Ohio Environmental Protection Agency
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

July 25, 2012

RE: CUYAHOGA COUNTY
CITY OF BEDFORD HEIGHTS WWTP
COMPLIANCE EVALUATION INSPECTION
NPDES PERMIT NO. OH0024040
OHIO EPA PERMIT NO. 3PD00006

Mayor Fletcher D. Berger
Bedford Heights City Hall
5661 Perkins Road
Bedford Hts., OH 44146

Dear Mayor Berger:

On June 13, 2012, this office conducted an inspection of the wastewater treatment plant (WWTP) serving the City of Bedford Heights. The facility was represented by Mr. David Pocaro, Director of Water Reclamation. During the course of the inspection, evaluations were conducted of the treatment processes, effluent discharge quality, laboratory, and biosolids management.

NPDES Permit Status

The NPDES permit for this facility was issued effective on April 1, 2009 and will expire on July 31, 2013. Per the Tinkers Creek TMDL report, the NPDES permit contains a water quality trading requirement in Part 1, C for Phosphorus.

Facility Description

The treatment plant serves Bedford Heights, as well as portions of Solon, Warrensville Heights, Oakwood, and Glenwillow. The current National Pollutant Discharge Elimination System (NPDES) permit authorizes an average daily discharge of 7.0 MGD from the facility to Hawthorne Creek. The wet stream treatment process consists of bar screens, grit removal and pre-aeration, followed by primary clarification, aeration, secondary clarification, rapid sand filtration, chlorination/dechlorination and post aeration. Phosphorus removal is achieved through the addition of ferrous chloride. Sludges from the primary and secondary clarifiers are thickened, combined and treated through the use of the Zimpro wet oxidation system prior to dewatering by a belt filter press. The sludge cake is hauled off-site for proper disposal. The stand-by diesel generator provides power to the raw sewage pumps which are necessary to lift the influent wastewater into the plant.

The facility includes two internal treatment system bypass locations where wastewater can be diverted around required treatment operations: (1) at the headworks; (2) after primary clarification prior to aeration (secondary bypass); and, (3) after secondary clarification prior to the rapid sand filters (tertiary bypass). The headworks bypass receives no treatment and ties into the effluent discharge line after the final sampling point. The secondary and tertiary bypasses tie into the chlorination channel prior to the final sampling point. It would appear that many of the secondary bypasses occur at flow rates that are **substantially** below the design capacity of the treatment plant.

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Please be advised that the diverting or bypassing of wastewater from any portion of the treatment facility is prohibited and must be reported as an unauthorized discharge in accordance with Part III, items 11 and 12, of your NPDES permit. This includes notification by email or telephone and confirmation in writing. Sampling must occur during bypass events. Future NPDES renewals will require the City to conduct a comprehensive analysis of all feasible alternatives necessary to eliminate the headworks and secondary bypasses at the treatment plant and any overflows in the collection system.

Inspection Findings/Compliance Status
At the time of the inspection, the following observations and comments were noted:

- A visual observation of the plant effluent revealed no signs of floating debris, oil & grease, or foam in the discharge.

- The issue of the recurring pH excursions was discussed. Mr. Pacaro noted that the likely cause of the low effluent pH is the decant flow from Zimpro, coupled with the low influent flowrates. He indicated that the facility was seeking a cost effective way to handle the low effluent pH and increase the alkalinity in the aeration system.

- Three (3) of the six (6) tertiary sand filters were in service. The remaining filters have been out of service since September 2010 due to operational problems with the underdrain system. It was noted that the most of the replacement parts were on-site and installation was to proceed upon receiving some additional equipment from the manufacturer. Recent correspondence from the facility indicates that a total of five filters should be on-line by the end of August.

- As referenced in prior correspondence, *Ten States Standards requires that* handle rails be installed around all open tanks with tops of walls less than 42 inches above the surrounding ground level. The existing chlorine contact tanks, as well as the gravity thickener, do not meet this safety requirement. The facility shall immediately install a temporary railing around these structures.

- Additionally, it was noted that repairs to the chlorine contact tank walls and pump support structures are needed.

Laboratory

The review of the plant laboratory noted that the following permit parameters are currently being analyzed in-house: DO, pH, Temperature, cBOD, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Conductivity, Hardness, Fecal Coliform, Ammonia, Nitrate-Nitrite, and Phosphorus. The balance of the permit parameters are analyzed by Precision Analytical (Metals, TKN, Cyanide) and Enviroscience (Bioassays). The laboratory had satisfactorily addressed all of the items referenced during the 2011 inspection.

Discharge Monitoring Reports

Discharge monitoring reports (DMR), received by Ohio EPA for the period July 2011 through June 2012, were reviewed. A summary of the reported data is listed in Attachment A. Additionally, the data was reviewed for compliance with the final effluent limitations and monitoring requirements of the NPDES. Violations of the NPDES permit at Outfall 001 are listed in Attachment B. Bypasses at Stations 602 and 603 are listed in Attachment C.

The following reporting issues must also be addressed:

- Please ensure that the Method Detection Limit (MDL) reported for mercury is denoted as 0.2 ng/l, not 0.5 ng/l.

- The applicable Water Quality Standard (WQS) for Cadmium is lower than the MDL, i.e. 5ug/l, currently being reported on certain DMRs. The MDL must be lowered in order to demonstrate consistent compliance with the downstream WQS.

Based on the inspection results, the facility continues to be in **significant non-compliance** with the terms and conditions of the NPDES permit. Part III, item 12, of your NPDES permit requires the permittee to provide notification and a letter of explanation outlining the actions taken, or to be taken, to correct all instances of noncompliance. Within 10 days of the date of this letter, please submit a written response to this office addressing all deficiencies cited above.

Please be advised that any violations referenced herein are subject to appropriate enforcement actions pursuant to Chapter 6111 of the Ohio Revised Code. Such actions can result in the imposition of fines of up to $10,000 per day of violation.

If you should have any questions, please contact this office at (330) 963-1196.

Respectfully,

Ermelindo Gomes
Environmental Engineer
Division of Surface Water

EG/cs

Attachments

cc: David Pocaro, Director of Water Reclamation, City of Bedford Heights

Attachment A: Bedford Heights WWTP Summary Data (7/2011- 6/2012)								
Station Code	Parameter Name	Units	# of Obs.	# of values	# < MDL	Min	Avg	Max
1	Water Temperature	C	366	366	0	1.5	18.082787	25.8
1	Specific Conductance at 25 Degrees C	Umho/cm	52	52	0	501	1271.6923	1863
1	Dissolved Oxygen	mg/l	366	366	0	5	6.7592896	9.7
1	Residue, Total Dissolved	mg/l	4	4	0	728	776.5	824
1	Total Suspended Solids	mg/l	165	100	65	0	3.3333333	28
1	Oil and Grease, Hexane Extr Method	mg/l	26	1	25	0	0.0846154	2.2
1	Nitrogen, Ammonia (NH3)	mg/l	178	84	94	0	0.2966854	16.5
1	Nitrite Plus Nitrate, Total	mg/l	12	12	0	7.3	24.166667	41.5
1	Phosphorus, Total (P)	mg/l	51	51	0	0.036	0.2561961	0.67
1	Cyanide, Free	mg/l	12	2	10	0	0.0024167	0.016
1	Nickel, Total Recoverable	ug/l	4	4	0	14.8	25.225	37.7
1	Silver, Total Recoverable	ug/l	12	4	8	0	0.425	2.6
1	Zinc, Total Recoverable	ug/l	12	12	0	25	78.125	202
1	Cadmium, Total Recoverable	ug/l	4	2	2	0	0.675	1.45
1	Lead, Total Recoverable	ug/l	12	4	8	0	1.9583333	6
1	Chromium, Total Recoverable	ug/l	4	0	4	0	0	0
1	Copper, Total Recoverable	ug/l	14	14	0	10.2	14.028571	20.4
1	Chromium, Dissolved Hexavalent	ug/l	4	0	4	0	0	0
1	Fecal Coliform	#/100 ml	77	77	0	10	645.54545	6633
1	Flow Rate	MGD	366	366	0	1.06	1.889235	6.17
1	Chlorine, Total Residual	mg/l	184	103	81	0	0.007962	0.142
1	Mercury, Total (Low Level)	ng/l	13	9	4	0	1.3146154	3.96
1	Acute Toxicity, Ceriodaphnia dubia	TUa	1	0	1	0	0	0
1	Chronic Toxicity, Ceriodaphnia dubia	TUc	1	0	1	0	0	0
1	Acute Toxicity, Pimephales promelas	TUa	1	0	1	0	0	0
1	Chronic Toxicity, Pimephales promelas	TUc	1	1	0	2.26	2.26	2.26
1	pH, Maximum	S.U.	366	366	0	6.3	6.9554645	8.3
1	pH, Minimum	S.U.	366	366	0	6	6.6778689	7.3
1	CBOD 5 day	mg/l	186	186	0	0.3	2.6951075	20.8
589	Ammonia (NH3) In Sludge	mg/kg	4	4	0	976	9854	23000
589	Nitrogen Kjeldahl, Total In Sludge	mg/kg	4	4	0	2980	21045	28500
589	Arsenic, Total In Sludge	mg/kg	4	1	3	0	1.0375	4.15
589	Cadmium, Total In Sludge	mg/kg	4	1	3	0	0.9275	3.71
589	Copper, Total In Sludge	mg/kg	4	4	0	153	1115	3020
589	Lead, Total In Sludge	mg/kg	4	4	0	9.54	117.71	357
589	Nickel, Total In Sludge	mg/kg	4	4	0	12.1	107.2	352
589	Zinc, Total In Sludge	mg/kg	4	4	0	327	2951.75	8640
589	Selenium, Total In Sludge	mg/kg	4	1	3	0	16.85	67.4
589	Sludge Fee Weight	dry tons	4	4	0	103.55	111.355	128.81

Attachment A: Bedford Heights WWTP Summary Data (7/2011- 6/2012)								
Station Code	Parameter Name	Units	# of Obs	# of values	# < MDL	Min	Avg	Max
589	Sludge Weight	Dry Tons	4	4	0	104.37	112.3475	130.12
589	Mercury, Total In Sludge	mg/kg	4	4	0	0.185	0.5345	0.876
589	Molybdenum In Sludge	mg/kg	4	4	0	14.8	115.675	360
601	Total Suspended Solids	mg/l	169	169	0	70	189.18639	1423
601	Cyanide, Total	mg/l	12	3	9	0	0.0148333	0.147
601	Nickel, Total Recoverable	ug/l	12	7	5	0	4.9666667	16.7
601	Zinc, Total Recoverable	ug/l	12	12	0	84.6	133.53333	208
601	Cadmium, Total Recoverable	ug/l	12	0	12	0	0	0
601	Lead, Total Recoverable	ug/l	12	8	4	0	5.9666667	13.9
601	Chromium, Total Recoverable	ug/l	12	3	9	0	1.6375	8.1
601	Copper, Total Recoverable	ug/l	12	12	0	42.2	83.85	174
601	Chromium, Dissolved Hexavalent	ug/l	12	1	11	0	5.8333333	70
601	Mercury, Total (Low Level)	ng/l	12	12	0	7.55	63.4625	309
601	pH, Maximum	S.U.	366	366	0	6.4	7.436612	8.5
601	pH, Minimum	S.U.	366	366	0	5.1	7.0915301	8
601	CBOD 5 day	mg/l	184	184	0	37.5	169.05815	319
602	Bypass Occurrence	No./Day	20	20	0	1	1	1
602	Bypass Total Hours Per Day	Hrs/Day	20	20	0	0.33	4.7665	13
602	Total Suspended Solids	mg/l	20	20	0	44	122.75	280
602	Bypass Volume	MGAL	21	21	0	0.033	0.6632381	1.519
602	CBOD 5 day	mg/l	19	19	0	2	66.547368	133
603	Bypass Occurrence	No./Day	23	23	0	1	1	1
603	Bypass Total Hours Per Day	Hrs/Day	23	23	0	0.33	5.7534783	14.5
603	Total Suspended Solids	mg/l	23	23	0	2	27.956522	122
603	Bypass Volume	MGAL	24	24	0	0.062	1.374125	3.951
603	CBOD 5 day	mg/l	21	21	0	0.9	22.085714	130
801	Water Temperature	C	12	12	0	1.7	12.35	22.7
801	Dissolved Oxygen	mg/l	12	12	0	8	10.833333	15
801	pH	S.U.	13	13	0	6.9	7.4384615	8.2
801	Nitrogen, Ammonia (NH3)	mg/l	13	0	13	0	0	0
801	Nitrite Plus Nitrate, Total	mg/l	12	10	2	0	0.5443333	3.33
801	Phosphorus, Total (P)	mg/l	12	12	0	0.025	0.0554167	0.21
801	Fecal Coliform	#/100 ml	6	6	0	350	562.33333	867
801	48-Hr. Acute Toxicity Ceriodaphnia dubia	% Affected	1	0	1	0	0	0
801	96-Hr. Acute Toxicity Pimephales promela	% Affected	1	1	0	2	2	2
801	7-Day Chronic Toxicity Ceriodaphnia dubia	% Affected	1	1	0	100	100	100
801	7-Day Chronic Toxicity Pimephales promelas	% Affected	1	1	0	2	2	2
901	Water Temperature	C	12	12	0	4.3	14.133333	22.7
901	Dissolved Oxygen	mg/l	12	12	0	7.3	9.55	13.3
901	pH	S.U.	12	12	0	7	7.2833333	7.6
901	Nitrogen, Ammonia (NH3)	mg/l	12	2	10	0	0.0375	0.25

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Station Code	Parameter Name	Units	# of Obs.	# of values	# < MDL	Min	Avg	Max
901	Nitrite Plus Nitrate, Total	mg/l	12	12	0	4	11.5925	22.5
901	Phosphorus, Total (P)	mg/l	12	11	1	0	0.43125	2.5
901	Cyanide, Total	mg/l	12	3	9	0	0.0254167	0.177
901	Hardness, Total (CaCO3)	mg/l	12	12	0	9.3	234.60833	450
901	Nickel, Total Recoverable	ug/l	12	12	0	5.85	10.704167	29
901	Zinc, Total Recoverable	ug/l	12	12	0	11.8	38.691667	96
901	Cadmium, Total Recoverable	ug/l	12	1	11	0	0.1208333	1.45
901	Lead, Total Recoverable	ug/l	12	3	9	0	1.5875	7.05
901	Chromium, Total Recoverable	ug/l	12	0	12	0	0	0
901	Copper, Total Recoverable	ug/l	12	12	0	4.05	7.6416667	16
901	Chromium, Dissolved Hexavalent	ug/l	12	0	12	0	0	0
901	Fecal Coliform	#/100 ml	6	6	0	84	738.66667	2100

Attachment B: Bedford Heights WWTP Effluent Violations Summary (7/2011- 6/2012)						
Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
July 2011	001	Chlorine, Total Residu	1D Conc	0.019	.106	7/1/2011
July 2011	001	Mercury, Total (Low Le	30D Conc	1.3	2.03	7/1/2011
July 2011	001	Chlorine, Total Residu	1D Conc	0.019	.068	7/2/2011
July 2011	001	pH, Minimum	1D Conc	6.5	6.4	7/3/2011
July 2011	001	Chlorine, Total Residu	1D Conc	0.019	.052	7/5/2011
July 2011	001	Chlorine, Total Residu	1D Conc	0.019	.081	7/6/2011
July 2011	001	pH, Minimum	1D Conc	6.5	6.3	7/6/2011
July 2011	001	pH, Minimum	1D Conc	6.5	6.2	7/7/2011
July 2011	001	pH, Minimum	1D Conc	6.5	6.4	7/11/2011
July 2011	001	pH, Minimum	1D Conc	6.5	6.3	7/14/2011
July 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.9	4.15	7/22/2011
July 2011	001	pH, Minimum	1D Conc	6.5	6.4	7/22/2011
August 2011	001	Mercury, Total (Low Le	30D Conc	1.3	1.61	8/1/2011
August 2011	001	pH, Minimum	1D Conc	6.5	6.1	8/8/2011
August 2011	001	pH, Minimum	1D Conc	6.5	6.4	8/9/2011
August 2011	001	Chlorine, Total Residu	1D Conc	0.019	.142	8/12/2011
August 2011	001	pH, Minimum	1D Conc	6.5	6.4	8/29/2011
August 2011	001	pH, Minimum	1D Conc	6.5	6.3	8/30/2011
August 2011	001	pH, Minimum	1D Conc	6.5	6.3	8/31/2011
September 2011	001	pH, Minimum	1D Conc	6.5	6.3	9/1/2011
September 2011	001	pH, Minimum	1D Conc	6.5	6.	9/2/2011
September 2011	001	Chlorine, Total Residu	1D Conc	0.019	.095	9/3/2011
October 2011	001	Mercury, Total (Low Le	30D Conc	1.3	3.25	10/1/2011
May 2012	001	Mercury, Total (Low Le	30D Conc	1.3	1.38	5/1/2012
May 2012	001	pH, Minimum	1D Conc	6.5	6.3	5/24/2012
May 2012	001	pH, Minimum	1D Conc	6.5	6.3	5/25/2012
May 2012	001	pH, Minimum	1D Conc	6.5	6.4	5/27/2012
May 2012	001	pH, Minimum	1D Conc	6.5	6.1	5/31/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/1/2012
June 2012	001	Mercury, Total (Low Le	30D Conc	1 3	3.96	6/1/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/5/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.2	6/6/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/7/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/8/2012
June 2012	001	Chlorine, Total Residu	1D Conc	0.019	.071	6/10/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/11/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/12/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/13/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/14/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.2	6/15/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.4	6/16/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/18/2012

Attachment B: Bedford Heights WWTP Effluent Violations Summary (7/2011- 6/2012)						
Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
June 2012	001	pH, Minimum	1D Conc	6.5	6.3	6/19/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.2	6/20/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.2	6/21/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.1	6/22/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.4	6/25/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.	6/26/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.	6/27/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.1	6/28/2012
June 2012	001	pH, Minimum	1D Conc	6.5	6.1	6/29/2012

Attachment C: Bedford Heights WWTP Bypass Summary (7/2017- 6/2012)					
Station	Parameter	Units	Date	Reported Value	A Code
602	Bypass Volume	MGAL	7/19/2011	0.037	
602	Bypass Volume	MGAL	7/28/2011	0.033	
602	Bypass Volume	MGAL	8/15/2011	0.33	
602	Bypass Volume	MGAL	9/4/2011	0.107	
602	Bypass Volume	MGAL	9/10/2011	1.303	
602	Bypass Volume	MGAL	9/30/2011	0.69	
602	Bypass Volume	MGAL	10/1/2011	1.23	
602	Bypass Volume	MGAL	10/14/2011	0.343	
602	Bypass Volume	MGAL	10/19/2011	1.519	
602	Bypass Volume	MGAL	11/14/2011	0.557	
602	Bypass Volume	MGAL	11/22/2011	0.251	
602	Bypass Volume	MGAL	11/29/2011	0.94	
602	Bypass Volume	MGAL	12/5/2011	1.5	
602	Bypass Volume	MGAL	12/6/2011	0.78	
602	Bypass Volume	MGAL	12/21/2011	0.99	
602	Bypass Volume	MGAL	1/17/2012	0.604	
602	Bypass Volume	MGAL	1/23/2012	0.776	
602	Bypass Volume	MGAL	1/27/2012	1	
602	Bypass Volume	MGAL	2/24/2012	0.218	
602	Bypass Volume	MGAL	2/29/2012	0.4	
602	Bypass Volume	MGAL	3/1/2012		AL
602	Bypass Volume	MGAL	4/1/2012		AL
602	Bypass Volume	MGAL	5/8/2012	0.32	
603	Bypass Volume	MGAL	7/3/2011	0.373	
603	Bypass Volume	MGAL	7/19/2011	0.387	
603	Bypass Volume	MGAL	7/28/2011	0.062	
603	Bypass Volume	MGAL	8/15/2011	0.856	

Attachment C: Bedford Heights WWTP Bypass Summary (7/2017- 6/2012)					
Station	Parameter	Units	Date	Reported Value	A Code
603	Bypass Volume	MGAL	9/4/2011	0.603	
603	Bypass Volume	MGAL	9/10/2011	3.951	
603	Bypass Volume	MGAL	9/30/2011	2.08	
603	Bypass Volume	MGAL	10/1/2011	3.05	
603	Bypass Volume	MGAL	10/14/2011	0.479	
603	Bypass Volume	MGAL	10/19/2011	3.02	
603	Bypass Volume	MGAL	11/14/2011	1.88	
603	Bypass Volume	MGAL	11/22/2011	1.15	
603	Bypass Volume	MGAL	11/27/2011	1.51	
603	Bypass Volume	MGAL	11/29/2011	2.13	
603	Bypass Volume	MGAL	12/5/2011	2.03	
603	Bypass Volume	MGAL	12/6/2011	1.2	
603	Bypass Volume	MGAL	12/21/2011	1.24	
603	Bypass Volume	MGAL	1/17/2012	0.64	
603	Bypass Volume	MGAL	1/23/2012	1.67	
603	Bypass Volume	MGAL	1/27/2012	2.6	
603	Bypass Volume	MGAL	2/24/2012	0.56	
603	Bypass Volume	MGAL	2/29/2012	0.62	
603	Bypass Volume	MGAL	4/23/2012	0.2	
603	Bypass Volume	MGAL	5/8/2012	0.688	