

August 24, 2020

Submitted electronically via email

Sam Plummer
Sam.Plummer@Waterboards.ca.gov
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Division

Re: Discharge from the San Antonio Creek Wet Weather Facility and Alice Street Overflow Structure

Dear Mr. Plummer:

On August 15, 2020, East Bay Municipal Utility District (EBMUD) discharged 3.72 million gallons of partially-treated wastewater from the San Antonio Creek (SAC) Wet Weather Facility (WWF). EBMUD activated the SAC WWF to provide partial treatment, thereby limiting an overflow of untreated wastewater from the Alice Street Overflow Structure to an estimated 47,000 gallons. The discharge from SAC WWF entered the Oakland Inner Harbor from the SAC outfall. The sanitary sewer overflow (SSO) from the Alice Street Overflow Structure entered the Oakland Inner Harbor at the southwest end of Alice Street, Oakland. Both discharges were reported to the California Office of Emergency Services (Cal OES) (No. 20-4391) and the San Francisco Bay Regional Water Quality Control Board as required.

These discharges resulted from an unprecedented confluence of several unlikely events and circumstances. On August 14, 2020, within a three-minute period, EBMUD lost all four sources of the Main Wastewater Treatment Plant's (MWWTP's) multiple-redundant power supply system. The power outage shut down the influent pump. Since this pump had a leaking discharge valve and because an adjacent pump had its inspection plate removed due to maintenance work, water back-flowed through the pump and flooded the dry pit rendering all of the pumps inoperable.

Once the plant was re-energized, the influent pumps could not be operated immediately due to the flooding – the pump station must remain dry to be operational. EBMUD staff worked through the night to lower wastewater levels in the flooded dry pits to restore operation of the pumps. By the time they succeeded, the pumping of wastewater into the MWWTP had been interrupted for approximately 14 hours.

Because that wastewater could not flow into the MWWTP for treatment, wastewater backed up in the interceptor system. EBMUD diverted flows by gravity to the onsite wet weather storage

basin and deployed operators to the wet weather facilities and Pump Station C to store excess flows for as long as possible. With the goal of preventing or minimizing an SSO, EBMUD activated the SAC WWF, which was ultimately able to partially treat a portion of the flows. These measures were insufficient to entirely prevent an overflow, and by approximately 03:46, flows in the interceptor system backed up and the Alice Street SSO began. The activation of SAC WWF, however, delayed the discharge of untreated wastewater and reduced the volume of the untreated discharge by millions of gallons.

EBMUD is currently conducting a detailed investigation of all of the factors that contributed to these discharges to develop a plan to prevent recurrence. This includes investigation of the prevailing conditions at the time, which were highly irregular—a major heat wave resulting in extreme statewide demands on the power grid. These conditions may have caused anomalies in the grid power that led to the rapid shutdown of EBMUD’s generators and the PG&E substations. This letter describes the results of EBMUD’s investigations of the incident thus far and the actions EBMUD has taken to protect public health and San Francisco Bay. Topics addressed include:

- Discharge Characteristics, Visual Observations, and Assessment of Incident Extent
- EBMUD Actions to Protect Public Health
- Causes of the Discharges, Contributing Factors, and Corrective Measures
- Preventative Measures and Procedural Modifications

Discharge Characteristics, Visual Observations, and Assessment of Incident Extent

The discharge from SAC WWF occurred between 03:12 and 08:15 on August 15, 2020. Operation of the SAC WWF significantly reduced the Alice Street SSO. SAC WWF remained in operation until the influent pumps at the MWWTP were once again in operation and the surcharges in the interceptor system were reduced. Wastewater entering the SAC WWF was chlorinated and then dechlorinated prior to discharge through the SAC outfall in the Oakland Inner Harbor. The discharge met all effluent limitations as specified in the Consent Decree (i.e., pII, chlorine residual, total coliform). The final laboratory report is included as Attachment 1.

Per data from EBMUD’s computerized monitoring system, the Alice Street SSO occurred between 03:46 and 06:51 on August 15, 2020 during the low tide period. When EBMUD staff reported to the site at 07:15, they first began posting signage and at 09:11 took the first sample at the discharge point and did not observe any odor or discoloration. Based on the calculated discharge volume of 47,000 gallons¹ and previous analytical results from similar volume discharges, it was estimated that the impacted area would extend no more than 0.25 to 0.50 miles from the overflow structure. However, as described below, signage was posted all along the entire Inner Harbor on both the Oakland and Alameda sides.

¹ EBMUD has developed an algorithm to calculate the estimated discharge from an overflow structure. The discharge volume is computed based on level readings upstream (interceptor) and downstream (receiving water) of the overflow structure as recorded by the Distributed Control Systems.

EBMUD Actions to Protect Public Health

Cal OES was notified at 04:26. Notification, signs, and water quality samples were conducted consistent with the EBMUD Wastewater Sanitary Sewer Overflow Response Plan. Due to the unusual circumstances of the discharge – it occurred on a Saturday morning during a heat wave with high potential for the public to utilize the estuary for recreational purposes – numerous additional measures were taken and an extensive outreach campaign was conducted.

Outreach to Media and Public Officials

The EBMUD public information office was notified at 04:15 and began their outreach efforts to notify the public that it was unsafe to enter the water in the vicinity of the overflow. Media outreach began at 06:30 with a phone call to a local television station (KTVU) and continued through 17:00 in the evening. A press release was issued to 61 reporters (Attachment 2). The media outreach resulted in a factual article being published in Mercury News at 10:03 (Attachment 3) and many more articles throughout the day and several live and taped interviews, including one with the Associated Press that was picked up by national news outlets.

Most of EBMUD's focus was on providing accurate information to as many local residents as possible to ensure that the public knew not to enter the estuary to swim or row. EBMUD utilized Twitter and Facebook to post these messages. An advisory was posted on the EBMUD webpage (Attachment 4) and updated as new quality data was received. In addition, a new email address was created to field all questions and comments and to set up a mass mailing list for EBMUD to send emails when the advisory is lifted.

Signage

EBMUD's SSO Response Plan includes posting specific signs (Attachment 5) at three designated locations proximate to the Alice Street Overflow Structure. In addition to these signs, EBMUD posted additional signs at more than 20 locations extending over a span of 3 miles of the Inner Harbor on both the Oakland and Alameda side (Attachment 6). The signage was broad to ensure that those entering the water by a small craft (e.g., kayak) would not inadvertently enter the impacted area from the water. Sign locations included sites that were recommended by the City of Alameda and rowing clubs.

Direct Communications

EBMUD public affairs, contact center, and wastewater staff all placed and fielded calls to a variety of organizations and individuals. These included an email to various public officials, including three Oakland City Councilmembers, Oakland Public Works, City of Alameda, and the East Bay Regional Park District. In accordance with the established procedures direct calls were made to several local interested parties: Baykeeper, Barnhill Marina, California Canoe and Kayak, and East Bay Rowing Club.

Water Quality Monitoring for SSO

After the inspector completed the posting of the three required signs and three additional signs in the vicinity, water quality samples were collected for analysis. Consistent with the SSO Response Plan, samples were taken at the following locations:

- At the outfall pipe from the Alice Street Overflow Structure;
- Off the pier that is approximately 200 yards west of the Overflow Structure;
- Along the shoreline approximately 150 yards east of the Overflow Structure;
- At Middle Harbor Park (designated background location to the west); and
- At Doolittle ("Bay Farm") Bridge (designated background location to the east).

Also consistent with the SSO Response Plan, all samples were analyzed for the following constituents and data was posted to the EBMUD website as it became available:

- Enterococcus;
- Ammonia;
- Total Coliform; and
- Fecal Coliform

Water Quality Monitoring for SAC WWF Discharge

At initiation of operation of the SAC WWF, an effluent sample was taken for pH, hourly samples were taken for chlorine residual, and a grab sample was taken for total coliform. The results of all samples met the effluent limits specified in paragraph 35 of the Consent Decree.

Cause of the Discharges, Contributing Factors, and Corrective Measures

EBMUD's investigation into the incident is ongoing and will continue until a root cause analysis has been completed. At this time, it is clear that the discharges resulted from the simultaneous occurrence of a number of unusual events and circumstances, without any one of which the discharges likely would not have occurred. The following sections of this letter describe those events and the MWWTP systems they affected.

MWWTP Power Supply

Generally, the MWWTP is powered by two onsite systems, comprised of three large engine-generators and a low-emission gas turbine, and two separate PG&E lines, which are fed from two different sub-stations for further redundancy (see Diagram of MWWTP Power Supply, Attachment 7). The causes of this unprecedented near-simultaneous loss of all four power sources, first the three onsite generation facilities, following almost immediately by both PG&E service lines, are as yet unknown. PG&E has stated that it is still investigating the cause of the outages, but that the outages were not part of the rolling blackouts that impacted other parts of California that evening. EBMUD is investigating to determine what the causes of the outages were, whether they were related, and what can be done to prevent recurrence.

At the MWWTP, EBMUD's two onsite power sources use digester gas to produce power. On average, the MWWTP generates more power than it consumes; however, because each of the onsite generation sources is aligned with a separate PG&E line, at times the MWWTP may be both importing and exporting power. Sometimes the MWWTP is exporting power on both PG&E lines. At other times, when there is not enough digester gas to meet the power needs of the MWWTP, or generators are out of service either due to scheduled maintenance or unplanned outages, EBMUD imports power on both lines from PG&E to meet the power demands at the MWWTP. The two PG&E service lines that are tied into the MWWTP's power distribution

system are fed from separate substations to provide further redundancy in the power supply system. When PG&E has an outage on one line, if onsite generators are not available or not well matched to connected loads, switchgear within the MWWTP automatically transfers affected loads on that line to the other PG&E line, re-energizing the affected circuits. If power from both PG&E lines is lost simultaneously, the onsite power is designed to be able to continue running without interruption in certain conditions and meet the critical loads and avoid an overflow. The two PG&E lines comprise the primary source of redundancy with the two onsite generation sources providing additional back-up.

On August 14, 2020, prior to the outages EBMUD was operating two onsite engine generators and one turbine generator; one engine was out of service for planned maintenance work. The generators were producing excess power that was being exported onto the PG&E grid. At 17:11:42, the two engine generators unexpectedly simultaneously shut off. At 17:13:09, the turbine generator self-activated its shutdown mode and was fully shut down by 17:14:13. This was an unprecedented event and EBMUD is investigating the cause of these nearly-simultaneous shutdowns. This meant that the two PG&E service lines were the only available power sources to operate the MWWTP. Then, at 17:14:17, both service lines from PG&E lost power. The loss of PG&E power opened the breakers that connect each PG&E service line to the MWWTP power distribution system as designed for safety purposes. An electrician was called in from standby and power was restored at 18:49. EBMUD later determined the PG&E outage lasted approximately 5 seconds. If the EBMUD onsite generators had not just shut down, this loss of PG&E power likely would have had little to no impact on the MWWTP because, just prior to the loss, there was more than sufficient power produced to operate the MWWTP, and the onsite generators are designed to continue to run and to provide power to the MWWTP upon a loss of power from the PG&E service lines. Power was restored to the PG&E lines at 18:49 when the EBMUD electricians who were called in to respond to the outage closed the breakers to reconnect to the PG&E system.

At 17:25, the Operator working at the Power Generation Station attempted to start the engines, but was unable to do so. EBMUD is investigating the reason why the engines would not immediately start.

MWWTP Influent Pump Station

When the power from both PG&E lines was lost, and backup power was not available because the two independent internal sources of power had gone out minutes before, all equipment and systems at the MWWTP shut down. This included the one pump that was operating at the MWWTP Influent Pump Station (IPS).

The EBMUD interceptor system delivers wastewater through the IPS intake chamber at the MWWTP. The wastewater travels through a channel in the coarse screen room before entering the IPS' five pumps, called Main Units. These Main Units lift the wastewater to a higher elevation where it then flows by gravity through the treatment processes. Each Main Unit has a dedicated channel. There are large gates between the intake chamber and the coarse screen room that are hydraulically operated. These gates close automatically in the event of a power outage to prevent wastewater from the interceptor system from flooding the coarse screen room.

Each of the Main Units has a discharge valve that serves as a check valve on the pump. When the pump shuts off, this valve is programmed to close to prevent water downstream of the pump, which is at a higher elevation, from flowing "backwards" through the system to the coarse screen room or intake chamber. The pump will not start until this check valve is opened. After passing through the valve, the wastewater is pumped through the fine screens and into the IPS effluent channel. There are five electrically operated discharge gates, one for each Main Unit, at the location where the wastewater exits IPS and enters the IPS effluent channel. In the event of power outage, these gates are immobilized in whatever position they were in prior to the power outage. In order to operate them with no power, each gate has a manually operated clutch assembly. Due to the size of the gates, hundreds of turns of a spindle by an operator are required to move the gate.

The Main Units and their ancillary equipment, including oil pumps which are required to be in operation to start the pumps, are not designed to be submerged. This equipment is in the lowest level of IPS and is in a room that must remain dry.

On August 14, 2020, at the time of the power failure, Main Unit 5 was operating. Main Units 1, 2 and 3 were in standby mode. Main Unit 4 was out of service for scheduled maintenance as part of EBMUD's preparation of equipment for wet weather operations.

When power was lost, Main Unit 5 shut down. However, the discharge valve did not close completely and water flowed backwards through the pump into the coarse screen room. The valve had been previously scheduled to be refurbished in November 2020. Due to the significant "leak-by" on the discharge valve on Main Unit 5, operators have been closing the electrically operated discharge gate when Main Unit 5 is taken out of service to prevent backflow of water through the Main Unit. When the power failed, the gate could only be closed using the manually operated clutch assembly.

Four operators were sent to operate the clutch assembly. Meanwhile, the "leak-by" was occurring and the coarse screen room was rapidly filling with wastewater since the gates between the coarse screen room and the intake chamber had automatically closed as they are programmed to do. The water level rose above the side wall of the inlet channel for Main Unit 5 and spilled over in the four other channels that direct water to the other Main Units. As the water level continued to rise, the water forced its way up to each Main Unit.

The water then found an "opening" where an inspection plate had been removed from Main Unit 4. The water then flooded the dry pit (Attachment 8). The inspection plate had been removed as a part of Main Unit 4's scheduled maintenance.

When the operators became aware of the flooding in the dry pit, they immediately dispatched the Vactor truck with a suction hose to IPS to try to remove the flooding wastewater. They also set up a portable pump to try to remove the wastewater. They were unable to enter the dry pit to install the inspection plate, however, because the water level was rising very quickly and there was a risk of engulfment of personnel.

By the time power was restored and the discharge gate could be electronically closed, the dry pit was completely full of wastewater and the Main Units inoperable.

Backup of the Interceptor System

EBMUD managed flows within the interceptor system to prevent overflows and to minimize SSO volume should they occur. Specifically, EBMUD staff took the following actions:

- Diverted flows for storage at Point Isabel and Oakport WWFs;
- Diverted flows to the onsite wet weather storage basin at the MWWTP; and
- Diverted flows to the storage basin at Pump Station C in Alameda.

Around 02:00 on August 15, 2020, as staff worked to pump out the dry pit to allow for restoration of pumping ability at IPS, the flows had backed up within the interceptor system and were approaching the level of the overflow weirs at the Alice Street Overflow Structure. In addition, EBMUD noted that the tide was dropping in the Oakland estuary. When the water level in the estuary is lower than the overflow weir, and the level in the interceptor system is higher than the overflow weir, an SSO will occur. Recognizing this situation presented the risk of an SSO, EBMUD dispatched operators to activate the SAC WWF to prevent the SSO, or failing that, reduce the SSO volume. Initially, activation of SAC WWF diverted sufficient flow from the interceptor to lower the level and avoid an SSO. However, over time, due to the backup of wastewater in the system (because of the inability to use the Main Units at IPS) and flows continuing to enter the interceptor downstream of SAC WWF, the levels once again began to rise and an SSO did eventually occur. Through EBMUD's activation of the SAC WWF, a much smaller volume of flow was released untreated through the Alice Street Overflow Structure and the majority of the discharge was treated with chlorination and then dechlorinated and discharged through the SAC WWF outfall.

After sufficient wastewater was pumped out of the dry pit to enable resumed pump operation, EBMUD started up Main Unit 3 at IPS at 07:06 on August 15, 2020, approximately 14 hours after first losing pumping capacity. At 08:15, SAC WWF was taken off line since levels in the interceptor had decreased enough to direct those flows to the MWWTP for full treatment.

Preventative Measures and Procedural Modifications

EBMUD has preliminarily identified measures to prevent recurrence. These measures include:

- Replace inspection plates as soon as work is complete or at the end of the shift;
- Fabrication of new lighter inspection plates so that they can be easily installed during inspections to prevent wastewater from traveling through a pump to the dry well and causing flooding;
- Procuring additional submersible pumps for emergency use; and
- Repairing the leaking valve on the influent pump (as planned).

In addition, EBMUD is continuing its (1) root cause analysis to identify other potential measures to prevent recurrence and (2) systemic review to identify potential measures to prevent similar problems elsewhere in the system.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,



Eileen M. White, P.E.
Director of Wastewater

Attachments

Cc: Eric Magnan, U.S. Environmental Protection Agency
Michael B. Weiss, U.S. Environmental Protection Agency
Robert Schlipf, Regional Water Quality Control Board
Bill Johnson, Regional Water Quality Control Board
Thomas Mumley, Regional Water Quality Control Board

Attachment 1



Laboratory Services

E - ANALYTICAL REPORT

Prepared for: Jeff Biehl
M.S. 59

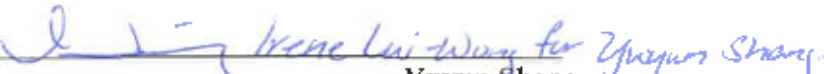
SUMMARY REPORT OF AUGUST 15, 2020
SAN ANTONIO CREEK WET WEATHER COMPLIANCE MONITORING

Date: August 21, 2020

Project ID: B942-9612-2

Sample ID: L237647

E-mailed by:


Yuyun Shang,

Manager of Laboratory and Technical Services



Analytical Report Prepared for NA

Report generated on: Aug 21, 2020 12:00 pm
Login No.: L237647

LBR B942-9612-1

Project Title: San Antonio Creek Wet Weather Compliance Monitoring;WWF Consant Decree MRF NPDES#0038440

Login Performance Summary

1 - Sample received by the lab on: Aug 15 2020, 08:06 am

0 - Lost Analyses

0 - Hold Time Exceedences

Turn-around-time met

Samples included in this report:

Sample	Type Collected	Site	Locator	ClientID
L237647-1	GRAB	15-Aug-2020 04:17 WW SAN ANTONIO	EFF	monthly grab

Legend to the laboratory qualifiers used in this report:

PASS - Pass

Qualifiers for subcontract work See textvalue for description



EAST BAY MUNICIPAL UTILITY DISTRICT
 Laboratory Services Division
 PO Box 24055, MS 59, Oakland, CA 94623
 Phone (510) 387-1432 Fax (510) 465-5462
Analytical Results Report

LSR B942 9612-1 San Antonio Creek Wet Weather Compliance Monitoring:WWF Consent D
 Site: MW SAN ANTONIO San Antonio Creek Stormwater Treatment Plant
 Localor: EFF Chlorinated effluent sample at San Antonio WW Plant
 ClientID: #monthly grab
 Lab ID: L237647-1 (P247532-1)
 Sample Type: GNAB (Instantaneous Grab)
 Date Collected: Aug 15 2020, 04:17am Sample collector: U. Sin
 Date Received: Aug 15 2020, 08:06am Sample receiver: VMGUYNN
 Sample Comments: Collected by request, not approved for req reporting. Flow= 15.6 MGD for data entry. chl2= 10.8 mg/L at facility(not for LIMS entry).After sample collection, sample verified neg color dev for chl2 via color dev or titrate by OPR(DS).

Method Reference	Qualifier	Result	Units	Dilution	MDL	Matrix RT/MF	Tag
Method: SAMPLER PROVIDED FIELD MEASUREMENTS - DATA ENTRY LIST FOR FIELD DATA FIELD ANALYSIS/OBSERVATION DATA PARAMETERS						WasteH2O	
FLOW		15.6	MGD	1			
Run ID: R306255 / Work Group No.: WG237760 Prep Date: 15-AUG-20 Analyzed 15-Aug-20 09:17							
Method: SM9221B - 2006, Multiple Tube Fermentation TARGET ANALYTES						WasteH2O	
TOTAL COLIFORMS		45	MPN/100 mL		1.8		
Run ID: R306233 / Work Group No.: WG237676 Prep Date: 15-AUG-20 Analyzed 15-Aug-20 11:29							

RL is either the client requested or regulatory mandated Reporting Limit. MDL is the regulatory mandated Minimum Level



EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
PO Box 24055, MS 59, Oakland, CA 94623
Phone (510)207-1432 Fax (510)465-5462
ANALYTICAL QC SUMMARY REPORT FOR LOGIN L237647

LSR B942-9612-1 San Antonio Creek Wet Weather Compliance Monitoring:WWF Counsel D

Method Reference	Sample	Parameter	Sample Type	Qual Result	Units	Control Limit	Measure Date
Method: SM92218 - 2006, Multiple Tube Fermentation							
Batch QC Summary:							
	WG237676-1	CTRL CULTR	Control Culture				
	WG237676-1	CTRL CULTR	Control Culture				
	WG237676-2	CTRL CULTR	Control Culture				
	WG237676-2	CTRL CULTR	Control Culture				
	WG237676-3	CTRL CULTR	Control Culture				
	WG237676-3	CTRL CULTR	Control Culture				
	WG237676-4	DUP	Matrix Sample Duplicate		L237647-1		
Run ID: R306233 / Work Group No.: WG237676							
Prep Date: 15-AUG-20 Analyzed 15-AUG-20							
TARGET ANALYTES							
	WG237676-1	TOTAL COLIFORMS	CTRL CULTR	PASS 2		-	15-aug-20 08:43
	WG237676-2	TOTAL COLIFORMS	CTRL CULTR	PASS 2		-	15-aug-20 08:43
	WG237676-3	TOTAL COLIFORMS	CTRL CULTR	PASS 1		-	15-aug-20 08:43
REL % DIFFERENCE USING BASE VALUES							
	WG237676-4	TOTAL COLIFORMS	DUP	150		RPD	15-aug-20 11:29
TARGET ANALYTES							
	WG237676-4	TOTAL COLIFORMS	DUP	330	MPN/100 mL	-	15-aug-20 11:29

For detailed information regarding subcontract data, a copy of the original subcontractor report is available upon request

Attachment 2

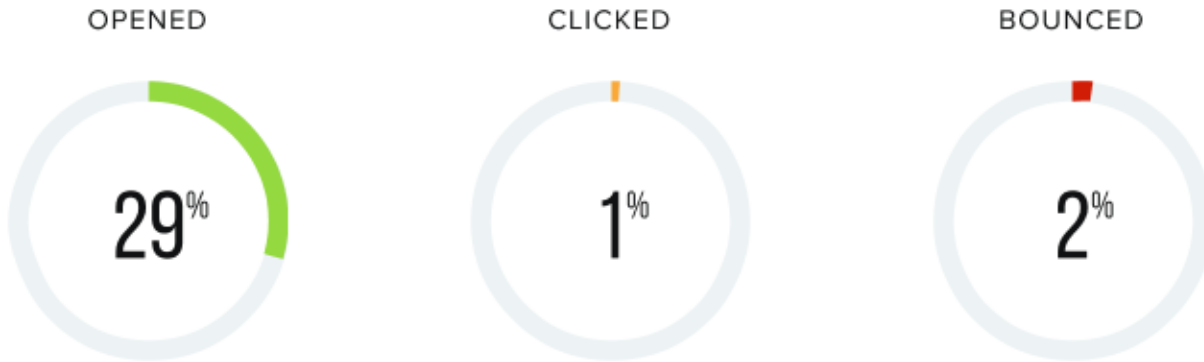
**Power outage causes wastewater
overflows**

**MEDIA ADVISORY Power outage at EBMUD
Wastewater Treatment Plant causes release of
sewage**

Power outage causes wastewater overflows

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

Analytics



Click Summary

LINK TEXT	NUMBER OF CLICKS
ebmud.com	1
Facebook	0
LinkedIn	0
Nextdoor	0
Twitter	0
YouTube	0

Copy of Email



Contact: EBMUD Public Affairs
Andrea Pook 510-287-0145 | andrea.pook@ebmud.com

FOR IMMEDIATE RELEASE – August 15, 2020

Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

Public should avoid bodily contact with water along the Oakland-Alameda Estuary

OAKLAND – A power outage on Friday included the West Oakland area where the East Bay Municipal Utility District (EBMUD) Main Wastewater Treatment Plant is located. This power outage caused failure of major equipment at the wastewater plant resulting in a sewer back-up and release of raw and partially treated wastewater to the Oakland-Alameda Estuary. EBMUD is asking the public to avoid bodily contact with water in this area (swimming, boating) until water samples indicate it is safe.

The wastewater treatment received no power from PG&E between 5:10 pm and 6:50 pm. on Friday, resulting in major flooding of the pump station that transports sewage from East Bay communities via pipes to the plant for treatment, causing a back-up. EBMUD worked through the night to restore pumping capacity and stored excess flow in storage basins. However, flows exceeded the storage capacity before full operations could be restored and EBMUD discharged raw sewage to the Oakland-Alameda Estuary from the foot of Alice Street and Embarcadero Street in Oakland. Discharges occurred between approximately 4 a.m. and 8:30 a.m. Saturday morning. EBMUD estimates 50,000 gallons of untreated sewage was released.

Just after 3 a.m., EBMUD utilized its San Antonio Creek Wet Weather Facility to partially treat and discharge disinfected and dechlorinated sewage. This minimized the volume of raw sewage that would otherwise have been discharged. This facility discharges at a point just west of the Jack London Aquatic Center on the Oakland-Alameda estuary. The discharge is not expected to affect water quality at beaches in Alameda.

EBMUD notified regulatory agencies of the incident, and has posted signs along the estuary alerting the public. EBMUD also reached out to Baykeeper, local rowing clubs, and California Canoe and Kayak in Jack London Square. EBMUD is investigating the incident and plans to have a full report within a week.

The East Bay Municipal Utility District has a proud history of providing high-quality drinking water for 1.4 million customers in Alameda and Contra Costa counties. EBMUD's wastewater treatment serves 685,000 customers and protects the San Francisco Bay. EBMUD is a not-for-profit public agency established in 1923.

Connect with EBMUD / ebmud.com / [Twitter](#) / [Facebook](#) / [Nextdoor](#) / [LinkedIn](#) / [YouTube](#)

Power outage causes wastewater overflows

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

Email Details

Subject

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

Sender Name

Andrea Pook

Sender Email

apook@ebmud.com

Created:

Sat, 15 Aug 2020 11:53:14 Pacific Standard Time

Submitted:

Sat, 15 Aug 2020 12:01:31 Pacific Standard Time

Sent:

Sat, 15 Aug 2020 12:01:31 Pacific Standard Time

Recipient Lists

Contacts:

EBMUD Bay Area Reporter List

Outlets:

EBMUD Bay Area Media List

Individuals:

List of Media Contact Recipients

Name	Outlet	Status	Links Clicked
Mr. Kurtis Alexander Reporter	San Francisco Chronicle	Opened	0
Ms. Laura Anthony Reporter	KGO-TV	Opened	0
David Baker Reporter	Bloomberg Businessweek - San Francisco Bureau	Opened	0

Power outage causes wastewater overflows

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

Mr. Keith Barry Managing Editor	KNTV-TV	Opened	0
Mr. Ken Bastida Anchor	KPIX-TV	Not Opened	0
Ms. Kristin Bender Reporter and Writer	KTVU-TV	Not Opened	0
Ms. Tamara Berry News Assignment Editor	KRON-TV	Opened	1
Mr. Tim Bollinger Senior Assignment Editor	KNTV-TV	Not Opened	0
Mr. Dan Brekke Editor/Reporter	KQED-FM Online	Not Opened	0
Mr. Keith Burbank Evening Shift Editor & Reporter	Bay City News Service	Opened	0
Mr. Gray Cathrall Publisher & Editor	The Piedmont Post	Not Opened	0
Mr. Paul Cobb Publisher	Oakland Post	Not Opened	0
Mr. David DeBolt Senior Reporter	East Bay Times	Not Opened	0
Mr. Brian Dinsmore Morning Executive Producer	KPIX-TV	Not Opened	0
Mr. Philippe Djegal Reporter	KRON-TV	Opened	0
Ms. Candy Duran News Assignment Editor	KDTV-TV	Not Opened	0
Ms. Ellen Ellery Assignment Editor	KTVU-TV	Not Opened	0
Ms. Marianne Favro Reporter	KNTV-TV	Not Opened	0
Mr. Peter Fimrite Science & Environment Reporter	San Francisco Chronicle	Not Opened	0

Power outage causes wastewater overflows

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

Mr. Geoff Glaub Planning Editor	KGO-TV	Not Opened	0
Ms. Jodi Hernandez Reporter	KNTV-TV	Opened	0
Ms. Bonnie Hitch Assignment Manager and Planning Editor	KRON-TV	Not Opened	0
Ms. Heather Holmes Anchor	KTVU-TV	Opened	0
Mr. Will Houston Reporter	Marin Independent Journal	Opened	0
Mr. Jim Huntington Assignment Manager	KGO-TV	Not Opened	0
Ms. Cheryl Hurd Reporter	KNTV-TV	Not Opened	0
Mr. Rick Hurd Breaking News Reporter	East Bay Times	Not Opened	0
Ms. Jana Katsuyama News Reporter and Fill-in Anchor	KTVU-TV	Not Opened	0
Mr. Jim Knowles Managing Editor	San Leandro Times	Opened	0
Ms. Lisa Krieger Reporter	The Mercury News	Not Opened	0
Mr. Flavio Lacayo News Anchor & Reporter	KSTS-TV	Opened	0
Ms. Amber Lee Reporter	KTVU-TV	Not Opened	0
Da Lin	KPIX-TV	Not Opened	0
Cecilia Lopez	Univision Television Network - Washington Bureau	Not Opened	0
Mr. David Louie Business Editor & Technology Reporter	KGO-TV	Not Opened	0

Power outage causes wastewater overflows

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

Mr. Victor Marino Director of Programming	KTSF2-TV	Not Opened	0
Mr. Raj Mathai Evening Anchor	KNTV-TV	Opened	0
Ms. Lyanne Melendez TV News Reporter / Fill-in Anchor	KGO-TV	Not Opened	0
Mr. Ken Miguel Writer, Special Projects & Field Producer	KGO-TV	Not Opened	0
Mr. Daniel Montes Reporter	Bay City News Service	Not Opened	0
Ms. Pilar Niño Reporter, Video Journalist & Multimedia Journalist	KSTS-TV	Not Opened	0
Gloria Olivares	KGO2-TV	Not Opened	0
Rebecca Parr City Editor		Opened	0
Ms. Luz Peña Reporter	KGO-TV	Not Opened	0
Ms. Holly Quan Reporter	KCBS-AM	Opened	0
Ms. Allie Rasmus Reporter	KTVU-TV	Opened	0
Mr. Paul Rogers Reporter	The Mercury News	Not Opened	0
Mr. Gonzo Rojas News Assignment Editor	KNTV-TV	Not Opened	0
Mr. Rob Roth Reporter	KTVU-TV	Not Opened	0
Mr. Dave Russo Assignment Editor	KGO-TV	Not Opened	0
Ms. Kris Sanchez Anchor	KNTV-TV	Not Opened	0

Power outage causes wastewater overflows

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

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Ms. Jennifer Seelig Director of News & Programming	KCBS-AM	Not Opened	0
Mr. Stephen Stock Senior Investigative Reporter	KNTV-TV	Opened	0
Ms. Rachel Swan City Hall Reporter	San Francisco Chronicle	Not Opened	0
Ms. Amy Sylvestri City Editor	San Leandro Times	Not Opened	0
Mr. Jose Tello Assignment Editor	KSTS-TV	Not Opened	0
Mr. Tom Vacar Consumer Editor/Investigative Reporter	KTVU-TV	Not Opened	0
Ms. Debora Villalon Reporter	KTVU-TV	Not Opened	0
Ms. Justine Waldman Anchor & Reporter	KRON-TV	Not Opened	0
Mr. Fred Zehnder Publisher & Editor	San Leandro Times	Opened	0

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Outlet	Status	Links Clicked
Associated Press Television News - San Francisco Bureau	Not Opened	0
Bay City News Service	Not Opened	0
The Daily Californian, University of California-Berkeley	Not Opened	0
East Bay Express	Opened	0

Power outage causes wastewater overflows

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

East Bay Times	Not Opened	0
KCBS-AM	Not Opened	0
KDTV2-TV	Bounced	0
KGO Morning News - KGO-AM	Not Opened	0
KGO Noon News - KGO-AM	Bounced	0
KGO-AM	Not Opened	0
KGO-AM Online	Not Opened	0
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KNTV3-TV	Not Opened	0
KNTV-TV	Opened	0
KNTV-TV Online	Not Opened	0
Korea Times San Francisco Edition	Not Opened	0
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KPIX-TV	Opened	0
KQED-FM Online	Not Opened	0
KRON-TV	Opened	0
KTSF2-TV	Not Opened	0
KTVU-TV	Not Opened	0
The Montclarion	Opened	0

Power outage causes wastewater overflows

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

Oakland Post	Not Opened	0
The Piedmont Post	Opened	0
San Francisco Business Times	Not Opened	0
San Francisco Chronicle	Not Opened	0
San Francisco Examiner	Opened	0
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Sing Tao Daily - San Francisco Bureau	Not Opened	0

List of Individual Recipients

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Power outage causes wastewater overflows

MEDIA ADVISORY Power outage at EBMUD Wastewater Treatment Plant causes release of sewage

Ms. Tamara Berry

Bounced

Email Address	Reason
noticias14@tv.univision.com	Bounced Address
producers@abc-sf.com	Bounced Address

Attachment 3

Attachment 3

BREAKING NEWS | 'My God, we've got nobody': Strained firefighters struggle to stop Bay Area wildfires

News > **Environment & Science** - News

50K gallons of raw sewage spilled into Oakland Estuary after power outage affects EBMUD wastewater plant

Boaters are being warned to stay away from area



Doug Duran/Bay Area News Group archives

Boaters are being warned to stay away from the Oakland Estuary on Saturday after 50,000 gallons of raw sewage spilled into the water when a power outage caused an equipment failure at the EBMUD wastewater treatment plant in West Oakland.

By **BAY CITY NEWS** |
August 15, 2020 at 10:03 a.m.

Bay City News

OAKLAND — Boaters are being warned to stay away from the Oakland Estuary on Saturday, after an estimated 50,000 gallons of raw sewage spilled during a power outage Friday night at the East Bay Municipal Utility District wastewater treatment plant in West Oakland.

Signs were posted along the estuary on Saturday morning about the spill and EBMUD was reaching out to rowing clubs and others who frequently use the strait between Oakland and Alameda.

The spill occurred after power outages between 5 and 7 p.m., ordered by the California Independent System Operator, caused a pump to fail, EBMUD said Saturday.

"This power outage caused failure of major equipment at the wastewater plant, including the ability for EBMUD to generate its own power on-site," according to a statement from EBMUD on Saturday. "Power outages like this are quite uncommon. During PSPS events we normally get notice, but this outage occurred very quickly."

The main wastewater treatment plant in West Oakland, at the foot of the Bay Bridge, received no power from PG&E from 5:10 to 6:50 p.m., according to EBMUD.

The outage resulted in major flooding at the pump station, which transports sewage from the East Bay via pipes to the plant for treatment, causing a backup.

EBMUD employees worked through the night to restore pumping capacity at the plant and stored excess sewage in storage basins, EBMUD spokeswoman Andrea Pook said.

However, flows exceeded the storage capacity before full operations could be restored and raw sewage was discharged into the estuary from 3:47 a.m. to 3:58 a.m., from the foot of Alice Street and Embarcadero, according to the water agency.

Discharge started again at 4:07 a.m. and has now stopped, EBMUD said in a statement at 8:30 a.m.

Although initial estimates were that 100,000 gallons of raw sewage were released, EBMUD revised that Saturday to 50,000 gallons, Pook said.

In an effort to minimize the release, EBMUD also discharged disinfected and dechlorinated sewage — partially treated wastewater — from its San Antonio Creek Wet Weather Facility, officials said. The facility discharges at a point just west of the Jack London Aquatic Center on the Oakland/Alameda estuary.

Regulatory agencies have been notified of the spill and EBMUD on Saturday morning was advising people to stay out of the water.

EBMUD is investigating the incident and plans to issue a report within a week.

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Tags: [Environment](#), [PG&E](#)



Bay City News

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Attachment 4



Sanitary sewer overflow advisory

Updated August 19, 2020 at 6:00 pm

The East Bay Municipal Utility District experienced a sanitary sewer spill that occurred at the Oakland Estuary near Alice Street in Oakland around 4:00 AM on Saturday, August 15, 2020.

The spill lasted about four and a half hours and released about 50,000 gallons of untreated sewage. The District is continuing to investigate the cause of the spill and taking actions to prevent future occurrences. Regulatory agencies, including the Office of Emergency Services, were promptly notified.

As shown in the table and map below, samples have been taken at the site of the discharge, two locations within 250 feet of the discharge site, and at two "reference locations" (the Bay Farm Bridge approximately 5 miles from the discharge site and Middle Harbor Park, approximately 3 miles from the discharge site). The samples taken at the discharge site continue to show levels of enterococcus bacteria at levels above the state health standard. Samples taken within 250 feet of the discharge location are currently well below the state health standard for enterococcus indicating that the current area of impact from the discharge is likely very small. As a precaution, the signs that EBMUD has posted remain in place to caution against recreational water contact in this area.

EBMUD will continue to take daily samples of the water for analysis and will update this posting as new information is available.

If you have any questions regarding this advisory, please call 510-287-1651 during business hours, Monday through Friday, 8 a.m. – 4:30 p.m., or 866-403-2683 after normal business hours.

If you would like to be notified when the advisory is removed and receive future notifications, please send your contact information to baynotice@ebmud.com.

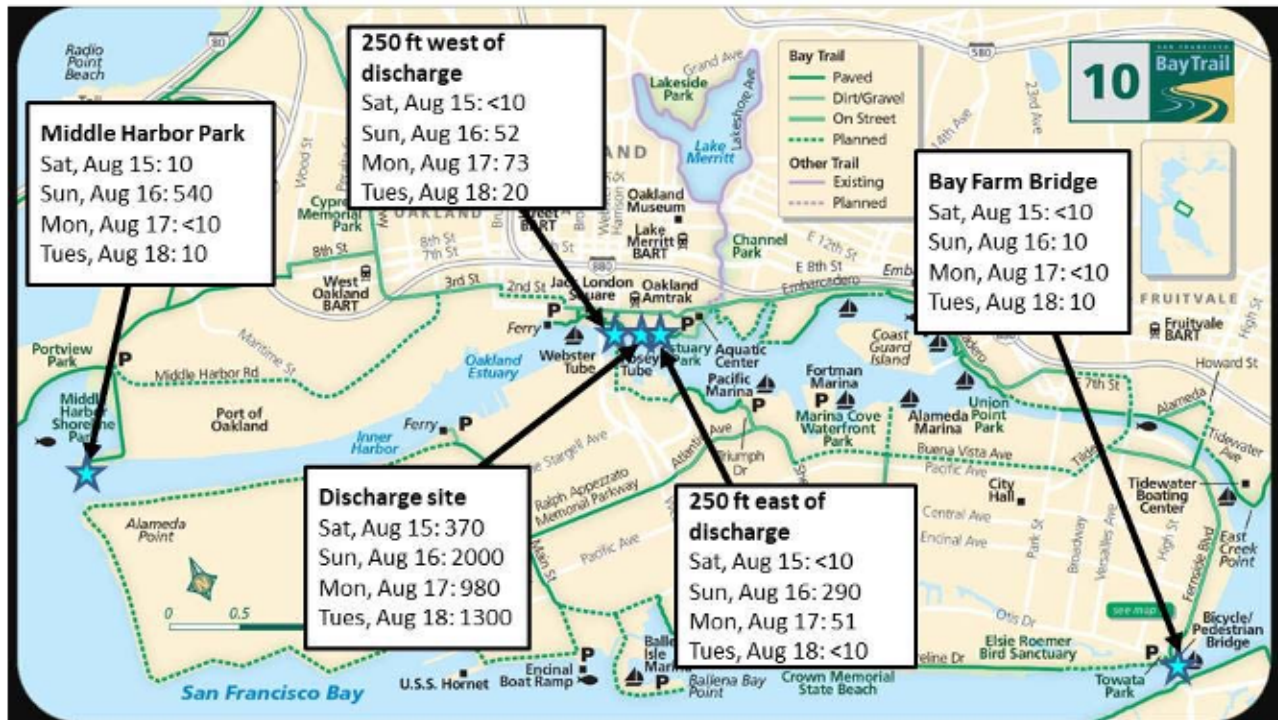
Samples taken at the overflow site and reference locations have been analyzed and the results

for enterococcus bacteria are as follows:

Date and Time	Alice St. Overflow Site	250 feet east of overflow	200 feet west of overflow	Bay Farm Bridge (reference site)	Middle Harbor Park (reference site)
Enterococcus MPN ¹ /100 mL					
State Health Standard for Recreational Water Contact: 10 ⁴ MPN/100 mL ²					
Saturday, August 15	370	<10	<10	<10	10
Sunday, August 16 ³	2,000	290	52	10	540
Monday, August 17	980	51	73	<10	<10
Tuesday, August 18	1,300	<10	20	10	10
Wednesday, August 19	<i>Lab analysis in progress</i>				

Bold text = Sample result above state health standard of 10⁴ MPN/mL

1. MPN = Most probable number.
2. Maximum single sample bacterial concentration for safe water contact recreation. This includes uses of water involving body contact where ingestion of water is reasonably possible, including but not limited to swimming, wading, water-skiing, scuba diving, surfing and fishing.
3. Sample collected after rainfall.



★ Sampling location
 All samples results are reported as MPN/100 mL enterococcus. MPN = most probable number. Applicable state health standard for recreational water contact is 104 MPN/100 mL.

375 11th Street Oakland, CA 94607
 1-866-403-2683

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Attachment 5

Advisory

Water may be contaminated at this location.
Bodily contact with the water should be avoided.
This sign will be removed when it has been
determined that the water is safe to enter.
For further information call the
East Bay Municipal Utility District
at 1-866-40-EBMUD
(1-866-403-2683).



告示

此處水源可能受到污染，
應該避免有任何身體的接觸。
當證明這水源是可以安全進入的時候，
此項告示將會除下。若需任何詳細資料，
請致電 1-866-40-EBMUD (1-866-403-2683)
與東灣水務局 (East Bay Municipal Utility District) 聯絡。

Khuyến Cáo

Nước có thể bị ô nhiễm tại đây. Nên tránh để cơ
thể tiếp xúc với nước này. Chúng tôi sẽ gỡ bỏ
biển báo khi xác nhận có thể an toàn sử
dụng nguồn nước này. Để biết thêm chi
tiết, xin gọi East Bay Municipal Utility
District tại số 1-866-40-EBMUD
(1-866-403-2683).

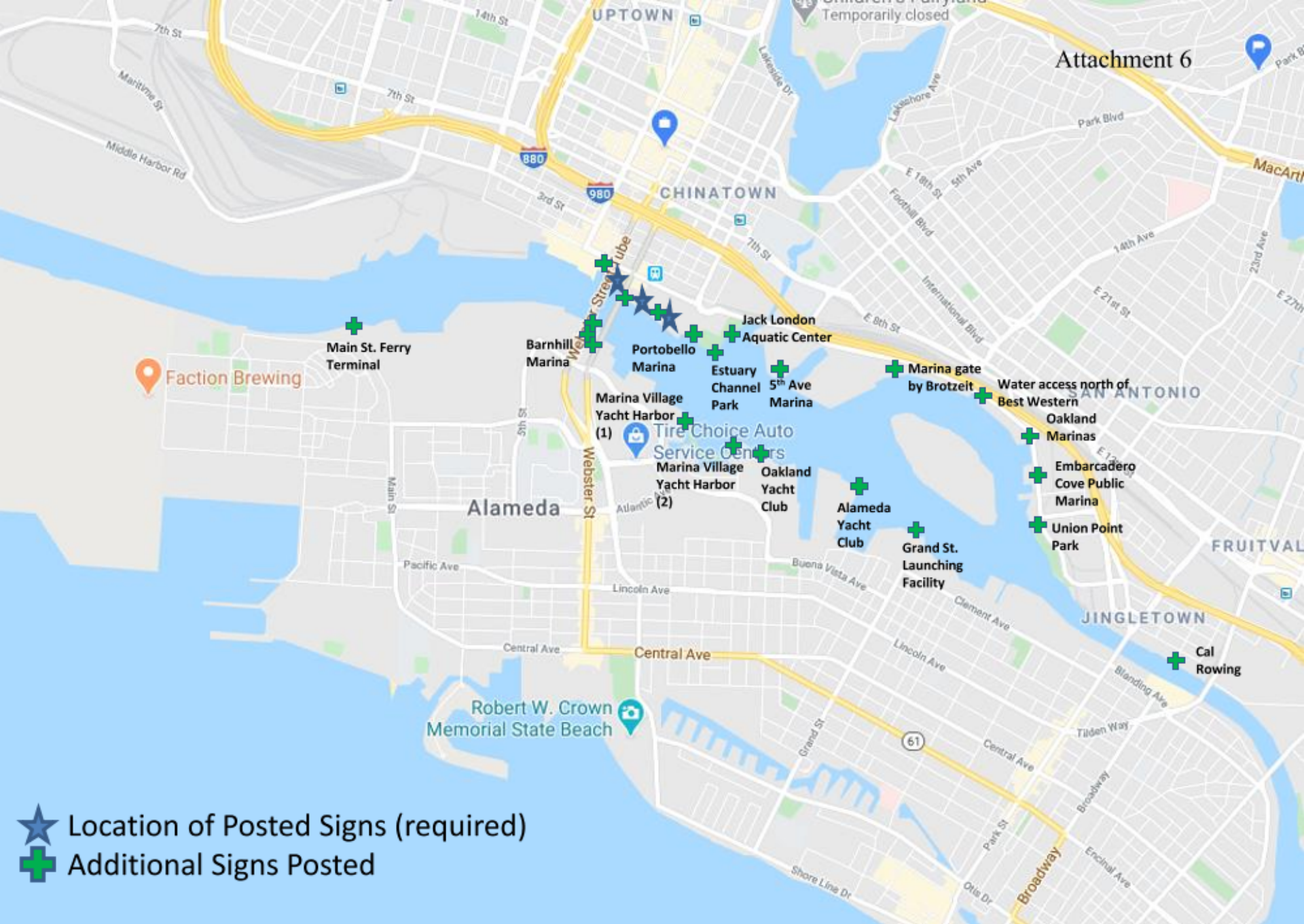
Advertencia

El agua en este sitio puede
estar contaminada. El contacto
corporal con el agua debe ser
evitado. Esta advertencia será quitada
cuando ha sido determinado que el agua
es segura para entrar. Para información
adicional, llame a East Bay Municipal
Utility District al 1-866-40-EBMUD
(1-866-403-2683).



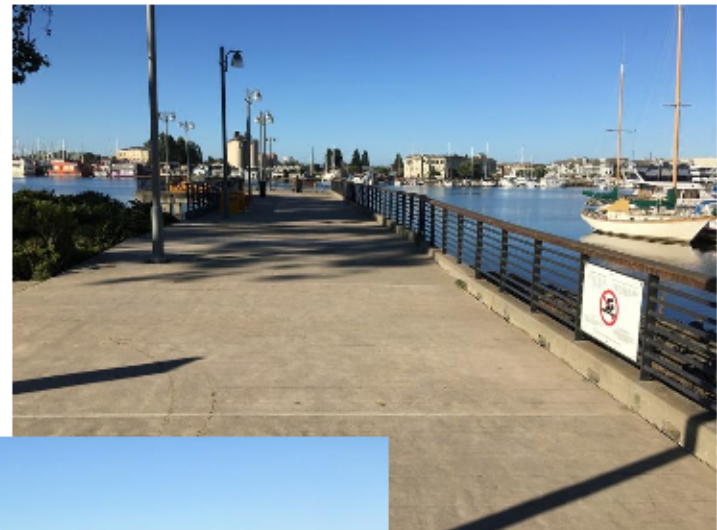
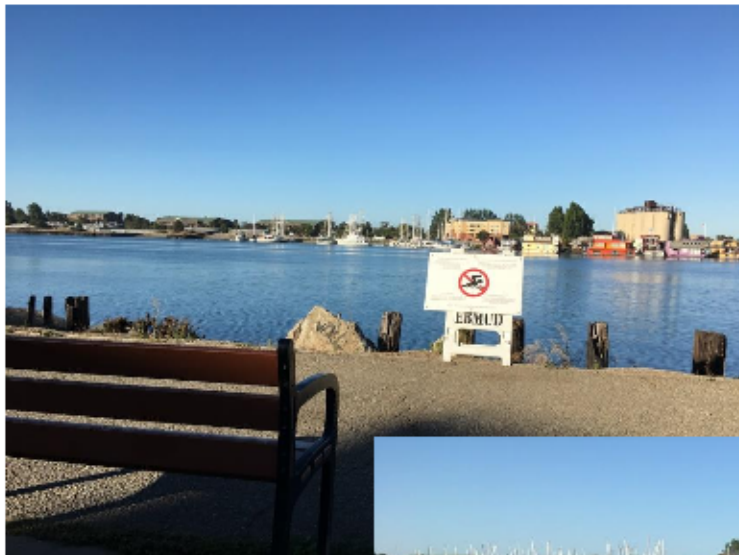
Posted by the East Bay Municipal Utility District

Attachment 6



- ★ Location of Posted Signs (required)
- ✚ Additional Signs Posted

Required Signs in Vicinity of Alice Street Overflow Structure





↑ Portobello Marina

Jack London
↓ Aquatic Center



↑ Estuary Channel
Park



↑ 5th Ave Marina

Water access
north of Best
↓ Western



↑ Marina gate by
Brotzeit





Oakland Marinas



Union Point Park



Embarcadero Cove
Public Marina



Cal Rowing



Barnhill Marina





Main St. Ferry
Terminal



↑
Marina Village
Yacht Harbor 1



↑
Marina Village
Yacht Harbor 2



↑
Oakland Yacht
Club

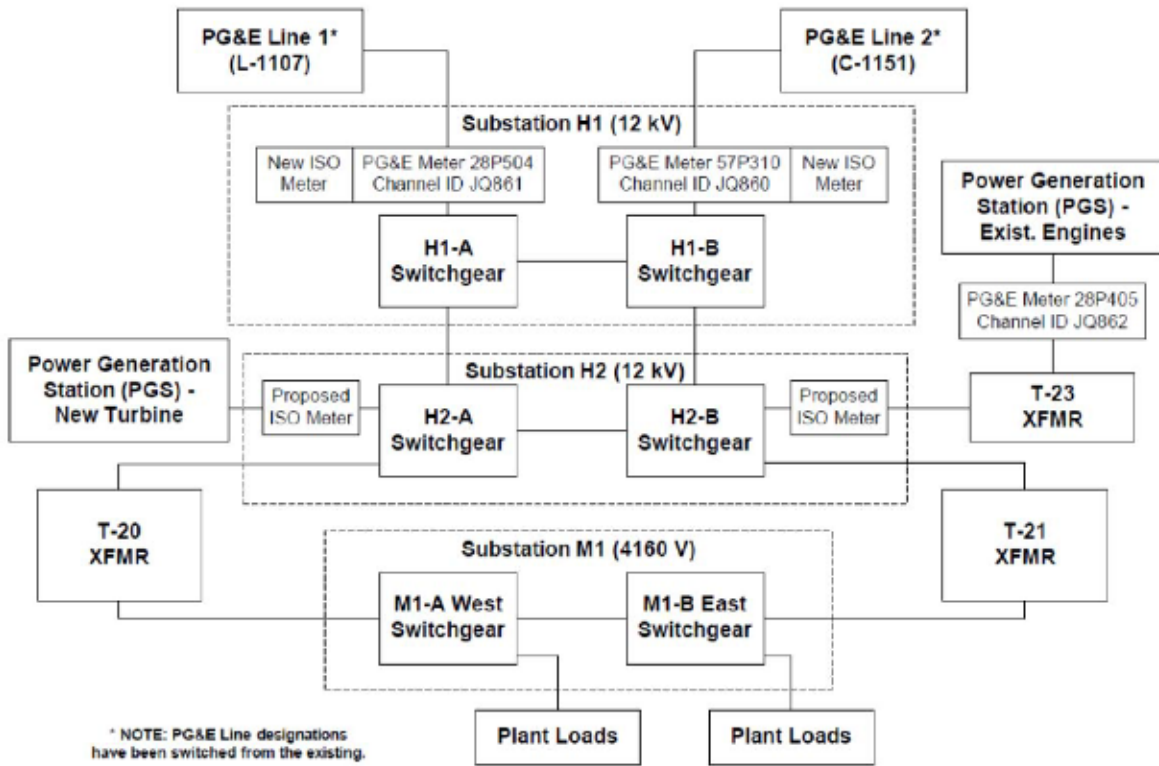
Grand St.
Launching
↓ Facility



↑
Alameda Yacht
Club



Attachment 7



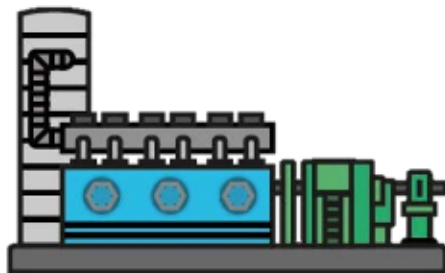
MWWTP Power Sources



Main Wastewater Treatment Plant



Turbine



Engines

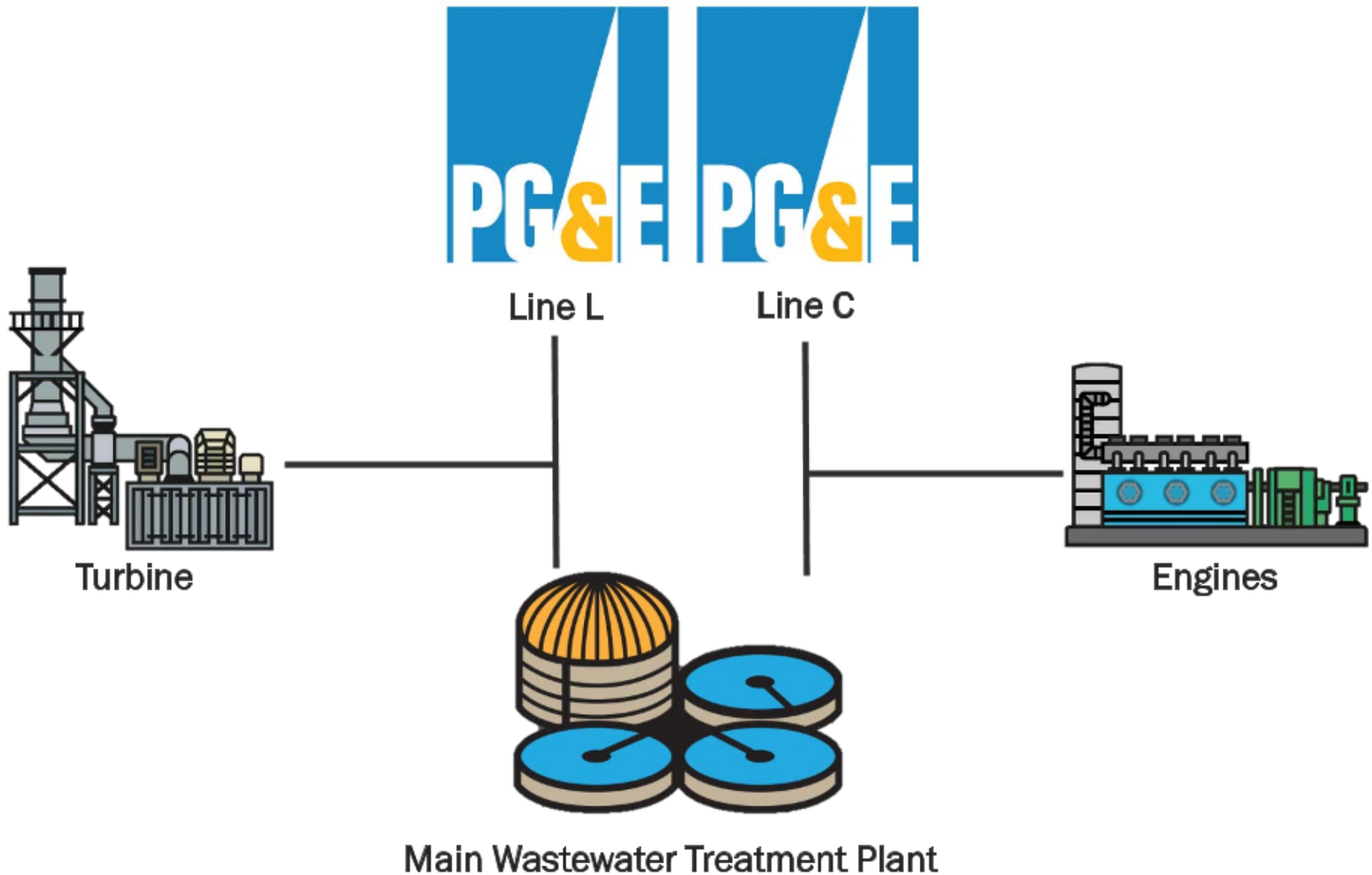


Line 1



Line 2

Typical Configuration



Attachment 8

Influent Pumping System: Overview

Purpose

The purpose of the Influent Pumps is to lift incoming wastewater up to a higher elevation so that the wastewater can flow through the various treatment processes.

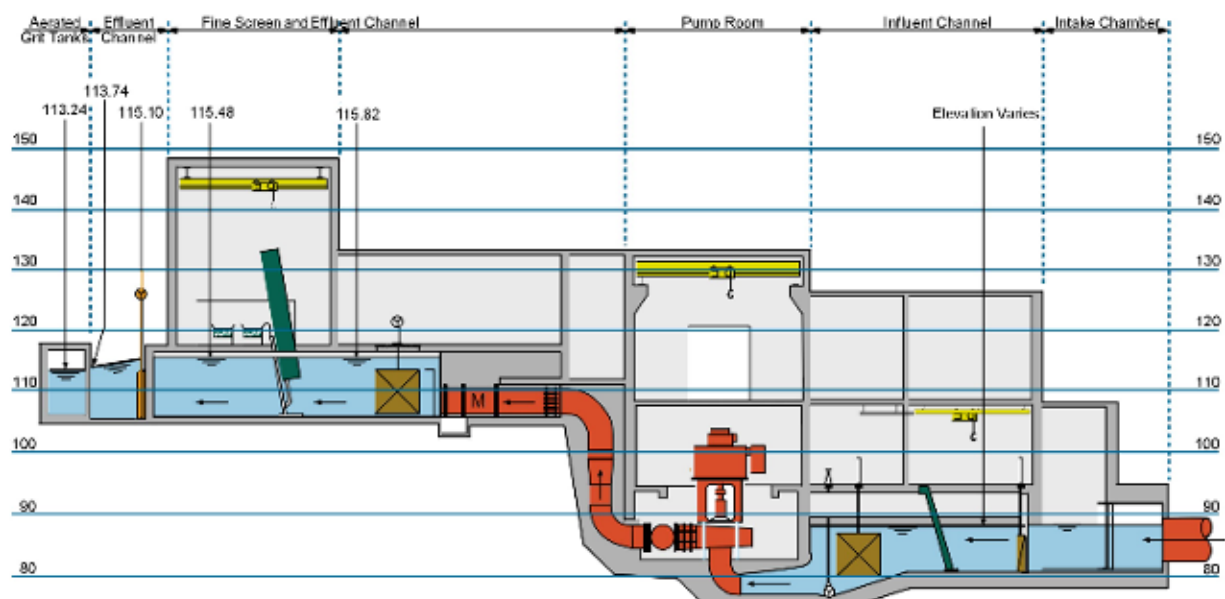
System Description

The Influent Pumps are located in the Main Pump Room of the IPS. There are five (5) Influent Pumps. The Influent pumps are designed to be in a dry environment.

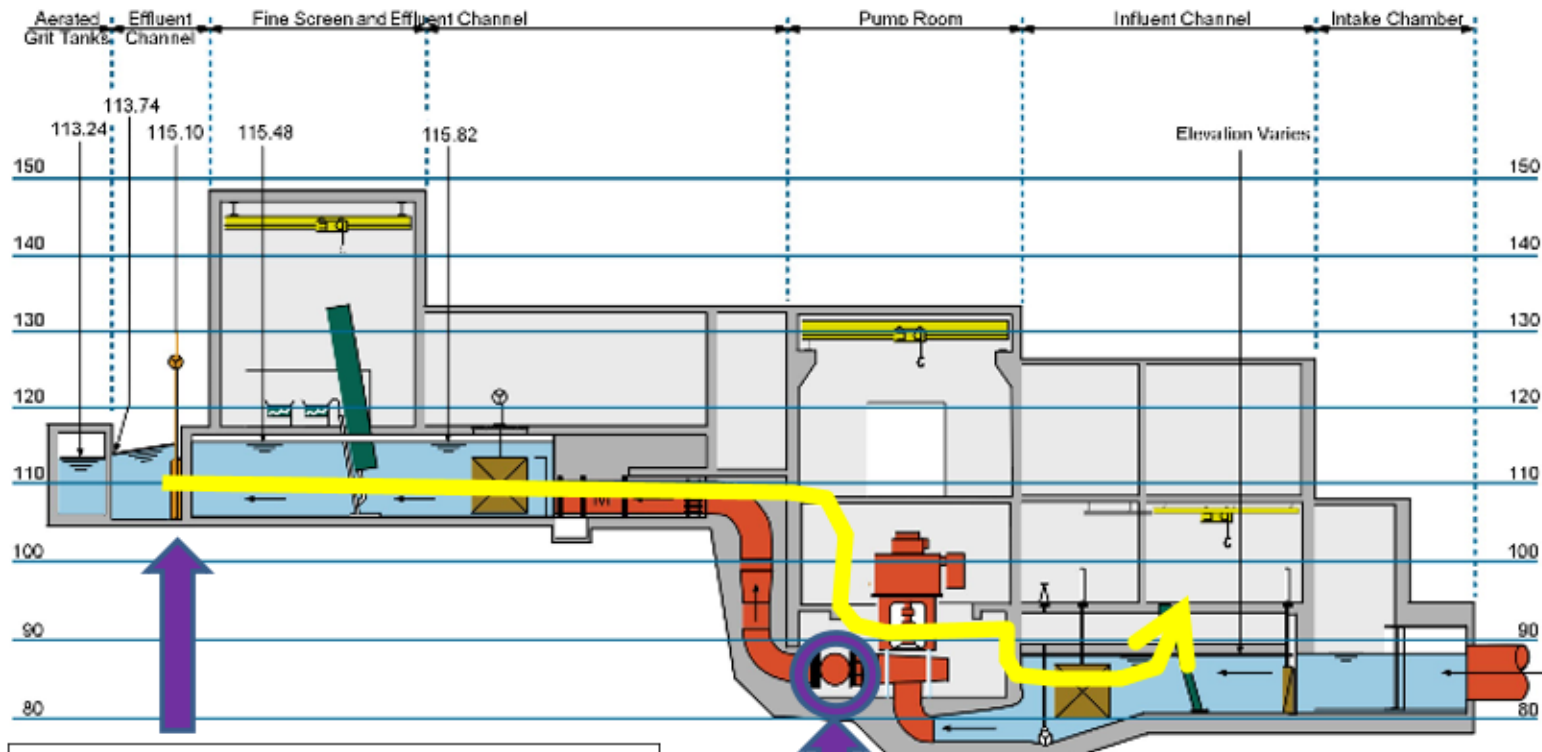
The Influent Pump Discharge Valve serves both as the Isolation Valve and the Check Valve. It is a 42-inch diameter ball valve at the discharge side of the Influent Pump. There are five (5) Discharge Valves, one per Pump. Each ball valve consists of four (4) main elements: a pressure vessel (body), a rotatable closing element (ball), a torque unit, and an operator.

Each Influent Pump has a Lubrication System which is mounted on a skid attached to the pump. Each Lubrication System consists of an oil reservoir, an oil pump and motor, an oil filter, metering valves, pressure gauges, pressure switches, an oil temperature gauge, and piping system

The operation of the Lubrication System normally is tied to the operation of its Influent Pump. When an Influent Pump receives a signal to start, the oil pump starts first to pump the oil to the Influent Pump bearings and develop an oil pressure which is sensed by a pressure switch. The oil pump then continues to run for another 20 seconds before the Influent Pump starts. The oil pump continues to run for as long as the Influent Pump runs. The oil pump will run for 20 seconds after the Influent Pump stops. The Influent Pump will not start without the oil Lubrication System working properly. The Influent Pump will also stop when the oil flow rate drops below 0.25 gpm.

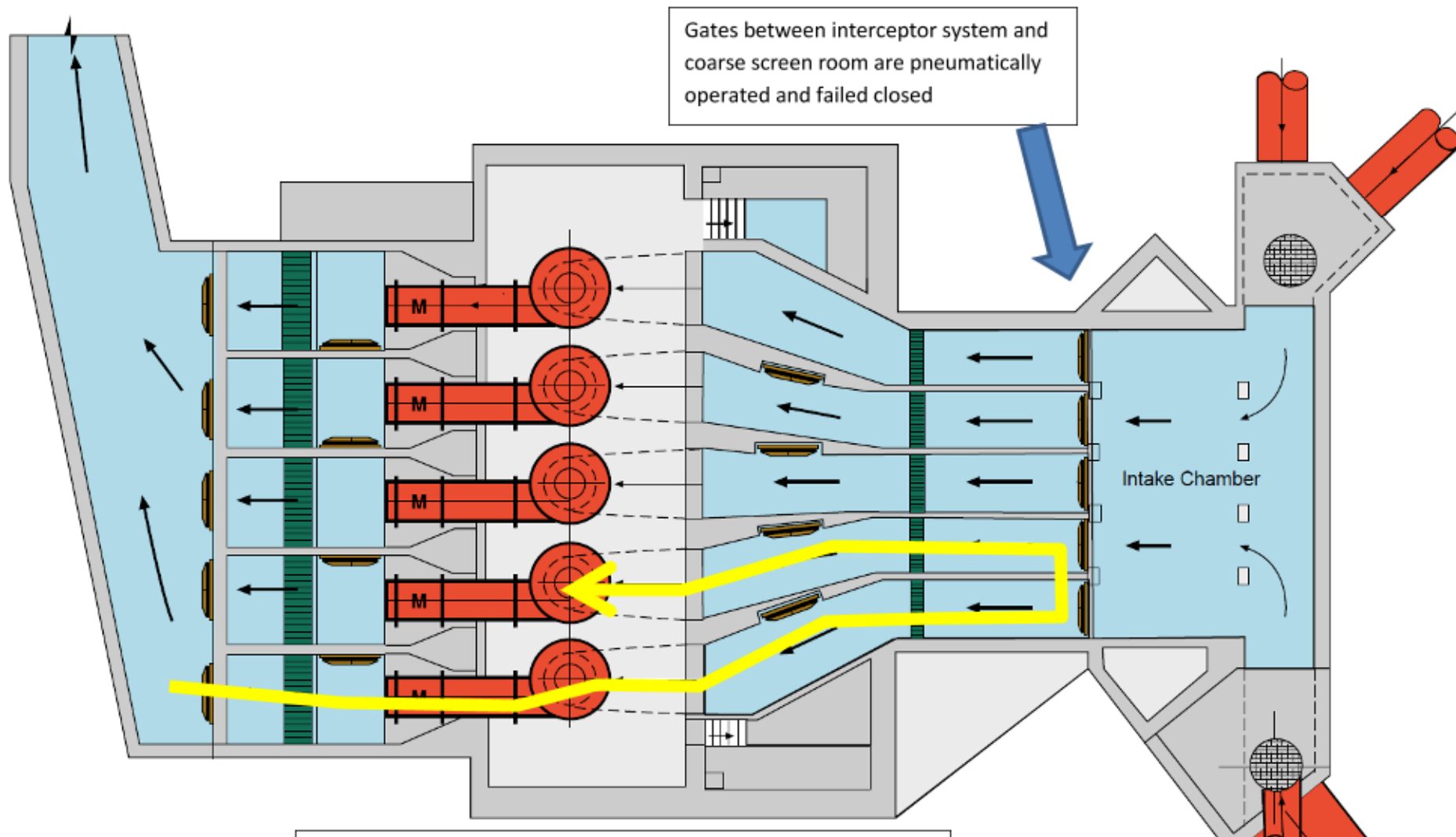


On August 14, 2020, Main Unit 5 pump at IPS was the only pump operating. When power was lost, it is believed that the discharge valve failed to close. This caused water in the channel downstream of IPS to flow backwards through the valve and fill the coarse screen room. As noted above, this valve operates as a check and isolation valve.



The discharge gate to the effluent channel is electrically powered and failed open.

The discharge valve on Main Unit 5 did not fully close, and water backed up into the coarse screen room.



Gates between interceptor system and coarse screen room are pneumatically operated and failed closed

The flow could not go back into the interceptor system since gates were closed so levels rose and it backed up into the dry pit via MU 4 which was having maintenance work done on it so the motor was off the top and the side inspection plates were removed.



Photo of new ball valve we received in early June. We are in the process of rehabbing each of the five valves one at a time. As we take one out to refurbish we put this new one in so the pump remains operational. Main Unit 3's valve is currently out for work and the next one scheduled is Main Unit 5.