

Appendix OERP-A

- SSO Report Form (Adopted from SAM SSMP)
 - SSMP and First Responder Contact List

Sanitary Sewer Overflow/Backup Response Packet
Sanitary Sewer Overflow Report

Spill Category (*check one*):

- Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either (1) Reaches surface water and/or drainage channel tributary to a surface water; OR (2) Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.
- Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either (1) Does not reach surface water, a drainage channel, or an MS4, OR (2) The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.
- Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition
- Spill from Private Lateral

IMMEDIATE NOTIFICATION:
If this is a Category 1 spill greater than or equal to 1,000 gallons, contact CalOES within 2 hours at (800) 852-7550.

Indicate the service area where the SSO occurred:

- Montara
- SAM
- Grenada
- Half Moon Bay

Describe the basis for choosing the spill category:

A. SPILL LOCATION

Spill Location Name:		
Latitude Coordinates:	Longitude Coordinates:	
Street Name and Number:		
Nearest Cross Street:	City:	Zip Code:
County: Napa	Spill Location Description:	

B. SPILL DESCRIPTION

Spill Appearance Point (check one or more): <input type="checkbox"/> Building/Structure <input type="checkbox"/> Force Main <input type="checkbox"/> Gravity Sewer <input type="checkbox"/> Pump Station	
<input type="checkbox"/> Other Sewer System Structure (<i>i.e. cleanout</i>) <input type="checkbox"/> Manhole- Structure ID#: <input type="checkbox"/> Other (<i>specify</i>):	
Did the spill reach a drainage channel and/or surface water? <input type="checkbox"/> Yes (<i>Category 1</i>) <input type="checkbox"/> No	
If the spill reached a storm sewer, was it fully captured and returned to the Sanitary Sewer? <input type="checkbox"/> Yes <input type="checkbox"/> No (<i>Category 1</i>)	
Was this spill from a private lateral? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, name of responsible party:	
Discharged into: <input type="checkbox"/> Ocean/ocean beach <input type="checkbox"/> Waters of the state other than ocean <input type="checkbox"/> Drainage channel <input type="checkbox"/> Combined storm drain	
<input type="checkbox"/> Separate storm drain <input type="checkbox"/> Paved surface <input type="checkbox"/> Unpaved surface <input type="checkbox"/> Building/structure <input type="checkbox"/> Street/curb/gutter	
<input type="checkbox"/> Other: Provide name(s) of affected drainage channels, beach, etc.:	
Total Estimated spill volume (<i>in gallons – 1,000gal or more = Category 1</i>):	gallons
Est. volume that reached a separate storm drain that flows to a surface water body:	gal Recovered: gal
Est. volume that reached a drainage channel that flows to a surface water body:	gal Recovered: gal
Est. volume discharged directly to a surface water body:	gal Recovered: gal
Est. volume discharged to land:	gal Recovered: gal
Calculation Methods: <input type="checkbox"/> Eyeball <input type="checkbox"/> Photo Comparison <input type="checkbox"/> Upstream Connections <input type="checkbox"/> Area/Volume <input type="checkbox"/> Lower Lateral	
<input type="checkbox"/> Other (describe):	
NOTE: Attach all Spill Volume Estimation documentation including calculations and summary.	

C. SPILL OCCURRING TIME

Estimated spill start date:	Estimated spill start time:
Date spill reported to sewer crew:	Time spill reported to sewer crew:
Date sewer crew arrived:	Time sewer crew arrived:
Who was interviewed to help determine start time?	
Estimated spill end date:	Estimated spill end time:

* If multiple appearance points, use the GPS coordinates for the location of the SSO appearance point closest to the failure point/blockage.

NOTE: Attach detailed start time determination documentation.

Sewer Authority Mid-Coastside: Overflow Emergency Response Plan

**Sanitary Sewer Overflow/Backup Response Packet
Sanitary Sewer Overflow Report**

**B-4
Side 2**

D. CAUSE OF SPILL

Location of Blockage: Main Lateral Private Lateral Other:

SSO cause (check all that apply): Debris/Blockage Flow exceeded capacity Grease Operator error Roots
 Pipe problem/failure Pump station failure Rainfall exceeded design Vandalism Inflow/infiltration
 Animal carcass Electrical power failure Bypass Debris from laterals Construction Debris
 Other (specify):

Diameter (in inches) of pipe at point of blockage/spill cause (if applicable):

Sewer pipe material at point of blockage/spill cause (if applicable):

Estimated age of sewer asset at the point of blockage or failure (if applicable):

Description of terrain surrounding point of blockage/spill cause: Flat Mixed Steep

E. SPILL RESPONSE

Spill response activities (check all that apply): Cleaned up Contained all/portion of spill TV inspection Restored flow
 Returned all/portion of spill to sanitary sewer Other (specify):

Spill response completed (date & time):

Visual inspection result of impacted waters (if applicable):

Any fish killed? Yes No Any ongoing investigation? Yes No

Were health warnings posted? Yes No If yes, provide health warning/beach closure posting/details:

Was there a beach closure? Yes No If yes, name of closed beach(es):

Were samples of impacted waters collected? Yes No

If YES, select the analyses: DO Ammonia Bacteria pH Temperature Other:

Recommended corrective actions: (check all that apply and provide detail)

- Clean line again ASAP:
- CCTV:
- Re-CCTV:
- Additional work:
- Cleaning schedule change:
- Cleaning method change:
- Fog investigation:
- Repair line segment:
- Replace line segment:
- Additional comments:

List all agency personnel involved in the response including name, title and their role in the response:

<u>Name</u>	<u>Title</u>	<u>Role</u>
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F. NOTIFICATION DETAILS

CalOES contacted date and time (if applicable):

CalOES Control Number (if applicable):

Spoke to:

G. RECOMMENDED FOLLOW-UP ACTIONS TO PREVENT FUTURE OCCURRENCES

CURRENT PM FREQUENCY:

DATE OF LAST PM:

RECOMMENDED ACTIONS: TV RE-RUN CHANGE CLEANING SCHEDULE
 REPAIR LINE SEGMENT REPLACE LINE SEGMENT OTHER (describe):

NOTES:

Place completed form in Sewer Overflow/Backup Response Packet and follow routing instructions.

**City of Half Moon Bay
SSMP and OERP Contact List**

Title	Name	Contact #
City Manager	Bob Nisbet	650-726-8280
Deputy City Manager	Matthew Chidester	650-726-8272
Public Works Director	John Doughty	650-726-7177
City Engineer	Maziar Bozorginia	650-726-8251
Associate Engineer	Denice Hutten	650-750-2005
Sewer Authority Mid-Coastside (Maintenance and SSO Response)	Tim Costello (Operations Supervisor)	650-726-0124 (24 hours)
Mark Thomas Company (Operations Manager)	Frank Quach	510-299-0917
Mark Thomas Company (Operations Superintendent)	Rick Almondia	408-483-0497

ADJACENT SEWER SERVICE AREAS

Agency	Phone Number
Granada Sanitary District	650-726-7081
Montara Water and Sanitary District	650-728-3545

SSO REPORTING AND EMERGENCY CONTACT INFORMATION

Agency	Phone Number
Granada Sanitary District	650-726-7093
Montara Water and Sanitary District	650-728-3545
CA Office of Emergency Services	800-852-7550
San Mateo County Environmental Health	650-372-6200
San Mateo County Sheriff Dispatch	650-216-SMSO (7676)
San Mateo County Public Health Laboratory	650-573-2500
CA Department of Fish and Wildlife	707-944-5500
SWRCB SSO Program Manager: Paul Levy	916-323-5598

SSO REPORTING AND EMERGENCY CONTACT INFORMATION

Agency	Phone Number
Claims Representative (Internal SSO): Carl Warren & Co.	909-763-4320

Appendix OERP-B

- Residential Sewage Contamination Flyer
- Pump Station Emergency Response Plan
 - SSO Volume Estimation Methods
 - Example SSO Notification Signs(s)

General Precautions for Sewage Contamination on Residential Property

If a sewer backup causes flooding in your home:

- ✓ Keep people and pets away from the affected area(s).
- ✓ Do not attempt to clean it yourself.
- ✓ Turn off central heat and air-conditioning systems and prevent flow from reaching floor vents by using towels or blankets as a berm. You can also remove the vent cover and stuff a towel in the opening to help prevent the flow from entering.
- ✓ Leave items in the affected area for the experts to handle.

Homeowner responsibilities

The homeowner is responsible for clearing any blockage in the home's plumbing system or private lateral and for any resulting flood damage to the structure. The homeowner is also responsible for damage that happens because a lateral was not properly installed. If the sewage flooding was caused by blockage in your private lateral:

- ✓ Call an experienced restoration company for cleanup and removal of affected surfaces.
- ✓ Report a claim to your homeowner's insurance carrier.
- ✓ If you had recent plumbing work, contact your plumber or contractor.
- ✓ If the sewage flooding was caused by a blockage in the public sewer main, the agency may be responsible for the damage. If you have a claim, file your claim as soon as possible. SAM and/or its insurance carrier will arrange for a restoration company.

Note: This information is provided to assist residents who experience an overflow of sewage on their property. It is not inclusive of events involving severe flooding, which can cause additional structural damage.

To report a sewage spill, contact the City's Contract Operator, Sewer Authority Mid-Coastside (SAM) at (650) 726-0124 day or night.

**** See "Water Damage Restoration" section of the Yellow Pages for a list of restoration contractors****



PUMP STATION OVERFLOW EMERGENCY RESPONSE PLAN

City of Half Moon Bay
February 2020

WDID No. : 2SSO10139

Prepared by



V.W. HOUSEN
—
& ASSOCIATES

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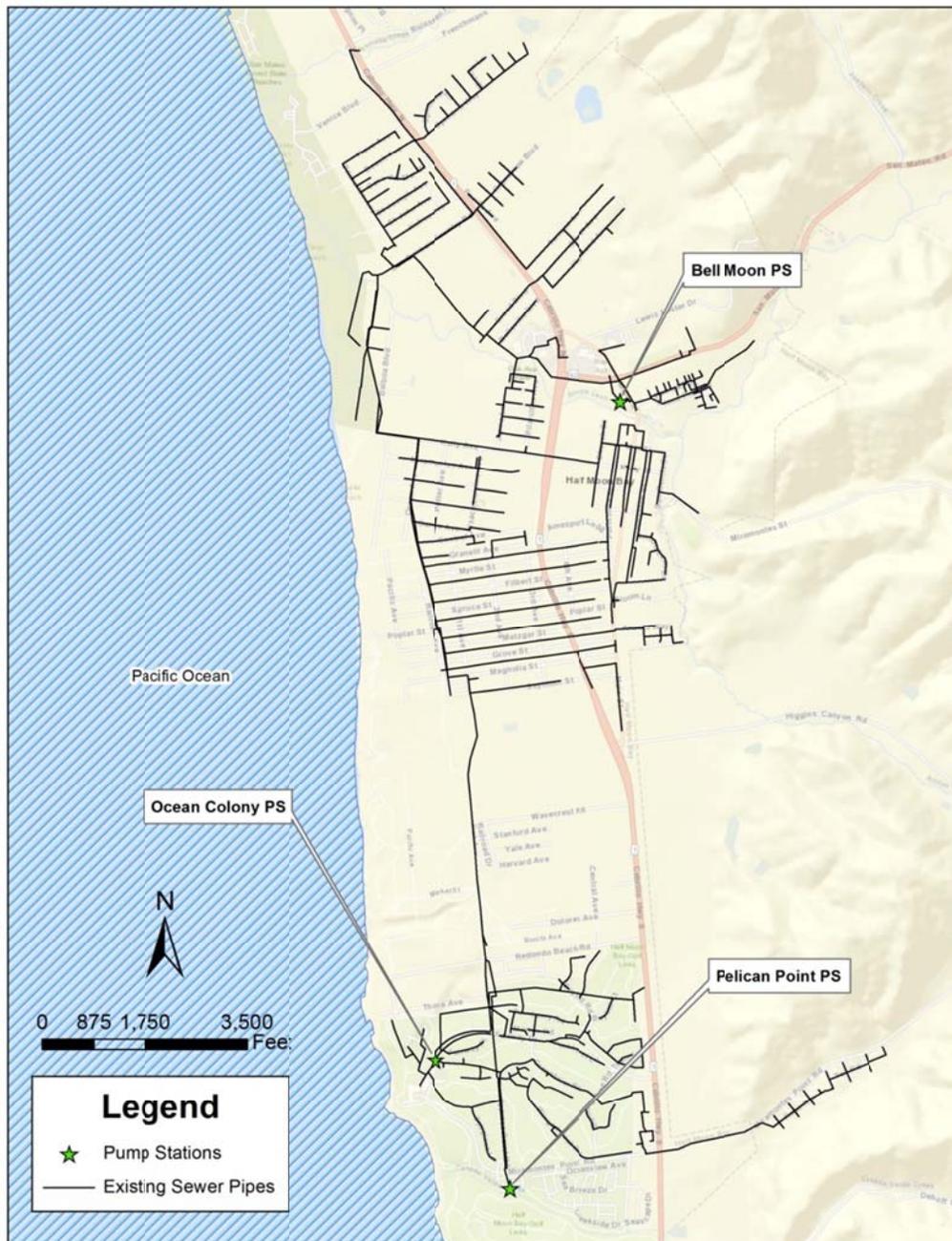
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Chapter 1 Pump Station Information

The City of Half Moon Bay Pump Station Emergency Response Plan (PERP) provides guidelines for responding to and reporting emergency incidents (i.e. overflow, pump failure) that occur in the pump stations. The City's sewer collection system serves a population of approximately 13,000 and consists of approximately 35 miles of gravity sewer mains, 3,750 lateral connections, 1.5 miles of force mains, and three pump stations. The City's Collection System Map is shown in Figure 1-1.

Figure 1-1. Collection System Map and Pump Station Locations



1.1 Bell Moon Pump Station

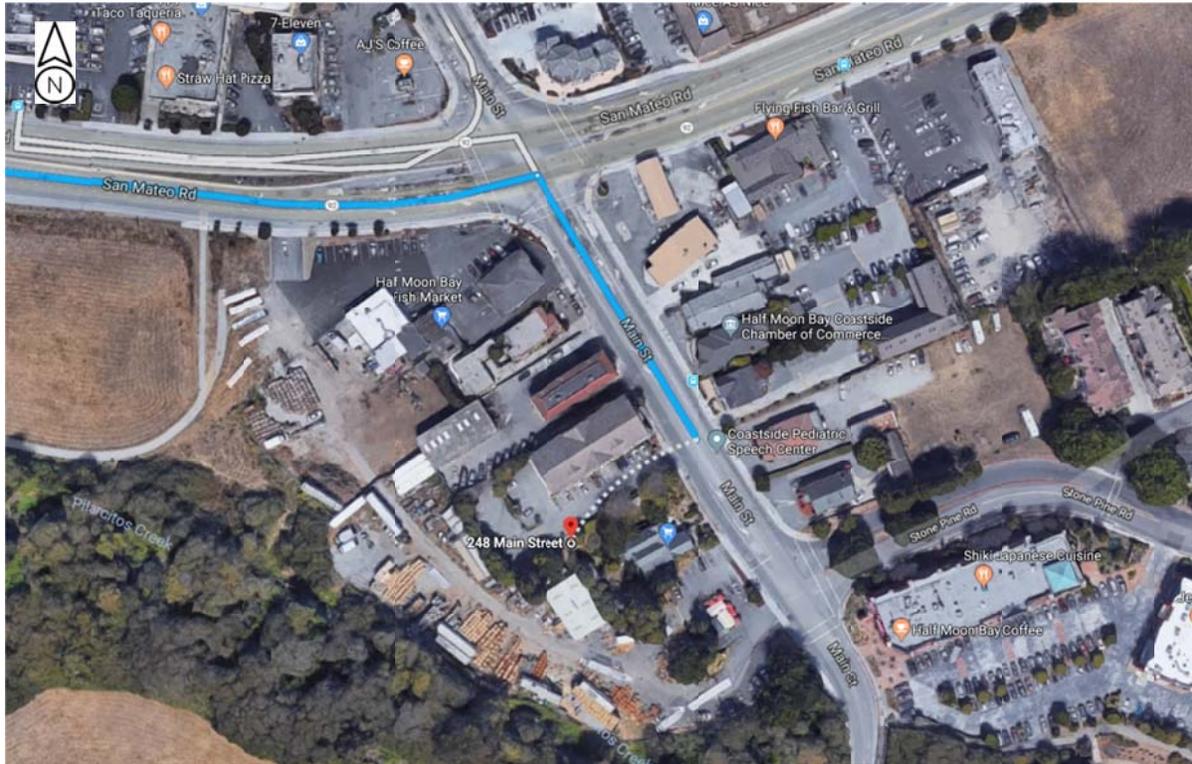
Bell Moon Pump Station conveys sewage from a small portion of the commercial area west of Main Street and north of Pilarcitos Creek to the gravity flow trunk sewer in Main Street. The pump station is located along the south side of the parking lot at 248 Main Street as shown in Figure 1-2 on the following page. The lift station discharges to a 4-inch force main that discharges to a 6-inch gravity main on Main Street at sewer manhole H11035. Table 1-1 summarizes Bell Moon pump station characteristics.

Table 1-1 Bell Moon Pump Station Characteristics

Location Summary	
Address	248 Main Street, Half Moon Bay, CA
Lat, Long	37.466779, -122.429922
Sewer Map	City of Half Moon Bay Sewer Collection System Map Book page H11
Directions	<ul style="list-style-type: none"> • From the Sewer Authority Mid-Coastside Treatment Plant at 1000 Cabrillo Hwy N, Half Moon Bay, CA 94019 • Head northeast on Bev Cunha's Country Rd toward Frontage Rd (0.3 mi) • Turn right onto Frontage Rd (0.2 mi) • Turn right onto Cabrillo Hwy N (0.4 mi) • Use the left 2 lanes to turn left after Burger King (on the right) (0.2 mi) • Turn right onto Main St (322 ft) • Turn into the parking lot at 248 Main Street, and the pump station will be on your left
Pump Capacities	
#1	3 HP Flygt NP 3085 5 ¹ GPM
#2	3 HP Flygt NP 3085 30 GPM
Backup Systems	
Backup Power	Mitsubishi® S4L2-W461ML 22.3 hp @ 1800 rpm. The generator is capable of running at 13 kW / 13 kVA (54A @ 240V) rated capacity. The pump station has a receptacle for connecting the portable generator.
Bypass	Utilize 1,000 gallon Vactor Truck as means of bypass during repair/maintenance operations
Flow Monitoring	Electromagnetic flow meter - Siemens Model 5100W with a MAGFLO 5000 converter

¹The mix-flush valve on Pump #1 significantly reduces its pumping capacity.

Figure 1-2. Bell Moon Pump Station Location



1.2 Ocean Colony Pump Station

The Ocean Colony Pump Station conveys sewage to the City's gravity system from the Ocean Colony community and from Miramontes Point Road. In addition, sewage from the Pelican Point pump station can be re-directed to the Ocean Colony pump station during bypass operations. The pump station is located on Fairway Drive as shown in Figure 1-3. The lift station discharges to a 6-inch force main that discharges to an 18-inch gravity main on Redondo Beach Road, and manhole number H22005. Table 1-2 summarizes Ocean Colony Pump Station Characteristics.

Figure 1-3. Ocean Colony Pump Station Location

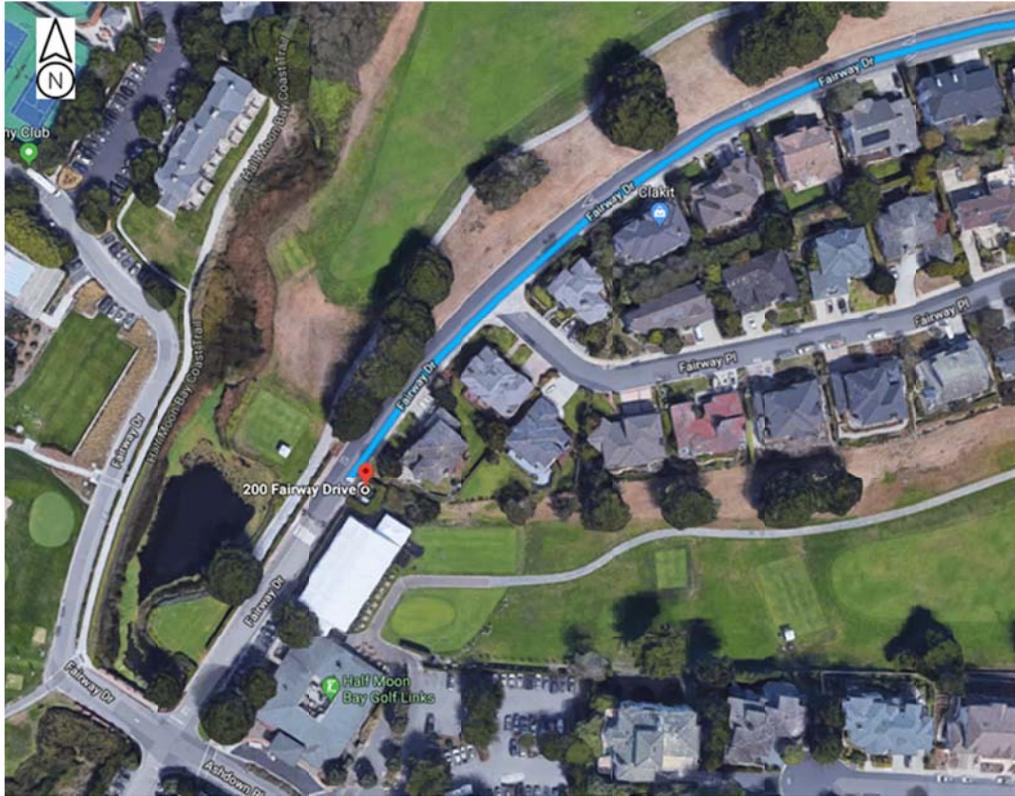


Table 1-2. Ocean Colony Pump Station Characteristics

Location Summary		
Address	202 Fairway Drive, Half Moon Bay, CA	
Lat, Long	37.435459, -122.440083	
Sewer Map	City of Half Moon Bay Sewer Collection System Map Book page H24	
Directions	<ul style="list-style-type: none"> • From the Sewer Authority Mid-Coastside Treatment Plant at 1000 Cabrillo Hwy N, Half Moon Bay, CA 94019 • Head northeast on Bev Cunha's Country Rd toward Frontage Rd (0.3 mi) • Turn right onto Frontage Rd (0.2 mi) • Turn right onto CA-1 S/Cabrillo Hwy N (2.8 mi) • Turn right onto Fairway Drive (0.8 mi) 	
Pump Capacities		
#1	47 HP Submersible Flygt C3201.280	500 GPM
#2	47 HP Submersible Flygt C3201.280	500 GPM
Backup Systems		
Backup Pump	SAM is in the process of acquiring a backup pump through a pump vendor.	
Backup Power	Onsite generator Energy Model DS00125D6SRAK0574 that utilizes a John Deere 4045HF285 125 kW engine. Diesel fuel tank capacity of 240 gallons.	
Bypass	Utilize 1,000 gallon Vactor Truck as means of bypass during repair/maintenance operations	
Flow Monitoring	Currently not equipped with a flow meter.	

1.3 Pelican Point Pump Station

The Pelican Point Pump Station conveys sewage from the area south of Miramontes Road and West of Highway 1, in the southern portion of the City, as shown in Figure 1-4. Flows are generated by the Pelican Point and Canada Cove Mobile Home Parks, both adjacent to the pump station, and the Moon Ridge Apartments on the east side of Highway 1. The lift station discharges to a 6-inch force main that discharges to an 18-inch gravity main on Redondo Beach Road, at manhole H22005. Flows can be temporarily redirected to an 8-inch gravity sewer system at the end of Cypress Point Road via valving located in an access vault if force main maintenance is needed. Table 1-3 provides additional information on the Pelican Point Pump Station.

Figure 1-4. Pelican Point Pump Station Location



Table 1-3. Pelican Point Pump Station Characteristics

Location Summary	
Address	1001 Miramontes Point Road, Half Moon Bay, CA
Lat, Long	37.429329, -122.435492
Sewer Map	City of Half Moon Bay Sewer Collection System Map Book page H29
Directions	<ul style="list-style-type: none"> From the Sewer Authority Mid-Coastside Treatment Plant at 1000 Cabrillo Hwy N, Half Moon Bay, CA 94019 Head northeast on Bev Cunha's Country Rd toward Frontage Rd (0.3 mi) Turn right onto Frontage Rd (0.2 mi) Turn right onto CA-1 S/Cabrillo Hwy N (3.0 mi) Turn right onto Miramontes Point Rd (0.5 mi) Turn Left – Destination will be on your left (453 ft)
Pump Capacities	
#1	10 HP Submersible Flygt pumps, Model NP 3127 225 GPM
#2	10 HP Submersible Flygt pumps, Model NP 3127 225 GPM
Backup Systems	
Backup Pump	10 HP Submersible Flygt pumps, Model NP 3127
Backup Power	Onsite generator DMT Corporation Model 80C
Bypass	Utilize 1,000 gallon Vector Truck as means of bypass during repair/maintenance operations
Flow Monitoring	Currently not equipped with a flow meter.

Chapter 2 Emergency Contact Information

Sewer Authority Mid-Coastside receives alarm for pump station emergencies including all service calls pertaining to the City’s sewer collection system. SAM receives all alarms directly. In addition, SAM receives a phone call from a third party alarm system, Hue & Cry, notifying them of the alarm at the stations. After receiving the call, SAM will notify Mark Thomas and Company (MTCO) of the alarm received and will proceed with emergency response. A second call will be made by SAM to MTCO after arriving on the site to relay their observations. From this point, MTCO will decide whether or not to mobilize an MTCO crew for further assistance.

2.1 OERP and PERP Contact List

SEWER AUTHORITY MID-COASTSIDE

SAM Staff	Name	Contact #
SAM Business Hours (Maintenance and SSO Response)	SAM Administrative Assistant	650-726-0124
SAM Non-Business Hours (Maintenance and SSO Response)	On-Call Employee	650-726-0124
Pump Station Staff	Carlos Mendez	(650) 438-1938 / (650) 430-9210
Supervisor of Treatment/Field Operations	Tim Costello	650-245-8538
Lead Collection Worker	Tony Young	650-703-9123
Engineering & Construction Contracts Manager	Kishen Prathivadi	951-764-5674

MARK THOMAS & COMPANY

Mark Thomas Company Staff	Name	Contact #
Pump Station Maintenance Lead Worker	Tony Soares	408-253-7863
Pump Station Maintenance Worker	Dale Bennett	408-761-5875
Operations & Maintenance Supervisor	Frank Quach	510-299-0917
Project Manager	Benjamin Porter	650-726-8251

CITY OF HALF MOON BAY

City Staff	Name	Contact #
Public Works Director	John Doughty	831-247-1088
City Engineer	Maziar Bozorginia	408-489-9026
Associate Civil Engineer	Denice Hutten	650-750-2005

ADJACENT SEWER SERVICE AREAS

Agency	Phone Number
Granada Sanitary District	650-726-7081
Montara Water and Sanitary District	650-728-3545

SSO REPORTING AND EMERGENCY CONTACT INFORMATION

Agency	Phone Number
Granada Sanitary District	650-726-7093
Montara Water and Sanitary District	650-728-3545
CA Office of Emergency Services	800-852-7550
San Mateo County Environmental Health	650-372-6200
San Mateo County Sheriff Dispatch	650-216-SMSO (7676)
San Mateo County Public Health Laboratory	650-573-2500
CA Department of Fish and Wildlife	707-944-5500
SWRCB SSO Program Manager: Paul Levy	916-323-5598
Claims Representative (Internal SSO): Carl Warren & Co.	909-763-4320

Chapter 3 Hazards and Cautions

This section of the PERP identifies the different hazards that could potentially be encountered at the City's pump stations.

3.1 Traffic Control

SSO response crew observes safety practices and utilizes personal protective equipment for addressing traffic hazards when responding to emergencies in and around the pump stations. In the event of an overflow, the SSO response crew will setup detours as needed in order to keep the public away from the spill areas. The SSO response crew may utilize some or all of the following equipment listed below:

- Traffic cones
- Caution tape
- Barricades
- Signage

3.2 Obstacles and Crossings

There are no known obstacles or crossings.

3.3 Safety Hazards

3.3.1 Electric Hazards

In order to ensure that electrical equipment within the pump stations is properly shut off for repair or maintenance, the SSO response crew will follow standard Lockout and Tagout procedures at all times. Response crew members will verify that all electrical equipment capable of storing energy is controlled prior to initiating exposure.

3.3.2 Sanitary Hazards

As part of SSO response during an overflow, crew members will wear latex gloves under leather gloves in combination with safety glasses to avoid contamination when handling equipment and raw sewage.

3.3.3 Lifting Hazards

In cases where it is necessary to remove the submersible pumps for servicing or repair, the SAM, MTCO, or other emergency contractors will observe proper rigging and lifting techniques.

3.4 Safety Practices

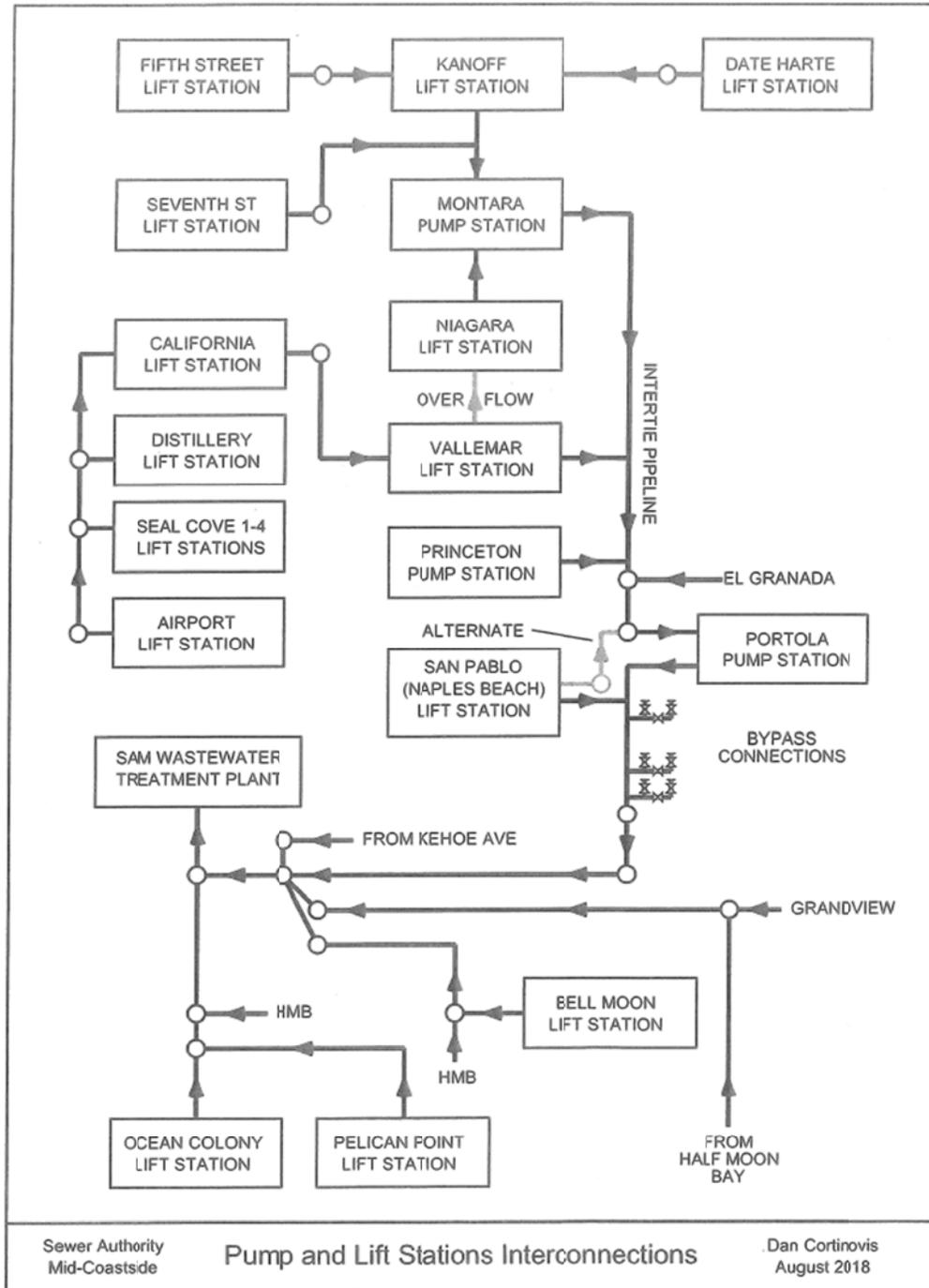
The SSO responder will follow good work practices including CalOSHA rules and regulations to ensure safety of the response crew members. Some of the safety practices include but are not limited to:

- Confined Space
- Lockout/Tagout
- Proper PPE
- Respiratory protection
- Any other safety procedure/program, as required.

Chapter 4 Pump Station Network & Schematics

Figure 4-1 shows the how all pump stations from the SAM member agencies, including the City's three pump stations, convey flow to the SAM wastewater treatment plant.

Figure 4-1. Pump and Lift Station Interconnections



Figures 4-2 through 4-4 show individual system schematics for the City's three pump stations.

Figure 4.2. Bell Moon PS System Schematics

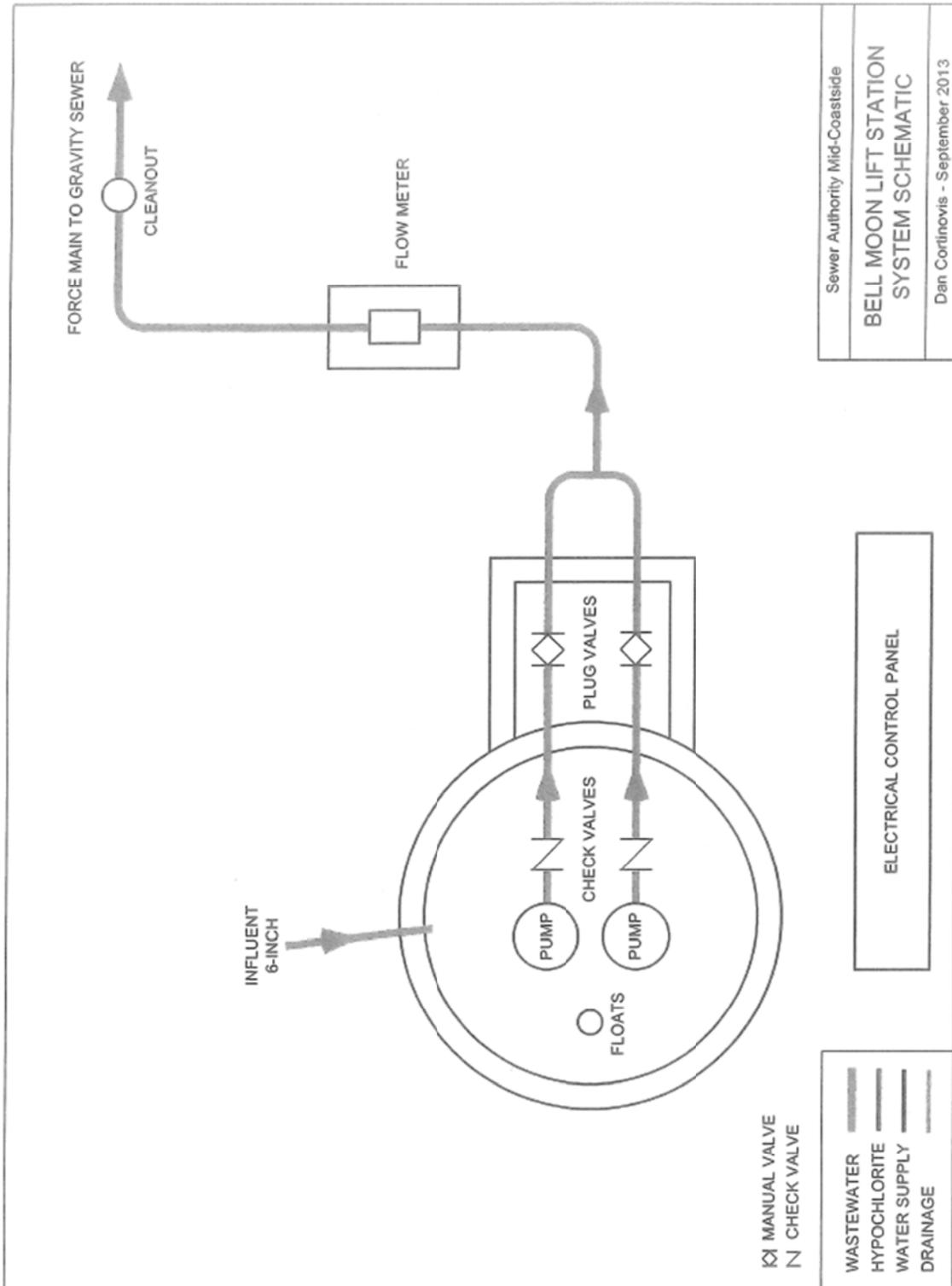


Figure 4.3. Ocean Colony PS System Schematics

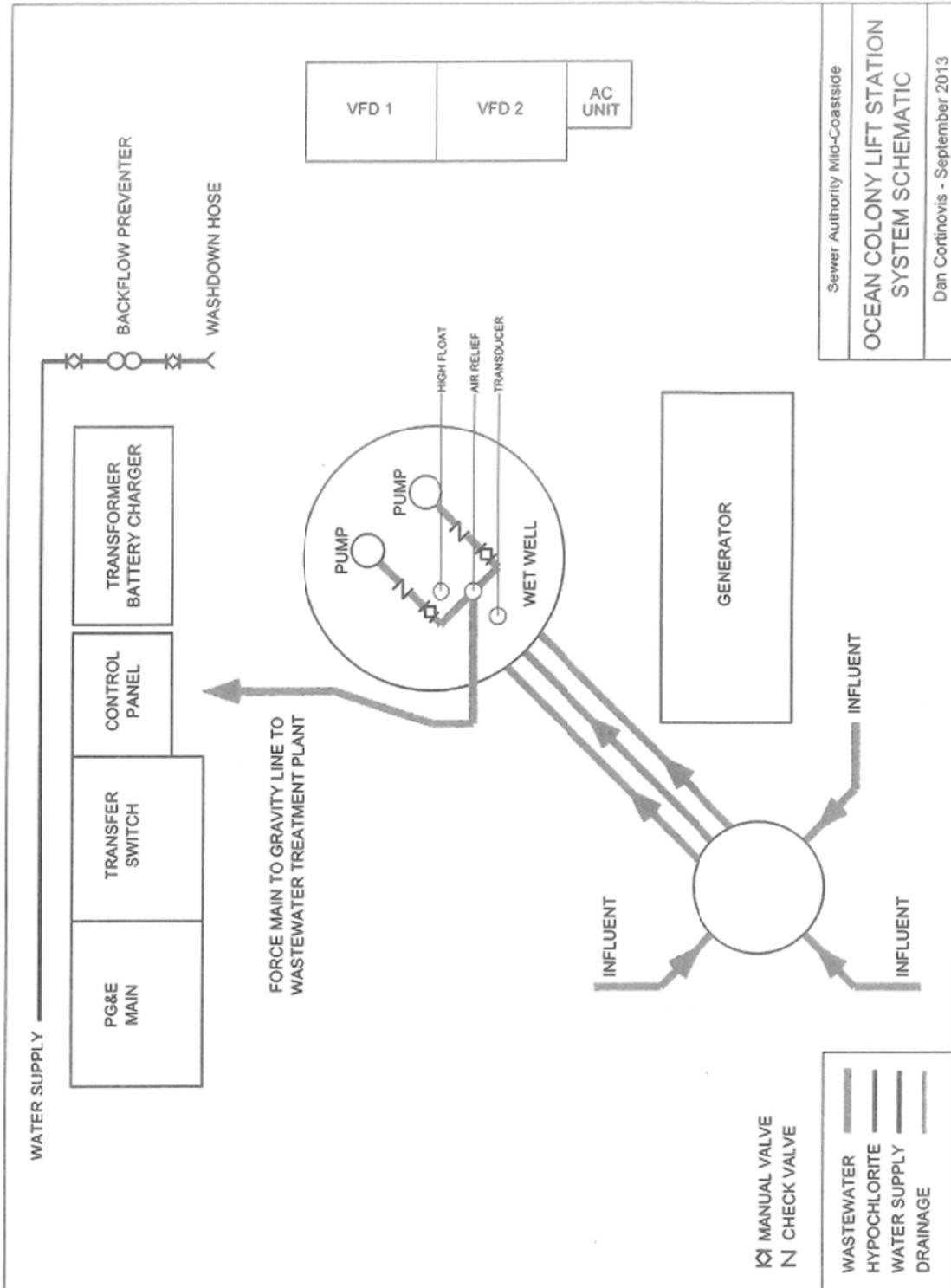
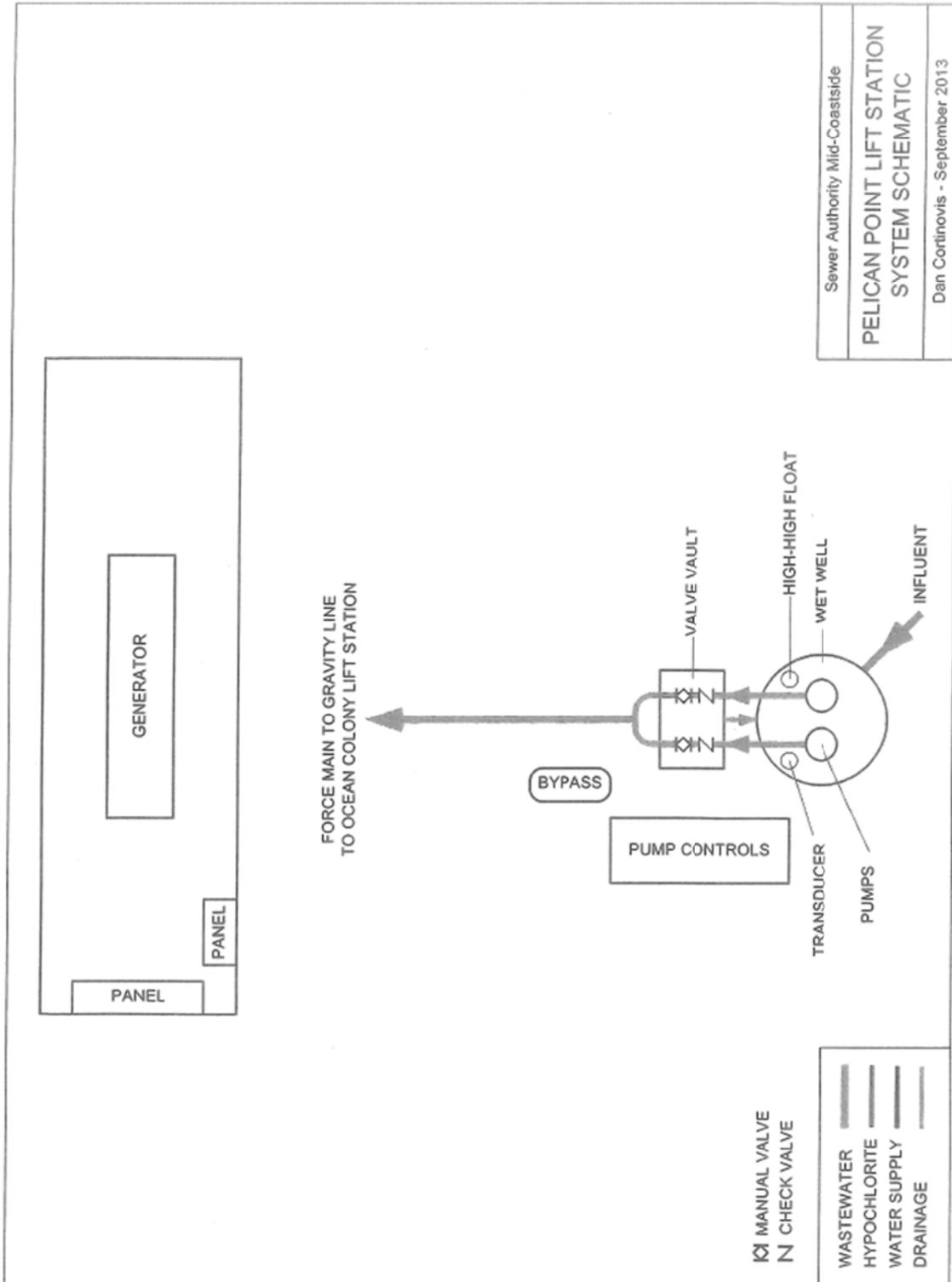


Figure 4.4. Pelican Point PS System Schematics



Chapter 5 Emergency Response Decision Tree

There are several emergency scenarios that warrant immediate response from SAM initially, with MTCO as support. These include but are not limited to:

- Power Failure
- Float Failure
- Clogged Pump/Failed Pump
- High Level Alarm

SAM serves as the City's emergency first response contractor while MTCO provides assistance with documentation and reports observations directly to the City. MTCO may also provide assistance to SAM with emergency response procedures as necessary.

5.1 Response Decision Tree

The Decision Tree diagram on Figure 5-1 serves as a guide for all emergency response activities.

5.2 Spill Notification and SSO Response Procedures

After the SSO response crew has followed the Response Decision Tree and determined that the emergency is SSO-related, The SSO response crew will follow the Spill Notification Procedures and SSO Response Activities guidelines as indicated in the OERP and shown in Figures 5-2 through 5-5, on the following pages of this section.

Figure 5-1. Response Decision Tree

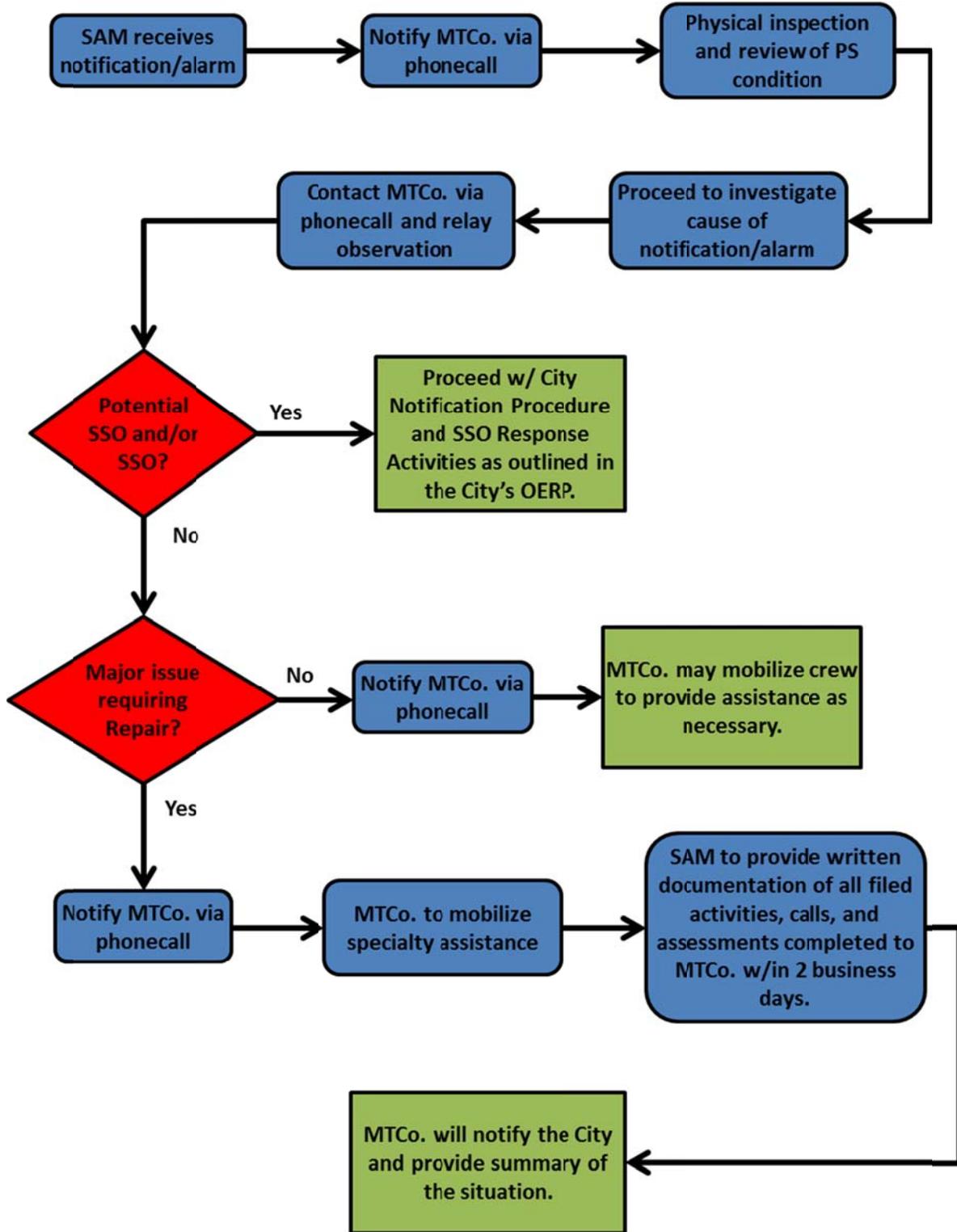


Figure 5-2. SSO Response Notification Process

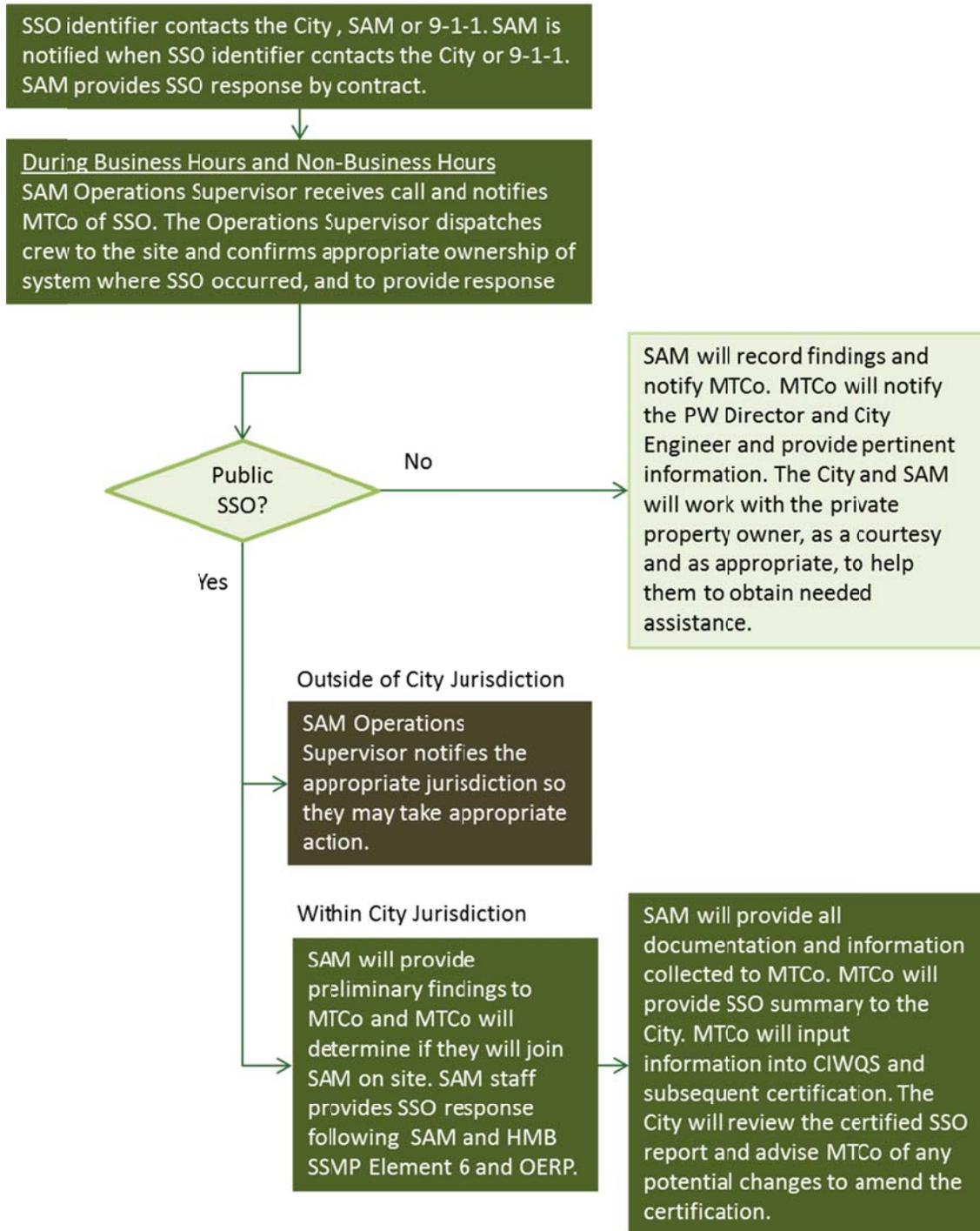


Figure 5-3. SSO Response Activities

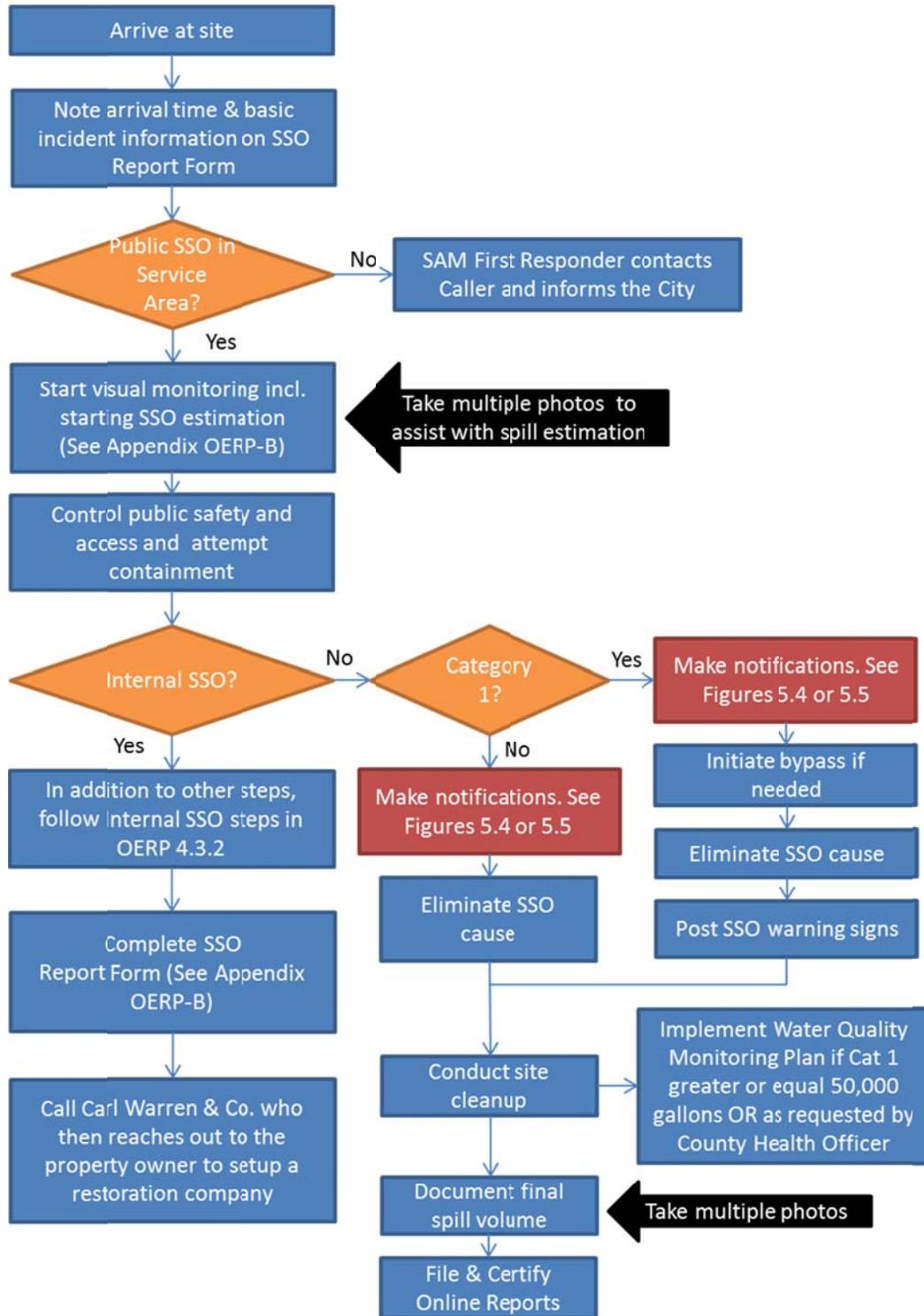


Figure 5-4. SSO Response Chain of Communication (Business Hours)

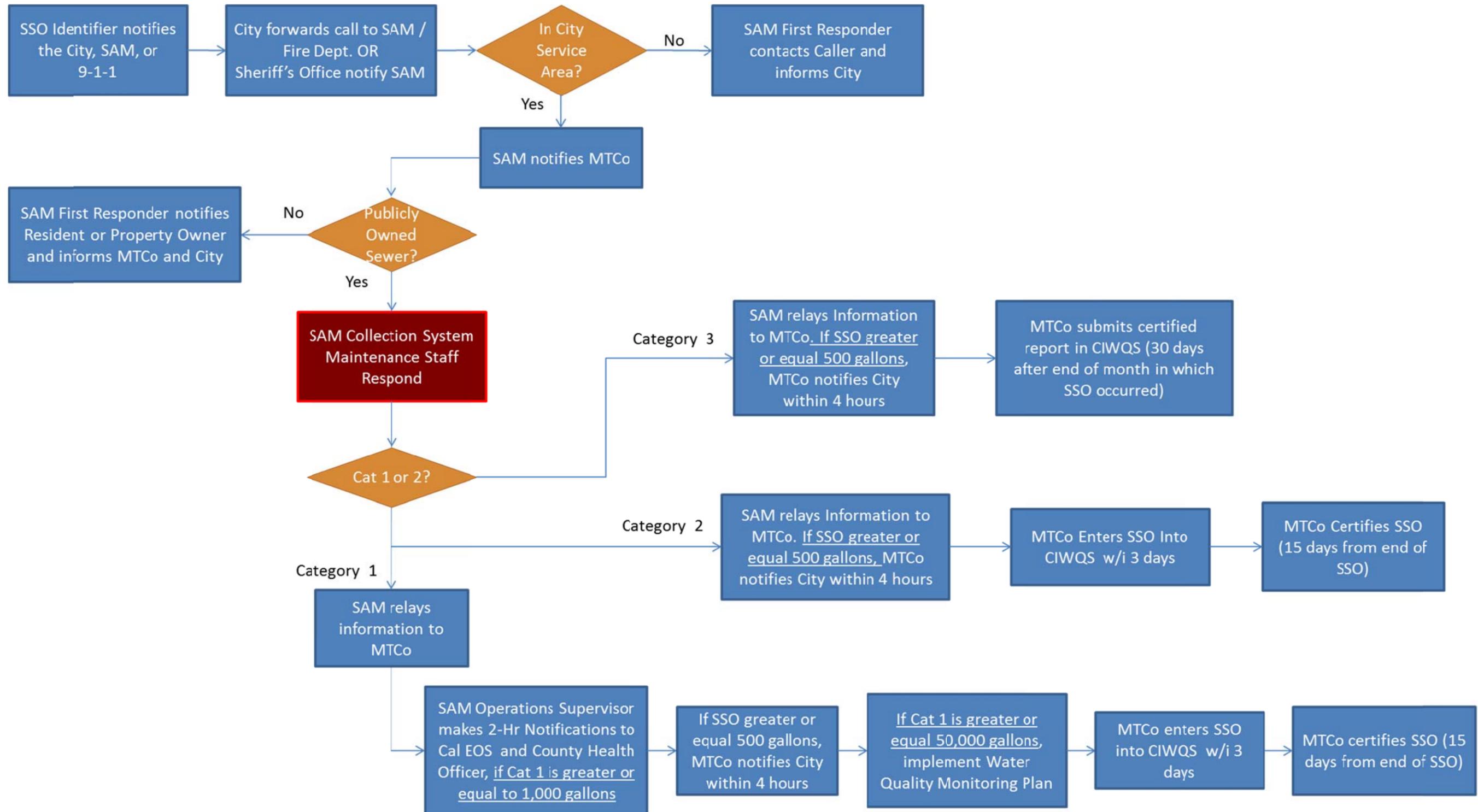
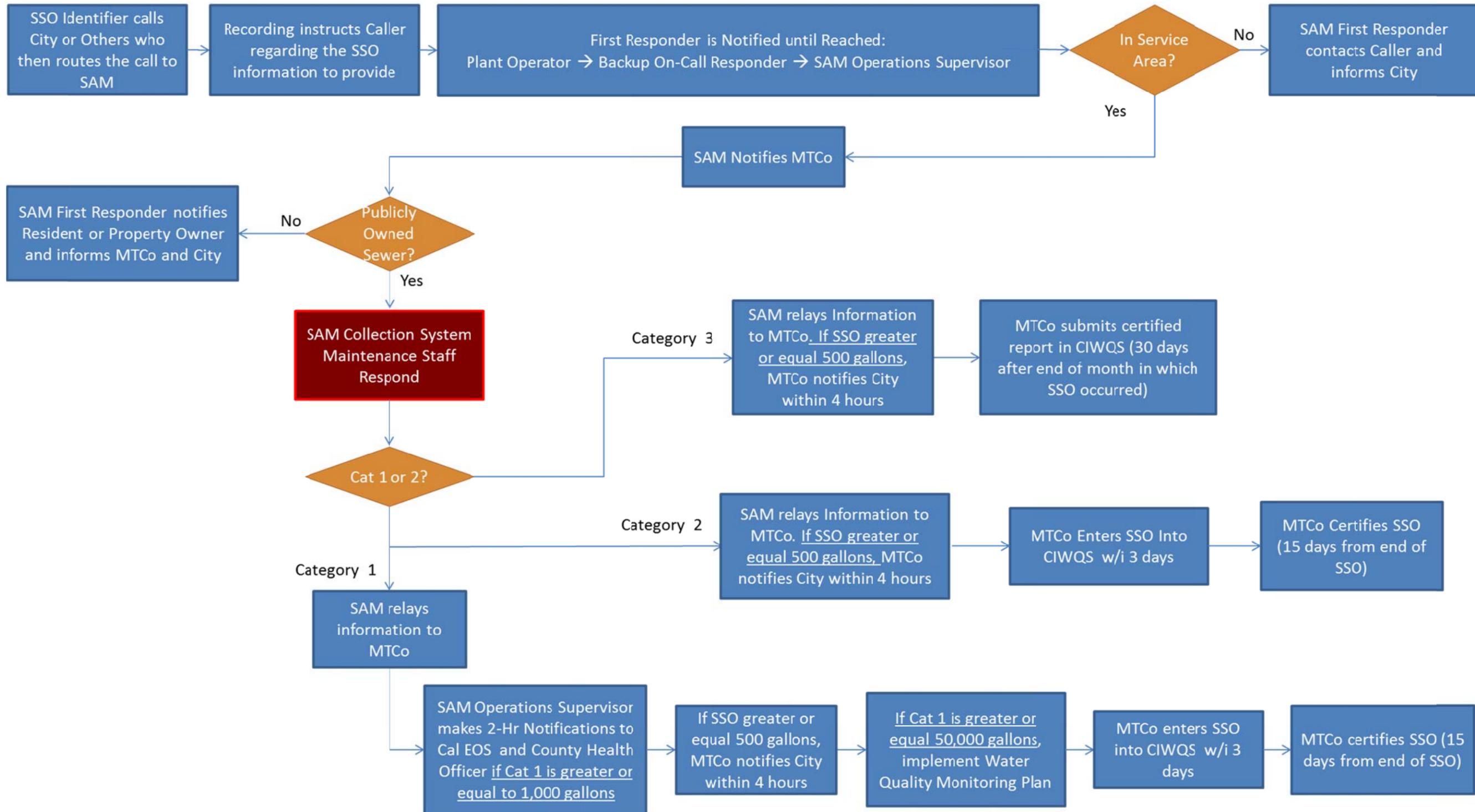


Figure 5-5. SSO Response Chain of Communication (Non-Business Hours)



Chapter 6 Spill Containment Procedures

6.1 Spill Containment Procedures

SAM staff should attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the overflowing sewage originating from the pump station.
- Plug storm drains using available equipment and materials listed below to contain the spill, where feasible. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam or sandbags
- Check critical manhole locations and perform the steps above if overflow is observed. Refer to section 6.3 for location of critical manhole locations.
- Vacuum the station wetwell using the Vactor Truck and discharge wastewater to either the nearest large diameter gravity main or SAM treatment plant. Refer to section 6.3 for the discharge location at each station.
- If an SSO reaches a water body, follow the requirements below for posting and SSO notification signage.

6.2 Available Spill Containment Equipment

The following equipment will be utilized for spill containment procedures. These include but are not limited to:

- Spill berm
- Spill mat
- Spill Shark (water based spill absorbent)
- 2 inch pump
- 6 inch pump
- 1,000 gallon Vactor truck

6.3 Estimated SSO Flow Map

Figures 6-1 through 6-3 and Tables 6-1 through 6-3 on the following pages show the estimated direction of SSO flow and critical structures (i.e. storm drain inlets, creeks, etc.) that needs to be protected in the event that a spill occur within each of the pump stations.

Figure 6-1. Bell Moon Pump Station Projected SSO Flow Map. See Table 6-1 for SSO Response Activities.

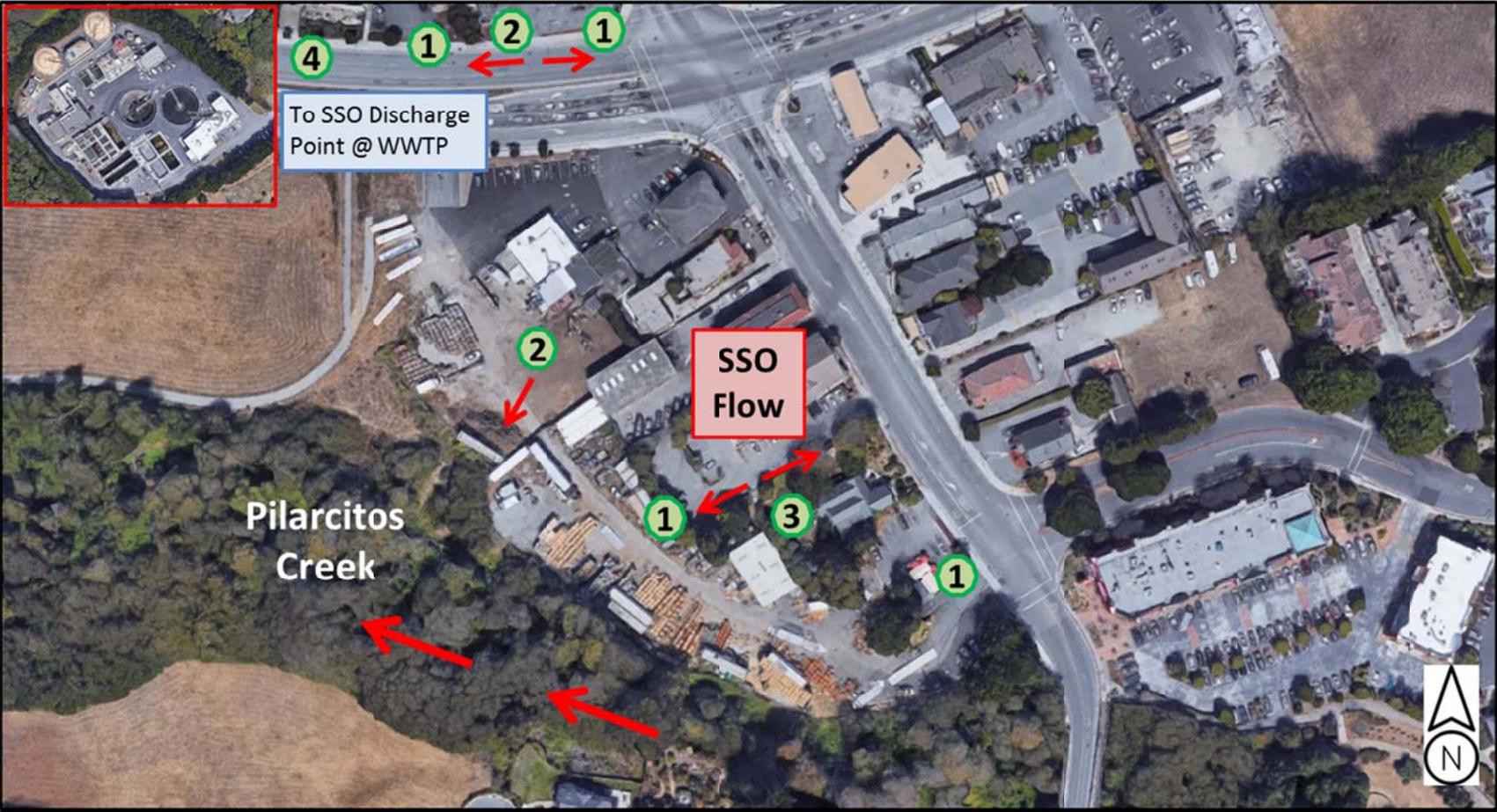


Table 6-1. SSO Response Activities for Bell Moon Pump Station

#	Description	Containment
1	Storm drain inlets	Protect the storm drain inlets using the following spill containment equipment: Sandbags, spill mat, or spill shark.
2	2x sewer manholes @ lower elevation	There are 2 manholes (H07033 and H10033) that are at a lower rim elevation compared to the pump station. Check these 2 locations for signs of overflow and use the following spill containment equipment to address the overflow: Sandbags, spill shark, or Vector truck.
3	Pump Station	Vacuum the station wet well using a Vector truck.
4	Discharge Point @ WWTP	Discharge the recovered sewage from the Vector truck into SAM's wastewater treatment plant.

Figure 6-2. Ocean Colony Pump Station Projected SSO Flow Map. See Table 6-2 for SSO Response Activities.

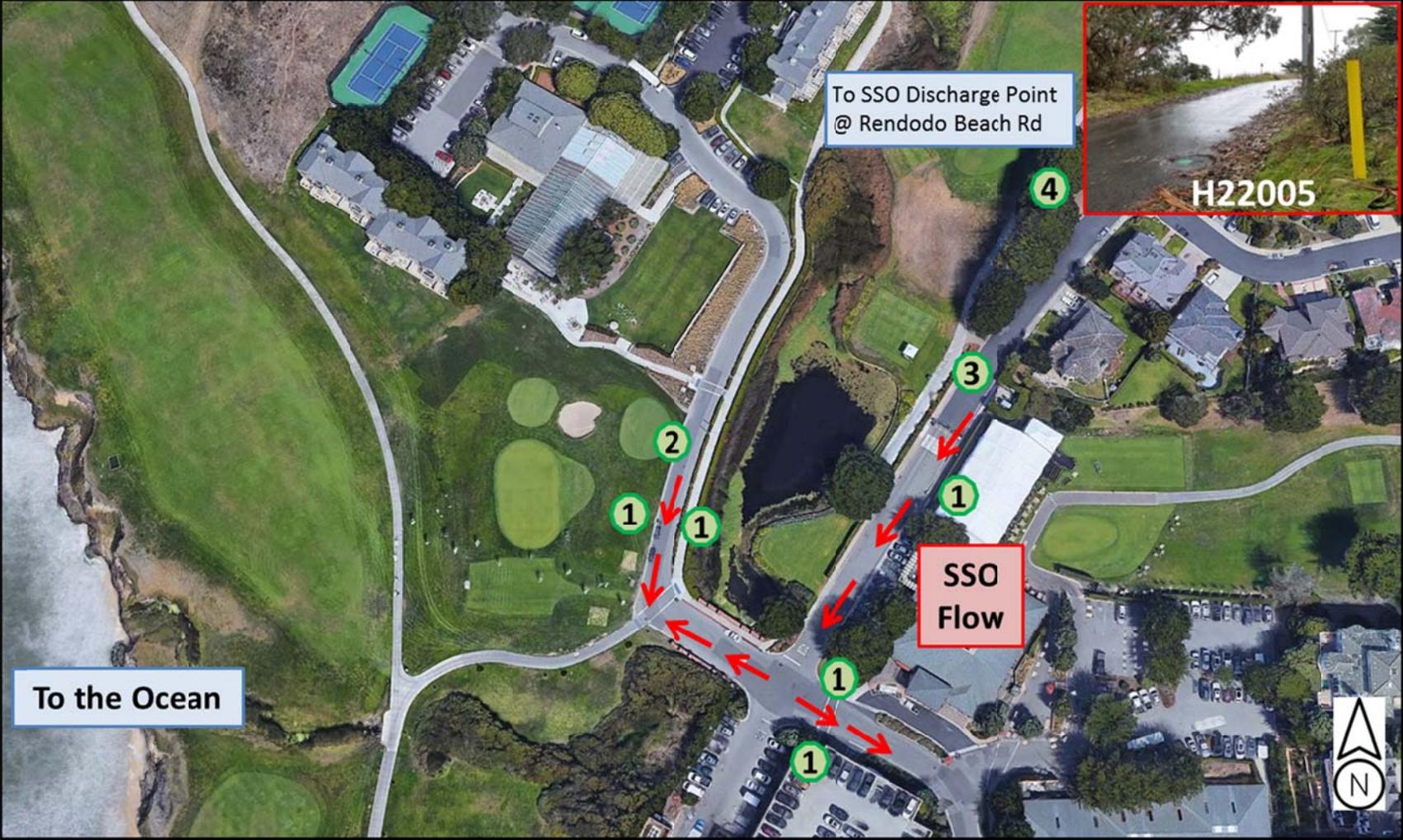


Table 6-2. SSO Response Activities for Ocean Colony Pump Station

#	Description	Containment
1	Storm drain inlets	Protect the storm drain inlets using the following spill containment equipment: Sandbags, spill mat, or spill shark.
2	2x sewer manholes @ lower elevation	There are 2 manholes (H24006 and H24005) that are at a lower rim elevation compared to the pump station. Check these 2 locations for signs of overflow and use the following spill containment equipment to address the overflow: Sandbags, spill shark, or Vector truck.
3	Pump Station	Vacuum the station wet well using a Vector truck.
4	Discharge Point @ Redondo Beach Road	Discharge the recovered sewage from the Vector truck into manhole H22005 (end of forcemain into 18in gravity main) located along Redondo Beach Rd.

Figure 6-3. Pelican Point Pump Station Projected SSO Flow Map. See Table 6-3 for SSO Response Activities.



Table 6-3. SSO Response Activities for Pelican Point Pump Station

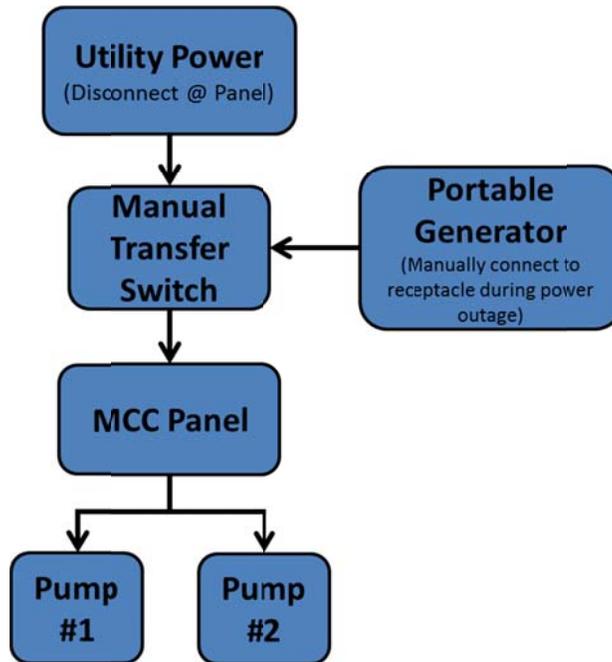
#	Description	Containment
1	Canada Verde Creek	Protect the creek by containing/directing sewage using the following spill containment equipment: Sandbags, spill mat, or spill shark.
2	Pump Station	Vacuum the station wet well using a Vector truck.
3	Discharge Point at manhole H22005 along Redondo Beach Rd	Discharge the recovered sewage from the Vector truck into manhole H22005 (end of forcemain into 18in gravity main) located along Redondo Beach Rd.

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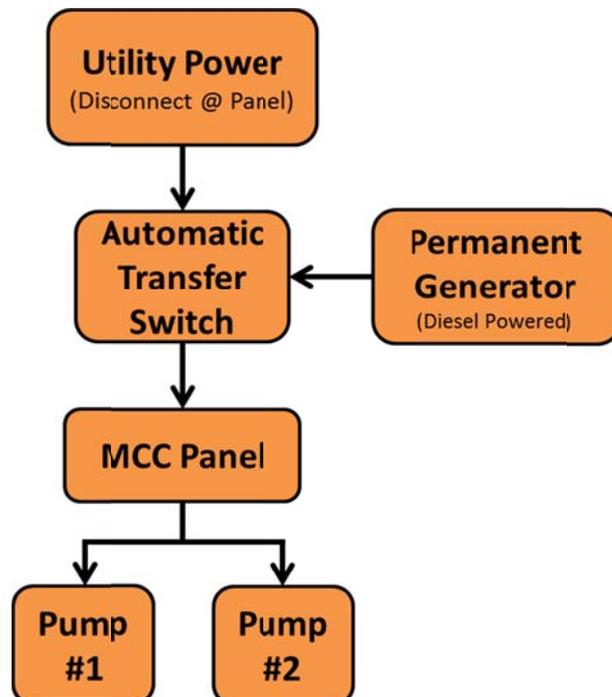
Chapter 7 Pump Station Power Map

This chapter provides diagrams showing the power configuration at each pump station.

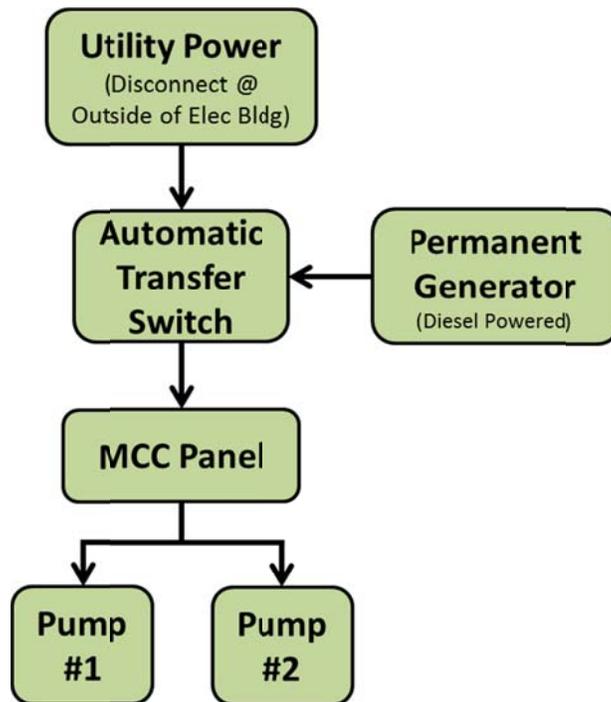
7.1 Bell Moon Station Power Map



7.2 Ocean Colony Power Map



7.3 Pelican Point Power Map



Chapter 8 Pump Station System Controls & Panels

This chapter includes photos of the pump station control panels.

8.1 Bell Moon Pump Station

The power meter and utility disconnect are located on the left side of the station after entering the fenced gate, and are shown in Figure 8-1. The manual transfer switch is located at the back end of the station on the left side of the main control panel, and is shown in Figure 8-2.

Figure 8-1. Power Meter / Utility Disconnect
(Inside Right Panel)



Figure 8-2. Manual Transfer Switch (Side of
Panel)



The main control panel includes Hand-Off-Auto switches for Pump 1 and Pump 2, as shown in Figure 8-3.

Figure 8-3. Main Control Panel – SCADA Panel (Top) / Pump 1 Hand-Off-Auto Switch (Left) / Pump 2 Hand-Off-Auto Switch (Right)



The Bell Moon Pump Station includes a portable generator receptacle, which is located at the back end of the station on the left side of the main control panel and shown on Figure 8-4. A dedicated trailer-mounted portable generator is owned by the City of Half Moon Bay and stored at the City's corporation yard.

Figure 8-4. Portable Generator Receptacle



8.2 Ocean Colony Pump Station Photos

The power meter and utility disconnect are located inside the first panel on the left side upon entering the station, and are shown in Figure 8-5. The automatic transfer switch is located inside the panel next to the power meter and utility disconnect, and is shown in Figure 8-6, both on the following page.

Figures 8-7 shows the SCADA panel, Pump 1&2 Hand-Off-Auto switch, and load breakers. Figure 8-8 shows the generator control system located inside the generator housing, and the Emergency Stop switch on this control panel both located on the right side of upon entering the station.

Figure 8-5. Power Meter and Utility Disconnect



Figure 8-6. Automatic Transfer Switch



Figure 8-7. SCADA Panel (Top) / Pump 1&2 Hand-Off-Auto Switch (Left) / Load Breakers (Bottom)



Figure 8-8. Generator Control System (Inside Generator Housing) / Emergency Stop (Bottom Left)



8.3 Pelican Point Pump Station Photos

The power meter and utility disconnect are located on the side of the electrical building, and are shown in Figure 8-9. Figure 8-10 shows the SCADA panel located inside the electrical building and Pump 1&2 Hand-Off-Auto switch breakers located at the bottom of this panel. Figure 8-11 shows the generator control system panel and Figure 8-12 shows the Automatic Transfer Switch and generator receptacle all located inside the electrical building.

Figure 8-9. Power Meter and Utility Disconnect (Side of Electrical Bldg.)



Figure 8-10. SCADA Panel (Top) / Pump 1&2 Hand-Off-Auto Switch (Bottom of Panel)



Figure 8-11. Generator Control System



Figure 8-12. Automatic Transfer Switch and Portable Generator Receptacle (Bottom Left Cable with White Receptacle)



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Chapter 9 Lockout / Tagout Procedures

All Half Moon Bay pump stations receive constant power source from electrical utility providers. Ocean Colony and Pelican Point pump stations have built in backup power sources through permanent generators. It is important to follow proper lockout/tagout procedures to help protect staff from uncontrolled hazardous energy that may escape from electrical equipment during isolation or servicing.

9.1 Bell Moon Pump Station Entire Pump Station Electrical Shutdown Procedures

The following procedures must be followed in the order shown during any a full electrical shutdown of the Bell Moon pump station:

- Locate the utility disconnect switch inside the panel next to the power meter and turn the switch down to the OFF position (see Figure 9-1).
- Lock and tag the utility disconnect panel.
- Locate the manual transfer switch at the side of the main control panel and turn the lever down to the OFF position (see Figure 9-2).
- Lock and tag the manual transfer switch lever.
- This station does not have a permanent backup generator. There is no need to check for generator status.

Figure 9-1. Utility Disconnect (Inside Right Panel)



Figure 9-2. Manual Transfer Switch



9.2 Bell Moon Pump Station Individual Pump Electrical Shutdown

The following procedures must be followed in the order shown during any individual pump electrical shutdown at the Bell Moon pump station:

- Determine the pump that needs to be shutdown.
- Rotate the pump's Hand-Off-Auto switch to the OFF position (middle) (see Figure 9-3).
- Open the main control panel and locate the pump disconnect (bottom right next to brown box) and turn the switch of the pump that needs to be shut down to the OFF position (see Figure 9-4).
- Tag the pump disconnect.

Figure 9.3. Pump Hand-Off-Auto Switch



Figure 9.4. Pump Disconnect



9.3 Ocean Colony Pump Station Entire Pump Station Electrical Shutdown

The following procedures must be followed in the order shown during any a full electrical shutdown of the Ocean Colony pump station:

- Since this station has a backup generator, the generator has the tendency to start up after disconnecting the utility power supply.
- Start the shutdown procedure by opening the generator enclosure and pushing the OFF button in the generator control system panel (see Figure 9-5). Locate the main generator breaker inside the enclosure and turn the breaker off.
- Lock and tag the generator enclosure.
- Locate the utility disconnect switch (next to the main control panel) and turn the switch down to the OFF position (see Figure 9-6).
- Lock and tag the disconnect switch cover.

Figure 9-5. Generator Control System



Figure 9-6. Utility Disconnect



9.4 Ocean Colony Pump Station Individual Pump Electrical Shutdown

The following procedures must be followed in the order shown during any individual pump electrical shutdown at the Ocean Colony pump station:

- Open the main control panel.
- Determine the pump that needs to be shut down.
- Rotate the pump Hand-Off-Auto switch to the “O” position (middle) (see Figure 9-7).
- Tag the pump’s Hand-Off-Auto switch.
- Locate the pump disconnect and turn the switch of the pump that needs to be shut down to the OFF position.
- Tag the pump disconnect panel.

Figure 9.7. Pump Hand-Off-Auto Switch



9.5 Pelican Point Pump Station Entire Pump Station Electrical Shutdown

The following procedures must be followed in the order shown during an entire pump station electrical shutdown at the Pelican Point pump station:

- Since this station has a backup generator, the generator has the tendency to start up after disconnecting the utility power supply.
- Start the shutdown procedure by turning the Engine Control switch to the middle (OFF) located at the bottom of the generator control system panel (see Figure 9-8). Locate the main generator breaker inside the enclosure and turn the breaker off.
- Tag the generator control system.
- Locate the automatic transfer switch and turn the handle until the arrow points to “✱” (see Figure 9-9)
- Lock and tag the panel.
- Locate the utility disconnect and turn the switch down to the OFF position (see Figure 9-10).
- Lock and tag the disconnect switch cover.

Figure 9-8. Pump Hand-Off-Auto Switch



Figure 9-9. Automatic Transfer Switch



Figure 9-10. Utility Disconnect (Side of Electrical Bldg.)

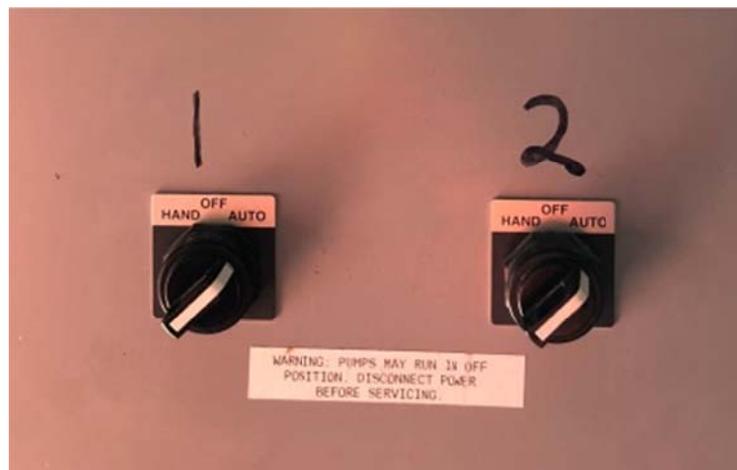


9.6 Pelican Point Pump Station Individual Pump Electrical Shutdown

The following procedures must be followed in the order shown during any individual pump electrical shutdown at the Pelican Point pump station:

- Determine the pump that needs to be shut down.
- Rotate the pump Hand-Off-Auto switch to the OFF position (middle) (see Figure 9-11).
- Tag the pump's Hand-Off-Auto switch.
- Locate the pump disconnect and turn the switch of the pump that needs to be shut down to the OFF position.
- Tag the pump disconnect panel.

Figure 9-11. Hand-Off-Auto Switch



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Chapter 10 Pump Station Bypass

10.1 Bell Moon Bypassing Procedures

There is currently no formal bypassing procedure or system setup at the Bell Moon pump station. Instead of bypassing this station, SAM will utilize a vactor truck to capture and truck sewage flows to the nearest available downstream location or to the wastewater treatment plant.

10.2 Ocean Colony Bypassing Procedures

There is currently no formal bypassing procedure or system setup at the Ocean Colony pump station. Instead of bypassing this station, SAM will utilize a vactor truck to capture and truck sewage flows to the nearest available downstream location or to the wastewater treatment plant. The City recently designed an upgrade to the Ocean Colony pump station that includes means to bypass flow. The project is expected to be constructed in 2020.

10.3 Pelican Point Bypassing Procedures

The Pelican Point pump station is valved to allow flows to be pumped through the Ocean Colony forcemain, should the existing Pelican Point forcemain require repair or replacement. However, if the pump station fails, or the emergency generator fails during a power outage, then there is currently no formal bypassing procedure or system setup to bypass these flows around the station. Instead of bypassing this station, SAM will utilize a vactor truck to capture and truck sewage flows to the nearest available downstream location or to the wastewater treatment plant.

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Methods for Estimating Spill Volume

A variety of approaches exist for estimating the volume of a sanitary sewer spill. This Appendix documents the three methods that are most often employed. The person preparing the estimate should use the method most appropriate to the sewer overflow in question and use the best information available.

Refer to the DKF Solutions SSO Volume Estimation Binder for additional information.

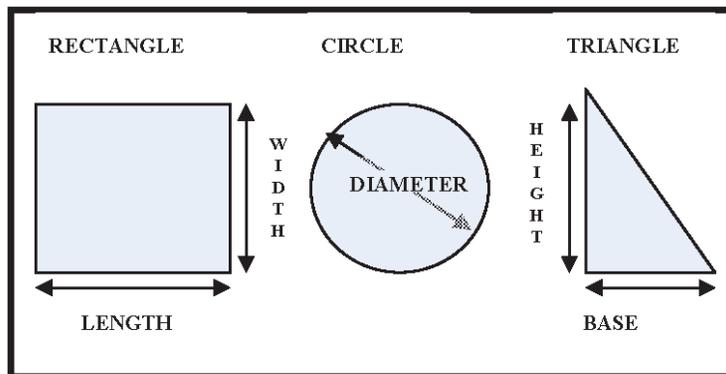
Method 1: Eyeball Estimate

The volume of small spills can be estimated using an “eyeball estimate”. To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to approximately 200 gallons.

Method 2: Measured Volume

The volume of most small spills that have been contained can be estimated using this method. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

Common Shapes and Dimensions



- Step 1 Sketch the shape of the contained sewage (see figure above).
- Step 2 Measure or pace off the dimensions.
- Step 3 Measure the depth at several locations and select an average.
- Step 4 Convert the dimensions, including depth, to feet.
- Step 5 Calculate the area in square feet using the following formulas:
Rectangle: $\text{Area} = \text{length (feet)} \times \text{width (feet)}$
Circle: $\text{Area} = \text{diameter (feet)} \times \text{diameter (feet)} \times 0.785$
Triangle: $\text{Area} = \text{base (feet)} \times \text{height (feet)} \times 0.5$
- Step 6 Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.
- Step 7 Multiply the volume in cubic feet by 7.5 to convert it to gallons

Method 3: Duration and Flowrate

Calculating the volume of larger spills, where it is difficult or impossible to measure the area and depth, requires a different approach. In this method, separate estimates are made of the duration of the spill and the flowrate. The methods of estimating duration and flowrate are:

Duration

The duration is the elapsed time from the time the spill started to the time that the flow was restored.

Start Time: The start time is sometimes difficult to establish. Here are some approaches:

1. Local residents can be used to establish start time. Inquire as to their observations.

Spills that occur in rights-of-way are usually observed and reported promptly. Spills that occur out of the public view can go on longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.

2. Changes in flow on a downstream flowmeter can be used to establish the start time.

Typically the daily flow peaks are “cut off” or flattened by the loss of flow. This can be identified by comparing hourly flow data during the spill event with flow data from prior days. This method will likely only be effective with consistent weather.

3. Conditions at the spill site change over time and can be used to establish the start time. Initially there will be limited deposits of toilet paper and other sewage solids. After a few days to a week, the sewage solids form a light-colored residue. After a few weeks to a month, the sewage solids turn dark. The quantity of toilet paper and other materials of sewage origin increase over time. These observations can be used to estimate the start time in the absence of other information. Taking photographs to document the observations can be helpful if questions arise later in the process. This method is valid for spills that have been occurring for a long time and may be used in conjunction with either of the above methods.

4. It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues). In this case the spill would occur during the peak flow periods (typically 10:00 to 12:00 and 13:00 to 16:00 each day). Spills that occur due to peak flows in excess of capacity will occur only during, and for a short period after, heavy rainfall.

End Time: The end time is usually much easier to establish. Field crews on-site observe the “blow down” that occurs when the blockage has been removed. The “blow down” can

also be observed in downstream flowmeters.

Flow Rate

The flowrate is the average flow that left the sewer system during the time of the spill.

There are three common ways to estimate the flowrate:

1. **The San Diego Manhole Flowrate Chart:** This chart, included as at the end of this appendix, shows sewage flowing from manhole covers at a variety of flowrates. The observations of the field crew can be used to select the appropriate flowrate from the chart. If possible, photographs are useful in documenting basis for the flowrate estimate.
2. **Flowmeter:** Changes in flows in downstream flowmeters can be used to estimate the flowrate during the spill.
3. **Counting Connections:** Once the location of the spill is known, the number of upstream connections can be determined from the sewer maps. Multiply the number of connections by 200 to 250 gallons per day per connection or 8 to 10 gallons per hour per connection.

For example: 22 upstream connections * 9 gallons per hour per connection
 = 198 gallons per hour / 60 minutes per hour
 = 3.3 gallons per minute

Spill Volume

Once duration and flowrate have been estimated, the volume of the spill is the product of duration (hours or days) and the flowrate (gallons per hour or gallons per day).

For example: Spill start time = 11:00
 Spill end time = 14:00
 Spill duration = 3 hours
 3.3 gallons per minute x 3 hours x 60 minutes per hour
 = 594 gallons

WARNING

RAW SEWAGE SPILL.

AREA CLOSED, NO ENTRY.

Contaminated water, do not ingest, wade, swim, fish or come into contact.

Keep children and pets out of the area.

Questions concerning exposure, posting and clean-up should be directed to:

**COUNTY OF SAN MATEO
HEALTH SERVICES AGENCY**

(650) 363- 4305

Monday through Thursday 7:00 AM - 7:00 PM

Appendix OERP-C

- Water Quality Monitoring Program
- Template for SSO Technical Report

**CITY OF HALF MOON BAY
WATER QUALITY MONITORING PROGRAM**

INTRODUCTION

This Water Quality Monitoring Program provides the agency's response activities and standard operating procedures to be utilized in the OERP, in the event a sanitary sewer overflow (SSO) exceeds 50,000 gallons. This program is reviewed periodically and may be updated as necessary.

State Water Resources Control Board Order No. WQ 2013-0058-EXEC, **Amending Monitoring And Reporting Program For Statewide General Waste Discharge Requirements For Sanitary Sewer Systems** (Effective September 9, 2013), requires the following:

SSO WDR Section D. Water Quality Monitoring Requirements

To comply with subsection D.7(v) of the SSS WDRs, the enrollee shall develop and implement an SSO Water Quality Monitoring Program to assess impacts from SSOs to surface waters in which 50,000 gallons or greater are spilled to surface waters. The SSO Water Quality Monitoring Program, shall, at a minimum:

1. Contain protocols for water quality monitoring.
2. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.).
3. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.
4. Require monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.
5. Within 48 hours of the enrollee becoming aware of the SSO, require water quality sampling for, at a minimum, the following constituents:
 - i. Ammonia
 - ii. Appropriate Bacterial indicator(s) per the applicable Basin Plan water quality objective or Regional Board direction which may include total and fecal coliform, enterococcus, and e-coli.

Additionally, for spills greater than 50,000 gallons, an SSO Technical Report is required and must be submitted within 45 calendar days from the SSO end date. The SSO Technical Report requirements are described in Element VI of the OERP.

SAFETY

Be aware of safety issues and do not subject personnel to unsafe conditions in order to comply with this Water Quality Monitoring Plan. Scenarios where monitoring may not be possible may include, but are not limited to, heavy rain/storm events where access points have been compromised, flooding around low level areas, or fast-moving water. Employ the buddy system as required to maximize employee safety when sample collection is required.

ESTIMATION OF SPILL TRAVEL TIME

The follow methods are recommended to estimate spill travel time and direction:

- Method-1; use a velocity probe if available to determine the rate of flow in the surface water or
- Method-2; take visual ft/sec measurement from above, based on floating debris, to estimate the number of feet the debris has traveled in seconds.

Either method will provide a means to estimate the distance traveled and identify where the SSO may be headed within the waterway.

WATER QUALITY SAMPLING PROCEDURES

- In the event an SSO reaches a surface water or (flowing) drainage channel tributary, take samples for spills less than 50,000 gallons as appropriate and within 48 hours for spills greater than 50,000 gallons. The purpose of water quality sampling is to determine the nature and extent of the impact of the SSO.
- When sampling an SSO, take a minimum of three separate sample sets as conditions allow. Water quality sampling should not be given precedence over stopping the spill or protection of public health. One sample shall be located 500' upstream of the discharge location. The second sample shall be taken at the discharge location. A third sample shall be taken 1000' downstream of the discharge location.
- Sample for Total and Fecal Coliform, eColi, and Ammonia as a minimum. Conduct additional sampling for pH if practical.
- Additional follow-up samples are recommended to confirm the extent that the impact reverts back to baseline levels. Follow-up samples may be used to determine if posting of warning signs should be discontinued (if signs were posted).
- Collaboration with the County Health Department should continue until closure is obtained.
- Do not forget to take into account Spill Travel Time.

WATER QUALITY SAMPLING EQUIPMENT

The following list describes equipment that should be stocked and readily available for each water quality sampling event.

- Personnel protective equipment including latex/nitrile gloves and eye protection
- 3 – 100 mL sterile plastic containers for coliform analysis.
- 3 – 500 mL Poly containers preserved with H₂SO₄ for Ammonia analysis.
- 3 – sterile funnels
- 1 – Sample Collection Container
- Cooler with ice packs
- Chain of Custody forms

Ensure that there are adequate quantities of sample containers-kits if there are more than three sample locations.

WATER QUALITY SAMPLING PROCEDURE

1. Put on all required protective equipment including latex/nitrile gloves and eye protection
2. Use the 100 mL sterile container for coliform and 500mL poly container for ammonia. Ammonia sample requires preservation with H₂SO₄.
3. Collect three sets of samples for each incident:
 - a. 500 feet upstream
 - b. At the SSO entry point
 - c. 1000 feet downstream
4. Collect all grab samples approximately 3' - 6" below the surface (or if shallower, as close as possible to this depth) to avoid sampling debris or scum from the surface.
5. Collect the sample in a safe manner in the middle of the flow, against the direction of water flow.
6. Rinse the sample collection container.
7. Collect sample in sample collection container and photo-document the locations.
8. Transfer sample from sample collection container to individual sample bottle(s).
9. Leave approximately one inch of head space in individual sample bottles. Do not overfill.
10. Once the lid is opened for the individual sample bottle, do not touch the inside surface of the bottle or lid.
11. For the sample bottles that contain a preservative, take care to keep the preservation material in the container.
12. Immediately place all sample bottles on ice.
13. Complete Chain of Custody form and take samples to contracted environmental laboratory as described in the OERP.

Following are allowable hold times for the sample bottles:

- Ammonia - 28 days (preserved and cooled)
- Bacterial Indicator (enterococcus or fecal/total coliform) - 8 hours (preserved and cooled)
- pH Field Test - Immediate

ON LETTERHEAD

Date

State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Subject: Technical Report for Sanitary Sewer Overflow Greater than 50,000 Gallons
Event ID: XXXXXX

This submittal comprises the Sanitary Sewer Overflow (“SSO”) Technical Report (“Report”) that is required by State Water Resources Control Board (“SWRCB”) Order No.WQ 2013-0058-EXEC (“Order”). The Order requires each enrollee to submit an SSO Technical Report in the California Integrated Water Quality System (“CIWQS”) online SSO database within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters.

This Report comprises the following sections:

1. Causes and Circumstances of the SSO
2. City’s Response to SSO
3. Water Quality Monitoring

1.0 CAUSES AND CIRCUMSTANCES OF THE SSO

A. Description of how and when the SSO was discovered.

B. Figure 1 shows the SSO failure point, appearance point(s), and final destination(s).

C. Methodology and data used to calculate the volume of the SSO and any SSO volume recovered.

D. Detailed description of the cause(s) of the SSO.

E. Copies of original field crew records used to document the SSO are included at the end of this Report.

F. The Order requests historical maintenance records for the failure location. The associated pipe segment cleaning and CCTV history is provided in Table 1.

Table 1. Maintenance Results for Pipe Segment XXXXX-XXXX

Date	Action: Clean or CCTV	Summary of Findings

2.0 RESPONSE TO SSO BY CITY'S SSO RESPONSE CONTRACTOR (SAM)

A. The following presents a chronology of all actions taken to terminate the SSO.

B. The actions described in 2A, above, followed the agency's Sewer System Management Plan ("SSMP") Overflow Emergency Response Plan. Specifically, the activities related to initial response, reporting, notifications and posting, and corrective measures were followed. Sewer Authority Mid-Coastside (SAM), the City's contract SSO responder, completed water quality sampling within 48 hours after the end of the SSO, and submitted these samples for bacteriological and ammonia testing as required by the Order.

C. Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed are described below.

3.0 WATER QUALITY MONITORING

A. Water quality sampling activities conducted, including analytical results and evaluation of the result, are as follows.

B. Figure 2 shows a location map showing water quality sampling points.

If you have further questions or would like additional information about this Technical Report, please contact me by phone at (650) 726-7177 or by email at JDoughty@hmbcity.com.

Sincerely,

John Doughty
Public Works Director

Appendix OERP-D

- SSMP and OERP Training Records

