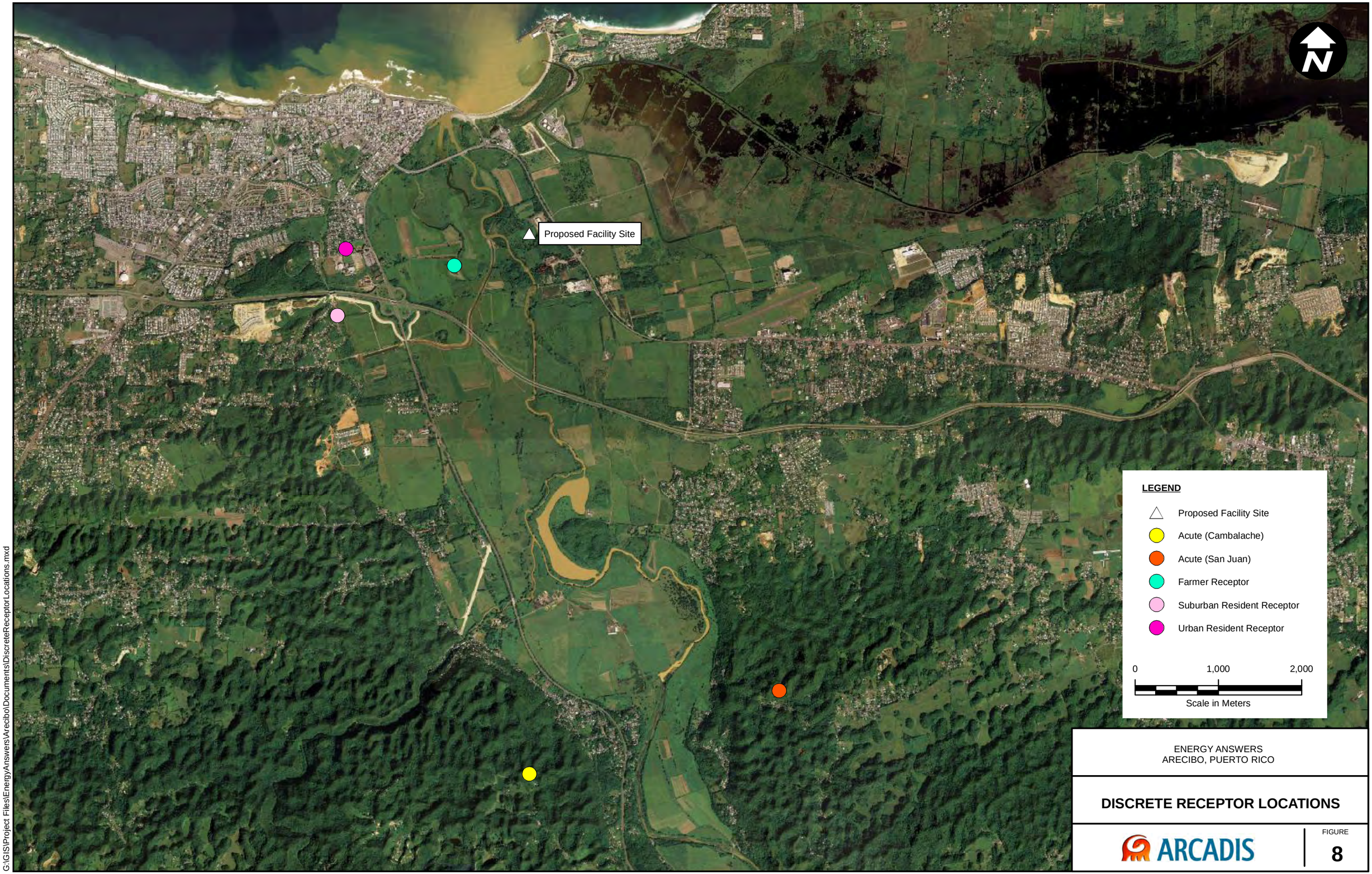


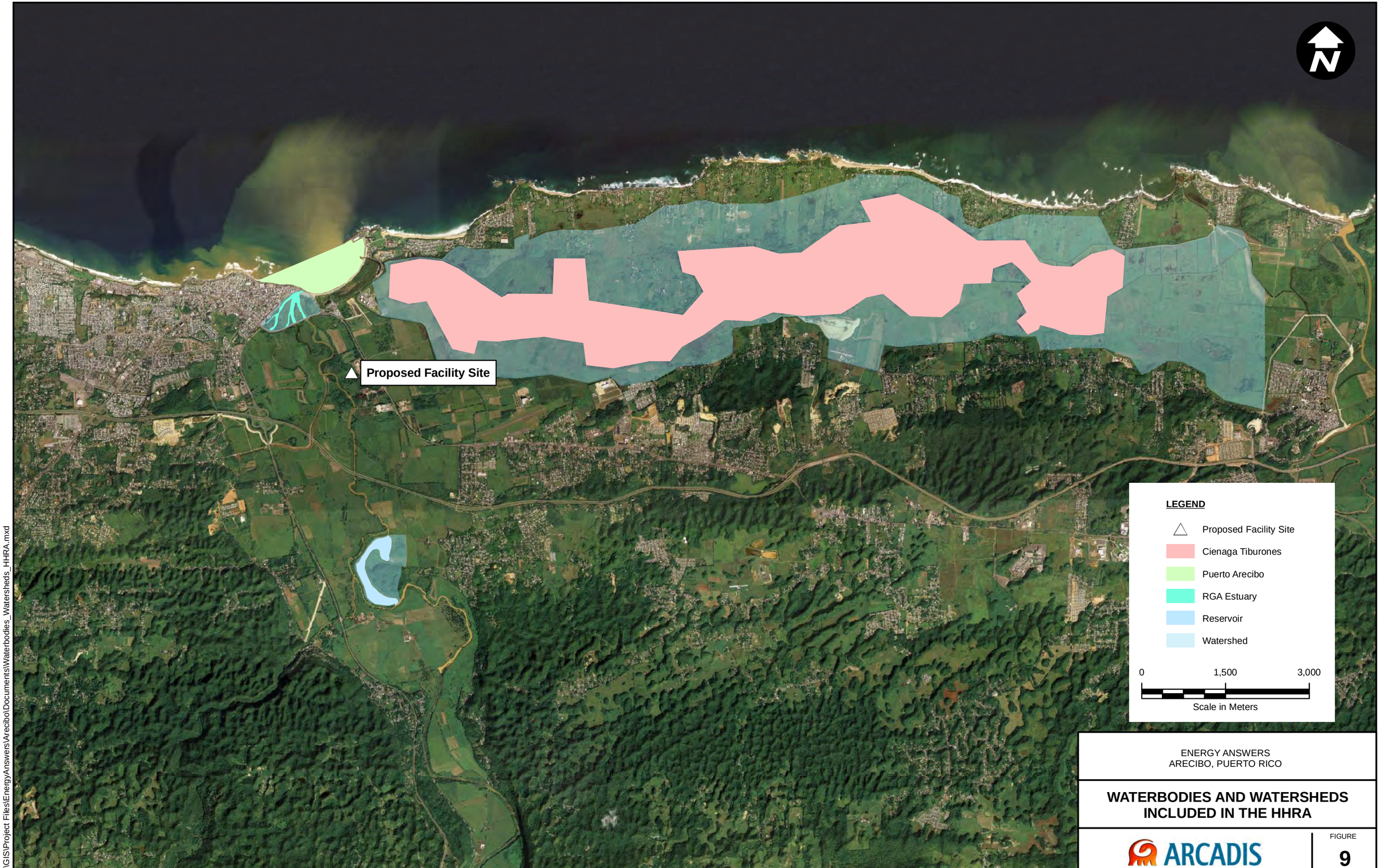
ENERGY ANSWERS
ARECIBO, PUERTO RICO

DISCRETE RECEPTOR LOCATIONS

ARCADIS

FIGURE
8

PROJECT NUMBER:
CITY:NOVI DIV/GROUP:ENV DB: PIC: PM: TM: TR:
G:\GIS\Project Files\EnergyAnswers\Arecibo\Documents\DiscreteReceptorLocations.mxd



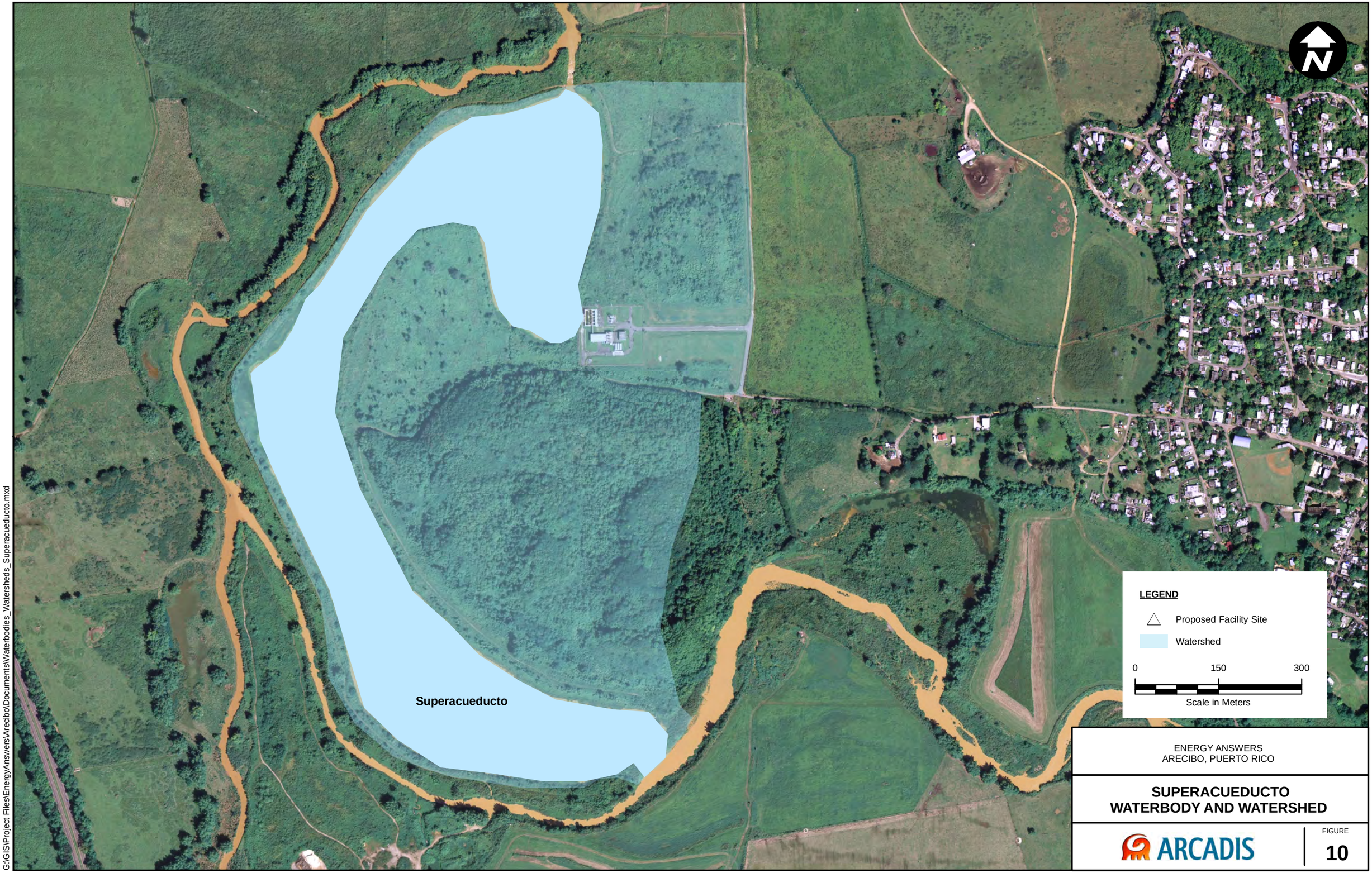
ENERGY ANSWERS
ARECIBO, PUERTO RICO

WATERBODIES AND WATERSHEDS INCLUDED IN THE HHRA

ARCADIS

FIGURE
9

PROJECT NUMBER:
CITY:NOVI DIV/GROUP:ENV DB: PIC: PM: TM: TR:
G:\GIS\Project Files\EnergyAnswers\Arecibo\Documents\Waterbodies_Watersheds_HHRA.mxd



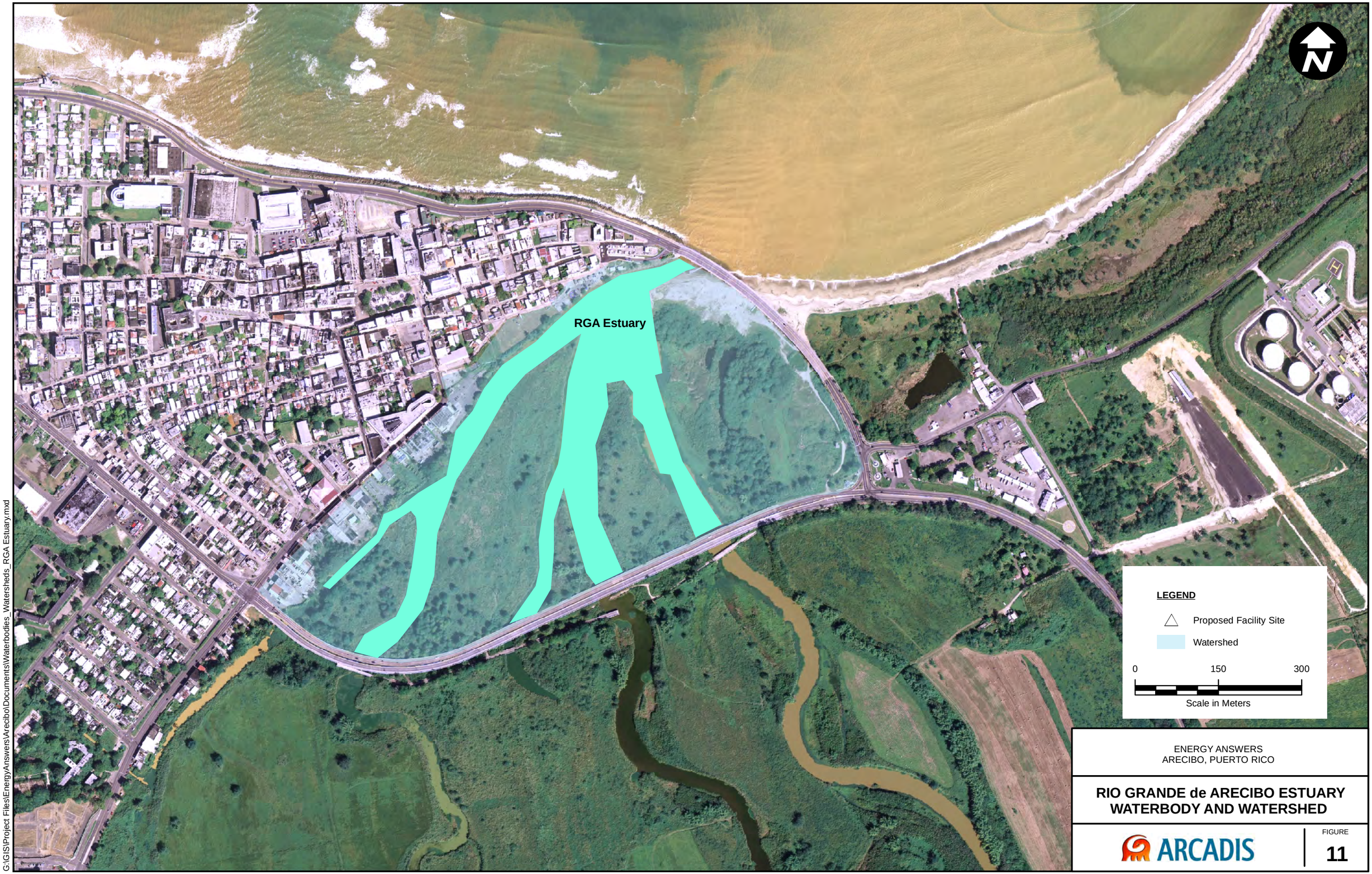
ENERGY ANSWERS
ARECIBO, PUERTO RICO

SUPERACUEDUCTO
WATERBODY AND WATERSHED

ARCADIS

FIGURE
10

PROJECT NUMBER:
CITY:NOVI DIV/GROUP:ENV DB: PIC: PM: TM: TR:
G:\GIS\Project Files\EnergyAnswers\Arecibo\Documents\Waterbodies_Watersheds_Superacueducto.mxd



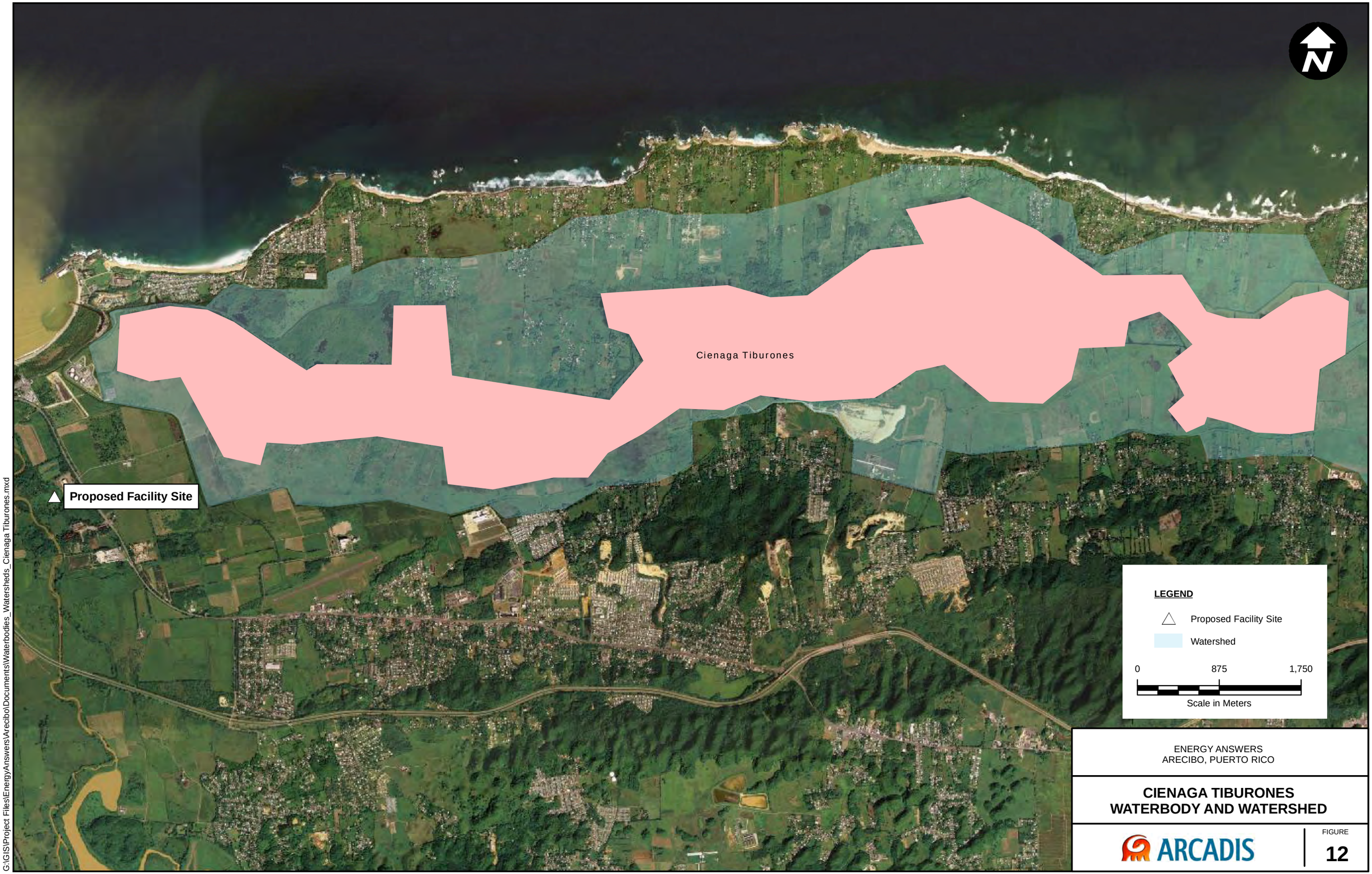
ENERGY ANSWERS
ARECIBO, PUERTO RICO

RIO GRANDE de ARECIBO ESTUARY WATERBODY AND WATERSHED

ARCADIS

FIGURE
11

PROJECT NUMBER:
CITY:NOVI DIV/GROUP:ENV DB: PIC: PM: TM: TR:
G:\GIS\Project Files\EnergyAnswers\Arecibo\Documents\Waterbodies_Watersheds_RGA Estuary.mxd



ENERGY ANSWERS
ARECIBO, PUERTO RICO

CIENAGA TIBURONES WATERBODY AND WATERSHED

ARCADIS

FIGURE
12

PROJECT NUMBER:
CITY:NOVI DIV/GROUP:ENV DB: PIC: PM: TM: TR:
G:\GIS\Project Files\EnergyAnswers\Arecibo\Documents\Waterbodies_Watersheds_Cienaga Tiburones.mxd

ENERGY ANSWERS
ARECIBO, PUERTO RICO

PUERTO ARECIBO
WATERBODY AND WATERSHED

ARCADIS

FIGURE
13

PROJECT NUMBER:
CITY:NOVI DIV/GROUP:ENV DB: PIC: PM: TM: TR:
G:\GIS\Project Files\EnergyAnswers\Arecibo\Documents\Waterbodies_Watersheds_Port Arecibo.mxd

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Appendix A

SEMASS Unit 3 Stack Test Data

Appendix A
ENERGY ANSWERS ARECIBO, PUERTO RICO PROJECT
Emission Calculations
EACH BOILER

Estimated Stack Flow Rate (dscmm) 3806 3460

	SEMASS Stack Test Data			Average	Emission Rates	
	1993	1994	1996	Emission Factor	Maximum	Average
Emission Rate Calculations	**ng/dscm**	**ng/dscm**	**ng/dscm**	**ng/dscm**	**g/s**	**g/s**
PCDD						
Permit Limit (total mass) - Units conversion				13	8.25E-07	
Permit Limit (TEQ) - Units conversion				0.2	1.27E-08	
2,3,7,8-TCDD**	0.0018	0.0011	ND	0.0015	9.30E-11	8.46E-11
1,2,3,7,8-PeCDD**	0.0038	0.0027	ND	0.0033	2.06E-10	1.87E-10
1,2,3,4,7,8-HxCDD**	0.0023	0.0018	ND	0.0021	1.32E-10	1.20E-10
1,2,3,6,7,8-HxCDD**	0.0037	0.0067	ND	0.0052	3.28E-10	2.98E-10
1,2,3,7,8,9-HxCDD**	0.0037	0.0067	ND	0.0052	3.29E-10	2.99E-10
1,2,3,4,6,7,8-HpCDD	0.0185	0.0398	ND	0.0292	1.85E-09	1.68E-09
1,2,3,4,6,7,8,9-OCDD	0.0442	0.0658	0.0920	0.0673	4.27E-09	3.88E-09
PCDFs						
2,3,7,8-TCDF**	0.0222	0.0319	ND	0.0271	1.72E-09	1.56E-09
1,2,3,7,8-PeCDF**	0.0055	0.0074	ND	0.0065	4.10E-10	3.73E-10
2,3,4,7,8-PeCDF**	0.0074	0.0104	ND	0.0089	5.66E-10	5.14E-10
1,2,3,4,7,8-HxCDF*	0.0133	0.0111	ND	0.0122	7.73E-10	7.03E-10
1,2,3,6,7,8-HxCDF	0.0047	0.0059	0.0131	0.0079	5.02E-10	4.56E-10
2,3,4,6,7,8-HxCDF*	0.0074	0.0074	ND	0.0074	4.70E-10	4.28E-10
1,2,3,7,8,9-HxCDF**	0.0022	0.0011	ND	0.0017	1.06E-10	9.61E-11
1,2,3,4,6,7,8-HpCDF	0.0178	0.0133	0.0328	0.0213	1.35E-09	1.23E-09
1,2,3,4,7,8,9-HpCDF**	0.0028	0.0016	ND	0.0022	1.40E-10	1.27E-10
OCDF	0.0083	0.0073	0.0329	0.0162	1.03E-09	9.33E-10
PAH						
Naphthalene		2.71		2.714	1.72E-07	1.56E-07
Benz(a)anthracene		*0.203*		*0.203*	1.29E-08	1.17E-08
Benzo(b)fluoranthene		*0.16*		*0.160*	1.01E-08	9.23E-09
Benzo(k)fluoranthene		*0.175*		*0.175*	1.11E-08	1.01E-08
Benzo(a)pyrene		*0.182*		*0.182*	1.15E-08	1.05E-08
Acenapthene		*0.422*		*0.422*	2.68E-08	2.44E-08
2-Chloronapthalene		*0.435*		*0.435*	2.76E-08	2.51E-08
2-Methylnaphthalene		*0.398*		*0.398*	2.52E-08	2.30E-08
Acenapthylene		*0.250*		*0.250*	1.58E-08	1.44E-08
Chrysene		*0.217*		*0.217*	1.38E-08	1.25E-08
Dibenz(a,h)anthracene		*0.251*		*0.251*	1.59E-08	1.45E-08
Benzo(g,h,i)perylene		*0.222*		*0.222*	1.41E-08	1.28E-08
Perylene		*0.195*		*0.195*	1.24E-08	1.12E-08
Benzo(e)pyrene		*0.171*		*0.171*	1.08E-08	9.84E-09
Pyrene		*0.140*		*0.140*	8.88E-09	8.07E-09
Fluoranthene		*0.169*		*0.169*	1.07E-08	9.75E-09
Anthracene		*0.232*		*0.232*	1.47E-08	1.34E-08
Indeno(1,2,3-cd)pyrene		*0.193*		*0.193*	1.23E-08	1.11E-08

Notes:
Stack test measurements for were not taken in 1995.
ND = Non Detected.
Figures reported in italics are equal to the detection limit.
dscmm = dry standard cubic meters per minute

Appendix A
ENERGY ANSWERS ARECIBO, PUERTO RICO PROJECT
OPERATING SCENARIOS AND STACK PARAMETERS

EACH BOILER

Estimated Flow Rate (dscmm) 3460

Constituent	units	SEMASS STACK TEST RESULTS																AVERAGE	Average g/s
		1996	1997	1998	1999	2000	Jan-01	Apr-01	Apr-02	Jan-03	Sep-03	Jun-04	Apr-05	Dec-05	Sep-06	Jul-07	Apr-08		
Hydrogen Chloride	ppm @ 7% O_2	3.62	2.78	4.4	6	4.49	9.9	8.49	23.09	19.7	6.21	4.88	15.5	27.3	7.6	5.85	5.9	9.73	0.84
Mercury	mg/dscm @ 7% O_2	3.67	3.46	3.431	6.4	1.38	2.6	23.82	7.1183	24.47	13.24	5.56	2.6	6	1.3	1.8	3.43	6.89	3.97E-04
Zinc	mg/dscm @ 7% O_2	24.8	40.9	33.154	44.2	49.7	24.4	23.47	18.225	52.19	115.64	69.26	30.88	2948.2	29	57.36	91	228.27	1.32E-02
Nickel	mg/dscm @ 7% O_2	6.74	<0.366	0.773	1.37	1.19	0.61	0.88	2.0767	1.37	0.89	0.916	1.63	0.86	0.51	0.28	0.306	1.36	7.84E-05
Arsenic	mg/dscm @ 7% O_2	0.857	0.36	<0.334	0.785	0.71	0.18	0.44	<0.12531	0.35	1.42	0.572	<0.26	<0.17	0.37	0.4	0.751	0.60	3.46E-05
Antimony	mg/dscm @ 7% O_2	7.79	25.6	2.021	2.47	4.76	1.76	1.37	0.72428	3.73	7.67	5.51	1.67	1.2	0.89	5.29	4.15	4.79	2.76E-04
Cadmium	mg/dscm @ 7% O_2	<0.110	0.379	0.426	0.83	0.68	0.447	0.37	0.32764	0.61	1.79	0.935	0.44	0.45	0.72	0.92	1	0.69	3.97E-05
Chromium	mg/dscm @ 7% O_2	12.9	<0.194	<0.243	0.637	0.99	0.44	<0.21	<0.5413	0.41	1.72	0.653	0.44	<1.7	0.14	0.51	0.593	1.77	1.02E-04
Copper	mg/dscm @ 7% O_2	2.83	0.572	1.785	3.04	2.99	1.59	2.19	0.94974	4.32	5.07	2.75	2.29	0.83	1.59	1.92	1.87	2.29	1.32E-04
Cobalt	mg/dscm @ 7% O_2	NA	NA	NA	NA	NA	0.04	0.14	<0.083733	<0.55	0.25	<0.273	<0.26	<0.30	<0.11	<0.11	0.183	0.15	8.84E-06
Lead	mg/dscm @ 7% O_2	6.37	29.1	11.854	23.6	24.3	6.5	5.85	5.7849	13.64	56.56	34.02	9.29	<2.5	17.8	31.1	25	20.05	1.16E-03
Manganese	mg/dscm @ 7% O_2	4.24	7.98	5.226	2.96	3.04	2.26	1.46	7.3208	4.43	7.05	<0.129	3.3	4.6	1.92	2.75	0.458	3.93	2.27E-04
Molybdenum	mg/dscm @ 7% O_2	6.64	<0.248	0.287	<0.282	<0.178	<0.190	<0.27	1.7385	<0.34	5.7	<0.453	<0.13	<0.30	0.4	<0.05	0.458	2.54	1.46E-04
PCDDs/PCDFs	ng/dscm @ 7% O_2 [2]	0.417	0.868	0.022	8.9	1.19	3.31	1.31	1.67	1.32	3.21	1.69	9.91	7.7	3.6	3.9	<2.35	3.27	1.88E-07
Tin	mg/dscm @ 7% O_2	<1.44	7.12	8.563	11	9.3	5.62	9.45	10.258	13.7	16.49	<0.485	<0.13	7.9	4.98	<0.25	0.458	8.74	5.04E-04
Selenium	mg/dscm @ 7% O_2	NA	<0.356	<0.162	<0.303	<0.298	<0.250	0.58	<0.83733	0.66	<0.36	<0.273	<0.26	<0.47	<0.54	<0.11	0.611	0.62	3.56E-05
Vanadium	mg/dscm @ 7% O_2	<0.237	<0.129	<0.115	<0.113	<0.205	<0.106	<0.12	<0.16747	<0.55	<0.27	<0.273	<0.32	<0.21	<0.11	<0.11	0.458	0.46	2.64E-05
Beryllium	mg/dscm @ 7% O_2	<0.110	<0.0221	<0.057	<0.058	<0.054	<0.051	<0.06	<0.083733	<0.13	<0.04	<0.027	<0.03	<0.021	<0.028	<0.027	0.0611	0.06	3.52E-06

Notes:
dscmm = dry standard cubic meters per minute

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Appendix B

AERMOD Input and Output Files

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The attached CD has the AERMOD air dispersion modeling input and output files. AERMOD is the recommended model in USEPA's *Guideline on Air Quality Models* (40 CFR Part 51, Appendix W) (USEPA 2005) for predicting ambient air concentrations of emissions from stationary industrial sources like the proposed Energy Answers facility. Software created by *Lakes Environmental* was used for executing USEPA's AERMOD model.

Input and output files for running the USEPA's BPIPPRM utility program for calculating building profile dimensions and Good Engineering Practice Stack Height are included.

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Appendix C

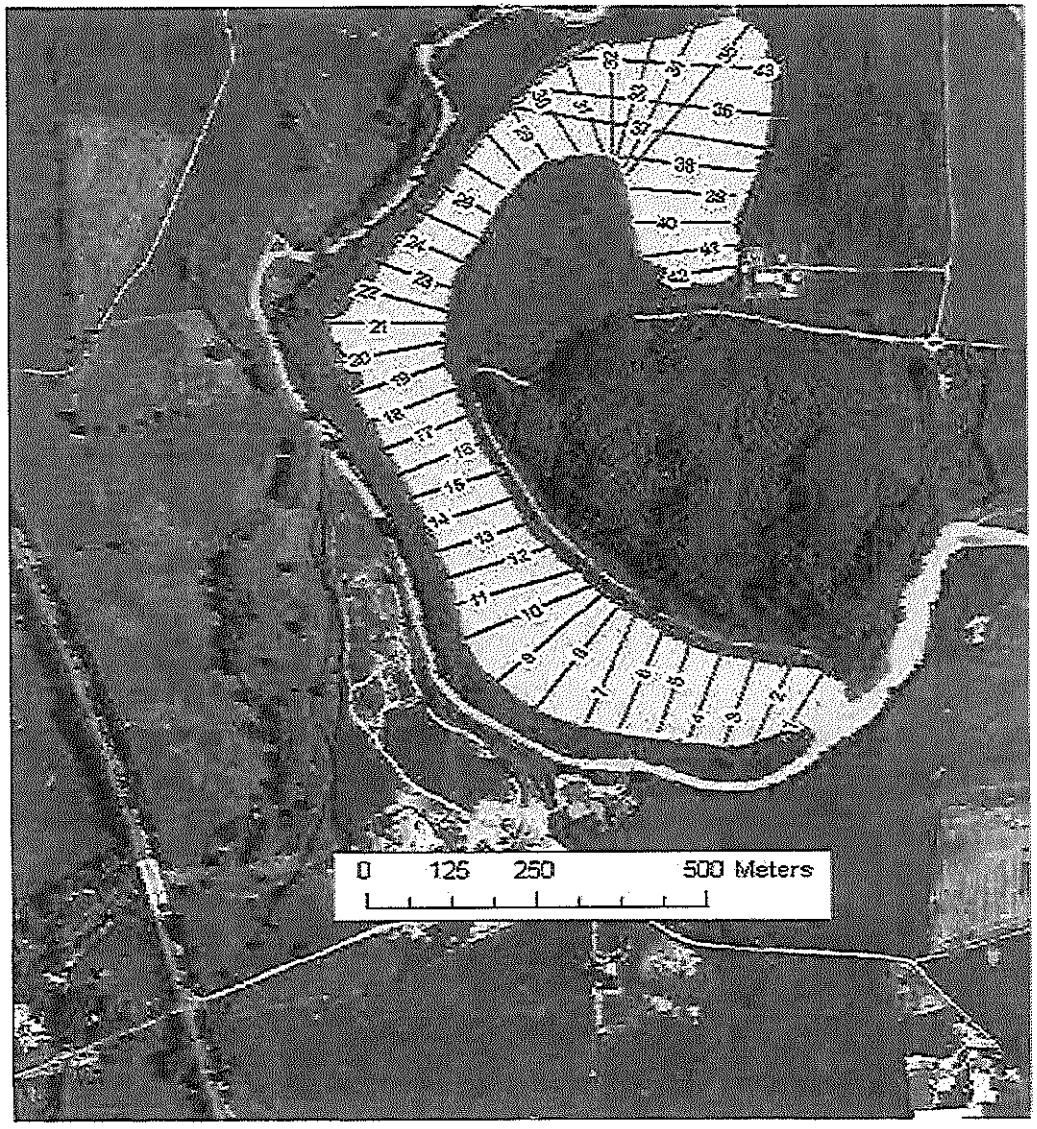
Local Information

Thames Water Puerto Rico

Superacueducto

Raw Water Lagoon

Lagoon Volume:	300.00	MG
Lagoon Depth:	6.00	meters
	19.68	feet



Optimal Depth:	5.00	meters
	16.40	feet
Minuimum Depth:	2.00	meters
	6.56	feet
Specific Capacity	50.00	MG / meter
	15.24	MG / foot
Usable Capacity:	3.00	meters
	150.00	MG
	1.50	Days Storage
Plant Output:	100.00	MGD
	4.17	MG / Hour

Capacity Chart

Meters	MG	Hours of Supply
5.00	150.00	36.00
4.75	137.50	33.00
4.50	125.00	30.00
4.25	112.50	27.00
4.00	100.00	24.00
3.75	87.50	21.00
3.50	75.00	18.00
3.25	62.50	15.00
3.00	50.00	12.00
2.75	37.50	9.00
2.50	25.00	6.00
2.25	12.50	3.00
2.00	0.00	0.00

Water released by PREPA from Caonillas will reach the Raw Water Lagoon in 6 - 8 hours.

TABLE D- IDENTIFY FISHING PATTERNS AND PRACTICES - (area 20 km to west, 20 km south, 10 km east, north to the ocean for the site).

Receptor		UTM coordinates	
Identify areas where people are known to be fishing for food	**Description**	Xutm	Y [1] utm
Name/Location			
Dos Bocas Reservoir	A 256.6 ha impoundment of the Grande de Arecibo River, the Limon River and the Caonillas River between the municipalities of Arecibo and Utuado. People fish from small boats or from the water's edge throughout the day.	746237.13476	2028526.1718
PR-680 Bridge and waterfront near mouth of RGA	Stretch of approximately 900 meters along PR-680 associated to the mouth of the Grande de Arecibo River. People fish with fishing rods or hand held reels from the bridge of from the rock wall during late afternoon or at night.	744753.39461	2032425.27666
RGA Estuary	The RGA estuary has three extensions including the river and two other courses that may represent past flows of the RGA. People fish these extensions by small boat, from the waters edge or from small abandoned bridges during late afternoon and at night. Ceti is caught with nets at the RGA mouth.	741717.17004	2043989.75454
Arecibo Bay Breakwater	This breakwater was constructed to protect a new boat ramp for the Arecibo Outboard Club. People fish with fishing rods on the breakwater late afternoon and at night.	742765.24961	2044615.15580
Caño Tiburones	PR's largest wetland, it covers approximately 7,000 acres between the Grande de Arecibo and Grande de Manati rivers. It is influenced by salt and fresh water and has an open connection with the Atlantic Ocean. People fish from small boats or from the water's edge throughout the entire zone.	748964.56798	2043586.76289
Camuy Coast line	This is an approximately 5.5 kilometer long stretch of coast in the Municipality of Camuy where people fish with fishing rods or with castnets.	728440.75122	2045513.18594
Ramp and dock at El Membrillo in Camuy	New boat ramp and dock build for the Asociación de Pescadores de Membrillo. Fishermen fish in the late afternoon and at night with fishing rods.	725164.05836	2045788.22422
Identify what fish are generally caught and eaten from fresh and salt water bodies within the areas of interest	**Fish species caught**		
Water Body			
Atlantic Ocean-offshore	Dolphin, Little tuna, Silk snapper, King mackerel, Swordfish, Yellowfin tuna, Mutton snapper, Queen snapper, Yellowfin snapper, Bar jack	751283.04463	2078455.18361
Atlantic Ocean coastal waters	Mutton snapper, Bar jack, Palometa, Permit, Yellowfin snapper	741419.01094	2044125.62376
Rio Grande de Arecibo	Snook, Schoolmaster, Sirajo goby (larvae locally called "ceti")	741598.85804	2043852.91997
Caño Tiburones	Snook, Schoolmaster	748964.56798	2043586.76289
Dos Bocas Reservoir	Largemouth bass, Peacock bass, Mozambique Tilapia, Blue tilapia, Redbreast sunfish, Redear sunfish, White catfish, Marbled bullhead, Channel catfish, Redbreast tilapia, Red devil	746527.22306	2028582.79220
		UTM coordinates	
Receptor	**Description**	Xutm	Y [1] utm
Identify what fish sport fishing locations and fisheries within Sport fishing locations and fisheries			
Name/Location			
Arecibo Outboard Club	Private Club	742903.40194	2044598.76583
Club Nautico Arecibo	Private Club	743097.54668	2044311.18369
Asociacion de Pescadores de Jarealito	Local fishermen's Association	743590.17533	2044622.90090
Asociacion de Pescadores El Membrillo	Local fishermen's Association	725240.04906	2045814.03385
Dos Bocas Reservoir-Club Lobiñero Villalbeño	Conduct tournaments in Dos Bocas Reservoir	746237.13476	2028526.17180

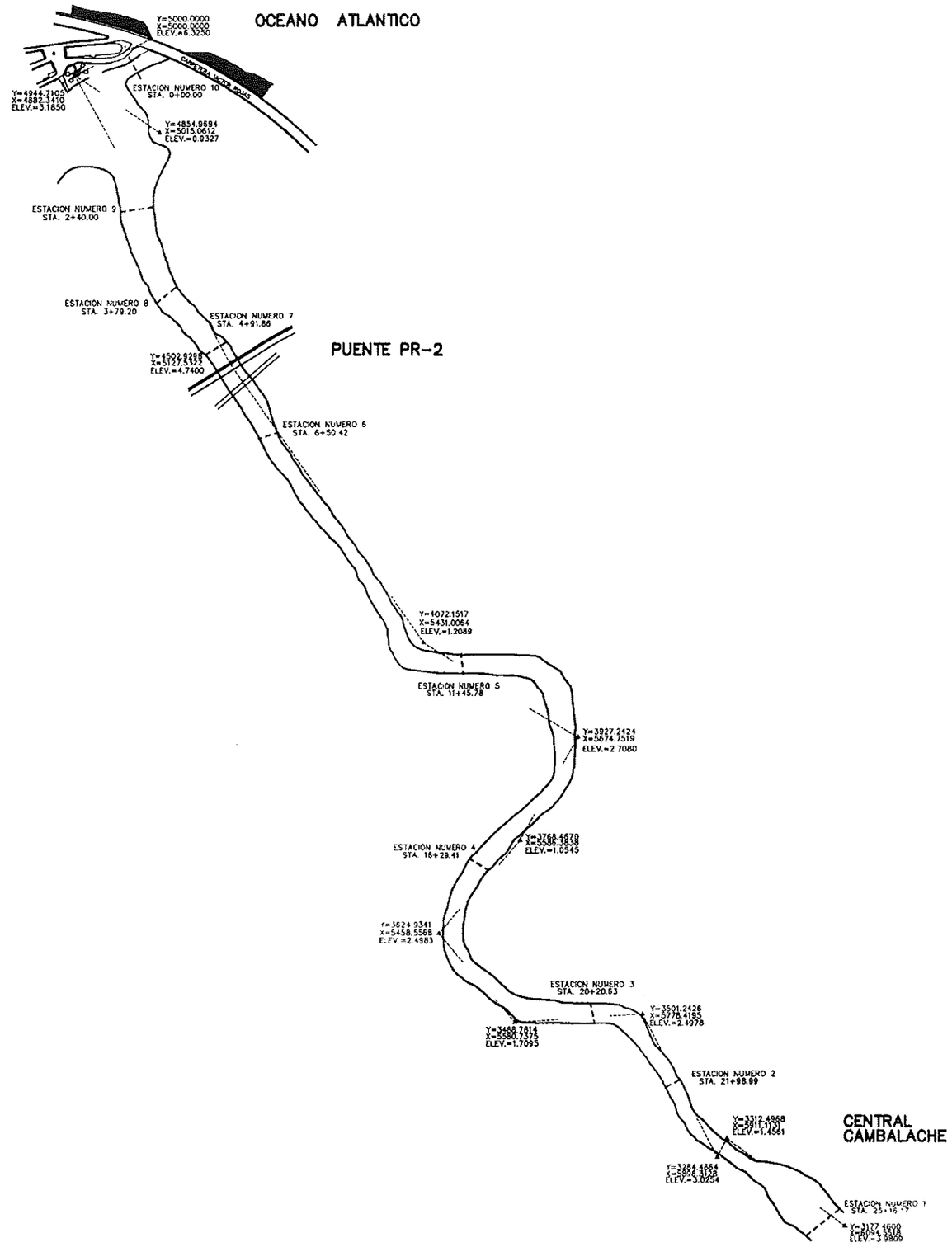
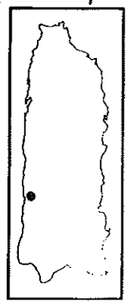


FIGURA 2-1 CONFIGURACION DEL CANAL DEL ESTUARIO DEL RIO GRANDE DE ARECIBO

PROGRAMA DE MONITOREO DEL ESTUARIO DEL RIO GRANDE DE ARECIBO



ARCHITECTS & ENGINEERS
MERCANTIL PLAZA, MEZZANINE SUITE SAN JUAN P.R. 00918
TEL. (787) 754-6800 FAX: 753-7250

Tabla 4-1. Lista de Parámetros de Calidad de Agua y Métodos Analíticos

Párametros	Métodos (EPA)	Limite Detección
Amonia (mg/L)	350.1	0.10
BOD (mg/L)	405.1	1.0
Bromuro (mg/L)	320.1	0.10
Calcio (mg/L)	200.7	0.01
Cloruro (mg/L)	325.2	3.0
COD (mg/L)	410.4	5.0
Fluoruro (mg/L)	340.2	0.01
Fósforo (mg/L)	365.3	0.01
Fosfato - ortho (mg/L)	365.3	0.01
Magnesio (mg/L)	200.7	0.01
Nitrato (mg/L)	353.2	0.01
Nitrito (mg/L)	353.2	0.01
Nitrogeno Kjeldahl Total (TKN) (mg/L)	351.2	0.2
Nitrogeno Orgánico Total (mg/L)	351.2	0.2
Potasio (mg/L)	200.7	0.01
Sodio (mg/L)	200.7	0.01
Sólidos Suspendidos Totales (TSS) (mg/L)	160.2	5.0
Sulfato (mg/L)	375.4	1.0
TOC (mg/L)	415.1	0.1
Turbiedad (NTU)	180.1	0.05
Metales		
Arsenico (ug/L)	200.9	0.4
Bario (ug/L)	200.7	50
Cadmio (ug/L)	200.7	2
Cromio (ug/L)	200.7	2
Cobre (ug/L)	200.7	10
Hierro (ug/L)	200.7	20
Plomo (ug/L)	200.7	5
Manganeso (ug/L)	200.7	5
Mercurio (ug/L)	245.1	0.2
Selenio (ug/L)	200.9	1
Plata (ug/L)	200.7	2
Zinc (ug/L)	200.7	5

Tabla 4-2. Resumen de Datos de Calidad de Agua en la Estación 2 del Estuario del RGA

Parámetro	Unidades	Periodo	N	Media	Desviación Estandar	Mínimo	Máximo	Estándares de Calidad de Agua[1]
Temperatura	°C	1	22	25.30	1.21	22.41	27.55	32.2
		2	11	25.07	1.82	22.06	27.44	
		3	12	25.38	1.10	23.81	26.93	
		Total	45	25.26	1.33	22.06	27.55	
pH	Unidades	1	22	7.78	0.17	7.52	8.24	6.0 - 9.0
		2	11	7.71	0.16	7.57	8.02	
		3	12	7.74	0.15	7.41	7.91	
		Total	45	7.75	0.16	7.41	8.24	
Oxígeno Disuelto	mg/L	1	22	7.91	0.52	7.24	9.66	5.0
		2	11	8.03	0.29	7.68	8.78	
		3	12	7.86	0.42	7.30	8.58	
		Total	45	7.93	0.44	7.24	9.66	
Conductividad	mS/cm	1	22	0.26	0.05	0.17	0.36	(0.07)
		2	11	0.23	0.04	0.17	0.28	
		3	12	0.26	0.02	0.24	0.31	
		Total	45	0.25	0.04	0.17	0.36	
Salinidad	ppt (‰)	1	22	0.12	0.04	0.08	0.20	
		2	11	0.11	0.02	0.09	0.14	
		3	12	0.13	0.01	0.11	0.15	
		Total	45	0.12	0.03	0.08	0.20	
Sólidos Disueltos Totales (TDS)	g/L	1	22	0.17	0.03	0.11	0.23	0.5
		2	11	0.15	0.02	0.11	0.18	
		3	12	0.17	0.01	0.15	0.20	
		Total	45	0.16	0.03	0.11	0.23	
Amonio	mg/L	1	10	0.11	0.06	0.05	0.23	1.0
		2	11	0.08	0.05	0.05	0.17	
		3	12	0.07	0.04	0.05	0.15	
		Total	33	0.08	0.05	0.05	0.23	
Demanda Bioquímica de Oxígeno (BOD_5)	mg/L	1	22	1.78	0.95	0.50	3.20	(2.0 -15.0)
		2	11	1.39	1.13	0.50	4.40	
		3	12	2.14	1.48	0.50	5.40	
		Total	45	1.78	1.16	0.50	5.40	
Bromuro	mg/L	1	22	4.40	4.91	1.00	14.70	
		2	11	1.00	0.00	1.00	1.00	
		3	12	0.46	0.48	0.05	1.00	
		Total	45	2.52	3.88	0.05	14.70	
Calcio	mg/L	1	22	37.40	12.12	22.40	73.00	(13.0 - 15.0)
		2	11	29.75	3.10	24.00	34.80	
		3	12	35.85	5.28	29.30	46.30	
		Total	45	35.12	9.45	22.40	73.00	
Cloruro	mg/L	1	22	12.06	4.14	7.98	22.97	250.0
		2	11	9.82	1.75	7.31	12.20	
		3	10	9.75	1.09	8.40	11.50	
		Total	43	10.95	3.30	7.31	22.97	
Demanda Química de Oxígeno (COD)	mg/L	1	22	10.70	9.18	2.50	40.23	
		2	11	6.23	6.94	1.50	25.00	
		3	12	9.50	8.21	2.50	24.00	
		Total	45	9.29	8.45	1.50	40.23	
Fluoruro	mg/L	1	22	0.09	0.03	0.01	0.13	0.70
		2	11	0.09	0.05	0.01	0.17	
		3	11	0.09	0.02	0.06	0.14	
		Total	44	0.09	0.03	0.01	0.17	
ortho-Fosfato	mg/L	1	22	0.32	0.65	0.01	2.94	(0.01 - 0.5)
		2	11	0.11	0.09	0.01	0.26	
		3	12	0.09	0.13	0.02	0.48	

Tabla 4-2. Resumen de Datos de Calidad de Agua en la Estación 2 del Estuario del RGA

Parámetro	Unidades	Periodo	N	Media	Desviación Estandar	Mínimo	Máximo	Estándares de Calidad de Agua[1]
		Total	45	0.20	0.47	0.01	2.94	
Fosforo Total	mg/L	1	22	0.32	0.60	0.01	2.92	1.00
		2	10	0.20	0.14	0.08	0.54	
		3	12	0.10	0.06	0.02	0.19	
		Total	44	0.23	0.44	0.01	2.92	
Magnesio	mg/L	1	22	5.89	1.33	1.80	8.90	(4.0)
		2	11	5.22	0.95	3.22	6.81	
		3	9	4.49	1.77	0.01	6.00	
		Total	42	5.41	1.43	0.01	8.90	
Nitrato (NO_3)	mg/L	1	20	0.67	0.22	0.25	1.16	(0.23)
		2	11	0.60	0.24	0.27	0.95	
		3	12	0.65	0.64	0.30	2.64	
		Total	43	0.65	0.38	0.25	2.64	
Nitrito (NO_2)	mg/L	1	20	0.01	0.00	0.01	0.02	(0.01 - 0.50)
		2	11	0.01	0.00	0.01	0.02	
		3	12	0.01	0.00	0.01	0.01	
		Total	43	0.01	0.00	0.01	0.02	
$NO_2 + NO_3$	mg/L	1	22	0.66	0.22	0.25	1.16	10.0
		2	11	0.61	0.24	0.27	0.95	
		3	12	0.66	0.64	0.30	2.65	
		Total	45	0.65	0.37	0.25	2.65	
Nitrógeno Orgánico Total (TON)	mg/L	1	10	0.35	0.20	0.10	0.74	(0.1 - 9.0)
		2	11	0.38	0.20	0.10	0.70	
		3	12	0.45	0.22	0.10	0.75	
		Total	33	0.39	0.21	0.10	0.75	
Nitrógeno Kjedahl Total (TKN)	mg/L	1	10	0.44	0.20	0.21	0.85	
		2	11	0.42	0.18	0.21	0.70	
		3	12	0.49	0.17	0.26	0.75	
		Total	33	0.45	0.18	0.21	0.85	
Potasio	mg/L	1	22	2.40	2.03	1.44	11.36	(1.3 - 2.3)
		2	11	2.45	1.25	1.40	5.78	
		3	12	1.32	0.66	0.34	3.10	
		Total	45	2.13	1.63	0.34	11.36	
Sodio	mg/L	1	22	11.22	9.19	2.90	50.00	(5.1 - 6.3)
		2	11	8.68	1.20	6.71	10.40	
		3	12	7.48	0.97	5.71	8.94	
		Total	45	9.60	6.60	2.90	50.00	
Sólidos Suspendidos Totales (TSS)	mg/L	1	22	40.20	72.37	2.50	282.00	(10 -110)
		2	11	32.86	46.82	2.50	166.00	
		3	12	17.33	14.01	2.50	47.00	
		Total	45	32.31	56.03	2.50	282.00	
Sulfato	mg/L	1	22	12.72	5.57	4.20	31.08	250.0
		2	11	12.88	3.93	4.76	18.70	
		3	12	5.54	3.40	0.50	10.00	
		Total	45	10.85	5.63	0.50	31.08	
Carbono Orgánico Total (TOC)	mg/L	1	22	3.22	2.85	1.30	12.00	(1 - 10)
		2	11	1.74	0.69	1.07	3.06	
		3	11	1.96	0.73	1.08	3.22	
		Total	44	2.54	2.17	1.07	12.00	
Turbiedad	Unidades Nefelométricas	1	20	52.08	112.28	3.60	512.00	50.0
		2	11	42.33	66.31	2.38	230.00	
		3	12	12.27	12.75	2.10	49.60	
		Total	43	38.48	84.15	2.10	512.00	

[1] Estándares de Calidad de Agua (JCA, 1990). Valores en paréntesis son valores típicos (Maidment, 1993).

Tabla 4-3. Resumen de Datos de Calidad de Agua en la Estación 5 del Estuario del RGA

Parámetro	Unidades	Periodo	N	Media	Desviación Estandar	Mínimo	Máximo	Estándares de Calidad de Agua[1]
Temperatura	°C	1	22	25.64	1.19	23.24	27.70	32.2
		2	11	25.40	1.99	22.26	28.13	
		3	12	26.02	1.15	24.60	28.05	
		Total	45	25.69	1.40	22.26	28.13	
pH	Unidades	1	22	7.77	0.14	7.58	8.15	6.0 - 9.0
		2	11	7.64	0.18	7.33	7.98	
		3	12	7.70	0.13	7.37	7.87	
		Total	45	7.72	0.16	7.33	8.15	
Oxígeno Disuelto	mg/L	1	22	7.78	0.47	6.82	8.57	5.0
		2	11	7.84	0.32	7.22	8.37	
		3	12	7.35	0.32	6.78	7.79	
		Total	45	7.68	0.44	6.78	8.57	
Conductividad	mS/cm	1	22	0.28	0.09	0.17	0.55	(0.07)
		2	11	0.24	0.06	0.17	0.41	
		3	12	0.29	0.09	0.24	0.55	
		Total	45	0.27	0.08	0.17	0.55	
Salinidad	ppt (‰)	1	22	0.13	0.06	0.08	0.30	
		2	11	0.12	0.03	0.09	0.20	
		3	12	0.14	0.04	0.11	0.27	
		Total	45	0.13	0.05	0.08	0.30	
Sólidos Disueltos Totales (TDS)	g/L	1	22	0.18	0.05	0.11	0.31	0.5
		2	11	0.15	0.04	0.11	0.26	
		3	12	0.18	0.05	0.15	0.35	
		Total	45	0.17	0.05	0.11	0.35	
Amonio	mg/L	1	10	0.11	0.07	0.05	0.26	1.0
		2	11	0.06	0.02	0.05	0.12	
		3	12	0.10	0.12	0.05	0.47	
		Total	33	0.09	0.08	0.05	0.47	
Demanda Bioquímica de Oxígeno (BOD_5)	mg/L	1	22	1.77	0.97	0.50	3.00	(2.0 -15.0)
		2	11	1.42	1.14	0.50	4.40	
		3	12	2.05	1.15	0.50	5.10	
		Total	45	1.76	1.06	0.50	5.10	
Bromuro	mg/L	1	22	2.88	4.16	1.00	19.40	
		2	11	1.00	0.00	1.00	1.00	
		3	12	0.49	0.46	0.05	1.00	
		Total	45	1.78	3.08	0.05	19.40	
Calcio	mg/L	1	22	36.52	11.09	19.40	58.30	(13.0 - 15.0)
		2	11	30.22	5.29	22.40	39.10	
		3	12	35.11	5.58	29.40	48.10	
		Total	45	34.60	8.92	19.40	58.30	
Cloruro	mg/L	1	22	16.94	14.30	8.25	65.10	250.0
		2	11	12.20	8.09	7.04	36.00	
		3	12	13.61	8.61	8.80	37.60	
		Total	45	14.89	11.63	7.04	65.10	
Demanda Química de Oxígeno (COD)	mg/L	1	22	6.54	5.15	2.50	26.28	
		2	11	8.68	6.76	2.50	22.00	
		3	12	11.00	6.56	2.50	21.00	
		Total	45	8.25	6.12	2.50	26.28	
Fluoruro	mg/L	1	22	0.11	0.07	0.01	0.33	0.70
		2	11	0.08	0.04	0.01	0.17	
		3	11	0.17	0.25	0.06	0.92	
		Total	44	0.12	0.14	0.01	0.92	
ortho-Fosfato	mg/L	1	22	0.20	0.29	0.01	1.30	(0.01 - 0.5)
		2	11	0.08	0.07	0.01	0.24	
		3	12	0.07	0.07	0.02	0.28	

Tabla 4-3. Resumen de Datos de Calidad de Agua en la Estación 5 del Estuario del RGA

Parámetro	Unidades	Periodo	N	Media	Desviación Estandar	Mínimo	Máximo	Estándares de Calidad de Agua[1]
		Total	45	0.13	0.21	0.01	1.30	
Fosforo Total	mg/L	1	22	0.33	0.59	0.01	2.84	1.00
		2	10	0.12	0.08	0.04	0.29	
		3	12	0.11	0.09	0.02	0.31	
		Total	44	0.22	0.43	0.01	2.84	
Magnesio	mg/L	1	22	6.35	1.66	2.40	10.44	(4.0)
		2	11	5.46	0.81	4.18	6.75	
		3	9	4.67	1.95	0.01	7.32	
		Total	42	5.76	1.67	0.01	10.44	
Nitrato (NO_3)	mg/L	1	20	0.65	0.21	0.22	1.09	(0.23)
		2	11	0.59	0.25	0.26	0.94	
		3	12	0.51	0.18	0.28	0.84	
		Total	43	0.60	0.22	0.22	1.09	
Nitrito (NO_2)	mg/L	1	20	0.01	0.01	0.01	0.06	(0.01 - 0.50)
		2	11	0.01	0.00	0.01	0.02	
		3	12	0.01	0.00	0.01	0.01	
		Total	43	0.01	0.01	0.01	0.06	
$NO_2 + NO_3$	mg/L	1	22	0.64	0.21	0.22	1.10	10.0
		2	11	0.59	0.25	0.26	0.95	
		3	12	0.51	0.18	0.28	0.84	
		Total	45	0.60	0.22	0.22	1.10	
Nitrógeno Orgánico Total (TON)	mg/L	1	10	0.38	0.24	0.10	0.82	(0.1 - 9.0)
		2	11	0.40	0.20	0.10	0.85	
		3	12	0.41	0.18	0.10	0.74	
		Total	33	0.40	0.20	0.10	0.85	
Nitrógeno Kjedahl Total (TKN)	mg/L	1	10	0.46	0.26	0.10	0.94	
		2	11	0.42	0.17	0.22	0.85	
		3	12	0.46	0.21	0.10	0.83	
		Total	33	0.45	0.21	0.10	0.94	
Potasio	mg/L	1	22	2.17	0.50	1.46	3.36	(1.3 - 2.3)
		2	11	2.03	0.53	1.30	2.90	
		3	12	1.85	1.45	0.47	5.98	
		Total	45	2.05	0.85	0.47	5.98	
Sodio	mg/L	1	22	12.91	7.52	5.20	37.75	(5.1 - 6.3)
		2	11	9.95	4.25	6.69	22.10	
		3	12	9.76	4.87	6.57	22.70	
		Total	45	11.35	6.28	5.20	37.75	
Sólidos Suspendidos Totales (TSS)	mg/L	1	22	44.17	74.93	4.80	267.00	(10 -110)
		2	11	34.25	50.85	6.00	183.00	
		3	12	16.16	12.78	2.50	49.00	
		Total	45	34.28	58.71	2.50	267.00	
Sulfato	mg/L	1	22	13.02	5.74	2.81	25.40	250.0
		2	11	13.88	3.03	9.90	18.70	
		3	12	6.08	4.48	0.50	14.30	
		Total	45	11.38	5.78	0.50	25.40	
Carbono Orgánico Total (TOC)	mg/L	1	22	3.34	3.05	1.20	12.30	(1 - 10)
		2	11	1.63	0.59	1.09	2.92	
		3	11	1.74	0.60	1.04	3.07	
		Total	44	2.51	2.32	1.04	12.30	
Turbiedad	Unidades Nefelométricas	1	20	55.89	115.30	3.80	525.00	50.0
		2	11	48.39	74.19	2.35	260.00	
		3	12	12.98	11.80	2.56	47.40	
		Total	43	42.00	87.77	2.35	525.00	

[1] Estándares de Calidad de Agua (JCA, 1990). Valores en paréntesis son valores tipicos (Maidment, 1993).

Tabla 4-4. Resumen de Datos de Calidad de Agua en la Estación 9 del Estuario del RGA

Parámetro	Unidades	Periodo	N	Media	Desviación Estandar	Mínimo	Máximo	Estándares de Calidad de Agua[1]
Temperatura	°C	1	22	26.15	1.24	24.27	28.67	32.2
		2	11	25.74	2.08	22.47	28.51	
		3	12	26.62	1.27	24.43	28.63	
		Total	45	26.18	1.49	22.47	28.67	
pH	Unidades	1	22	7.77	0.15	7.57	8.17	6.0 - 9.0
		2	11	7.62	0.14	7.37	7.81	
		3	12	7.72	0.14	7.40	7.87	
		Total	45	7.72	0.15	7.37	8.17	
Oxígeno Disuelto	mg/L	1	22	7.58	0.63	6.63	9.26	5.0
		2	11	7.73	0.27	7.35	8.19	
		3	12	7.30	0.48	6.21	8.02	
		Total	45	7.54	0.54	6.21	9.26	
Conductividad	mS/cm	1	22	0.43	0.34	0.03	1.55	(0.07)
		2	11	0.40	0.55	0.17	2.06	
		3	12	0.47	0.46	0.25	1.87	
		Total	45	0.43	0.42	0.03	2.06	
Salinidad	ppt (‰)	1	22	0.22	0.19	0.09	0.90	
		2	11	0.20	0.30	0.09	1.10	
		3	12	0.24	0.25	0.12	1.01	
		Total	45	0.22	0.23	0.09	1.10	
Sólidos Disueltos Totales (TDS)	g/L	1	22	0.28	0.21	0.13	1.01	0.5
		2	11	0.25	0.35	0.11	1.31	
		3	12	0.30	0.30	0.16	1.20	
		Total	45	0.28	0.27	0.11	1.31	
Amonio	mg/L	1	10	0.11	0.07	0.05	0.23	1.0
		2	11	0.07	0.03	0.05	0.14	
		3	12	0.08	0.04	0.05	0.15	
		Total	33	0.08	0.05	0.05	0.23	
Demanda Bioquímica de Oxígeno (BOD_5)	mg/L	1	22	2.23	2.36	0.50	12.00	(2.0 -15.0)
		2	11	1.30	1.02	0.50	4.00	
		3	12	2.02	1.48	0.50	6.00	
		Total	45	1.95	1.89	0.50	12.00	
Bromuro	mg/L	1	22	2.85	4.78	1.00	22.30	
		2	11	1.00	0.00	1.00	1.00	
		3	12	0.81	0.34	0.24	1.00	
		Total	45	1.86	3.45	0.24	22.30	
Calcio	mg/L	1	22	36.47	10.50	21.00	53.30	(13.0 - 15.0)
		2	11	30.34	8.74	24.70	55.00	
		3	12	36.18	7.99	28.40	54.40	
		Total	45	34.89	9.63	21.00	55.00	
Cloruro	mg/L	1	22	65.05	94.31	9.37	362.00	250.0
		2	11	16.10	11.78	7.31	48.60	
		3	12	67.46	135.59	11.60	481.90	
		Total	45	53.72	96.66	7.31	481.90	
Demanda Química de Oxígeno (COD)	mg/L	1	22	7.25	6.87	2.50	35.60	
		2	11	11.68	9.03	2.50	29.00	
		3	12	12.17	8.89	2.50	34.00	
		Total	45	9.65	8.15	2.50	35.60	
Fluoruro	mg/L	1	22	0.11	0.06	0.01	0.25	0.70
		2	11	0.08	0.04	0.01	0.15	
		3	11	0.10	0.04	0.06	0.20	
		Total	44	0.10	0.05	0.01	0.25	
ortho-Fosfato	mg/L	1	22	0.32	0.52	0.01	2.10	(0.01 - 0.5)
		2	11	0.12	0.12	0.03	0.37	
		3	12	0.07	0.05	0.02	0.23	

Tabla 4-4. Resumen de Datos de Calidad de Agua en la Estación 9 del Estuario del RGA

Parámetro	Unidades	Periodo	N	Media	Desviación Estandar	Mínimo	Máximo	Estándares de Calidad de Agua[1]
		Total	45	0.20	0.38	0.01	2.10	
Fosforo Total	mg/L	1	22	0.37	0.62	0.01	2.85	1.00
		2	10	0.14	0.10	0.06	0.35	
		3	12	0.11	0.09	0.02	0.28	
		Total	44	0.25	0.45	0.01	2.85	
Magnesio	mg/L	1	22	8.83	4.86	2.20	23.18	(4.0)
		2	11	7.26	6.42	4.20	26.50	
		3	9	8.13	10.28	0.01	35.10	
		Total	42	8.27	6.57	0.01	35.10	
Nitrato (NO_3)	mg/L	1	20	0.66	0.21	0.31	1.13	(0.23)
		2	11	0.58	0.26	0.24	0.94	
		3	12	0.84	1.28	0.24	4.87	
		Total	43	0.69	0.69	0.24	4.87	
Nitrito (NO_2)	mg/L	1	20	0.01	0.00	0.01	0.02	(0.01 - 0.50)
		2	11	0.01	0.00	0.01	0.02	
		3	12	0.01	0.00	0.01	0.01	
		Total	43	0.01	0.00	0.01	0.02	
$NO_2 + NO_3$	mg/L	1	22	0.64	0.21	0.31	1.14	10.0
		2	11	0.58	0.26	0.24	0.95	
		3	12	0.84	1.28	0.24	4.87	
		Total	45	0.68	0.68	0.24	4.87	
Nitrógeno Orgánico Total (TON)	mg/L	1	10	0.41	0.32	0.10	0.85	(0.1 - 9.0)
		2	11	0.45	0.20	0.10	0.79	
		3	12	0.39	0.12	0.20	0.60	
		Total	33	0.41	0.21	0.10	0.85	
Nitrógeno Kjedahl Total (TKN)	mg/L	1	10	0.50	0.31	0.10	1.08	
		2	11	0.48	0.17	0.21	0.79	
		3	12	0.44	0.12	0.23	0.64	
		Total	33	0.47	0.20	0.10	1.08	
Potasio	mg/L	1	22	3.42	2.25	1.44	9.36	(1.3 - 2.3)
		2	11	3.84	5.82	1.20	21.30	
		3	12	3.02	2.91	0.83	11.00	
		Total	45	3.42	3.51	0.83	21.30	
Sodio	mg/L	1	22	43.66	49.81	6.80	167.00	(5.1 - 6.3)
		2	11	11.12	6.16	7.00	28.70	
		3	12	28.85	41.20	7.11	142.00	
		Total	45	31.76	42.39	6.80	167.00	
Sólidos Suspendidos Totales (TSS)	mg/L	1	22	42.12	66.73	4.60	247.00	(10 -110)
		2	11	43.27	50.90	5.00	188.00	
		3	12	23.33	12.39	7.70	45.00	
		Total	45	37.39	53.16	4.60	247.00	
Sulfato	mg/L	1	22	20.40	10.42	9.10	48.20	250.0
		2	11	22.74	24.35	5.76	85.90	
		3	12	17.59	32.49	0.50	120.00	
		Total	45	20.22	21.31	0.50	120.00	
Carbono Orgánico Total (TOC)	mg/L	1	22	3.03	2.92	0.66	12.40	(1 - 10)
		2	11	1.77	0.59	1.15	3.13	
		3	11	1.78	0.63	0.98	3.06	
		Total	44	2.40	2.18	0.66	12.40	
Turbiedad	Unidades Nefelométricas	1	20	53.67	109.89	3.40	500.00	50.0
		2	11	54.93	75.89	5.10	270.00	
		3	12	15.87	11.44	3.52	48.80	
		Total	43	43.44	84.68	3.40	500.00	

[1] Estándares de Calidad de Agua (JCA, 1990). Valores en paréntesis son valores típicos (Maidment, 1993).

ARCADIS

Appendix D

Chemical of Potential Concern (COPC) Database

Chemical Abstract Services Number	Chemical of Potential Concern	Molecular Weight	Melting Point	Vapor Pressure	Aqueous Solubility	Henry's Law Constant	Diffusivity in Air	Diffusivity in Water	Log Octanol-Water Partitioning Coefficient	Organic Carbon Normalized Soil Sorption Coefficient	Soil to Water Partition Coefficient	Suspended Sediment to Surface Water Partition Coefficient	Bottom Sediment to Sediment Pore Water Partition Coefficient	Soil Loss Constant due to Degradation
		g/mole	Kelvin	atm	mg/L	atm-m^3/mole	cm^2/s	cm^2/s	unitless	mL/g	cm^3/g	L/kg	cm^3/g	1/yr
CAS_NUMBER	**COPC_NAME**	**param_MW**	**param_T_m**	**param_V_p**	**param_S**	**param_H**	**param_D_a**	**param_Dw**	**param_K_ow**	**param_K_oc**	**param_Kd_s**	**param_Kd_sw**	**param_Kd_bs**	**param_K_sg**
83-32-9	Acenaphthene	154.212	366.15	3.29E-6	3.6	0.00016	0.001	1E-5	7943.28234724282	4900	1100	367.5	196	2.48
280-96-8	Acenaphthylene	152.21	366	1E-6	16	1.1E-4	.0438669	7.53E-6	12589	6123	1500	0	0	0
120-12-7	Anthracene	178.234	493.15	3.55E-9	0.043	6.5E-5	0.001	1E-5	31622.7766016838	23500	4500	1762.5	940	0.55
7440-36-0	Antimony	124.77	903.15	0	0	0	0	0	0	0	45	45	45	0
11097-69-1	Aroclor 1254	326.44	283.1	1.01E-7	0.043	0.000283	0.001	1E-5	3162277.66016838	2453465.75	24534.66	184009.93	98138.63	0.03
7440-38-2	Arsenic	77.95	1093.15	3.3E-12	0	0	0	0	0	0	29	29	29	0
56-55-3	Benzo(a)anthracene	228.294	357.15	1.45E-10	0.0094	3.4E-6	0.051	9E-6	501187.233627273	358000	60000	26850	14320	0.37
50-32-8	Benzo(a)pyrene	252.32	453.15	7.24E-12	0.0016	1.1E-6	0.043	9E-6	1000000	969000	160000	72675	38760	0.48
205-99-2	Benzo(b)fluoranthene	252.32	440.65	6.58E-10	0.0015	0.000111	0.001	1E-5	1330454.41797809	1047543.34	10475.43	78565.75	41901.7335931264	0.41
207-08-9	Benzo(k)fluoranthene	252.32	493.15	2.63E-12	0.0008	8.3E-7	0.001	1E-5	1258925.41179417	992156.08	190000	74411.7	39686.24	0.12
7440-41-7	Beryllium	9.01	1573.15	5.58E-12	0	0	0	0	0	0	790	790	790	0
7440-43-9	Cadmium	112.4	593.15	5.45E-12	0	0	0	0	0	0	75	75	75	0
7440-47-3	Chromium	51.996	2173.15	5.58E-12	0	0	0	0	0	0	19	19	19	0
18540-29-9	Chromium, hexavalent	51.996	2173.15	0	1.69E6	0	0	0	0	0	19	19	19	0
218-01-9	Chrysene	228.294	533.15	8.16E-12	0.0063	9.5E-5	0.001	1E-5	501187.233627273	401217.62	60000	30091.32	16048.7	0.25
007440-48-4	Cobalt	58.9	1773.15	0	0	0	0	0	0	0	45	45	45	0
7440-50-8	Copper	63.55	1356	5.58E-12	0	0	0	0	0	0	35	35	35	0
53-70-3	Dibenz(a,h)anthracene	278.33	543.15	1.32E-13	0.0025	1.5E-8	0.001	1E-5	3162277.66016838	1790000	580000	134250	71600	0.27
206-44-0	Fluoranthene	202.256	383.15	1.03E-8	0.21	1.6E-5	0.001	1E-5	100000	49100	11000	3682.5	1964	0.57
86-73-7	Fluorene	166.223	383.15	8.29E-7	2	6.4E-5	0.001	1E-5	15848.9319246112	7710	2100	578.25	308.4	4.22
35822-46-9	HeptaCDD, 1,2,3,4,6,7,8-	425.31	537.7	7.37E-15	2.4E-6	1.2E-5	0.0904888336173498	8E-6	100000000	61659500.19	616595	4624462.51	2466380	0.03
67562-39-4	HeptaCDF, 1,2,3,4,6,7,8-	409.31	509.7	4.61E-14	1.35E-6	1.41E-5	0.0203183391320296	8E-6	25118864.3150958	15488166.19	154881.66	1161612.46	619526.65	0.03
55673-89-7	HeptaCDF, 1,2,3,4,7,8,9-	409.31	495.2	4.04E-13	1.4E-6	1.4E-5	0.0203183391320296	8E-6	25118864.3150958	15488166.19	154881.66	1161612.46	619526.65	0.03
39227-28-6	HexaCDD, 1,2,3,4,7,8-	390.87	547.2	5E-14	4.42E-6	1.07E-5	0.094391224035758	8E-6	63095734.4480194	38904514.5	389045.14	2917838.59	1556180.58	0.03
57653-85-7	HexaCDD, 1,2,3,6,7,8-	390.87	558.7	4.73E-14	4.4E-6	1.1E-5	0.094391224035758	8E-6	19952623.1496888	12302687.71	123026.88	922701.58	492107.51	0.03
19408-74-3	HexaCDD, 1,2,3,7,8,9-	390.87	516.7	6.45E-14	4.4E-6	1.1E-5	0.094391224035758	8E-6	19952623.1496888	12302687.71	123026.88	922701.58	492107.51	0.03
70648-26-9	HexaCDF, 1,2,3,4,7,8-	374.87	499.2	3.16E-13	8.25E-6	1.43E-5	0.0212311754528064	8E-6	10000000	6165950.02	61659.5	462446.25	246638	0.03
57117-44-9	HexaCDF, 1,2,3,6,7,8-	374.87	505.7	2.89E-13	1.77E-5	7.31E-6	0.0212311754528064	8E-6	10000000	6165950.02	61659.5	462446.25	246638	0.03
72918-21-9	HexaCDF, 1,2,3,7,8,9-	374.87	520.7	3.68E-13	1.3E-5	1.1E-5	0.0212311754528064	8E-6	10000000	6165950.02	61659.5	462446.25	246638	0.03
60851-34-5	HexaCDF, 2,3,4,6,7,8-	374.87	512.7	2.63E-13	1.3E-5	1.1E-5	0.0212311754528064	8E-6	10000000	6165950.02	61659.5	462446.25	246638	0.03
7647-01-0	Hydrogen chloride	36.46	158.98	46.6	720000	0.00235870614035088	0	0	0	0	0	0	0	0
7664-39-3	Hydrogen fluoride	20.01	186.6	1.21	922	1.4E-5	0	0	1.698	150	150	150	150	0
193-39-5	Indeno(1,2,3-cd) pyrene	276.34	433.15	1.32E-13	2.2E-5	1.6E-6	0.001	1E-5	3981071.70553498	3076663.5	530000	230749.76	123066.54	0.35
7439-92-1	Lead	209.21	603.15	3.97E-12	0	0	0	0	0	0	900	900	900	0
7439-96-5	Manganese	54.94	1517	5.58E-12	0	0	0	0	0	0	65	65	65	0
7487-94-7	Mercuric chloride	271.52	550.1	0.00012	69000	7.1E-10	0	0	0.609536897240169	0	58000	100000	50000	0
7439-97-6	Mercury	200.59	234.23	2.63E-6	0.06	0.0071	0.0109	3.01E-5	0	0	1000	1000	3000	0
22967-92-6	Methyl mercury	216	0	0	0	4.7E-7	0	0	0	0	7000	100000	3000	0
91-57-6	Methylnaphthalene, 2-	142.2	308	7.24E-5	24.6	5.18E-4	4.8E-2	7.84E-6	7.24E3	8500	950	950	950	0
0074939-98-7	Molybdenum	95.9	2893.15	0	0	0	0	0	0	0	2.0E+01	2.0E+01	2.0E+01	0
91-20-3	Naphthalene	128.18	353.15	0.000112	31	0.00048	0.059	7.5E-6	1995.26231496888	1190	300	89.25	47.6	5.27
7440-02-0	Nickel	58.71	1773.15	5.58E-12	0	0	0	0	0	0	65	65	65	0
3268-87-9	OctaCDD, 1,2,3,4,6,7,8,9-	460.76	598.7	1.09E-15	7.4E-8	6.75E-6	0.0869381516281836	8E-6	158489319.246111	97723722.1	977237.22	7329279.16	3908948.88	0.03

Chemical Abstract Services Number	Chemical of Potential Concern	Molecular Weight	Melting Point	Vapor Pressure	Aqueous Solubility	Henry's Law Constant	Diffusivity in Air	Diffusivity in Water	Log Octanol-Water Partitioning Coefficient	Organic Carbon Normalized Soil Sorption Coefficient	Soil to Water Partition Coefficient	Suspended Sediment to Surface Water Partition Coefficient	Bottom Sediment to Sediment Pore Water Partition Coefficient	Soil Loss Constant due to Degradation
		g/mole	Kelvin	atm	mg/L	atm-m^3/mole	cm^2/s	cm^2/s	unitless	mL/g	cm^3/g	L/kg	cm^3/g	1/yr
CAS_NUMBER	**COPC_NAME**	**param_MW**	**param_T_m**	**param_V_p**	**param_S**	**param_H**	**param_D_a**	**param_Dw**	**param_K_ow**	**param_K_oc**	**param_Kd_s**	**param_Kd_sw**	**param_Kd_bs**	**param_K_sg**
39001-02-0	OctaCDF, 1,2,3,4,6,7,8,9-	444.76	532.2	4.93E-15	1.16E-6	1.88E-6	0.0194917809291022	8E-6	100000000	61659500.19	616595	4624462.51	2466380	0.03
40321-76-4	PentaCDD, 1,2,3,7,8-	356.42	513.7	5.79E-13	0.000118	2.6E-6	0.0988477422976492	8E-6	4365158.32240167	2691534.8	26915.35	201865.11	107661.39	0.03
57117-41-6	PentaCDF, 1,2,3,7,8-	340.42	499.2	2.23E-12	0.00024	5E-6	0.0222795722631019	8E-6	6165950.01861483	3801893.96	38018.94	285142.05	152075.76	0.03
57117-31-4	PentaCDF, 2,3,4,7,8-	340.42	469.4	3.42E-12	0.000236	4.98E-6	0.0222795722631019	8E-6	3162277.66016838	1949844.6	19498.45	146238.34	77993.78	0.03
85-01-8	Phenanthrene	178.234	372.15	1.45E-7	1.1	2.3E-5	0.001	1E-5	31622.7766016838	26532.61	3700	1989.95	1061.3	1.26
129-00-0	Pyrene	202.256	423.15	6.05E-9	1.4	1.1E-5	0.001	1E-5	79432.8234724283	68000	9500	5100	2720	0.13
7782-49-2	Selenium	78.96	493.15	1.87E-13	0	0	0	0	0	0	5	5	5	0
1746-01-6	TetraCDD, 2,3,7,8-	321.98	578.7	1.97E-12	1.93E-5	3.29E-5	0.104	5.6E-6	6309573.44480193	3890451.45	38904.51	291783.86	155618.06	0.03
51207-31-9	TetraCDF, 2,3,7,8-	305.98	500.7	1.97E-11	0.000419	1.44E-5	0.0235	6.01E-6	1258925.41179417	776247.12	7762.47	58218.53	31049.88	0.03
007440-31-5	Tin	121	286.35	0	0	0	0	0	0	250	250	0	0	0
7440-62-2	Vanadium	50.94	2183	0	0	0	0	0	0	0	1000	1000	1000	0
7440-66-6	Zinc	65.37	693.15	5.09E-12	0	0	0	0	0	0	62	62	62	0

Chemical Abstract Services Number	Chemical of Potential Concern	Fraction of COPC air Concentration in Vapor Phase	Root Concentration Factor	Root Vegetable to Soil Bioconcentration Factor	Leafy Vegetable to Soil Bioconcentration Factor	Forage to Soil Bioconcentration Factor	Air to Leafy Vegetable Biotransfer Factor	Air to Forage Biotrasfer Factor	Biotrasfer Factor for Milk	Biotransfer Factor for Beef	Biotransfer Factor for Pork
		unitless	ug/g WW plant / ug/mL Soil water	ug/g DW plant / ug/g soil	ug/g DW plant / ug/g soil	ug/g DW plant / ug/g soil	ug/g DW plant / ug/g air	ug/g DW plant / ug/g air	day/kg	day/kg	day/kg
CAS_NUMBER	**COPC_NAME**	**param_f_v**	**param_RCF**	**param_br_root_veg**	**param_br_leafy_veg**	**param_br_forage**	**param_bv_leafy_veg**	**param_bv_forage**	**param_ba_milk**	**param_ba_beef**	**param_ba_pork**
83-32-9	Acenaphthene	1	234	0.213	0.216	0.216	4.97	4.97	0.00512000035782844	0.0243200016996851	0.0294400020575135
280-96-8	Acenaphthylene	1	0	0	.27	.27	0	0	0	0	0
120-12-7	Anthracene	0.998	678	0.151	0.0971	0.0971	53.3	53.3	0.00711721345857463	0.0338067639282295	0.0409239773868041
7440-36-0	Antimony	0	0	0.03	0.0319	0.2	0	0	0.0001	0.001	0
11097-69-1	Aroclor 1254	0.992	23499	0.958	0.00678	0.00678	1652	1652	0.00652093680331813	0.0309744498157611	0.0374953866190793
7440-38-2	Arsenic	0	0	0.008	0.00633	0.036	0	0	6E-5	0.002	0
56-55-3	Benzo(a)anthracene	0.483	5689	0.0948	0.0197	0.0197	19338	19338	0.00840523753621224	0.0399248782970081	0.0483301158332204
50-32-8	Benzo(a)pyrene	0.294	9684	0.0605	0.0132	0.0132	124742	124742	0.00790787856044744	0.0375624231621253	0.0454703017225728
205-99-2	Benzo(b)fluoranthene	0.966	12065	1.15	0.0112	0.0112	1675	1675	0.00761913673015491	0.0361908994682358	0.0438100361983908
207-08-9	Benzo(k)fluoranthene	0.273	11562	0.0609	0.0115	0.0115	211264	211264	0.00767838689440205	0.0364723377484097	0.0441507246428118
7440-41-7	Beryllium	0	0	0.0015	0.00258	0.01	0	0	9E-7	0.001	0
7440-43-9	Cadmium	0	0	0.064	0.125	0.364	0	0	6.5E-6	0.00012	0.000191489361702128
7440-47-3	Chromium	0	0	0.0045	0.00488	0.0075	0	0	0.0015	0.0055	0
18540-29-9	Chromium, hexavalent	0	0	0.0045	0.00488	0.0075	0	0	0.0015	0.0055	0
218-01-9	Chrysene	0.744	5689	0.0948	0.0197	0.0197	692	692	0.00840523753621224	0.0399248782970081	0.0483301158332204
007440-48-4	Cobalt	0	0	1.3E-03	1.10E-01	2.8E-01	0	0	7E-05	1E-04	0.000121053
7440-50-8	Copper	0	0	.25	0	.4	0	0	1.5E-3	1E-2	0
53-70-3	Dibenz(a,h)anthracene	0.055	23499	0.0405	0.00678	0.00678	31175561	31175561	0.00652093680331813	0.0309744498157611	0.0374953866190793
206-44-0	Fluoranthene	0.992	1644	0.15	0.0499	0.0499	738	738	0.00826152062324212	0.0392422229604001	0.0475037435836422
86-73-7	Fluorene	1	398	0.19	0.145	0.145	26	26	0.00616169207896548	0.029268037375086	0.0354297294540515
35822-46-9	HeptaCDD, 1,2,3,4,6,7,8-	0.003	335781	0.545	0.00092	0.00092	910000	910000	0.00184527029824152	0.00876503391664721	0.0106103042148887
67562-39-4	HeptaCDF, 1,2,3,4,6,7,8-	0.01	115892	0.748	0.00205	0.00205	830000	830000	0.00345796020756315	0.016425310985925	0.0198832711934881
55673-89-7	HeptaCDF, 1,2,3,4,7,8,9-	0.057	115892	0.748	0.00205	0.00205	830000	830000	0.00345796020756315	0.016425310985925	0.0198832711934881
39227-28-6	HexaCDD, 1,2,3,4,7,8-	0.024	235535	0.605	0.0012	0.0012	520000	520000	0.00231686106529583	0.0110050900601552	0.013321951125451
57653-85-7	HexaCDD, 1,2,3,6,7,8-	0.029	97063	0.789	0.00234	0.00233	520000	520000	0.00377876593260574	0.0179491381798773	0.021727904112483
19408-74-3	HexaCDD, 1,2,3,7,8,9-	0.016	97063	0.789	0.00234	0.00234	520000	520000	0.00377876593260574	0.0179491381798773	0.021727904112483
70648-26-9	HexaCDF, 1,2,3,4,7,8-	0.049	57023	0.925	0.00348	0.00348	162000	162000	0.00479799721259752	0.0227904867598382	0.0275884839724357
57117-44-9	HexaCDF, 1,2,3,6,7,8-	0.052	57023	0.925	0.00348	0.00348	162000	162000	0.00479799721259752	0.0227904867598382	0.0275884839724357
72918-21-9	HexaCDF, 1,2,3,7,8,9-	0.09	57023	0.925	0.00348	0.00348	162000	162000	0.00479799721259752	0.0227904867598382	0.0275884839724357
60851-34-5	HexaCDF, 2,3,4,6,7,8-	0.055	57023	0.925	0.00348	0.00348	162000	162000	0.00479799721259752	0.0227904867598382	0.0275884839724357
7647-01-0	Hydrogen chloride	1	0	0	0	0	0	0	1.10169148133526E-5	5.23303453634251E-5	6.33472601767777E-5
7664-39-3	Hydrogen fluoride	1	0	0	0	0	0	0	1.92E-5	9.11E-5	.00011
193-39-5	Indeno(1,2,3-cd) pyrene	0.005	28057	0.0529	0.00593	0.00593	373495	373495	0.0061889929977113	0.0293977167391287	0.03558670973684
7439-92-1	Lead	0	0	0.009	0.0136	0.045	0	0	0.00025	0.0003	0
7439-96-5	Manganese	0	0	.5	0	.25	0	0	3.5E-4	4E-4	0
7487-94-7	Mercuric chloride	0.85	0	0.036	0.0145	0	1800	1800	0.002262	0.00522	3.393E-5
7439-97-6	Mercury	1	0	0	0	0	0	0	0	0	0
22967-92-6	Methyl mercury	0	0	0.099	0.0294	0	0	0	0.000338	0.00078	5.07E-6
91-57-6	Methylnaphthalene, 2-	1	218	.229	.227	.227	1.51	1.51	5E-3	3.4E-2	2.86E-2
0074939-98-7	Molybdenum	0	0	3.20E-01	5.10E-01	0	0	0	1.7E-03	1E-03	0.001210526
91-20-3	Naphthalene	1	80.7	0.269	0.479	0.479	0.381	0.381	0.00312571942223865	0.0148471672556336	0.0179728866778722
7440-02-0	Nickel	0	0	0.008	0.00931	0.032	0	0	0.001	0.006	0
3268-87-9	OctaCDD, 1,2,3,4,6,7,8,9-	0.002	478692	0.49	0.000705	0.000705	2360000	2360000	0.00144311184484882	0.00685478126303191	0.00829789310788074

Chemical Abstract Services Number	Chemical of Potential Concern	Fraction of COPC air Concentration in Vapor Phase	Root Concentration Factor	Root Vegetable to Soil Bioconcentration Factor	Leafy Vegetable to Soil Bioconcentration Factor	Forage to Soil Bioconcentration Factor	Air to Leafy Vegetable Biotransfer Factor	Air to Forage Biotrasfer Factor	Biotrasfer Factor for Milk	Biotransfer Factor for Beef	Biotransfer Factor for Pork
		unitless	ug/g WW plant / ug/mL Soil water	ug/g DW plant / ug/g soil	ug/g DW plant / ug/g soil	ug/g DW plant / ug/g soil	ug/g DW plant / ug/g air	ug/g DW plant / ug/g air	day/kg	day/kg	day/kg
CAS_NUMBER	**COPC_NAME**	**param_f_v**	**param_RCF**	**param_br_root_veg**	**param_br_leafy_veg**	**param_br_forage**	**param_bv_leafy_veg**	**param_bv_forage**	**param_ba_milk**	**param_ba_beef**	**param_ba_pork**
39001-02-0	OctaCDF, 1,2,3,4,6,7,8,9-	0.002	478692	0.776	0.00092	0.00092	2280000	2280000	0.00184527029824152	0.00876503391664721	0.0106103042148887
40321-76-4	PentaCDD, 1,2,3,7,8-	0.117	30120	1.12	0.00562	0.00562	239000	239000	0.00605326366811965	0.0287530024235684	0.034806266091688
57117-41-6	PentaCDF, 1,2,3,7,8-	0.268	39296	1.03	0.00461	0.00461	97500	97500	0.00553419033200588	0.0262874040770279	0.0318215944090338
57117-31-4	PentaCDF, 2,3,4,7,8-	0.221	23499	1.21	0.00678	0.00678	97500	97500	0.00652093680331813	0.0309744498157611	0.0374953866190793
85-01-8	Phenanthrene	0.999	678	0.183	0.097	0.0971	151	151	0.00711721345857463	0.0338067639282295	0.0409239773868041
129-00-0	Pyrene	0.994	1377	0.145	0.057	0.057	840	840	0.00809226304381041	0.0384382494580995	0.0465305125019099
7782-49-2	Selenium	0	0	0.022	0.0195	0.016	0	0	0.0058565	0.002265	0.187659574468085
1746-01-6	TetraCDD, 2,3,7,8-	0.664	39999	1.03	0.00455	0.00455	65500	65500	0.00549920603406625	0.0261212286618147	0.031620434695881
51207-31-9	TetraCDF, 2,3,7,8-	0.77	11562	1.49	0.0115	0.0115	45700	45700	0.00767838689440205	0.0364723377484097	0.0441507246428118
007440-31-5	Tin	0	0	0	1	0	0	0	1E-03	1E-02	0.012105263
7440-62-2	Vanadium	0	0	3E-3	0	5.5E-3	0	0	2E-5	2.5E-3	0
7440-66-6	Zinc	0	0	0.9	0.097	0.25	0	0	3.25E-5	9E-5	0.000127659574468085

Chemical Abstract Services Number	Chemical of Potential Concern	Bioconcentration Factor for Poultry Eggs	Bioconcentration Factor for Chicken	Bioconcentration Factor for Fish	Bioaccumulation Factor for Fish	Fish to Biota Sediment Accumulation Factor	Oral Reference Dose	Oral Cancer Slope Factor	Inhalation Reference Concentration	Inhalation Unit Risk Factor	Inhalation Cancer Slope Factor
		unitless	unitless	L/kg	L/kg	unitless	mg/kg-d	$(mg/kg\text{-}d)^{-1}$	mg/m^3	$(ug/m^3)^{-1}$	$(mg/kg\text{-}d)^{-1}$
CAS_NUMBER	**COPC_NAME**	**param_bcf_egg**	**param_bcf_chicken**	**param_BCF_fish**	**param_BAF_fish**	**param_BSAF_fish**	**param_RfD**	**param_Oral_csf**	**param_RfC**	**param_inhalation_urf**	**param_inhalation_csf**
83-32-9	Acenaphthene	0.0731973468298426	0	201	0	0	0.06	0	0.21	0	0
280-96-8	Acenaphthylene	0	0	0	0	0	0	0	0	0	0
120-12-7	Anthracene	0.234461865043566	0	582	1027.99428258336	0	0.3	0	1	0	0
7440-36-0	Antimony	0	0	40	0	0	0.0004	0	0.0014	0	0
11097-69-1	Aroclor 1254	12.7976684313957	0	84100	0	2	2E-5	2	7E-5	5.7E-4	2
7440-38-2	Arsenic	0	0	114	0	0	0.0003	1.5	1.5E-5	0.0043	15
56-55-3	Benzo(a)anthracene	3.78927929749341	0	4886	49886.5193653099	0	0	0.73	0	0.00011	.39
50-32-8	Benzo(a)pyrene	10.6974645787847	0	8317.64	133048.932825583	0	0	7.3	0	0.0011	3.85
205-99-2	Benzo(b)fluoranthene	12.6514246601006	0	10400	206293.629312622	0	0	0.73	0	0.00011	.39
207-08-9	Benzo(k)fluoranthene	12.5892525891687	0	9930	176605.826890695	0	0	0.073	0	0.00011	.39
7440-41-7	Beryllium	0	0	62	0	0	0.002	0	2E-5	0.0024	8.4
7440-43-9	Cadmium	0.0025	0	907	0	0	1E-3	0	1E-5	0.0018	6.3
7440-47-3	Chromium	0	0	19	0	0	1.5	0	5.3	0	0
18540-29-9	Chromium, hexavalent	0	0	3.16	0	0	0.003	0.5	1E-4	1.2E-02	420
218-01-9	Chrysene	4.35480922748771	0	4890	49886.5193653099	0	0	0.0073	0	1.1E-5	.039
007440-48-4	Cobalt	0	0	300	0	0	3E-04	0	6E-06	9E-03	32
7440-50-8	Copper	0	0	0	0	0	4E-2	0	0	0	0
53-70-3	Dibenz(a,h)anthracene	28.0205798290515	0	20183	496598.860120211	0	0	7.3	0	0.0012	4.2
206-44-0	Fluoranthene	0.964997599237141	0	1410	4493.28192944499	0	0.04	0	0.14	0	0
86-73-7	Fluorene	0.116948945998456	0	342	471.931630668919	0	0.04	0	0.14	0	0
35822-46-9	HeptaCDD, 1,2,3,4,6,7,8-	0.02552	0.39	2754	0	0.005	0	1.3E+03	0	.38	1.3E+03
67562-39-4	HeptaCDF, 1,2,3,4,6,7,8-	0.0209	0.32	18281	0	0.005	0	1.3E+03	0	.38	1.3E+03
55673-89-7	HeptaCDF, 1,2,3,4,7,8,9-	0.0242	0.48	18281	0	0.005	0	1.3E+03	0	.38	1.3E+03
39227-28-6	HexaCDD, 1,2,3,4,7,8-	0.04532	1.83	5176	0	0.04	0	1.3E+04	0	3.8	1.3E+04
57653-85-7	HexaCDD, 1,2,3,6,7,8-	0.03696	1.17	25100	0	0.04	0	1.3E+04	0	3.8	1.3E+04
19408-74-3	HexaCDD, 1,2,3,7,8,9-	0.02332	0.63	25100	0	0.04	0	1.3E+04	0	3.8	1.3E+04
70648-26-9	HexaCDF, 1,2,3,4,7,8-	0.0451	1.58	48977	0	0.04	0	1.3E+04	0	3.8	1.3E+04
57117-44-9	HexaCDF, 1,2,3,6,7,8-	0.04532	1.62	48977	0	0.04	0	1.3E+04	0	3.8	1.3E+04
72918-21-9	HexaCDF, 1,2,3,7,8,9-	0	0	48977	0	0.04	0	1.3E+04	0	3.8	1.3E+04
60851-34-5	HexaCDF, 2,3,4,6,7,8-	0.02706	0.79	48977	0	0.04	0	1.3E+04	0	3.8	1.3E+04
7647-01-0	Hydrogen chloride	0	0	3.16	0	0	0.00571	0	0.02	0	0
7664-39-3	Hydrogen fluoride	0	0	0	0	0	4E-02	0	1.4E-2	0	0
193-39-5	Indeno(1,2,3-cd) pyrene	65.3205735856933	0	24100	618020.247186678	0	0	0.73	0	0.00011	.39
7439-92-1	Lead	0	0	0.09	0	0	0.000429	0.0085	0.0015	1.2E-5	4.2E-02
7439-96-5	Manganese	0	0	0	0	0	.14	0	5E-5	0	0
7487-94-7	Mercuric chloride	0.023925	0	0	0	0	0.0003	0	3E-05	0	0
7439-97-6	Mercury	0	0	0	0	0	1.6E-4	0	0.0003	0	0
22967-92-6	Methyl mercury	0.003575	0	0	6800000	0	0.0001	0	0.00035	0	0
91-57-6	Methylnaphthalene, 2-	0	0	97.72	0	0	4E-3	0	0	0	0
0074939-98-7	Molybdenum	0	0	1.00E+01	0	0	5.0E-03	0	0	0	0
91-20-3	Naphthalene	0.0187143732101041	0	69.3	0	0	0.02	0	0.003	3.4E-5	1.2E-1
7440-02-0	Nickel	0	0	78	0	0	0.02	0	9E-5	0.00026	.91
3268-87-9	OctaCDD, 1,2,3,4,6,7,8,9-	0.0099	0.05	1465	0	0.0001	0	39	0	1.14E-2	4E+01

Chemical Abstract Services Number	Chemical of Potential Concern	Bioconcentration Factor for Poultry Eggs	Bioconcentration Factor for Chicken	Bioconcentration Factor for Fish	Bioaccumulation Factor for Fish	Fish to Biota Sediment Accumulation Factor	Oral Reference Dose	Oral Cancer Slope Factor	Inhalation Reference Concentration	Inhalation Unit Risk Factor	Inhalation Cancer Slope Factor
		unitless	unitless	L/kg	L/kg	unitless	mg/kg-d	$(mg/kg\text{-}d)^{-1}$	mg/m^3	$(ug/m^3)^{-1}$	$(mg/kg\text{-}d)^{-1}$
CAS_NUMBER	**COPC_NAME**	**param_bcf_egg**	**param_bcf_chicken**	**param_BCF_fish**	**param_BAF_fish**	**param_BSAF_fish**	**param_RfD**	**param_Oral_csf**	**param_RfC**	**param_inhalation_urf**	**param_inhalation_csf**
39001-02-0	OctaCDF, 1,2,3,4,6,7,8,9-	0.00792	0.02	2754	0	0.0001	0	39	0	1.14E-2	4E+01
40321-76-4	PentaCDD, 1,2,3,7,8-	0.04708	2.5	25870	0	0.09	0	1.3E+05	0	38	1.3E+05
57117-41-6	PentaCDF, 1,2,3,7,8-	0	0	33752	0	0.09	0	3.9E+03	0	1.14	4E+03
57117-31-4	PentaCDF, 2,3,4,7,8-	0.0561	3.28	20183	0	0.09	0	3.9E+04	0	11.4	4E+04
85-01-8	Phenanthrene	0.28198652332712	0	582	1027.99428258336	0	0	0	0	0	0
129-00-0	Pyrene	0.798093350556875	0	1180	3288.85552491596	0	0.03	0	0.11	0	0
7782-49-2	Selenium	1.12625	0	129	0	0	0.005	0	0.02	0	0
1746-01-6	TetraCDD, 2,3,7,8-	0.05962	3.32	34400	0	0.09	1E-9	1.3E+5	4E-8	38	1.3E+5
51207-31-9	TetraCDF, 2,3,7,8-	0.03608	2.56	9931	0	0.09	0	1.3E+04	0	3.8	1.3E+04
007440-31-5	Tin	0	0	3000	0	0	6E-01	0	0	0	0
7440-62-2	Vanadium	0	0	0	0	0	7E-05	0	1E-04	0	0
7440-66-6	Zinc	0.00875	0	2059	0	0	0.3	0	1.05	0	0

Chemical Abstract Services Number	Chemical of Potential Concern	Chemical Type	chemical subtype	Grain to Soil Bioconcentration Factor	Biotransfer Factor for Eggs	Biotransfer Factor for Chicken	Inhalation Reference Dose	Toxic Equivalency Factor
				mg/kg DW plant / g/kg soil	day/kg	day/kg	mg/kg-d	unitless
CAS_NUMBER	**COPC_NAME**	**Chemical_type**	**Chemical_subtype**	**Param_br_grain**	**Param_ba_egg**	**Param_ba_chicken**	**Param_inhalation_rfd**	**Param_tef**
83-32-9	Acenaphthene	O	PAH	0.216	0.0102400007156569	0.0179200012523996	0.06	0
280-96-8	Acenaphthylene	O	PAH	0	0	0	0	0
120-12-7	Anthracene	O	PAH	0.0971	0.0142344269171493	0.0249102471050112	0.286	0
7440-36-0	Antimony	I	Metal	0.03	0	0	0.0004	0
11097-69-1	Aroclor 1254	O	PCB	0.00678	0.0130418736066363	0.0228232788116135	2E-5	0
7440-38-2	Arsenic	I	Metal	0.004	0	0	4.29E-5	0
56-55-3	Benzo(a)anthracene	O	PAH	0.0197	0.0168104750724245	0.0294183313767428	0	0
50-32-8	Benzo(a)pyrene	O	PAH	0.0132	0.0158157571208949	0.027677574961566	0	0
205-99-2	Benzo(b)fluoranthene	O	PAH	0.0112	0.0152382734603098	0.0266669785555422	0	0
207-08-9	Benzo(k)fluoranthene	O	PAH	0.0115	0.0153567737888041	0.0268743541304072	0	0
7440-41-7	Beryllium	I	Metal	0.0015	0	0	5.71E-6	0
7440-43-9	Cadmium	I	Metal	0.062	0.0025	0.10625	2.86E-6	0
7440-47-3	Chromium	I	Metal	0.0045	0	0	1.51	0
18540-29-9	Chromium, hexavalent	I	Metal	0.0045	0	0	2.86E-5	0
218-01-9	Chrysene	O	PAH	0.0197	0.0168104750724245	0.0294183313767428	0	0
007440-48-4	Cobalt	I	Metal	8.50E-03	0	7.89E-05	1.71E-06	0
7440-50-8	Copper	I	Metal	.25	0	0	0	0
53-70-3	Dibenz(a,h)anthracene	O	PAH	0.00678	0.0130418736066363	0.0228232788116135	0	0
206-44-0	Fluoranthene	O	PAH	0.0499	0.0165230412464842	0.0289153221813474	0.04	0
86-73-7	Fluorene	O	PAH	0.145	0.012323384157931	0.0215659222763792	0.04	0
35822-46-9	HeptaCDD, 1,2,3,4,6,7,8-	O	D	0.00092	0.00369054059648304	0.00645844604384531	0	0.01
67562-39-4	HeptaCDF, 1,2,3,4,6,7,8-	O	F	0.00205	0.00691592041512631	0.012102860726471	0	0.01
55673-89-7	HeptaCDF, 1,2,3,4,7,8,9-	O	F	0.00205	0.00691592041512631	0.012102860726471	0	0.01
39227-28-6	HexaCDD, 1,2,3,4,7,8-	O	D	0.0012	0.00463372213059166	0.00810901372853541	0	0.1
57653-85-7	HexaCDD, 1,2,3,6,7,8-	O	D	0.00234	0.00755753186521148	0.0132256807641201	0	0.1
19408-74-3	HexaCDD, 1,2,3,7,8,9-	O	D	0.00234	0.00755753186521148	0.0132256807641201	0	0.1
70648-26-9	HexaCDF, 1,2,3,4,7,8-	O	F	0.00348	0.00959599442519503	0.0167929902440913	0	0.1
57117-44-9	HexaCDF, 1,2,3,6,7,8-	O	F	0.00348	0.00959599442519503	0.0167929902440913	0	0.1
72918-21-9	HexaCDF, 1,2,3,7,8,9-	O	F	0.00348	0.00959599442519503	0.0167929902440913	0	0.1
60851-34-5	HexaCDF, 2,3,4,6,7,8-	O	F	0.00348	0.00959599442519503	0.0167929902440913	0	0.1
7647-01-0	Hydrogen chloride	I		0	2.20338296267053E-5	3.85592018467343E-5	0.00571428571428571	0
7664-39-3	Hydrogen fluoride	I		0	3.837E-5	6.714E-5	4.00E-03	0
193-39-5	Indeno(1,2,3-cd) pyrene	O	PAH	0.00593	0.0123779859954226	0.0216614754919896	0	0
7439-92-1	Lead	I	Metal	0.009	0	0	4.29E-04	0
7439-96-5	Manganese	I	Metal	.5	0	0	1.43E-5	0
7487-94-7	Mercuric chloride	I	Divalent	0.0093	0.023925	0.023925	8.6E-06	0
7439-97-6	Mercury	I	Metal	0	0	0	8.57142857142857E-5	0
22967-92-6	Methyl mercury	O		0.019	0.003575	0.003575	0.0001	0
91-57-6	Methylnaphthalene, 2-	O	PAH	.227	9.96E-3	1.74E-2	0	0
0074939-98-7	Molybdenum	I	Metal	8.00E-01	0	0.000789474	0	0
91-20-3	Naphthalene	O	PAH	0.479	0.00625143884447729	0.0109400179778353	8.57E-4	0
7440-02-0	Nickel	I	Metal	0.006	0	0	2.57E-5	0
3268-87-9	OctaCDD, 1,2,3,4,6,7,8,9-	O	D	0.000705	0.00288622368969765	0.00505089145697088	0	.0003

Chemical Abstract Services Number	Chemical of Potential Concern	Chemical Type	chemical subtype	Grain to Soil Bioconcentration Factor	Biotransfer Factor for Eggs	Biotransfer Factor for Chicken	Inhalation Reference Dose	Toxic Equivalency Factor
				mg/kg DW plant / g/kg soil	day/kg	day/kg	mg/kg-d	unitless
CAS_NUMBER	**COPC_NAME**	**Chemical_type**	**Chemical_subtype**	**Param_br_grain**	**Param_ba_egg**	**Param_ba_chicken**	**Param_inhalation_rfd**	**Param_tef**
39001-02-0	OctaCDF, 1,2,3,4,6,7,8,9-	O	F	0.00092	0.00369054059648304	0.00645844604384531	0	.0003
40321-76-4	PentaCDD, 1,2,3,7,8-	O	D	0.00562	0.0121065273362393	0.0211864228384188	0	1
57117-41-6	PentaCDF, 1,2,3,7,8-	O	F	0.00461	0.0110683806640118	0.0193696661620206	0	.03
57117-31-4	PentaCDF, 2,3,4,7,8-	O	F	0.00678	0.0130418736066363	0.0228232788116135	0	.3
85-01-8	Phenanthrene	O	PAH	0.0971	0.0142344269171493	0.0249102471050112	0	0
129-00-0	Pyrene	O	PAH	0.057	0.0161845260876208	0.0283229206533364	0.0314	0
7782-49-2	Selenium	I	Metal	0.002	1.12625	1.12625	5.71E-3	0
1746-01-6	TetraCDD, 2,3,7,8-	O	D	0.00455	0.0109984120681325	0.0192472211192319	1.1E-8	1
51207-31-9	TetraCDF, 2,3,7,8-	O	F	0.0115	0.0153567737888041	0.0268743541304072	0	0.1
007440-31-5	Tin	I	Metal	0	0	0.007894737	0	0
7440-62-2	Vanadium	I	Metal	3E-3	0	0	2.9E-05	0
7440-66-6	Zinc	I	Metal	0.054	0.00875	0.00875	0.3	0

Notes:
atm - atmosphere
cm - centimeter
d - day
g - gram
kg - kilogram
L - liter
m - meter
mg - milligram
mL - milliliter
s - second
ug - microgram
yr - year
DW - dry weight
WW - wet weight
D - Polychlorinated dibenzo-p-dioxin
F - Polychlorinated dibenzo-p-furan
I - Inorganic
O - Organic
PAH - Polynuclear Aromatic Hydrocarbons
PCB - Polychlorinated biphenyls

ARCADIS

Appendix E

Pathway and COPC-Specific Cancer Risks and Noncancer Hazards

Table E-1. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Inhalation	0.00E+00	0.00E+00	1.56E-05	1.56E-05	
Arsenic	7440-38-2	Inhalation	6.69E-09	1.00E-09	1.82E-04	1.82E-04	
Beryllium	7440-41-7	Inhalation	3.82E-10	5.73E-11	1.39E-05	1.39E-05	
Cadmium	7440-43-9	Inhalation	3.23E-09	4.84E-10	3.14E-04	3.14E-04	
Chromium, hexavalent	18540-29-9	Inhalation	5.53E-08	4.42E-08	8.07E-05	8.07E-05	8.30E-09
Cobalt	7440-48-4	Inhalation	3.59E-09	5.39E-10	1.16E-04	1.16E-04	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Inhalation	2.89E-11	4.33E-12	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Inhalation	2.11E-11	3.17E-12	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Inhalation	5.74E-12	8.62E-13	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Inhalation	2.06E-11	3.09E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Inhalation	5.11E-11	7.67E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Inhalation	5.16E-11	7.73E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Inhalation	1.21E-10	1.82E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Inhalation	2.07E-10	3.10E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Inhalation	4.34E-11	6.51E-12	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Inhalation	1.94E-10	2.90E-11	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Inhalation	5.54E-14	4.43E-14	0.00E+00	0.00E+00	8.31E-15
Lead	7439-92-1	Inhalation	6.26E-10	9.39E-11	6.08E-05	6.08E-05	
Manganese	7439-96-5	Inhalation	0.00E+00	0.00E+00	3.59E-04	3.59E-04	
Mercury	7439-97-6	Inhalation	0.00E+00	0.00E+00	1.66E-06	1.66E-06	
Nickel	7440-02-0	Inhalation	9.20E-10	1.38E-10	6.88E-05	6.88E-05	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Inhalation	2.01E-12	3.01E-13	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Inhalation	4.82E-13	7.23E-14	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Inhalation	8.50E-10	1.28E-10	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Inhalation	5.06E-11	7.59E-12	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Inhalation	6.99E-10	1.05E-10	0.00E+00	0.00E+00	
TetraCDD, 2,3,7,8-	1746-01-6	Inhalation	3.82E-10	5.74E-11	4.40E-07	4.40E-07	
TetraCDF, 2,3,7,8-	51207-31-9	Inhalation	7.06E-10	1.06E-10	0.00E+00	0.00E+00	
Vanadium	7440-62-2	Inhalation	0.00E+00	0.00E+00	2.08E-05	2.08E-05	
Zinc	7440-66-6	Inhalation	0.00E+00	0.00E+00	9.90E-07	9.90E-07	
		Pathway Total:	**7.42E-08**	**4.71E-08**	**1.23E-03**	**1.23E-03**	

Table E-1. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Locally-grown Produce	0.00E+00	0.00E+00	4.83E-04	5.36E-03	
Arsenic	7440-38-2	Locally-grown Produce	1.56E-08	2.62E-08	6.18E-05	6.91E-04	
Beryllium	7440-41-7	Locally-grown Produce	0.00E+00	0.00E+00	9.47E-07	1.06E-05	
Cadmium	7440-43-9	Locally-grown Produce	0.00E+00	0.00E+00	5.62E-05	6.22E-04	
Chromium, hexavalent	18540-29-9	Locally-grown Produce	1.51E-08	1.36E-07	1.78E-05	2.00E-04	2.55E-08
Cobalt	7440-48-4	Locally-grown Produce	0.00E+00	0.00E+00	3.14E-05	3.54E-04	
Copper	7440-50-8	Locally-grown Produce	0.00E+00	0.00E+00	2.38E-06	2.42E-05	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Locally-grown Produce	2.87E-10	4.81E-10	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Locally-grown Produce	2.13E-10	3.56E-10	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Locally-grown Produce	5.82E-11	9.72E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Locally-grown Produce	2.04E-10	3.42E-10	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Locally-grown Produce	5.11E-10	8.54E-10	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Locally-grown Produce	5.18E-10	8.65E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Locally-grown Produce	1.19E-09	1.98E-09	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Locally-grown Produce	2.02E-09	3.38E-09	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Locally-grown Produce	4.12E-10	6.87E-10	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Locally-grown Produce	1.89E-09	3.15E-09	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Locally-grown Produce	2.45E-12	2.21E-11	0.00E+00	0.00E+00	4.14E-12
Lead	7439-92-1	Locally-grown Produce	3.40E-09	5.52E-09	1.78E-03	1.99E-02	
Manganese	7439-96-5	Locally-grown Produce	0.00E+00	0.00E+00	1.82E-06	1.69E-05	
Molybdenum	74939-98-7	Locally-grown Produce	0.00E+00	0.00E+00	6.04E-05	6.63E-04	
Nickel	7440-02-0	Locally-grown Produce	0.00E+00	0.00E+00	2.26E-06	2.52E-05	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Locally-grown Produce	2.00E-11	3.35E-11	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Locally-grown Produce	4.82E-12	8.07E-12	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Locally-grown Produce	8.15E-09	1.36E-08	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Locally-grown Produce	4.01E-10	6.67E-10	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Locally-grown Produce	5.94E-09	9.87E-09	0.00E+00	0.00E+00	
Selenium	7782-49-2	Locally-grown Produce	0.00E+00	0.00E+00	3.73E-06	4.18E-05	
TetraCDD, 2,3,7,8-	1746-01-6	Locally-grown Produce	1.56E-09	2.60E-09	2.16E-05	2.40E-04	
TetraCDF, 2,3,7,8-	51207-31-9	Locally-grown Produce	2.16E-09	3.57E-09	0.00E+00	0.00E+00	
Tin	7440-31-5	Locally-grown Produce	0.00E+00	0.00E+00	8.01E-06	9.07E-05	
Vanadium	7440-62-2	Locally-grown Produce	0.00E+00	0.00E+00	1.93E-04	2.16E-03	
Zinc	7440-66-6	Locally-grown Produce	0.00E+00	0.00E+00	9.51E-05	9.03E-04	
		Pathway Total:	**5.97E-08**	**2.10E-07**	**2.82E-03**	**3.13E-02**	

Table E-1. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Beef Ingestion	0.00E+00	0.00E+00	1.22E-05	3.63E-05	
Arsenic	7440-38-2	Beef Ingestion	9.10E-10	4.08E-10	3.60E-06	1.07E-05	
Beryllium	7440-41-7	Beef Ingestion	0.00E+00	0.00E+00	4.73E-08	1.40E-07	
Cadmium	7440-43-9	Beef Ingestion	0.00E+00	0.00E+00	1.01E-07	2.99E-07	
Chromium, hexavalent	18540-29-9	Beef Ingestion	2.42E-09	5.77E-09	2.85E-06	8.43E-06	1.08E-09
Cobalt	7440-48-4	Beef Ingestion	0.00E+00	0.00E+00	5.39E-08	1.60E-07	
Copper	7440-50-8	Beef Ingestion	0.00E+00	0.00E+00	6.58E-07	1.95E-06	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Beef Ingestion	1.11E-10	4.75E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Beef Ingestion	1.58E-10	6.78E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Beef Ingestion	5.45E-11	2.36E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Beef Ingestion	1.06E-10	4.53E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Beef Ingestion	4.33E-10	1.86E-10	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Beef Ingestion	4.19E-10	1.80E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Beef Ingestion	1.21E-09	5.19E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Beef Ingestion	2.07E-09	8.86E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Beef Ingestion	4.40E-10	1.89E-10	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Beef Ingestion	1.94E-09	8.31E-10	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Beef Ingestion	2.27E-12	5.46E-12	0.00E+00	0.00E+00	1.02E-12
Lead	7439-92-1	Beef Ingestion	3.93E-11	1.67E-11	2.28E-05	6.74E-05	
Manganese	7439-96-5	Beef Ingestion	0.00E+00	0.00E+00	1.50E-08	4.44E-08	
Molybdenum	74939-98-7	Beef Ingestion	0.00E+00	0.00E+00	5.31E-07	1.57E-06	
Nickel	7440-02-0	Beef Ingestion	0.00E+00	0.00E+00	3.92E-07	1.16E-06	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Beef Ingestion	6.14E-12	2.63E-12	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Beef Ingestion	1.88E-12	8.06E-13	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Beef Ingestion	1.18E-08	5.08E-09	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Beef Ingestion	5.49E-10	2.37E-10	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Beef Ingestion	8.98E-09	3.87E-09	0.00E+00	0.00E+00	
Selenium	7782-49-2	Beef Ingestion	0.00E+00	0.00E+00	2.39E-07	7.07E-07	
TetraCDD, 2,3,7,8-	1746-01-6	Beef Ingestion	3.07E-09	1.34E-09	4.52E-05	1.34E-04	
TetraCDF, 2,3,7,8-	51207-31-9	Beef Ingestion	6.02E-09	2.63E-09	0.00E+00	0.00E+00	
Tin	7440-31-5	Beef Ingestion	0.00E+00	0.00E+00	1.73E-07	5.12E-07	
Vanadium	7440-62-2	Beef Ingestion	0.00E+00	0.00E+00	2.62E-05	7.76E-05	
Zinc	7440-66-6	Beef Ingestion	0.00E+00	0.00E+00	7.59E-08	2.25E-07	
		Pathway Total:	**4.07E-08**	**2.23E-08**	**1.15E-04**	**3.41E-04**	

Table E-1. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Cadmium	7440-43-9	Chicken Ingestion	0.00E+00	0.00E+00	5.77E-07	1.83E-06	
Cobalt	7440-48-4	Chicken Ingestion	0.00E+00	0.00E+00	1.49E-10	4.73E-10	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Chicken Ingestion	1.50E-12	6.33E-13	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Chicken Ingestion	2.04E-12	8.63E-13	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Chicken Ingestion	5.31E-13	2.24E-13	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Chicken Ingestion	1.32E-12	5.57E-13	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Chicken Ingestion	5.28E-12	2.23E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Chicken Ingestion	5.39E-12	2.28E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Chicken Ingestion	1.56E-11	6.61E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Chicken Ingestion	2.66E-11	1.12E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Chicken Ingestion	5.38E-12	2.27E-12	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Chicken Ingestion	2.48E-11	1.05E-11	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Chicken Ingestion	7.31E-15	2.24E-14	0.00E+00	0.00E+00	4.20E-15
Molybdenum	74939-98-7	Chicken Ingestion	0.00E+00	0.00E+00	5.05E-09	1.60E-08	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Chicken Ingestion	8.17E-14	3.45E-14	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Chicken Ingestion	2.51E-14	1.06E-14	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Chicken Ingestion	1.28E-10	5.44E-11	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Chicken Ingestion	5.93E-12	2.51E-12	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Chicken Ingestion	1.01E-10	4.30E-11	0.00E+00	0.00E+00	
Selenium	7782-49-2	Chicken Ingestion	0.00E+00	0.00E+00	5.60E-08	1.77E-07	
TetraCDD, 2,3,7,8-	1746-01-6	Chicken Ingestion	2.19E-11	9.40E-12	4.54E-07	1.44E-06	
TetraCDF, 2,3,7,8-	51207-31-9	Chicken Ingestion	4.26E-11	1.83E-11	0.00E+00	0.00E+00	
Tin	7440-31-5	Chicken Ingestion	0.00E+00	0.00E+00	2.12E-09	6.71E-09	
Zinc	7440-66-6	Chicken Ingestion	0.00E+00	0.00E+00	4.30E-08	1.36E-07	
		Pathway Total:	**3.89E-10**	**1.65E-10**	**1.14E-06**	**3.60E-06**	

Table E-1. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Drinking Water Ingestion	0.00E+00	0.00E+00	5.30E-08	1.18E-07	
Arsenic	7440-38-2	Drinking Water Ingestion	1.90E-12	7.38E-13	8.78E-09	1.96E-08	
Beryllium	7440-41-7	Drinking Water Ingestion	0.00E+00	0.00E+00	1.18E-10	2.65E-10	
Cadmium	7440-43-9	Drinking Water Ingestion	0.00E+00	0.00E+00	3.07E-09	6.86E-09	
Chromium, hexavalent	18540-29-9	Drinking Water Ingestion	1.88E-12	3.91E-12	2.59E-09	5.79E-09	7.33E-13
Cobalt	7440-48-4	Drinking Water Ingestion	0.00E+00	0.00E+00	2.26E-09	5.05E-09	
Copper	7440-50-8	Drinking Water Ingestion	0.00E+00	0.00E+00	2.53E-10	5.65E-10	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Drinking Water Ingestion	9.97E-16	3.19E-16	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Drinking Water Ingestion	2.54E-15	8.13E-16	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Drinking Water Ingestion	6.91E-16	2.22E-16	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Drinking Water Ingestion	1.11E-15	3.57E-16	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Drinking Water Ingestion	7.37E-15	2.37E-15	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Drinking Water Ingestion	7.37E-15	2.36E-15	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Drinking Water Ingestion	2.90E-14	9.29E-15	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Drinking Water Ingestion	5.15E-14	1.65E-14	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Drinking Water Ingestion	1.06E-14	3.41E-15	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Drinking Water Ingestion	4.71E-14	1.51E-14	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Drinking Water Ingestion	6.56E-17	1.20E-16	0.00E+00	0.00E+00	2.25E-17
Lead	7439-92-1	Drinking Water Ingestion	2.93E-13	9.31E-14	1.76E-07	3.93E-07	
Manganese	7439-96-5	Drinking Water Ingestion	0.00E+00	0.00E+00	1.25E-10	2.79E-10	
Molybdenum	74939-98-7	Drinking Water Ingestion	0.00E+00	0.00E+00	2.24E-09	4.99E-09	
Nickel	7440-02-0	Drinking Water Ingestion	0.00E+00	0.00E+00	3.02E-10	6.75E-10	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Drinking Water Ingestion	4.48E-17	1.44E-17	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Drinking Water Ingestion	1.69E-17	5.41E-18	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Drinking Water Ingestion	4.19E-13	1.36E-13	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Drinking Water Ingestion	1.88E-14	6.10E-15	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Drinking Water Ingestion	3.54E-13	1.15E-13	0.00E+00	0.00E+00	
Selenium	7782-49-2	Drinking Water Ingestion	0.00E+00	0.00E+00	5.40E-10	1.21E-09	
TetraCDD, 2,3,7,8-	1746-01-6	Drinking Water Ingestion	9.55E-14	3.13E-14	1.44E-09	3.21E-09	
TetraCDF, 2,3,7,8-	51207-31-9	Drinking Water Ingestion	3.94E-13	1.30E-13	0.00E+00	0.00E+00	
Tin	7440-31-5	Drinking Water Ingestion	0.00E+00	0.00E+00	6.59E-11	1.47E-10	
Vanadium	7440-62-2	Drinking Water Ingestion	0.00E+00	0.00E+00	2.40E-08	5.37E-08	
Zinc	7440-66-6	Drinking Water Ingestion	0.00E+00	0.00E+00	3.38E-09	7.55E-09	
		Pathway Total:	**5.51E-12**	**5.21E-12**	**2.78E-07**	**6.22E-07**	

Table E-1. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Cadmium	7440-43-9	Eggs Ingestion	0.00E+00	0.00E+00	5.01E-09	1.68E-08	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Eggs Ingestion	3.16E-13	1.41E-13	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Eggs Ingestion	4.30E-13	1.92E-13	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Eggs Ingestion	1.12E-13	5.00E-14	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Eggs Ingestion	2.78E-13	1.24E-13	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Eggs Ingestion	1.11E-12	4.97E-13	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Eggs Ingestion	1.14E-12	5.08E-13	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Eggs Ingestion	3.29E-12	1.47E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Eggs Ingestion	5.61E-12	2.50E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Eggs Ingestion	1.13E-12	5.06E-13	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Eggs Ingestion	5.23E-12	2.34E-12	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Eggs Ingestion	1.54E-15	4.99E-15	0.00E+00	0.00E+00	9.36E-16
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Eggs Ingestion	1.72E-14	7.68E-15	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Eggs Ingestion	5.28E-15	2.36E-15	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Eggs Ingestion	2.70E-11	1.21E-11	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Eggs Ingestion	1.25E-12	5.59E-13	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Eggs Ingestion	2.14E-11	9.57E-12	0.00E+00	0.00E+00	
Selenium	7782-49-2	Eggs Ingestion	0.00E+00	0.00E+00	2.06E-08	6.91E-08	
TetraCDD, 2,3,7,8-	1746-01-6	Eggs Ingestion	4.62E-12	2.09E-12	9.57E-08	3.20E-07	
TetraCDF, 2,3,7,8-	51207-31-9	Eggs Ingestion	8.98E-12	4.07E-12	0.00E+00	0.00E+00	
Zinc	7440-66-6	Eggs Ingestion	0.00E+00	0.00E+00	1.58E-08	5.31E-08	
		Pathway Total:	**8.19E-11**	**3.67E-11**	**1.37E-07**	**4.59E-07**	

Table E-1. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Milk Ingestion	0.00E+00	0.00E+00	1.10E-05	8.47E-05	
Arsenic	7440-38-2	Milk Ingestion	2.45E-10	2.85E-10	9.63E-07	7.44E-06	
Beryllium	7440-41-7	Milk Ingestion	0.00E+00	0.00E+00	3.00E-10	2.32E-09	
Cadmium	7440-43-9	Milk Ingestion	0.00E+00	0.00E+00	4.91E-08	3.80E-07	
Chromium, hexavalent	18540-29-9	Milk Ingestion	5.95E-09	3.69E-08	6.98E-06	5.39E-05	6.92E-09
Cobalt	7440-48-4	Milk Ingestion	0.00E+00	0.00E+00	3.35E-07	2.59E-06	
Copper	7440-50-8	Milk Ingestion	0.00E+00	0.00E+00	9.45E-07	7.31E-06	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Milk Ingestion	1.76E-10	2.00E-10	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Milk Ingestion	2.54E-10	2.88E-10	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Milk Ingestion	9.19E-11	1.05E-10	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Milk Ingestion	1.71E-10	1.94E-10	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Milk Ingestion	7.03E-10	7.99E-10	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Milk Ingestion	6.73E-10	7.65E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Milk Ingestion	1.94E-09	2.21E-09	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Milk Ingestion	3.32E-09	3.77E-09	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Milk Ingestion	7.15E-10	8.13E-10	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Milk Ingestion	3.12E-09	3.54E-09	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Milk Ingestion	4.18E-12	2.61E-11	0.00E+00	0.00E+00	4.89E-12
Lead	7439-92-1	Milk Ingestion	2.47E-10	2.77E-10	1.34E-04	1.04E-03	
Manganese	7439-96-5	Milk Ingestion	0.00E+00	0.00E+00	1.36E-07	1.05E-06	
Molybdenum	74939-98-7	Milk Ingestion	0.00E+00	0.00E+00	9.38E-06	7.25E-05	
Nickel	7440-02-0	Milk Ingestion	0.00E+00	0.00E+00	5.69E-07	4.40E-06	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Milk Ingestion	9.80E-12	1.11E-11	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Milk Ingestion	3.00E-12	3.40E-12	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Milk Ingestion	1.95E-08	2.23E-08	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Milk Ingestion	9.11E-10	1.04E-09	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Milk Ingestion	1.48E-08	1.69E-08	0.00E+00	0.00E+00	
Selenium	7782-49-2	Milk Ingestion	0.00E+00	0.00E+00	5.61E-06	4.34E-05	
TetraCDD, 2,3,7,8-	1746-01-6	Milk Ingestion	5.38E-09	6.17E-09	7.61E-05	5.88E-04	
TetraCDF, 2,3,7,8-	51207-31-9	Milk Ingestion	1.06E-08	1.22E-08	0.00E+00	0.00E+00	
Tin	7440-31-5	Milk Ingestion	0.00E+00	0.00E+00	1.35E-07	1.04E-06	
Vanadium	7440-62-2	Milk Ingestion	0.00E+00	0.00E+00	1.45E-06	1.12E-05	
Zinc	7440-66-6	Milk Ingestion	0.00E+00	0.00E+00	2.46E-07	1.90E-06	
		Pathway Total:	**6.88E-08**	**1.09E-07**	**2.48E-04**	**1.92E-03**	

Table E-1. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Cadmium	7440-43-9	Pork Ingestion	0.00E+00	0.00E+00	2.84E-08	1.01E-07	
Cobalt	7440-48-4	Pork Ingestion	0.00E+00	0.00E+00	9.01E-09	3.21E-08	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Pork Ingestion	3.52E-11	1.72E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Pork Ingestion	4.91E-11	2.40E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Pork Ingestion	1.50E-11	7.41E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Pork Ingestion	3.23E-11	1.58E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Pork Ingestion	1.31E-10	6.42E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Pork Ingestion	1.30E-10	6.36E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Pork Ingestion	3.76E-10	1.84E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Pork Ingestion	6.41E-10	3.14E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Pork Ingestion	1.33E-10	6.54E-11	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Pork Ingestion	5.99E-10	2.94E-10	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Pork Ingestion	3.46E-13	1.07E-12	0.00E+00	0.00E+00	2.00E-13
Molybdenum	74939-98-7	Pork Ingestion	0.00E+00	0.00E+00	1.29E-07	4.59E-07	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Pork Ingestion	1.93E-12	9.45E-13	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Pork Ingestion	5.93E-13	2.90E-13	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Pork Ingestion	3.39E-09	1.67E-09	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Pork Ingestion	1.58E-10	7.79E-11	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Pork Ingestion	2.63E-09	1.30E-09	0.00E+00	0.00E+00	
Selenium	7782-49-2	Pork Ingestion	0.00E+00	0.00E+00	1.74E-06	6.21E-06	
TetraCDD, 2,3,7,8-	1746-01-6	Pork Ingestion	7.56E-10	3.83E-10	1.31E-05	4.67E-05	
TetraCDF, 2,3,7,8-	51207-31-9	Pork Ingestion	1.49E-09	7.56E-10	0.00E+00	0.00E+00	
Tin	7440-31-5	Pork Ingestion	0.00E+00	0.00E+00	4.89E-08	1.74E-07	
Zinc	7440-66-6	Pork Ingestion	0.00E+00	0.00E+00	1.73E-08	6.18E-08	
		Pathway Total:	**1.06E-08**	**5.24E-09**	**1.51E-05**	**5.38E-05**	

Table E-1. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Soil Ingestion	0.00E+00	0.00E+00	7.40E-06	6.91E-05	
Arsenic	7440-38-2	Soil Ingestion	1.53E-10	2.75E-10	7.95E-07	7.42E-06	
Beryllium	7440-41-7	Soil Ingestion	0.00E+00	0.00E+00	2.04E-07	1.91E-06	
Cadmium	7440-43-9	Soil Ingestion	0.00E+00	0.00E+00	7.09E-07	6.62E-06	
Chromium, hexavalent	18540-29-9	Soil Ingestion	9.94E-11	9.65E-10	1.55E-07	1.44E-06	1.81E-10
Cobalt	7440-48-4	Soil Ingestion	0.00E+00	0.00E+00	3.16E-07	2.95E-06	
Copper	7440-50-8	Soil Ingestion	0.00E+00	0.00E+00	2.75E-08	2.57E-07	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Soil Ingestion	4.11E-11	5.12E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Soil Ingestion	2.99E-11	3.72E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Soil Ingestion	7.77E-12	9.67E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Soil Ingestion	2.88E-11	3.58E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Soil Ingestion	7.07E-11	8.81E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Soil Ingestion	7.22E-11	8.99E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Soil Ingestion	1.64E-10	2.05E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Soil Ingestion	2.80E-10	3.49E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Soil Ingestion	5.66E-11	7.05E-11	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Soil Ingestion	2.61E-10	3.25E-10	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Soil Ingestion	5.95E-14	5.38E-13	0.00E+00	0.00E+00	1.01E-13
Lead	7439-92-1	Soil Ingestion	4.41E-10	5.45E-10	3.28E-04	3.06E-03	
Manganese	7439-96-5	Soil Ingestion	0.00E+00	0.00E+00	2.51E-08	2.34E-07	
Molybdenum	74939-98-7	Soil Ingestion	0.00E+00	0.00E+00	1.40E-07	1.31E-06	
Nickel	7440-02-0	Soil Ingestion	0.00E+00	0.00E+00	6.06E-08	5.66E-07	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Soil Ingestion	2.87E-12	3.57E-12	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Soil Ingestion	6.88E-13	8.55E-13	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Soil Ingestion	1.07E-09	1.33E-09	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Soil Ingestion	5.41E-11	6.74E-11	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Soil Ingestion	7.83E-10	9.78E-10	0.00E+00	0.00E+00	
Selenium	7782-49-2	Soil Ingestion	0.00E+00	0.00E+00	8.66E-09	8.08E-08	
TetraCDD, 2,3,7,8-	1746-01-6	Soil Ingestion	2.01E-10	2.54E-10	4.17E-06	3.89E-05	
TetraCDF, 2,3,7,8-	51207-31-9	Soil Ingestion	2.78E-10	3.51E-10	0.00E+00	0.00E+00	
Tin	7440-31-5	Soil Ingestion	0.00E+00	0.00E+00	4.76E-08	4.44E-07	
Vanadium	7440-62-2	Soil Ingestion	0.00E+00	0.00E+00	4.75E-05	4.43E-04	
Zinc	7440-66-6	Soil Ingestion	0.00E+00	0.00E+00	6.47E-07	6.04E-06	
		Pathway Total:	**4.10E-09**	**6.04E-09**	**3.90E-04**	**3.64E-03**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-2. I Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Urban Resident

COPC Name	CAS Number	Pathway	Urban Res Adult Cancer Risk	Urban Res Child Cancer Risk	Urban Res Adult Hazard Quotient	Urban Res Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Inhalation	0.00E+00	0.00E+00	6.02E-06	6.02E-06	
Arsenic	7440-38-2	Inhalation	1.94E-09	3.87E-10	7.01E-05	7.01E-05	
Beryllium	7440-41-7	Inhalation	1.11E-10	2.21E-11	5.38E-06	5.38E-06	
Cadmium	7440-43-9	Inhalation	9.35E-10	1.87E-10	1.21E-04	1.21E-04	
Chromium, hexavalent	18540-29-9	Inhalation	1.60E-08	1.71E-08	3.11E-05	3.11E-05	3.20E-09
Cobalt	7440-48-4	Inhalation	1.04E-09	2.08E-10	4.49E-05	4.49E-05	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Inhalation	8.41E-12	1.68E-12	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Inhalation	6.16E-12	1.23E-12	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Inhalation	1.68E-12	3.35E-13	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Inhalation	6.01E-12	1.20E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Inhalation	1.49E-11	2.98E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Inhalation	1.50E-11	3.01E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Inhalation	3.53E-11	7.07E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Inhalation	6.03E-11	1.21E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Inhalation	1.27E-11	2.53E-12	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Inhalation	5.64E-11	1.13E-11	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Inhalation	1.60E-14	1.71E-14	0.00E+00	0.00E+00	3.21E-15
Lead	7439-92-1	Inhalation	1.81E-10	3.62E-11	2.35E-05	2.35E-05	
Manganese	7439-96-5	Inhalation	0.00E+00	0.00E+00	1.39E-04	1.39E-04	
Mercury	7439-97-6	Inhalation	0.00E+00	0.00E+00	6.48E-07	6.48E-07	
Nickel	7440-02-0	Inhalation	2.66E-10	5.33E-11	2.66E-05	2.66E-05	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Inhalation	5.85E-13	1.17E-13	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Inhalation	1.40E-13	2.81E-14	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Inhalation	2.48E-10	4.96E-11	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Inhalation	1.48E-11	2.96E-12	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Inhalation	2.04E-10	4.08E-11	0.00E+00	0.00E+00	
Selenium	7782-49-2	Inhalation	0.00E+00	0.00E+00	5.42E-08	5.42E-08	
TetraCDD, 2,3,7,8-	1746-01-6	Inhalation	1.12E-10	2.24E-11	1.72E-07	1.72E-07	
TetraCDF, 2,3,7,8-	51207-31-9	Inhalation	2.07E-10	4.13E-11	0.00E+00	0.00E+00	
Vanadium	7440-62-2	Inhalation	0.00E+00	0.00E+00	8.03E-06	8.03E-06	
Zinc	7440-66-6	Inhalation	0.00E+00	0.00E+00	3.82E-07	3.82E-07	
		Pathway Total:	**2.15E-08**	**1.82E-08**	**4.77E-04**	**4.77E-04**	

Table E-2. I Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Urban Resident

COPC Name	CAS Number	Pathway	Urban Res Adult Cancer Risk	Urban Res Child Cancer Risk	Urban Res Adult Hazard Quotient	Urban Res Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Soil Ingestion	0.00E+00	0.00E+00	2.32E-06	2.17E-05	
Arsenic	7440-38-2	Soil Ingestion	4.63E-11	8.64E-11	2.50E-07	2.33E-06	
Beryllium	7440-41-7	Soil Ingestion	0.00E+00	0.00E+00	6.42E-08	5.99E-07	
Cadmium	7440-43-9	Soil Ingestion	0.00E+00	0.00E+00	2.23E-07	2.08E-06	
Chromium, hexavalent	18540-29-9	Soil Ingestion	3.04E-11	3.03E-10	4.86E-08	4.53E-07	5.68E-11
Cobalt	7440-48-4	Soil Ingestion	0.00E+00	0.00E+00	9.92E-08	9.26E-07	
Copper	7440-50-8	Soil Ingestion	0.00E+00	0.00E+00	8.65E-09	8.08E-08	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Soil Ingestion	8.61E-12	1.61E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Soil Ingestion	6.26E-12	1.17E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Soil Ingestion	1.63E-12	3.04E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Soil Ingestion	6.04E-12	1.13E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Soil Ingestion	1.48E-11	2.77E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Soil Ingestion	1.51E-11	2.83E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Soil Ingestion	3.45E-11	6.44E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Soil Ingestion	5.88E-11	1.10E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Soil Ingestion	1.19E-11	2.22E-11	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Soil Ingestion	5.49E-11	1.02E-10	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Soil Ingestion	1.70E-14	1.69E-13	0.00E+00	0.00E+00	3.17E-14
Lead	7439-92-1	Soil Ingestion	9.17E-11	1.71E-10	1.03E-04	9.62E-04	
Manganese	7439-96-5	Soil Ingestion	0.00E+00	0.00E+00	7.88E-09	7.35E-08	
Molybdenum	74939-98-7	Soil Ingestion	0.00E+00	0.00E+00	4.40E-08	4.11E-07	
Nickel	7440-02-0	Soil Ingestion	0.00E+00	0.00E+00	1.90E-08	1.78E-07	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Soil Ingestion	6.00E-13	1.12E-12	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Soil Ingestion	1.44E-13	2.69E-13	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Soil Ingestion	2.25E-10	4.20E-10	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Soil Ingestion	1.14E-11	2.13E-11	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Soil Ingestion	1.66E-10	3.09E-10	0.00E+00	0.00E+00	
Selenium	7782-49-2	Soil Ingestion	0.00E+00	0.00E+00	2.72E-09	2.54E-08	
TetraCDD, 2,3,7,8-	1746-01-6	Soil Ingestion	4.42E-11	8.26E-11	1.35E-06	1.26E-05	
TetraCDF, 2,3,7,8-	51207-31-9	Soil Ingestion	6.22E-11	1.16E-10	0.00E+00	0.00E+00	
Tin	7440-31-5	Soil Ingestion	0.00E+00	0.00E+00	1.50E-08	1.40E-07	
Vanadium	7440-62-2	Soil Ingestion	0.00E+00	0.00E+00	1.49E-05	1.39E-04	
Zinc	7440-66-6	Soil Ingestion	0.00E+00	0.00E+00	2.03E-07	1.90E-06	
		Pathway Total:	**8.90E-10**	**1.91E-09**	**1.23E-04**	**1.14E-03**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-3. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Suburban Resident

COPC Name	CAS Number	Pathway	Suburban Res Adult Cancer Risk	Suburban Res Child Cancer Risk	Suburban Res Adult Hazard Quotient	Suburban Res Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Inhalation	0.00E+00	0.00E+00	6.25E-06	6.25E-06	
Arsenic	7440-38-2	Inhalation	2.01E-09	4.02E-10	7.28E-05	7.28E-05	
Beryllium	7440-41-7	Inhalation	1.15E-10	2.30E-11	5.58E-06	5.58E-06	
Cadmium	7440-43-9	Inhalation	9.71E-10	1.94E-10	1.26E-04	1.26E-04	
Chromium, hexavalent	18540-29-9	Inhalation	1.66E-08	1.77E-08	3.23E-05	3.23E-05	3.33E-09
Cobalt	7440-48-4	Inhalation	1.08E-09	2.16E-10	4.67E-05	4.67E-05	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Inhalation	8.76E-12	1.75E-12	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Inhalation	6.41E-12	1.28E-12	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Inhalation	1.75E-12	3.49E-13	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Inhalation	6.26E-12	1.25E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Inhalation	1.55E-11	3.10E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Inhalation	1.57E-11	3.13E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Inhalation	3.68E-11	7.36E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Inhalation	6.28E-11	1.26E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Inhalation	1.32E-11	2.64E-12	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Inhalation	5.88E-11	1.18E-11	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Inhalation	1.67E-14	1.78E-14	0.00E+00	0.00E+00	3.33E-15
Lead	7439-92-1	Inhalation	1.88E-10	3.76E-11	2.44E-05	2.44E-05	
Manganese	7439-96-5	Inhalation	0.00E+00	0.00E+00	1.44E-04	1.44E-04	
Mercury	7439-97-6	Inhalation	0.00E+00	0.00E+00	6.77E-07	6.77E-07	
Nickel	7440-02-0	Inhalation	2.77E-10	5.54E-11	2.76E-05	2.76E-05	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Inhalation	6.10E-13	1.22E-13	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Inhalation	1.46E-13	2.93E-14	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Inhalation	2.58E-10	5.17E-11	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Inhalation	1.54E-11	3.08E-12	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Inhalation	2.13E-10	4.25E-11	0.00E+00	0.00E+00	
Selenium	7782-49-2	Inhalation	0.00E+00	0.00E+00	5.63E-08	5.63E-08	
TetraCDD, 2,3,7,8-	1746-01-6	Inhalation	1.17E-10	2.33E-11	1.79E-07	1.79E-07	
TetraCDF, 2,3,7,8-	51207-31-9	Inhalation	2.16E-10	4.31E-11	0.00E+00	0.00E+00	
Vanadium	7440-62-2	Inhalation	0.00E+00	0.00E+00	8.33E-06	8.33E-06	
Zinc	7440-66-6	Inhalation	0.00E+00	0.00E+00	3.97E-07	3.97E-07	
		Pathway Total:	**2.23E-08**	**1.89E-08**	**4.95E-04**	**4.95E-04**	

Table E-3. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Suburban Resident

COPC Name	CAS Number	Pathway	Suburban Res Adult Cancer Risk	Suburban Res Child Cancer Risk	Suburban Res Adult Hazard Quotient	Suburban Res Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Locally-grown Produce	0.00E+00	0.00E+00	2.13E-04	2.37E-03	
Arsenic	7440-38-2	Locally-grown Produce	5.32E-09	1.19E-08	2.80E-05	3.14E-04	
Beryllium	7440-41-7	Locally-grown Produce	0.00E+00	0.00E+00	4.29E-07	4.82E-06	
Cadmium	7440-43-9	Locally-grown Produce	0.00E+00	0.00E+00	2.36E-05	2.62E-04	
Chromium, hexavalent	18540-29-9	Locally-grown Produce	5.17E-09	6.19E-08	8.09E-06	9.08E-05	1.16E-08
Cobalt	7440-48-4	Locally-grown Produce	0.00E+00	0.00E+00	1.35E-05	1.52E-04	
Copper	7440-50-8	Locally-grown Produce	0.00E+00	0.00E+00	1.03E-06	1.07E-05	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Locally-grown Produce	9.75E-11	2.19E-10	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Locally-grown Produce	7.22E-11	1.62E-10	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Locally-grown Produce	1.98E-11	4.44E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Locally-grown Produce	6.94E-11	1.56E-10	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Locally-grown Produce	1.73E-10	3.89E-10	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Locally-grown Produce	1.76E-10	3.93E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Locally-grown Produce	4.02E-10	9.01E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Locally-grown Produce	6.84E-10	1.53E-09	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Locally-grown Produce	1.39E-10	3.12E-10	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Locally-grown Produce	6.39E-10	1.43E-09	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Locally-grown Produce	8.37E-13	1.00E-11	0.00E+00	0.00E+00	1.88E-12
Lead	7439-92-1	Locally-grown Produce	1.11E-09	2.48E-09	7.90E-04	8.83E-03	
Manganese	7439-96-5	Locally-grown Produce	0.00E+00	0.00E+00	7.53E-07	7.14E-06	
Molybdenum	74939-98-7	Locally-grown Produce	0.00E+00	0.00E+00	2.50E-05	2.76E-04	
Nickel	7440-02-0	Locally-grown Produce	0.00E+00	0.00E+00	1.01E-06	1.14E-05	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Locally-grown Produce	6.80E-12	1.53E-11	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Locally-grown Produce	1.64E-12	3.67E-12	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Locally-grown Produce	2.75E-09	6.16E-09	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Locally-grown Produce	1.36E-10	3.04E-10	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Locally-grown Produce	2.00E-09	4.48E-09	0.00E+00	0.00E+00	
Selenium	7782-49-2	Locally-grown Produce	0.00E+00	0.00E+00	1.69E-06	1.90E-05	
TetraCDD, 2,3,7,8-	1746-01-6	Locally-grown Produce	5.32E-10	1.19E-09	9.83E-06	1.10E-04	
TetraCDF, 2,3,7,8-	51207-31-9	Locally-grown Produce	7.30E-10	1.63E-09	0.00E+00	0.00E+00	
Tin	7440-31-5	Locally-grown Produce	0.00E+00	0.00E+00	3.25E-06	3.69E-05	
Vanadium	7440-62-2	Locally-grown Produce	0.00E+00	0.00E+00	8.80E-05	9.86E-04	
Zinc	7440-66-6	Locally-grown Produce	0.00E+00	0.00E+00	3.85E-05	3.70E-04	
		Pathway Total:	**2.02E-08**	**9.57E-08**	**1.25E-03**	**1.39E-02**	

Table E-3. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Suburban Resident

COPC Name	CAS Number	Pathway	Suburban Res Adult Cancer Risk	Suburban Res Child Cancer Risk	Suburban Res Adult Hazard Quotient	Suburban Res Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Soil Ingestion	0.00E+00	0.00E+00	2.78E-06	2.60E-05	
Arsenic	7440-38-2	Soil Ingestion	5.54E-11	1.03E-10	2.99E-07	2.79E-06	
Beryllium	7440-41-7	Soil Ingestion	0.00E+00	0.00E+00	7.68E-08	7.17E-07	
Cadmium	7440-43-9	Soil Ingestion	0.00E+00	0.00E+00	2.67E-07	2.49E-06	
Chromium, hexavalent	18540-29-9	Soil Ingestion	3.64E-11	3.63E-10	5.81E-08	5.43E-07	6.80E-11
Cobalt	7440-48-4	Soil Ingestion	0.00E+00	0.00E+00	1.19E-07	1.11E-06	
Copper	7440-50-8	Soil Ingestion	0.00E+00	0.00E+00	1.04E-08	9.67E-08	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Soil Ingestion	1.03E-11	1.93E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Soil Ingestion	7.49E-12	1.40E-11	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Soil Ingestion	1.95E-12	3.64E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Soil Ingestion	7.23E-12	1.35E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Soil Ingestion	1.78E-11	3.31E-11	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Soil Ingestion	1.81E-11	3.38E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Soil Ingestion	4.13E-11	7.71E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Soil Ingestion	7.03E-11	1.31E-10	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Soil Ingestion	1.42E-11	2.66E-11	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Soil Ingestion	6.56E-11	1.23E-10	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Soil Ingestion	2.03E-14	2.02E-13	0.00E+00	0.00E+00	3.79E-14
Lead	7439-92-1	Soil Ingestion	1.10E-10	2.05E-10	1.23E-04	1.15E-03	
Manganese	7439-96-5	Soil Ingestion	0.00E+00	0.00E+00	9.43E-09	8.80E-08	
Molybdenum	74939-98-7	Soil Ingestion	0.00E+00	0.00E+00	5.27E-08	4.92E-07	
Nickel	7440-02-0	Soil Ingestion	0.00E+00	0.00E+00	2.28E-08	2.13E-07	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Soil Ingestion	7.19E-13	1.34E-12	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Soil Ingestion	1.72E-13	3.22E-13	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Soil Ingestion	2.69E-10	5.03E-10	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Soil Ingestion	1.36E-11	2.54E-11	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Soil Ingestion	1.98E-10	3.69E-10	0.00E+00	0.00E+00	
Selenium	7782-49-2	Soil Ingestion	0.00E+00	0.00E+00	3.26E-09	3.04E-08	
TetraCDD, 2,3,7,8-	1746-01-6	Soil Ingestion	5.19E-11	9.68E-11	1.59E-06	1.48E-05	
TetraCDF, 2,3,7,8-	51207-31-9	Soil Ingestion	7.22E-11	1.35E-10	0.00E+00	0.00E+00	
Tin	7440-31-5	Soil Ingestion	0.00E+00	0.00E+00	1.79E-08	1.67E-07	
Vanadium	7440-62-2	Soil Ingestion	0.00E+00	0.00E+00	1.79E-05	1.67E-04	
Zinc	7440-66-6	Soil Ingestion	0.00E+00	0.00E+00	2.43E-07	2.27E-06	
		Pathway Total:	**1.06E-09**	**2.28E-09**	**1.47E-04**	**1.37E-03**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-4. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Fisher at Puerto Arecibo

COPC Name	CAS Number	Pathway	Fisher PA Adult Cancer Risk	Fisher PA Child Cancer Risk	Fisher PA Adult Hazard Quotient	Fisher PA Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Fish Ingestion	0.00E+00	0.00E+00	4.48E-08	1.47E-07	
Arsenic	7440-38-2	Fish Ingestion	4.10E-12	2.69E-12	2.13E-08	6.99E-08	
Beryllium	7440-41-7	Fish Ingestion	0.00E+00	0.00E+00	1.77E-10	5.83E-10	
Cadmium	7440-43-9	Fish Ingestion	0.00E+00	0.00E+00	5.85E-08	1.92E-07	
Chromium, hexavalent	18540-29-9	Fish Ingestion	1.12E-13	3.93E-13	1.75E-10	5.73E-10	7.37E-14
Cobalt	7440-48-4	Fish Ingestion	0.00E+00	0.00E+00	1.43E-08	4.71E-08	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Fish Ingestion	3.10E-13	2.04E-13	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Fish Ingestion	2.16E-13	1.42E-13	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Fish Ingestion	5.76E-14	3.79E-14	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Fish Ingestion	1.76E-12	1.15E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Fish Ingestion	4.10E-12	2.69E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Fish Ingestion	4.13E-12	2.71E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Fish Ingestion	8.90E-12	5.85E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Fish Ingestion	1.55E-11	1.02E-11	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Fish Ingestion	3.17E-12	2.09E-12	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Fish Ingestion	1.43E-11	9.40E-12	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Fish Ingestion	7.20E-13	2.52E-12	0.00E+00	0.00E+00	4.73E-13
Molybdenum	74939-98-7	Fish Ingestion	0.00E+00	0.00E+00	4.76E-10	1.56E-09	
Nickel	7440-02-0	Fish Ingestion	0.00E+00	0.00E+00	4.96E-10	1.63E-09	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Fish Ingestion	4.35E-16	2.86E-16	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Fish Ingestion	1.04E-16	6.83E-17	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Fish Ingestion	1.38E-10	9.05E-11	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Fish Ingestion	7.73E-12	5.08E-12	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Fish Ingestion	9.05E-11	5.95E-11	0.00E+00	0.00E+00	
Selenium	7782-49-2	Fish Ingestion	0.00E+00	0.00E+00	1.49E-09	4.89E-09	
TetraCDD, 2,3,7,8-	1746-01-6	Fish Ingestion	3.73E-11	2.45E-11	6.70E-07	2.20E-06	
TetraCDF, 2,3,7,8-	51207-31-9	Fish Ingestion	4.16E-11	2.73E-11	0.00E+00	0.00E+00	
Tin	7440-31-5	Fish Ingestion	0.00E+00	0.00E+00	4.10E-09	1.35E-08	
Zinc	7440-66-6	Fish Ingestion	0.00E+00	0.00E+00	1.47E-07	4.82E-07	
		Pathway Total:	**3.72E-10**	**2.47E-10**	**9.63E-07**	**3.16E-06**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-5. I Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Fisher at Cienaga Tiburones

COPC Name	CAS Number	Pathway	Fisher Tib Adult Cancer Risk	Fisher Tib Child Cancer Risk	Fisher Tib Adult Hazard Quotient	Fisher Tib Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Fish Ingestion	0.00E+00	0.00E+00	1.45E-02	4.78E-02	
Arsenic	7440-38-2	Fish Ingestion	1.85E-06	1.21E-06	9.80E-03	3.22E-02	
Beryllium	7440-41-7	Fish Ingestion	0.00E+00	0.00E+00	3.01E-06	9.89E-06	
Cadmium	7440-43-9	Fish Ingestion	0.00E+00	0.00E+00	1.22E-02	4.01E-02	
Chromium, hexavalent	18540-29-9	Fish Ingestion	6.92E-08	2.42E-07	1.09E-04	3.59E-04	4.55E-08
Cobalt	7440-48-4	Fish Ingestion	0.00E+00	0.00E+00	4.66E-03	1.53E-02	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Fish Ingestion	5.79E-13	3.80E-13	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Fish Ingestion	1.70E-13	1.12E-13	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Fish Ingestion	4.57E-14	3.00E-14	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Fish Ingestion	2.25E-12	1.48E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Fish Ingestion	1.85E-12	1.22E-12	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Fish Ingestion	1.86E-12	1.22E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Fish Ingestion	3.09E-12	2.03E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Fish Ingestion	8.10E-12	5.32E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Fish Ingestion	1.28E-12	8.41E-13	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Fish Ingestion	5.76E-12	3.79E-12	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Fish Ingestion	5.34E-11	1.87E-10	0.00E+00	0.00E+00	3.51E-11
Molybdenum	74939-98-7	Fish Ingestion	0.00E+00	0.00E+00	2.88E-04	9.45E-04	
Nickel	7440-02-0	Fish Ingestion	0.00E+00	0.00E+00	1.18E-04	3.86E-04	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Fish Ingestion	1.49E-15	9.78E-16	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Fish Ingestion	8.21E-16	5.40E-16	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Fish Ingestion	3.81E-11	2.50E-11	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Fish Ingestion	3.54E-12	2.33E-12	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Fish Ingestion	2.58E-11	1.69E-11	0.00E+00	0.00E+00	
Selenium	7782-49-2	Fish Ingestion	0.00E+00	0.00E+00	1.86E-03	6.12E-03	
TetraCDD, 2,3,7,8-	1746-01-6	Fish Ingestion	6.01E-12	3.95E-12	1.09E-07	3.58E-07	
TetraCDF, 2,3,7,8-	51207-31-9	Fish Ingestion	4.06E-12	2.67E-12	0.00E+00	0.00E+00	
Tin	7440-31-5	Fish Ingestion	0.00E+00	0.00E+00	7.78E-03	2.56E-02	
Zinc	7440-66-6	Fish Ingestion	0.00E+00	0.00E+00	3.62E-02	1.19E-01	
		Pathway Total:	**1.92E-06**	**1.46E-06**	**8.75E-02**	**2.88E-01**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-6. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 1 - 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Fisher at Rio Grande de Arecibo Estuary

COPC Name	CAS Number	Pathway	Fisher RGA Adult Cancer Risk	Fisher RGA Child Cancer Risk	Fisher RGA Adult Hazard Quotient	Fisher RGA Child Hazard Quotient	IRAP Output
Antimony	7440-36-0	Fish Ingestion	0.00E+00	0.00E+00	5.60E-08	1.84E-07	
Arsenic	7440-38-2	Fish Ingestion	4.99E-12	3.28E-12	2.66E-08	8.73E-08	
Beryllium	7440-41-7	Fish Ingestion	0.00E+00	0.00E+00	1.64E-10	5.38E-10	
Cadmium	7440-43-9	Fish Ingestion	0.00E+00	0.00E+00	7.31E-08	2.40E-07	
Chromium, hexavalent	18540-29-9	Fish Ingestion	1.38E-13	4.83E-13	2.18E-10	7.16E-10	9.05E-14
Cobalt	7440-48-4	Fish Ingestion	0.00E+00	0.00E+00	1.79E-08	5.89E-08	
HeptaCDD, 1,2,3,4,6,7,8-	35822-46-9	Fish Ingestion	3.11E-14	2.04E-14	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,6,7,8-	67562-39-4	Fish Ingestion	2.18E-14	1.44E-14	0.00E+00	0.00E+00	
HeptaCDF, 1,2,3,4,7,8,9-	55673-89-7	Fish Ingestion	5.69E-15	3.74E-15	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,4,7,8-	39227-28-6	Fish Ingestion	1.73E-13	1.14E-13	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,6,7,8-	57653-85-7	Fish Ingestion	4.11E-13	2.70E-13	0.00E+00	0.00E+00	
HexaCDD, 1,2,3,7,8,9-	19408-74-3	Fish Ingestion	4.19E-13	2.75E-13	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,4,7,8-	70648-26-9	Fish Ingestion	9.05E-13	5.95E-13	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,6,7,8-	57117-44-9	Fish Ingestion	1.54E-12	1.01E-12	0.00E+00	0.00E+00	
HexaCDF, 1,2,3,7,8,9-	72918-21-9	Fish Ingestion	3.12E-13	2.05E-13	0.00E+00	0.00E+00	
HexaCDF, 2,3,4,6,7,8-	60851-34-5	Fish Ingestion	1.44E-12	9.45E-13	0.00E+00	0.00E+00	
Indeno(1,2,3-cd) pyrene	193-39-5	Fish Ingestion	2.88E-13	1.01E-12	0.00E+00	0.00E+00	1.89E-13
Molybdenum	74939-98-7	Fish Ingestion	0.00E+00	0.00E+00	5.94E-10	1.95E-09	
Nickel	7440-02-0	Fish Ingestion	0.00E+00	0.00E+00	6.20E-10	2.04E-09	
OctaCDD, 1,2,3,4,6,7,8,9-	3268-87-9	Fish Ingestion	4.35E-17	2.86E-17	0.00E+00	0.00E+00	
OctaCDF, 1,2,3,4,6,7,8,9-	39001-02-0	Fish Ingestion	1.04E-17	6.83E-18	0.00E+00	0.00E+00	
PentaCDD, 1,2,3,7,8-	40321-76-4	Fish Ingestion	1.18E-11	7.75E-12	0.00E+00	0.00E+00	
PentaCDF, 1,2,3,7,8-	57117-41-6	Fish Ingestion	6.38E-13	4.19E-13	0.00E+00	0.00E+00	
PentaCDF, 2,3,4,7,8-	57117-31-4	Fish Ingestion	8.07E-12	5.30E-12	0.00E+00	0.00E+00	
Selenium	7782-49-2	Fish Ingestion	0.00E+00	0.00E+00	1.86E-09	6.10E-09	
TetraCDD, 2,3,7,8-	1746-01-6	Fish Ingestion	2.63E-12	1.73E-12	4.77E-08	1.57E-07	
TetraCDF, 2,3,7,8-	51207-31-9	Fish Ingestion	2.36E-12	1.55E-12	0.00E+00	0.00E+00	
Tin	7440-31-5	Fish Ingestion	0.00E+00	0.00E+00	4.95E-09	1.63E-08	
Zinc	7440-66-6	Fish Ingestion	0.00E+00	0.00E+00	1.83E-07	6.02E-07	
		Pathway Total:	**3.62E-11**	**2.50E-11**	**4.13E-07**	**1.36E-06**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-7. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 2 - Benzo(a)pyrene
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Anthracene	120-12-7	Inhalation	0.00E+00	0.00E+00	2.79E-12	2.79E-12	
Benzo(a)anthracene	56-55-3	Inhalation	1.53E-13	1.23E-13	0.00E+00	0.00E+00	2.30E-14
Benzo(a)pyrene	50-32-8	Inhalation	1.37E-12	1.10E-12	0.00E+00	0.00E+00	2.06E-13
Chrysene	218-01-9	Inhalation	1.65E-14	1.32E-14	0.00E+00	0.00E+00	2.48E-15
Fluoranthene	206-44-0	Inhalation	0.00E+00	0.00E+00	1.45E-11	1.45E-11	
Hydrogen fluoride	7664-39-3	Inhalation	0.00E+00	0.00E+00	2.69E-03	2.69E-03	
Pyrene	129-00-0	Inhalation	0.00E+00	0.00E+00	1.53E-11	1.53E-11	
		Pathway Total:	**1.54E-12**	**1.24E-12**	**2.69E-03**	**2.69E-03**	
Anthracene	120-12-7	Locally-grown Produce	0.00E+00	0.00E+00	7.61E-13	8.60E-12	
Benzo(a)anthracene	56-55-3	Locally-grown Produce	1.59E-12	1.43E-11	0.00E+00	0.00E+00	2.69E-12
Benzo(a)pyrene	50-32-8	Locally-grown Produce	2.00E-11	1.80E-10	0.00E+00	0.00E+00	3.37E-11
Chrysene	218-01-9	Locally-grown Produce	8.54E-15	7.75E-14	0.00E+00	0.00E+00	1.45E-14
Fluoranthene	206-44-0	Locally-grown Produce	0.00E+00	0.00E+00	3.26E-12	3.67E-11	
Pyrene	129-00-0	Locally-grown Produce	0.00E+00	0.00E+00	1.16E-11	1.31E-10	
		Pathway Total:	**2.16E-11**	**1.94E-10**	**1.56E-11**	**1.76E-10**	
Anthracene	120-12-7	Beef Ingestion	0.00E+00	0.00E+00	5.75E-13	1.65E-12	
Benzo(a)anthracene	56-55-3	Beef Ingestion	2.31E-12	5.40E-12	0.00E+00	0.00E+00	1.01E-12
Benzo(a)pyrene	50-32-8	Beef Ingestion	3.47E-11	8.04E-11	0.00E+00	0.00E+00	1.51E-11
Chrysene	218-01-9	Beef Ingestion	1.14E-14	2.69E-14	0.00E+00	0.00E+00	5.04E-15
Fluoranthene	206-44-0	Beef Ingestion	0.00E+00	0.00E+00	5.81E-12	1.67E-11	
Hydrogen fluoride	7664-39-3	Beef Ingestion	0.00E+00	0.00E+00	3.84E-07	1.10E-06	
Pyrene	129-00-0	Beef Ingestion	0.00E+00	0.00E+00	1.65E-11	4.74E-11	
		Pathway Total:	**3.70E-11**	**8.59E-11**	**3.84E-07**	**1.10E-06**	
Anthracene	120-12-7	Chicken Ingestion	0.00E+00	0.00E+00	1.89E-14	6.00E-14	
Benzo(a)anthracene	56-55-3	Chicken Ingestion	7.09E-15	2.19E-14	0.00E+00	0.00E+00	4.10E-15
Benzo(a)pyrene	50-32-8	Chicken Ingestion	5.68E-14	1.79E-13	0.00E+00	0.00E+00	3.35E-14
Chrysene	218-01-9	Chicken Ingestion	7.58E-17	2.25E-16	0.00E+00	0.00E+00	4.21E-17
Fluoranthene	206-44-0	Chicken Ingestion	0.00E+00	0.00E+00	1.14E-13	3.62E-13	
Hydrogen fluoride	7664-39-3	Chicken Ingestion	0.00E+00	0.00E+00	1.54E-08	4.90E-08	
Pyrene	129-00-0	Chicken Ingestion	0.00E+00	0.00E+00	5.21E-13	1.65E-12	
		Pathway Total:	**6.40E-14**	**2.01E-13**	**1.54E-08**	**4.90E-08**	
Anthracene	120-12-7	Drinking Water Ingestion	0.00E+00	0.00E+00	1.04E-15	2.31E-15	
Benzo(a)anthracene	56-55-3	Drinking Water Ingestion	2.97E-16	5.36E-16	0.00E+00	0.00E+00	1.00E-16
Benzo(a)pyrene	50-32-8	Drinking Water Ingestion	1.96E-15	3.53E-15	0.00E+00	0.00E+00	6.63E-16
Chrysene	218-01-9	Drinking Water Ingestion	1.12E-18	2.04E-18	0.00E+00	0.00E+00	3.83E-19
Fluoranthene	206-44-0	Drinking Water Ingestion	0.00E+00	0.00E+00	6.82E-15	1.52E-14	
Hydrogen fluoride	7664-39-3	Drinking Water Ingestion	0.00E+00	0.00E+00	2.49E-07	5.55E-07	
Pyrene	129-00-0	Drinking Water Ingestion	0.00E+00	0.00E+00	9.28E-15	2.07E-14	
		Pathway Total:	**2.26E-15**	**4.07E-15**	**2.49E-07**	**5.55E-07**	

Table E-7. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 2 - Benzo(a)pyrene
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Anthracene	120-12-7	Eggs Ingestion	0.00E+00	0.00E+00	3.99E-15	1.34E-14	
Benzo(a)anthracene	56-55-3	Eggs Ingestion	1.50E-15	4.87E-15	0.00E+00	0.00E+00	9.13E-16
Benzo(a)pyrene	50-32-8	Eggs Ingestion	1.20E-14	3.98E-14	0.00E+00	0.00E+00	7.47E-15
Chrysene	218-01-9	Eggs Ingestion	1.60E-17	5.00E-17	0.00E+00	0.00E+00	9.38E-18
Fluoranthene	206-44-0	Eggs Ingestion	0.00E+00	0.00E+00	2.41E-14	8.06E-14	
Hydrogen fluoride	7664-39-3	Eggs Ingestion	0.00E+00	0.00E+00	3.26E-09	1.09E-08	
Pyrene	129-00-0	Eggs Ingestion	0.00E+00	0.00E+00	1.10E-13	3.68E-13	
		Pathway Total:	**1.35E-14**	**4.47E-14**	**3.26E-09**	**1.09E-08**	
Anthracene	120-12-7	Milk Ingestion	0.00E+00	0.00E+00	7.36E-13	5.69E-12	
Benzo(a)anthracene	56-55-3	Milk Ingestion	4.28E-12	2.67E-11	0.00E+00	0.00E+00	5.00E-12
Benzo(a)pyrene	50-32-8	Milk Ingestion	6.54E-11	4.07E-10	0.00E+00	0.00E+00	7.62E-11
Chrysene	218-01-9	Milk Ingestion	2.01E-14	1.26E-13	0.00E+00	0.00E+00	2.37E-14
Fluoranthene	206-44-0	Milk Ingestion	0.00E+00	0.00E+00	8.68E-12	6.71E-11	
Hydrogen fluoride	7664-39-3	Milk Ingestion	0.00E+00	0.00E+00	3.58E-07	2.77E-06	
Pyrene	129-00-0	Milk Ingestion	0.00E+00	0.00E+00	2.05E-11	1.59E-10	
		Pathway Total:	**6.97E-11**	**4.33E-10**	**3.58E-07**	**2.77E-06**	
Anthracene	120-12-7	Pork Ingestion	0.00E+00	0.00E+00	3.68E-13	1.31E-12	
Benzo(a)anthracene	56-55-3	Pork Ingestion	3.71E-13	1.14E-12	0.00E+00	0.00E+00	2.14E-13
Benzo(a)pyrene	50-32-8	Pork Ingestion	5.23E-12	1.56E-11	0.00E+00	0.00E+00	2.93E-12
Chrysene	218-01-9	Pork Ingestion	2.38E-15	7.45E-15	0.00E+00	0.00E+00	1.40E-15
Fluoranthene	206-44-0	Pork Ingestion	0.00E+00	0.00E+00	2.52E-12	9.00E-12	
Hydrogen fluoride	7664-39-3	Pork Ingestion	0.00E+00	0.00E+00	2.84E-07	1.01E-06	
Pyrene	129-00-0	Pork Ingestion	0.00E+00	0.00E+00	1.02E-11	3.64E-11	
		Pathway Total:	**5.60E-12**	**1.68E-11**	**2.84E-07**	**1.01E-06**	
Anthracene	120-12-7	Soil Ingestion	0.00E+00	0.00E+00	1.24E-13	1.16E-12	
Benzo(a)anthracene	56-55-3	Soil Ingestion	4.20E-14	3.82E-13	0.00E+00	0.00E+00	7.16E-14
Benzo(a)pyrene	50-32-8	Soil Ingestion	3.60E-13	3.34E-12	0.00E+00	0.00E+00	6.25E-13
Chrysene	218-01-9	Soil Ingestion	4.49E-16	3.92E-15	0.00E+00	0.00E+00	7.35E-16
Fluoranthene	206-44-0	Soil Ingestion	0.00E+00	0.00E+00	6.70E-13	6.26E-12	
Hydrogen fluoride	7664-39-3	Soil Ingestion	0.00E+00	0.00E+00	4.08E-05	3.81E-04	
Pyrene	129-00-0	Soil Ingestion	0.00E+00	0.00E+00	3.10E-12	2.90E-11	
		Pathway Total:	**4.02E-13**	**3.72E-12**	**4.08E-05**	**3.81E-04**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-8. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 2 - Benzo(a)pyrene
Urban Resident

COPC Name	CAS Number	Pathway	Urban Res Adult Cancer Risk	Urban Res Child Cancer Risk	Urban Res Adult Hazard Quotient	Urban Res Child Hazard Quotient	IRAP Output
Anthracene	120-12-7	Inhalation	0.00E+00	0.00E+00	1.09E-12	1.09E-12	
Benzo(a)anthracene	56-55-3	Inhalation	4.47E-14	4.77E-14	0.00E+00	0.00E+00	8.95E-15
Benzo(a)pyrene	50-32-8	Inhalation	4.01E-13	4.28E-13	0.00E+00	0.00E+00	8.03E-14
Chrysene	218-01-9	Inhalation	4.82E-15	5.15E-15	0.00E+00	0.00E+00	9.65E-16
Fluoranthene	206-44-0	Inhalation	0.00E+00	0.00E+00	5.66E-12	5.66E-12	
Hydrogen fluoride	7664-39-3	Inhalation	0.00E+00	0.00E+00	1.05E-03	1.05E-03	
Pyrene	129-00-0	Inhalation	0.00E+00	0.00E+00	5.95E-12	5.95E-12	
		Pathway Total:	**4.51E-13**	**4.81E-13**	**1.05E-03**	**1.05E-03**	
Anthracene	120-12-7	Soil Ingestion	0.00E+00	0.00E+00	4.84E-14	4.52E-13	
Benzo(a)anthracene	56-55-3	Soil Ingestion	1.26E-14	1.25E-13	0.00E+00	0.00E+00	2.34E-14
Benzo(a)pyrene	50-32-8	Soil Ingestion	1.08E-13	1.07E-12	0.00E+00	0.00E+00	2.01E-13
Chrysene	218-01-9	Soil Ingestion	1.36E-16	1.35E-15	0.00E+00	0.00E+00	2.53E-16
Fluoranthene	206-44-0	Soil Ingestion	0.00E+00	0.00E+00	2.61E-13	2.43E-12	
Hydrogen fluoride	7664-39-3	Soil Ingestion	0.00E+00	0.00E+00	1.60E-05	1.49E-04	
Pyrene	129-00-0	Soil Ingestion	0.00E+00	0.00E+00	1.21E-12	1.13E-11	
		Pathway Total:	**1.20E-13**	**1.20E-12**	**1.60E-05**	**1.49E-04**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-9. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 2 - Benzo(a)pyrene
Suburban Resident

COPC Name	CAS Number	Pathway	Suburban Res Adult Cancer Risk	Suburban Res Child Cancer Risk	Suburban Res Adult Hazard Quotient	Suburban Res Child Hazard Quotient	IRAP Output
Anthracene	120-12-7	Inhalation	0.00E+00	0.00E+00	1.14E-12	1.14E-12	
Benzo(a)anthracene	56-55-3	Inhalation	4.67E-14	4.98E-14	0.00E+00	0.00E+00	9.33E-15
Benzo(a)pyrene	50-32-8	Inhalation	4.18E-13	4.46E-13	0.00E+00	0.00E+00	8.36E-14
Chrysene	218-01-9	Inhalation	5.03E-15	5.37E-15	0.00E+00	0.00E+00	1.01E-15
Fluoranthene	206-44-0	Inhalation	0.00E+00	0.00E+00	5.91E-12	5.91E-12	
Hydrogen fluoride	7664-39-3	Inhalation	0.00E+00	0.00E+00	1.10E-03	1.10E-03	
Pyrene	129-00-0	Inhalation	0.00E+00	0.00E+00	6.21E-12	6.21E-12	
		Pathway Total:	**4.70E-13**	**5.01E-13**	**1.10E-03**	**1.10E-03**	
Anthracene	120-12-7	Locally-grown Produce	0.00E+00	0.00E+00	3.32E-13	3.76E-12	
Benzo(a)anthracene	56-55-3	Locally-grown Produce	5.44E-13	6.52E-12	0.00E+00	0.00E+00	1.22E-12
Benzo(a)pyrene	50-32-8	Locally-grown Produce	6.86E-12	8.22E-11	0.00E+00	0.00E+00	1.54E-11
Chrysene	218-01-9	Locally-grown Produce	2.93E-15	3.51E-14	0.00E+00	0.00E+00	6.58E-15
Fluoranthene	206-44-0	Locally-grown Produce	0.00E+00	0.00E+00	1.45E-12	1.63E-11	
Pyrene	129-00-0	Locally-grown Produce	0.00E+00	0.00E+00	5.08E-12	5.74E-11	
		Pathway Total:	**7.41E-12**	**8.88E-11**	**6.86E-12**	**7.75E-11**	
Anthracene	120-12-7	Soil Ingestion	0.00E+00	0.00E+00	5.03E-14	4.69E-13	
Benzo(a)anthracene	56-55-3	Soil Ingestion	1.46E-14	1.46E-13	0.00E+00	0.00E+00	2.73E-14
Benzo(a)pyrene	50-32-8	Soil Ingestion	1.27E-13	1.26E-12	0.00E+00	0.00E+00	2.37E-13
Chrysene	218-01-9	Soil Ingestion	1.53E-16	1.52E-15	0.00E+00	0.00E+00	2.85E-16
Fluoranthene	206-44-0	Soil Ingestion	0.00E+00	0.00E+00	2.72E-13	2.54E-12	
Hydrogen fluoride	7664-39-3	Soil Ingestion	0.00E+00	0.00E+00	1.66E-05	1.55E-04	
Pyrene	129-00-0	Soil Ingestion	0.00E+00	0.00E+00	1.26E-12	1.17E-11	
		Pathway Total:	**1.42E-13**	**1.41E-12**	**1.66E-05**	**1.55E-04**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-10. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 2 - Benzo(a)pyrene
Fisher at Puerto Arecibo

COPC Name	CAS Number	Pathway	Fisher PA Adult Cancer Risk	Fisher PA Child Cancer Risk	Fisher PA Adult Hazard Quotient	Fisher PA Child Hazard Quotient	IRAP Output
Anthracene	120-12-7	Fish Ingestion	0.00E+00	0.00E+00	2.73E-14	8.97E-14	
Benzo(a)anthracene	56-55-3	Fish Ingestion	2.69E-13	9.42E-13	0.00E+00	0.00E+00	1.77E-13
Benzo(a)pyrene	50-32-8	Fish Ingestion	4.29E-12	1.50E-11	0.00E+00	0.00E+00	2.82E-12
Chrysene	218-01-9	Fish Ingestion	1.11E-15	3.88E-15	0.00E+00	0.00E+00	7.28E-16
Fluoranthene	206-44-0	Fish Ingestion	0.00E+00	0.00E+00	7.72E-13	2.54E-12	
Pyrene	129-00-0	Fish Ingestion	0.00E+00	0.00E+00	6.24E-13	2.05E-12	
		Pathway Total:	**4.56E-12**	**1.60E-11**	**1.42E-12**	**4.68E-12**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-11. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 2 - Benzo(a)pyrene
Fisher at Cienaga Tiburones

COPC Name	CAS Number	Pathway	Fisher Tib Adult Cancer Risk	Fisher Tib Child Cancer Risk	Fisher Tib Adult Hazard Quotient	Fisher Tib Child Hazard Quotient	IRAP Output
Anthracene	120-12-7	Fish Ingestion	0.00E+00	0.00E+00	2.71E-14	8.89E-14	
Benzo(a)anthracene	56-55-3	Fish Ingestion	4.11E-13	1.44E-12	0.00E+00	0.00E+00	2.70E-13
Benzo(a)pyrene	50-32-8	Fish Ingestion	2.58E-11	9.06E-11	0.00E+00	0.00E+00	1.70E-11
Chrysene	218-01-9	Fish Ingestion	1.15E-15	4.04E-15	0.00E+00	0.00E+00	7.57E-16
Fluoranthene	206-44-0	Fish Ingestion	0.00E+00	0.00E+00	2.18E-12	7.16E-12	
Pyrene	129-00-0	Fish Ingestion	0.00E+00	0.00E+00	2.55E-12	8.37E-12	
		Pathway Total:	**2.63E-11**	**9.20E-11**	**4.76E-12**	**1.56E-11**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-12. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 2 - Benzo(a)pyrene
Fisher at Rio Grande de Arecibo Estuary

COPC Name	CAS Number	Pathway	Fisher RGA Adult Cancer Risk	Fisher RGA Child Cancer Risk	Fisher RGA Adult Hazard Quotient	Fisher RGA Child Hazard Quotient	IRAP Output
Anthracene	120-12-7	Fish Ingestion	0.00E+00	0.00E+00	1.02E-14	3.37E-14	
Benzo(a)anthracene	56-55-3	Fish Ingestion	6.20E-14	2.17E-13	0.00E+00	0.00E+00	4.07E-14
Benzo(a)pyrene	50-32-8	Fish Ingestion	1.16E-12	4.07E-12	0.00E+00	0.00E+00	7.63E-13
Chrysene	218-01-9	Fish Ingestion	4.60E-16	1.61E-15	0.00E+00	0.00E+00	3.02E-16
Fluoranthene	206-44-0	Fish Ingestion	0.00E+00	0.00E+00	2.44E-13	8.03E-13	
Pyrene	129-00-0	Fish Ingestion	0.00E+00	0.00E+00	1.98E-13	6.51E-13	
		Pathway Total:	**1.22E-12**	**4.29E-12**	**4.53E-13**	**1.49E-12**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-13. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 3 - Dibenzo(a,h)anthracene
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Benzo(k)fluoranthene	207-08-9	Inhalation	1.32E-13	1.06E-13	0.00E+00	0.00E+00	1.98E-14
Dibenz(a,h)anthracene	53-70-3	Inhalation	2.07E-12	1.66E-12	0.00E+00	0.00E+00	3.11E-13
Mercuric chloride	7487-94-7	Inhalation	0.00E+00	0.00E+00	6.64E-04	6.64E-04	
		Pathway Total:	**2.20E-12**	**1.76E-12**	**6.64E-04**	**6.64E-04**	
Benzo(k)fluoranthene	207-08-9	Locally-grown Produce	2.10E-13	1.89E-12	0.00E+00	0.00E+00	3.55E-13
Dibenz(a,h)anthracene	53-70-3	Locally-grown Produce	1.19E-10	1.07E-09	0.00E+00	0.00E+00	2.00E-10
Mercuric chloride	7487-94-7	Locally-grown Produce	0.00E+00	0.00E+00	7.29E-05	7.96E-04	
Methyl mercury	22967-92-6	Locally-grown Produce	0.00E+00	0.00E+00	4.77E-05	5.31E-04	
		Pathway Total:	**1.19E-10**	**1.07E-09**	**1.21E-04**	**1.33E-03**	
Benzo(k)fluoranthene	207-08-9	Beef Ingestion	4.35E-13	1.01E-12	0.00E+00	0.00E+00	1.88E-13
Dibenz(a,h)anthracene	53-70-3	Beef Ingestion	7.42E-10	1.71E-09	0.00E+00	0.00E+00	3.20E-10
Mercuric chloride	7487-94-7	Beef Ingestion	0.00E+00	0.00E+00	1.23E-05	3.53E-05	
Methyl mercury	22967-92-6	Beef Ingestion	0.00E+00	0.00E+00	5.52E-07	1.59E-06	
		Pathway Total:	**7.42E-10**	**1.71E-09**	**1.28E-05**	**3.69E-05**	
Benzo(k)fluoranthene	207-08-9	Chicken Ingestion	1.90E-15	5.09E-15	0.00E+00	0.00E+00	9.55E-16
Dibenz(a,h)anthracene	53-70-3	Chicken Ingestion	1.40E-13	4.17E-13	0.00E+00	0.00E+00	7.82E-14
Mercuric chloride	7487-94-7	Chicken Ingestion	0.00E+00	0.00E+00	2.13E-06	6.76E-06	
Methyl mercury	22967-92-6	Chicken Ingestion	0.00E+00	0.00E+00	1.88E-08	5.95E-08	
		Pathway Total:	**1.42E-13**	**4.22E-13**	**2.15E-06**	**6.82E-06**	
Benzo(k)fluoranthene	207-08-9	Drinking Water Ingestion	1.08E-17	1.95E-17	0.00E+00	0.00E+00	3.66E-18
Dibenz(a,h)anthracene	53-70-3	Drinking Water Ingestion	1.29E-15	2.35E-15	0.00E+00	0.00E+00	4.41E-16
Mercuric chloride	7487-94-7	Drinking Water Ingestion	0.00E+00	0.00E+00	3.21E-09	7.17E-09	
Methyl mercury	22967-92-6	Drinking Water Ingestion	0.00E+00	0.00E+00	1.70E-09	3.80E-09	
		Pathway Total:	**1.30E-15**	**2.37E-15**	**4.91E-09**	**1.10E-08**	
Benzo(k)fluoranthene	207-08-9	Eggs Ingestion	4.00E-16	1.13E-15	0.00E+00	0.00E+00	2.13E-16
Dibenz(a,h)anthracene	53-70-3	Eggs Ingestion	2.94E-14	9.29E-14	0.00E+00	0.00E+00	1.74E-14
Mercuric chloride	7487-94-7	Eggs Ingestion	0.00E+00	0.00E+00	7.86E-07	2.63E-06	
Methyl mercury	22967-92-6	Eggs Ingestion	0.00E+00	0.00E+00	6.93E-09	2.32E-08	
		Pathway Total:	**2.98E-14**	**9.41E-14**	**7.93E-07**	**2.66E-06**	
Benzo(k)fluoranthene	207-08-9	Milk Ingestion	7.92E-13	4.92E-12	0.00E+00	0.00E+00	9.22E-13
Dibenz(a,h)anthracene	53-70-3	Milk Ingestion	1.43E-09	8.85E-09	0.00E+00	0.00E+00	1.66E-09
Mercuric chloride	7487-94-7	Milk Ingestion	0.00E+00	0.00E+00	3.16E-05	2.44E-04	
Methyl mercury	22967-92-6	Milk Ingestion	0.00E+00	0.00E+00	2.04E-06	1.58E-05	
		Pathway Total:	**1.43E-09**	**8.86E-09**	**3.36E-05**	**2.60E-04**	

Table E-13. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 3 - Dibenzo(a,h)anthracene
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Benzo(k)fluoranthene	207-08-9	Pork Ingestion	8.63E-14	2.52E-13	0.00E+00	0.00E+00	4.72E-14
Dibenz(a,h)anthracene	53-70-3	Pork Ingestion	1.21E-10	3.47E-10	0.00E+00	0.00E+00	6.50E-11
Mercuric chloride	7487-94-7	Pork Ingestion	0.00E+00	0.00E+00	3.61E-08	1.29E-07	
Methyl mercury	22967-92-6	Pork Ingestion	0.00E+00	0.00E+00	5.76E-10	2.05E-09	
		Pathway Total:	**1.21E-10**	**3.47E-10**	**3.67E-08**	**1.31E-07**	
Benzo(k)fluoranthene	207-08-9	Soil Ingestion	1.24E-14	9.80E-14	0.00E+00	0.00E+00	1.84E-14
Dibenz(a,h)anthracene	53-70-3	Soil Ingestion	1.08E-12	9.49E-12	0.00E+00	0.00E+00	1.78E-12
Mercuric chloride	7487-94-7	Soil Ingestion	0.00E+00	0.00E+00	1.57E-05	1.46E-04	
Methyl mercury	22967-92-6	Soil Ingestion	0.00E+00	0.00E+00	9.16E-07	8.55E-06	
		Pathway Total:	**1.09E-12**	**9.59E-12**	**1.66E-05**	**1.55E-04**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-14. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 3 - Dibenzo(a,h)anthracene
Urban Resident

COPC Name	CAS Number	Pathway	Urban Res Adu Cancer Risk	Urban Res Chil Cancer Risk	Urban Res Adult Hazard Quotient	Urban Res Child Hazard Quotient	IRAP Output
Benzo(k)fluoranthene	207-08-9	Inhalation	3.86E-14	4.12E-14	0.00E+00	0.00E+00	7.72E-15
Dibenz(a,h)anthracene	53-70-3	Inhalation	6.04E-13	6.44E-13	0.00E+00	0.00E+00	1.21E-13
Mercuric chloride	7487-94-7	Inhalation	0.00E+00	0.00E+00	2.59E-04	2.59E-04	
		Pathway Total:	**6.43E-13**	**6.85E-13**	**2.59E-04**	**2.59E-04**	
Benzo(k)fluoranthene	207-08-9	Soil Ingestion	3.11E-15	3.09E-14	0.00E+00	0.00E+00	5.80E-15
Dibenz(a,h)anthracene	53-70-3	Soil Ingestion	3.00E-13	2.99E-12	0.00E+00	0.00E+00	5.60E-13
Mercuric chloride	7487-94-7	Soil Ingestion	0.00E+00	0.00E+00	5.27E-06	4.92E-05	
Methyl mercury	22967-92-6	Soil Ingestion	0.00E+00	0.00E+00	3.08E-07	2.87E-06	
		Pathway Total:	**3.03E-13**	**3.02E-12**	**5.58E-06**	**5.21E-05**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-15. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 3 - Dibenzo(a,h)anthracene
Suburban Resident

COPC Name	CAS Number	Pathway	Sub Res Adult Cancer Risk	Sub Res Child Cancer Risk	Sub Res Adult Hazard Quotient	Sub Res Child Hazard Quotient	IRAP Output
Benzo(k)fluoranthene	207-08-9	Inhalation	4.02E-14	4.29E-14	0.00E+00	0.00E+00	8.05E-15
Dibenz(a,h)anthracene	53-70-3	Inhalation	6.29E-13	6.71E-13	0.00E+00	0.00E+00	1.26E-13
Mercuric chloride	7487-94-7	Inhalation	0.00E+00	0.00E+00	2.70E-04	2.70E-04	
		Pathway Total:	**6.69E-13**	**7.14E-13**	**2.70E-04**	**2.70E-04**	
Benzo(k)fluoranthene	207-08-9	Locally-grown Produce	7.21E-14	8.65E-13	0.00E+00	0.00E+00	1.62E-13
Dibenz(a,h)anthracene	53-70-3	Locally-grown Produce	4.29E-11	5.14E-10	0.00E+00	0.00E+00	9.64E-11
Mercuric chloride	7487-94-7	Locally-grown Produce	0.00E+00	0.00E+00	3.33E-05	3.66E-04	
Methyl mercury	22967-92-6	Locally-grown Produce	0.00E+00	0.00E+00	2.25E-05	2.51E-04	
		Pathway Total:	**4.29E-11**	**5.15E-10**	**5.58E-05**	**6.17E-04**	
Benzo(k)fluoranthene	207-08-9	Soil Ingestion	3.71E-15	3.70E-14	0.00E+00	0.00E+00	6.93E-15
Dibenz(a,h)anthracene	53-70-3	Soil Ingestion	3.59E-13	3.58E-12	0.00E+00	0.00E+00	6.70E-13
Mercuric chloride	7487-94-7	Soil Ingestion	0.00E+00	0.00E+00	6.08E-06	5.67E-05	
Methyl mercury	22967-92-6	Soil Ingestion	0.00E+00	0.00E+00	3.55E-07	3.31E-06	
		Pathway Total:	**3.63E-13**	**3.61E-12**	**6.43E-06**	**6.00E-05**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-16. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 3 - Dibenzo(a,h)anthracene
Fisher at Puerto Arecibo

COPC Name	CAS Number	Pathway	Fisher PA Adult Cancer Risk	Fisher PA Child Cancer Risk	Fisher PA Adult Hazard Quotient	Fisher PA Child Hazard Quotient	IRAP Output
Benzo(k)fluoranthene	207-08-9	Fish Ingestion	3.61E-14	1.26E-13	0.00E+00	0.00E+00	2.37E-14
Dibenz(a,h)anthracene	53-70-3	Fish Ingestion	1.23E-11	4.31E-11	0.00E+00	0.00E+00	8.08E-12
Methyl mercury	22967-92-6	Fish Ingestion	0.00E+00	0.00E+00	1.48E-04	4.87E-04	
		Pathway Total:	**1.23E-11**	**4.32E-11**	**1.48E-04**	**4.87E-04**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-17. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 3 - Dibenzo(a,h)anthracene
Fisher at Cienaga Tiburones

COPC Name	CAS Number	Pathway	Fisher Tib Adult Cancer Risk	Fisher Tib Child Cancer Risk	Fisher Tib Adult Hazard Quotient	Fisher Tib Child Hazard Quotient	IRAP Output
Benzo(k)fluoranthene	207-08-9	Fish Ingestion	2.67E-12	9.36E-12	0.00E+00	0.00E+00	1.75E-12
Dibenz(a,h)anthracene	53-70-3	Fish Ingestion	3.77E-09	1.32E-08	0.00E+00	0.00E+00	2.48E-09
Methyl mercury	22967-92-6	Fish Ingestion	0.00E+00	0.00E+00	6.15E-02	2.02E-01	
		Pathway Total:	**3.77E-09**	**1.32E-08**	**6.15E-02**	**2.02E-01**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-18. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 3 - Dibenzo(a,h)anthracene
Fisher at Rio Grande de Arecibo Estuary

COPC Name	CAS Number	Pathway	Fisher RGA Adult Cancer Risk	Fisher RGA Child Cancer Risk	Fisher RGA Adult Hazard Quotient	Fisher RGA Child Hazard Quotient	IRAP Output
Benzo(k)fluoranthene	207-08-9	Fish Ingestion	1.39E-14	4.87E-14	0.00E+00	0.00E+00	9.13E-15
Dibenz(a,h)anthracene	53-70-3	Fish Ingestion	4.87E-12	1.71E-11	0.00E+00	0.00E+00	3.20E-12
Methyl mercury	22967-92-6	Fish Ingestion	0.00E+00	0.00E+00	6.27E-05	2.06E-04	
		Pathway Total:	**4.89E-12**	**1.71E-11**	**6.27E-05**	**2.06E-04**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-19. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 4 - Naphthalene
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Acenaphthene	83-32-9	Inhalation	0.00E+00	0.00E+00	2.42E-11	2.42E-11	
Benzo(b)fluoranthene	205-99-2	Inhalation	1.21E-13	9.70E-14	0.00E+00	0.00E+00	1.82E-14
Hydrogen chloride	7647-01-0	Inhalation	0.00E+00	0.00E+00	8.71E-03	8.71E-03	
Naphthalene	91-20-3	Inhalation	6.36E-13	9.54E-14	1.09E-08	1.09E-08	
		Pathway Total:	**7.57E-13**	**1.92E-13**	**8.71E-03**	**8.71E-03**	
Acenaphthene	83-32-9	Locally-grown Produce	0.00E+00	0.00E+00	2.03E-13	2.26E-12	
Benzo(b)fluoranthene	205-99-2	Locally-grown Produce	8.45E-14	7.60E-13	0.00E+00	0.00E+00	1.43E-13
Methylnaphthalene, 2-	91-57-6	Locally-grown Produce	0.00E+00	0.00E+00	3.41E-11	3.66E-10	
Naphthalene	91-20-3	Locally-grown Produce	0.00E+00	0.00E+00	9.49E-13	1.05E-11	
		Pathway Total:	**8.45E-14**	**7.60E-13**	**3.53E-11**	**3.79E-10**	
Acenaphthene	83-32-9	Beef Ingestion	0.00E+00	0.00E+00	1.95E-14	5.61E-14	
Benzo(b)fluoranthene	205-99-2	Beef Ingestion	1.38E-13	3.20E-13	0.00E+00	0.00E+00	6.01E-14
Hydrogen chloride	7647-01-0	Beef Ingestion	0.00E+00	0.00E+00	6.46E-11	1.85E-10	
Methylnaphthalene, 2-	91-57-6	Beef Ingestion	0.00E+00	0.00E+00	3.19E-12	9.17E-12	
Naphthalene	91-20-3	Beef Ingestion	0.00E+00	0.00E+00	5.69E-14	1.63E-13	
		Pathway Total:	**1.38E-13**	**3.20E-13**	**6.78E-11**	**1.95E-10**	
Acenaphthene	83-32-9	Chicken Ingestion	0.00E+00	0.00E+00	3.04E-16	9.65E-16	
Benzo(b)fluoranthene	205-99-2	Chicken Ingestion	2.62E-16	8.16E-16	0.00E+00	0.00E+00	1.53E-16
Hydrogen chloride	7647-01-0	Chicken Ingestion	0.00E+00	0.00E+00	2.60E-12	8.23E-12	
Methylnaphthalene, 2-	91-57-6	Chicken Ingestion	0.00E+00	0.00E+00	4.92E-14	1.56E-13	
Naphthalene	91-20-3	Chicken Ingestion	0.00E+00	0.00E+00	1.35E-15	4.27E-15	
		Pathway Total:	**2.62E-16**	**8.16E-16**	**2.65E-12**	**8.39E-12**	
Acenaphthene	83-32-9	Drinking Water Ingestion	0.00E+00	0.00E+00	1.47E-15	3.29E-15	
Benzo(b)fluoranthene	205-99-2	Drinking Water Ingestion	1.55E-17	2.78E-17	0.00E+00	0.00E+00	5.22E-18
Methylnaphthalene, 2-	91-57-6	Drinking Water Ingestion	0.00E+00	0.00E+00	9.09E-15	2.03E-14	
Naphthalene	91-20-3	Drinking Water Ingestion	0.00E+00	0.00E+00	1.32E-14	2.94E-14	
		Pathway Total:	**1.55E-17**	**2.78E-17**	**2.37E-14**	**5.30E-14**	

Table E-19. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 4 - Naphthalene
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient	IRAP Output
Acenaphthene	83-32-9	Eggs Ingestion	0.00E+00	0.00E+00	6.42E-17	2.15E-16	
Benzo(b)fluoranthene	205-99-2	Eggs Ingestion	5.53E-17	1.82E-16	0.00E+00	0.00E+00	3.41E-17
Hydrogen chloride	7647-01-0	Eggs Ingestion	0.00E+00	0.00E+00	5.47E-13	1.83E-12	
Methylnaphthalene, 2-	91-57-6	Eggs Ingestion	0.00E+00	0.00E+00	1.04E-14	3.48E-14	
Naphthalene	91-20-3	Eggs Ingestion	0.00E+00	0.00E+00	2.84E-16	9.50E-16	
		Pathway Total:	**5.53E-17**	**1.82E-16**	**5.58E-13**	**1.87E-12**	
Acenaphthene	83-32-9	Milk Ingestion	0.00E+00	0.00E+00	3.33E-14	2.58E-13	
Benzo(b)fluoranthene	205-99-2	Milk Ingestion	2.59E-13	1.61E-12	0.00E+00	0.00E+00	3.02E-13
Hydrogen chloride	7647-01-0	Milk Ingestion	0.00E+00	0.00E+00	6.01E-11	4.64E-10	
Methylnaphthalene, 2-	91-57-6	Milk Ingestion	0.00E+00	0.00E+00	5.80E-12	4.49E-11	
Naphthalene	91-20-3	Milk Ingestion	0.00E+00	0.00E+00	1.15E-13	8.91E-13	
		Pathway Total:	**2.59E-13**	**1.61E-12**	**6.60E-11**	**5.10E-10**	
Acenaphthene	83-32-9	Pork Ingestion	0.00E+00	0.00E+00	7.74E-15	2.76E-14	
Benzo(b)fluoranthene	205-99-2	Pork Ingestion	2.12E-14	6.36E-14	0.00E+00	0.00E+00	1.19E-14
Hydrogen chloride	7647-01-0	Pork Ingestion	0.00E+00	0.00E+00	4.78E-11	1.71E-10	
Methylnaphthalene, 2-	91-57-6	Pork Ingestion	0.00E+00	0.00E+00	1.23E-12	4.38E-12	
Naphthalene	91-20-3	Pork Ingestion	0.00E+00	0.00E+00	3.09E-14	1.10E-13	
		Pathway Total:	**2.12E-14**	**6.36E-14**	**4.91E-11**	**1.75E-10**	
Acenaphthene	83-32-9	Soil Ingestion	0.00E+00	0.00E+00	2.51E-15	2.35E-14	
Benzo(b)fluoranthene	205-99-2	Soil Ingestion	1.73E-15	1.58E-14	0.00E+00	0.00E+00	2.97E-15
Hydrogen chloride	7647-01-0	Soil Ingestion	0.00E+00	0.00E+00	1.19E-08	1.12E-07	
Methylnaphthalene, 2-	91-57-6	Soil Ingestion	0.00E+00	0.00E+00	6.43E-14	6.00E-13	
Naphthalene	91-20-3	Soil Ingestion	0.00E+00	0.00E+00	1.19E-14	1.11E-13	
		Pathway Total:	**1.73E-15**	**1.58E-14**	**1.19E-08**	**1.12E-07**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-20. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 4 - Naphthalene
Urban Resident

COPC Name	CAS Number	Pathway	Urban Res Adult Cancer Risk	Urban Res Child Cancer Risk	Urban Res Adult Hazard Quotient	Urban Res Child Hazard Quotient	IRAP Output
Acenaphthene	83-32-9	Inhalation	0.00E+00	0.00E+00	6.09E-08	6.09E-08	
Benzo(b)fluoranthene	205-99-2	Inhalation	2.29E-10	2.45E-10	0.00E+00	0.00E+00	4.58E-11
Hydrogen chloride	7647-01-0	Inhalation	0.00E+00	0.00E+00	8.31E-03	8.31E-03	
Naphthalene	91-20-3	Inhalation	1.20E-09	2.40E-10	2.74E-05	2.74E-05	
		Pathway Total:	**1.43E-09**	**4.84E-10**	**8.34E-03**	**8.34E-03**	
Acenaphthene	83-32-9	Soil Ingestion	0.00E+00	0.00E+00	6.66E-12	6.22E-11	
Benzo(b)fluoranthene	205-99-2	Soil Ingestion	3.29E-12	3.27E-11	0.00E+00	0.00E+00	6.13E-12
Hydrogen chloride	7647-01-0	Soil Ingestion	0.00E+00	0.00E+00	1.20E-08	1.12E-07	
Methylnaphthalene, 2-	91-57-6	Soil Ingestion	0.00E+00	0.00E+00	1.70E-10	1.59E-09	
Naphthalene	91-20-3	Soil Ingestion	0.00E+00	0.00E+00	3.14E-11	2.94E-10	
		Pathway Total:	**3.29E-12**	**3.27E-11**	**1.22E-08**	**1.14E-07**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-21. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 4 - Naphthalene
Suburban Resident

COPC Name	CAS Number	Pathway	Suburban Res Adult Cancer Risk	Suburban Res Child Cancer Risk	Suburban Res Adult Hazard Quotient	Suburban Res Child Hazard Quotient	IRAP Output
Acenaphthene	83-32-9	Inhalation	0.00E+00	0.00E+00	9.88E-12	9.88E-12	
Benzo(b)fluoranthene	205-99-2	Inhalation	3.71E-14	3.96E-14	0.00E+00	0.00E+00	7.42E-15
Hydrogen chloride	7647-01-0	Inhalation	0.00E+00	0.00E+00	3.55E-03	3.55E-03	
Naphthalene	91-20-3	Inhalation	1.95E-13	3.89E-14	4.45E-09	4.45E-09	
		Pathway Total:	**2.32E-13**	**7.85E-14**	**3.55E-03**	**3.55E-03**	
Acenaphthene	83-32-9	Locally-grown Produce	0.00E+00	0.00E+00	9.76E-14	1.09E-12	
Benzo(b)fluoranthene	205-99-2	Locally-grown Produce	2.90E-14	3.47E-13	0.00E+00	0.00E+00	6.51E-14
Methylnaphthalene, 2-	91-57-6	Locally-grown Produce	0.00E+00	0.00E+00	1.50E-11	1.61E-10	
Naphthalene	91-20-3	Locally-grown Produce	0.00E+00	0.00E+00	4.29E-13	4.75E-12	
		Pathway Total:	**2.90E-14**	**3.47E-13**	**1.55E-11**	**1.67E-10**	
Acenaphthene	83-32-9	Soil Ingestion	0.00E+00	0.00E+00	1.04E-15	9.66E-15	
Benzo(b)fluoranthene	205-99-2	Soil Ingestion	6.02E-16	5.99E-15	0.00E+00	0.00E+00	1.12E-15
Hydrogen chloride	7647-01-0	Soil Ingestion	0.00E+00	0.00E+00	4.92E-09	4.59E-08	
Methylnaphthalene, 2-	91-57-6	Soil Ingestion	0.00E+00	0.00E+00	2.65E-14	2.47E-13	
Naphthalene	91-20-3	Soil Ingestion	0.00E+00	0.00E+00	4.89E-15	4.56E-14	
		Pathway Total:	**6.02E-16**	**5.99E-15**	**4.92E-09**	**4.59E-08**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-22. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 4 - Naphthalene
Fisher at Puerto Arecibo

COPC Name	CAS Number	Pathway	Fisher PA Adult Cancer Risk	Fisher PA Child Cancer Risk	Fisher PA Adult Hazard Quotient	Fisher PA Child Hazard Quotient	IRAP Output
Acenaphthene	83-32-9	Fish Ingestion	0.00E+00	0.00E+00	1.95E-11	6.40E-11	
Benzo(b)fluoranthene	205-99-2	Fish Ingestion	1.12E-10	3.91E-10	0.00E+00	0.00E+00	7.33E-11
Hydrogen chloride	7647-01-0	Fish Ingestion	0.00E+00	0.00E+00	2.36E-09	7.76E-09	
Methylnaphthalene, 2-	91-57-6	Fish Ingestion	0.00E+00	0.00E+00	6.81E-11	2.24E-10	
Naphthalene	91-20-3	Fish Ingestion	0.00E+00	0.00E+00	6.91E-11	2.27E-10	
		Pathway Total:	**1.12E-10**	**3.91E-10**	**2.52E-09**	**8.27E-09**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-23. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 4 - Naphthalene
Fisher at Cienaga Tiburones

COPC Name	CAS Number	Pathway	Fisher Tib Adult Cancer Risk	Fisher Tib Child Cancer Risk	Fisher Tib Adult Hazard Quotient	Fisher Tib Child Hazard Quotient	IRAP Output
Acenaphthene	83-32-9	Fish Ingestion	0.00E+00	0.00E+00	2.54E-11	8.35E-11	
Benzo(b)fluoranthene	205-99-2	Fish Ingestion	3.79E-10	1.33E-09	0.00E+00	0.00E+00	2.49E-10
Hydrogen chloride	7647-01-0	Fish Ingestion	0.00E+00	0.00E+00	1.78E-03	5.85E-03	
Methylnaphthalene, 2-	91-57-6	Fish Ingestion	0.00E+00	0.00E+00	5.40E-11	1.78E-10	
Naphthalene	91-20-3	Fish Ingestion	0.00E+00	0.00E+00	5.64E-11	1.85E-10	
		Pathway Total:	**3.79E-10**	**1.33E-09**	**1.78E-03**	**5.85E-03**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-24. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 4 - Naphthalene
Fisher at Rio Grande de Arecibo Estuary

COPC Name	CAS Number	Pathway	Fisher RGA Adult Cancer Risk	Fisher RGA Child Cancer Risk	Fisher RGA Adult Hazard Quotient	Fisher RGA Child Hazard Quotient	IRAP Output
Acenaphthene	83-32-9	Fish Ingestion	0.00E+00	0.00E+00	1.20E-11	3.93E-11	
Benzo(b)fluoranthene	205-99-2	Fish Ingestion	8.30E-11	2.91E-10	0.00E+00	0.00E+00	5.46E-11
Hydrogen chloride	7647-01-0	Fish Ingestion	0.00E+00	0.00E+00	2.06E-08	6.78E-08	
Methylnaphthalene, 2-	91-57-6	Fish Ingestion	0.00E+00	0.00E+00	4.95E-11	1.63E-10	
Naphthalene	91-20-3	Fish Ingestion	0.00E+00	0.00E+00	4.92E-11	1.62E-10	
		Pathway Total:	**8.30E-11**	**2.91E-10**	**2.07E-08**	**6.82E-08**	

Note:
Shading indicates carcinogen is a mutagen and the age-dependent adjsutment factors (ADAFs) have been applied to the cancer risk calculations.

Table E-25. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 5 - Aroclor 1254
Farmer

COPC Name	CAS Number	Pathway	Farmer Adult Cancer Risk	Farmer Child Cancer Risk	Farmer Adult Hazard Quotient	Farmer Child Hazard Quotient
Aroclor 1254	11097-69-1	Inhalation	1.77E-11	2.65E-12	7.75E-07	7.75E-07
		Pathway Total:	**1.77E-11**	**2.65E-12**	**7.75E-07**	**7.75E-07**
Aroclor 1254	11097-69-1	Locally-grown Produce	1.97E-12	3.27E-12	8.98E-08	1.00E-06
		Pathway Total:	**1.97E-12**	**3.27E-12**	**8.98E-08**	**1.00E-06**
Aroclor 1254	11097-69-1	Beef Ingestion	5.58E-12	2.36E-12	2.67E-07	7.68E-07
		Pathway Total:	**5.58E-12**	**2.36E-12**	**2.67E-07**	**7.68E-07**
Aroclor 1254	11097-69-1	Chicken Ingestion	3.94E-14	1.67E-14	2.66E-09	8.44E-09
		Pathway Total:	**3.94E-14**	**1.67E-14**	**2.66E-09**	**8.44E-09**
Aroclor 1254	11097-69-1	Drinking Water Ingestion	5.13E-16	1.71E-16	2.30E-11	5.13E-11
		Pathway Total:	**5.13E-16**	**1.71E-16**	**2.30E-11**	**5.13E-11**
Aroclor 1254	11097-69-1	Eggs Ingestion	8.31E-15	3.73E-15	5.62E-10	1.88E-09
		Pathway Total:	**8.31E-15**	**3.73E-15**	**5.62E-10**	**1.88E-09**
Aroclor 1254	11097-69-1	Milk Ingestion	9.80E-12	1.12E-11	4.51E-07	3.49E-06
		Pathway Total:	**9.80E-12**	**1.12E-11**	**4.51E-07**	**3.49E-06**
Aroclor 1254	11097-69-1	Pork Ingestion	1.40E-12	7.06E-13	7.85E-08	2.80E-07
		Pathway Total:	**1.40E-12**	**7.06E-13**	**7.85E-08**	**2.80E-07**
Aroclor 1254	11097-69-1	Soil Ingestion	3.05E-13	3.81E-13	2.06E-08	1.92E-07
		Pathway Total:	**3.05E-13**	**3.81E-13**	**2.06E-08**	**1.92E-07**

Table E-26. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 5 - Aroclor 1254
Urban Resident

COPC Name	CAS Number	Pathway	Urban Res Adu Cancer Risk	Urban Res Chil Cancer Risk	Urban Res Adult Hazard Quotient	Urban Res Child Hazard Quotient
Aroclor 1254	11097-69-1	Inhalation	5.17E-12	1.03E-12	3.03E-07	3.03E-07
		Pathway Total:	**5.17E-12**	**1.03E-12**	**3.03E-07**	**3.03E-07**
Aroclor 1254	11097-69-1	Soil Ingestion	6.99E-14	1.30E-13	7.06E-09	6.58E-08
		Pathway Total:	**6.99E-14**	**1.30E-13**	**7.06E-09**	**6.58E-08**

Table E-27. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 5 - Aroclor 1254
Suburban Resident

COPC Name	CAS Number	Pathway	Sub Res Adult Cancer Risk	Sub Res Child Cancer Risk	Sub Res Adult Hazard Quotient	Sub Res Child Hazard Quotient
Aroclor 1254	11097-69-1	Inhalation	5.40E-12	1.08E-12	3.16E-07	3.16E-07
		Pathway Total:	**5.40E-12**	**1.08E-12**	**3.16E-07**	**3.16E-07**
Aroclor 1254	11097-69-1	Locally-grown Produce	6.71E-13	1.50E-12	4.10E-08	4.57E-07
		Pathway Total:	**6.71E-13**	**1.50E-12**	**4.10E-08**	**4.57E-07**
Aroclor 1254	11097-69-1	Soil Ingestion	7.83E-14	1.46E-13	7.91E-09	7.38E-08
		Pathway Total:	**7.83E-14**	**1.46E-13**	**7.91E-09**	**7.38E-08**

Table E-28. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 5 - Aroclor 1254
Fisher at Puerto Arecibo

COPC Name	CAS Number	Pathway	Fisher PA Adult Cancer Risk	Fisher PA Child Cancer Risk	Fisher PA Adult Hazard Quotient	Fisher PA Child Hazard Quotient
Aroclor 1254	11097-69-1	Fish Ingestion	3.08E-12	2.02E-12	1.80E-07	5.90E-07
		Pathway Total:	**3.08E-12**	**2.02E-12**	**1.80E-07**	**5.90E-07**

Table E-29. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 5 - Aroclor 1254
Fisher at Cienaga Tiburones

COPC Name	CAS Number	Pathway	Fisher Tib Adult Cancer Risk	Fisher Tib Child Cancer Risk	Fisher Tib Adult Hazard Quotient	Fisher Tib Child Hazard Quotient
Aroclor 1254	11097-69-1	Fish Ingestion	3.18E-13	2.09E-13	1.86E-08	6.12E-08
		Pathway Total:	**3.18E-13**	**2.09E-13**	**1.86E-08**	**6.12E-08**

Table E-30. Pathway and Constituent of Potential Concern Cancer Risks and Noncancer Hazards - IRAP Output.
Run 5 - Aroclor 1254
Fisher at Rio Grande de Arecibo Estuary

COPC Name	CAS Number	Pathway	Fisher RGA Adult Cancer Risk	Fisher RGA Child Cancer Risk	Fisher RGA Adult Hazard Quotient	Fisher RGA Child Hazard Quotient
Aroclor 1254	11097-69-1	Fish Ingestion	2.19E-13	1.44E-13	1.29E-08	4.22E-08
		Pathway Total:	**2.19E-13**	**1.44E-13**	**1.29E-08**	**4.22E-08**