SDMS Document
68049

APR 04 1990

BY TELEFAX and
EXPRESS MAIL--
RETURN RECEIPT REQUESTED

Mr. Donald Murphy
Facility Coordinator
Langan Environmental Services
River Drive Center 2
Elmwood Park, NJ 07407

Re: SCP-Carlstadt Site, Administrative Order, Index No. II-CERCLA-50114

Dear Mr. Murphy:

Enclosed is a copy of the preliminary discharge limitations for Peach Island Creek which were provided to the Environmental Protection Agency ("EPA") by the New Jersey Department of Environmental Protection ("NJDEP") this morning. Please be advised that NJDEP has informed EPA that these limitations are subject to change if:

1. new information regarding background concentrations of chemicals in Peach Island Creek becomes available;

2. there are significant changes in the chemical characteristics of the groundwater at the site; or,

3. there are changes in Federal or State Water Quality Criteria.

EPA is providing Respondents with these limitations so that they can complete their analyses of various disposal options for the shallow groundwater which is to be removed as part of the interim remedy for first operable unit for the SCP-Carlstadt site.

By letter dated March 28, 1990, I requested that Respondents submit to EPA an assessment of the off-site disposal option. Now that the enclosed limitations for on-site surface water discharge are available, I am further requesting that Respondents submit an assessment of the option of on-site groundwater treatment with discharge to Peach Island Creek. As with the off-site option, the assessment should include cost estimates and volume estimates (for both initial dewatering and periodic maintenance), and in addition, should include an analysis of the expected capability of Respondents' preferred on-site treatment method to meet the enclosed discharge limitations.

SYMBOL --				
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This analysis should be submitted to EPA by no later than April 13, 1990.

In addition, I am requesting that once the above analyses are completed, Respondents submit to EPA total cost estimates for the interim remedy (slurry wall, dewatering, and groundwater treatment/disposal). These cost estimates should include both capital costs and operation and maintenance[1], and should be submitted to EPA by no later than April 18, 1990. Cost estimates for both interim action options (off-site treatment/disposal and on-site treatment/surface water discharge) should be included.

If you have any questions, please contact Janet Feldstein, of my staff at (212) 264-0613.

Sincerely yours,

Raymond Basso, Chief
New Jersey Compliance Branch

Enclosure

cc: William Warren
Pam Lange w/enclosure

enclosure

[1] For operation and maintenance costing purposes, it can be assumed that the duration of the interim remedy will be approximately 2 years.

CN 028
Trenton, N.J. 08625-0028

(609)633-1403

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT

TO: Janet Feldstein

FAX #: 212 264 - 7611

DATE: 4/3/90 NUMBER OF PAGES: 20 (inc. cover)

FROM: Pam Lange

OFFICE: BECM / NJDEP

PHONE #: 609 633 1455

Janet:

ARARs for Surface Water

Hard copy to follow.

Pam

Background Information

1. Outfall(001) will discharge to the Peach Island Creek classified as SE2 waters.

2. Data from the September 19, 1988 Report "Remedial Investigation, SCP Carlstadt" prepared by Dames & Moore was used to determine the extent of contamination which may be present in outfall 001. The following information was extracted from the Report and used to characterize the contamination which may be present in outfall 001:

1. Organic and Inorganic Chemical Copmpounds detected at the SCP Site - Table 2

2. Water Table Aquifer Samples - Table 21 and 22.

3. Till Aquifer Samples - Table 21 and 22

4. Surface Water Samples - Table 23,24,25 and Figure 52,53,54,55.

This data may or may not be representative of the contamination in outfall 001 since the data available is from 1987. Only the information available, as listed above, was used to characterize this discharge and the instream background levels.

STATEMENT OF BASIS

Whole effluent toxicity limitation

Outfall 001

The water quality based acute and chronic toxicity limitations were calculated in accordance with N.J.A.C. 7:5-4.6(c)5 using a MA7CD10 flow of 0.03 cfs(USGS personal communication) and an effluent flow of 0.072 MGD reported on the August 2, 1989 memorandum from the Division of Hazardous Waste Management.

In accordance with the Departments "Interim Policy on Permittees Receiving Chronic Limits" (dated October 4, 1989), the more stringent of the two limitations (acute or chronic) calculated for the outfall, is selected as the toxicity limitation. Therefore, the chronic toxicity limitation of an NOEC $\geq$79% is selected as the toxicity limitation for this discharge.

Multi-species testing requirements for chronic toxicity testing are imposed in accordance with N.J.A.C. 7:9-4.5 (f)1.i. and recommendatios in the Technical Support Document for Water Quality - based Toxics Control (USEPA 1985; EPA-440/4-85-032).

The initial increased testing frequencies are included to establish an adequate database for toxicity in order to determine if the discharge is in consistent compliance with the established effluent limitations, in accordance with the N.J.A.C. 7:14A-10.3(a)16. The requirement for cessation of discharge (should the disacharge not meet its toxicity limitation) is in accordance with N.J.A.C 7:14A-2.8(d) since new sources do not qualify for compliance schedules and with N.J.A.C. 7:14A-2.5(a)6 which states that "The permittee shall take corrective action including ceasing discharge to mitigate the effects of violating a NJPDES permit." Furthermore, the impact to the groundwater cleanup, caused by the temporary cessation of discharge to surface water, should be less severe than if the discharge to surface water was continued in violation of effluent limitations.

Chemical Specific Effluent Limitations

Outfall 001

Technology based limitations were considered based on the following documents:

1. Guidance for BAT-Equivalent Control of Selected Toxic Pollutants, James W. Patterson, Ph.D. (May 1981).

2. Organic Chemicals and Plastics and Synthetic Fibers Category Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards; Final Rule, 40 CFR Parts 414 and 416 (November 5, 1987).

3. USEPA WERL Treatability Database.

Water Quality-Based Effluent Limitations (WQBEL) were calculated as follows. The procedure for determining Waste Load Allocation's (WLA's), calculating Long Term Averages (LTA's), and translating the LTA'S into permit limits are consistent with the EPA "Permit Writer's Guide to Water-Quality-Based Permitting for Toxic Pollutants" (EPA 440/4-87-005 July 1987) which is based on the EPA "Technical Support Document for Water Quality-Based Toxics Control" (EPA 440/4-85-032 September 1985). A reserve capacity is maintained pursuant to N.J.A.C. 7:9-4.6(c)4.i. when calculating WLA's. Assuming the discharge will be via a submerged pipe to ensure good mixing, site specific WLA's were calculated using the N.J. Surface Water Quality Criteria for saline water. A minimum average 7 consecutive day flow with a statistical recurrence interval of 10 years (MA7CD10) of 0.03 cfs was used, for the proposed discharge to Peach Island Creek. A steady state model assuming the pollutant behaves as a conservative substance was used to calculate the site specific WLA's. An effluent performance level (LTA) necessary to comply with the WLA is back-calculated. The most stringent LTA was used to calculate the Daily Maximum and Monthly Average effluent limitations.

Limitations are expressed in terms of both mass and concentration. In each case the proposed limitations are based on the more stringent of the WQBEL or technology based limitations.

The limitation for Petroleum Hydrocarbons is in accordance with the New Jersey Oil and Grease effluent limitations, N.J.A.C. 7:14A-14.1 et. seq.

The limitation for Total Organic Carbon is in accordance with the Wastewater Discharge Requirements, N.J.A.C. 7:9-5.5 and 7:9-5.8 for the Hackensack River basin.

The requirement for cessation of a discharge (should the discharge not meet the effluent limitations) is in accordance with N.J.A.C. 7:14A-2.8(d) since new sources do not qualify for compliance schedules and with N.J.A.C. 7:14A-2.5(a)6 which states that "The permittee shall take corrective action including ceasing discharge to mitigate the effects of violating a NJPDES permit." Furthermore, the impact to the SCP site, caused by the temporary cessation of discharge to surface water, should be less severe than if the discharge to surface water was continued in violation of effluent limitations.

Whole Effluent Toxicity Testing Requirements

Chronic Toxicity Testing

1. Test Species and Methodology

   a. Chronic toxicity tests shall be conducted concurrently, with the split samples, using the following test species and test durations:

      1. A choice of one of the following two fish species: Sheepshead minnow (Cyprinodon variegatus), 7 day larval survival and reproduction test, or

         Inland Silverside (Menidia beryllina), 7 day larval survival and reproduction test,and

      2. Mysid shrimp (Mysidopsis bahia), 7 day survival, growth, and fecundity test.

      Such testing will determine if appropriately selected effluent concentrations will affect the survival, growth and/or reproduction of the most sensitive to the discharge.

b. Test results shall be expressed as an NOEC (No Observable Effect Concentration) and LOEC (Lowest Observable Effect Concentration). Compliance with the chronic limit shall be evaluated using the most sensitive endpoint measured by the test.

c. Testing shall be in conformance with the guidelines contained in the "Interim Chronic Toxicity Testing Methodologies for Use in the NJPDES Permit Program, Version 1.0, February 1989" (attached). The laboratory performing the toxicity testing shall be within the existing acute toxicity testing laboratory certification program established under N.J.A.C. 7:18-6.

MONITORING AND REPORTING REQUIREMENTS

Monitoring Frequency for all Parameters

1. Chronic toxicity testing shall initially be conducted on representative effluent samples on a biweekly basis for two months. All other parameters shall be monitored at the frequencies specified in Table II. If the test results show that the effluent is consistently meeting the specified chronic toxicity limitation, the discharge may continue (provided it also meets any other specified limits). If at any time the effluent does not meet the specified chronic toxicity or chemical specific limitations, the discharge shall cease until it is determined that the effluent can consistently meet the specified limits.

2. Once it has been demonstrated that the effluent from the site can consistently meet the specified chronic toxicity limit, the discharge shall be monitored at a quarterly frequency using the most sensitive chronic species/test (as determined during the first two months of testing). If at any time the discharge from the site does not meet its specified effluent limitations, that discharge shall cease until it is determined that the effluent can again consistently meet the specified chronic toxicity and/or chemical specific limitations.

Testing Requirements

All analyses shall be performed in accordance with N.J.A.C. 7:14A-2.5(a)12.ii.

Reporting Requirements

1. The Bureau of Industrial Discharge Permits shall be notified one month prior to commencement of discharge of treated groundwater from the SCP Carlstadt site outfall DSN001.

2. All test results shall be summarized and reported monthly (starting from the first month in which the discharge occurs) on the Discharge Monitoring Reports (DMR's), a copy of which is attached.

3. All DMR's shall be submitted within 25 days of the start of the following month. Contact Surya Shah of the Bureau of Industrial Discharge Permits at 2-4860 for directions on the submittal of DMR's.

4. Chronic toxicity test results shall also be reported on the "NJPDES Biomonitoring Report Form - Chronic Bioassays," (copies of which are provided to certified laboratories).

PERMIT EQUIVALENCY SUMMARY TABLE 1

OUTFALL 001

PARAMETER	WORST CASE INFLUENT DATA	WATER QUALITY BASED LIMITS		TECHNOLOGY BASED LIMITS		MINIMUM DETECTION LEVEL	EPA METHOD NUMBER	PERMIT EQUIVALENT EFFLUENT LIMIT	
All values are in ug/l unless otherwise stated		DAY MAX	MON AVG	DAY MAX	MON AVG	(ug/l)		DAY MAX	MON AVG
CONVENTIONALS & NON-CONVENTIONALS									
Flow (GPD)	72,000	-	-	-	-	-	-	Report	
TOC(mg/l)	-	-		40	- (2)	-		40	-
TSS(mg/l)	-	-	-	50	- (1)	-		50	-
pH(S.U.)	-	-	-	6.5-8.5	(6)	-		6.5-8.5	
Petroleum Hydrocarbons(mg/l)	-	-	-	15	10 (3)	-		15	10
Cyanide, total	4,520	0.5	1.0	400	200 (4)	5.0	335.3	0.5	1.0
Chronic Toxicity	-	NOEC ≥ 79%		-	-	-	-	Min.NOEC ≥ 79%	
VOLATILE COMPOUNDS									
Benzene	7,270	-	-	134	57 (5)	4.4	624	134	57
Chlorobenzene	6,560	-	-	380	142 (5)	6.0	624	380	142
Chloroethane	2,420	-	-	295	110 (5)	0.52	601	295	110
Chloroform	614,000	-	-	325	111 (5)	1.6	624	325	111
1,1 Dichloroethane	11,700	-	-	59	22 (5)	4.7	624	59	22
1,2 Dichloroethane	473,000			574	180 (5)	2.8	624	574	180
1,1 Dichloroethylene	1,220	-	-	60	22 (5)	2.8	624	60	22
Ethylbenzene	3,900	-	-	380	142 (5)	7.2	624	380	142
Methylene Chloride	200,000	-	-	170	36 (5)	2.8	624	170	36
1,1,2,2-Tetrachloroethane	7,350	-	-	50	- (7)	6.9	624	50	
Tetrachloroethylene	24,500	-	-	164	52 (5)	4.1	624	164	52

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PARAMETER	WORST CASE INFLUENT DATA	WATER QUALITY BASED LIMITS		TECHNOLOGY BASED LIMITS		MINIMUM DETECTION LEVEL	EPA METHOD NUMBER	PERMIT EQUIVALENT EFFLUENT LIMIT	
		DAY MAX	MON AVG	DAY MAX	MON AVG	(ug/l)		DAY MAX	MON AVG
VOLATILE COMPOUNDS									
Toluene	90,900	-	-	74	28 (5)	6.0	624	74	28
1,2-Trans-dichloro-ethylene	64,700	-	-	66	25 (5)	1.6	624	66	25
1,1,1-Trichloroethane	81,200	-	-	59	22 (5)	3.8	624	59	22
Trichloroethylene	161,000	-	-	69	26 (5)	1.9	624	69	26
Vinyl Chloride	7,290	-	-	172	97 (5)	0.18	601	172	97
Methyl Ethyl Ketone	2,000,000	-	-	2000	- (7)	-	-	2000	-
Xylenes, total	35,600	-	-	50	- (7)	-	-	50	-
ACID COMPOUNDS									
2-Chlorophenol	170	-	-	10	- (7)	3.3	625	10	-
2,4-Dichlorophenol	1,090	-	-	100	- (7)	2.7	625	100	-
2,4 Dimethylphenol	736	-	-	47	19 (5)	2.7	625	47	19
2-Nitrophenol	4	-	-	231	65 (5)	3.6	625	231	65
Phenol	17,100	-	-	47	19 (5)	1.5	625	47	19
BASE NEUTRAL COMPOUNDS									
Acenaphthene	40	-	-	47	19 (5)	1.9	625	47	19
Acenaphthylene	73	-	-	47	19 (5)	3.5	625	47	19
Anthracene	126	-	-	47	19 (5)	1.9	625	47	19
Benzo(a)pyrene	90	-	-	48	20 (5)	2.5	625	48	20
Benzo(b)fluoranthene	141	-	-	-	-	4.8	625	Controlled with Benzo(a)pyrene	
bis(2-Chloroethyl)ether	1,390	-	-	200	- (7)	5.7	625	200	-
bis(2-Ethyl hexyl)-phthalate	654	-	-	258	95 (5)	2.5	625	258	
Butyl Benzyl phthalate	10.4	-	-	30	- (8)	2.5	625	30	-

PARAMETER	WORST CASE INFLUENT DATA	WATER QUALITY BASED LIMITS DAY MAX	WATER QUALITY BASED LIMITS MON AVG	TECHNOLOGY BASED LIMITS DAY MAX	TECHNOLOGY BASED LIMITS MON AVG	MINIMUM DETECTION LEVEL (ug/l)	EPA METHOD NUMBER	PERMIT EQUIVALENT EFFLUENT LIMIT DAY MAX	PERMIT EQUIVALENT EFFLUENT LIMIT MON AVG
BASE NEUTRAL COMPOUNDS									
2-Chloronaphthalene	18.9	-	-	57	- (8)	1.9	625	57	-
Chrysene	87	-	-	47	19 (5)	2.5	625	47	19
1,2-Dichlorobenzene	192	-	-	794	196 (5)	1.9	625	794	196
Diethyl phthalate	416	-	-	113	46 (5)	22.0	625	113	46
Dimethyl phthalate	316	-	-	47	19 (5)	1.6	625	47	19
Di-n-butyl phthalate	318	-	-	43	20 (5)	2.5	625	43	20
Fluoranthene	266	-	-	54	22 (5)	2.2	625	54	22
Fluorene	133	-	-	47	19 (5)	1.9	625	47	19
Indeno(1,2,3-c,d)pyrene	60	-	-	24	- (7)	3.7	625	24	-
Isophorone	8,450	-	-	85	- (7)	2.2	625	85	-
Naphthalene	1,220	-	-	47	19 (5)	1.6	625	47	19
Nitrobenzene	57,900	-	-	6402	2237 (5)	1.9	625	6402	2237
Phenanthrene	620	-	-	47	19 (5)	5.4	625	47	19
Pyrene	228	-	-	48	20 (5)	1.9	625	48	20
PESTICIDES & PCBs									
Beta-BHC	0.6	-	-	0.006	- (7)	0.006	608	0.006	-
4,4' -DDT	1.7	0.0008	0.0004	-	-	0.012	608	0.0008	0.0004
4,4' -DDE	.59	-	-	-	-	0.004	608	Controlled with DDT	
Endosulfan I	.3	0.0072	0.0036	-	-	0.014	608	0.0072	0.0036
Endrin	.7	0.002	0.001	-	-	0.006	608	0.002	0.001
Endrin Aldehyde	15.0	-	-	-	-	0.023	608	Controlled with Endrin	
PCBs	17	0.025	0.012	-	-	-	608	0.025	0.012

PARAMETER	WORST CASE INFLUENT DATA	WATER QUALITY BASED LIMITS		TECHNOLOGY BASED LIMITS		MINIMUM DETECTION LEVEL	EPA METHOD NUMBER	PERMIT EQUIVALENT EFFLUENT LIMIT	
		DAY MAX	MON AVG	DAY MAX	MON AVG	(ug/l)		DAY MAX	MON AVG
METALS									
Arsenic	1,600	62	31	400	200 (4)	1.0	206.2	62	31
Beryllium	1.3	-	-	3	- (8)	0.2	210.2	3	-
Cadmium	-	16	8	200	100 (4)	0.1	213.2	16	8
Chromium, total	420	-	-	1000	500 (4)	1.0	218.2	1000	500
Chromium, Hexavalent	-	-	-	100	50 (4)	5.0	218.5	100	50
Copper, total	60	ND	ND	800	400 (4)	1.0	220.2	ND	ND
Lead, total	-	10	5	300	150 (4)	1.0	239.2	10	5
Mercury	0.21	ND	ND	6	3 (4)	0.2	245.1	ND	ND
Nickel	150	ND	ND	1500	750 (4)	1.0	249.2	ND	ND
Silver	110	2.46	1.23	200	100 (4)	0.2	272.2	2.46	1.23
Zinc	690	ND	ND	1000	500 (4)	0.05	289.2	ND	ND

(1) Based on USEPA Effluent Limitations Guidelines for stormwater discharges.
(2) Based on minimum requirements for treatment of wastewater, N.J.A.C. 7:9-5.5 and 7:9-5.8.
(3) Based on Oil and Grease Effluent Limitations N.J.A.C. 7:14A-14.1 et seq.
(4) Based on "Guidance for BAT-Equivalent Control of Selected Toxic Pollutants", a report prepared by James W. Patterson, Ph. D., for USEPA, May 1981.
(5) Based on final USEPA Effluent Guidelines for the Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) point source category for discharges that do not use end-of-pipe biological treatment.
(6) Based on NMDC District Zoning Regulations N.J.A.C. 19:4-6.14 (g).
(7) BPJ based on WERL treatability database.
(8) BPJ set at 3 times the highest observed influent data based on low levels observed.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - TABLE II

ECP CARLSTADT - OUTFALL 001

PARAMETER	PERMIT EQUIVALENT EFFLUENT LIMITATIONS		DISCHARGE COMPLIANCE LEVEL (1)	MONITORING REQUIREMENTS	
All values are in ug/l unless otherwise stated	Monthly Average	Daily Maximum		FREQUENCY	SAMPLE TYPE
CONVENTIONALS & NON-CONVENTIONALS					
Flow (GPD)	NL	NL	N/A	Continuous	
TOC(mg/l)	-	40	N/A	Weekly	Composite
TSS(mg/l)	-	50	N/A	Monthly	Composite
pH(S.U.)	6.5 Min.	8.5	N/A	Weekly	Grab
Petroleum Hydro-carbons(mg/l)	10	15 (2)	N/A	Weekly	Grab
Cyanide,total (lb/d)	0.5(.0003)	1.0(.0006)	5.0	Weekly	Grab
Chronic Toxicity	NOEC ≥ 79%	N/A		See Pages 3 and 4 of 13	
VOLATILE COMPOUNDS					
Benzene	57	134	N/A	2/month	Grab
Chlorobenzene	142	380	N/A	2/month	Grab
Chloroethane	110	295	N/A	2/month	Grab
Chloroform	111	325	N/A	2/month	Grab
1,1 Dichloroethane	22	59	N/A	2/month	Grab
1,2 Dichloroethane	180	574	N/A	2/month	Grab
1,1 Dichloroethylene	22	60	N/A	2/month	Grab
Ethylbenzene	142	380	N/A	2/month	Grab
Methylene Chloride	36	170	N/A	2/month	Grab
1,1,2,2-Tetrachloro-ethane	NL	50	N/A	2/month	Grab
Tetrachloroethylene	52	164	N/A	2/month	Grab

PARAMETER All values are in ug/l unless otherwise stated	PERMIT EQUIVALENT EFFLUENT LIMITATIONS Monthly Average	 Daily Maximum	DISCHARGE COMPLIANCE LEVEL (1)	MONITORING REQUIREMENTS FREQUENCY	 SAMPLE TYPE
VOLATILE COMPOUNDS					
Toluene	28	74	N/A	2/month	Grab
1,2-Trans-dichloro-ethylene	25	66	N/A	2/month	Grab
1,1,1-Trichloroethane	22	59	N/A	2/month	Grab
Trichloroethylene	26	69	N/A	2/month	Grab
Vinyl Chloride	97	172	N/A	2/month	Grab
Methyl Ethyl Ketone	NL	2000	N/A	2/month	Grab
Xylenes, total	NL	50	N/A	2/month	Grab
ACID COMPOUNDS					
2-Chlorophenol	NL	10	N/A	2/month	Grab
2,4-Dichlorophenol	NL	100	N/A	2/month	Grab
2,4 Dimethylphenol	19	47	N/A	2/month	Grab
2-Nitrophenol	65	231	N/A	2/month	Grab
Phenol	19	47	N/A	2/month	Grab
BASE NEUTRAL COMPOUNDS					
Acenaphthene	19	47	N/A	2/month	Grab
Acenaphthylene	19	47	N/A	2/month	Garb
Anthracene	19	47	N/A	2/month	Grab
Benzo(A)pyrene	20	48	N/A	2/month	Grab
bis(2-Chloroethyl)ether	NL	200	N/A	2/month	Grab
bis(2-Ethyl hexyl)-phthalate	95	258	N/A	2/month	Grab
Butyl Benzyl phthalate	NL	30	N/A	2/month	Grab

PARAMETER All values are in ug/l unless otherwise stated	PERMIT EQUIVALENT EFFLUENT LIMITATIONS Monthly Average	Daily Maximum	DISCHARGE COMPLIANCE LEVEL (1)	MONITORING REQUIREMENTS FREQUENCY	SAMPLE TYPE
BASE NEUTRAL COMPOUNDS					
2-Chloronaphthalene	NL	57	N/A	2/month	Grab
Chrysene	19	47	N/A	2/month	Grab
1,2-Dichlorobenzene	196	794	N/A	2/month	Grab
Diethyl phthalate	46	113	N/A	2/month	Grab
Dimethyl phthalate	19	47	N/A	2/month	Grab
Di-n-b[illegible] phthalate	20	43	N/A	2/month	Grab
Fluo[illegible]	22	54	N/A	2/month	Grab
Flu[illegible]	19	47	N/A	2/month	Grab
Ind[illegible]eno(1,2,3-c,d)pyrene	NL	24	N/A	2/month	Grab
Isophorone	NL	85	N/A	2/month	Grab
Naphthalene	19	47	N/A	2/month	Grab
Nitrobenzene	2237	6402	N/A	2/month	Grab
Phenanthrene	19	47	N/A	2/month	Grab
Pyrene	20	48	N/A	2/month	Grab
PESTICIDES & PCBs					
Beta-BHC	NL	0.006	0.006	2/month	Grab
4,4'-DDT (lb/d)	0.0004(2.4E-7)	0.0008(4.8E-7)	0.012	Weekly	Grab
Endosulfan I (lb/d)	0.0036(2.1E-6)	0.0072(4.2E-6)	0.014	Weekly	Grab
Endrin (lb/d)	0.001(6.0E-7)	0.002(1.2E-6)	0.006	Weekly	Grab
PCB's (lb/d)	0.012(7.2E-6)	0.025(1.5E-5)	-	Weekly	Grab

PARAMETER All values are in mg/l unless otherwise stated	PERMIT EQUIVALENT EFFLUENT LIMITATIONS Monthly Average	 Daily Maximum	DISCHARGE COMPLIANCE LEVEL (1)	MONITORING REQUIREMENTS FREQUENCY	 SAMPLE TYPE
METALS					
Arsenic (lb/d)	31(.0186)	62(.037)	N/A	Weekly	Composite
Beryllium	NL	3	N/A	Weekly	Composite
Cadmium (lb/d)	8(.0048)	16(.0096)	N/A	Weekly	Composite
Chromium,total	500	1000	N/A	2/month	Composite
Chromium, Hexavalent	50	100	N/A	2/month	Composite
Copper, total	ND	ND	1.0	Weekly	Composite
Lead, total (lb/d)	5(.003)	10(.006)	N/A	Weekly	Composite
Mercury	ND	ND	0.2	Weekly	Composite
Nickel	ND	ND	1.0	Weekly	Composite
Silver (lb/d)	1.23(.0007)	2.46(.0015)	N/A	Weekly	Composite
Zinc	ND	ND	0.05	Weekly	Composite

N/A - not applicable
NL - no limit, but monitoring and reporting required
NOEC - No Observable Efects Concentration
ND - nondetectible by the most sensitive analytical method available
(1) Where specified, the Discharge Compliance Level (DCL) shall be used for purposes of determining discharge compliance. When the average and maximum effluent limitations are less than the DCL, the discharge must be less than or equal to the DCL to be considered in compliance with both limitations. When only the average limitation is less than the DCL, the discharge wil be considered in compliance with both limitations if it is in compliance with the maximum effluent limitation.
(2) And no visible sheen.

Date

EFFLUENT LIMITS WORKSHEET

ity: SCP Carlstadt NJ00 Receiving Stream: Peach Island Creek MA7CD10: 0.03 cfs = 0.01935 MGD

		WATER QUALITY BASED CRITERIA				Back-	WASTE LOAD ALLOCATIONS				LONG TERM AVERAGES (LTA)				WQB Limits	
ETERS	Infl. Value	NJWQS	Acute WQC	Chronic WQC	Human Health	ground Values	NJWQS WLA	Acute WLA	Chronic WLA	H.H. WLA	NJWQS LTA	Acute LTA	Chronic LTA	H.H. LTA	Monthly Average	Daily Maximum
senic+++	-	-	69	36	-	0	-	70	36.5	-	-	23.73	19.84	-	30.79	61.78
dmium	-	-	43	9.3	-	0	-	43.3	9.37	-	-	14.69	5.09	-	7.89	15.84
omium+6	-	-	1100	50	-	-	-	880	40	-	-	298	21.72	-	33.71	67.64
pper	60	-	2.9	-	-	100	-	<0	-	-	-	<0	-	-	ND	ND
ad	-	-	140	5.6	-	0	-	141.1	5.64	-	-	47.8	3.06	-	4.75	9.53
ercury	0.21	-	2.1	0.025	-	4.8	-	<0	<0	-	-	<0	<0	-	ND	ND
ckel	150	-	75	8.3	-	57	-	75.6	<0	-	-	25.63	<0	-	ND	ND
lenium	-	-	300	71	-	0	-	302.3	71.6	-	-	102.5	38.88	-	60.34	121.1
inc	690	-	95	86	-	370	-	<0	<0	-	-	<0	<0	-	ND	ND
lver	110	-	2.3	-	-	0	-	2.32	-	-	-	0.79	-	-	1.23	2.46
nide total	-	-	1	-	-	0	-	1.015	-	-	-	0.344	-	-	0.534	1.071
4 DDT	1.7	0.001	-	-	-	0	.001	-	-	-	.00027	-	-	-	.0004	.0008
drin	0.7	0.0023	-	-	-	0	.0023	-	-	-	.0006	-	-	-	.00093	.00187
CB's	-	0.03	-	-	-	0	.03	-	-	-	.008	-	-	-	.012	.025
dosulfan	.3	0.0087	-	-	-	0	.0087	-	-	-	.0023	-	-	-	.0036	.0072

ENTS:

-004464

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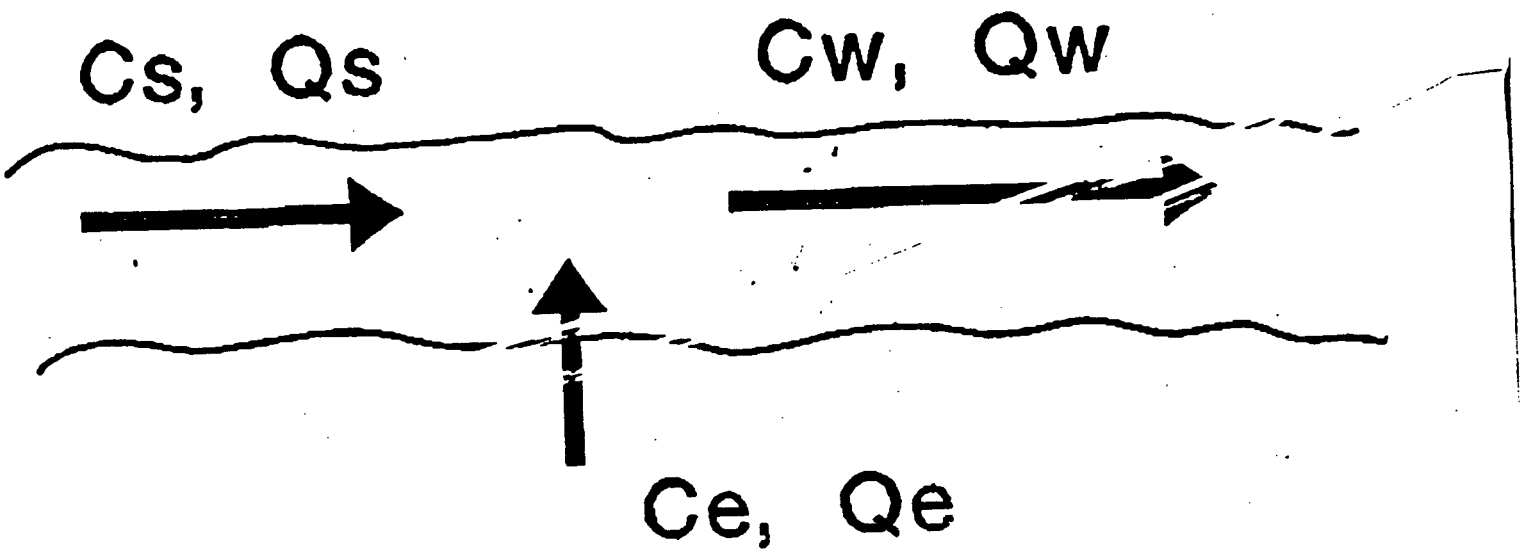
SIMPLE MASS BALANCE



Where:

Cs = Background Stream Concentration

Qs = Upstream streamflow

Qw = 7-day, 10-year Low Flow

Cw = Surface Water Quality Criteria

Qe = Effluent Flow Rate

Ce = Effluent Concentration

SIMPLE MASS BALANCE

Mass of Pollutant Upstream + Mass of Pollutant in Effluent

= Mass of Pollutant Downstream - Pollutant Reserve

Mass Effluent = Mass Downstream - Mass Upstream-Reserve

Mass in effluent (lb/day) = Wasteload Allocation (WLA)

Mass downstream (lb/day) = 8.34 * Qw(mgd) * Cw(mg/l)

Mass upstream (lb/day) = 8.34 * Qs(mgd) * Cs(mg/l)

Reserve (lb/day) = 0.2 * 8.34 * Qw(mgd) * Cw(mg/l)

WLA (lb/day) = 8.34 * (Qw*Cw - Qs*Cs - 0.2 * Qw*Cw)

= 8.34 * (0.8*Qw*Cw - Qs*Cs)

For Qw, Qs in cubic feet per second and Cw, Cs in ug/l:

WLA (lbs/day) = 0.00539 * (0.8*Qw*Cw - Qs*Cs)

SCP Carlstadt

Water Quality Based Effluent Limits

Waste Load Allocation (WLA) → Long Term Average (LTA) → Effluent Limit

$$WLA\ (lbs/day) = 8.34(Q_w C_w - Q_s C_s - 0.2 Q_w C_w)$$
$$= 8.34(0.8 Q_w C_w - Q_s C_s)$$

where $Q_w = Q_s + Q_e$
Q_e, Q_s and Q_w are in MGD, and
C_e, C_s and C_w are in mg/l.

For Discharge to Peach Island Creek which is saline water with a stream classification of SE2 waters.

$Q_s = 0.01935$ MGD
$Q_e = 0.072$ MGD

ARSENIC "Chronic"

$$WLA\ (lbs/day) = 8.34(.8 \times 0.09135 \times \frac{36}{1000} - .01935 \times 0)$$
$$= 0.0219415$$

$$WLA\ (mg/l) = \frac{0.0219415 \times 1000}{8.34 \times .072}$$

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"Acute"

$$WLA\ (lb/day) = 8.34\left\{\left(.8 \times \frac{69}{1000} \times .09135\right) - .01935 \times 0\right\}$$

$$= 0.0420548$$

$$WLA\ (mg/l) = \frac{0.0420548 \times 1000}{8.34 \times .072}$$

$$= 70.03$$

Since chronic and acute criteria are available, I have to calculate LTA for both and choose the most stringent LTA of both and use that to calculate Effluent Limitations.

Chronic LTA = chronic WLA x 0.543
= 36.5 x .543
= 19.84 mg/l

Acute LTA = Acute WLA x 0.339
= 70 x .339
= 23.73 mg/l

Hence Chronic LTA is used to derive Effluent Limit.

Monthly Average = 19.84 x 1.552 (multiplier)
= 30.79 or say 31 mg/l

Daily Maximum = 19.84 x 3.114 (multiplier)

"Acute"

$$WLA\ (lb/day) = 8.34\left\{\left(.8 \times \frac{69}{1000} \times .09135\right) - .01935 \times 0\right\}$$

$$= 0.0420548$$

$$WLA\ (mg/l) = \frac{0.0420548 \times 1000}{8.34 \times .072}$$

$$= 70.03$$

Since chronic and acute criteria are available, I have to calculate LTA for both and choose the most stringent LTA of both and use that to calculate Effluent Limitations.

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= 19.84 ug/l

Acute LTA = Acute WLA x 0.339
= 70 x .339
= 23.73 ug/l

Hence Chronic LTA is used to derive Effluent Limit.

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Monthly Average = 19.84 x 1.552 (multiplier)
= 30.79 or say 31 ug/l

Daily Maximum = 19.84 x 3.114 (multiplier)
= 61.78 or say 62 ug/l

$\boxed{4\text{-}4\text{-}DDT}$

$$WLA\ (lb/day) = 8.34\left(.8 \times \frac{.001}{1000} \times .09135 - .01935 \times 0\right)$$

$$= .0000006\ lb/day$$

$$WLA\ (\mu g/l) = \frac{.0000006 \times 1000}{8.34 \times .072}$$

$$= .001$$

For NJWQS, multiplier to calculate LTA is 0.266.

Therefore $LTA = WLA \times 0.266$

$$= .001 \times .266$$

$$= .00027$$

Effluent Limit:

Monthly Average $= .00027 \times 1.552$

$= 0.0004\ \mu g/l$

Daily Maximum $= 0.00027 \times 3.114$

$= 0.0008$

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

EMERGENCY AND REMEDIAL RESPONSE DIVISION

FACSIMILE REQUEST AND COVER SHEET

TO: Donald Murphy

OFFICE/PHONE Langan Env

FROM: Ray Basso

PHONE 212 264-0613

DATE 4/4/90

Number of Pages to Follow Cover Sheet 23

Please number ALL pages

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