J			348	J			636	J			238	J		
185		C183				C183				C183				C183				C183		
186	0.0683	U			34.2	J			40.3	U			57	U			50.3	U		
187	2790				128000				462000				673000				254000			
188	5.79				201	J			616	J			896	J			379	J		
189	38.9				12900				37300				57800				20900			
190	251				40500				119000				183000				76700			
191	36.5				9620				29500				44100				17700			
192	0.0796	U			36.5	U			47.9	U			67.7	U			59.8	U		
193		C180				C180				C180				C180				C180		
194	302				28100				94200				137000				41600			
195	157				10700				33600				48100				15300			
196	150				14000				46200				66700				19200			
197	32.7	C			2270	C			8500	C			13900	C			4050	C		
198	371	C			28500	C			105000	C			147000	C			42100	C		
199		C198				C198				C198				C198				C198		
200		C197				C197				C197				C197				C197		
201	61.9				3320				11500				17900				4580			
202	138				5490				18600				28000				7230			
203	270				20600				56000				77400				23500			
204	0.515	J			19.6	U			31.5	J			54.2	J			17.5	U		
205	15.1				1160	J			3450				5020				1900			
206	100				8400				23900				38400				9020			
207	26.3				1280	J			4430				7480				1510	J		
208	43.6				2020															

2011 Clam Field Data Sheet

Sample Location	Clam Count	Length	Weight	Date Collected	Date Shucked	Total Sample Weight
112	1	2.2	1.2	10/19/2011	10/21/2011	28.2
	2	2.3	1.1			
	3	2.4	1.5			
	4	2.1	0.9			
	5	2.5	2.3			
	6	2.2	1.2			
	7	2.4	1.7			
	8	2.3	1.0			
	9	2.2	1.1			
	10	2.0	1.1			
	11	2.0	0.7			
	12	2.4	1.0			
	13	2.1	1.0			
	14	2.1	1.5			
	15	2.5	1.2			
	16	2.0	0.6			
	17	2.0	0.9			
	18	2.2	1.4			
	19	2.0	0.6			
	20	2.0	0.4			
	21	1.8	0.4			
	22	2.0	1.2			
	23	2.0	0.6			
	24	1.9	0.5			
	25	1.7	0.3			
	26	1.6	0.3			
	27	2.0	0.6			
	28	1.7	0.3			
	29	1.6	0.4			
	30	1.5	0.3			
	31	1.5	0.2			
	32	1.4	0.2			
	33	1.5	0.4			
	34	1.1	0.1			

2011 Clam Field Data Sheet

Sample Location	Clam Count	Length	Weight	Date Collected	Date Shucked	Total Sample Weight
113	1	3.6	4.4	10/19/2011	10/21/2011	62.5
	2	3.0	2.9			
	3	2.7	1.2			
	4	2.5	1.7			
	5	2.5	2.7			
	6	2.7	2.0			
	7	2.4	1.2			
	8	2.3	1.1			
	9	2.5	1.8			
	10	2.2	1.6			
	11	2.5	1.9			
	12	2.3	1.5			
	13	2.3	1.2			
	14	2.5	1.8			
	15	2.4	1.4			
	16	2.3	1.0			
	17	2.2	1.1			
	18	2.2	1.2			
	19	2.3	1.7			
	20	2.3	1.6			
	21	2.2	1.1			
	22	2.3	1.5			
	23	2.6	1.4			
	24	2.2	1.5			
	25	2.0	0.8			
	26	2.3	1.1			
	27	2.3	0.9			
	28	2.3	1.2			
	29	2.1	0.7			
	30	2.0	0.7			
	31	2.2	1.0			
	32	2.0	0.7			
	33	2.2	0.5			
	34	2.1	1.0			
	35	1.9	0.5			
	36	2.0	0.7			
	37	2.2	0.9			
	38	1.9	0.6			
	39	2.1	1.2			
	40	2.1	0.9			
	41	2.0	0.8			
	42	2.0	0.8			
	43	1.9	0.6			
	44	1.8	0.5			
	45	1.6	0.4			
	46	1.7	0.5			
	47	1.7	0.5			
	48	1.6	0.5			
	49	1.7	0.4			
	50	1.7	0.5			
	51	1.6	0.2			
	52	1.6	0.3			
	53	1.6	0.2			
	54	1.5	0.3			
	55	1.6	0.6			
	56	1.7	0.5			
	57	1.7	0.3			
	58	1.6	0.5			
	59	1.6	0.2			

2011 Clam Field Data Sheet

Sample Location	Clam Count	Length	Weight	Date Collected	Date Shucked	Total Sample Weight
114	1	3.0	2.3	10/19/2011	10/21/2011	27.0
	2	2.0	1.0			
	3	2.5	1.8			
	4	3.0	2.5			
	5	3.0	1.8			
	6	2.5	0.9			
	7	2.5	0.8			
	8	2.5	0.9			
	9	2.5	1.0			
	10	2.5	1.1			
	11	2.0	1.0			
	12	2.5	0.9			
	13	2.5	1.0			
	14	2.5	0.9			
	15	2.0	0.9			
	16	2.0	1.0			
	17	2.0	0.8			
	18	2.0	0.7			
	19	2.0	0.8			
	20	2.0	0.5			
	21	2.5	1.0			
	22	2.0	0.9			
	23	2.0	0.5			
	24	2.0	0.3			
	25	1.5	0.2			
	26	1.5	0.2			
	27	2.0	0.3			
	28	2.0	0.4			
	29	2.0	0.4			
	30	2.0	0.2			
115	1	2.6	1.2	10/18/2011	10/21/2011	30.5
	2	2.6	1.5			
	3	2.3	1.0			
	4	2.4	1.0			
	5	2.4	1.0			
	6	2.6	1.6			
	7	2.5	1.4			
	8	2.6	1.3			
	9	2.5	1.6			
	10	2.2	1.3			
	11	2.7	1.2			
	12	2.3	1.1			
	13	2.3	1.5			
	14	2.3	1.1			
	15	2.3	0.8			
	16	2.1	1.0			
	17	2.5	1.3			
	18	2.2	1.3			
	19	2.0	0.8			
	20	2.1	0.8			
	21	2.2	1.0			
	22	2.1	0.9			
	23	2.1	0.8			
	24	2.0	0.8			
	25	2.0	0.7			
	26	2.0	0.8			
	27	2.0	0.9			
	28	1.7	0.6			
	29	1.5	0.2			

2011 Clam Field Data Sheet

Sample Location	Clam Count	Length	Weight	Date Collected	Date Shucked	Total Sample Weight
116	1	2.5	2.0	10/18/2011	10/21/2011	5.1
	2	2.5	1.9			
	3	2.5	1.2			
117	1	3.0	2.0	10/18/2011	10/21/2011	11.0
	2	2.5	2.1			
	3	2.5	1.1			
	4	2.5	1.4			
	5	2.3	1.1			
	6	2.0	1.0			
	7	4.0	1.6			
	8	1.5	0.3			
	9	1.5	0.4			
118	1	3.5	4.8	10/18/2011	10/21/2011	15.7
	2	2.5	1.3			
	3	3.0	2.2			
	4	2.5	1.8			
	5	2.0	0.8			
	6	2.5	1.1			
	7	2.0	1.9			
	8	2.0	0.7			
	9	2.5	1.1			

DATE 10/18/11

DAY S M T W TH F S

PROJECT MANAGER Mike Powell
PROJECT SUPPLEMENTAL SEGMENT/CLAM SAMPLING
JOB NO. 25697026
CONTRACT NO.

WEATHER	BRIGHT SUN	CLEAR	OVERCAST	RAIN	SNOW
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	Still	Moder	High	Report No.	
HUMIDITY	Dry	Moder	Humid	1	

SUB-CONTRACTOR ON SITE: ADVANCED AMERICAN CONSTRUCTION, INC

EQUIPMENT ON SITE: DIVE BOAT, SMALL DIVE BARGE, BRZ SAFETY BOAT

WORK PERFORMED (INCLUDING SAMPLES COLLECTED):

0700 ZO+JR ONSITE TO CONDUCT LOTD WALK
0740 COMPLETE LOTD WALK, LOAD SAMPLING GEAR ONTO BOAT
0815 CONDUCT SAFETY TAILGATE WITH ALL CREW MEMBERS
0840 MOBILIZE TO P117 LOCATION, SET ANCHORED BUOY IN CENTER OF SAMPLE AREAS OF P117+P116.
0945 FIRST DIVER IN WATER AT P117. WATER DEPTH ~60'. SAMPLE AREA EXPANDED TO 75' DUE TO LACK OF CLAMS OBSERVED.
1030 DIVER SURFACES AT P116^m 7 LOCATION, BEGIN PROCESSING SEDIMENT+CLAMS
1032 ST=111018P117SD 4-802. JARS COLLECTED OF BROWN SILT WITH MEDIUM SAND+GRAVEL. NO VEGETATION OBSERVED, HOWEVER BARK+WOOD DEBRIS WAS.
15 LIVE CLAMS COLLECTED AT STATION, 30+ DEAD CLAM SHELLS REMOVED.
DIVE CREW MOBILIZES TO P116 LOCATION
1100 DIVER IN WATER AT P116, SAMPLE AREA EXPANDED TO 75' DUE TO LACK OF CLAMS. WATER DEPTH ~20'
1144 ST=111018P116SD 8-802 JARS COLLECTED OF SILT WITH FINE SAND. BARK+WOOD DEBRIS OBSERVED. ONLY 3 CLAMS ~~WERE~~ COLLECTED.
1200 BRZ BOAT SETS BUOYS FOR STATIONS P115+P118. DIVE CREW BOAT MOBILIZES TO P118.
ON STANDBY FOR DIVE PENDING GATE ADJUSTMENT.
1218 DIVER IN WATER AT P118, SAMPLE AREA EXPANDED TO 75' DUE TO LACK OF CLAMS, ~10' DEEP
1300 DIVER OUT OF WATER AT P118
1301 ST=111018P118SD 8^m 7-802 JARS OF BROWN SILT WITH LITTLE FINE SAND+CLAY
11 CLAMS COLLECTED. BARK DEBRIS OBSERVED.

DAILY QUALITY CONTROL REPORT

SHEET 1 OF 2

PROJECT SUPPLEMENTAL SEDIMENT ^{CLAM} SAMPLING
JOB NO. 2569 ~~7026~~ 7026

REPORT NO. 1
DATE 10/18/11

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS): em

1315 MOB TO P115 LOCATION

1333 DIVER IN WATER AT P115 LOCATION. WATER DEPTH ~28'

1405 DIVER OUT IF WATER AT P115, BEGIN PROCESSING SEDIMENT / CLAMS

1412 ST 111018 P115SD BROWN TO BLACK SILT WITH ^{SOME} FINE SAND. WOOD DEBRIS OBSERVED
29 CLAMS COLLECTED.

1420 MOB BACK TO STEELWHEELER DOCK, DEMOB SAMPLES + EQUIPMENT

1440 ZO+JK SIGN OUT OF LOTD AND OFFSITE.

HEALTH AND SAFETY LEVELS AND ACTIVITIES: SAFETY TAILGATE

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN: N/A

SPECIAL NOTES: N/A

TOMORROW'S EXPECTATIONS: CONTINUE SAMPLING AT STATIONS P112-P114

BY



TITLE

Graduate Environmental Engineer

DAILY QUALITY CONTROL REPORT

SHEET 2 OF 2

DATE 10/19/11

DAY S M T W TH F S

PROJECT MANAGER Mike Power

PROJECT BLANFORD SUPPLEMENTAL CLAM/SEDIMENT SAMPLING

JOB NO. 25697026

CONTRACT NO.

WEATHER	BRIGHT SUN	CLEAR	OVERCAST	RAIN	SNOW
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	Still	Moder	High	Report No.	
HUMIDITY	Dry	Moder	Humid	2	

SUB-CONTRACTOR ON SITE: ADVANCED AMERICAN CONSTRUCTION, INC.

EQUIPMENT ON SITE: DIVE BOAT, SMALL DIVE BARGE, BILZ SAFETY BOAT

WORK PERFORMED (INCLUDING SAMPLES COLLECTED):

0700 SET UP ON SITE TO CONDUCT LOTO WALK.

0750 LOAD SAMPLING EQUIPMENT ONTO BARGE, MOBILIZE TO P114.

0815 CONDUCT SAFETY TAILGATE

0840 DIVER IN WATER AT P114, WATER DEPTH ~30'

0940 ST=111019P114SD 8-802 JARS COLLECTED OF BROWN COARSE SAND WITH SOME SILT, LITTLE CLAY + GRAVELS ^{3/4"} SMALL WOOD DEBRIS + BARK OBSERVED 32 CLAMS COLLECTED

0945 DIVER IN WATER AT P113 LOCATION, ~30' DEEP

1016 DIVER OUT OF WATER AT P113, BEGIN PROCESSING

1109 ST=111019P113SD 8-802 JARS COLLECTED OF BROWN, BLACK/RED COARSE TO MED. SAND WITH A LITTLE SILT AND GRAVEL. 73 CLAMS COLLECTED. MANY WORMS + SNAILS OBSERVED IN SEDIMENT. REMOVED BEFORE PLACING INTO SAMPLE CONTAINERS.

1040 MOBILIZE TO P112

1107 DIVER IN WATER AT P112, WATER DEPTHS UP TO 30' DEEP. SAMPLE AREA EXPANDED TO 75' TO COLLECT ADEQUATE SEDIMENT/CLAM VOLUME.

1205 DIVER OUT OF WATER AT P112

1210 ST=111019P112SD 8-802 JARS OF BROWN TO BLACK MEDIUM TO COARSE SAND WITH GRAVEL + LITTLE SILT. SAMPLE CONTAINED LOT OF GLASS DEBRIS, REMOVED FROM SEDIMENT BEFORE PLACING INTO CONTAINERS. 37 CLAMS COLLECTED. AND WIRE

DIVER STATED OBSERVING A LOT OF DEBRIS (GLASS, BULBS, ETC) DURING

DAILY QUALITY CONTROL REPORT

SHEET 1 OF 2

PROJECT SUPPLEMENTAL SEDIMENT/CLAM SAMPLING
JOB NO. 25697026

REPORT NO. 2
DATE 10/19/11

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS): ✓

COLLECTION.

1220 RETURN TO STERNWHEELER DOCK, DEMOB EQUIPMENT AND
SAMPLES, SIGN OUT OF LOTO
1255 RETURN BADGES, ZO+JR OFFSITE

HEALTH AND SAFETY LEVELS AND ACTIVITIES: SAFETY TAGGAGE

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN: N/A

SPECIAL NOTES: N/A

TOMORROW'S EXPECTATIONS: N/A

BY

TITLE

Graduate Environmental Engin

DAILY QUALITY CONTROL REPORT

SHEET 2 OF 2

Bradford Island Sediment Sampling

Sample Number: <u>111019P112SD</u>		Date: <u>10/19/11</u>
Weather Conditions: <u>CLOUDY 50's, BEGINNING TO RAIN</u>		Time: <u>1210</u>
Analyses		
☒ PCB-Aroclors	☐ VOCs	☒ % Moisture
☒ PCB - Congeners	☒ Pesticides <u>HERBICIDES</u>	☒ Grain Size
☒ Metals	☒ Butyltins	☐ pH
☒ SVOCs	☒ Diesel/Heavy Range Organics	☒ TOC
☐ PAHs	☒ Archive	
Sample Collection		
Sampling Method: <u>DIVER</u>		
QC Samples Collected: <u>NONE</u>		
Water Sample Collected: <u>NONE</u>		
Decontamination Method: Soap wash, water rinse, acetone & nitric acid wash, water rinse <u>NONE</u>		
Sample Team: <u>SR+ZO</u>		
Sample Location		
Latitude: <u>45.6427</u> N <u>CENTER</u>		
Longitude: <u>-121.9350</u> W		
Description of Location: <u>OFF NE CORNER OF BRADFORD ISLAND, NW OF CHANNEL AT TIP (FRANK DEBRIS PILE AREA)</u>		
Description of River Bottom: <u>ROCK W/ FEW POCKETS OF SAND</u>		
Water Depth: <u>< 30'</u>		
Sediment Depth:		
Sediment Description		
Color: <u>BROWN BLACK</u>		
Texture: <u>MED-COARSE SAND WITH GRAVEL + LITTLE FINE SILT</u>		
UCSC Classification:		
Odor/sheen: <u>NONE</u>		
Benthic Organisms: <u>SNAILS, CLAMS</u>		
Depth of bioactive layer:		
Vegetation:		
Other Comments		
Bottom Condition:		
Number of Corbicula at sampling station: <u>37+</u>		
<u>DIVER OBSERVED A LOT OF GLASS DEBRIS, BULBS, ETC.</u> <u>SAMPLE CONTAINED DEBRIS (GLASS + WIRE (FILAMENT?))</u>		

Bradford Island Sediment Sampling

Sample Number: 11019P113SD		Date: 10/19/11
Weather Conditions: CLOUDY, 50s		Time: 1109
Analyses		
☒ PCB-Aroclors	☐ VOCs	☒ % Moisture
☒ PCB - Congeners	☒ Pesticides / HERBICIDES	☒ Grain Size
☒ Metals	☒ Butyltins	☐ pH
☒ SVOCs	☒ Diesel/Heavy Range Organics	☒ TOC
☐ PAHs	☒ Archive	
Sample Collection		
Sampling Method: DIVER		
QC Samples Collected: NONE		
Water Sample Collected: NONE		
Decontamination Method: Soap wash, water rinse, acetone & nitric acid wash, water rinse NONE		
Sample Team: JR + ZO		
Sample Location		
Latitude: 45.6428 N		
Longitude: 72.9356 W		
Description of Location: CENTERED ~20' OFFSHORE BELOW LANDFILL ~200 FROM ISLAND TIP		
Description of River Bottom: LARGE ROCKS + COBBLES WITH SEDIMENT BETWEEN		
Water Depth: ~30'		
Sediment Depth:		
Sediment Description		
Color: BROWN, BLACK SOME RED		
Texture: COARSE TO MED. SAND w/ LITTLE SILT + GRAVEL		
UCSC Classification:		
Odor/sheen: NONE		
Benthic Organisms: CLAMS, SNAILS, WORMS		
Depth of bioactive layer:		
Vegetation: NONE		
Other Comments		
Bottom Condition:		
Number of Corbicula at sampling station: 73		
DIVER COMMENTED HE OBSERVED A LOT OF GLASS DEBRIS, BULBS, ETC		

Bradford Island Sediment Sampling

Sample Number: 111019P1145D		Date: 10/19/11
Weather Conditions: Cloudy 50's still		Time: 0940
Analyses		
☒ PCB-Aroclors	☐ VOCs	☒ % Moisture
☒ PCB - Congeners	☒ Pesticides / HERBICIDES	☒ Grain Size
☒ Metals	☒ Butyltins	☐ pH
☒ SVOCs	☒ Diesel/Heavy Range Organics	☒ TOC
☐ PAHs	☒ Archive	
Sample Collection		
Sampling Method: DIVER		
QC Samples Collected: NONE		
Water Sample Collected: NONE		
Decontamination Method: Soap wash, water rinse, acetone & nitric acid wash, water rinse NONE		
Sample Team: SRL+ZO		
Sample Location		
Latitude: 45.6428 N		
Longitude: -121.9362 W		
Description of Location: CENTERED APPROXIMATELY 20' OFFSHORE ^{~300'} W OF TIP OF ISLAND		
Description of River Bottom: LARGE ROCK WITH SEDIMENT BETWEEN ^{BELOW W END OF LANDFILL}		
Water Depth: 15m 30'		
Sediment Depth: -		
Sediment Description		
Color: BROWN		
Texture: COARSE SAND WITH SOME ^{SILT, LITTLE} CLAY + GRAVEL		
UCSC Classification:		
Odor/sheen: NONE		
Benthic Organisms: CLAMS + SNAILS (3)		
Depth of bioactive layer:		
Vegetation: SOME SMALL WOOD DEBRIS/BARK		
Other Comments		
Bottom Condition: 3m		
Number of Corbicula at sampling station: 32+		
DIVER OBSERVED MANY CRABFISH WHILE SAMPLING		

Bradford Island Sediment Sampling

Sample Number: 111018P1155D		Date: 10/18/11
Weather Conditions: SUNNY, WINDY, 60s		Time: 1412
Analyses		
☒ PCB-Aroclors	☐ VOCs	☒ % Moisture
☒ PCB - Congeners	☒ Pesticides / HERBICIDES	☒ Grain Size
☒ Metals	☒ Butyltins	☐ pH
☒ SVOCs	☒ Diesel/Heavy Range Organics	☒ TOC
☐ PAHs	☒ Archive	
Sample Collection		
Sampling Method: DIVER		
QC Samples Collected: NONE		
Water Sample Collected: N/A		
Decontamination Method: Soap wash, water rinse, acetone & nitric acid wash, water rinse N/A		
Sample Team: SR + ZO		
Sample Location		
Latitude: 45.6427 N		
Longitude: -121.9374 W		
Description of Location: CENTERED APPROX 25' OFFSHORE FROM BULB SLOPE AREA		
Description of River Bottom: LARGE ROCKS WITH SEDIMENT		
Water Depth: ~28'		
Sediment Depth:		
Sediment Description		
Color: BROWN TO BLACK		
Texture: FINE SILT W/ SOME FINE SAND		
UCSC Classification:		
Odor/sheen: NONE		
Benthic Organisms: CLAMS		
Depth of bioactive layer:		
Vegetation: SOME WOOD DEBRIS		
Other Comments		
Bottom Condition:		
Number of Corbicula at sampling station: 29		

Bradford Island Sediment Sampling

Sample Number: 111018P116515	Date: 10/18/11
Weather Conditions: Sunny, windy, SDS	Time: 1144
Analyses	
☒ PCB-Aroclors	☐ VOCs
☒ PCB - Congeners	☒ Pesticides/HERBICIDES
☒ Metals	☒ Butyltins
☒ SVOCs	☒ Diesel/Heavy Range Organics
☐ PAHs	☒ Archive
☒ % Moisture	☒ Grain Size
	☐ pH
	☒ TOC
Sample Collection	
Sampling Method: DIVER	
QC Samples Collected: NA	
Water Sample Collected: NA	
Decontamination Method: Soap wash, water rinse, acetone & nitric acid wash, water rinse NA	
Sample Team: JR + ZO	
Sample Location	
Latitude: 45.6427 N	
Longitude: -121.9393 W	
Description of Location:	
Description of River Bottom: APPROX 75' NNW OF OUTFALL 2	
Water Depth: 20'	
Sediment Depth:	
Sediment Description	
Color: Brown	
Texture: SILT w/ SOME FINE SAND	
UCSC Classification:	
Odor/sheen: NONE	
Benthic Organisms:	
Depth of bioactive layer:	
Vegetation: SOME BARK + WOOD DEBRIS	
Other Comments	
Bottom Condition:	
Number of Corbicula at sampling station: 3	

Bradford Island Sediment Sampling

Sample Number: <u>111018P1175D</u>	Date: <u>10/18/11</u>	
Weather Conditions: <u>CLEAR, WINDY, 50s</u>	Time: <u>1032</u>	
Analyses		
☒ PCB-Aroclors	☐ VOCs	☒ % Moisture
☒ PCB - Congeners	☒ Pesticides / <u>HERBICIDES</u>	☒ Grain Size
☒ Metals	☒ Butyltins	☐ pH
☒ SVOCs	☒ Diesel/Heavy Range Organics	☒ TOC
☐ PAHs	☒ Archive	
Sample Collection		
Sampling Method: <u>DIVER</u>		
QC Samples Collected: <u>N/A</u>		
Water Sample Collected: <u>N/A</u>		
Decontamination Method: Soap wash, water rinse, acetone & nitric acid wash, water rinse <u>N/A</u>		
Sample Team: <u>JK + ZD</u>		
Sample Location		
Latitude: <u>45.6429</u> N		
Longitude: <u>-121.9395</u> W		
Description of Location: <u>CENTERED ~100' NORTH OFF OF OUTFALL 2</u>		
Description of River Bottom: <u>LARGE ROCK / RIP RAP WITH POCKETS OF SEDIMENT</u>		
Water Depth: <u>~60'</u>		
Sediment Depth: <u>-</u>		
Sediment Description		
Color: <u>BROWN</u>		
Texture: <u>SILT WITH SAND + GRAVEL</u>		
UCSC Classification:		
Odor/sheen: <u>NONE</u>		
Benthic Organisms: <u>NONE CLAMS</u>		
Depth of bioactive layer: <u>-</u>		
Vegetation: <u>NONE, SOME BARK + WOOD DEBRIS</u>		
Other Comments		
Bottom Condition:		
Number of Corbicula at sampling station: <u>15 LIVE,</u>		

Bradford Island Sediment Sampling

Sample Number: P118 111018P11850		Date: 10/18/11
Weather Conditions: SUNNY 60s WIND		Time: 1301
Analyses		
☒ PCB-Aroclors	☐ VOCs	☒ % Moisture
☒ PCB - Congeners	☒ Pesticides / HERBICIDES	☒ Grain Size
☒ Metals	☒ Butyltins	☐ pH
☒ SVOCs	☒ Diesel/Heavy Range Organics	☒ TOC
☐ PAHs	☒ Archive	
Sample Collection		
Sampling Method: DIVER		
QC Samples Collected: NONE		
Water Sample Collected: NONE		
Decontamination Method: Soap wash, water rinse, acetone & nitric acid wash, water rinse		
Sample Team: JR+ZO		
Sample Location		
Latitude: 45.6426 N		
Longitude: -121.9386 W		
Description of Location: APPROX 200' EAST (UPSTREAM) OF OUTFALL 1 LOCATION NEAR SHORE		
Description of River Bottom:		
Water Depth: 16'		
Sediment Depth:		
Sediment Description		
Color: BROWN + BLACK		
Texture: SILT w/ LITTLE FINE SAND AND CLAY		
UCSC Classification:		
Odor/sheen: NONE		
Benthic Organisms:		
Depth of bioactive layer:		
Vegetation: SOME WOOD DEBRIS		
Other Comments		
Bottom Condition:		
Number of Corbicula at sampling station: 11		

Braford Island Fish Sampling 2011

Boat: Champion	Weather: Sunny and warm, east wind	Date: 20/21 August 2011
Samplers: T. Martinez, J. Keith, R. Haykes, B. Mavros, B. Rawls	Site location: Reference Area - Cascade Locks	Page 1 of 1

Count	Sample ID	Fin Clip (Pec, Pel, A, D)	Collection Time	Species (SB/LB)	Weight (g)	Length (cm)	Age (Otolith)	Age (Scale)	Boat / Observations / Notes
1	R08202011SB39	none	7:55	SB	91	18	2		Sample Date 8/20/11 Co Ply Mill Site RB Shallow Water
2	R08202011SB40	L Pec	7:55	SB	202	24	2		Co Ply Mill Site RB Shallow Water 10-15 feet
3	R08202011SB41	R Pec / L Pec	8:10	SB	615	36	4		Need to add L Pec into data dictionary Co Ply Mill Site
4	R08202011SB42	L Pel	8:30	SB	501	25	4		Co Ply Mill Site RB Shallow Water 10-15 feet
5	R08202011SB43	A	8:59	SB	1894	49	10		Mid Island
6	R08202011SB44	R Pel	9:04	SB	191	32	2		Mid island 25 feet deep
7	R08202011SB45	A / L Pel	9:55	SB	93	18	2		Mid island 25 feet deep
8	R08202011SB46	A / R Pel	10:38	SB	841	41	6		Mid island / 1 broken otolith
9	R08202011SB47	A / R Pec	10:40	SB	185	24	2		Mid island / only 1 otolith recovered
10	R08202011SB48	L Pel / R Pel	10:45	SB	495	32	4		Sore R side / Only 1 partial (broken) otolith found
11	R08202011SB49	R Pel / L Pel / A	12:25	SB	815	37	4		
12	R08202011SB50	R Pel / R Pec / A	12:40	SB	1134	44	7		
13	R08202011SB51	L Pec / L Pel / A	12:50	SB	1183	42	7		1 broken otolith (3 pieces present) / 1 unrecovered
14	R08202011SB52	L Pec / A	14:54	SB	569	34	4		
15	R08202011SB53	R Pec	15:10	SB	438	31	4		Only 1 otolith recovered
16	R08212011SB54	D	6:25	SB	804	35	4		Sample Date 8/21/11 Rock creek delta
17	R08212011SB55	D / L Pec	7:08	SB	862	37	5		Rock Creek Delta
18	R08212011SB56	D / R Pec	7:57	SB	182	22	2		Pt. R bank
19	R08212011SB57	D / A / L Pel	8:15	SB	123	25	2		Rocky Pt - R bank
20	R08212011SB58	D / R Pel	8:25	SB	232	24	2		
21	R08212011SB59	D / A	9:15	SB	342	27	3		Small Mid island R Bank
22	R08212011SB60	D / A / L Pec	9:17	SB	256	20	2		
23	R08212011SB61	D / A / R Pec	9:28	SB	185	23	2		

Boat: Champion & Bullet			Weather: Sunny and warm, east wind					Date: 03/04 September 2011	
Samplers: T. Martinez, J. Martinez, J. Keith, R. Haykes, B. Mavros, B. Rawls			Site location: Forebay Area - Bradford Island					Page <u>1</u> of <u>1</u>	
Count	Sample ID	Fin Clip (Pec, Pel, A, D)	Collection Time	Species (SB/LB)	Weight (g)	Length (cm)	Age (Otolith)	Age (Scale)	Boat / Observations / Notes
1	R09032011SB62	D, C	8:02	SB	1272	44	7		Champion: Inner BRZ northshore Bradford Island near
2	R09032011SB63	L Pec, C	8:36	SB	115	19	2		Champion: Inner BRZ northshore Bradford Island near
3	R09032011SB64	R Pec, C	9:42	SB	86	17	2		Champion: Inner BRZ southshore Cascade Island. All fish
4	R09032011SB65	L Pel, C	9:49	SB	96	19	2		Champion: Inner BRZ southshore Cascade Island. All fish
5	R09032011SB66	R Pel, C	9:51	SB	115	19	2		Champion: Inner BRZ southshore Cascade Island. All fish
6	R09032011SB67	A, C	10:26	SB	100	19	2		Champion: Inner BRZ southshore Cascade Island. All fish
7	R09032011SB68	D	9:05	SB	113	18	2		Bullet: Inner BRZ north bank Bradford Island
8	R09032011SB69	A / R Pec	9:49	SB	64	14	2		Bullet: Inner BRZ south bank Cascade Island
9	R09032011SB70	A / L Pec	10:27	SB	121	18	2		Bullet: Inner BRZ south bank Cascade Island
10	R09042011SB71	A / R Pel, C	6:36	SB	121	24	3		Champion: Outside BRZ, mid-channel islands. All fish
11	R09042011SB72	A / L Pel, C	6:57	SB	94	18	2		Champion: Outside BRZ, mid-channel islands. All fish
12	R09042011SB73	A / D, C	6:58	SB	151	22	2		Champion: Outside BRZ, mid-channel islands. All fish
13	R09042011SB74	D / R Pec, C	6:59	SB	378	29	4		Champion: Outside BRZ, mid-channel islands. All fish
14	R09042011SB75	D / L Pec, C	7:14	SB	189	23	2		Champion: Outside BRZ, mid-channel islands. All fish
15	R09042011SB76	D / R Pel, C	7:33	SB	169	22	2		Champion: Outside BRZ, mid-channel islands. All fish
16	R09042011SB77	D / L Pel, C	7:51	SB	177	23	2		Champion: Outside BRZ, mid-channel islands. All fish
17	R09042011SB78	D / L Pec	6:30	SB	135	19	2		Bullet: Goose Island
18	R09042011SB79	D / R Pec	6:50	SB	452	29	4		Bullet: Goose Island. Only 1 otolith recovered from
19	R09042011SB80	R Pec / R Pel	7:01	SB	201	21	2		Bullet: Goose Island
20	R09042011SB81	R Pec / L Pel	7:18	SB	625	30	4		Bullet: Goose Island. R Pelvic fin looks like it is
21	R09042011SB82	L Pec / L Pel	7:26	SB	328	27	No otols	3	Bullet: Goose Island
22	R09042011SB83	L Pec / R Pel	7:45	SB	183	20	2		Bullet: Goose Island
23	R09042011SB84	D / A / R Pec	7:48	SB	498	32	3		Bullet: Goose Island