

IWD_WQ0002436000_Compliance_20180411_CP
Texas Commission on Environmental Quality
Investigation Report

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Customer: Formosa Plastics Corporation, Texas
Customer Number: CN600130017

Regulated Entity Name: FORMOSA POINT COMFORT PLANT

Regulated Entity Number: RN100218973

Investigation # 1484116

Incident Numbers

287061	287850
293981	281686
284025	283448
281852	283449
291390	291353
284027	293975
287060	281850
293985	292868

Investigator: ZACHARY FUQUA

Site Classification INDUSTRIAL MAJOR

Conducted: 04/11/2018 -- 06/26/2018

SIC Code: 2821

NAIC Code: 325211

Program(s): WASTEWATER

Investigation Type: Compliance Investigation

Location: PLANT LOCATED NE OF INTX OF FM
1593 AND HWY 35

Additional ID(s): TX0085570
WQ0002436000

Address: 201 FORMOSA DR,
POINT COMFORT, TX , 77978

Local Unit: REGION 14 - CORPUS CHRISTI

Activity Type(s): WWCMPL - WW Complaint
WWRECONMAJ - WW Major Recon

Principal(s):

Role

Name

RESPONDENT
RESPONDENT

FORMOSA UTILITY VENTURE LTD
FORMOSA PLASTICS CORPORATION TEXAS

Contact(s):

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Role	Title	Name	Phone
REGULATED ENTITY MAIL CONTACT	VICE PRESIDENT/GENERAL MANAGER	MR RICK CRABTREE	Phone (361) 987-7000 Fax (361) 987-2363
NOTIFIED	ENVIRONMENTAL STAFF	MR PORFIRIO ARGUELLEZ III	Work (361) 987-7645
PARTICIPATED IN	ASSISTANT MANAGER WATER/ WASTE	MR MATT BROGGER	Fax (361) 987-2363 Work (361) 987-7468
PARTICIPATED IN	MANAGER, COMBINED WATER TREATMENT PLANT	MR JOHN HYAK	Work (361) 987-7000
PARTICIPATED IN	ENVIRONMENTAL STAFF	MR PORFIRIO ARGUELLEZ III	Fax (361) 987-2363 Work (361) 987-7645
PARTICIPATED IN	OPERATIONS STAFF 1	MR CHAD LEE	Work (361) 987-7000

Other Staff Member(s):

Role	Name
Investigator	GERARDO ARRAMBIDE
Supervisor	MELANIE EDWARDS
Investigator	BILL ROSS
Investigator	TRAVIS PRATER
QA Reviewer	TRAVIS PRATER

Associated Check List

<u>Checklist Name</u>	<u>Unit Name</u>
WQ COMPLAINT INVESTIGATION	Checklist 2
WQ COMPLIANCE CHECK/RECONNAISSANCE INVESTIGATION	Checklist 1
WQ INVESTIGATION - EQUIPMENT MONITORING AND SAMPLING revised 06/2013	Checklist 3

Investigation Comments:**INTRODUCTION**

The Formosa Point Comfort Plant was investigated by Zack Fuqua on April 11, 2018 and June 12, 22, and 26, 2018 to determine compliance with applicable wastewater treatment regulations. This investigation is considered a wastewater reconnaissance investigation. Prior notification of the investigation was not provided as the investigation was prompted by complaints.

A verbal exit interview, explaining the results of the investigation, was conducted on each day of the investigation with Mr. Porfirio Arguellez (Environmental Staff), Mr. Matt Brogger (Assistant Manager Water/Waste), Mr. John Hyak (Manager, Combined Wastewater Treatment Plant) and Mr. Chad Lee (Operator). Mr. David Sassman, Operations Staff, was also present for a portion of the investigation. A copy of the TCEQ Exit Interview Form was delivered to Mr. Arguellez on April 23, 2018 by email. A revised exit interview was delivered to Mr. Arguellez on August 21, 2018. Exit Interview Forms are included with this report as Attachment No. 1. Based on the findings of this investigation, a Notice of Violation (NOV) letter was issued to facilitate compliance.

GENERAL FACILITY AND PROCESS INFORMATION

Formosa Plastics Corporation, Texas (FPC) operates a large organic chemical manufacturing plant which includes Standard Industrial Classification (SIC) codes 2812 (Alkalies and Chlorine), 2821 (Plastic Materials, Synthetic Resins, and Nonvulcanizable Elastomers), and 2869 (Industrial Organic Chemicals, Not Elsewhere Classified).

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The plant is located on the north side of Lavaca Bay near the City of Point Comfort. FPC holds approximately 1200 acres and manufactures vinyl chloride monomer (VCM) which is then made into polyvinyl chloride (PVC) plastic. Other products manufactured at this plant include chlorine, sodium hydroxide (caustic), ethylene dichloride (EDC), polypropylene, linear low-density polyethylene (LLDPE), high density polyethylene (HDPE), and hydrogen.

Water Quality Permit No. WQ0002436000 was issued on June 10, 2016 and will expire on January 1, 2020. The permit authorizes FPC to discharge via pipeline to Lavaca Bay/Chocolate Bay in Segment No. 2453 of the Bays and Estuaries, through Outfalls 001 and 011; to discharge to unnamed ditches, thence to Cox Lake, thence to Cox Bay, through outfalls 002, 003, 004, and 012; to discharge to Cox Lake, thence Cox Bay, through outfalls 005, 006, 007, 008, 009, and 010; and to discharge directly to Cox Bay in Segment No. 2454 of the Bays and Estuaries, through outfall 013.

The following are descriptions of the discharges from the outfalls authorized by Water Quality Permit No. WQ0002436000: Outfall 001 is authorized to discharge remediated groundwater, fire water, and treated previously monitored effluents (via Outfalls 101 and 201) at an average daily flow not to exceed 9.7 million gallons per day (MGD) and a daily maximum flow not to exceed 15.1 MGD.

Outfall 101 is authorized to discharge treated process wastewater, equipment/facility washdown, stormwater, fire water, and utility wastewaters (including pretreated sanitary wastewaters) at an average daily flow not to exceed 4.4 MGD and a daily maximum flow not to exceed 6.0 MGD. The discharge from this outfall mixes with the discharge from Outfall 201 for discharge through Outfall 001.

Outfall 201 is authorized to discharge treated and combined Ion Exchange Membrane (IEM) wastewater streams, utility wastewaters (including pretreated sanitary wastewaters), equipment/facility washdown, stormwater, fire water, and water treatment wastewaters on a continuous and flow-variable basis. The discharge from this outfall mixes with the discharge from Outfall 101 for discharge through Outfall 001.

Outfalls 002 (non-process areas of PVC and VCM), 003 (utilities block and west end of Vinyl Plant), 004 (west end of combined wastewater treatment plant (CWTP), undeveloped areas between VCM/PVC process areas and the CWTP), 005 (undeveloped areas east of the out of service wastewater treatment plant), are authorized to discharge non-process area stormwater, hydrostatic test water, fire water, non-contact steam condensate, non-contact wash water, potable water, and air conditioner unit condensate on an intermittent and flow-variable basis.

Outfalls 006 (non-process areas on south side of facility), 007 (outside of CWTP process area and outside of truck loading station), 008 (non-process areas between north of East/West Road 28 and 40), 009 (olefins off-site, utility raw water treating, warehouse, maintenance shops, olefins flare, specialty PVC plant, and the raw water pond), 010 (marine tank farm), 011 (dock tank farm), and 012 (contractor's row and northern side of the rail car storage area) are authorized to discharge non-process area stormwater, hydrostatic test water, fire water, non-contact steam condensate, non-contact wash water, potable water, and air conditioner unit condensate on an intermittent and flow-variable basis.

Outfall 013 (Petroleum Coke/Coal Energy Generating Facility (CFB)) is authorized to discharge non-process area stormwater, hydrostatic test water, fire water, non-contact steam condensate, non-contact wash water, potable water, air conditioner unit condensate, and ash truck wash water on an intermittent and flow-variable basis.

Investigator Sampling/Testing

Effluent samples were collected by the investigator at the Outfall 001 sampling spigot for total suspended solids (TSS) on April 11, 2018 (COC No. W001028). In addition, effluent samples were collected by the investigator at the Outfall 001 Sump and Outfall 001 sample spigot for TSS on June 12, 2018 (COC No. W001035). A sample was also collected for characterization at the Outfall 001 sump on June 12, 2018, the Outfall 001 discharge location in Lavaca Bay on June 26, 2018, and from near the mouth of the Lavaca River on June 26, 2018 (COC No. W001029). The sample analysis results and Chain of Custody forms (COCs) are included with this report as Attachment No. 2. The TSS sample results were compliant with the permit limits.

BACKGROUND

The last CCI at the Formosa Point Comfort Plant (Investigation No. 1473883) was conducted on January 25 and 26, 2018. A resolved NOV letter was sent to the permittee on March 23, 2018.

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A complaint investigation was conducted on September 07 and 13, 2016 (Investigation No. 1358247). Violation Track No. 602620 was withdrawn, Track No. 603273 remained outstanding, and an additional alleged violation (Track No. 619884) was cited.

A file review (Investigation No. 1400665) was conducted on April 04, 2017 to determine the compliance of Violations Track No. 603273 and 619884. A Notice of Enforcement (NOE) letter (Order Docket Number 2017-0737-IWD-E) was issued to the permittee for the discharge and failure to clean up pellets from the facility's stormwater outfalls.

A complaint investigation (Investigation No. 1434660) was conducted on July 27, 2017. The complainant alleged that an unauthorized waste stream was being discharged through Outfall 002. The complainant's allegations could not be substantiated, and the facility was sent a General Compliance letter.

A complaint investigation (Investigation No. 1454350) was conducted on September 19, 2017. The complainant alleged that the facility was discharging plastic pellet cuttings out the facility's outfalls. The complainant's allegations could not be substantiated, and the facility was sent a General Compliance letter.

ADDITIONAL INFORMATION

A complaint (Incident No. 281686) was received by the Corpus Christi Region Office on April 02, 2018 alleging the discharge of plastic pellets through Formosa's Outfall 001 into Lavaca Bay. Additional complaints were received by the Corpus Christi Region Office on April 7 (Incident No. 281850) and 10 (Incident No. 281852), 2018 alleging the discharge of pellets relating to the clean-up activities taking place along Cox Creek. In response to the complaints, Mr. Fuqua and Mr. Bill Ross (TCEQ Investigator) surveyed the area surrounding Outfall 001's discharge on April 11, 2018. Outfall 001 discharges directly to Lavaca Bay Segment No. 2453 through an underwater pipe. The investigators noted an unknown floating white debris and at minimum ten plastic pellets in the vicinity of the outfall.

The investigators then proceeded to the Formosa Point Comfort Plant and met with facility representatives. The investigators visited the domestic wastewater treatment plant and observed floating sludge, vegetation, plastic pellets, and other floating solids in the clarifier. The investigators also visited Outfall 006. A discharge was not occurring, and the investigators were not able to determine any recent discharges of plastic pellets. The outfall appeared clean and clear of any floating debris. Facility personnel stated that a contract company is still performing the cleanup of Cox Creek. The investigators then proceeded to internal Outfall 101 and 201's mixing sump, prior to discharge through Outfall 001. A sample was collected at the sump for total suspended solids (TSS). The TSS analysis result was compliant with Outfall 001's permit limitations; however, it was noted that an unknown white debris material (similar in appearance to the material noted in Lavaca Bay) was floating in the sump. Facility personnel stated that after the sump screens, an inline cone filter was installed, and pellets have been observed in the filter during the weekly cleanings. It was also noted that the white debris was observed in the sample collected at the Outfall 001 sampling spigot (past the sump screens). The white debris appeared to be discharged from the sump. Photographs taken during the investigation and submitted by the permittee are included in this report as Attachment No. 4.

On April 12, 2018, the investigator submitted a list of questions stemming from the investigation on April 11, 2018. The permittee submitted a response to the questions on April 30, 2018 (Attachment No. 3). In the response, the permittee stated that the white flaky-like material was identified as containing polyethylene but it was not able to quantify the portion of the material that was polyethylene due to its low concentration. The permittee continued to state that the white flaky material is believed to be a combination of polyethylene and aluminum oxide from the PE process wastewater.

Additional complaints were received by the TCEQ Corpus Christi Region Office on April 17 (Incident No. 283448) and May 08 (Incident No. 283449), 2018 alleging the discharge of pellets from Outfall 001. Additional complaints were received by the TCEQ Corpus Christi Region Office on May 18, 2018 (Incident Nos. 284025 and 284027) alleging the discharge of foam, plastic pellets, and PVC powder from Outfall 001. Texas Parks and Wildlife determined that the foam allegedly discharged from the facility was related to an algal bloom occurring at the time of the complaint.

On May 10, 2018, A meeting was held at the TCEQ Region 14 Office with Formosa representatives to discuss the Exit Interview Form and the April 11, 2018 investigation.

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Mr. Fuqua and Mr. Travis Prater (TCEQ Investigator) visited the Formosa Point Comfort Plant on June 12, 2018, to collect a TSS sample from the Outfall 001 sampling spigot as well as the sump to verify the Outfall 001 sampling spigot was representative of the discharge. The TSS analysis results were compliant with Outfall 001's permit limitations. An additional sample was collected at the sump in an attempt to identify the white debris material. The sample was filtered using two 47mm glass microfiber filters on June 15, 2018 by Dr. Paul Zimba, Professor and Director of the Center for Coastal Studies at Texas A&M Corpus Christi, in the presence of Mr. Fuqua and Mr. Gerardo Arrambide (TCEQ Investigator). Mr. Fuqua retained the filters until they were submitted for analysis to the TCEQ Air laboratory in Austin Texas.

The permittee submitted a second response to questions from the investigator on June 15, 2018 (Attachment No. 3). The responses to the questions indicate that the minimum pellet size produced at the facility can range from 2.6 mm to 3.2 mm. Numerous pellet compositions (base material, additives, and physical properties) have been produced based on customer requirements. In addition, the documentation indicated that the cone filter in the main line was removed on April 26, 2018 and had not been replaced due to two failures resulting from the water pressure in the line overwhelming the cone filter screen. The submitted documentation also indicated the procedures for identifying the origin of found pellets.

Two additional complaints were received by the TCEQ Corpus Christi Region Office on June 21, 2018 (Incident Nos. 287061 and 287060) alleging the discharge of floating solids into both Lavaca Bay and from the stormwater outfalls at Cox Creek. In response to the complaints, Mr. Fuqua investigated the facility's Outfall 006, 007, 008, and 009 on June 22, 2018. Photographs taken by Formosa facility personnel documenting the investigation are included in this report as Attachment No. 4. The investigator's observations are as follows:

It was noted that due to heavy rainfalls prior to the investigation, a washout of the receiving ditch on one side of the gate system had occurred. The investigator observed debris (including plastic pellets) throughout the fine screen located immediately prior to the discharge location of Outfall 006. The fine screen design is not installed in a level line across the facility fence, and it appeared a discharge occurred over the fine screen in at least three locations based on the debris level mark. Facility personnel stated that the screen was cleaned prior to the rainfall on Monday that same week. The investigator also noted a small number of pellets flowing towards the washed out area next to the screens and the facility's fence line. Due to the lack of fine screens above the water mark and the ditch washout, it was apparent pellets and pellet debris were discharged from Outfall 006.

Outfall 007 appeared to only contain a small number of pellets on the facility side of the gate, as well as debris noted on the fine mesh.

Pellets were noted throughout the gate and screen systems of Outfall 008. Facility personnel stated that due to the high flows and buildup of debris, the gates had to be raised. Pellets were noted freely flowing back and forth at the facility fence line due to high water level.

Pellets were noted throughout the screen and gate system of Outfall 009. The investigator witnessed several pellets discharging past the facility's Outfall 009 fence line during the investigation.

On June 09, 2018, an additional complaint was received by the TCEQ Corpus Christi Region Office alleging the discharge of floating solids (pellets) from the facility's stormwater outfalls.

On June 26, 2018, Mr. Fuqua and Arrambide performed a survey of Lavaca Bay and Lavaca River near Lavaca Bay. Four pellets were observed near the discharge of Outfall 001 along with floating white debris. The floating debris was also observed near the shoreline of the Lavaca River. An aerial photograph describing the sites surveyed and photographs taken by the investigator during the on-site investigations are included with this report as Attachment No. 5. A sample was collected in the area around Outfall 001 and the mouth of the Lavaca River shoreline in an attempt to identify if the material is the same as was identified in the Formosa Point Comfort Outfall 001 Sump. In order to prepare the samples for analysis, the samples were filtered using 47mm glass microfiber filters on July 02, 2018 by Dr. Zimba in the presence of Mr. Fuqua and Mr. Arrambide.

The filters of samples originally collected on June 12 and 26 2018 were submitted to the TCEQ Air laboratory for Environmental sample characterization using polarized light microscopy and sample characterization using scanning electron microscope with an energy dispersive x-ray microanalysis spectrometer. The results of the analyses are included with this report as Attachment No. 2. The x-ray spectra of the white debris collected from

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Lavaca Bay and the Lavaca River are consistent with the reference samples collected at the Formosa Point Comfort Sump, indicating that it is likely the same material.

Additional complaints were received by the TCEQ Region 14 Office on August 31, 2018 (Incident Nos. 291390 and 291353).

Three additional complaints alleging the presence of a white powder and plastic pellets in Lavaca Bay were received by the TCEQ Region 14 Office on October 08, 2018 (Incident Nos. 293975, 293981, and 293985). Mr. Fuqua inspected 6 Mile Beach Boat Launch on October 09, 2018. The investigator documented piles of white debris at the high tide line in several locations in the area. Additionally, pellets were occasionally noted in the debris. Mr. Brogger was informed of the findings that same day. Mr. Brogger was familiar with the 6 Mile Beach Boat Launch from a previous clean-up operation and stated that a team would be sent out to inspect and clean the area.

The following Citizen Collected Evidence (CCE) was submitted to the TCEQ Region 14 Office: March 29, 2018 and April 02 and 17, 2018 (Incident 281686); April 07 and 19, 2018 (Incident No. 281850); April 15, 2018 (Incident No. 281852); April 19, 2018 (Incident No. 283448); April 23 and May 08 and 24, 2018 (Incident No. 283449); May 18, 2018 (Incident No. 284025); June 21 and 22, 2018 (Incident No. 287060); June 22, 2018 (Incident No. 287061); July 09, 2018 (Incident No. 287850); August 31, 2018 (Incident No. 291390); October 08 and 09, 2018 (Incident Nos. 293975, 293981, and 293985). The CCE was not used to document violations as it did not adequately document a current discharge of pellets from the outfalls. The complainants who provided the CCE were informed of the decision on October 19, 2018 by letter.

Conclusion

Regarding the complainant's allegations, the investigator was not able to physically observe pellets discharging out of Outfall 001 and pellets were not noted in samples collected from the Outfall 001 sump. Additionally, it was noted that there is the potential for the discharge of pellets from other nearby facility's and roadways leading to pellets in Lavaca Bay. However, floating white debris was observed being discharged at Outfall 001 and pellets and plastic debris were observed having been discharged at Outfall 006, 008, and 009.

NOV Date 10/19/2018 **Method** WRITTEN

**OUTSTANDING ALLEGED VIOLATION(S)
ASSOCIATED TO A NOTICE OF VIOLATION**

Track Number: 690560

Compliance Due Date: 11/19/2018

Violation Start Date: 4/11/2018

30 TAC Chapter 305.125(1)

PERMIT WQ0002436000, Operational Requirements No. 1, Pg. 9

The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained.

Alleged Violation:

Investigation: 1484116

Comment Date: 09/11/2018

Failed to at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained.

Specifically, during the investigation conducted on April 11, 2018, the investigators noted floating sludge, vegetation, plastic pellets, and other floating solids in the domestic wastewater treatment plant's clarifier.

Recommended Corrective Action: The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. Submit documentation to the TCEQ Region 14 Office by the compliance due date demonstrating the corrective actions that have been taken to ensure that the clarifier is being properly operated and maintained.

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Track Number: 690575

Compliance Due Date: 11/19/2018

Violation Start Date: 4/11/2018

2D TWC Chapter 26.121(a)(1)

30 TAC Chapter 305.125(1)

PERMIT WQ0002436000, Eff. Limits and Monitoring RQMTs; No. 3

There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

Alleged Violation:

Investigation: 1484116

Comment Date: 10/03/2018

Failed to prevent the unauthorized discharge of floating solids.

Specifically, during the investigation conducted on April 11, 2018, floating white debris of various sizes (generally smaller than one millimeter) was observed in a sample collected from Outfall 001. The floating white debris was also noted at the Outfall 001 discharge location in Lavaca Bay. During the investigation conducted on June 12, 2018, floating white debris was again observed in a sample collected from Outfall 001. On June 26, 2018, the floating white debris was also observed at the Outfall 001 discharge location in Lavaca Bay as well as the shoreline near the mouth of Lavaca River.

In addition, during the investigation on June 22, 2018, the investigator observed debris (including plastic pellets) throughout the fine screen located immediately prior to the discharge location of Outfall 006. The fine screen design is not installed in a level line across the facility fence, and it appeared a discharge occurred over the fine screen in at least three locations based on the debris level mark. In addition, the investigator documented a washout of the receiving ditch on one side of the gate system had occurred during the rain event. Several pellets and debris were noted in the flow prior to the facility fence line. The debris line on the fine screen as well as the washout indicate that a discharge of pellets and floating white debris had occurred at Outfall 006. In addition, pellets were noted throughout the gate and screen systems of Outfall 008. Facility personnel stated that due to the high flows and buildup of debris, the gates had to be raised. Pellets were noted freely flowing back and forth at the facility fence line of Outfall 008 due to the high water level. Pellets and debris were also noted throughout the screen and gate system of Outfall 009. The investigator witnessed several pellets discharging past the facility's fence line at Outfall 009. Facility representatives stated that heavy rainfall earlier that week led to the conditions noted by the investigator. In addition, the investigator observed plastic pellets and floating white debris that same day in Cox Creek downstream of the facility.

Recommended Corrective Action: The permittee shall ensure that there is no discharge of floating solids from the facility. The permittee shall submit documentation to the TCEQ Region 14 Office demonstrating corrective actions that have been and will be taken to prevent the recurrence of the discharge of plastic pellets and floating white debris. The permittee shall also conduct clean-up activities for the plastic pellets and floating white debris, as necessary.

Additional Issues

Description

Item 3

Additional Comments

During the investigations on April 11, 2018 and June 12, 22, and 26, 2018, the investigators did not note a discharge of pellets from Outfall 001. However, there appeared a potential for the discharge of pellets at Outfall 001, especially as the cone filter was not in operation. The permittee should confirm that no discharge of plastic pellets occurs from Outfall 001.


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Signed 
Environmental Investigator

Date 10-19-18

Signed 
Supervisor

Date 10/19/18

Attachments: (in order of final report submittal)

☐ Enforcement Action Request (EAR)
☐ Letter to Facility (specify type) : _____
Investigation Report
2 Sample Analysis Results
☐ Manifests
☐ Notice of Registration

☐ Maps, Plans, Sketches
5 Photographs
3 Correspondence from the facility
☒ Other (specify) :
1-Exit Interview Forms
4-Facility submitted Photographs

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



Attachment 1

Exit Interview Form

Customer

Formosa Plastics Corporation, Texas - CN600130017

Formosa Utility Venture LTD - CN602650954

Regulated Entity

Formosa Point Comfort Plant - RN100218973

WQ

Investigation No. 1484116

WQ0002436000

Point Comfort, Texas , 77978

Investigator: Zack Fuqua

Investigation Dates: April 11, June 12, 22, and 26, 2018

Zachary Fuqua

From: Zachary Fuqua
Sent: Tuesday, August 21, 2018 4:47 PM
To: Porfirio Arguellez III/FTEHSF
Subject: Revised Exit Interview Form
Attachments: Revised Exit Interview.pdf

Good afternoon,

The Revised Exit Interview Form: Potential Violations is being provided as an attachment to this email to ensure that the issues were communicated clearly during our telephone conversation on 08/03/2018. If there are questions about the information contained in the form, or if a meeting at the TCEQ regional office is requested to discuss the contents of the Exit Interview Form, contact me as soon as possible. Please reply to this email, with the attachment, to indicate your receipt.

Thanks,

Zack Fuqua
Environmental Investigator
TCEQ Region 14 Corpus Christi
6300 Ocean Drive, Unit 5839, Suite 1200
Corpus Christi, Texas 78412-5839
(361) 825-3130 ph. (361) 825-3101 fax
Zack Fuqua
Environmental Investigator
TCEQ Region 14 Corpus Christi
6300 Ocean Drive, Unit 5839, Suite 1200
Corpus Christi, Texas 78412-5839
(361) 825-3130 ph. (361) 825-3101 fax

TCEQ EXIT INTERVIEW FORM: Potential Violations and/or Records Request						
Regulated Entity/Site Name	Formosa Point Comfort Plant			TCEQ Add. ID No. RN No (optional)	WQ0002436000	
Investigation Type	Comp.	Contact Made In-House (Y/N)	N	Purpose of Investigation	Complaint	
Regulated Entity Contact	Mr. Porfirio Arguellez			Telephone No.	361-987-7645	Date Contacted 08/03/2018
				FAX #/Email address	PorfirioA@fpc.fpcusa.com	FAX/Email date 08/21/2018

NOTICE: The information provided in this form is intended to provide clarity to issues that have arisen during the investigation process between the TCEQ and the regulated entity named above and does not represent final TCEQ findings related to violations. Any potential or alleged violations discovered after the date on this form will be communicated to the regulated entity representative prior to the issuance of a notice of violation or enforcement. Conclusions drawn from this investigation, including additional violations or potential violations discovered (if any) during the course of this investigation, will be documented in a final investigation-report.

Issue			For Records Request, identify the necessary records, the company contact and date due to the agency. For Alleged and Potential Violation issues, include the rule in question with the clearly described potential problem. Other type of issues: fully describe.			
No.	Type ¹	Rule Citation (if known)	Description of Issue			
1	AV	Permit	Failed to prevent the discharge of floating solids (white debris material) at Outfall 001.			
2	AV	Permit	Failed to properly operate and maintain the domestic WWTP. Specifically, floating sludge and other solids were noted in the clarifier.			
3	AV	Permit	Failed to prevent the discharge of floating solids (plastic pellets and white debris material) from Outfall 006, 008, and 009.			
4	O	Permit	Additional Issue: Potential discharge of pellets through Outfall 001.			

Note 1: Issue Type Can Be One or More of: AV (Alleged Violation), PV (Potential Violation), O (Other), or RR (Records Request)

Did the TCEQ document the regulated entity named above operating without proper authorization?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Did the investigator advise the regulated entity representative that continued operation is not authorized?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Document Acknowledgment. Signature on this document establishes only that the regulated entity (RE) representative received a copy of this document and associated continuation pages on the date noted. If contact was made by telephone, the document will be sent via FAX or Email to RE; therefore, the RE signature is not required.		
/Zack Fuqua/	08/21/2018	
Investigator Name (Signed & Printed)	Date	Regulated Entity Representative Name (Signed & Printed)
		Date

If you have questions about any information on this form, please contact your local TCEQ Regional Office. Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.

White Copy: Regulated Entity Representative Yellow Copy: TCEQ

TCEQ EXIT INTERVIEW FORM: Potential Violations and/or Records Request					
Regulated Entity/Site Name	Formosa Point Comfort Plant			TCEQ Add. ID No. RN No (optional)	
Investigation Type	Comp.	Contact Made In-House (Y/N)	N	Purpose of Investigation	Complaint
Regulated Entity Contact	Mr. Porfirio Arguellez			Telephone No.	361-987-7645
				FAX #/Email address	PorfirioA@fpc.fpcusa.com
					Date Contacted
					FAX/Email date
					04/23/2018

NOTICE: The information provided in this form is intended to provide clarity to issues that have arisen during the investigation process between the TCEQ and the regulated entity named above and does not represent final TCEQ findings related to violations. Any potential or alleged violations discovered after the date on this form will be communicated to the regulated entity representative prior to the issuance of a notice of violation or enforcement. Conclusions drawn from this investigation, including additional violations or potential violations discovered (if any) during the course of this investigation, will be documented in a final investigation-report.

Issue		For Records Request, identify the necessary records, the company contact and date due to the agency. For Alleged and Potential Violation issues, include the rule in question with the clearly described potential problem. Other type of issues: fully describe.	
No.	Type ¹	Rule Citation (if known)	Description of Issue
1	AV	Permit	Failed to prevent the discharge of floating solids (plastic pellets and debris) at Outfall 001.
2	AV	Permit	Failed to properly operate and maintain the domestic WWTP. Specifically, pellets and floating sludge was noted in the Clarifier.

Note 1: Issue Type Can Be One or More of: AV (Alleged Violation), PV (Potential Violation), O (Other), or RR (Records Request)

Did the TCEQ document the regulated entity named above operating without proper authorization?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Did the investigator advise the regulated entity representative that continued operation is not authorized?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Document Acknowledgment. Signature on this document establishes only that the regulated entity (RE) representative received a copy of this document and associated continuation pages on the date noted. If contact was made by telephone, the document will be sent via FAX or Email to RE; therefore, the RE signature is not required.

/Zack Fuqua/	04/23/2018	
Investigator Name (Signed & Printed)	Date	Regulated Entity Representative Name (Signed & Printed)
		Date

If you have questions about any information on this form, please contact your local TCEQ Regional Office. Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



Attachment 2

Sample Analysis Results

Customer

Formosa Plastics Corporation, Texas - CN600130017

Formosa Utility Venture LTD - CN602650954

Regulated Entity

Formosa Point Comfort Plant - RN100218973

WQ

Investigation No. 1484116

WQ0002436000

Point Comfort, Texas , 77978

Investigator: Zack Fuqua

Investigation Dates: April 11, June 12, 22, and 26, 2018

INVESTIGATION SAMPLE RESULTS

Formosa Point Comfort Plant - RN100218973

Sample Collection Dates: April 11 and June 12, 2018

Permit ID: WQ0002436000

Sampling Location & Parameter	Measured Value	Authorized Limit	Type Sample	COC ID No.	Primary Source of Wastewater or Waste
Laboratory Data					Industrial
Laboratory: TCEQ Sugarland Laboratory					
Date: April 11, 2018					
Total Suspended Solids (mg/L)	42	115	Grab	W001028-01	
Date: June 12, 2018					
Total Suspended Solids (mg/L)	42	115	Grab	W001035-01	
Total Suspended Solids (mg/L)	35	115	Grab	W001035-02	
Total Suspended Solids (mg/L)	63	115	Grab	W001035-03	
Total Suspended Solids (mg/L)	<5	115	Grab	W001035-04 (Field Blank)	

Investigation No. 1484116



12553 West Airport Blvd.
Sugar Land, Texas 77478
Phone: (281) 269-8300
Fax: (281) 269-8307
Contact:
Rajan Geevarghese - Work Leader

4/23/2018 11:27:56AM

Hi Zachary,

The sample results for COC # W001028-01, Sample # AA76502 are attached to this email within this PDF document.

The Staff of the TCEQ Sugar Land Laboratory appreciates your business and continued support.

A copy of the Chain of Custody will be sent in a separate email.

Please contact us at (281) 269-8300 if you are in need of assistance.

Thank you,

Texas Commission on Environmental Quality
Sugar Land Laboratory
Sugar Land, Texas 77478
(281) 269-8300 (Main)
(281) 269-8307 (Fax)



AA76502

Chain of Custody Record

W 001028

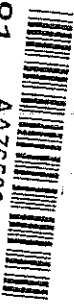


Send to:
☐ Houston Laboratory
Phone: 281-457-5229
☒ Sterland
Lab

Region: 14 Organization #: 6314 PCA Code: _____ Program: Water Quality
Sampler Name: Zack Fugua (phone) _____ Sampler Signature: Zack Fugua
Sampler phone number: 361-825-3150 E-Mail ID: Zachary.Fugue@TCEQ.Texas.gov

LAB USE ONLY

01 AA76502



LAB USE ONLY		Sample ID		Sampling		Comp	Grab	Matrix L = Liquid S = Solid	No. of Containers	Containers* Preservatives**		BOD	CBOD	TSS	NH ₃ -N	E. Coli	Remarks
		Date	Time														
-01	AA76502	4/11/18	2:40pm				V	L	1								
-02																	
-03																	
-04																	
-05																	
-06																	
-07																	
-08																	

RELINQUISHED BY

DATE TIME

RECEIVED BY

DATE TIME

Zack Fugua

4/11/18 3:38

[Signature]

4/13/18 10:00

Shipper Name: Fedex

Shipper Number: 811758838157

*Containers: P = Plastic G = Clear Glass A = Amber Glass V = VOA Vials O = Other _____
**Preservative 1 = Ice 2 = H₂SO₄ 3 = HCl 4 = HNO₃ 5 = N₂ 6 = Other _____

FOR LAB USE ONLY

Received on Ice: ☒ Y ☐ N
Temperature: 2.4 °C
Preserved: ☒ Y ☐ N
COC Seal: ☒ Y ☐ N
Seals Intact: ☒ Y ☐ N



12553 West Airport Blvd.
Sugar Land, Texas 77478
Phone: (281) 269-8300
Fax: (281) 269-8307
Contact:
Rajan Geevarghese - Work Leader

4/23/2018 11:27:56AM

Hi Zachary,

The sample results for COC # **W001028-01**, Sample # **AA76502** are attached to this email within this PDF document.

The Staff of the TCEQ Sugar Land Laboratory appreciates your business and continued support.

A copy of the Chain of Custody will be sent in a separate email.

Please contact us at (281) 269-8300 if you are in need of assistance.

Thank you,

Texas Commission on Environmental Quality
Sugar Land Laboratory
Sugar Land, Texas 77478
(281) 269-8300 (Main)
(281) 269-8307 (Fax)



12553 West Airport Blvd.
Sugar Land, Texas 77478
Phone: (281) 269-8300
Fax: (281) 269-8307
Contact:
Rajan Geevarghese - Work Leader

LELAP Certificate #04167
Page 2 of 2

TCEQ Laboratory Report of Analysis

4/23/2018 11:27:56AM

TCEQ Sample #:	AA76502	Chain of Custody #:	W001028-01	Region:	14
Program:	Water Quality Monitoring	Sample Matrix:	LIQUID	Organization #:	6314
Sample Collected:	04/11/2018 14:40	Collected By:	zachary.fuqua@tceq.texas.gov	Work #:	
Sample Received:	04/13/2018			Permit #:	
Sample Depth:	CL2R:	Field pH:	Conductivity:		
Collection Site:	--Grab				

CONSTITUENT	RESULT	QUAL	UNIT	ANALYSIS DATE	METHOD
Total Suspended Solids	42		mg/L	04/17/2018 09:40	SM 2540-D-1997
Volatile Suspended Solids	19		mg/L	04/17/2018 09:40	SM 2540-E-1997

End of Report for TCEQ Sample Number: AA76502

Laboratory Approval:

Apr 23, 2018

This report contains results generated by the TCEQ Sugar Land Laboratory. All solid results are calculated on a dry weight basis. The results reported meet the requirements of the current NELAP Standard.

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<https://tceq.sharepoint.com/sites/ow/planning/hl/SitePages/Home.aspx>



AA77090

Chain of Custody Record



AA77093

W 001035



Send to:
☐ Houston Laboratory
Phone: 281-457-5229
☒ Secluded
Lab

Region: 14 Organization #: 14 PCA Code: 14 Program: Water Quality
Sampler Name: Zack Fugua (Agent) Sampler Signature: Zack Fugua
Sampler phone number: 361-888-3130 E-Mail ID: Zackary.Fugua@TCEQ.Texas.Gov

LAB USE ONLY

Sample ID	Sampling		Comp	Grab	Matrix L = Liquid S = Solid	No. of Containers	Containers*						Remarks
	Date	Time					Preservatives**	BOD	CBOD	TSS	NH ₃ -N	E. Coli	
AA77090	06/13/18	14:45	✓	L	1								
AA77091	06/13/18	14:44	✓	L	1								
AA77092	06/13/18	14:44	✓	L	1								
AA77093	06/13/18	14:45	✓	L	1								
	05												
	06												
	07												
	08												

RELINQUISHED BY

DATE TIME

RECEIVED BY

DATE TIME

FOR LAB USE ONLY

Zack Fugua

06/13/18 3:30

[Signature] 06/13/18 14:45Shipper Name: FedExShipper Number: 8117-5883-7724

*Containers: P = Plastic G = Clear Glass A = Amber Glass V = VOA Vials O = Other _____
1 = Ice 2 = H₂SO₄ 3 = HCl 4 = HNO₃ 5 = O₂ 6 = Other _____

Received on Ice: ☒ Y ☐ N
Temperature: 1.2 °C
Preserved: ☐ Y ☒ N
COC Seal: ☒ Y ☐ N
Seals Intact: ☒ Y ☐ N



12553 West Airport Blvd.
Sugar Land, Texas 77478
Phone: (281) 269-8300
Fax: (281) 269-8307
Contact:
Rajan Geevarghese - Work Leader

LELAP Certificate #04167

Page 4 of 8

TCEQ Laboratory Report of Analysis

6/26/2018 4:47:56PM

TCEQ Sample #: AA77090	Chain of Custody #: W001035-01	Region: 14
Program: Water Quality Monitoring	Sample Matrix: LIQUID	Organization #:
Sample Collected: 06/12/2018 14:45	Collected By: zachary.fuqua@tceq.texas.gov	Work #:
Sample Received: 06/14/2018		Permit #:

Sample Depth:	CL2R:	Field pH:	Conductivity:
---------------	-------	-----------	---------------

Collection Site: --GRAB

CONSTITUENT	RESULT	QUAL	UNIT	ANALYSIS DATE	METHOD
Total Suspended Solids	42		mg/L	06/18/2018 09:15	SM 2540-D-1997
Volatile Suspended Solids	14		mg/L	06/18/2018 09:15	SM 2540-E-1997

End of Report for TCEQ Sample Number: AA77090

Laboratory Approval:

Jun 26, 2018

This report contains results generated by the TCEQ Sugar Land Laboratory. All solid results are calculated on a dry weight basis. The results reported meet the requirements of the current NELAP Standard.

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Please fill out our customer feedback form at the following web address:

<https://tceq.sharepoint.com/sites/ow/planning/hl/SitePages/Home.aspx>



12553 West Airport Blvd.
Sugar Land, Texas 77478
Phone: (281) 269-8300
Fax: (281) 269-8307
Contact:
Rajan Geevarghese - Work Leader

LELAP Certificate #04167

Page 5 of 8

TCEQ Laboratory Report of Analysis

6/26/2018 4:47:56PM

TCEQ Sample #: AA77091	Chain of Custody #: W001035-02	Region: 14	
Program: Water Quality Monitoring		Organization #:	
Sample Collected: 06/12/2018 14:44	Sample Matrix: LIQUID	Work #:	
Sample Received: 06/14/2018	Collected By: zachary.fuqua@tceq.texas.gov	Permit #:	
Sample Depth:	CL2R:	Field pH:	Conductivity:
Collection Site: --GRAB			

CONSTITUENT	RESULT	QUAL	UNIT	ANALYSIS DATE	METHOD
Total Suspended Solids	35		mg/L	06/18/2018 09:15	SM 2540-D-1997
Volatile Suspended Solids	14		mg/L	06/18/2018 09:15	SM 2540-E-1997

End of Report for TCEQ Sample Number: AA77091

Laboratory Approval:

Jun 26, 2018

This report contains results generated by the TCEQ Sugar Land Laboratory. All solid results are calculated on a dry weight basis. The results reported meet the requirements of the current NELAP Standard.

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12553 West Airport Blvd.
Sugar Land, Texas 77478
Phone: (281) 269-8300
Fax: (281) 269-8307
Contact:
Rajan Geevarghese - Work Leader

LELAP Certificate #04167

Page 6 of 8

TCEQ Laboratory Report of Analysis

6/26/2018 4:47:56PM

TCEQ Sample #: AA77092	Chain of Custody #: W001035-03	Region: 14	
Program: Water Quality Monitoring	Sample Matrix: LIQUID	Organization #:	
Sample Collected: 06/12/2018 14:44	Collected By: zachary.fuqua@tceq.texas.gov	Work #:	
Sample Received: 06/14/2018		Permit #:	
Sample Depth:	CL2R:	Field pH:	Conductivity:
Collection Site: --GRAB			

CONSTITUENT	RESULT	QUAL	UNIT	ANALYSIS DATE	METHOD
Total Suspended Solids	63		mg/L	06/18/2018 09:15	SM 2540-D-1997
Volatile Suspended Solids	17		mg/L	06/18/2018 09:15	SM 2540-E-1997

End of Report for TCEQ Sample Number: AA77092

Laboratory Approval:

Jun 26, 2018

This report contains results generated by the TCEQ Sugar Land Laboratory. All solid results are calculated on a dry weight basis. The results reported meet the requirements of the current NELAP Standard.

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<https://tceq.sharepoint.com/sites/ow/planning/hl/SitePages/Home.aspx>



12553 West Airport Blvd.
Sugar Land, Texas 77478
Phone: (281) 269-8300
Fax: (281) 269-8307
Contact:
Rajan Geevarghese - Work Leader

LELAP Certificate #04167

Page 7 of 8

TCEQ Laboratory Report of Analysis

6/26/2018 4:47:56PM

TCEQ Sample #: AA77093	Chain of Custody #: W001035-04	Region: 14	
Program: Water Quality Monitoring	Sample Matrix: LIQUID	Organization #:	
Sample Collected: 06/12/2018 14:45	Collected By: zachary.fuqua@tceq.texas.gov	Work #:	
Sample Received: 06/14/2018		Permit #:	
Sample Depth:	CL2R:	Field pH:	Conductivity:
Collection Site: --GRAB			

CONSTITUENT	RESULT	QUAL	UNIT	ANALYSIS DATE	METHOD
Total Suspended Solids	<5		mg/L	06/18/2018 09:15	SM 2540-D-1997
Volatile Suspended Solids	<5		mg/L	06/18/2018 09:15	SM 2540-E-1997

End of Report for TCEQ Sample Number: AA77093

Laboratory Approval:

Jun 26, 2018

This report contains results generated by the TCEQ Sugar Land Laboratory. All solid results are calculated on a dry weight basis. The results reported meet the requirements of the current NELAP Standard.

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Please fill out our customer feedback form at the following web address:

<https://tceq.sharepoint.com/sites/ow/planning/hl/SitePages/Home.aspx>

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Zack Fuqua
Region 14

Date: July 12, 2018

From: Frank Martinez 
Air Laboratory
Monitoring Division

Subject: Sample Receipt Confirmation

Samples were recently submitted to the Monitoring Division. Please consider this a confirmation of sample receipts.

The attached **Request Number 1807003** Log-in Report and the associated Request for Analysis are for your information. If you have any questions or corrections concerning these forms please contact me at (512) 239-1716 or by email at *Frank.Martinez@tceq.texas.gov*. Please reference the Request Number and/or Laboratory Sample Number in any correspondence.

The Laboratory Analysis Results will be sent upon completion.

Attachments

FM/hw

Log-in Report

Request Number: 1807003

Project Leader: Frank Martinez

Region: T14

Date Received: 7/10/2018

Facility(ies) Sampled	City	County	Facility Type
Formosa Point Comfort Plant	Point Comfort	Calhoun	Manufacturing

Sample(s) Received

Field ID Number: A Laboratory Sample Number: 1807003-001RS Sampled by: Zack Fuqua
Sampling Site: Suspected Source Date & Time Sampled: 06/15/18 14:30:00 Valid Sample: Yes
Comments: Filtered material on glass microfiber filter from water sample collected from Outfall 001 sump.

Field ID Number: B Laboratory Sample Number: 1807003-002RS Sampled by: Zack Fuqua
Sampling Site: Suspected Source Date & Time Sampled: 06/15/18 14:31:00 Valid Sample: Yes
Comments: Filtered material on glass microfiber filter from water sample collected from Outfall 001 Sump.

Field ID Number: C Laboratory Sample Number: 1807003-003 Sampled by: Zack Fuqua
Sampling Site: Lavaca River Date & Time Sampled: 07/02/18 15:12:00 Valid Sample: Yes
Comments: Filtered material on glass microfiber filter from water sample from collected Lavaca River.

Field ID Number: D Laboratory Sample Number: 1807003-004 Sampled by: Zack Fuqua
Sampling Site: Outfall to Lavaca Bay Date & Time Sampled: 07/02/18 15:15:00 Valid Sample: Yes
Comments: Filtered material on glass microfiber from water sample collected from Outfall discharge.

Requested Laboratory Procedure(s):

Analysis: AP007MIC

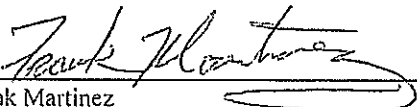
Environmental Sample Characterization using Polarized Light Microscopy

Analysis: AP008MIC

Sample Characterization using Scanning Electron Microscope with an Energy Dispersive X-Ray Microanalysis Spectrometer

For questions please contact the laboratory manager at (512) 239-1716.

Laboratory Manager:


Frank Martinez

Date:

7/11/18



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Air Laboratory
PO Box 13087, MC 165, Austin, TX 78711-3087

Request for Analysis

ACL Number: 1807003		Project Name, Number, Leader Frank Martinez		Page 1 of 1	
Potential Source: FORMOSA POINT COMFORT PLANT; RN100218973 Plastic Particulates		TCEQ Region: 14		Enter Required Analysis Code	
City: Point Comfort	County: Calhoun	Sample Types		Analysis Codes	
Sampling Site Information: Water samples were collected by TCEQ R14 Investigator, Zack Fuqua, on 06/12/2018 (Reference Samples A and B) and 06/26/2018 (Samples C and D). The samples were filtered using 47mm glass microfibre filters on 06/15/2018 (Reference Samples A and B) and 07/02/2018 (Samples C and D) by Dr. Paul Zimba, Professor and Director of the Center for Coastal Studies Texas A&M Corpus Christi, in the presence of Zack Fuqua and Gerardo Arambide, TCEQ R14 Investigator.		Sample Types		Analysis Codes	
Collected By: Zack Fuqua		Sample Types		Analysis Codes	
Phone Number, Mailing Address, E-mail Address: 361-825-3130; 6300 Ocean Drive, Ste 1200, CC, TX 78412; zachary.fuqua@tceq.texas.gov		Sample Types		Analysis Codes	
Field Sample ID or Sample Description		Date Sampled	Time Sampled	Sample Type	Comments
Reference Sample A: Filtered material on glass microfibre filter from water sample collected from Outfall 001 Sump.		6/15/2018	14:30	RS	Water sample was originally collected by TCEQ R14 Investigator, Zack Fuqua, on 06/12/2018 at 1446 hours from Outfall 001 sump prior to discharge. The filter sample was collected from the water sample on 06/15/2018.
Reference Sample B: Filtered material on glass microfibre filter from water sample collected from Outfall 001 Sump.		6/15/2018	14:31	RS	Water sample was originally collected by TCEQ R14 Investigator, Zack Fuqua, on 06/12/2018 at 1446 hours from Outfall 001 sump prior to discharge. The filter sample was collected from the water sample on 06/15/2018.
Sample C: Filtered material on glass microfibre filter from water sample collected from Lavaca River.		7/2/2018	15:12	FS	Water sample was originally collected by TCEQ R14 Investigator, Zack Fuqua, on 06/26/2018 at 1200 hours from Lavaca River. The filter sample was collected from the water sample on 07/02/2018.
Sample D: Filtered material on glass microfibre filter from water sample collected from Outfall discharge.		7/2/2018	15:15	FS	Water sample was originally collected by TCEQ R14 Investigator, Zack Fuqua, on 06/26/2018 at 1200 hours from Outfall 001 discharge to Lavaca River. The filter sample was collected from the water sample on 07/02/2018.
Relinquished by: Zachary Fuqua		Date/Time: 7/10/18 14:30		Received by: [Signature]	
Relinquished by: [Signature]		Date/Time: 7/10/18 11:05		Received by: [Signature]	

7/25/2018

Texas Commission on Environmental Quality

Laboratory and Quality Assurance Section

P.O. Box 13087, MC-165

Austin, Texas 78711-3087

(512) 239-1716

Laboratory Analysis Results

Request Number: 1807003

Request Lead: Frank Martinez

Region: T14

Date Received: 7/10/2018

Facility(ies) Sampled	City	County	Facility Type
Formosa Point Comfort Plant	Point Comfort	Calhoun	Manufacturing

Sample(s) Received

Field ID Number: A Laboratory Sample Number: 1807003-001RS Sampled by: Zack Fuqua
Sampling Site: Suspected Source Date & Time Sampled: 06/15/18 14:30:00 Valid Sample: Yes
Comments: Filtered material on glass microfiber filter from water sample collected from Outfall 001 sump.

Field ID Number: B Laboratory Sample Number: 1807003-002RS Sampled by: Zack Fuqua
Sampling Site: Suspected Source Date & Time Sampled: 06/15/18 14:31:00 Valid Sample: Yes
Comments: Filtered material on glass microfiber filter from water sample collected from Outfall 001 Sump.

Field ID Number: C Laboratory Sample Number: 1807003-003 Sampled by: Zack Fuqua
Sampling Site: Lavaca River Date & Time Sampled: 07/02/18 15:12:00 Valid Sample: Yes
Comments: Filtered material on glass microfiber filter from water sample from collected Lavaca River.

Field ID Number: D Laboratory Sample Number: 1807003-004 Sampled by: Zack Fuqua
Sampling Site: Outfall to Lavaca Bay Date & Time Sampled: 07/02/18 15:15:00 Valid Sample: Yes
Comments: Filtered material on glass microfiber from water sample collected from Outfall discharge.

Requested Laboratory Procedure(s):

Analysis: AP007MIC

Environmental Sample Characterization using Polarized Light Microscopy

Analysis: AP008MIC

Sample Characterization using Scanning Electron Microscope with an Energy Dispersive X-Ray Microanalysis Spectrometer

Please note that this analytical technique is not capable of measuring all compounds which might have adverse health effects. For questions on the analytical procedures please contact the laboratory manager at (512) 239-1716.

Analyst:



Jeffrey Ketteman

Date: 7/25/18

Laboratory Manager:



Frank Martinez

Date: 7/27/18

Laboratory Analysis Results

Request Number: 1807003

Analysis Code: AP007MIC & AP008MIC

Sample Number: 1807003-001RS

Analysis began: 7/17/2018

Analyst: Jeffrey Kettelman

SOP: AP007MIC Analysis completed: 7/25/2018

Sample A was a bulk sample. Unknown white pellets accounted for less than 5% of the particle coverage. Plant material accounted for over 80% of the particle coverage. White pellets are irregular shaped agglomerates and vary in size from 75 to 160 microns. Starch grains are adhered to the white pellets. Other particles present in quantities less than 5% included paper fibers.

Sample Number: 1807003-001RS

Analysis began: 7/17/2018

Analyst: Jeffrey Kettelman

SOP: AP008MIC Analysis completed: 7/25/2018

Energy dispersive spectroscopy (EDS) analysis of a white pellet particle showed elements carbon, oxygen, sodium, and chlorine. The primary peak in the x-ray spectrum was carbon.

EDS analysis of a second white pellet particle showed elements carbon, oxygen, sodium, silicon, sulfur, chlorine, and calcium. The primary peak in the x-ray spectrum was carbon.

Sample Number: 1807003-002RS

Analysis began: 7/17/2018

Analyst: Jeffrey Kettelman

SOP: AP007MIC Analysis completed: 7/25/2018

Sample B was a bulk sample. Unknown white pellets accounted for less than 5% of the particle coverage. Plant material accounted for over 80% of the particle coverage. White pellets are irregular shaped agglomerates and vary in size from 80 to 250 microns. Starch grains are adhered to the white pellets. Other particles present in quantities less than 5% included plant fibers.

Sample Number: 1807003-002RS

Analysis began: 7/17/2018

Analyst: Jeffrey Kettelman

SOP: AP008MIC Analysis completed: 7/25/2018

EDS analysis of a white pellet particle showed elements carbon, oxygen, sodium, silicon, and chlorine. The primary peak in the x-ray spectrum was carbon.

EDS analysis of a second white pellet particle showed elements carbon, oxygen, silicon, chlorine, and calcium. The primary peak in the x-ray spectrum was carbon.

Sample Number: 1807003-003

Analysis began: 7/17/2018

Analyst: Jeffrey Kettelman

SOP: AP007MIC Analysis completed: 7/25/2018

Sample C was a bulk sample. Unknown white pellets accounted for between 5 and 20% of the particle coverage. White pellets are irregular shaped agglomerates and vary in size from 130 to 370 microns. Starch grains are adhered to the white pellets. The sample contained between 5 and 20% plant fibers, between 61 and 70% plant material.

TCEQ laboratory customer support may be reached at Frank. Martinez@tceq.texas.gov

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Laboratory Analysis Results

Request Number: 1807003

Analysis Code: AP007MIC & AP008MIC

Sample Number: 1807003-003

Analysis began: 7/17/2018

Analyst: Jeffrey Kettelman

SOP: AP008MIC Analysis completed: 7/25/2018

EDS analysis of a white pellet particle showed elements carbon, oxygen, and silicon. The primary peak in the x-ray spectrum was carbon.

EDS analysis of a second white pellet particle showed elements carbon, oxygen, aluminum, and silicon. The primary peak in the x-ray spectrum was carbon.

These x-ray spectra of white pellet are consistent with the reference samples 1807003-001RS and 1807003-002RS.

Sample Number: 1807003-004

Analysis began: 7/17/2018

Analyst: Jeffrey Kettelman

SOP: AP007MIC Analysis completed: 7/25/2018

Sample D was a bulk sample. Unknown white pellets accounted for over 80% of the particle coverage. White pellets are irregular shaped agglomerates and vary in size from 170 to 710 microns. Starch grains are adhered to the white pellets.

Sample Number: 1807003-004

Analysis began: 7/17/2018

Analyst: Jeffrey Kettelman

SOP: AP008MIC Analysis completed: 7/25/2018

EDS analysis of a white pellet particle showed elements carbon, oxygen, magnesium, aluminum, silicon, calcium, and iron. The primary peak in the x-ray spectrum was carbon.

EDS analysis of a second white pellet particle showed elements carbon, oxygen, aluminum, silicon, and calcium. The primary peak in the x-ray spectrum was carbon.

These x-ray spectra of white pellet are consistent with the reference samples 1807003-001RS and 1807003-002RS.

TCEQ laboratory customer support may be reached at Frank. Martinez@tceq.texas.gov

The TCEQ is an equal opportunity/affirmative action employer. The agency does not allow discrimination on the basis of race, color, religion, national origin, sex, disability, age, sexual orientation or veteran status. In compliance with the Americans With Disabilities Act, this document may be requested in alternate formats by contacting the TCEQ at (512) 239-0010, (Fax 512-239-0055), or 1-800-RELAY-TX (TDD), or by writing P.O. Box 13087, Austin, Texas 78711-3087.

Laboratory Analysis Results

Request Number: 1807003

Analysis Code: AP008MIC

Qualifier Notes:

ND - not detected

NQ - concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilutions).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Compound and/or results is tentatively identified.

F - Established acceptance criteria was not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

TCEQ laboratory customer support may be reached at Frank.Martinez@tceq.texas.gov

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Chain of Custody Record

001029

Send to:
☐ Houston Laboratory
 Phone: 281-457-5229
☒ TCEQ

Region: WA Organization #: 361-845-3130 PCA Code: WA
 Sampler Name: Zach Foy Sampler Signature: Zach Foy
 Sampler phone number: 361-845-3130 E-Mail ID: zach.foya@tceq.texas.gov

Sample ID	Sampling		Comp	Grab	Matrix L = Liquid S = Solid	No. of Containers	Containers* Preservatives**	Analyses Requested					Remarks
	Date	Time						BOD	CBOD	TSS	NH ₃ -N	E. Coll	
-01	06/19/18	12:00p		V	L	1							Sample filtered on 06/19
-02	06/19/18	12:00p		V	L	1							Sample filtered on 07/02/18
-03	06/19/18	12:00p		V	L	1							Sample filtered on 07/02/18
-04													
-05													
-06													
-07													
-08													

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Zach Foy	07/02/18				
Shipper Name: _____ Shipper Number: _____					
*Containers: P = Plastic G = Clear Glass A = Amber Glass V = VOA Vials O = Other _____ **Preservatives: 1 = Ice 2 = H ₂ SO ₄ 3 = HCl 4 = HNO ₃ 5 = Na ₂ S ₂ O ₃ 6 = Other _____					
FOR LAB USE ONLY Received on Ice: <input type="checkbox"/> Y <input type="checkbox"/> N Temperature: _____ °C Preserved: <input type="checkbox"/> Y <input type="checkbox"/> N COC Seal: <input type="checkbox"/> Y <input type="checkbox"/> N Seals Intact: <input type="checkbox"/> Y <input type="checkbox"/> N					

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



Attachment 3

Facility Correspondence

Customer

Formosa Plastics Corporation, Texas - CN600130017
Formosa Utility Venture LTD - CN602650954

Regulated Entity

Formosa Point Comfort Plant - RN100218973

WQ

Investigation No. 1484116

WQ0002436000

Point Comfort, Texas , 77978

Investigator: Zack Fuqua

Investigation Dates: April 11, June 12, 22, and 26, 2018

Zachary Fuqua

From: Porfirio Arguellez III/FTEHSF <PorfirioA@ftpc.fpcusa.com>
Sent: Monday, April 30, 2018 3:56 PM
To: Zachary Fuqua
Cc: Matt Brogger/FTEHSF
Subject: RE: TCEQ Visit FPC-TX: 4.11.18 (Business Confidential)

Importance: High

Zach,

My apologies for not responding sooner as I was out of the office last week. Please see the below responses to the questions which you asked in the email below dated April 12, 2018.

Have these particles been seen at the facility before?

During a recent maintenance activity of the sump (TZT-07), the sump screens were cleaned. The debris from the screens was collected in a roll-off box, white particles were observed in the roll off box. A sample of this material was taken to the Lab for testing, results indicated that the material was not organic, but inorganic. The Lab could not conclude what the inorganic material was, but concluded it was not organic in nature.

As a follow-up to the TCEQ visit of 04-11-18 a sample was collected from the sump. We used a fine mesh screen to collect from the sump for ~ three hours. The water & solids were collected in a one liter glass jar. You could visibly see some very small "flaky-like" white particles suspended within the solids. The sample container was taken to the Lab for analysis. The white flaky-like TSS material was identified as containing polyethylene, however, the Lab could only confirm its presence, but not quantify the portion of the white flaky-like TSS material that was polyethylene. The remaining material is > 99.99 vol% of the one liter sample appears to contain primarily biological materials and inorganic salts (but contains no plastic).

If so do you know what they are and where they may be coming from?

From the recent maintenance activity referenced above, we could not confidently conclude what the particles were, or where they came from. We could only conclude that -they were inorganic. It is possible that these particles are from our Biological tertiary treatment system. Specifically, the bi-media filters we use to "polish" the treated wastewater contains activated carbon, garnet and sand which may contribute to the inorganic content in the sump. In addition, due to the hardness of the water within the cooling water systems, we will see some calcium carbonate. And finally, from our Inorganic Treatment system will have some calcium sulfate.

With respect to the sample collected after the 04/11/18 TCEQ visit, the white flaky TSS material showed to have the presence of polyethylene. The remaining solid material that comprise the TSS would be as described in the paragraph above. We believe that the polyethylene portion of the white flaky TSS material is likely coming from the PE process waste water and the remaining portion of white flaky TSS material may be aluminum oxide (creating the white appearance) which also comes from the PE process waste water. The PE process waste water is treated through the biological treatment system in CWTP and most of the TSS is removed but the final effluent (internal outfall 101) can contain up to 1149 lbs/day (daily average) of TSS.

Secondly, have you performed any comparisons between the current sample collection point (sink) and the mixing well to verify that the line collects a representative sample, specifically when it comes to solids?

The TSS number in the mixing well (TZT-07 sump) was 35 ppm and the similar time sample at the sink was 40 ppm. Therefore, the TSS number in the line (sink) appears to be representative of the TSS number in the mixing well (sump). However, solids floating on the top of the mixing well (sump) are not likely to make it into the pump discharge

line. The suction of the pumps at TZT-07 are ~ 10 feet deep. While it is possible some of the floating solids (non-TSS) may be pulled through the pumps to the discharge line, it would be a very minimal amount and easily noticed in a routine sample.

I have also received the exit interview form you sent last week. I will review with management on my end and get that back to you as well. Should you have any questions and or concerns, feel free to contact me.

Thanks,

Porfirio Arguellez III



Formosa Plastics'

Environmental Specialist II-Water

Environmental Dept.

Point Comfort, Texas 77978

Office: 361-987-7645

From: Zachary Fuqua [mailto:Zachary.Fuqua@Tceq.Texas.Gov]

Sent: Thursday, April 12, 2018 3:03 PM

To: Porfirio Arguellez III/FTEHSF

Subject: RE: TCEQ Visit FPC-TX: 4.11.18 (EMAIL 2 of 2)

Good afternoon,

We noted that the sample we collected for TSS yesterday had white particles floating in it similar to those that we saw in the bay.

Have these particles been seen at the facility before?

If so do you know what they are and where they may be coming from?

Secondly, have you performed any comparisons between the current sample collection point (sink) and the mixing well to verify that the line collects a representative sample, specifically when it comes to solids?

Feel free to contact me if you have any other thoughts or concerns.

Thanks,

Zack Fuqua

Environmental Investigator

TCEQ Region 14 Corpus Christi

6300 Ocean Drive, Unit 5839, Suite 1200

Corpus Christi, Texas 78412-5839

(361) 825-3150 ph. (361) 825-3101 fax

Zachary Fuqua

From: Matt Brogger/FTEHSF <MattB@ftpc.fpcusa.com>
Sent: Friday, June 15, 2018 8:52 AM
To: Zachary Fuqua
Cc: Porfirio Arguellez III/FTEHSF
Subject: FW: Response to TCEQ Questions 06.13.18 Privileged and Confidential Attorney Work Product
Attachments: RE: TCEQ Visit FPC-TX: 4.11.18 ; Response to TCEQ Questions 06.13.18.pdf

Zach

Attached are the answer to your questions.

If you have any questions call me as Porfirio is still out and will be next week also.

Sorry for the delay.

Matt Brogger
Formosa Plastics Corp. TX
EHS Department
Phone: (361) 987-7468
Fax: (361) 987-2363

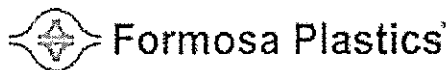
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From: Porfirio Arguellez III/FTEHSF [mailto:PorfirioA@ftpc.fpcusa.com]
Sent: Wednesday, April 11, 2018 3:11 PM
To: Zachary Fuqua <Zachary.Fuqua@Tceq.Texas.Gov>; Bill Ross <bill.ross@tceq.texas.gov>
Cc: Matt Brogger/FTEHSF <MattB@ftpc.fpcusa.com>
Subject: TCEQ Visit FPC-TX: 4.11.18 (EMAIL 2 of 2)

Gentlemen,
Please see the rest of the photos taken today during your visit.

Thanks,

Porfirio Arguellez III



Environmental Specialist II-Water

Environmental Dept.

Point Comfort, Texas 77978

Office: 361-987-7645

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1. What is the mesh size of the screens for both the cone filter and the sump?

See attached document (TITAN FCI Screen Selection PDF) Attachment 1.

2. When were the sump screens and the cone filter installed?

The sump was screen installed on 11/8/17, cone filter on the main line was installed on 6/20/17 and the cone filter on the bypass was installed on 8/23/17. The cone filter in the main line was removed on 4/26/18 has not been replaced due to two failures resulting from the water pressure in the line overwhelming the cone filter screen and causing the damage shown in attachment 2. It should be noted that the sump screens have sustained no damage and have been intact and in place since 11/8/17. Additionally, the cone filter is still in the bypass and FPC is studying new designs for the main line to replace the cone filters.

3. What are the procedures for cleaning the cone filter and sump screens? At what frequency does this occur?

The cone filter cleaning was done by backwashing the filter through a drain into another screen for disposal. The bypass line was opened (the bypass has a cone filter as well), the backpressure from the bypass backwashed the main line. The cleaning cycle for the cone filter was weekly until the filter was removed. The sump screen cleaning involves installing the duel filter before pulling the screen to be cleaned. Once the screen to be cleaned is pulled it is washed off into a dewatering box. The cleaning cycle for the sump screens is quarterly.

4. Is flow stopped during the cleanings? If so, how long can flow be stopped and has this been exceeded during any cleaning events?

Flow is not stopped during the cleanings. It needs to be noted that there is always sump screens in place during the sump screen cleanings as well as a cone filter was in place on the bypass during the backwash of the main line. Refer to the process above in #3 for both cleanings.

5. During the meeting, it was mentioned that the cone filter has been damaged in the past. How many times has it been damaged? What did damage entail? Do you have any photographs of the damaged cone filters?

The cone filter was damaged on two separate occasions. The damage consisted of the filter section of the cone being removed completely. See Attachment 2 for picture.

6. It appears the cone filter has a bypass line. When is this line used and how often?

The bypass was used during the cleaning of the filter on the main discharge line. As noted above the bypass line has a cone filter. In addition it is used when there are issues with the control valve and/or level in the discharge sump.

7. What are the sizes of the pellets produced at this facility? Have different sizes and compositions been made in the past?

FPC does not directly measure or record physical pellet size, however, based on die plate perforations the minimum size of the pellets can range from 2.6 mm to 3.2 mm. In the present and past, there have been numerous compositions produced based upon customer requirements and orders. Differences between compositions include base material, additives, and physical properties of the material.

8. Has the Bay Monitoring Report ever produced data showing the ingestion of pellets by marine life or the collection during plankton tows?

The Bay Monitoring Report has never shown any data indicating the ingestion of pellets by marine life. With respect to the collection during plankton tows, pellets have been collected during bay monitoring activities.

9. What are the procedures for the analysis and identification of “found” pellets to verify the pellet origin is not Formosa Point Comfort? Can you provide an example analysis?

The procedures for identification are as follows and an example analysis can be found in Attachment A.

- a. Visual Identification: We visually compare unknown pellets with known samples retrieved from the units here on site. We examine 1. Size; 2. Shape; 3. Color; 4. Cut; etc. to make preliminary decisions for follow up determinations;
- b. Differential Scanning Calorimetry (DSC): DSC instrumentation can be used to provide characteristics of unknown material such as: 1. Melt temp; 2. Crystallization temperature; 3. Heat flux; etc. Polyethylene and polypropylene have different melt and crystallization temperatures aiding in identification. Also of benefit is that the technique requires a very small amount of material to test and is non-destructive.
- c. Fourier Transform Infrared Spectroscopy (FTIR): FTIR requires that you prepare the unknown sample to a thin film. The film is then analyzed producing a spectrum resultant of the chemical characteristics of the compound/mixture. This spectrum (or “fingerprint”) may be evaluated against known spectra and a value for “fit” may be assigned. The higher the percentage, the more similar the 2 compounds are.
- d. X-Ray Fluorescence Spectroscopy (XRF): XRF is an instrumented technique to determine metal/mineral content in unknown sample. Again, the sample is prepared into a film and exposed to varying X-Ray radiation. The metal/mineral fluoresce at specific wavelengths that are then quantified. This information can then be used to identify/quantify additives and catalyst residuals aiding in identification.

Additional requested records:

1. Sump screen and cone filter cleaning and maintenance records for the past year.

There is no formal cleaning or maintenance records for the sump screen or cone filter. We have however attached photos of the sump screen cleaning. There are no photos of the cone filter cleaning as it back flushed within the pipe.

2. A copy of the most current yearly Bay Monitoring report.

Electronic copies of the most recent report were provided to Ms. Melanie Edwards by email on 06/08/2018.

3. Sample analysis results from the April 11, 2018 TCEQ Investigation.

See Attachment 4 for lab results.

4. Lab results for the analysis of the white debris material found in the sump. What percentage of the TSS is estimated to be this material?

We could not quantify the white debris material found in the sump but we are confident it is less than 1ppm. However, because the quantity is so small we cannot confidently estimate the percentage of TSS this material would make up. See attached email (TCEQ Visit FPC-TX: 4.11.18).

Attachment 1

Mesh size for the Cone Filter and Sump Screen

Titan Flow Control - Perforation and Mesh Configurations

(3)

Table 2: Standard Mesh and Perforated Configurations (60)

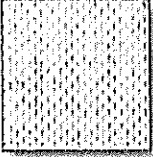
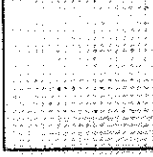
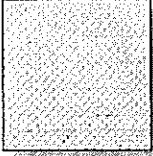
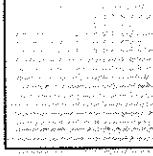
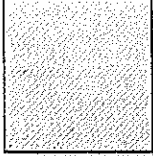
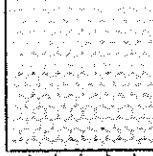
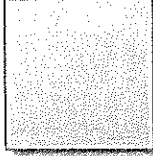
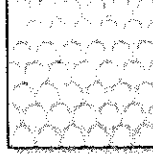
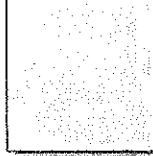
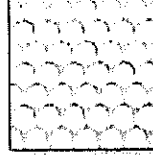
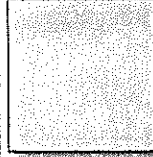
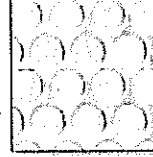
	20 Mesh 51.8% Open Area .036 Openings (914 mm / 914 µm) .014 Wire Diameter		1/32" Diameter (.031 in / .787 mm) .055 Centers 28% Open Area 320 holes/sq. in. Straight Line
	40 Mesh 44.8% Open Area .0223 Openings (566 mm / 566 µm) .011 Wire Diameter		1/64" Diameter (.0156 in / .396 mm) .056 Centers 36% Open Area 225 holes/sq. in. Straight Line
	80 Mesh 36% Open Area .015 Openings (381 mm / 381 µm) .010 Wire Diameter		1/16" Diameter (.0625 in / 1.587 mm) .032" Centers 41% Open Area 112 holes/sq. in. Staggered Line
	100 Mesh 33.9% Open Area .0097 Openings (246 mm / 246 µm) .007 Wire Diameter		1/8" Diameter (.125 in / 3.175 mm) .0316" Centers 40% Open Area 33 holes/sq. in. Staggered Line
	200 Mesh 36% Open Area .0075 Openings (190 mm / 190 µm) .005 Wire Diameter		5/32" Diameter (.1562 in / 3.96 mm) .0316" Centers 65% Open Area 33 holes/sq. in. Staggered Line
	400 Mesh 30.3% Open Area .0055 Openings (139 mm / 139 µm) .0045 Wire Diameter		1/4" Diameter (.25 in / 6.35 mm) .0316" Centers 58% Open Area 12 holes/sq. in. Staggered Line

Table 3: Optional Mesh Configurations (6)

Mesh (Linear inch)	Wire Dia (in)	Hole Openings (in)	Open Area (%)
20	.016	.014	46.2
20	.023	.027	29.2
30	.010	.023	48.9
30	.014	.019	21.5
40	.009	.016	41.0
40	.011	.014	31.4
50	.009	.011	29.3
60	.0065	.010	17.5
60	.0090	.0087	17.2
80	.0055	.0070	31.1
80	.0060	.0065	27.0
100	.0040	.0060	36.0
100	.0045	.0055	30.1
120	.0037	.0046	30.7
130	.0034	.0043	31.1
140	.0029	.0042	24.9
150	.0026	.0041	37.4
160	.0025	.0038	36.4
170	.0024	.0035	35.1
180	.0023	.0031	31.2
200	.0021	.0029	33.6
325	.0011	.0020	42.0
400	.0010	.0015	36.0
500	.0010	.0010	25.0

Table 4: Optional Perf. Configurations (6)

Hole Diameter (in)	Centers (in)	Open Area (%)
.027	.05 Straight	23.0
.045	.066 Straight	36.0
.045	.088 Staggered	24.0
1/16	7/64 Staggered	30.0
1/16	1/8 Staggered	22.5
5/64	7/64 Staggered	44
5/64	1/8 Staggered	36
3/32	1/32 Staggered	11.0
3/32	3/16 Staggered	25.0
1/8	1/4 Straight	12.7
1/8	5/32 Staggered	26.0
1/8	5/16 Staggered	51.0
1/8	7/32 Staggered	30.0
1/8	1/4 Staggered	23.0
7/64	3/16 Staggered	54.0
5/16	1/4 Staggered	34.0
1/16	1/4 Staggered	50.0
1/16	5/16 Staggered	13.0
3/16	1/2 Straight	10.0
7/16	5/16 Staggered	45.0
1/4	3/8 Staggered	40.0
1/4	1/2 Staggered	23.0
1/4	1/2 Straight	20.0
5/16	7/16 Staggered	46.0
3/8	1/2 Staggered	52.0
3/8	7/8 Staggered	40.0
7/16	5/8 Staggered	45.0
1/2	1 1/16 Staggered	48.0
1/2	3/4 Staggered	40.0

Notes:

- Titan FC's standard construction material for all screens and baskets is Type 304 Stainless Steel. Other materials (e.g. Type 316 and Inconel) are available upon request. Please consult factory for pricing and availability for non-stock materials.
- Table 2 represents Titan FC's most commonly stocked mesh and perforation arrangements. A large variety of special mesh and perforation options are available. Please consult the factory or your local sales representative regarding the specific requirements of your application.
- Table 3 & 4 represent optional mesh and perf configurations which are not routinely stocked but can be furnished upon request. Please consult factory for pricing and availability.
- For mesh-lined screens or baskets, 5/32" perf is most commonly used for outer support (backing). If other backing is required, please specify at time of order.



Attachment 2

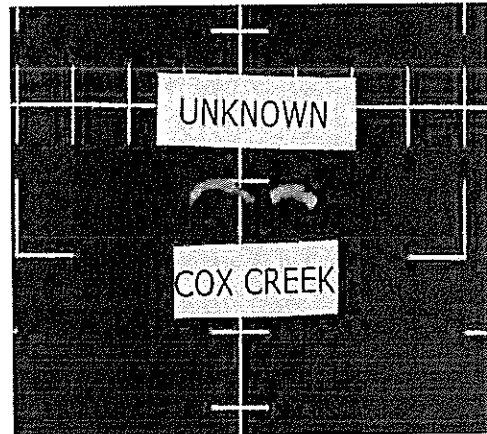
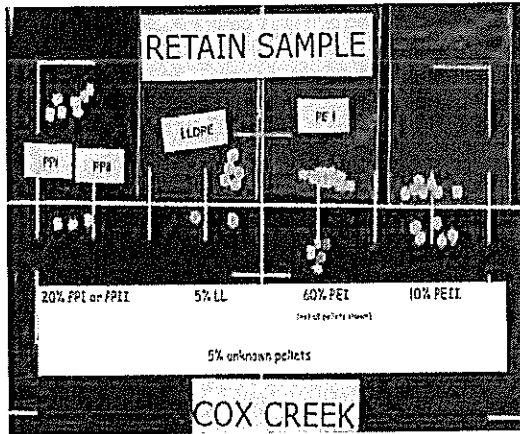
Cone Filter Damage

Attachment 3

(2 pages)

Example Analysis – Visual Identification and FTIR Results

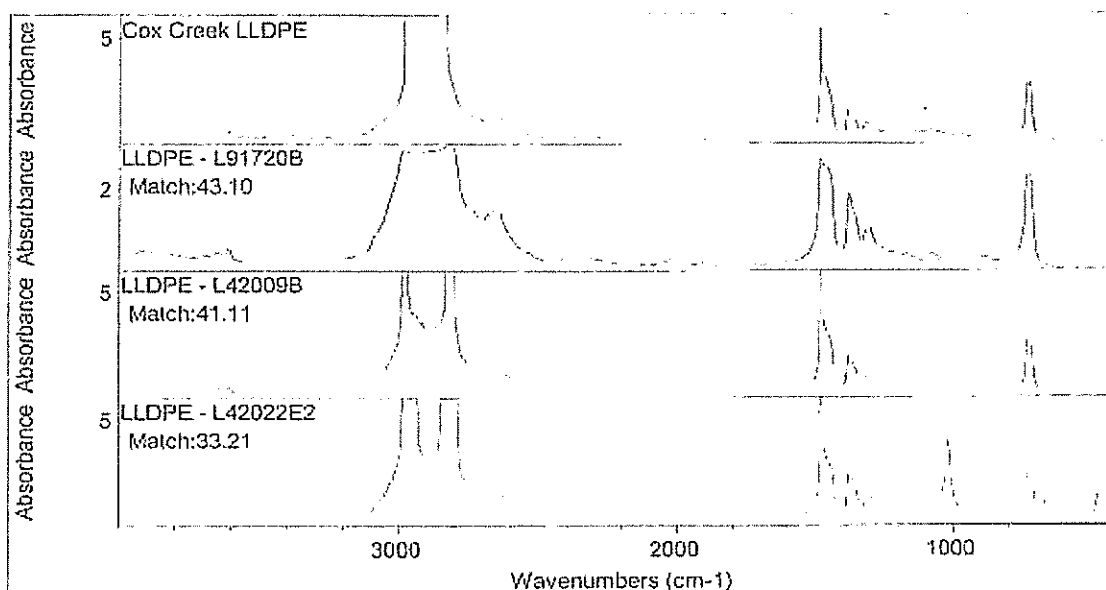
Visual Inspection and Categorization



Identification	PP, %	LLDPE, %	PE1, %	PE2, %	Unknowns, %	Total, %
Visual	20	5	60	10	5	100
FTIR Spectrum Matching % to FPC Products	NA	43	66	58	NA	NA

FTIR Results

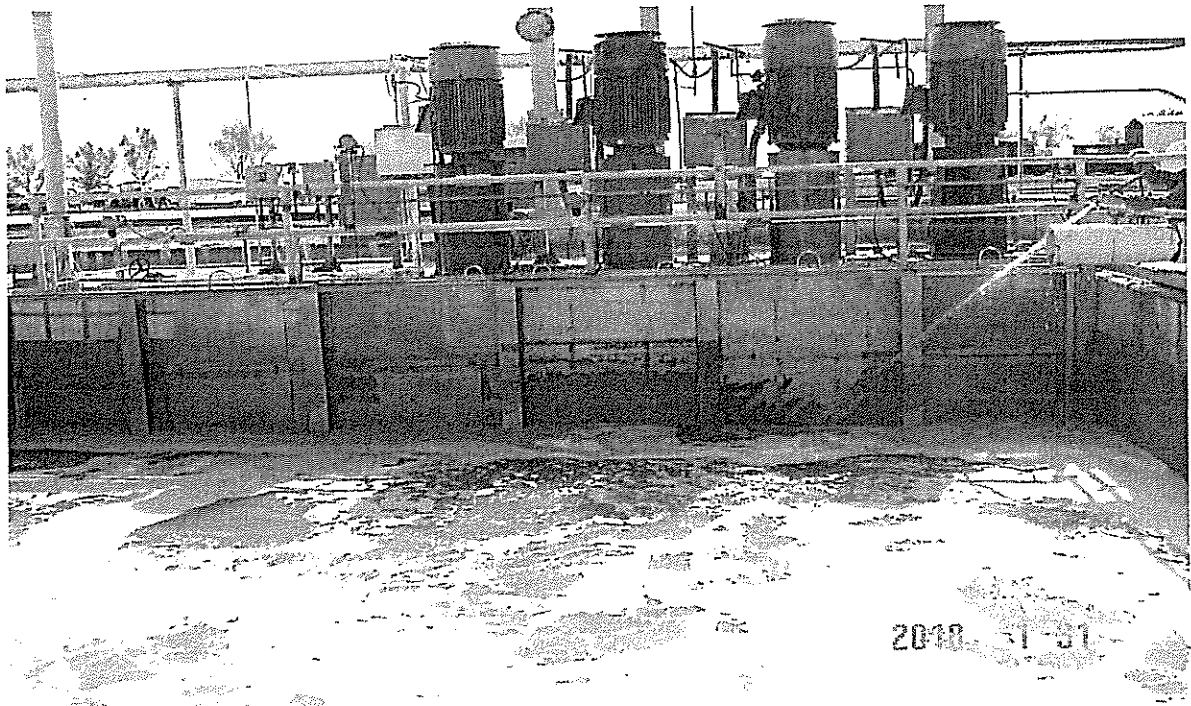
Search results for: Cox Creek LLDPE
 Date: Wed Apr 19 10:24:14 2017 (GMT-05:00)
 Search algorithm: Correlation
 Regions searched: 3999.81-400.00



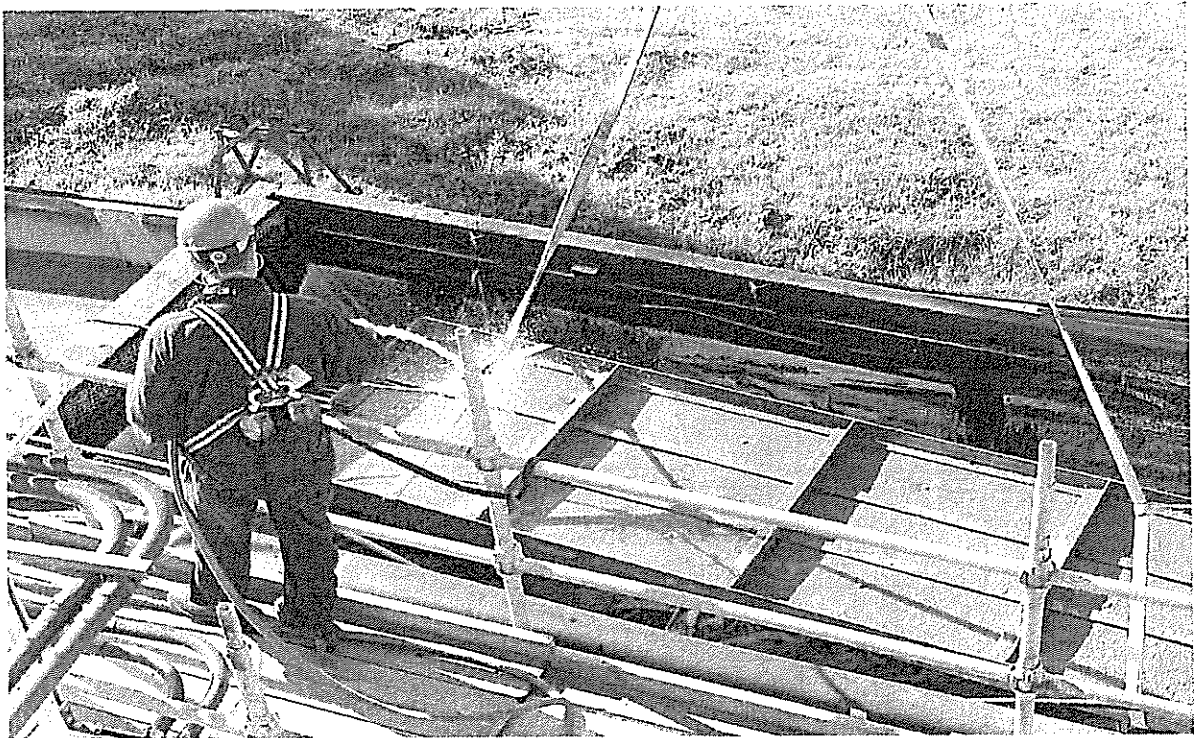
Search results list of matches

	Index	Match	Compound Name	Library Name
1	1	43.10	LLDPE - L91720B	FPC LL
2	17	41.11	LLDPE - L42009B	FPC LL
3	10	33.21	LLDPE - L42022E2	FPC LL
4	16	30.42	LLDPE - L42009E2	FPC LL
5	12	28.39	LLDPE - L42009PE	FPC LL
6	18	28.26	LLDPE - L42009A	FPC LL
7	11	28.08	LLDPE - L42022B	FPC LL
8	8	27.81	LLDPE - L62009H	FPC LL
9	15	26.94	LLDPE - L42009F	FPC LL
10	14	23.65	LLDPE - L42009H	FPC LL
11	2	22.25	LLDPE - L91507H	FPC LL
12	9	21.98	LLDPE - L62009E2	FPC LL
13	5	20.57	LLDPE - L91507A	FPC LL
14	13	20.37	LLDPE - L42009M	FPC LL
15	3	20.21	LLDPE - L91507E3	FPC LL

Sump Screen Cleaning 1/31/18

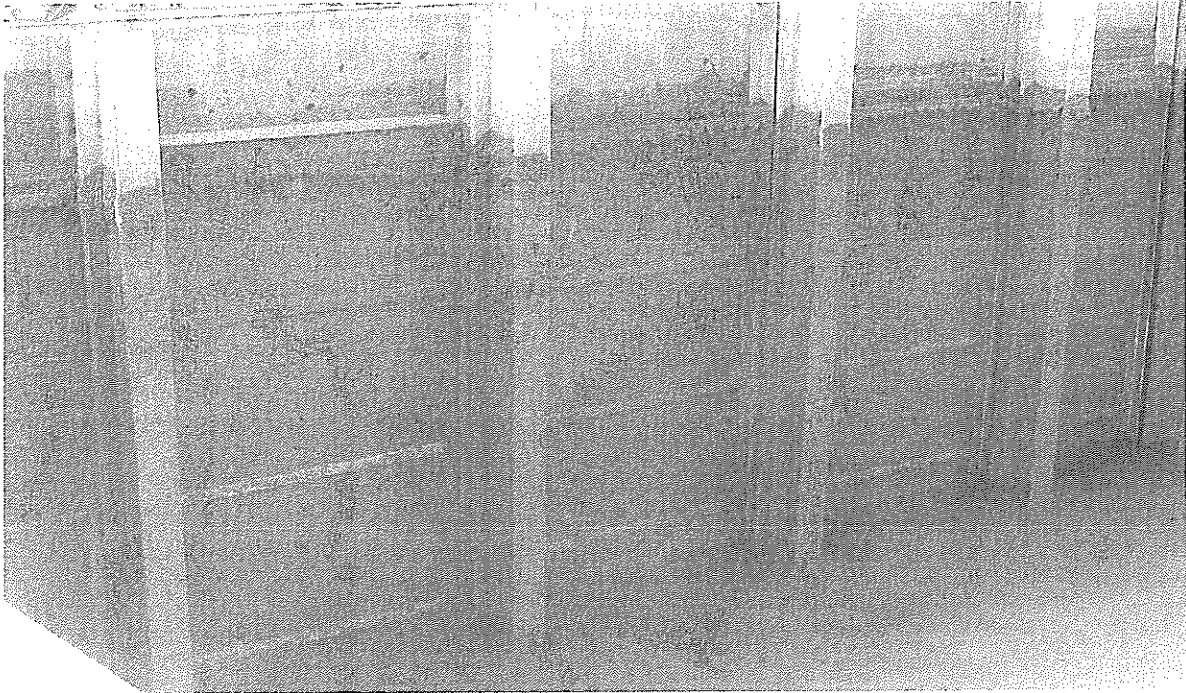


Sump Screen Cleaning 3/12/18

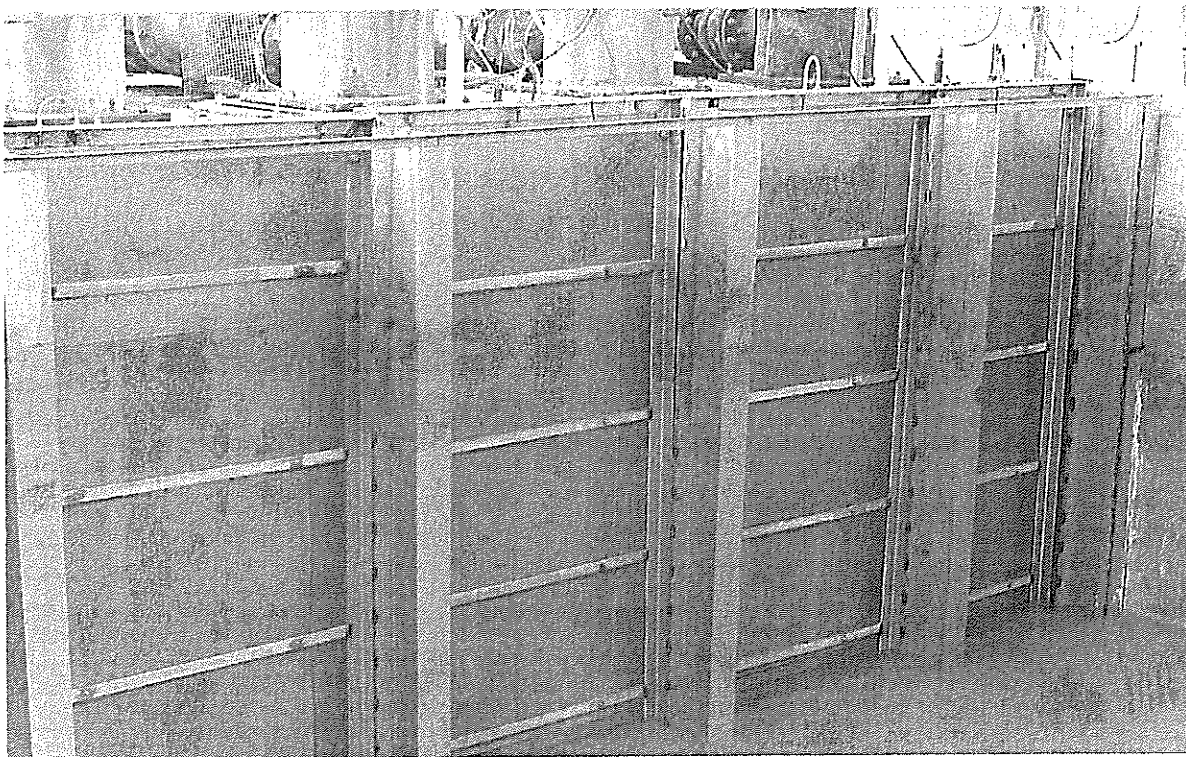


Sump Screen Cleaning 4/04/18

Before



After



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



Attachment 4

Facility Submitted Investigation Photographs

Customer

Formosa Plastics Corporation, Texas - CN600130017

Formosa Utility Venture LTD - CN602650954

Regulated Entity

Formosa Point Comfort Plant - RN100218973

WQ

Investigation No. 1484116

WQ0002436000

Point Comfort, Texas , 77978

Investigator: Zack Fuqua

Investigation Dates: April 11, June 12, 22, and 26, 2018

Zachary Fuqua

From: Porfirio Arguellez III/FTEHSF <PorfirioA@ftpc.fpcusa.com>
Sent: Wednesday, April 11, 2018 3:11 PM
To: Zachary Fuqua; Bill Ross
Cc: Matt Brogger/FTEHSF
Subject: TCEQ Visit FPC-TX: 4.11.18 (EMAIL 1 of 2)
Attachments: Effluent Sump.JPG; Sanitary 1.JPG; Sanitary 2.JPG; Sanitary 3.JPG; Effluent Sump (photo 1).JPG; Effluent Sump (photo 2).JPG; Effluent Sump Sampling Point.JPG

Gentlemen,

Please see the attached photos taken today during your visit. Essentially not all photos can be sent in one email so I will send in a second email as well.

Thanks,

Porfirio Arguellez III



Formosa Plastics

Environmental Specialist II-Water

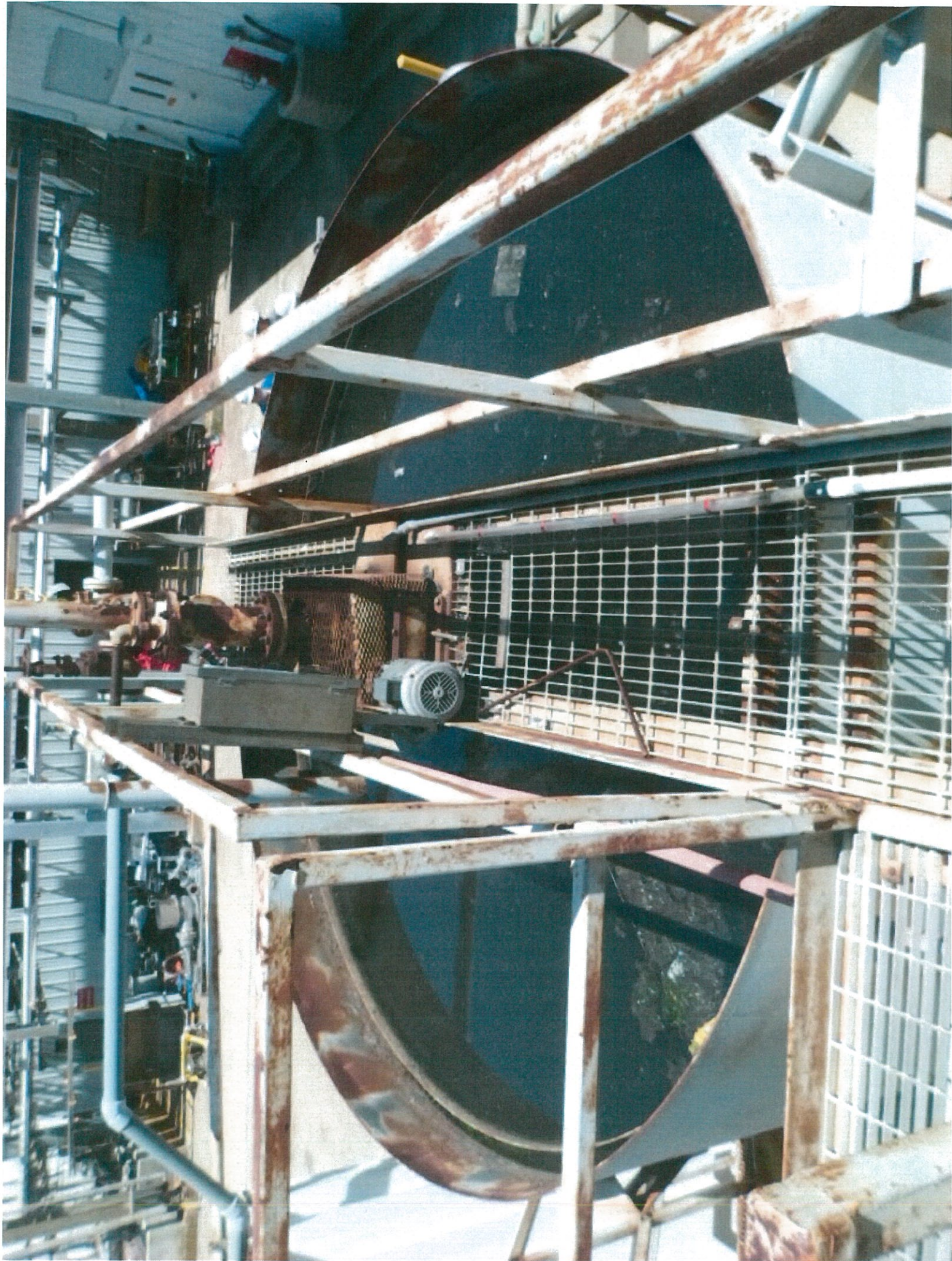
Environmental Dept.

Point Comfort, Texas 77978

Office: 361-987-7645

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Zachary Fuqua

From: Matt Brogger/FTEHSF <MattB@ftpc.fpcusa.com>
Sent: Friday, June 22, 2018 3:31 PM
To: Zachary Fuqua
Subject: Pictures 4 of 4
Attachments: SAM_4345.JPG; SAM_4346.JPG; SAM_4347.JPG; SAM_4348.JPG; SAM_4349.JPG; SAM_4344.JPG

Here are the Outfall 009 pictures.

Matt Brogger
Formosa Plastics Corp. TX
EHS Department
Phone: (361) 987-7468
Fax: (361) 987-2363

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Zachary Fuqua

From: Matt Brogger/FTEHSF <MattB@ftpc.fpcusa.com>
Sent: Friday, June 22, 2018 3:30 PM
To: Zachary Fuqua
Subject: Pictures 3 of 4
Attachments: SAM_4337.JPG; SAM_4338.JPG; SAM_4339.JPG; SAM_4341.JPG; SAM_4343.JPG

Here are the pictures from Outfall 008.

Matt Brogger
Formosa Plastics Corp. TX
EHS Department
Phone: (361) 987-7468
Fax: (361) 987-2363

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Zachary Fuqua

From: Matt Brogger/FTEHSF <MattB@ftpc.fpcusa.com>
Sent: Friday, June 22, 2018 3:29 PM
To: Zachary Fuqua
Subject: Pictures 2 of 4
Attachments: SAM_4336.JPG; SAM_4335.JPG

Attached are the pictures from Outfall 007.

Matt Brogger
Formosa Plastics Corp. TX
EHS Department
Phone: (361) 987-7468
Fax: (361) 987-2363

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Zachary Fuqua

From: Matt Brogger/FTEHSF <MattB@ftpc.fpcusa.com>
Sent: Friday, June 22, 2018 3:28 PM
To: Zachary Fuqua
Cc: Porfirio Arguellez III/FTEHSF
Subject: Pictures 1 of 4
Attachments: SAM_4332.JPG; SAM_4333.JPG; SAM_4334.JPG; SAM_4331.JPG

Zach

Here are the pictures from Outfall 006.

Matt Brogger
Formosa Plastics Corp. TX
EHS Department
Phone: (361) 987-7468
Fax: (361) 987-2363

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



Attachment 5

Investigation Photographs and Survey Sites

Customer

Formosa Plastics Corporation, Texas - CN600130017
Formosa Utility Venture LTD - CN602650954

Regulated Entity

Formosa Point Comfort Plant - RN100218973

WQ

Investigation No. 1484116

WQ0002436000

Point Comfort, Texas , 77978

Investigator: Zack Fuqua

Investigation Dates: April 11, June 12, 22, and 26, 2018



1. Red arrows indicate Lavaca Bay areas assessed (06/26/2018).

Photographic Documentation

Formosa Plastics Corporation, Texas - CN600130017	WQ0002436000	Pellets and debris at Cox Creek boat launch shoreline. Photo by Zack Fuqua under partly cloudy skies.
Formosa Point Comfort Plant - RN100218973	22-Jun-18	
201 FORMOSA DR,POINT COMFORT, TX , 77978	Investigation No. 1484116	
Point Comfort, Texas , 77978	Photograph No. 1: Outfall 001 Discharge	
Lavaca Bay		



Photographic Documentation

Formosa Plastics Corporation, Texas - CN600130017	WQ0002436000	Pellets and debris at Cox Creek boat launch shoreline. Photo by Zack Fuqua under partly cloudy skies.
Formosa Point Comfort Plant - RN100218973	22-Jun-18	
201 FORMOSA DR, POINT COMFORT, TX , 77978	Investigation No. 1484116	
Point Comfort, Texas , 77978	Photograph No. 1: Outfal 001 Discharge	
Lavaca Bay		



Photographic Documentation

Formosa Plastics Corporation, Texas - CN600130017	WQ0002436000	Small, white, floating debris was noted in the vicinity of Outfall 001. Photo by Zack Fuqua under sunny skies.
Formosa Point Comfort Plant - RN100218973	26-Jun-18	
201 FORMOSA DR, POINT COMFORT, TX , 77978	Investigation No. 1484116	
Point Comfort, Texas , 77978	Photograph No. 1: Outfal 001 Discharge	
Lavaca Bay		



Photographic Documentation

Formosa Plastics Corporation, Texas - CN600130017	WQ0002436000	Small, white, floating debris was noted in the vicinity of Outfall 001. Photo by Zack Fuqua under sunny skies.
Formosa Point Comfort Plant - RN100218973	Investigation Date: 04/11/2018	
201 FORMOSA DR, POINT COMFORT, TX , 77978	Investigation No. 1484116	
Point Comfort, Texas , 77978	Photograph No. 1: Outfall 001 Discharge	
		Lavaca Bay

