National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit to Discharge to Waters of the State of Ohio
for the Elkem Metal Company WWTP

Public Notice No:
Public Notice Date:
Comment Period Ends:

OEPA Permit No: 3IN00036*JD
Application No: OH0000027

Name and Address Of Applicant
Elkem Metal Company
2700 Lake Road East
Ashtabula, Ohio 44004

Name and Address of Facility Where Discharge Occurs:
Elkem Metal Company
2700 Lake Road East
Ashtabula, Ohio 44004

Receiving Water: Lake Erie

Introduction

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations, Sections 124.8 and 124.56. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Ohio Environmental Protection Agency, as well as the methods by which the public can participate in the process of finalizing those actions.

This Fact Sheet is prepared in order to document the technical basis and risk management decisions that are considered in the determination of water quality based NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, instream biological, chemical and physical conditions, and the relative risk of alternative effluent limitations. This Fact Sheet details the discretionary decision-making process empowered to the Director by the Clean Water Act and Ohio Water Pollution Control Law (ORC 6111). Decisions to award variances to Water Quality Standards or promulgated effluent guidelines for economic or technical reasons will also be justified in the Fact Sheet where necessary.

The draft permit contains effluent limits developed to comply with the requirements of Ohio Administrative Code (OAC) Section 3745-1-05. Any person who believes that these limits are eligible for revision in accordance with Section 3745-1-05(B) of the OAC may request the Director to consider such revision. Please contact the staff of the Division of Surface Water, Permits Section at (614) 644-2001 to obtain specific instructions and the forms necessary to make the request.

Procedures for Participation in the Formulation of Final Determinations

The draft action shall be issued as a final action unless the Director revises the draft after consideration of the record of a public meeting or written comments, or upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Within thirty days of the date of the Public Notice, any person may request or petition for a public meeting for presentation of evidence, statements or opinions. The purpose of the public meeting is to obtain additional evidence. Statements concerning the issues raised by the party requesting the meeting are invited. Evidence may be presented by the applicant, the state, and other parties, and following presentation of such evidence other interested persons may present testimony of facts or statements of opinion.

Requests for public meetings shall be in writing and shall state the action of the Director objected to, the questions to be considered, and the reasons the action is contested. Such requests should be addressed to:

Legal Records Section
Ohio Environmental Protection Agency
PO Box 1049
Columbus, Ohio 43216-1049

Interested persons are invited to submit written comments upon the discharge permit. Comments should be submitted in person or by mail no later than 30 days after the date of this Public Notice. Deliver or mail all comments to:

Ohio Environmental Protection Agency
Division of Surface Water
Permits Section
P.O. Box 1049
Columbus, Ohio 43216-1049

The OEPA permit number and Public Notice numbers should appear on each page of any submitted comments. All comments received no later than 30 days after the date of the Public Notice will be considered.

Citizens may conduct file reviews regarding specific companies or sites. Appointments are necessary to conduct file reviews, because requests to review files have increased dramatically in recent years. The first 250 pages copied are free. For requests to copy more than 250 pages, there is a five-cent charge for each page copied. Payment is required by check or money order, made payable to Treasurer State of Ohio.
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Location of Discharge

The Elkem Metal Company (hereafter referred to as Elkem) discharges to Lake Erie from outfalls 001 and 002. Figure 1 shows the approximate location of this facility.

Facility Description

When the NPDES permit for the Ashtabula plant of Elkem Metals Company was issued in February 1992, the plant produced calcium carbide, lime, and ferrosilicon. In April 1994, the ferrosilicon operations were permanently shut down. However, the plant continues to operate as a lime and calcium carbide production facility. At present, this includes the operation of a coke dryer, 2 lime kilns, and two calcium carbide furnaces. Coke is brought into the facility and dried, limestone is calcined in the kilns, and coke and lime are fed to the carbide furnaces to produce calcium carbide. Because the ferrosilicon operations have been removed, Elkem no longer uses scrap steel, wood chips, magnesium ingots, or coal in the production of their products. Elkem feels this has a major impact on the characteristics of their waste water, since the volatiles from coal had a range of 18% to 35%, while coke has a range of 1% to 4% volatiles, resulting in a reduction of PAHs in the waste water treatment system.

At present, process waste waters from the calcium carbide furnace scrubbers, lime kiln scrubber, and the coke dryer fog tower, along with ground water leachate from the Pond 3 and 3A area are pumped to Pond 5A, where most of the solids are removed. The decant from this pond flows by gravity to Pond 4B for further removal of solids. The water then flows to two treatment tanks for pH adjustment and chlorine addition, initiating the cyanide removal treatment. The water then flows to Pond 4D which allows for addition residence time. A stop log device is present at the discharge of Pond 4D which allows Elkem to retain the treated waste water should there be a problem in the treatment up to this point. The treated waste water then flows to a series of two treatment tanks which allow for the addition of sodium bisulfite for the removal of excess chlorine, pH adjustment, and the aeration to remove any excess bisulfite. The treated water then flows through a flume where the flow is measured and samples are taken, then on to an open channel, into a culvert, under Lake Road, down a high bank, and finally discharges to Lake Erie. The distance from the flume until final discharge is approximately one half mile.

Since the last permit was renewed in June 1997, the Ashtabula plant of Elkem Metals Company has not made any changes in their production processes or in treatment operations. The plant has just completed the dredging of their primary settling pond (Pond 5C) which will give their treatment operations more settling time.

Process wastewater is discharged through outfall 001. Outfall 002 comprises non-contact cooling water, storm water and internal sanitary wastewater from 601. Sanitary wastewater (601) goes through Imhoff tanks, trickling filter, chlorination and final settling. Non-contact cooling water is screened at intake point. Outfall 002 discharges screened intake water plus treated sanitary waste.

Figure 1. Approximate location of Elkem's discharge to Lake Erie located in Ashtabula County.

Location and characterization of Existing Discharge

Stream Location:	Lake Erie, (direct discharger)
Stream Network:	Lake Erie
Major Basin:	Lake Erie
Ohio EPA River Code:	24-800
USEPA River Reach number:	04120101-011
Designated Stream Uses:	Exceptional Warmwater Habitat Agricultural Water Supply

Table A provides a summary of the Elkem outfalls based on unaltered monthly operating report (MOR) data for the period January 1997 thru June 2001.

For the chemical specific parameters, the sampling results from MOR shows the facility has been mostly in compliance with the NPDES permit requirements. There have been very few instances when high concentrations of total residual chlorine and mercury, total recoverable were detected.

As regards effluent toxicity, Elkem conducted the biomonitoring program (to determine acute toxicity of the effluent from outfall 001) for a period of twenty four months beginning August 1997 thru June 1999 per permit requirement. Elkem was required to conduct once every two months acute toxicity tests with *Ceriodaphnia dubia* and *Pimephales promelas* on the effluent sample. Elkem contracted with Great lakes Environmental Center (GLEC) to conduct the biomonitoring program. The results are as follows:

Sample date	Ceriodaphnia dubia 48-hr. TUa value	Pimephales promelas 96-hr. TUa value
August 1997	0.6	0.0
October 1997	0.0	0.1
December 1997	1.8	0.6
February 1998	1.5	0.1
April 1998	0.2	0.0
June 1998	0.1	0.0
August 1998	0.0	0.1
October 1998	0.6	0.0
December 1998	0.2	0.0
February 1999	1.3	0.6
April 1999	0.1	0.0
June 1999	0.0	0.0

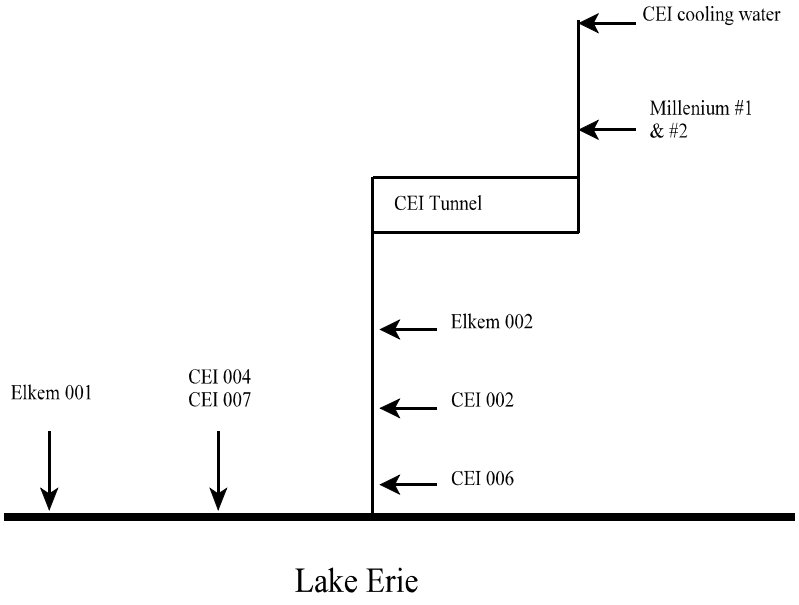
Assessment of Impact on Receiving Waters

No information to assess the impact of this source is available.

Development of Water-Quality-Based Effluent Limits

Determining appropriate effluent concentrations is a multiple-step process in which parameters are identified as likely to be discharged by a facility, evaluated with respect to Ohio water quality criteria, and examined to determine the likelihood that the existing effluent could violate the calculated limits.

Figure 1. Study Area



Parameter Selection
Effluent data for were used to determine what parameters should undergo wasteload allocation. The sources of effluent data are as follows:

Self-monitoring data (LEAPS)	January 1996 - June 2001
2c data	2001

The average and maximum projected effluent quality (PEQ) values are presented in Table 1. For a summary of the screening results, refer to the parameter groupings at the end of this section.

Wasteload Allocation
For those parameters that require a wasteload allocation (WLA), the results are based on the uses assigned to the receiving waterbody in OAC 3745-1. The data used in the WLA are listed in Tables 2 and 3. The wasteload allocation results to maintain all applicable criteria are presented in Tables 4 and 5.

Reasonable Potential
The preliminary effluent limits are the lowest average WLA (average PEL) and the maximum WLA (maximum PEL). To determine the reasonable potential of the discharger to exceed the WLA for each parameter, the facility's effluent quality is compared to the preliminary effluent limits. The average PEQ value (Table 1) is compared to the average PEL, and the maximum PEQ value is compared to the maximum PEL. Based on the calculated percentage of the respective average and maximum comparisons, the parameters are assigned to "groups", as listed in Tables 6 and 7.

Whole Effluent Toxicity
The allowable effluent toxicity (AET) is a factor considered in evaluating whole effluent toxicity. The AET calculations are similar to those for aquatic life criteria. The WLA results for the Elkem outfalls are:

	TUc	TUa
001	11.0	1.0
002	19.6	1.0

Table 1. Effluent Data for Elkem Metals

Parameter	Units	# of Samples	# > MDL	Average PEQ	Maximum PEQ
Outfall 001 - LEAPS					
Benzonitrile	ug/l	15	0	–	–
Bis (2-ethylhexyl) phthalate	ug/l	43	0	–	–
Chlorine, total residual	ug/l	744	80	9.4	18.6
Chloroform	ug/l	57	57	67.66	101.31
Chromium +6	ug/l	132	0	–	–
Chromium	ug/l	130	16	3.71	4.07
Copper	ug/l	299	86	9.68	13.26
Cyanide, free	ug/l	744	105	7.9	15.6
Cyanide, total	ug/l	744	0	–	–
Dibenzofuran	ug/l	15	0	–	–
Manganese	ug/l	15	1	24.09	33.
Mercury	ug/l	299	1	0.1971	0.27
PAHs	ug/l	58	0	–	–
Phenolic 4AAP	ug/l	376	301	9.16	15.77
TDS	mg/l	179	179	717.04	918.67
Zinc	ug/l	310	182	46.01	70.18
Outfall 001 - 2c Data					
Arsenic	ug/l	1	1	9.05	12.4
Boron	ug/l	1	1	905.2	1240.
Dichlorobromomethane	ug/l	2		52.15	71.44
Fluoride	ug/l	1	1	3620.8	4960.
Magnesium	mg/l	2		8.6	11.78
NO2+NO3	mg/l	1	1	3.67	5.02
Phenols	ug/l	52		7.3	10.
Phosphorus	mg/l	1	1	0.18	0.25
Sulfate	mg/l	1	1	271.56	372.
Outfall 002 - 2c Data					
Fluoride	ug/l	1	1	1357.8	1860.
NO2+NO3	mg/l	1	1	1.90	2.6
Phosphorus	mg/l	1	1	0.27	0.37

Table 2. Water Quality Criteria in the Study Area

Parameter	Units	Outside Mixing Zone Criteria: Average: Human Health [A]	Wildlife	Agri-culture	Aquatic Life [A]	Maximum Aquatic Life [A]	Inside Mixing Zone Maximum [A]
Aluminum	ug/l	4500[A]	–	–	–	–	–
Antimony	ug/l	780	–	–	190[A]	900[A]	1800[A]
Arsenic	ug/l	580	–	100	150	340	680
Barium	ug/l	160000	–	–	220[A]	2000[A]	4000[A]
Beryllium	ug/l	130[C]	–	100	19	160	320
Bis (2-EHP)	ug/l	32[C]	–	–	8.4[A]	1100[A]	2100[A]
Boron	ug/l	200000	–	–	950[A]	8500[A]	17000[A]
Cadmium	ug/l	730	–	50	3.2	6.6	13
Carbon disulfide	ug/l	–	–	–	15[A]	130[A]	260[A]
Chlorine, total residual	ug/l	–	–	–	11	19	38
Chloroform	ug/l	1700[C]	–	–	140[A]	1300[A]	2600[A]
Chloromethane	ug/l	7300[AC]	–	–	–	–	–
Chromium	ug/l	14000	–	100	110	2400	4800
Chromium +6	ug/l	14000	–	–	11	15	31
Copper	ug/l	64000	–	500	12	19	38
Cyanide, free	ug/l	48000	–	–	5.2	22	44
Cyanide, total	ug/l	48000	–	–	–	–	–
Fluoride	ug/l	–	–	2000	–	–	–
Iron	ug/l	–	–	5000	–	–	–
Lead	ug/l	190	–	100	9.9	190	380
Manganese	ug/l	61000	–	–	–	–	–
Mercury	ug/l	0.0031	0.0013	10	0.91	1.7	3.4
Methyl chloride	ug/l	7300[AC]	–	–	–	–	–
Methylene chloride	ug/l	2600[C]	–	–	1900[A]	11000[A]	22000[A]
Molybdenum	ug/l	10000	–	–	110[A]	2400[A]	4700[A]
Nickel	ug/l	43000	–	200	69	620	1200
NO2+NO3	mg/l	–	–	100	–	–	–
Phenol	ug/l	2400.	–	–	400	4700	9400
Selenium	ug/l	3100	–	50	5	–	–
Strontium	ug/l	1400000	–	–	770[A]	6900[A]	14000[A]
Thallium	ug/l	3.7	–	–	17[A]	79[A]	160[A]
TDS	mg/l	–	–	–	1500	–	–
Toluene	ug/l	51000	–	–	62[A]	560[A]	1100[A]
Zinc	ug/l	35000	–	25000	160	160	320

A) Human Health and Aquatic Life Criteria are Tier I unless otherwise indicated.
C) Carcinogen

Table 3. Instream Conditions and Discharger Flow

Parameter	Units		Value	Basis
Instream Hardness	mg/l	annual	140.	STORET
Background Water Quality				
Aluminum	ug/l	annual	0.0	No representative data avail.
Arsenic	ug/l	annual	0.0	No representative data avail.
Barium	ug/l	annual	0.0	No representative data avail.
Boron	ug/l	annual	0.0	No representative data avail.
Cadmium	ug/l	annual	0.25	A) 1696 values,1365<MDL
Carbon disulfide	ug/l	annual	0.0	No representative data avail.
Chromium, TR	ug/l	annual	15	A) 1641 values, 1388<MDL
Copper	ug/l	annual	5.0	A) 2867 values, 1597<MDL
Cyanide, free	ug/l	annual	0.0	No representative data avail.
Fluoride	ug/l	annual	0.0	No representative data avail.
Iron	ug/l	annual	650.	A) 3018 values, 15<MDL
Lead	ug/l	annual	2.0	A) 2814 values, 1458<MDL
Manganese	ug/l	annual	0.0	No representative data avail.
Molybdenum	ug/l	annual	0.0	No representative data avail.
Mercury	ug/l	annual	0.0	No representative data avail.
Nickel	ug/l	annual	20.0	A) 1259 values, 1105<MDL
Selenium	ug/l	annual	0.0	No representative data avail.
Strontium	ug/l	annual	0.0	No representative data avail.
TDS	mg/l	annual	382.	A) 3755 values, 0<MDL
Thallium	ug/l	annual	0.0	No representative data avail.
TRC	ug/l	annual	0.0	No representative data avail.
Zinc	ug/l	annual	15.	A) 2284 values, 1117<MDL
Effluent Flows				
CEI 001	cfs		185.64	DSW
CEI 002	cfs		0.22	DSW
CEI 004	cfs		0.19	DSW
CEI 006	cfs		2.40	DSW
CEI 007	cfs		1.29	DSW
Elkem 001	cfs		3.93	DSW
Elkem 002	cfs		10.60	DSW
Millenium #1	cfs		4.64	DSW - expansion
Millenium #2	cfs		6.81	DSW - expansion

A) Background Water Quality Report

Table 4. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria for Outfall 001

Parameter	Units	Outside Mixing Zone Criteria					Inside Mixing Zone Maximum
		Average				Maximum	
		Human Health	Wild-life	Agri Supply	Aquatic Life	Aquatic Life	
Boron	ug/l	2200000.[A]	–	–	10450.	–	17000.
Chloroform	ug/l	18700.[A]	–	–	1540.	–	2600.
Copper	ug/l	703950.[A]	–	5450.[A]	82.[A]	–	38.
Cyanide, free	ug/l	528000.[A]	–	–	57.[A]	–	44.
Fluoride	ug/l	–	–	22000	–	–	–
Mercury	ug/l	0.034	0.014	110.[A]	10.[A]	–	3.4
TDS	mg/l	–	–	–	12680.	–	–
TRC	ug/l	–	–	–	121.[A]	–	38.
Zinc	ug/l	384850.[A]	–	274850.[A]	1610.[A]	–	320.

[A] Allocation must not exceed the Inside Mixing Zone Maximum.

Table 5. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria for Outfall 002

Parameter	Units	Outside Mixing Zone Criteria					Inside Mixing Zone Maximum
		Average				Maximum	
		Human Health	Wild-life	Agri Supply	Aquatic Life	Aquatic Life	
Fluoride	ug/l	–	–	23551.	–	–	–

[A] Allocation must not exceed the Inside Mixing Zone Maximum.

Table 6. Parameter Assessment for Outfall 001

Group 1: Due to a lack of criteria, the following parameters could not be evaluated at this time.

Benzonitrile	Dibenzofuran	Dichlorobromomethane
Magnesium	PAHs	Phenolic 4AAP
Phosphorus	Sulfate	

Group 2: PEQ < 25% of WQS or all data below minimum detection limit; WLA not required. No limit recommended, monitoring optional.

Arsenic	Bis (2-EHP)	Boron
Chromium +6	Chromium	Cyanide, total
Manganese	NO2+NO3	Phenols

Group 3: PEQ_{max} < 50% of maximum PEL and PEQ_{avg} < 50% of average PEL. No limit recommended, monitoring optional.

Chloroform	Copper	Cyanide, free
Fluoride	TDS	TRC
Zinc		

Group 4: $PEQ_{max} \geq$ 50% but <100% of the maximum PEL or $PEQ_{avg} \geq$ 50% but < 100% of the average PEL. Monitoring is appropriate.

No parameters fit the criteria of this group

Group 5: Maximum PEQ $\geq$ 100% of the maximum PEL or average PEQ $\geq$ 100% of the average PEL,or either the average or maximum PEQ is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. Limit recommended.

Limits to Protect Numeric Water Quality Criteria

Parameter	Units	Applicable Period	Recommended Effluent Limits Average	Recommended Effluent Limits Maximum
Mercury	ug/l	annual	0.014	3.4

Table 7. Parameter Assessment for Outfall 002

Group 1: Due to a lack of criteria, the following parameters could not be evaluated at this time.

Phosphorus

Group 2: PEQ < 25% of WQS or all data below minimum detection limit; WLA not required. No limit recommended, monitoring optional.

NO2+NO3

Group 3: PEQ_{max} < 50% of maximum PEL and PEQ_{avg} < 50% of average PEL. No limit recommended, monitoring optional.

Fluoride

Group 4: $PEQ_{max} \geq$ 50% but <100% of the maximum PEL or $PEQ_{avg} \geq$ 50% but < 100% of the average PEL. Monitoring is appropriate.

No parameters fit the criteria of this group

Group 5: Maximum PEQ $\geq$ 100% of the maximum PEL or average PEQ $\geq$ 100% of the average PEL,or either the average or maximum PEQ is between 75 and 100% of the PEL and certain conditions that increase the risk to the environment are present. Limit recommended.

No parameters fit the criteria of this group

Effluent Limitations, Monitoring Requirements and their Jurisdiction

Receiving water for Elkem's discharge is Lake Erie and is presently designated for the following uses based upon Ohio Water Quality Standards (WQS) (OAC3745-1-31): Exceptional Warmwater Habitat (EWH), Superior High Quality Water, Public Water Supply (PWS), Agricultural Water Supply (AWS), Industrial Water Supply (IWS) and Bathing Waters.

Table 8 presents the final effluent limitations and their justification for outfall 3IN00036001. The initial effect of shutting down the ferrosilicon production facilities was a reduction in flow from Elkem's process wastewater treatment facility. Changes in the market have made it necessary to run two calcium carbide furnaces instead of one for extended campaign periods resulting in flows similar to those recorded when the plant produced ferrosilicon. Therefore, the allowable flow from outfall 001 has remained the same (2.54 MGD) as in the existing permit.

Based on reasonable potential assessment, the chemical-specific limits for PAHs have been removed from the effluent table. The Total Residual Chlorine limits are being retained due the use of chlorine as a wastewater treatment chemical at the facility. Though mercury was recommended for numeric limits based on WLA, monitoring has been recommended in the permit at this time because there was only one high detection of mercury (in 1999) out of many samples. As the applicable water quality based average mercury limit is 0.014 ug/l, Elkem will have to use USEPA method 1631 to measure low mercury concentration, if present, in the effluent. The previous method 245.1 or 245.2 cannot be used because its detection level is 0.2 ug/l. The EPA method 1631 has a detection level of 0.0002 ug/l.

Whole Effluent Toxicity

Whole effluent toxicity or "WET" is the total toxic effect of an effluent on aquatic life in the receiving stream measured directly with a toxicity test. Acute WET measures short term effects of the effluent while chronic WET measures longer term and potentially more subtle effects of the effluent. WET values are then compared to a calculated allowable effluent toxicity "AET" value. This comparison along with an assessment of the instream community are two ways in which whole effluent toxicity is evaluated.

AET calculations are similar to aquatic life criteria wasteload allocation calculations. For Elkem , the calculated chronic AET is 11.0 TU_c and acute AET is 1.0 $TU_{a.}$.

U.S. EPA disapproved Ohio's reasonable potential procedures for whole effluent toxicity in the Lake Erie Basin because they determined that the Ohio Rules in OAC 3745-33-07(B) were not as protective as the procedures in the Great Lakes Water Quality Guidance Rule. On August 4, 2000, U.S. EPA promulgated reasonable potential procedures for the Lake Erie Basin portions of Ohio and several other Great Lakes States (40 CFR Part 132 Appendix F). These rules became effective on September 5, 2000.

The new federal reasonable potential rules require that effluent toxicity be assessed in much the same way that chemical parameters are done - a PEQ value is established by taking the maximum toxicity detected in the effluent, and multiplying by a reasonable potential factor based on the number of test results. The PEQ value is compared to the AET values. and if PEQ is greater than AET, an effluent limit for toxicity is required.

As mentioned earlier, Elkem has twelve test results for acute toxicity. The toxicity results varied from 0.0 TUa to 1.8 TUa. Out of twelve tests, three tests exceeded the AET value of 1.0 TUa. The PEQ value, 2.16 TUa is greater than the AET of 1.0 TUa, and therefore acute toxicity limit is recommended in the permit. A time period of 36 months is

provided in the permit for attaining compliance with the toxicity limit.

Table 8. Final effluent limits and monitoring requirements for Elkem's outfall 3IN00036001and their justification.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
TDS	mg/l	--	--	--	--	BPJ/EP
TSS	mg/l	3.2	7	31	68	BPT/EP
Cyanide, Free	ug/l	--	--	--	--	BPJ
Cyanide, Total	mg/l	0.047	0.104	0.456	1.008	BAT/EP
Copper	ug/l	--	--	--	--	BPJ/EP
Zinc	ug/l	--	--	--	--	BPJ/EP
Chloroform	ug/l	--	--	--	--	BPJ/EP
Fluoride	ug/l	--	--	--	--	BPJ
Flow	MGD	--	--	--	--	M[c]
Tot. Res. Chlorine	ug/l	--	0.038	--	--	BPJ/EP
Acute Toxicity (*Ceriodaphnia dubia*)	TUa	--	1.0	--	--	WET
pH	S.U.	- - - - - - - - - -	6.5 to 9.0	- - - - - - - - - - -		WQS
Mercury	ug/l	--	--	--	--	BPJ/EP

[a] Effluent loadings based on average design discharge flow of 2.54 MGD.

[b] Definitions: BAT = Best Available Technology outlined in the covered calcium carbide furnaces with wet air pollution control devices subcategory outlined in 424.43; BPJ = Best Professional Judgment; BPT = Best Practicable Control Technology outlined in 40 CFR Part 424.42; WLA = Wasteload Allocation (OAC 3745-2); WQS = Ohio Water Quality Standards (OAC 3745-1); WET = Whole Effluent Toxicity (OAC 3745-33-07(B)); EP = Existing Permit

[c] Monitoring will assist in the evaluation of effluent quality and potential receiving stream impacts.

Table 9. Final effluent limits and monitoring requirements for Elkem's outfall 3IN00036002 and their justification.

		Effluent Limits				
		Concentration		Loading (kg/day)		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis
Flow	MGD	--	--	--	--	M[a]
Temperature	°C	--	--	--	--	M[a]
pH	S.U.	- - - - - - 6.5 to 9.0 - - - - - -				WQS
TSS	mg/l	--	--	--	--	M[a]/BPJ
Cyanide, Total	mg/l	--	--	--	--	M[a]/ BPJ

[a] Monitoring will assist in the evaluation of effluent quality and potential receiving stream impacts.

WQS = Ohio Water Quality Standards (OAC 3745-1)

Table 10. Final effluent limits and monitoring requirements for Elkem's outfall 3IN00036601and their justification.

		Effluent Limits				
		Concentration		Loading (kg/day)		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis
Temperature	°C	--	--	--	--	M[a]
Color Severity	Units	--	--	--	--	M[a]
Dissolved Oxygen	mg/l	--	--	--	--	M[a]
TSS	mg/l	30	45	--	--	EP[b]
Ammonia-Nitrogen						
(Summer)	mg/l	--	--	--	--	M[a]
(Winter)		--	--	--	--	M[a]
Odor Severity	Units	--	--	--	--	M[a]
Turbidity, Severity	Units	--	--	--	--	M[a]
Fecal coliform	#/100ml	200	400	--	--	EP[b]
Flow	MGD	--	--	--	--	M[a]
Chlorine, Tot. Res.	mg/l	--	0.038	--	--	EP[b]
$CBOD_5$	mg/l	25	40	--	--	EP[b]
pH	S.U.	- - - - - - 6.5 to 9.0 - - - - - -				WQS[b]

[a] Monitoring of these parameters will assist in the evaluation of effluent quality and potential receiving stream impacts.

[b] EP = Existing Permit
WQS = Ohio Water Quality Standards (OAC 3745-1).