

CALCULATIONS OF NEW MEXICO WATER QUALITY-BASED EFFLUENT LIMITATIONS

NMAC 20.6.4. **2005** Do not change this year

Calculations Specifications:

Excel

Revised as of September 14, 2009

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

**APPENDIX 1
FACT SHEET**

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 "Procedures for Implementing NPDES Permits in New Mexico" amended July 2009

FACILITY

DATA INPUT

Permittee	City of Raton Water Filtration Facility	
NPDES Permit No.	NM0029891	
Outfall No.(s)	001	
Plant Effluent Flow (MGD)	0.08	For industrial and federal facility, use the highest monthly average flow
Plant Effluent Flow (cfs)	0.124	for the past 24 months. For POTWs, use the design flow.

RECEIVING STREAM

DATA INPUT

Receiving Stream Name	Raton Creek
Basin Name	Canadian River Basin
Waterbody Segment Code No.	20.6.4.305
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
Are chronic aquatic life criteria considered (1= yes, 0=no)	0
Are domestic water supply criteria considered (1= yes, 0=no)	0
Are irrigation water supply criteria considered (1= yes, 0=no)	1
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)	20	For intermittent stream, enter effluent Hardness (If no data, 20 mg/l is used)
Receiving Stream Critical Low Flow (4Q3) (cfs)	0	Enter "0" for intermittent stream and lake.
Receiving Stream Harmonic Mean Flow (cfs)	0	Enter harmonic mean or modified harmonic mean flow data
Avg. Water Temperature (C)	5.8	
pH (Avg)	7.1	
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	0	

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, no data is inputted.
 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)

See "Procedures for Implementing NPDES Permits in New Mexico" amended July 2009

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

Where:

Cd = Instream Waste Concentration

F = Fraction of stream allowed for mixing (see "Procedures for Implementing NPDES Permits in New Mexico")

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

See "Procedures for Implementing NPDES Permits in New Mexico" amended July 2009

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

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	7.1	480000	-0.73	53887.66189	0.481289107	3.41715266	480000	-0.73	53887.66189	0.481289107	3.41715266
Chromium	7	3360000	-0.93	207196.0069	0.194404262	1.36082984	2170000	-0.27	966454.995	0.049190569	0.34433399
Copper	1.7	1040000	-0.74	113310.7574	0.306164767	0.5204801	2850000	-0.9	192272.8058	0.20637892	0.35084416
Lead	1	2800000	-0.8	254878.9884	0.163999495	0.16399949	2040000	-0.53	416950.2799	0.107077781	0.10707778
Nickel	2.3	490000	-0.57	88840.0885	0.360126535	0.82829103	2210000	-0.76	226782.4678	0.18064728	0.41548874
Silver	0.2	2390000	-1.03	109228.7605	0.314013623	0.06280272	2390000	-1.03	109228.7605	0.314013623	0.06280272
Zinc	7.7	1250000	-0.7	153528.5033	0.245665836	1.89162694	3340000	-0.68	435558.075	0.102974294	0.79290206

The following formula is used to calculate hardness dependent criteria

(Please refer to State Water Quality Standards for details)

			Dissolved WQC (ug/l)
Cadmium (D)	Acute	$e^{(1.0166[\ln(\text{hardness})]-3.924)} \cdot CF1$	$CF1 = 1.136672 - 0.041838 \cdot \ln(\text{hardness})$
	Chronic	$e^{(0.7409[\ln(\text{hardness})]-4.719)} \cdot CF2$	$CF2 = 1.101672 - 0.041838 \cdot \ln(\text{hardness})$
Chromium (D)	Acute	$0.316 \cdot e^{(0.819[\ln(\text{hardness})]+3.7256)}$	152.4888787
	Chronic	$0.860 \cdot e^{(0.819[\ln(\text{hardness})]+0.6848)}$	19.8356702

			Dissolved WQC (ug/l)	
Copper (D)	Acute	$0.960 e(0.9422[\ln(\text{hardness})]-1.700)$	2.949857764	
	Chronic	$0.960 e(0.8545[\ln(\text{hardness})]-1.702)$	2.263769249	
Lead (D)	Acute	$e(1.273[\ln(\text{hardness})]-1.46)*CF3$	10.79154489	$CF3 = 1.46203 - 0.145712*\ln(\text{hardness})$
	Chronic	$e(1.273[\ln(\text{hardness})]-4.705)*CF4$	0.420531012	$CF4 = 1.46203 - 0.145712*\ln(\text{hardness})$
Nickel (D)	Acute	$0.998 e(0.846[\ln(\text{hardness})]+2.255)$	119.9874916	
	Chronic	$0.997 e(0.846[\ln(\text{hardness})]+0.0584)$	13.32690594	
Zinc (D)	Acute	$0.978 e(0.8473[\ln(\text{hardness})]+0.884)$	29.96524909	
	Chronic	$0.986 e(0.8473[\ln(\text{hardness})]+0.884)$	30.2103636	
Silver (D)	Acute	$0.85 e(1.72[\ln(\text{hardness})]-6.59)$	0.201924903	

POLLUTANTS	Instream Waste Concentration											Livestock& Wildlife Criteria	Acute Aquatic Criteria	Chronic Aquatic Criteria	Human Health Criteria
	Ambient Conc.	Effluent Conc.	Acute Aquatic	Domestic Supply	Chronic Aquatic	Human Health	Domestic Criteria	Irrigation Criteria							
	CAS No.	STORET	MLQ	Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l				
Radioactivity, Nutrients, and Chlorine															
Aluminum, dissolved	7429-90-5	01106	2.5	200	426	426	426	426	426	1E+100	5000	1E+100	750	87	1E+100
Barium, dissolved	7440-39-3	01005	100	0	0	0	0	0	0	2000	1E+100	1E+100	1E+100	1E+100	1E+100
Boron, dissolved	7440-42-8	01022	100	0	0	0	0	0	0	1E+100	750	5000	1E+100	1E+100	1E+100
Cobalt, dissolved	7440-48-4	01037	50	0	0	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	0	0	1E+100	1000	1E+100	1E+100	1E+100	1E+100
Uranium, dissolved	7440-61-1	22706	0.1		0	0	0	0	0	5000	1E+100	1E+100	1E+100	1E+100	1E+100
Vanadium, dissolved	7440-62-2	01087	50	8	17.04	17.04	17.04	17.04	17.04	1E+100	100	100	1E+100	1E+100	1E+100
Ra-226 and Ra-228 (pCi/l)		11503			0	0	0	0	0	5	1E+100	30	1E+100	1E+100	1E+100
Strontium (pCi/l)		13501			0	0	0	0	0	8	1E+100	1E+100	1E+100	1E+100	1E+100
Tritium (pCi/l)		04124			0	0	0	0	0	20000	1E+100	20000	1E+100	1E+100	1E+100
Gross Alpha (pCi/l)		80029			0	0	0	0	0	15	1E+100	15	1E+100	1E+100	1E+100
Asbestos (fibers/l)					0	0	0	0	0	7000000	1E+100	1E+100	1E+100	1E+100	1E+100
Total Residual Chlorine	7782-50-5	50060	33	50	106.5	106.5	106.5	106.5	106.5	1E+100	1E+100	11	19	11	1E+100
Nitrate as N (mg/l)		00620			0	0	0	0	0	10	1E+100	1E+100	1E+100	1E+100	1E+100
Nitrite + Nitrate (mg/l)		00630			0.5	1.065	1.065	1.065	1.065	1E+100	1E+100	132	1E+100	1E+100	1E+100
METALS AND CYANIDE															
Antimony, dissolved (P)	7440-36-0	01097	60	0	0	0	0	0	0	5.6	1E+100	1E+100	1E+100	1E+100	640
Arsenic, dissolved (P)	7440-38-2	01000	0.5	3.417152659	7.27853516	7.27853516	7.27853516	7.27853516	7.27853516	2.3	100	200	340	150	9
Beryllium, dissolved	7440-41-7	01012	0.5	0	0	0	0	0	0	4	1E+100	1E+100	1E+100	1E+100	1E+100
Cadmium, dissolved	7440-43-9	01025	1	0	0	0	0	0	0	5	10	50	0.42009862	0.08018572	1E+100
Chromium, dissolved	18540-29-9	01034	10	1.360829836	2.89856755	2.89856755	2.89856755	2.89856755	2.89856755	100	100	1000	152.488879	19.8356702	1E+100
Copper, dissolved	7440-50-8	01042	0.5	0.520480104	1.10862262	1.10862262	1.10862262	1.10862262	1.10862262	1300	200	500	2.94985776	2.26376925	1E+100
Lead, dissolved	7439-92-1	01049	0.5	0.163999495	0.34931892	0.34931892	0.34931892	0.34931892	0.34931892	50	5000	100	10.7915449	0.42053101	1E+100
Mercury, dissolved	7439-97-6	71890	0.005	0	0	0	0	0	0	1E+100	1E+100	1E+100	1.4	0.77	1E+100

POLLUTANTS	CAS No.	STORET	MQL	Instream Waste Concentration							Livestock&	Acute	Chronic	Human	
				Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Wildlife	Aquatic	Aquatic	Health
				Conc	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	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
Mercury, total	7439-97-6	71900	0.005		0	0	0	0	0	2	1E+100	0.77	1E+100	1E+100	1E+100
Nickel, dissolved (P)	7440-02-0	01065	0.5		0.828291031	1.7642599	1.7642599	1.7642599	1.764259895	100	1E+100	1E+100	119.987492	13.3269059	4600
Selenium, dissolved (P)	7782-49-2	01145	5		0	0	0	0	0	50	130	50	1E+100	1E+100	4200
Selenium, dis (SO4 >500 mg/l)		01145	5			0	0	0	0	50	250	50	1E+100	1E+100	4200
Selenium, total recoverable	7782-49-2	01147	5			0	0	0	0	1E+100	1E+100	5	20	5	1E+100
Silver, dissolved	7440-22-4	01077	0.5		0.062802725	0.1337698	0.1337698	0.1337698	0.133769803	1E+100	1E+100	1E+100	0.2019249	1E+100	1E+100
Thallium, dissolved (P)	7440-28-0	01059	0.5		1	2.13	2.13	2.13	2.13	1.7	1E+100	1E+100	1E+100	1E+100	6.3
Zinc, Dis.	7440-66-6	01080	20		1.891626941	4.02916538	4.02916538	4.02916538	4.029165384	7400	2000	25000	29.9652491	30.2103636	26000
Cyanide, dissolved	57-12-5	00720	10			0	0	0	0	200	1E+100	1E+100	1E+100	1E+100	1E+100
Cyanide, weak acid dissocial	57-12-5	00718	10			0	0	0	0	700	1E+100	5.2	22	5.2	220000
DIOXIN						0	0	0	0						
2,3,7,8-TCDD	1764-01-6	34675	0.00001			0	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	0	0	190	1E+100	1E+100	1E+100	1E+100	290
Acrylonitrile	107-13-0	34215	20		0	0	0	0	0	0.51	1E+100	1E+100	1E+100	1E+100	2.5
Benzene	71-43-2	34030	10		0	0	0	0	0	22	1E+100	1E+100	1E+100	1E+100	510
Bromoform	75-25-2	32104	10		0	0	0	0	0	43	1E+100	1E+100	1E+100	1E+100	1400
Carbon Tetrachloride	56-23-5	32102	2		0	0	0	0	0	2.3	1E+100	1E+100	1E+100	1E+100	16
Chlorobenzene	108-90-7	34301	10		0	0	0	0	0	680	1E+100	1E+100	1E+100	1E+100	21000
Clorodibromomethane	124-48-1	32105	10		0	0	0	0	0	4	1E+100	1E+100	1E+100	1E+100	130
Chloroform	67-66-3	32106	50		0	0	0	0	0	57	1E+100	1E+100	1E+100	1E+100	4700
Dichlorobromomethane	75-27-4	32101	10		0	0	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	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	0	0.57	1E+100	1E+100	1E+100	1E+100	32
1,2-Dichloropropane	78-87-5	34541	10		0	0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	150
1,3-Dichloropropylene	542-75-6	34561	10		0	0	0	0	0	10	1E+100	1E+100	1E+100	1E+100	1700
Ethylbenzene	100-41-4	34371	10		0	0	0	0	0	3100	1E+100	1E+100	1E+100	1E+100	29000
Methyl Bromide	74-83-9	34413	50		0	0	0	0	0	47	1E+100	1E+100	1E+100	1E+100	1500
Methylene Chloride	75-09-2	34423	20		0	0	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	0	0	1.7	1E+100	1E+100	1E+100	1E+100	40
Tetrachloroethylene	127-18-4	34475	10		0	0	0	0	0	6.9	1E+100	1E+100	1E+100	1E+100	33
Toluene	108-88-3	34010	10		0	0	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	0	0	700	1E+100	1E+100	1E+100	1E+100	140000
1,1,2-Trichloroethane	79-00-5	34511	10		0	0	0	0	0	5.9	1E+100	1E+100	1E+100	1E+100	160
Trichloroethylene	79-01-6	39180	10		0	0	0	0	0	25	1E+100	1E+100	1E+100	1E+100	300
Vinyl Chloride	75-01-4	39175	10		0	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	0	81	1E+100	1E+100	1E+100	1E+100	150
2,4-Dichlorophenol	120-83-2	34601	10		0	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	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	0	13	1E+100	1E+100	1E+100	1E+100	280

POLLUTANTS	CAS No.	STORET	MQL	Instream Waste Concentration							Livestock&	Acute	Chronic	Human	
				Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Wildlife	Aquatic	Aquatic	Health
				Conc	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	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
2,4-Dinitrophenol	51-28-5	34616	50		0	0	0	0	0	69	1E+100	1E+100	1E+100	1E+100	5300
Pentachlorophenol	87-86-5	39032	50		0	0	0	0	0	2.7	1E+100	1E+100	19	15	30
Phenol	108-95-2	34694	10		0	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	0	14	1E+100	1E+100	1E+100	1E+100	24
BASE/NEUTRAL							0	0	0						
Acenaphthene	83-32-9	34205	10		0	0	0	0	0	670	1E+100	1E+100	1E+100	1E+100	990
Anthracene	120-12-7	34220	10		0	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	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	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	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	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	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	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	0	1400	1E+100	1E+100	1E+100	1E+100	65000
Bis(2-ethylhexyl)Phthalate	117-81-7	39100	10		0	0	0	0	0	12	1E+100	1E+100	1E+100	1E+100	22
Butyl Benzyl Phthalate	85-68-7	34292	10		0	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	0	1000	1E+100	1E+100	1E+100	1E+100	1600
Chrysene	218-01-9	34320	5		0	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	0.038	1E+100	1E+100	1E+100	1E+100	0.18
1,2-Dichlorobenzene	95-50-1	34536	10		0	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	0	320	1E+100	1E+100	1E+100	1E+100	960
1,4-Dichlorobenzene	106-46-7	34571	10		0	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	0.21	1E+100	1E+100	1E+100	1E+100	0.28
Diethyl Phthalate	84-66-2	34336	10		0	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	0	270000	1E+100	1E+100	1E+100	1E+100	1100000
Di-n-Butyl Phthalate	84-74-2	39110	10		0	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	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	0.36	1E+100	1E+100	1E+100	1E+100	2
Fluoranthene	206-44-0	34376	10		0	0	0	0	0	130	1E+100	1E+100	1E+100	1E+100	140
Fluorene	86-73-7	34381	10		0	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	0.0028	1E+100	1E+100	1E+100	1E+100	0.0029
Hexachlorobutadiene	87-68-3	34391	10		0	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	0	240	1E+100	1E+100	1E+100	1E+100	17000
Hexachloroethane	67-72-1	34396	20		0	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	0.038	1E+100	1E+100	1E+100	1E+100	0.18
Isophorone	78-59-1	34408	10		0	0	0	0	0	350	1E+100	1E+100	1E+100	1E+100	9600
Nitrobenzene	98-95-3	34447	10		0	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	0.0069	1E+100	1E+100	1E+100	1E+100	30
n-Nitrosodi-n-Propylamine	621-64-7	34428	20		0	0	0	0	0	0.05	1E+100	1E+100	1E+100	1E+100	5.1
n-Nitrosodiphenylamine	86-30-6	34433	20		0	0	0	0	0	33	1E+100	1E+100	1E+100	1E+100	60
Pyrene	129-00-0	34469	10		0	0	0	0	0	830	1E+100	1E+100	1E+100	1E+100	4000
1,2,4-Trichlorobenzene	120-82-1	34551	10		0	0	0	0	0	260	1E+100	1E+100	1E+100	1E+100	940

POLLUTANTS	CAS No.	STORET	MQL	Instream Waste Concentration						Livestock&	Acute	Chronic	Human		
				Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Wildlife	Aquatic	Aquatic	Health
				Conc	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	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	
PESTICIDES AND PCBs							0	0	0						
Aldrin	309-00-2	39330	0.01		0	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	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	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	0.19	1E+100	1E+100	0.95	1E+100	0.63
Chlordane	57-74-9	39350	0.2		0	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	0.0022	1E+100	0.001	1.1	0.001	0.0022
Dieldrin	60-57-1	39380	0.02		0	0	0	0	0	0.00052	1E+100	1E+100	0.24	0.056	0.00054
Alpha-Endosulfan	959-98-8	34361	0.01		0.014	0.02982	0.02982	0.02982	0.02982	62	1E+100	1E+100	0.22	0.056	89
Beta-Endosulfan	33213-65-9	34356	0.02		0	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	0	62	1E+100	1E+100	1E+100	1E+100	89
Endrin	72-20-8	39390	0.02		0	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	0.29	1E+100	1E+100	1E+100	1E+100	0.3
Heptachlor	76-44-8	39410	0.01		0	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	0.00039	1E+100	1E+100	0.52	0.0038	0.00039
PCBs	1336-36-3	39516	0.2		0	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	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 formula is used to calculate the allowable daily maximum effluent concentration

See "Procedures for Implementing NPDES Permits in New Mexico" amended July 2009

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

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

Where: C_s = Applicable water quality standard

C_a = Ambient stream concentration

F = Fraction of stream allowed for mixing (1.0 is assigned to domestic water supply and human health uses)

Q_e = Plant effluent flow

Q_a = Criteria Low flow (4Q3) or Harmonic Mean flow for Human Health Criteria

