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December 23, 2013

FOR SETTLEMENT PURPOSES ONLY PURSUANT TO Fed. R. Evid. 408.

Mr. Brandon Robers
Department of Justice
Environmental Enforcement Section
P.O. Box 7611 – Ben Franklin Station
Washington, D.C. 20044

VIA EMAIL AND USPS MAIL

Re: City of Corpus Christi: WWTP Memo

Dear Mr. Robers:

The City of Corpus Christi (the "City") provides the attached information regarding its Wastewater Treatment Plants ("WWTPs") and efforts to address effluent excursions. The document identifies current operational and planned capital improvements at the City's six WWTPs.

The City anticipates that this information will prove helpful as a background for conversations at the upcoming negotiations on WWTPs and developing the appropriate provisions in the Consent Decree with respect to this topic.

We look forward to presenting the City's vision for WWTPs and the Consent Decree at our upcoming meeting in January.

As always, please let us know as you have questions.

Sincerely,

José de la Fuente

Enclosure

cc: Mr. Mark Walters, Assistant Attorney General
Mr. Ron Olson, City of Corpus Christi
Mr. Mark Van Vleck, City of Corpus Christi
Mr. Gus Gonzalez, City of Corpus Christi
Mr. Brian Butscher, City of Corpus Christi
Mr. Bill Mahaffey, City of Corpus Christi
Ms. Lisa Aguilar, City of Corpus Christi
Mr. Joe Trejo, City of Corpus Christi
Mr. Fredric P. Andes, *of Barnes & Thornburg, LLP*
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Mr. Nathan Vassar, *of the Firm*

City of Corpus Christi, Texas
Wastewater Treatment Plants (WWTPs)
Activities Addressing Permit Excursions

Section 1 - Purpose

The purpose of this memorandum is to provide the Environmental Protection Agency and the Department of Justice with additional detail regarding the City of Corpus Christi's (City) ongoing response to permit excursions occurring between December 2006 and October 2013 at its six wastewater treatment plants (WWTPs). The information contained in this memo is a follow up to and refinement of the discussion of the City's 2014 Capital Improvements Program (2014 CIP) at the September, 2013 meeting in Dallas, Texas. This memo focuses on current key City operational and construction activities most directly addressing permit excursions. It should be noted that not all capital projects included in the 2014 CIP are covered in this memo as the City is currently reviewing and reevaluating several projects contained in the 2014 CIP.

Section 2 – Overview and Background

The permitted Annual Average Flow for all six (6) WWTPs is about 44.7 million gallons per day (MGD). The total permitted 2-hour Peak Flow is 172.7 MGD. Table 2-1 summarizes the flow information and current permit limits for each WWTP.

Table 2-1: City of Corpus Christi Wastewater Treatment Plant Permit Limits

WWTP	Annual Average Flow	2-Hour Peak Flow	BOD	TSS	Ammonia	Entero	Copper
Allison	5 MGD	15 MGD	20 mg/L	20 mg/L	12 mg/L		
Broadway[1]	10 MGD	20 MGD	20 mg/L	20 mg/L		35	0.0241 mg/L
Greenwood[2]	8 MGD	24 MGD	10 mg/L	15 mg/L	3 mg/L		0.013 mg/L
Laguna Madre	3 MGD	9 MGD	20 mg/L	20 mg/L		35	
Oso	16.2 MGD	97.2 MGD	20 mg/L	20 mg/L	4 mg/L	35	
Whitecap	2.5 MGD	7.5 MGD	20 mg/L	20 mg/L		35	

[1] *Annual Average Flow of current Broadway WWTP is 10 MGD; 365 days after completion of new plant the Annual Average Flow changes to 8 MGD and 2- Hour Peak Capacity to 40 MGD (pending TCEQ approval of current permit application to increase peak capacity).*

[2] *Bacteria limit at Greenwood WWTP currently is based on fecal limit, not enterococci limits.*

For the purposes of Table 2-1, the following definitions are provided:

WWTP:	wastewater treatment plant
Annual Average Flow:	the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months as defined in the City's TPDES permits
2-Hour Peak Flow:	the maximum flow sustained for a two-hour period during the period of daily discharge as defined in the City's TPDES permits
BOD:	biological oxygen demand
TSS:	total suspended solids
TPDES:	Texas Pollutant Discharge Elimination System
Ammonia:	(NH3-N) Ammonia Nitrogen concentration
Entero:	Enterococci, an indicator of bacterial contamination
Copper:	a regulated metal

Section 3 - Discussion

The permit excursions for each WWTP and how the City is addressing them are discussed below.

3.1 Allison WWTP

Thirty-six (36) excursions occurred at the Allison WWTP between December 2006 and October 2013. They are summarized in Table 3.1-1.

Table 3.1-1: Allison WWTP Permit Excursions

TSS		Ammonia		BOD	
Dec-07	1	Jan-11	2	Jan-10	1
Dec-08	1	Apr-11	3	Jan-11	1
Feb-09	2	May-11	2		
Jan-10	3	Jun-11	1		
Jan-11	2	Aug-11	4		
May-11	1	Nov-11	1		
		Dec-11	1		
		Feb-12	2		
		Nov-12	1		
		Jan-13	6		
		Feb-13	1		
Total	**10**	**Total**	**24**	**Total**	**2**

3.1.1 Operational Responses Addressing Excursions

The last TSS excursion occurred in May 2011. About the same time, City staff worked with the filter manufacturer to improve performance of the filter to reduce solids carryover. These improvements have reduced TSS levels and consequently stopped TSS excursions.

For the BOD and Ammonia Nitrogen excursions, operators are manually adjusting blowers to increase dissolved oxygen in the aeration basins. Recent ammonia excursions (those that occurred during the last quarter of 2012 and first quarter of 2013) coincide with aeration improvements when one process train was down for construction efforts. Since the completion of the improvements, ammonia excursions have ended.

3.1.2 Capital Improvements Addressing Excursions

The City is completing a capital improvement project for the bar screen and grit removal system which will optimize performance of the clarifier sludge withdrawal system. A change in project scope in January 2013 added the rehabilitation of the aeration system in the west aeration basin train. These aeration system improvements are complete and improved control of ammonia. A summary of the project schedule is shown in Table 3.1-2.

Table 3.1-2: Allison WWTP Capital Improvement Project

Project Name	Allison WWTP Head Works (Phase 1) & Grit System (Phase 2)
Finance Project No.	150725
Design Award	April 2009
Construction Award	September 2012
Construction Finish	March 2014 (aeration improvements completed in February 2013)

3.2 Broadway WWTP

Thirteen (13) excursions occurred at the Broadway WWTP between December 2006 and October 2013. They are summarized in Table 3.2-1.

Table 3.2-1: Broadway WWTP Permit Excursions

Enterococci	
Oct-11	2
Feb-12	1
Mar-12	1
Apr-12	3
Nov-12	1
May-13	1
Jun-13	1
Sep-13	3
Total	**13**

3.2.1 Operational Responses Addressing Excursions

The City is completing the construction of a new treatment plant as discussed in Section 3.2.2 below. The City continues to monitor operations at the existing plant to identify and address the causes of excursions until the new plant comes on line.

3.2.2 Capital Improvements Addressing Excursions

The Broadway treatment plant will be a new facility. Phase I of the plant is scheduled to be on-line in 2014. A summary of the project schedule is shown in Table 3.2-2.

Table 3.2-2: Broadway WWTP Capital Improvement Project

Project Name	New Broadway Wastewater Treatment Plant
Finance Project No.	190130
Design Award	November 2006
Construction Award	October 2009
Construction Finish	FY2016 with beneficial use prior to FY2016

3.3 Greenwood WWTP

Ten (10) excursions occurred at the Greenwood WWTP between December 2006 and October 2013. They are summarized in Table 3.3-1.

Table 3.3-1: Greenwood WWTP Permit Excursions

TSS		Fecal		Peak Flow		Ammonia		Copper	
Aug-11	1	Sep-10	1	Sep-10	1	Feb-08	1	Nov-10	3
May-12	1					Sep-10	1		
						Jul-13	1		
Total	**2**	**Total**	**1**	**Total**	**1**	**Total**	**3**	**Total**	**3**

3.3.1 Operational Responses Addressing Excursions

Operational changes geared toward maintaining a more consistent solids inventory at plant have assisted in limiting the TSS excursions.

The Fecal and Peak Flow excursions (one each) happened during a flood event that occurred on September 18 – 19, 2010, which caused storm water flows from a nearby creek to flood the ultraviolet (UV) disinfection system. After that storm, the City increased the height of the walls around the electrical control room. In addition, the City currently has the capability to raise the controls modules above flood level to protect the UV system and prevent inundation of the controls during flood events.

The February 2008 Ammonia excursion can be linked to operational issues associated with improvements occurring at the WWTP. The September 2010 excursion was due to the September 18 – 19 rain event. Since that time, operators have adjusted digester return flow to better manage ammonia loading. The most recent excursion that occurred in July 2013 coincides with, and is attributable to, two primary clarifiers being off-line for repair work.

When the Copper excursions occurred in November 2010, the City investigated several industrial customers that discharge in the basin. Although the City's investigation did not reveal specific violators, it did develop awareness among the industrial customers of the potential harm caused by illegal discharges to the wastewater collection system and that the additional treatment costs can be passed on to the customer. Copper discharges have since reduced and typically average 0.002 mg/L, which is well below the allowable permitted daily average of 0.013 mg/L.

3.3.2 Capital Improvements Addressing Excursions

At this time no capital improvements are identified as necessary to address permit excursions at the Greenwood WWTP.

3.4 Laguna Madre WWTP

Thirteen (13) excursions occurred at the Laguna Madre WWTP between December 2006 and October 2013. They are summarized in Table 3.4-1.

Table 3.4-1: Laguna Madre WWTP Permit Excursions

Enterococci		TSS		Peak Flow	
Dec-11	1	Sep-09	2	Jul-07	1
Apr-12	1				
May-12	2				
Aug-12	2				
Sep-12	1				
Jun-13	3				
Total	**10**	**Total**	**2**	**Total**	**1**

3.4.1 Operational Responses Addressing Excursions

Operation and maintenance staff currently perform increased maintenance of the sludge removal tubes and the telescoping valves to more effectively remove solids from the clarifier. This additional maintenance has helped reduce the solids blanket which minimizes solids carryover and prevents TSS excursions.

Similarly, the additional maintenance aids in reducing the enterococci excursions. To further improve control of enterococci, staff continues to improve chlorine metering and delivery to facilitate better chlorine dosing and disinfection to further reduce enterococci levels.

The one Peak Flow excursion occurred during a significant rain storm event when 8 inches fell on July 3, 2007 and an additional 4 inches fell on July 4, 2007. In the following year, the City rehabilitated several segments of the gravity sewer mains upstream of the Laguna Madre WWTP. Since then, daily flows, which average 1.68 MGD, are almost half of the plant's Annual Average Flow. Consequently, peak flow is not an issue at this plant.

3.4.2 Capital Improvements Addressing Excursions

The City has begun CIP planning efforts for the Laguna Madre WWTP. Under design are improvements to the chlorine disinfection system which will address enterococci. The design also includes replacement of the bar screen and grit removal system, which will improve control of mixed liquor suspended solids (MLSS) and effluent TSS. A summary of the project schedule is shown in Table 3.4-2.

Table 3.4-2: Laguna Madre WWTP Capital Improvement Project

Project Name	Laguna Madre WWTP Head Works & Bar Screen Improvements
Finance Project No.	E10048
Design Award	August 2012
Construction Award	FY 2014
Construction Finish	FY2015 (projected substantial completion)

3.5 Oso WWTP

Fifty-one (51) excursions occurred at the Oso WWTP between December 2006 and October 2013. They are summarized in Table 3.5-1.

Table 3.5-1: Oso WWTP Permit Excursions

BOD		TSS		Enterococci	
Sep-10	1	Feb-07	1	May-11	1
		Jun-07	2	Jun-11	1
		Aug-08	1	Oct-11	1
		Jan-10	2	Nov-11	1
		Feb-10	2	Dec-11	2
		Sep-10	2	Mar-12	2
		Feb-12	1	Apr-12	4
		Apr-12	2	May-12	4
		May-12	1	Jun-12	4
				Jul-12	2
				Dec-12	2
				Jan-13	3
				Feb-13	2
				Mar-13	1
				Aug-13	3
				Sep-13	3
Total	**1**	**Total**	**14**	**Total**	**36**

3.5.1 Operational Responses Addressing Excursions

The City's response to excursions at the Oso WWTP is focused on needed on-going capital projects. During construction of the CIP listed below, operators continually monitor the existing plant and make necessary operational changes to meet current permit requirements.

3.5.2 Capital Improvements Addressing Excursions

A summary of the project schedule currently underway at the Oso WWTP is shown in Table 3.5-2. The project scope includes the belt filter presses described below. The project completion date may be adjusted as elements are adjusted during construction.

Table 3.5-2: Oso WWTP Capital Improvement Project

Project Name	Oso Water Reclamation Plant Interim Ammonia Improvements (Phase 1)
Finance Project No.	E09007 & 150755
Design Award	August 2010
Construction Award	February 2013
Construction Finish	FY2014 (projected substantial completion)

Oso's belt filter press improvements (as a component of the CIP project listed above titled Interim Ammonia Improvements and designated with Finance Project Numbers E09007 and 150755) became fully operational in May, 2013, resulting in more solids being removed (as demonstrated by the higher volume of sludge being generated) and reductions in TSS readings. The reduced solids inventory subsequently reduces demand for oxygen which aids in avoiding BOD excursions.

The City is in the process of identifying the appropriate capital project that will best address the enterococci excursions and anticipates final identification of the project and associated time frame for design and construction prior to finalization of the Consent Decree negotiations.

3.6 Whitecap WWTP

Thirty-three (33) excursions occurred at the Whitecap WWTP between December 2006 and October 2013. They are summarized in Table 3.6-1.

Table 3.6-1: Whitecap WWTP Permit Excursions

Enterococci		TSS	
Jan-10	1	Jul-11	1
Apr-10	1	Aug-11	2
Sep-10	4		
Dec-10	1		
Jan-11	1		
Feb-11	2		
Jul-11	2		
Aug-11	2		
Feb-12	2		
Mar-12	1		
Apr-12	2		
Jun-12	5		
Jul-12	5		
Apr-13	1		
Total	**30**	**Total**	**3**

3.6.1 Operational Responses Addressing Excursions

To meet enterococci limits, plant operators are currently operating the UV system at maximum capacity. This requires careful planning and regular monitoring to timely replace UV bulbs and conduct preventative maintenance to minimize excursions. The more recent April 2013 excursion is related to a contractor, hired to clean the collection main immediately upstream of the Whitecap WWTP, who allowed significant amounts of cleaning debris to pass into the treatment plant without authorization from the City. Consequently, the plant exceeded an enterococci permit limit.

To meet TSS limits, plant operators are now operating the plant in a solids retention time (SRT) control mode, which reduces solids inventory and allows the operators to better manage solids throughout the treatment process.

3.6.2 Capital Improvements Addressing Excursions

A summary of the project schedule currently underway at Whitecap WWTP is shown in Table 3.6-2. The project scope includes building a new UV disinfection system and providing filtration to improve the effectiveness of the UV disinfection system. The project construction award and completion dates may be adjusted as project elements are adjusted during construction.

Table 3.6-2: Whitecap WWTP Capital Improvement Project

Project Name	Whitecap Wastewater Treatment Plant UV System Upgrade
Finance Project No.	E10179
Design Award	May 2012
Construction Award	FY2014*
Construction Finish	FY2015*

*Construction Award and Finish Dates are subject to change based on final design

Section 4 - Summary

The City takes its responsibility to properly operate its wastewater treatment facilities and prevent permit excursions seriously. When an excursion does occur, the City documents and reports the excursion, evaluates the circumstances, considers its options to avoid future similar excursions, and adjusts its operational activities if necessary and appropriate. In appropriate instances, the City identifies, develops and executes a capital improvement project to prevent future excursions. Accordingly, the City is addressing each permit excursion identified in this memorandum.

Table 4-1 summarizes the identified capital projects discussed in this memorandum.

Table 4-1: Identified Capital Improvement Projects for Wastewater Treatment Plants

WWTP	CIP Title	Finance No.	Anticipated Construction Finish*
Allison	Head Works (Ph1) & Grit System (Ph2)	150725	March 2014
Broadway	New Broadway WWTP	190130	FY2016
Laguna Madre	Head Works & Bar Screen Improvements	E10048	FY2015
Oso	Interim Ammonia Improvements (Ph1)	E09007 150755	FY2014
Oso	TBD	TBD	TBD
Whitecap	UV System Upgrade	E10179	FY2015

* Dates shown are taken from the FY2014 Wastewater Capital Improvement Budget and are subject to change based on project parameters.