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Chemical Name	CAS Number	HAL		Toxicity and Chemical-Specific Values: RfD	RfD Source	RfD Update	CSF	CSF Source	CSF Update	Mutagen	Method	Comments
ACENAPHTHYLENE	208-96-8	210	µg/L	0.03	IRIS	9/1/1990					NC	Non-carcinogenic PAH. GCTL based on surrogate (pyrene).
ACETONE	67-64-1	6300	µg/L	0.9	IRIS	7/31/2003					NC	
ACIFLUORFEN	50594-66-6	91	µg/L	0.013	IRIS	3/31/1987					NC	No cancer assessment in IRIS. DWSHA lists as L/N (Likely/Not Likely). Per 02/2004 Reregistration Eligibility Document, only likely to be carcinogen at doses high enough to cause kidney damage.
ALDICARB	116-06-3	7	µg/L	0.001	IRIS	11/1/1993					NC	
ALDICARB SULFONE	1646-88-4	7	µg/L	0.001	IRIS	11/1/1993					NC	
ALDICARB SULFOXIDE	1646-87-3	7	µg/L	0.001	IRIS	11/1/1993					NC	Per EPA 1995 DW Health Advisory Document, use the same HAL as Aldicarb
ALDRIN	309-00-2	0.002	µg/L	3.00E-05	IRIS	3/31/1987	17	IRIS	9/30/1987		C	
ALLYL CHLORIDE	107-05-1	2	µg/L				0.021	CalEPA			C	
AMETRYN	834-12-8	63	µg/L	0.009	IRIS	9/30/1987					NC	
ANTHRACENE	120-12-7	2100	µg/L	0.3	IRIS	9/1/1990					NC	
BENTAZON	25057-89-0	210	µg/L	0.03	IRIS	3/2/1998					NC	
BENZENE HEXACHLORIDE, ALPHA- (ALPHA-BHC)	319-84-6	0.006	µg/L				6.3	IRIS	3/31/1987		C	
BENZENE HEXACHLORIDE, BETA- (BETA-BHC)	319-85-7	0.02	µg/L				1.8	IRIS	9/30/1987		C	
BENZENE HEXACHLORIDE, DELTA- (DELTA-BHC)	319-86-8	2.1	µg/L	0.0003	IRIS	1/31/1987					NC	GCTL based on surrogate (gamma-BHC)
BENZO(A)ANTHRACENE	56-55-3	0.1	µg/L	0.0003	IRIS	1/19/2017	1	IRIS	1/19/2017	Y	A/T	CSF based on BaP. Toxicological Equivalence Factor = 0.1
BENZO(B)FLUORANTHENE	205-99-2	0.1	µg/L	0.0003	IRIS	1/19/2017	1	IRIS	1/19/2017	Y	A/T	CSF based on BaP. Toxicological Equivalence Factor = 0.1
BENZO(G,H,I)PERYLENE	191-24-2	210	µg/L	0.03	IRIS	9/1/1990					NC	Non-carcinogenic PAH. GCTL based on surrogate (pyrene).
BENZO(K)FLUORANTHENE	207-08-9	1	µg/L	0.0003	IRIS	1/19/2017	1	IRIS	1/19/2017	Y	A/T	CSF based on BaP. Toxicological Equivalence Factor = 0.01
BORON	7440-42-8	1400	µg/L	0.2	IRIS	8/5/2004					NC	
BROMACIL	314-40-9	70	µg/L	0.1	DWSHA	8/1/1987					NC	08/1987 Health Advisory. Possible human carcinogen. Divide RfD by 10.
BROMOBENZENE	108-86-1	56	µg/L	0.008	IRIS	9/30/2009					NC	
BROMOCHLOROMETHANE	74-97-5	91	µg/L	0.013	DWSHA	5/1/1990					NC	05/1990 Health and Environmental Effects Document citing 1989 Health Advisory.
BROMOMETHANE	74-83-9	9.8	µg/L	0.0014	IRIS	9/26/1988					NC	
BUTACHLOR	23184-66-9	260	µg/L								UNK	No EPA data. Chronic toxicity listed as 259 ppb in Sittig'sHandbook of Pesticides and Agricultural Chemicals. Citation (USDA's WIN-PST) has no human tox information.
BUTANONE, 2- (MEK)	78-93-3	4200	µg/L	0.6	IRIS	9/26/2003					NC	
BUTYL BENZYL PHTHALATE	85-68-7	140	µg/L	0.2	IRIS	9/1/1989					NC	Possible human carcinogen. Divide RfD by 10
BUTYLATE	2008-41-5	350	µg/L	0.05	IRIS	10/1/1994					NC	
BUTYLBENZENE, N-	104-51-8	350	µg/L	0.05	PPRTV	9/13/2010					NC	
BUTYLBENZENE, SEC-	135-98-8	700	µg/L	0.1	IRIS	8/1/1997					NC	11/28/2012 PPRTV recommends using isopropyl benzene as surrogate
BUTYLBENZENE, TERT-	98-06-6	700	µg/L	0.1	IRIS	8/1/1997					NC	11/28/2012 PPRTV recommends using isopropyl benzene as surrogate
BUTYLPHTHALATE, DI-N-	84-74-2	700	µg/L	0.1	IRIS	1/31/1987					NC	
CARBARYL	63-25-2	40	µg/L	0.1	IRIS	1/31/1987	0.000875	OPP	9/24/2007		C	9/24/2007 Reregistration Eligibility Document
CARBON DISULFIDE	75-15-0	370	µg/L	0.1	IRIS	9/30/1987					NS	Main effects are in fetal development. Use EPA exposure factors for pregnant/lactating women.
CHLORAMBEN	133-90-4	110	µg/L	0.015	IRIS	7/31/1987					NC	
CHLOROBENZILATE	510-15-6	0.3	µg/L	0.02	IRIS	12/1/1989	0.11	CalEPA	4/1/1992		C	
CHLOROBUTANE, 1-	109-69-3	280	µg/L	0.04	PPRTV	10/4/2005					NC	
CHLOROETHANE	75-00-3	7.4	µg/L				0.0047	CalEPA	5/1/2001		C	NSRL Document
CHLOROMETHANE	74-87-3	2.7	µg/L				0.013	HEAST	7/1/1997		C	
CHLORONEB	2675-77-6	91	µg/L	0.013	HHBP	9/1/2005					NC	
CHLOROPICRIN	76-06-2	7	µg/L	0.001	EUPDB	7/25/2013					NC	GCTL based on organoleptic properties. EU Pesticide DB ADI = 0.001 mg/kg-day
CHLOROTHALONIL	1897-45-6	11	µg/L	0.015	IRIS	3/1/1988	0.0031	CalEPA	1/13/2012		C	
CHLOROTOLUENE, 1,2-	95-49-8	140	µg/L	0.02	IRIS	2/1/1990					NC	
CHLOROTOLUENE, 1,4-	106-43-4	140	µg/L	0.02	PPRTV	9/29/2010					NC	
CHLORPROPHAM	101-21-3	350	µg/L	0.05	HHBP	7/10/2002					NC	
CHLORPYRIPHOS (DURSBAN)	2921-88-2	2	µg/L	0.00033	HHBP	9/15/2015					NC	
CHROMIUM (VI)	18540-29-9	0.03	µg/L	0.003	IRIS	9/3/1998	0.5	CalEPA	7/1/2011	Y	A	Mutagen.
CHRYSENE	218-01-9	10	µg/L	0.0003	IRIS	1/19/2017	1	IRIS	1/19/2017	Y	A/T	CSF based on BaP. Toxicological Equivalence Factor = 0.001
CYCLOATE	1134-23-2	35	µg/L	0.005	HHBP	1/28/2004					NC	
DACTHAL (DCPA)	1861-32-1	70	µg/L	0.01	IRIS	8/1/1994					NC	
DB, 2,4-	94-82-6	210	µg/L	0.03	HHBP	7/20/2004					NC	
DDD, 4,4'-	72-54-8	0.1	µg/L				0.24	IRIS	8/22/1988		C	
DDE, 4,4'-	75-55-9	0.1	µg/L				0.34	IRIS	8/22/1988		C	
DDT, 4,4'-	50-29-3	0.1	µg/L	0.0005	IRIS	3/31/1987	0.34	IRIS	8/22/1988		C	
DIBENZ(A,H)ANTHRACENE	53-70-3	0.01	µg/L	0.003	IRIS	1/19/2017	1	IRIS	1/19/2017	Y	A/T	CSF based on BaP. Toxicological Equivalence Factor = 1
DIBROMOMETHANE	74-95-3	63	µg/L	0.009	PPRTV	9/30/2009					NC	RAIS and GCTL cites HEAST, but no data in 1997 tables. PPRTV has subchronic RfD of 0.009.
DICAMBA	1918-00-9	210	µg/L	0.03	IRIS	8/22/1988					NC	
DICHLOROBENZENE, 1,3-	541-73-1	600	µg/L	0.09	IRIS	8/1/1989					NC	No data for 1,3-Dichlorobenzene. HAL based on RfD for 1,2-Dichlorobenzene per DWSHA.
DICHLORODIFLUOROMETHANE	75-71-8	1400	µg/L	0.2	IRIS	1/31/1987					NC	
DICHLOROETHANE, 1,1-	75-34-3	140	µg/L	0.2	PPRTV	9/27/2006					NC	Possible human carcinogen. Divide RfD by 10
DICHLOROPROPENE, CIS-1,3- / TRANS-1,3-	542-75-6	0.4	µg/L	0.3	IRIS	5/25/2000	0.1	IRIS	5/25/2000		C	HAL based on both cis- and trans- isomers.
DICHLOROPROP-P (2,4-DP-P)	15165-67-0	250	µg/L	0.036	HHBP	8/13/2007					NC	R-isomer of dichlorprop (CASRN 120-36-5)
DICHLOROPROPYLENE, CIS-1,3-	10061-01-5	0.4	µg/L	0.3	IRIS	5/25/2000	0.1	IRIS	5/25/2000		C	HAL based on both cis- and trans- isomers.
DICHLOROPROPYLENE, TRANS-1,3-	10061-02-6	0.4	µg/L	0.03	IRIS	5/25/2000	0.1	IRIS	5/25/2000		C	HAL based on both cis- and trans- isomers.

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Chemical Name	CAS Number	HAL		Toxicity and Chemical-Specific Values: RfD	RfD Source	RfD Update	CSF	CSF Source	CSF Update	Mutagen	Method	Comments
DICHLORPROP	120-36-5	250	µg/L	0.036	HHBP	8/13/2007					NC	RfD based on R-isomer (see 2,4-DP-p CASRN 15165-67-0). Per 08/07 Reregistration Eligibility Document, toxicity for R-isomer and racemic mixtures are similar.
DICHLORVOS	62-73-7	0.1	µg/L	0.0005	HHBP	6/22/2006	0.29	IRIS	10/1/1989		C	
DIELDRIN	60-57-1	0.002	µg/L	5.00E-05	IRIS	9/7/1988	16	IRIS	9/7/1988		C	
DIETHYLPHTHALATE	84-66-2	5600	µg/L	0.8	IRIS	9/30/1987					NC	
DIMETHYLPHTHALATE	131-11-3	70000	µg/L	10	HEAST (withdrawn)	NULL					NC	Data used to calculate HAL has since been withdrawn from HEAST. PPRTV (2007) has a screening value of 0.1 mg/kg-day, but they do not recommend using it as a primary driver for decision making. CPSC toxicity review states that DMP is less toxic than other phthalates.
DINITROTOLUENE, 2,4-	121-14-2	0.05	µg/L	0.002	IRIS	6/1/1992	0.68	IRIS	9/1/1990		C	CSF is based on mixture of 2,4- and 2,6- isomers
DINITROTOLUENE, 2,6-	606-20-2	0.02	µg/L	0.0003	PPRTV	4/10/2013	1.5	PPRTV	4/10/2013		C	
DIOXANE, 1,4-	123-91-1	0.35	µg/L	0.03	IRIS	8/11/2010	0.1	IRIS	9/20/2013		C	
DIPHENAMID	957-51-7	210	µg/L	0.03	IRIS	9/30/1987					NC	
ENDOSULFAN I	959-98-8	42	µg/L	0.006	IRIS	10/1/1994					NC	HAL based on both isomers. See CASRN 115-29-7
ENDOSULFAN II	33213-65-9	42	µg/L	0.006	IRIS	10/1/1994					NC	HAL based on both isomers. See CASRN 115-29-7
EPTC	759-94-4	350	µg/L	0.05	HHBP	6/14/2011					NC	
ETHOPROP	13194-48-4	1.3	µg/L	0.0014	HHBP	7/10/2008	0.028	HHBP	7/10/2008		C	
ETHYLMETHACRYLATE	97-63-2	630	µg/L	0.09	HEAST	7/1/1997					NC	
ETRIDIAZOLE (TERRAZOLE)	2593-15-9	1	µg/L	0.0053	HHBP	6/6/2000	0.0333	HHBP	6/6/2000		C	in HHBP as Terrazole
FENARIMOL	60168-88-9	42	µg/L	0.006	HHBP	2/26/2010					NC	
FLUORENE	86-73-7	280	µg/L	0.04	IRIS	11/1/1990					NC	
FLURIDONE	59756-60-4	560	µg/L	0.08	IRIS	8/22/1988					NC	
HEXACHLOROBUTADIENE	87-68-3	0.5	µg/L	0.001	PPRTV	7/13/2007	0.078	IRIS	3/31/1987		C	
HEXACHLOROETHANE	67-72-1	0.9	µg/L	0.0007	IRIS	9/23/2011	0.04	IRIS	9/23/2011		C	
HEXANONE, 2- (MBK)	591-78-6	35	µg/L	0.005	IRIS	9/25/2009					NC	
HEXAZINONE	51235-04-2	230	µg/L	0.033	IRIS	9/30/1987					NC	
INDENO (1,2,3-CD) PYRENE	193-39-5	0.1	µg/L	0.0003	IRIS	1/19/2017	1	IRIS	1/19/2017	Y	A/T	CSF based on BaP (mutagen). Toxicological Equivalence Factor = 0.1
ISOPHORONE	78-59-1	37	µg/L	0.2	IRIS	9/1/1989	0.00095	IRIS	10/1/1992		C	
ISOPROPYLBENZENE (CUMENE)	98-82-8	700	µg/L	0.1	IRIS	8/1/1997					NC	GCTL based on organoleptic properties.
METHACRYLONITRILE	126-98-7	0.7	µg/L	0.0001	IRIS	9/7/1988					NC	
METHIOCARB	2032-65-7	35	µg/L	0.005	OPP	2/1/1994					NC	02/1994 Reregistration Eligibility Document
METHOMYL	16752-77-5	180	µg/L	0.025	IRIS	1/31/1987					NC	
METHYL ACRYLATE	96-33-3	3500	µg/L	0.5	IRIS	4/1/1994					NC	PPRTV declined to derive provisional RfD. RAIS and GCTL cite HEAST. ECHA groups several acrylates together as similar in toxicity and they break down to acrylic acid. https://echa.europa.eu/registration-dossier/-/registered-dossier/15313/12 Propose using acrylic acid (RfD = 0.5) as surrogate
METHYLMETHACRYLATE	80-62-6	9800	µg/L	1.4	IRIS	3/2/1998					NC	Organoleptic per 62-777.
METOLACHLOR	51218-45-2	110	µg/L	0.15	IRIS	10/1/1990					NC	Possible human carcinogen. Divide RfD by 10
METRIBUZIN	21087-64-9	180	µg/L	0.025	IRIS	1/31/1987					NC	
MEVINPHOS	7786-34-7	1.8	µg/L	0.00025	HHBP	5/17/2000					NC	
MOLINATE	2212-67-1	14	µg/L	0.002	IRIS	9/28/1988					NC	
MOLYBDENUM	7439-98-7	35	µg/L	0.005	IRIS	11/1/1992					NC	
NAPHTHALENE	91-20-3	14	µg/L	0.02	IRIS	9/17/1998					NC	Possible human carcinogen. Divide RfD by 10
NAPROPAMIDE	15299-99-7	840	µg/L	0.12	HHBP	7/7/2005					NC	
NITROPHENOL, 4-	100-02-7	56	µg/L	0.008	EPA Health Advisory	4/1/1992					NC	EPA 0553--Office of Water Health Advisories for IOCs and SOCs
NORFLURAZON	27314-13-2	110	µg/L	0.015	HHBP	12/20/2001					NC	IRIS RfD archived 7/15/16
PEBULATE	1114-71-2	5	µg/L	0.0007	HHBP	11/23/1999					NC	
PERFLUOROOCTANE SULFONATE (PFOS)	1763-23-1	0.07	µg/L	2.00E-05	alth Effects Support D	5/1/2016					NS	Combined (with PFOA) HAL. Non-cancer effects based on lactating women
PERFLUOROOCTANOIC ACID (PFOA)	335-67-1	0.07	µg/L	2.00E-05	EPA Health Advisory	5/1/2016	0.07	EPA Health Advisory	5/1/2016		NS	Combined (with PFOS) HAL. Non-cancer effects based on lactating women
PERMETHRIN, CIS- / TRANS-	52645-53-1	3.5	µg/L	0.25	HHBP	4/1/2009	0.0096	HHBP	4/1/2009		C	Combined cis- and trans- isomers
PFOA & PFOS (TOTAL)		0.07	µg/L	2.00E-05	EPA Health Advisory	5/1/2016	0.07	EPA Health Advisory	5/1/2016		NS	Combined HAL. Non-cancer effects based on lactating women.
PHENANTHRENE	85-01-8	210	µg/L	0.03	IRIS	9/1/1990					NC	Non-carcinogenic PAH. GCTL based on surrogate (pyrene).
PROMETRYN	7287-19-6	280	µg/L	0.04	HHBP	8/5/2009					NC	IRIS RfD archived 7/15/16
PRONAMIDE	23950-58-5	280	µg/L	0.04	HHBP	11/9/2015					NC	IRIS RfD archived 7/15/16. HHPP states not likely to be carcinogenic to humans at levels that do no cause other non-cancer effects.
PROPACHLOR	1918-16-7	1.1	µg/L	0.013	IRIS	1/31/1987	0.032	OPP	11/1/1998		C	11/1998 Reregistration Eligibility Document
PROPAZINE	139-40-2	130	µg/L	0.018	OPP	4/1/2006					NC	Originally classified (1989) as possible human carcinogen. 04/2006 OPP Reregistration Eligibility Document states that chemical was reclassified in 2000 as "not likely to be carcinogenic to humans".
PROPOXUR (BAYGON)	114-26-1	3.5	µg/L	0.005	OPP	8/1/1997					NC	08/1997 Reregistration Eligibility Document. Probable human carcinogen. Divide RfD by 10.
PROPYLBENZENE, N-	103-65-1	700	µg/L	0.1	PPRTV	2/4/2009					NC	2009 PPRTV report recommends using ethylbenzene RfD
PYRENE	129-00-0	210	µg/L	0.03	IRIS	8/1/1990					NC	
STIROFOS	961-11-5	20	µg/L	0.04	HHBP	7/31/2006	0.00183	HHBP	7/31/2006		C	Old value from 1997 HEAST
TEBUTHIURON	34014-18-1	490	µg/L	0.07	IRIS	8/22/1988					NC	
TERBACIL	5902-51-2	91	µg/L	0.013	IRIS	1/31/1987					NC	
TERBUTRYN	886-50-0	7	µg/L	0.001	IRIS	9/26/1988					NC	Lab MDL looks to be 0.062 µg/L
TETRACHLOROETHANE, 1,1,1,2-	630-20-6	1.3	µg/L	0.03	IRIS	9/30/1987	0.026	IRIS	3/1/1989		C	
TETRACHLOROETHANE, 1,1,2,2-	79-34-5	0.2	µg/L	0.02	IRIS	9/30/2010	0.2	IRIS	9/30/2010		C	

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Chemical Name	CAS Number	HAL		Toxicity and Chemical-Specific Values RfD	RfD Source	RfD Update	CSF	CSF Source	CSF Update	Mutagen	Method	Comments
TRIADEMEFON	43121-43-3	210	µg/L	0.034	HHBP	8/3/2009					NC	8/3/09 Human Health Risk Assessment. IRIS RfD archived 7/15/16
TRIBUTYLTIN OXIDE	56-35-9	2.1	µg/L	0.0003	IRIS	9/1/1997					NC	
TRICHLOROBENZENE, 1,2,3-	87-61-6	5.6	µg/L	0.0008	PPRTV	9/11/2009					NC	Screening value derived from subchronic RfD
TRICHLOROFLUOROMETHANE	75-69-4	2100	µg/L	0.3	IRIS	1/31/1987					NC	
TRICHLOROPHENOXY-ACETIC ACID, 2,4,5- (2,4,5-T)	93-76-5	70	µg/L	0.01	IRIS	9/7/1988					NC	
TRICHLOROPROPANE, 1,2,3-	96-18-4	0.0004	µg/L	0.004	IRIS	9/30/2009	30	IRIS	9/30/2009	Y	A	Mutagen. Use ADAF method to calculate HAL. DEP MDL = 0.005 µg/L DOH MDL = 0.26 µg/L
TRIFLURALIN	1582-09-8	4.5	µg/L	0.0075	IRIS	7/1/1989	0.0077	IRIS	8/22/1988		C	
TRIMETHYLBENZENE, 1,3,5-	108-67-8	70	µg/L	0.01	IRIS	9/9/2016					NC	Organoleptic per 62-777. RfD applies to all TMB isomers.
TRIMETHYLBENZENE,1,2,4-	95-63-6	70	µg/L	0.01	IRIS	9/9/2016					NC	Organoleptic per 62-777. RfD applies to all TMB isomers.
VANADIUM	7440-62-2	15	µg/L	0.0021	CalEPA	8/24/2000					NC	PPRTV (2009) chronic RfD = 0.00007 mg/kg-day, but ATSDR Tox Profile (2012) considers PPRTV key study to be intermediate CalEPA value based on fetal / birth defects.
VERNOLATE	1929-77-7	7	µg/L	0.001	IRIS	3/31/1987					NC	

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Source	Description	URL
IRIS	EPA Integrated Risk Information System	https://cfpub.epa.gov/ncea/iris/search/index.cfm
HHBP	EPA Human Health Benchmarks For Pesticides	https://iaspub.epa.gov/apex/pesticides/f?p=107:3:::NO:RP,4::
OPP	EPA Office of Pesticide Programs Registration Eligibility Document	Various
PPRTV	EPA Provisional Peer Reviewed Toxicity Values for Superfund	https://hhpprtv.ornl.gov/quickview/pprtv_papers.php
Cal EPA	California Office of Environmental Health Hazard Assessement	https://oehha.ca.gov/chemicals
ATSDR	ATSDR Toxicological Profiles	https://www.atsdr.cdc.gov/toxprofiles/index.asp
DWSHA	EPA Drinking Water Standards and Health Advisories (2018 Edition)	https://www.epa.gov/dwstandardsregulations/2018-drinking-water-standards-and-advisory-tables
RSL	EPA Regional Screening Level Resident Tapwater Table (November 2017)	https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2017
RAIS	Oak Ridge National Lab Risk Assessment Information System	https://rais.ornl.gov/tools/tox_profiles.html
Win-PST	USDA Windows Pesticide Screening Tool (Last database update 12/21/2017)	https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/quality/?cid=stelprdb1044769
EUDB	European Union Pesticide Database	http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public/?event=activesubstance.selection&language=EN
ECHA	European Chemicals Agency	https://echa.europa.eu/
HEAST	EPA Health Effects Assessment Summary Tables for Superfund (1997 Edition)	https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=2877

Method	Description	Reference
NC	Non-carcinogen calculation with standard assumptions	FDOH, 2015
C	Equation 2: Carcinogen calculation with standard assumptions	FDOH, 2015
A	ADAF Method	FDOH, 2018
A/T	ADAF Method with Toxic Equivalency Factors	FDOH, 2018; EPA, 1993
NS	Non-standard assumptions	See attached
UNK	Unknown. Limited toxicity data.	

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Carbon Disulfide Calculations

Variable	Value	Units
RfD -- Reference Dose	0.1	mg/kg-day
NDWI--Normalized Drinking Water Intake*	0.054	L/kg-day
RSC--Relative Source Contribution	0.2	
CF--Conversion Factor	1000	ug/mg

*NDWI taken from EPA values for lactating women from Table 3-81 in *2011 EPA Exposure Factors Handbook* (90th percentile)

$$\text{HAL (ug/L)} = \frac{\text{RfD x RSC x CF}}{\text{NDWI}}$$

$$\text{HAL (ug/L)} = \frac{20}{0.054} = 370.3704$$

Round to 370 ug/L

PFOA/PFOS Calculations

Variable	Value	Units
RfD -- Reference Dose	0.00002	mg/kg-day
NDWI--Normalized Drinking Water Intake*	0.054	L/kg-day
RSC--Relative Source Contribution	0.2	
CF--Conversion Factor	1000	ug/mg

*Per PFOA Health Advisory Document, NDWI for lactating women taken from table 3-81 in 2011 Exposure Factors Handbook.

$$\text{HAL (ug/L)} = \frac{\text{RfD x RSC x CF}}{\text{NDWI}}$$

$$\text{HAL (ug/L)} = \frac{0.004}{0.054} = 0.074074$$

Round to 0.07 ug/L

Toxic Equivalency Factors for PAH's

Compound	Relative Potency
Benzo(a)pyrene	1
Benz(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons , EPA/600/R-93/089
http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=466885