STORM WATER ANNUAL REPORT ATTACHMENT

Neary Lagoon Summary Report

Dry Weather Diversion to WWTF

Dry Season: Line Cleaning, Monitoring Data

Wet Season: Pumping Summary, Discharge Report Forms, Beach Posting Summary

Neary Lagoon Summary

Dry Weather Diversion, Dry & Wet Season Summaries
Beach Postings

FY2019-2020

Dry Weather Diversion to WWTF

Dry Weather Diversion from Neary Lagoon to Wastewater Treatment Facility (previously SWMP BMP #MO-17)

During the dry season, Neary Lagoon discharge is diverted to the Wastewater Treatment Facility (WWTF) via a 12-inch bypass line (located just below the weir) so that this water is treated prior to discharge into the Pacific Ocean. The bypass line runs only if the water level is high enough in the lagoon. Lagoon water is diverted to the WWTF until rains force the gravity outlet opening. The City will also divert lagoon water to the WWTF during the "wet weather season" if the treatment plant has adequate capacity, including both hydraulic and organic loading, at that time. This is done when possible to treat the water prior to discharge, maintain consistent lagoon levels, and minimize pump operation and discharges to the beach. Diversion may also occur during periods of dry weather in the winter and spring months.

The dry weather diversion is important for receiving water quality because in spring and summer the bacteria levels in Neary Lagoon tend to increase due to the reduced freshwater flows into the lagoon and the presence of many birds and fish at the lagoon. Thus, this water is diverted to the treatment plant in lieu of being discharged at Cowell Beach.

During the permit year, lagoon water was diverted to the WWTF from 10//11/19 to 5/22/20. Thus, lagoon water was diverted approximately 215 days.

Dry Season

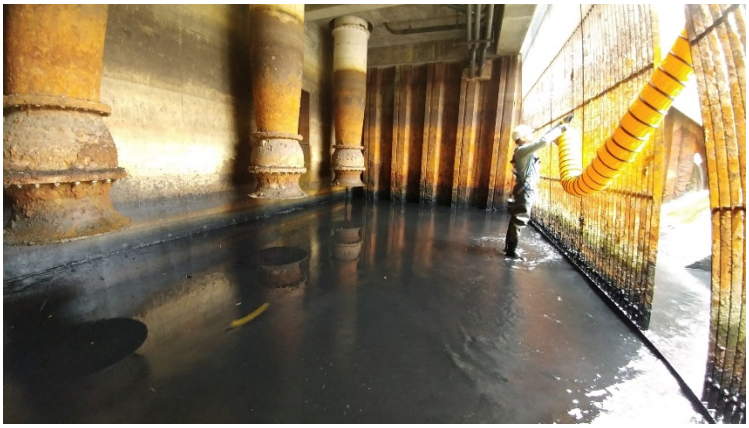
Clean Neary Lagoon Storm Drain Lines and Discharge Bacteria Laden Water to the Sanitary Sewer System (previously SWMP BMP #MO-18)

Public Works Storm Water Collections/Flood Control staff cleans the Neary Lagoon 66" force main and 66" gravity lines by a flushing process annually in order to clean the lines prior to the rainy season. This effort is done to reduce bacteria levels that may have built up in the lines over the summer months, and thus prevent the discharge of bacterial laden water to Cowell Beach if/when pump operations occur or the gravity line opens during the winter months. The water in the pipelines and from the flushing process is discharged to the sanitary sewer system. This year, maintenance efforts, discharge volume, and monitoring are summarized as follows:

A. Neary Lagoon storm drain maintenance:

- Line Flushing was primarily conducted November 15-16 and November 30-31, 2019. Due to an equipment issue, the flushing/cleaning was completed on 11/7/19.
- The line flushing process discharged approximately 100,000 gallons of water to the sanitary sewer.

- The Neary pump station was cleaned on August 1, 2019 and November 21, 2019. Approximately 2 yards of debris was removed during the August cleaning and 1 yard was removed during the November cleaning. Please see the photos below from the August cleaning.



B. Monitoring:

Environmental Compliance/Laboratory staff collected the “before” line cleaning samples on 10/15/19 prior to the Wastewater/Storm Water Collection Division cleaning/flushing of the Neary storm drain pipelines. Staff then collected the “after” sample on 11/12/19. The laboratory results are attached.

Please note that the installation of the slide gates on the Neary Lagoon storm drain culverts, which run under the railroad tracks in late Spring 2014, as part of a Clean Beaches Initiative Grant project, has enabled the City to better clean both 66" gravity and force main pipelines.

Wet Weather Season

Public Works Storm Water Collections/Flood Control staff manually turns on the pump station pumps as needed during the wet season to prevent flooding. The brief operation of the pumps helps to remove the sand that accumulates and blocks the Neary gravity storm drain line pipe opening at the beach outlet vault and thus allows lagoon water to flow from this pipe at Cowell Beach. Pump operation is typically 5-30 minutes each time. During the permit year, the pumps were operated (1) time during the wet season as described below.

A. Neary Lagoon Pump Operations:

- The Neary slide gates, on the culverts running under the railroad tracks, were opened on 11/8/19 although Neary Lagoon water was still being diverted to the WWTF at the time.
- There was a total of 1 pumping event which occurred on the following date(s):

- November 30, 2019

- Please see the attached Neary Lagoon Discharge Report Form for details of each pumping event.

B. Beach Postings: As required, coinciding with the first discharge of the wet weather season that requires operation of the flood control pumps, staff posted Cowell Beach as follows:

- Wastewater Collection/Storm Water Collection staff placed a Notice on the metal railing near the concrete stairs leading to Cowell Beach with the following wording: "Please stay out of flow to ocean. This water may have elevated bacteria levels. This may elevate bacteria levels in the ocean." The Notice was posted just prior to the first planned pump operation of the wet season on November 30, 2019. The Notice was posted for a minimum of 48 hours after the release due to pump operation as required.

- Parks and Recreation Wharf staff also placed signage near and adjacent to the storm water discharge channel/flow from the Neary Lagoon beach outlet vault to Cowell Beach at the first operation of the pumps on November 30, 2019. The signs remained posted for a minimum of 48 hours after the first pump operations release. The signs are adjusted if there are high tides or big waves present.

  As required, the signage has a graphic illustrating a child playing/recreating at the beach with a "stamp out" line through it. The purpose is to notify the public that playing in the discharge flow is not advised. Below are photos, taken on 1/8/2018, showing the signage used each year.

City of Santa Cruz Environmental Laboratory

110 California Street, Santa Cruz, CA 95060
ELAP CA #1176

Client: City of Santa Cruz - Storm Water Management Program

Contact: Suzanne Healy
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831-420-5131
shealy@cityofsantacruz.com

Project Title: Storm Water Management Program - Neary Lagoon

Report Date: 11/22/2019
Sampling Event: October 15, 2019
Sampler: TB

Analytical Method				SM 5310 B	SM4500-NH3 D	SM 9222 D	SM 9230 C	EPA 4500-H+	
Date/Time Collected	**Sample Type**	**Sample Description**	**LIMS ID**	**TOC** (mg/L)	**NH_3** (mg/L as N)	**Fecal Coliforms** (CFU/100ml)	**Enteroccous** (CFU/100ml)	**Field pH**	**Sampling Observations**
10-15-19 @0925	Grab	Pump House	AB06337-40	6	0.4	175	307	7.5	Approx. 5 paper/plastic trash
10-15-19 @0942	Grab	Force Main	AB06341-44	6	2.4	28	56	8.1	Approx. 5 birds nesting
10-15-19 @0932	Grab	Gravity Main	AB06345-48	3	1.1	12	42	7.5	Approx. 5 birds nesting
10-15-19 @0954	Grab	Beach Vault	AB06349-52	6	2.4	295	625	7.5	None taken
Analyst				JM	JM	MK	MK	TB	
Quality Control									
Method Blank				<1	<0.20	<1	<1		
Method Detection Limit				0.7	0.04	1	1		
Reporting Limit				2	0.20	1	1		
Media Controls						pass	pass		
CRM Recovery (%)				94.8%	102%				
Spike Recovery (%)				96.4%	100%				
Spike RPD				1.3%					
Duplicate RPD				1.5%	12.5%				

QC Code:

QA/QC Chemist:

Laboratory Manager:

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809 Center Street, Santa Cruz, CA 95060
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shealy@cityofsantacruz.com

Project Title: Storm Water Management Program - Neary Lagoon

Report Date: 11/22/2019
Sampling Event: November 12, 2019
Sampler: TB

Analytical Method				SM 5310 B	SM4500-NH3 D	SM 9222 D	SM 9230 C	EPA 4500-H+	
Date/Time Collected	**Sample Type**	**Sample Description**	**LIMS ID**	**TOC** (mg/L)	**NH_3** (mg/L as N)	**Fecal Coliforms** (CFU/100ml)	**Enteroccous** (CFU/100ml)	**Field pH**	**Sampling Observations**
11-12-19 @0955	Grab	Pump House	AB07037-40	3	0.2	106	230	7.6	
11-12-19 @1026	Grab	Force Main	AB070341-44	4	0.5	29	77	7.9	~15 birds
11-12-19 @1011	Grab	Gravity Main	AB07045-48	2	0.4	5	258	7.4	~15 birds
11-12-19 @0936	Grab	Beach Vault	AB07049-52	6	0.6	375	725	8.1	
Analyst				AB	JM	MK	MK	TB	
Quality Control									
Method Blank				<1	<0.20	<1	<1		
Method Detection Limit				0.7	0.04	1	1		
Reporting Limit				2	0.20	1	1		
Media Controls						pass	pass		
CRM Recovery (%)				92.0%	99.0%				
Spike Recovery (%)				96.0%	93.4%				
Spike RPD				0.4%					
Duplicate RPD				1.2%	3.8%				

QC Code:

QA/QC Chemist:

Laboratory Manager:

CITY OF SANTA CRUZ

DEPARTMENT OF PUBLIC WORKS
WASTEWATER MAINS

NEARY LAGOON DISCHARGE REPORTING FORM

Date form completed: 11.30.19

Name of person completing form: Rome Norman

Public Works Division (or other): Wastewater Collection / Flood Control

Date of discharge: 11.30.19

1. Is the flow pump or gravity discharge, or both? Pump

2. Estimated amount of total discharge (gallons). 1,980,000

3. Estimated duration of total discharge. 1
   Pump time: #1 1 hrs #2 1 hrs #3 .6 hrs

4. Time of day or night (military time). 1715 Hrs

5. Treatment plant influent flow rate (gallons) 11.8 MGD

6. Weather: Actual Rain Forecasted unsettled

7. Information indicating a potential flood condition in lagoon area.
   Lagoon level has reached 7.11' MSL with unsettled weather in the forecast w/ High Surf

8. Comments and observations on beach usage, signage, ocean conditions, etc.:
   Beach area cleared of Citizens prior to pumping operation

* To be completed as soon as possible following observation of pump operation or gravity discharge on a daily basis. Submit weekly to Assistant Director of Public Works. Annual discharge report to be submitted to Regional Water Quality Control Board by May 15th of each year by Assistant Director.