Ohio EPA
40 years and moving forward
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

December 28, 2012

RE: NOTICE OF VIOLATION - DUKE ENERGY,
WILLIAM H. ZIMMER STATION,
NPDES PERMIT NO. OH0048836/
OEPA PERMIT NO. 1IB00011*KD

Mr. Pat Coyle
Senior Environmental Specialist
EM 740
139 East Fourth Street
Cincinnati, Ohio 45202

Dear Mr. Coyle:

Ohio EPA collected samples for a routine bioassay at the Duke Energy, William H. Zimmer Station on October 22, 2012. As shown in the attached report, the bioassay results for the Outfall 005 discharge was acutely toxic to *Ceriodaphnia dubia* (water fleas), with a TUa of 8.0. This result violates the NPDES Permit Part III, (2.) General Effluent Limitations which state "The effluent shall, at all times, be free of substances: A. ... that will adversely affect aquatic life, and D. In amounts that either singly or in combination with other substances are toxic to human, animal or aquatic life."

Please inform this office, in writing, within ten days of receipt of this notification as to the reasons for the above referenced violation, as well as a description of the actions taken or proposed to prevent any further violations. Your response should include the dates, either actual or proposed, for completion of the actions.

If you have any questions regarding the above, please contact me at (937) 285-6028.

Respectfully,

Michelle Waller

Michelle Waller
Environmental Specialist II
Division of Surface Water

Enclosures

ec: Chis Osterbrink, Duke Energy, Zimmer Production Manager
Tom Patt, Duke Energy Environmental Coordinator

MW\bp

A Report on the Acute Toxicity of Duke Energy - Zimmer Station
Outfall 005 Effluents to *Pimephales promelas* and *Ceriodaphnia dubia*

Bioassay Report Number:
12-4200-SW

Sample Number:
148662

Reviewed By
QA Staff

OCT 30 2012

Ohio EPA - DES
Reviewer VP

Jonathan C. McLaughlin

Bioassay Section
Division of Environmental Services
Ohio Environmental Protection Agency

INTRODUCTION

A grab sample of Duke Energy - Zimmer Station outfall 005 effluent was collected by Greg Buthker, DSW, SWDO, Ohio EPA for use in screening bioassays as part of a toxics evaluation in conjunction with permit reissuance. A grab sample was also collected from a raw water spigot in the basement of the pumphouse supplied by the Ohio River, upstream from the discharge. The effluent grab samples were collected on 22 October 2012 at 1245 hours. The Ohio River water was collected on 22 October 2012 at 1210 hours. A mixing zone sample was manually prepared in the laboratory on 23 October 2012 at 0920 hours by combining equal aliquots of Ohio River upstream water and effluent. The fathead minnow, *Pimephales promelas*, and *Ceriodaphnia dubia* were used as test organisms in these 48-hour screening bioassays.

Based upon toxicity observed in the effluent grab sample, a static-acute definitive toxicity test was initiated using the 005 effluent to determine median lethal concentrations (LC50) or median effect concentrations (EC50). Test concentrations were 100, 50, 25, 12.5, and 6.25 percent by volume effluent (%). The Ohio River water was used as diluent and primary control. Hard reconstituted water was used as the laboratory control.

PREVIOUS RESULTS

Bioassays of Duke Energy - Zimmer Station outfall 005 effluents were previously conducted by the Ohio EPA within the last ten years in October and November 2007 (Bioassay Numbers 07-3717-SW and 07-3737-SW, respectively). The October 2007 effluents were acutely toxic to both *P. promelas* and *C. dubia* (Appendix 1). Magnitude of toxicity during the October 2007 tests was expressed as a fathead minnow 96-hour LC50 and EC50 of 68.3% (95 percent confidence limits 63.8-73.1%). The LC50 value converts to an acute toxic unit (TUa) of 1.5. Magnitude of toxicity during the October 2007 tests for *Ceriodaphnia* was expressed as a 48-hour TUa of 0.7 for mortality and 0.9 for adverse acute effects. The November 2007 effluents were not acutely toxic to either test species.

RESULTS AND CONCLUSIONS

Details of the tests may be found on the attached bioassay report forms. The effluents were acutely toxic to *C. dubia*. Daphnia mortality was 85 and 100 percent in the manual mixing zone and effluent, respectively. One surviving dubia was pale in appearance. No other mortality or adverse effects were observed in the remaining ambient waters and effluents for either *P. promelas* or *C. dubia*. Survival in the laboratory controls was 100 percent for both species.

Magnitude of composite effluent toxicity in the *C. dubia* definitive acute toxicity test can be expressed as a 48-hour LC50 and EC50 of 12.5% (6.25-50.0%). The LC50 and EC50 convert to a TUa of 8.0. By test end *Ceriodaphnia* mortality was 95, 75, 70, and 50 percent, in the 100%, 50%, 25%, and 12.5%, concentrations, respectively. Ten percent of the surviving organisms in 50.0% concentration were pale. Survival in the diluent/primary control and laboratory control was 100 percent.

Screening bioassays are utilized to determine if an effluent is acutely toxic to the test organisms and to indicate if more extensive bioassays should be conducted to estimate median lethal concentrations or persistence of toxicity. The results of these bioassays indicate that Duke Energy - Zimmer Station outfall 005 effluents were acutely toxic to *C. dubia*. This is similar to the October 2007 results in which the effluents were acutely toxic to both species and contrasts the November 2007 results in which acutely toxic conditions were not observed. Given the variability in effluent quality observed by this laboratory, the current *Ceriodaphnia* 48-hour LC50/EC50 of 12.5% should be used when evaluating the quality of this effluent. Additional bioassays should be conducted to better determine effluent variability, and if present, the magnitude of toxicity associated with this discharge.

Using an acute to chronic ratio of 10 and the current 48-hour LC50/EC50 of 12.5% indicates the potential for chronic toxicity exists where the instream waste concentration of Duke Energy - Zimmer Station outfall 005 effluent exceeds 1.3%. Discharge data for Duke Energy - Zimmer Station, and the Ohio River should be evaluated to determine if chronic toxicity should be of concern in Ohio River. Chronic tests may be required to adequately evaluate the toxicity in this discharge..

OHIO ENVIRONMENTAL PROTECTION AGENCY
Screening Bioassay Report Form

Report Date: 25 October 2012	**Bioassay Report Number:** 12-4200-SW

Investigators:	Jonathan C. McLaughlin

Effluent tested and source:	Duke Energy - Zimmer Station, U.S. Route 52, Moscow, Clermont County, Ohio, outfall 005
NPDES Number:	OH0048836
Ohio EPA Permit Number:	1IB00011
Business/Process:	Gas and electric power
Collector(s):	Greg Buthker, DSW, SWDO, Ohio EPA

Test Organisms:	Fathead minnow (*Pimephales promelas*) and *Ceriodaphnia dubia* from Ohio EPA Bioassay Section rearing units

Fathead Minnow Hatched:	10-11 October 2012; 12-13 days old at test initiation

Rearing unit water and reconstituted water were used in the controls for this static bioassay. Adverse effects measured in the test are death, immotility, and loss of equilibrium. Death is the cessation of all visible movement with no response to gentle prodding (fish) or to gentle test container agitation (*Ceriodaphnia*). An immotile organism is paralyzed or stunned with only occasional slight movements and cannot maintain its normal position in the water column. Loss of equilibrium is the organism's inability to maintain normal swimming posture in the water column and may be characterized by periods of quiescence followed by bursts of uncontrolled swimming. The effluent is considered to be acutely toxic if 20 percent, or more, of either species of test organism exhibits any combination of the adverse effects in the 100 percent effluent. Test results are invalid if more than ten percent of either species of test organism exhibits the adverse effects in the control.

Results of screening bioassays of Duke Energy - Zimmer Station outfall 005 effluent

Bioassay Number: 12-4200-SW

Sample	Time Collected Date: Time: (hours)	Test Start Date: Time: (hours)	Cumulative percent mortality (plus those pale in appearance)			
			P. promelas Time (hours)		*C. dubia* Time (hours)	
			24	48	24	48
Ohio River upstream	22 October 2012 1210	23 October 2012 0940	0	0	0	0
Manual mixing zone (1:1)	23 October 2012 0920	23 October 2012 0940	0	0	25	85 (90)
Grab 005	22 October 2012 1245	23 October 2012 0940	0	0	35	100
Rearing unit water control		23 October 2012 0940	0	0	-	-
Reconstituted water control		23 October 2012 0940	-	-	0	0

Relevant information: A mixing zone sample was manually prepared in the laboratory by combining equal aliquots of upstream water and effluent. The Ohio River upstream water was clear. Manual mixing zone was clear with a yellow tinge. Effluents were clear yellow. Physicochemical parameters measured prior to test initiation and at test end are on the next page.

Results of screening bioassays of Duke Energy - Zimmer Station outfall 005 effluent

Bioassay Number: 12-4200-SW

Relevant information (cont.): Physicochemical parameters recorded prior to test initiation were:

Sample	Temperature (°C) Upon Rcpt.	Temperature (°C) Test Init.	Dissolved Oxygen (mg/L) Initial-Adjusted	pH (S.U.)	Conductivity (µmhos/cm)
Ohio River upstream	1.1	25.0	8.2	8.04	471
Acute mixing zone	-	25.5	8.6	7.41	2380
Grab 005, 22 October 2012	0.8	25.2	7.8	7.15	3960
Rearing unit water control	22.0	24.5	8.0	7.73	363
Reconstituted water control	25.1	25.1	7.6	8.50	580

Physicochemical parameters recorded at *P. promelas* (FHM) and *C. dubia* (CDU) test end were:

Sample	Temperature (°C) FHM	Temperature (°C) CDU	Dissolved Oxygen (mg/L) FHM	Dissolved Oxygen (mg/L) CDU	pH (S.U.) FHM	pH (S.U.) CDU	Conductivity (µmhos/cm) FHM	Conductivity (µmhos/cm) CDU
Ohio River upstream	-	24.7	-	7.8	-	8.35	-	495
Acute mixing zone	-	24.7	-	7.6	-	8.11	-	2380
Grab 005, 22 October 2012	-	24.6	-	7.5	-	8.00	-	4050
Rearing unit water control	-	-	-	-	-	-	-	-
Reconstituted water control	-	24.8	-	7.6	-	8.43	-	596

OHIO ENVIRONMENTAL PROTECTION AGENCY
Definitive Toxicity Test Report Form

Report Date: 26 October 2012	**Bioassay Report Number**: 12-4200-SW

Investigators:	Jonathan C. McLaughlin

Effluent tested and source:	Duke Energy - Zimmer Station, outfall 005 grab
NPDES Number:	OH0048836
Ohio EPA Permit Number:	1IB00011
Business/Process:	Gas and electric power
Collector(s):	Greg Buthker, DSW, SWDO, Ohio EPA
Date & Time of Collection:	22 October 2012 at 1245 hours

Dilution water source:	Ohio River
Collector(s):	Greg Buthker, DSW, SWDO, Ohio EPA
Date and time of collection:	22 October 2012 at 1210 hours.

Test organism:	*Ceriodaphnia dubia*
Origin:	Ohio EPA Rearing Unit
Number per test container:	5
Number per concentration/control:	20

Test type:	Static nonrenewal
Duration of test:	48 hours
Beginning date:	24 October 2012 at 0840 hours

Concentrations tested:	100, 50, 25, 12.5, 6.25, Ohio River water diluent/primary control, and hard reconstituted water, laboratory control
Concentration expressed as:	Percent by volume effluent (%) The primary control is dilution water only - no addition of toxicant.

Adverse effects measured in the test are death, immotility, and loss of equilibrium. Death is the cessation of all visible movement with no response to gentle test container agitation. An immotile organism is paralyzed or stunned with only occasional slight movements and cannot maintain its' normal position in the water column. Loss of equilibrium is the organism's inability to maintain normal swimming posture in the water column and may be characterized by periods of quiescence followed by bursts of uncontrolled swimming. Results are expressed as the median lethal concentration (LC50) and/or median effective concentration (EC50). The median concentration is the derived estimate of the toxicant concentration at which 50 percent of the test organisms would show the effect measured. The EC50 includes the LC50 data (mortality) plus data on other adverse effects.

Results of definitive acute bioassay of Duke Energy - Zimmer Station outfall 005 effluent grab

Bioassay Number: 12-4200-SW (cont.)

Cumulative percent *Ceriodaphnia dubia* mortality

Time (hours)	Percent by volume effluent					Diluent control	Laboratory control	LC50	EC50
	100	50.0	25.0	12.5	6.25	Ohio River water	Reconstituted water	(95 percent confidence limits)	
24	45	20	10	0	0	0	0	>100	-
48	95	75 (85)	70	50	0	0	0	12.5% (6.25-50.0%)	12.5% (6.25-50.0%)

Relevant information: The LC50s, EC50, and 95 percent confidence limits are expressed as percent by volume effluent (%). The effluent grab was clear yellow. The Ohio River water was clear. The LC50, EC50 and corresponding 95 percent confidence limits were estimated using the binomial method from a modified version of the TOXSTAT program developed by Charles Stephan of the USEPA (6201 Congdon Blvd., Duluth, MN 55804). Physicochemical parameters recorded prior to test initiation and at test end were:

Test Concentration (%)	Temperature (°C)		Dissolved Oxygen (mg/L)		pH (S.U.)		Conductivity (µmhos/cm)	
	Init.	End	Init.	End	Init.	End	Init.	End
100	25.1	25.2	8.3	7.9	7.32	8.12	3960	3980
50.0	25.3	25.3	8.3	7.9	7.55	8.23	2420	2440
25.0	25.3	25.2	8.3	8.0	7.76	8.29	1528	1575
12.5	25.3	25.4	8.4	8.1	7.90	8.35	1033	1045
6.25	25.4	25.4	8.5	8.1	7.97	8.36	762	800
Ohio River diluent/ primary control	25.2	25.3	8.5	8.1	8.08	8.41	473	506
Reconstituted water/ laboratory control	25.4	25.2	7.7	7.8	8.51	8.53	579	659

Appendix 1.

Results of previous bioassays of Duke Energy - Zimmer Station outfall 005 effluent

Screening Results

Bioassay Number	Date (mm/yy)	Acutely Toxic (Y/N)	*Pimephales promelas* mortality (plus/or exhibiting other adverse effects)			*Ceriodaphnia dubia* mortality (plus those pale in appearance)		
			Day 1 Grab	Day 2 Grab	Composite	Day 1 Grab	Day 2 Grab	Composite
07-3717-SW	10/07	Y	100	N.C.	N.C.	80(85)	N.C.	N.C.
07-3737-SW	11/07	N	5	N.C.	N.C.	5	N.C.	N.C.

N.C. = Sample not collected

* All previous results are available electronically upon request.

Definitive Results

Bioassay Number	*Pimephales promelas*			*Ceriodaphnia dubia*		
	LC50 (95 percent confidence limits)	EC50 (95 percent confidence limits)	LC50 TUa (EC50 TUa)	LC50 (95 percent confidence limits)	EC50 (95 percent confidence limits)	LC50 TUa (EC50 TUa)
07-3717-SW	68.3 (63.8-73.1)	-	1.5	>100	>100	0.7 (0.9)

Definitions

- The **LC50s** and **EC50s** are reported as percent by volume effluent (%).
- The **LC50** is the effluent concentration that is lethal to 50 percent of a species of test organism in a stated exposure period. The **EC50** includes mortality plus data on other adverse effects. Both are usually obtained by statistical or graphical methods.
- The **TUa** is calculated by dividing 100 by the **LC50** or **EC50.**

OHIO EPA, DES, BIOASSAY SECTION, SAMPLE SUBMISSION FORM

Name of Entity and Outfall Tested: Duke Energy Zimmer Plant OEPA Permit #: 1IB00011

Facility Address: 1781 USRT 52 Moscow Ohio NPDES#: OH0048836

Receiving Stream (R.M.) Ohio River County: Clermont

Collector(s)[Print Full Name]: Greg Buthker

Collector(s) Signature: Greg Buthker

Upstream control samples shall be collected upstream from any discharge/receiving stream interactions. Generally, acute (near field) samples should be collected in the center of the effluent plume 5 times the stream depth downstream from the outfall and chronic (far field) samples should be collected midplume, or if a plume no longer exists, midstream 5 times the stream width downstream from the outfall. If atypical mixing characteristics exist, samples can be collected at closer distances than the above guidelines to insure the samples are within the effluent plume. If a mixing zone sample cannot be safely collected, one can be prepared using equal aliquots of the day 1 effluent grab and upstream dilution water (be sure to write "manual" in the "Location of Sample Collection" space provided below).

Sample Identification	Effluent-Day 1 Grab	Effluent-Day 2 Grab	Effluent-Composite	Upstream/Dilution-Grab	Acute Mixing Zone-Grab	Chronic Mixing Zone-Grab
Location of Sample Collection	AT Flume Prior to River			AT TAP in Basement		
If Composite, Sample Volume and Frequency						
Collection Containers, Types and Number	2 cubic			4 Cubic		
Volume Collected	2 gal			4 gallons		
Date of Sample Collection	10/22/12			10/22/12		
Time of Sample Collection, Beginning-Ending Time	12:45			12:40		
Flow (in MGD)						
Temperature (°C)	19.37			18.78		
Dissolved Oxygen (mg/L)	8.29/90.8%			8.90/95.6%		
pH (S.U.)	7.02			8.41		
Conductivity (µmhos/cm)	2926			476		
Total Residual Chlorine (mg/L)						

Place a check mark next to all the appropriate characteristics of the outfall/mixing zone:

___ Turbulent Mixing
___ Nonturbulent Mixing
___ Onshore Pipe
___ Offshore Pipe
___ Shore hugging Plume
___ Rapid Complete Mixing
✓ Flume
___ Diffuser

Notes: MZ is made up water was clear in dilution water
The effluent has an iron stain on pipe and yellowish in water color

Revised 11/1997

148662

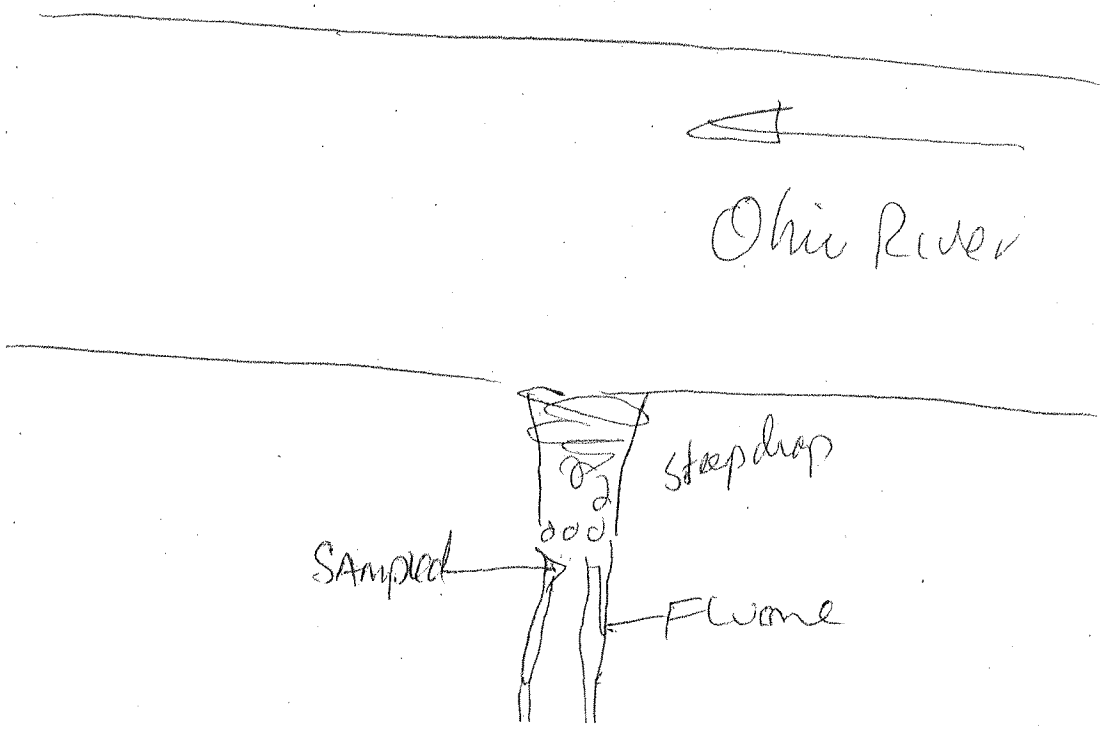
Name and Title		YEAR	MONTH	DAY	HOUR	MINUTE
Received from:	Greg Buthley	2012	10	22	15	45
Received by:	Michael Duff	2012	10	23	09	00
Received from:	Michael Duff	2012	10	23	09	15
Received by:	[illegible]	12	10	23	09	15
Received from:						
Received by:						
Received from:						
Received by:						
Received from:						
Received by:						

In the vicinity of the discharge: Stream Depth _____ Stream Width _____

CHEMISTRY SAMPLE NUMBERS
148663 - 148665

Location Map Drawing

Describe and map the upstream control and any mixing zone sampling sites so someone else could sample at the exact same points (include landmarks if possible). Stream depth should be recorded for any acute (near field) mixing zone sample and stream width for any chronic (far field) mixing zone sample. For the mixing zone sample location, delineate the distance downstream from the outfall and map the effluent plume. Be specific on discharge and receiving stream characteristics.



OhioEPA Division of Environmental Services

Laboratory Inorganic Analysis Data Report

Sample	148663				
Date Received	10/23/2012 9:23 AM	**Matrix**	WW	**Collected by**	BUTHKER, GREGORY
	Begin	**End**		**Sample Type**	COMPLIANCE
Date Collected			10/22/2012 12:45 PM	**Station ID**	X01E02
Program	SWDO-DSW			**Customer ID**	12GSB1022
Client	DSW			**External ID**	94751
OEPA Division	DSW				
Location	4 - DUKE ENERGY ZIMMER PLANT OUTFALL 005 (PROCESS COAL ASH)				

Analysis	Parameter	Storet	Result	RL	Units	Date	Qualifier
CBOD-5	CBOD5	P80082	13	2	mg/L	10/24/2012	
Oil&Grease	Oil & Grease	P556	<2.1	2.1	mg/L	10/29/2012	
Solids_Diss	Total Dissolved Solids	P70300	3740	10	mg/L	10/25/2012	
Solids_Susp	Total Suspended Solids	P530	17	5	mg/L	10/25/2012	
ICPMS_(WAT)	Arsenic	P1002	4.5	2	ug/L	11/08/2012	
ICPMS_(WAT)	Cadmium	P1027	<0.20	0.2	ug/L	11/08/2012	
ICPMS_(WAT)	Chromium	P1034	5.8	2	ug/L	11/08/2012	
ICPMS_(WAT)	Copper	P1042	2.8	2	ug/L	11/08/2012	
ICPMS_(WAT)	Lead	P1051	<2.0	2	ug/L	11/08/2012	
ICPMS_(WAT)	Nickel	P1067	23.4	2	ug/L	11/08/2012	
ICPMS_(WAT)	Selenium	P1147	50.4	4	ug/L	11/08/2012	
ICP_(WAT)	Aluminum	P1105	341	200	ug/L	10/30/2012	
ICP_(WAT)	Barium	P1007	74	15	ug/L	10/30/2012	
ICP_(WAT)	Calcium	P916	188	2	mg/L	10/30/2012	
ICP_(WAT)	Hardness, Total	P900	2540	10	mg/L	10/30/2012	
ICP_(WAT)	Iron	P1045	6220	50	ug/L	10/30/2012	
ICP_(WAT)	Magnesium	P927	502	10	mg/L	10/30/2012	
ICP_(WAT)	Manganese	P1055	1080	10	ug/L	10/30/2012	
ICP_(WAT)	Potassium	P937	42	2	mg/L	10/30/2012	
ICP_(WAT)	Sodium	P929	96	5	mg/L	10/30/2012	
ICP_(WAT)	Strontium	P1082	726	30	ug/L	10/30/2012	
ICP_(WAT)	Zinc	P1092	31	10	ug/L	10/30/2012	
Alkalinity	Alkalinity	P410	75.5	5	mg/L	10/26/2012	
Ammonia	Ammonia	P610	7.15	0.25	mg/L	10/30/2012	
COD	COD	P340	54	20	mg/L	11/05/2012	
Chloride	Chloride	P940	288	50	mg/L	10/24/2012	
Conductivity	Conductivity	P95	4040	2	umhos/cm	10/26/2012	
Cyanide_Free	Cyanide, Free	P718	<5	5	ug/L	10/25/2012	UJ
Nitrate	Nitrate+nitrite	P630	0.16	0.1	mg/L	10/30/2012	
Phenolics_MD	Phenolics	P32730	<10.0	10	ug/L	11/14/2012	
TKN	TKN	P625	19.8	1	mg/L	11/19/2012	
TP	Total Phosphorus	P665	0.034	0.01	mg/L	11/14/2012	

Field Comments GRAB

Lab Comments

QC / Sample Comments CN: Sample pH before distillation was <12, results estimated.

Approved By VDESHMUKH **On** 11/21/2012

OhioEPA Division of Environmental Services

Laboratory Organic Analysis Data Report

Sample	148664				
Date Received	10/23/2012 9:23 AM	**Matrix**	WW	**Collected by**	BUTHKER, GREGORY
	Begin	**End**		**Sample Type**	COMPLIANCE
Date Collected		10/22/2012 12:45 PM		**Station ID**	X01E02
Program	SWDO-DSW			**Customer ID**	12GSB1022
Client	DSW			**External ID**	94753
OEPA Division	DSW				
Location	6 - DUKE ENERGY ZIMMER PLANT OUTFALL 005 (PROCESS COAL ASH)				

EPA Method Parameter	Units	Cas Number	Result	RL	Analyzed	Qualifier
USEPA 624	**ug/L**					
Benzene		000071-43-2	<0.50	0.5	10/24/2012	
Bromobenzene		000108-86-1	<0.50	0.5	10/24/2012	
Bromochloromethane		000074-97-5	<0.50	0.5	10/24/2012	
Bromodichloromethane		000075-27-4	<0.50	0.5	10/24/2012	
Bromoform		000075-25-2	<0.50	0.5	10/24/2012	
Bromomethane		000074-83-9	0.56	0.5	10/24/2012	
n-Butylbenzene		000104-51-8	<0.50	0.5	10/24/2012	
sec-Butylbenzene		000135-98-8	<0.50	0.5	10/24/2012	
tert-Butylbenzene		000098-06-6	<0.50	0.5	10/24/2012	
Carbon tetrachloride		000056-23-5	<0.50	0.5	10/24/2012	
Chlorobenzene		000108-90-7	<0.50	0.5	10/24/2012	
Chloroethane		000075-00-3	<0.50	0.5	10/24/2012	
Chloroform		000067-66-3	<0.50	0.5	10/24/2012	
Chloromethane		000074-87-3	<0.50	0.5	10/24/2012	
2-Chlorotoluene		000095-49-8	<0.50	0.5	10/24/2012	
4-Chlorotoluene		000106-43-4	<0.50	0.5	10/24/2012	
Dibromochloromethane		000124-48-1	<0.50	0.5	10/24/2012	
1,2-Dibromo-3-chloropropane		000096-12-8	<0.50	0.5	10/24/2012	
1,2-Dibromoethane		000106-93-4	<0.50	0.5	10/24/2012	
Dibromomethane		000074-95-3	<0.50	0.5	10/24/2012	
1,2-Dichlorobenzene		000095-50-1	<0.50	0.5	10/24/2012	
1,3-Dichlorobenzene		000541-73-1	<0.50	0.5	10/24/2012	
1,4-Dichlorobenzene		000106-46-7	<0.50	0.5	10/24/2012	
Dichlorodifluoromethane		000075-71-8	<0.50	0.5	10/24/2012	
1,1-Dichloroethane		000075-34-3	<0.50	0.5	10/24/2012	
1,2-Dichloroethane		000107-06-2	<0.50	0.5	10/24/2012	
1,1-Dichloroethene		000075-35-4	<0.50	0.5	10/24/2012	
cis-1,2-Dichloroethene		000156-59-2	<0.50	0.5	10/24/2012	
trans-1,2-Dichloroethene		000156-60-5	<0.50	0.5	10/24/2012	
1,2-Dichloropropane		000078-87-5	<0.50	0.5	10/24/2012	
1,3-Dichloropropane		000142-28-9	<0.50	0.5	10/24/2012	
2,2-Dichloropropane		000594-20-7	<0.50	0.5	10/24/2012	
1,1-Dichloropropene		000563-58-6	<0.50	0.5	10/24/2012	
cis-1,3-Dichloropropene		010061-01-5	<0.50	0.5	10/24/2012	
trans-1,3-Dichloropropene		010061-02-6	<0.50	0.5	10/24/2012	
Ethylbenzene		000100-41-4	<0.50	0.5	10/24/2012	
Hexachlorobutadiene		000087-68-3	<0.50	0.5	10/24/2012	
Isopropylbenzene		000098-82-8	<0.50	0.5	10/24/2012	
4-Isopropyltoluene		000099-87-6	<0.50	0.5	10/24/2012	
Methylene chloride		000075-09-2	<0.50	0.5	10/24/2012	
Naphthalene		000091-20-3	<0.50	0.5	10/24/2012	
n-Propylbenzene		000103-65-1	<0.50	0.5	10/24/2012	
Styrene		000100-42-5	<0.50	0.5	10/24/2012	
1,1,1,2-Tetrachloroethane		000630-20-6	<0.50	0.5	10/24/2012	
1,1,2,2-Tetrachloroethane		000079-34-5	<0.50	0.5	10/24/2012	
Tetrachloroethene		000127-18-4	<0.50	0.5	10/24/2012	
Toluene		000108-88-3	<0.50	0.5	10/24/2012	
1,2,3-Trichlorobenzene		000087-61-6	<0.50	0.5	10/24/2012	
1,2,4-Trichlorobenzene		000120-82-1	<0.50	0.5	10/24/2012	
1,1,1-Trichloroethane		000071-55-6	<0.50	0.5	10/24/2012	
1,1,2-Trichloroethane		000079-00-5	<0.50	0.5	10/24/2012	

OhioEPA Division of Environmental Services

Laboratory Organic Analysis Data Report

Sample	148664				
Date Received	10/23/2012 9:23 AM	**Matrix**	WW	**Collected by**	BUTHKER, GREGORY
	Begin	**End**		**Sample Type**	COMPLIANCE
Date Collected			10/22/2012 12:45 PM	**Station ID**	X01E02
Program	SWDO-DSW			**Customer ID**	12GSB1022
Client	DSW			**External ID**	94753
OEPA Division	DSW				
Location	6 - DUKE ENERGY ZIMMER PLANT OUTFALL 005 (PROCESS COAL ASH)				

EPA Method Parameter	Units	Cas Number	Result	RL	Analyzed	Qualifier
USEPA 624	**ug/L**					
Trichloroethene		000079-01-6	<0.50	0.5	10/24/2012	
Trichlorofluoromethane		000075-69-4	<0.50	0.5	10/24/2012	
1,2,3-Trichloropropane		000096-18-4	<0.50	0.5	10/24/2012	
1,2,4-Trimethylbenzene		000095-63-6	<0.50	0.5	10/24/2012	
1,3,5-Trimethylbenzene		000108-67-8	<0.50	0.5	10/24/2012	
Vinyl chloride		000075-01-4	<0.50	0.5	10/24/2012	
o-Xylene		000095-47-6	<0.50	0.5	10/24/2012	
Total m&p-xylenes		000108-38-3	<0.50	0.5	10/24/2012	
USEPA 625	**ug/L**					
Acenaphthene		000083-32-9	<5.4	5.4	11/20/2012	
Acenaphthylene		000208-96-8	<5.4	5.4	11/20/2012	
Anthracene		000120-12-7	<2.2	2.2	11/20/2012	
Benzo[a]anthracene		000056-55-3	<2.2	2.2	11/20/2012	
Benzo[a]pyrene		000050-32-8	<2.2	2.2	11/20/2012	
Benzo[b]fluoranthene		000205-99-2	<2.2	2.2	11/20/2012	
Benzo[g,h,i]perylene		000191-24-2	<2.2	2.2	11/20/2012	
Benzo[k]fluoranthene		000207-08-9	<2.2	2.2	11/20/2012	
bis(2-Chloroethoxy)methane		000111-91-1	<5.4	5.4	11/20/2012	
bis(2-Chloroethyl)ether		000111-44-4	<2.2	2.2	11/20/2012	
bis(2-Chloroisopropyl)ether		000108-60-1	<2.2	2.2	11/20/2012	
bis(2-Ethylhexyl)phthalate		000117-81-7	<10.8	10.8	11/20/2012	
4-Bromophenyl-phenylether		000101-55-3	<5.4	5.4	11/20/2012	
Butylbenzylphthalate		000085-68-7	<2.2	2.2	11/20/2012	
4-Chloro-3-methylphenol		000059-50-7	<10.8	10.8	11/20/2012	
2-Chloronaphthalene		000091-58-7	<5.4	5.4	11/20/2012	
2-Chlorophenol		000095-57-8	<2.2	2.2	11/20/2012	
4-Chlorophenyl-phenylether		007005-72-3	<2.2	2.2	11/20/2012	
Chrysene		000218-01-9	<2.2	2.2	11/20/2012	
Di-n-butylphthalate		000084-74-2	<5.4	5.4	11/20/2012	
Di-n-octylphthalate		000117-84-0	<2.2	2.2	11/20/2012	
Dibenz[a,h]anthracene		000053-70-3	<2.2	2.2	11/20/2012	
1,3-Dichlorobenzene		000541-73-1	<2.2	2.2	11/20/2012	
1,4-Dichlorobenzene		000106-46-7	<2.2	2.2	11/20/2012	
1,2-Dichlorobenzene		000095-50-1	<2.2	2.2	11/20/2012	
2,4-Dichlorophenol		000120-83-2	<2.2	2.2	11/20/2012	
Diethylphthalate		000084-66-2	<5.4	5.4	11/20/2012	
2,4-Dimethylphenol		000105-67-9	<10.8	10.8	11/20/2012	
Dimethylphthalate		000131-11-3	<5.4	5.4	11/20/2012	
4,6-Dinitro-2-methylphenol		000534-52-1	<5.4	5.4	11/20/2012	
2,4-Dinitrophenol		000051-28-5	<21.5	21.5	11/20/2012	
2,6-Dinitrotoluene		000606-20-2	<2.2	2.2	11/20/2012	
2,4-Dinitrotoluene		000121-14-2	<2.2	2.2	11/20/2012	
Fluoranthene		000206-44-0	<2.2	2.2	11/20/2012	
Fluorene		000086-73-7	<2.2	2.2	11/20/2012	
Hexachlorobenzene		000118-74-1	<2.2	2.2	11/20/2012	
Hexachlorobutadiene		000087-68-3	<2.2	2.2	11/20/2012	
Hexachlorocyclopentadiene		000077-47-4	<2.2	2.2	11/20/2012	
Hexachloroethane		000067-72-1	<5.4	5.4	11/20/2012	
Indeno[1,2,3-cd]pyrene		000193-39-5	<2.2	2.2	11/20/2012	
Isophorone		000078-59-1	<2.2	2.2	11/20/2012	

OhioEPA Division of Environmental Services

Laboratory Organic Analysis Data Report

Sample	148664				
Date Received	10/23/2012 9:23 AM	**Matrix**	WW	**Collected by**	BUTHKER, GREGORY
	Begin	**End**		**Sample Type**	COMPLIANCE
Date Collected			10/22/2012 12:45 PM	**Station ID**	X01E02
Program	SWDO-DSW			**Customer ID**	12GSB1022
Client	DSW			**External ID**	94753
OEPA Division	DSW				
Location	6 - DUKE ENERGY ZIMMER PLANT OUTFALL 005 (PROCESS COAL ASH)				

EPA Method Parameter	Units	Cas Number	Result	RL	Analyzed	Qualifier
USEPA 625	**ug/L**					
N-Nitroso-di-n-propylamine		000621-64-7	<2.2	2.2	11/20/2012	
N-Nitrosodiphenylamine		000086-30-6	<5.4	5.4	11/20/2012	
Naphthalene		000091-20-3	<2.2	2.2	11/20/2012	
Nitrobenzene		000098-95-3	<2.2	2.2	11/20/2012	
2-Nitrophenol		000088-75-5	<2.2	2.2	11/20/2012	
4-Nitrophenol		000100-02-7	<21.5	21.5	11/20/2012	
Pentachlorophenol		000087-86-5	<10.8	10.8	11/20/2012	
Phenanthrene		000085-01-8	<2.2	2.2	11/20/2012	
Phenol		000108-95-2	<2.2	2.2	11/20/2012	
Pyrene		000129-00-0	<2.2	2.2	11/20/2012	
1,2,4-Trichlorobenzene		000120-82-1	<2.2	2.2	11/20/2012	
2,4,6-Trichlorophenol		000088-06-2	<5.4	5.4	11/20/2012	

Field Comments GRAB

Lab Comments

QC / Sample Comments

Approved By VDESHMUKH **On** 11/29/2012

OhioEPA Division of Environmental Services

Laboratory Organic Analysis Data Report

Sample	148665				
Date Received	10/23/2012 9:23 AM	**Matrix**	RW	**Collected by**	BUTHKER, GREGORY
	Begin	**End**		**Sample Type**	OTHER
Date Collected			10/22/2012 12:00 AM	**Station ID**	QA
Program	SWDO-DSW			**Customer ID**	12GSB1022
Client	DSW			**External ID**	94754
OEPA Division	DSW				
Location	5 - Trip Blank				

EPA Method Parameter	Units	Cas Number	Result	RL	Analyzed	Qualifier
USEPA 624	**ug/L**					
Benzene		000071-43-2	<0.50	0.5	10/24/2012	
Bromobenzene		000108-86-1	<0.50	0.5	10/24/2012	
Bromochloromethane		000074-97-5	<0.50	0.5	10/24/2012	
Bromodichloromethane		000075-27-4	<0.50	0.5	10/24/2012	
Bromoform		000075-25-2	<0.50	0.5	10/24/2012	
Bromomethane		000074-83-9	<0.50	0.5	10/24/2012	
n-Butylbenzene		000104-51-8	<0.50	0.5	10/24/2012	
sec-Butylbenzene		000135-98-8	<0.50	0.5	10/24/2012	
tert-Butylbenzene		000098-06-6	<0.50	0.5	10/24/2012	
Carbon tetrachloride		000056-23-5	<0.50	0.5	10/24/2012	
Chlorobenzene		000108-90-7	<0.50	0.5	10/24/2012	
Chloroethane		000075-00-3	<0.50	0.5	10/24/2012	
Chloroform		000067-66-3	<0.50	0.5	10/24/2012	
Chloromethane		000074-87-3	<0.50	0.5	10/24/2012	
2-Chlorotoluene		000095-49-8	<0.50	0.5	10/24/2012	
4-Chlorotoluene		000106-43-4	<0.50	0.5	10/24/2012	
Dibromochloromethane		000124-48-1	<0.50	0.5	10/24/2012	
1,2-Dibromo-3-chloropropane		000096-12-8	<0.50	0.5	10/24/2012	
1,2-Dibromoethane		000106-93-4	<0.50	0.5	10/24/2012	
Dibromomethane		000074-95-3	<0.50	0.5	10/24/2012	
1,2-Dichlorobenzene		000095-50-1	<0.50	0.5	10/24/2012	
1,3-Dichlorobenzene		000541-73-1	<0.50	0.5	10/24/2012	
1,4-Dichlorobenzene		000106-46-7	<0.50	0.5	10/24/2012	
Dichlorodifluoromethane		000075-71-8	<0.50	0.5	10/24/2012	
1,1-Dichloroethane		000075-34-3	<0.50	0.5	10/24/2012	
1,2-Dichloroethane		000107-06-2	<0.50	0.5	10/24/2012	
1,1-Dichloroethene		000075-35-4	<0.50	0.5	10/24/2012	
cis-1,2-Dichloroethene		000156-59-2	<0.50	0.5	10/24/2012	
trans-1,2-Dichloroethene		000156-60-5	<0.50	0.5	10/24/2012	
1,2-Dichloropropane		000078-87-5	<0.50	0.5	10/24/2012	
1,3-Dichloropropane		000142-28-9	<0.50	0.5	10/24/2012	
2,2-Dichloropropane		000594-20-7	<0.50	0.5	10/24/2012	
1,1-Dichloropropene		000563-58-6	<0.50	0.5	10/24/2012	
cis-1,3-Dichloropropene		010061-01-5	<0.50	0.5	10/24/2012	
trans-1,3-Dichloropropene		010061-02-6	<0.50	0.5	10/24/2012	
Ethylbenzene		000100-41-4	<0.50	0.5	10/24/2012	
Hexachlorobutadiene		000087-68-3	<0.50	0.5	10/24/2012	
Isopropylbenzene		000098-82-8	<0.50	0.5	10/24/2012	
4-Isopropyltoluene		000099-87-6	<0.50	0.5	10/24/2012	
Methylene chloride		000075-09-2	<0.50	0.5	10/24/2012	
Naphthalene		000091-20-3	<0.50	0.5	10/24/2012	
n-Propylbenzene		000103-65-1	<0.50	0.5	10/24/2012	
Styrene		000100-42-5	<0.50	0.5	10/24/2012	
1,1,1,2-Tetrachloroethane		000630-20-6	<0.50	0.5	10/24/2012	
1,1,2,2-Tetrachloroethane		000079-34-5	<0.50	0.5	10/24/2012	
Tetrachloroethene		000127-18-4	<0.50	0.5	10/24/2012	
Toluene		000108-88-3	<0.50	0.5	10/24/2012	
1,2,3-Trichlorobenzene		000087-61-6	<0.50	0.5	10/24/2012	
1,2,4-Trichlorobenzene		000120-82-1	<0.50	0.5	10/24/2012	
1,1,1-Trichloroethane		000071-55-6	<0.50	0.5	10/24/2012	
1,1,2-Trichloroethane		000079-00-5	<0.50	0.5	10/24/2012	

OhioEPA Division of Environmental Services

Laboratory Organic Analysis Data Report

Sample	148665				
Date Received	10/23/2012 9:23 AM	**Matrix**	RW	**Collected by**	BUTHKER, GREGORY
	Begin	**End**		**Sample Type**	OTHER
Date Collected		10/22/2012 12:00 AM		**Station ID**	QA
Program	SWDO-DSW			**Customer ID**	12GSB1022
Client	DSW			**External ID**	94754
OEPA Division	DSW				
Location	5 - Trip Blank				

EPA Method Parameter	Units	Cas Number	Result	RL	Analyzed	Qualifier
USEPA 624	**ug/L**					
Trichloroethene		000079-01-6	<0.50	0.5	10/24/2012	
Trichlorofluoromethane		000075-69-4	<0.50	0.5	10/24/2012	
1,2,3-Trichloropropane		000096-18-4	<0.50	0.5	10/24/2012	
1,2,4-Trimethylbenzene		000095-63-6	<0.50	0.5	10/24/2012	
1,3,5-Trimethylbenzene		000108-67-8	<0.50	0.5	10/24/2012	
Vinyl chloride		000075-01-4	<0.50	0.5	10/24/2012	
o-Xylene		000095-47-6	<0.50	0.5	10/24/2012	
Total m&p-xylenes		000108-38-3	<0.50	0.5	10/24/2012	

Field Comments

Lab Comments

QC / Sample Comments

Approved By VDESHMUKH **On** 11/05/2012