

CALCULATIONS OF NEW MEXICO WATER QUALITY-BASED EFFLUENT LIMITATIONS

NMAC 20.6.4. **2005**

Calculations Specifications:

Excel Revised as December 4, 2007

Prepared By:

Name Date

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STEP 1: REFERENCE IMPLEMENTATION PROCEDURES
INPUT FACILITY AND RECEIVING STREAM DATA
LIST SOURCE OF DATA INPUT

IMPLEMENTATION PROCEDURES

The State of New Mexico Standards for Interstate and Intrastate Surface Waters are implemented in this spread sheet by using procedures established in the "Implementation Guidance for State of New Mexico Standards for Interstate and Intrastatestreams", May 5, 1995.

FACILITY	DATA INPUT	
Permittee	Donna Anna South Central WWTP	
NPDES Permit No.	NM0030490	
Outfall No.(s)	001	
Plant Effluent Flow (MGD)	1.05	For industrial and federal facility, use the highest monthly average flow
Plant Effluent Flow (cfs)	1.6275	for the past 24 months. For POTWs, use the design flow.

RECEIVING STREAM	DATA INPUT	
Receiving Stream Name	Rio Grande	
Basin Name	Rio Grande	
Waterbody Segment Code No.	20.6.4.101	
Is a publicly owned lake or reservoir (enter "1" if it's a lake, "0" if not)	0	
Are acute aquatic life criteria considered (1= yes, 0= no) (MUST enter "1" for 2005 Standards)	1	Hardness pH Date
Are chronic aquatic life criteria considered (1= yes, 0=no)	1	228 8.3 3-Jun-06
Are domestic water supply criteria considered (1= yes, 0=no)	0	196 8.4 30-May-06
Are irrigation water supply criteria considered (1= yes, 0=no)	1	211.4 8.3 GM
Livestock watering and wildlife habitat criteria applied to all streams		

USGS Flow Station	USGS	
WQ Monitoring Station No.	SJR	
Receiving Stream TSS (mg/l)	20	For intermittent stream, enter effluent TSS
Receiving Stream Hardness (mg/l as CaCO ₃)	211.4	For intermittent stream, enter effluent Hardness (If no data, 20 mg/l is used)
Receiving Stream Critical Low Flow (4Q3) (cfs)	29.7	Enter "0" for intermittent stream and lake.
Receiving Stream Harmonic Mean Flow (cfs)	30	Enter harmonic mean or modified harmonic mean flow data
Avg. Water Temperature (C)	12	
pH (Avg)	8.3	
Fraction of stream allowed for mixing (F)	1	Enter 1, if stream morphology data is not available or for intermittent streams.

Fraction of Critical Low Flow

29.7

STEP 2: INPUT AMBIENT AND EFFLUENT DATA
CALCULATE IN-STREAM WASTE CONCENTRATIONS

DATA INPUT

Input pollutant geometric mean concentration as micro-gram per liter (ug/l or ppb)
unless other unit is specified for the parameter.

Effluent value reported as "< detection level" (DL) but the DL is greater than MQL, input "1/2 DL" for calculation.
Effluent value reported as "< detection level" (DL) and the DL is smaller than MQL, input "0" for calculation.
If a less than MQL value is reported, input either the reported value or "0" for calculation.

The following formula is used to calculate the Instream Waste Concentration (Cd)

(Please refer to State Implementation Guidance for details)

$$Cd = [(F \cdot Qa \cdot Ca) + (Qe \cdot 2.13 \cdot Ce)] / (F \cdot Qa + Qe)$$

Where:

Cd = Instream Waste Concentration

F = Fraction of stream allowed for mixing (see NM Implementation Guidance)

Ce = Reported concentration in effluent

Ca = Ambient stream concentration upstream of discharge

Qe = Plant effluent flow

Qa = Critical low flow of stream at discharge point expressed as the 4Q3 or harmonic mean flow for human health criteria

The following formula convert metals reported in total form to dissolved form if criteria are in dissolved form

(Please refer to State Implementation Guidance for details)

$$Kp = Kpo \cdot (TSS)^a$$

Kp = Linear partition coefficient; Kpo and a can be found in table below

$$C/Ct = 1 / (1 + Kp \cdot TSS \cdot 10^{-6})$$

TSS = Total suspended solids concentration found in receiving stream (or in effluent for intermittent stream)

$$\text{Total Metal Criteria (Ct)} = Cr / (C/Ct)$$

C/Ct = Fraction of metal dissolved; and Cr = Dissolved criteria value

Total Metals	Total Value	Stream Linear Partition Coefficient					Lake Linear Partition Coefficient				
		Kpo	alpha (a)	Kp	C/Ct	Dissolved Value in Stream	Kpo	alpha (a)	Kp	C/Ct	Dissolved Value in Lake
Arsenic	6	480000	-0.73	53887.66189	0.481289107	2.88773464	480000	-0.73	53887.66189	0.481289107	2.88773464
Chromium		3360000	-0.93	207196.0069	0.194404262	0	2170000	-0.27	966454.995	0.049190569	0
Copper	8	1040000	-0.74	113310.7574	0.306164767	2.44931814	2850000	-0.9	192272.8058	0.20637892	1.65103136
Lead		2800000	-0.8	254878.9884	0.163999495	0	2040000	-0.53	416950.2799	0.107077781	0
Nickel	1	490000	-0.57	88840.0885	0.360126535	0.36012654	2210000	-0.76	226782.4678	0.18064728	0.18064728
Zinc	30	1250000	-0.7	153528.5033	0.245665836	7.36997509	3340000	-0.68	435558.075	0.102974294	3.08922882

The following formular is used to calculate hardness dependent criteria

(Please refer to State Water Quality Standards for details)

			Dissolved	
			WQC (ug/l)	
Cadmium (D)	Acute	$e(1.0166[\ln(\text{hardness})]-3.924)*CF1$	4.16724977	$CF1 = 1.136672 - 0.041838*\ln(\text{hardness})$
	Chronic	$e(0.7409[\ln(\text{hardness})]-4.719)*CF2$	0.413591567	$CF2 = 1.101672 - 0.041838*\ln(\text{hardness})$
Chromium (D)	Acute	$0.316 e(0.819[\ln(\text{hardness})]+3.7256)$	1051.854297	
	Chronic	$0.860 e(0.819[\ln(\text{hardness})]+0.6848)$	136.8246335	
Copper (D)	Acute	$0.960 e(0.9422[\ln(\text{hardness})]-1.700)$	27.20724258	
	Chronic	$0.960 e(0.8545[\ln(\text{hardness})]-1.702)$	16.9786921	
Lead (D)	Acute	$e(1.273[\ln(\text{hardness})]-1.46)*CF3$	144.3858802	$CF3 = 1.46203 - 0.145712*\ln(\text{hardness})$
	Chronic	$e(1.273[\ln(\text{hardness})]-4.705)*CF4$	5.626510466	$CF4 = 1.46203 - 0.145712*\ln(\text{hardness})$
Nickel (D)	Acute	$0.998 e(0.846[\ln(\text{hardness})]+2.255)$	882.0707352	
	Chronic	$0.997 e(0.846[\ln(\text{hardness})]+0.0584)$	97.97082645	
Zinc (D)	Acute	$0.978 e(0.8473[\ln(\text{hardness})]+0.884)$	220.9615099	
	Chronic	$0.986 e(0.8473[\ln(\text{hardness})]+0.884)$	222.768966	
Silver (D)	Acute	$0.85 e(1.72[\ln(\text{hardness})]-6.59)$	11.65732382	

POLLUTANTS	CAS No.	STORET	Instream Waste Concentration							Domestic Criteria	Irrigation Criteria	Livestock/ Wildlife Criteria	Acute Fish Criteria	Chronic Fish Criteria	Human Health Criteria
			Ambient Conc.	Effluent Conc.	Acute	Fshery	Domestic Suq	Chronic Std	Human Health						
			Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l						
Radioactivity, Nutrients, and Chlorine															
Aluminum, dissolved	7429-90-5	01106	2.5	34	72.42	3.76230309	3.76230309	3.726616078	1E+100	5000	1E+100	750	87	1E+100	
Barium, dissolved	7440-39-3	01005	100	12	25.56	1.32787168	1.32787168	1.315276263	2000	1E+100	1E+100	1E+100	1E+100	1E+100	
Boron, dissolved	7440-42-8	01022	100	384	817.92	42.4918937	42.4918937	42.08884041	1E+100	750	5000	1E+100	1E+100	1E+100	
Cobalt, dissolved	7440-48-4	01037	50		0	0	0	0	1E+100	50	1000	1E+100	1E+100	1E+100	
Molybdenum, dissolved	7439-98-7	01062	10		0	0	0	0	1E+100	1000	1E+100	1E+100	1E+100	1E+100	
Uranium, dissolved	7440-61-1	22706	0.1	1.6	3.408	0.17704956	0.17704956	0.175370168	5000	1E+100	1E+100	1E+100	1E+100	1E+100	
Vanadium, dissolved	7440-62-2	01087	50	2	4.26	0.22131195	0.22131195	0.21921271	1E+100	100	100	1E+100	1E+100	1E+100	
Ra-226 and Ra-228 (pCi/l)	11503				0	0	0	0	5	1E+100	30	1E+100	1E+100	1E+100	
Strontium (pCi/l)	13501				0	0	0	0	8	1E+100	1E+100	1E+100	1E+100	1E+100	
Tritium (pCi/l)	04124				0	0	0	0	20000	1E+100	20000	1E+100	1E+100	1E+100	
Gross Alpha (pCi/l)	80029				0	0	0	0	15	1E+100	15	1E+100	1E+100	1E+100	
Asbestos (fibers/l)					0	0	0	0	7000000	1E+100	1E+100	1E+100	1E+100	1E+100	
Total Residual Chlorine	7782-50-5	50060	33		0	0	0	0	1E+100	1E+100	11	19	11	1E+100	
Nitrate as N (mg/l)	00620				0	0	0	0	10	1E+100	1E+100	1E+100	1E+100	1E+100	
Nitrite + Nitrate (mg/l)	00630				9.33	19.8729	1.03242023	1.03242023	1.022627294	1E+100	1E+100	132	1E+100	1E+100	

POLLUTANTS	CAS No.	STORET	Instream Waste Concentration						Domestic Criteria	Irrigation Criteria	Livestock/ Wildlife Criteria	Acute Fish Criteria	Chronic Fish Criteria	Human Health Criteria	
			MQL	Ambient Conc.	Effluent Conc.	Acute Fshery	Domestic Sup	Chronic Std							Human Health
				Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)							Cd,hh (ug/l)
METALS AND CYANIDE															
Antimony, dissolved (P)	7440-36-0	01097	60			0	0	0	0	5.6	1E+100	1E+100	1E+100	1E+100	640
Arsenic, dissolved (P)	7440-38-2	01000	0.5	2.887734641	6.15087479	0.31954509	0.31954509	0.316514069	2.3	100	200	340	150	9	
Beryllium, dissolved	7440-41-7	01012	0.5			0	0	0	4	1E+100	1E+100	1E+100	1E+100	1E+100	
Cadmium, dissolved	7440-43-9	01025	1			0	0	0	5	10	50	4.16724977	0.41359157	1E+100	
Chromium, dissolved	18540-29-9	01034	10	0		0	0	0	100	100	1000	1051.8543	136.824633	1E+100	
Copper, dissolved	7440-50-8	01042	0.5	2.449318137	5.21704763	0.27103168	0.27103168	0.268460834	1300	200	500	27.2072426	16.9786921	1E+100	
Lead, dissolved	7439-92-1	01049	0.5	0		0	0	0	50	5000	100	144.38588	5.62651047	1E+100	
Mercury, dissolved	7439-97-6	71890	0.005			0	0	0	1E+100	1E+100	1E+100	1.4	0.77	1E+100	
Mercury, total	7439-97-6	71900	0.005			0	0	0	2	1E+100	0.77	1E+100	1E+100	1E+100	
Nickel, dissolved (P)	7440-02-0	01065	0.5	0.360126535	0.76706952	0.03985015	0.03985015	0.039472157	100	1E+100	1E+100	882.070735	97.9708265	4600	
Selenium, dissolved (P)	7782-49-2	01145	5			0	0	0	50	130	50	1E+100	1E+100	4200	
Selenium, dis (SO4 >500 mg/l)	01145	5				0	0	0	50	250	50	1E+100	1E+100	4200	
Selenium, total recoverable	7782-49-2	01147	5			0	0	0	1E+100	1E+100	5	20	5	1E+100	
Silver, dissolved	7440-22-4	01077	0.5			0	0	0	1E+100	1E+100	1E+100	11.6573238	1E+100	1E+100	
Thallium, dissolved (P)	7440-28-0	01059	0.5			0	0	0	1.7	1E+100	1E+100	1E+100	1E+100	6.3	
Zinc, Dis.	7440-66-6	01080	20	7.369975094	15.698047	0.81553177	0.81553177	0.807796108	7400	2000	25000	220.96151	222.768966	26000	
Cyanide, dissolved	57-12-5	00720	10			0	0	0	200	1E+100	1E+100	1E+100	1E+100	1E+100	
Cyanide, weak acid dissociat	57-12-5	00718	10			0	0	0	700	1E+100	5.2	22	5.2	220000	
DIOXIN															
2,3,7,8-TCDD	1764-01-6	34675	0.00001			0	0	0	0.00000005	1E+100	1E+100	1E+100	1E+100	0.000000051	
VOLATILE COMPOUNDS															
Acrolein	107-02-8	34210	50			0	0	0	190	1E+100	1E+100	1E+100	1E+100	290	
Acrylonitrile	107-13-0	34215	20			0	0	0	0.51	1E+100	1E+100	1E+100	1E+100	2.5	
Benzene	71-43-2	34030	10			0	0	0	22	1E+100	1E+100	1E+100	1E+100	510	
Bromoform	75-25-2	32104	10			0	0	0	43	1E+100	1E+100	1E+100	1E+100	1400	
Carbon Tetrachloride	56-23-5	32102	2			0	0	0	2.3	1E+100	1E+100	1E+100	1E+100	16	
Chlorobenzene	108-90-7	34301	10			0	0	0	680	1E+100	1E+100	1E+100	1E+100	21000	
Clorodibromomethane	124-48-1	32105	10			0	0	0	4	1E+100	1E+100	1E+100	1E+100	130	
Chloroform	67-66-3	32106	50			0	0	0	57	1E+100	1E+100	1E+100	1E+100	4700	
Dichlorobromomethane	75-27-4	32101	10			0	0	0	5.5	1E+100	1E+100	1E+100	1E+100	170	
1,2-Dichloroethane	107-06-2	34531	10			0	0	0	3.8	1E+100	1E+100	1E+100	1E+100	370	
1,1-Dichloroethylene	75-35-4	34501	10			0	0	0	0.57	1E+100	1E+100	1E+100	1E+100	32	
1,2-Dichloropropane	78-87-5	34541	10			0	0	0	5	1E+100	1E+100	1E+100	1E+100	150	
1,3-Dichloropropylene	542-75-6	34561	10			0	0	0	10	1E+100	1E+100	1E+100	1E+100	1700	
Ethylbenzene	100-41-4	34371	10			0	0	0	3100	1E+100	1E+100	1E+100	1E+100	29000	
Methyl Bromide	74-83-9	34413	50			0	0	0	47	1E+100	1E+100	1E+100	1E+100	1500	
Methylene Chloride	75-09-2	34423	20			0	0	0	46	1E+100	1E+100	1E+100	1E+100	5900	
1,1,2,2-Tetrachloroethane	79-34-5	34516	10			0	0	0	1.7	1E+100	1E+100	1E+100	1E+100	40	
Tetrachloroethylene	127-18-4	34475	10			0	0	0	6.9	1E+100	1E+100	1E+100	1E+100	33	
Toluene	108-88-3	34010	10			0	0	0	6800	1E+100	1E+100	1E+100	1E+100	200000	
1,2--trans-Dichloroethylene	156-60-5	34546	10			0	0	0	700	1E+100	1E+100	1E+100	1E+100	140000	
1,1,2-Trichloroethane	79-00-5	34511	10			0	0	0	5.9	1E+100	1E+100	1E+100	1E+100	160	

Trichloroethylene	79-01-6	39180	10	Instream Waste Concentration						25	1E+100	1E+100	1E+100	1E+100	300
				Ambient Conc.	Effluent Conc.	Acute Fshery	Domestic Sup	Chronic Std	Human Health						
POLLUTANTS	CAS No.	STORET	MQL	Ambient Conc. Effluent Conc. Acute Fshery Domestic Sup Chronic Std Human Health						Domestic	Irrigation	Livestock/	Acute Fish	Chronic Fish	Human Health
				Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Vinyl Chloride	75-01-4	39175	10			0	0	0	0	20	1E+100	1E+100	1E+100	1E+100	5300
ACID COMPOUNDS															
2-Chlorophenol	95-57-8	34586	10			0	0	0	0	81	1E+100	1E+100	1E+100	1E+100	150
2,4-Dichlorophenol	120-83-2	34601	10			0	0	0	0	77	1E+100	1E+100	1E+100	1E+100	290
2,4-Dimethylphenol	105-67-9	34606	10			0	0	0	0	380	1E+100	1E+100	1E+100	1E+100	850
4,6-Dinitro-o-Cresol	534-52-1	34657	50			0	0	0	0	13	1E+100	1E+100	1E+100	1E+100	280
2,4-Dinitrophenol	51-28-5	34616	50			0	0	0	0	69	1E+100	1E+100	1E+100	1E+100	5300
Pentachlorophenol	87-86-5	39032	50			0	0	0	0	2.7	1E+100	1E+100	19	15	30
Phenol	108-95-2	34694	10			0	0	0	0	21000	1E+100	1E+100	1E+100	1E+100	1700000
2,4,6-Trichlorophenol	88-06-2	34621	10			0	0	0	0	14	1E+100	1E+100	1E+100	1E+100	24
BASE/NEUTRAL															
Acenaphthene	83-32-9	34205	10			0	0	0	0	670	1E+100	1E+100	1E+100	1E+100	990
Anthracene	120-12-7	34220	10			0	0	0	0	8300	1E+100	1E+100	1E+100	1E+100	40000
Benzidine	92-87-5	39120	50			0	0	0	0	0.00086	1E+100	1E+100	1E+100	1E+100	0.002
Benzo(a)anthracene	56-55-3	34526	5			0	0	0	0	0.038	1E+100	1E+100	1E+100	1E+100	0.18
Benzo(a)pyrene	50-32-8	34247	5			0	0	0	0	0.038	1E+100	1E+100	1E+100	1E+100	0.18
3,4-Benzofluoranthene	205-99-2	34230	10			0	0	0	0	0.038	1E+100	1E+100	1E+100	1E+100	0.18
Benzo(k)fluoranthene	207-08-9	34242	5			0	0	0	0	0.038	1E+100	1E+100	1E+100	1E+100	0.18
Bis(2-chloroethyl)Ether	111-44-4	34273	10			0	0	0	0	0.3	1E+100	1E+100	1E+100	1E+100	5.3
Bis(2-chloroisopropyl)Ether	108-60-1	34283	10			0	0	0	0	1400	1E+100	1E+100	1E+100	1E+100	65000
Bis(2-ethylhexyl)Phthalate	117-81-7	39100	10		190	404.7	21.0246349	21.0246349	20.82520749	12	1E+100	1E+100	1E+100	1E+100	22
Butyl Benzyl Phthalate	85-68-7	34292	10			0	0	0	0	1500	1E+100	1E+100	1E+100	1E+100	1900
2-Chloronaphthalene	91-58-7	34581	10			0	0	0	0	1000	1E+100	1E+100	1E+100	1E+100	1600
Chrysene	218-01-9	34320	5			0	0	0	0	0.038	1E+100	1E+100	1E+100	1E+100	0.18
Dibenzo(a,h)anthracene	53-70-3	34556	5			0	0	0	0	0.038	1E+100	1E+100	1E+100	1E+100	0.18
1,2-Dichlorobenzene	95-50-1	34536	10			0	0	0	0	2700	1E+100	1E+100	1E+100	1E+100	17000
1,3-Dichlorobenzene	541-73-1	34566	10			0	0	0	0	320	1E+100	1E+100	1E+100	1E+100	960
1,4-Dichlorobenzene	106-46-7	34571	10			0	0	0	0	400	1E+100	1E+100	1E+100	1E+100	2600
3,3'-Dichlorobenzidine	91-94-1	34631	5			0	0	0	0	0.21	1E+100	1E+100	1E+100	1E+100	0.28
Diethyl Phthalate	84-66-2	34336	10			0	0	0	0	17000	1E+100	1E+100	1E+100	1E+100	44000
Dimethyl Phthalate	131-11-3	34341	10			0	0	0	0	270000	1E+100	1E+100	1E+100	1E+100	1100000
Di-n-Butyl Phthalate	84-74-2	39110	10			0	0	0	0	2000	1E+100	1E+100	1E+100	1E+100	4500
2,4-Dinitrotoluene	121-14-2	34611	10			0	0	0	0	1.1	1E+100	1E+100	1E+100	1E+100	34
1,2-Diphenylhydrazine	122-66-7	34346	20			0	0	0	0	0.36	1E+100	1E+100	1E+100	1E+100	2
Fluoranthene	206-44-0	34376	10			0	0	0	0	130	1E+100	1E+100	1E+100	1E+100	140
Fluorene	86-73-7	34381	10			0	0	0	0	1100	1E+100	1E+100	1E+100	1E+100	5300
Hexachlorobenzene	118-74-1	39700	5			0	0	0	0	0.0028	1E+100	1E+100	1E+100	1E+100	0.0029
Hexachlorobutadiene	87-68-3	34391	10			0	0	0	0	4.4	1E+100	1E+100	1E+100	1E+100	180
Hexachlorocyclopentadiene	77-47-4	34386	10			0	0	0	0	240	1E+100	1E+100	1E+100	1E+100	17000
Hexachloroethane	67-72-1	34396	20			0	0	0	0	14	1E+100	1E+100	1E+100	1E+100	33
Indeno(1,2,3-cd)Pyrene	193-39-5	34403	5			0	0	0	0	0.038	1E+100	1E+100	1E+100	1E+100	0.18
Isophorone	78-59-1	34408	10			0	0	0	0	350	1E+100	1E+100	1E+100	1E+100	9600

POLLUTANTS	CAS No.	STORET	MQL	Instream Waste Concentration						Criteria					
				Ambient Conc.	Effluent Conc.	Acute Fshery	Domestic Sup	Chronic Std	Human Health	Domestic Criteria	Irrigation Criteria	Livestock/Wildlife Criteria	Acute Fish Criteria	Chronic Fish Criteria	Human Health Criteria
				Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Nitrobenzene	98-95-3	34447	10			0	0	0	0	17	1E+100	1E+100	1E+100	1E+100	690
n-Nitrosodimethylamine	62-75-9	34438	50			0	0	0	0	0.0069	1E+100	1E+100	1E+100	1E+100	30
PESTICIDES AND PCBs															
Aldrin	309-00-2	39330	0.01			0	0	0	0	0.00049	1E+100	1E+100	3	1E+100	0.0005
Alpha-BHC	319-84-6	39337	0.05			0	0	0	0	0.026	1E+100	1E+100	1E+100	1E+100	0.049
Beta-BHC	319-85-7	39338	0.05			0	0	0	0	0.091	1E+100	1E+100	1E+100	1E+100	0.17
Gamma-BHC	58-89-9	39340	0.05			0	0	0	0	0.19	1E+100	1E+100	0.95	1E+100	0.63
Chlordane	57-74-9	39350	0.2			0	0	0	0	0.008	1E+100	1E+100	2.4	0.0043	0.0081
4,4'-DDT and derivatives	50-29-3	39300	0.02			0	0	0	0	0.0022	1E+100	0.001	1.1	0.001	0.0022
Dieldrin	60-57-1	39380	0.02			0	0	0	0	0.00052	1E+100	1E+100	0.24	0.056	0.00054
Alpha-Endosulfan	959-98-8	34361	0.01			0	0	0	0	62	1E+100	1E+100	0.22	0.056	89
Beta-Endosulfan	33213-65-9	34356	0.02			0	0	0	0	62	1E+100	1E+100	0.22	0.056	89
Endosulfan sulfate	1031-7-8	34351	0.1			0	0	0	0	62	1E+100	1E+100	1E+100	1E+100	89
Endrin	72-20-8	39390	0.02			0	0	0	0	0.76	1E+100	1E+100	0.086	0.036	0.81
Endrin Aldehyde	7421-93-4	34366	0.1			0	0	0	0	0.29	1E+100	1E+100	1E+100	1E+100	0.3
Heptachlor	76-44-8	39410	0.01			0	0	0	0	0.00079	1E+100	1E+100	0.52	0.0038	0.00079
Heptachlor Epoixde	1024-57-3	39420	0.01			0	0	0	0	0.00039	1E+100	1E+100	0.52	0.0038	0.00039
PCBs	1336-36-3	39516	0.2			0	0	0	0	0.00064	1E+100	0.014	1E+100	0.014	0.00064
Toxaphene	8001-35-2	39400	0.3			0	0	0	0	0.0028	1E+100	1E+100	0.73	0.0002	0.0028

Note: SCORET CODE for reference only. Codes for total form are used except for parameters which have criteria in both total and dissolved forms.

STEP 3: SCAN POTENTIAL INSTREAM WASTE CONCENTRATIONS AGAINST WATER QUALITY CRITERIA AND ESTABLISH EFFLUENT LIMITATIONS FOR ALL APPLICABLE PARAMETERS

No limits are established if the receiving stream is not designated for the particular uses.

No limits are established if the potential instream waste concentrations are less than the chronic water quality criteria.

The most applicable stringent criteria are used to establish effluent limitations for a given parameter.

Water quality criteria apply at the end-of-pipe for acute aquatic life criteria and discharges to public lakes.

If background concentration exceeds the water quality criteria, water quality criteria apply. And "Need TMDL" shown to the next column of Avg. Mass

Monthly avg concentration = daily max. / 1.5.

APPLICABLE WATER QUALITY-BASED LIMITS

The following formular is used to calculate the allowable daily maximum effluent cencentration

(Please refer to State Implementation Guidance for details)

Daily Max. Conc. = $C_s + (C_s - C_a)(F^*Q_a/Q_e)$

Monthly Avg. Conc. = Daily Max. Conc. / 1.5

Where: C_s = Applicable water quality standard

C_a = Ambient stream concentration

