

NOVATO SANITARY DISTRICT OVERFLOW REPORTING

For: JULY 2017

COLLECTION SYSTEM OVERFLOWS FOR JULY 2017

The Novato Sanitary District Collection System had two overflows in July, 2017:

1. Friday, July 7, 2017, 676 Plum Street, Novato, CA, 776 gallon SSO, CIWQS Event ID 837648, Certification ID 188184, Category 3 event of which 78% was recovered.
2. Wednesday, July 26, 2017, Marin Country Club, Hole 11, Novato, CA, 4,050 gallon SSO, CIWQS Event ID 837552, Certification ID 178244, Category 1 event of which 0.0% was recovered.

EVALUATION OF OVERFLOWS FOR JULY 2017

1. 676 Plum Street: This SSO was categorized as a Category 3 event because the overflow volume did not exceed one-thousand gallons and did not reach receiving waters of the state. The discharge volume was estimated to be 776 gallons. Staff recovered an estimated 600 gallons (78%) of the spill. This discharge was determined to be the result of grease accumulation in the sewer main.

Initial actions

1. On Friday, July 7, 2017, at 2:20PM, Julie Hoover received a call from the homeowner at 676 Plum Street reporting that a plumber she had contacted to clear her lateral told her that the sewer main in the street appeared to be plugged because a manhole in the street was surcharged. Julie contacted Javier Vega and informed him of the surcharged manhole. Javier contacted PJ Siragusa & Liam O'Sullivan who responded to the site immediately.
2. PJ & Liam arrived on site at 2:24PM and began work to clear the stoppage. PJ verified the surcharged manhole condition and then surveyed the area and found sewage in the planter and on the walkway on the east side of the house at 676 Plum Street. PJ noted that the cleanout in the planter was not overflowing at the time indicating that the stoppage may be a partial stoppage. Meanwhile, Liam worked to clear the stoppage and broke the stoppage at 2:35 PM.
3. Steve Krautheim arrived on site at approximately 2:38 PM and inspected the area around the overflow and noticed that the overflow was entering a

4" yard drain. After interviewing the property owner it was discovered that the yard drain discharged into the storm drain in Plum Street.

4. The crew followed the route of the storm drain down Plum Street to Chase Street, then north to Cherry Street, and then west towards Armstrong Avenue. Staff found a dry catch basin full of dry gravel in front of 724 Cherry Street. The crew returned to the next catch basin upstream at 712 Cherry Street and began to vacuum up water from the catch basin while flushing the storm drain downstream to draw any water in the storm drain back to the catch basin and remove it.
5. Meanwhile, Aaron Hendricks retrieved the second hydroflusher from the treatment plant and returned to 676 Plum Street to commence cleanup operations with Javier. The crew cleaned up the yard and then flushed the yard drain and storm drain system with approximately 750 gallons of dye tainted chlorinated water. The crew followed up with the hydroflusher, flushing the accumulated water in the storm drain down to the catch basin at 712 Cherry Street where it was retrieved by the other truck.
6. Recovery: Staff was able to recover 600 gallons of the discharge from the storm drain system.
7. Volume Estimation: Volumetric calculations as well as staff and reporting party interviews were used to estimate the volume of this event.
8. This event was determined to be a Category 3 event because the discharge did not exceed 1,000 gallons and did not reach receiving waters of the state.

Follow-up actions

1. Follow up CCTV inspection revealed grease accumulation in the sewer main. This line segment was last cleaned using a hydro-flusher truck on April 17, 2015 and is on a 36-month frequency.

Subsequent Analysis and Actions

1. The cleaning frequency has been increased to every 12 months.
2. Staff distributed grease and wipes informational flyer packets to residents upstream of the overflow.
3. This event was reported into the CIWQS database on July 31, 2017 as a Category III event with an estimated spill volume of 776 gallons, SSO Event ID # 837648 and was certified in CIWQS on August 2, 2017, Certification ID # 188184.
2. **Marin Country Club, Hole 11**: This event was categorized as a Category 1 event because the final spill destination was a manmade pond on Arroyo San Jose Creek. The discharge volume was estimated to be 4,050 gallons. Staff was unable to recover any of the spill before it entered the

pond or soaked into the ground. This discharge is suspected to be the result of the vandalism after the crew found a sand trap rake blocking the flow through the manhole.

Initial actions

1. On Wednesday, July 26, 2017, at 8:40am, Laura Creamer received a call from Kevin Pryseski of the Marin Country Club reporting that a manhole was overflowing and going into a pond at the golf course. Laura contacted Steve Krautheim, Field Services Manager and informed him of the report. Steve called Aaron Hendricks, CSW II who responded with Liam O'Sullivan CSW I to the reported location. Steve also contacted Dasse de longh, Collection Systems Superintendent and all responded to the site immediately.
2. Aaron & Liam arrived on site at 9:06am and were met by an employee of the golf course. Aaron went with the employee to locate the manhole while Liam set up the hydro-flusher. Dasse arrived on site and the crew began work to clear the stoppage. Steve arrived and assisted Dasse with taking photos to document the event. The manhole discharge was flowing overland approximately 15 ft. into Arroyo San Jose Creek that is dammed to create a pond for the golf course.
3. The stoppage was broken at 9:13am. Marin County Environmental Health Services and Cal-OES were both contacted to report the spill. The cause of the overflow was determined to be a sand trap rake from the golf course that was blocking the channel in the manhole allowing rags and debris to accumulate behind it and obstruct the flow.
4. Recovery: Staff was unable to recover any of the spill before it entered the pond or soaked into the ground.
5. Volume Estimation: The SSCSC Manhole Overflow Gauge as well as staff and reporting party interviews were used to estimate the volume of this event.
6. This event was determined to be a Category 1 event because the discharge exceeded 1,000 gallons and the final spill destination was the Arroyo San Jose Creek.

Follow-up actions

1. The crew cleaned the manhole and removed five large yard waste bags of contaminated soil and debris.
2. Fourteen WARNING signs were posted around the pond.

Subsequent Analysis and Actions

1. Water quality sampling was conducted through Tuesday, August 1 as required by Marin County Environmental Health Services.
2. Follow up CCTV work was performed to confirm that there were no other contributing factors to the overflow. None were found.
3. This event was reported into the CIWQS database on July 27, 2017 as a Category 1 event with an estimated spill volume of 4,050 gallons, SSO Event ID # 837552 and was certified in CIWQS on August 2, 2017, Certification ID # 178244

For: June 2017

COLLECTION SYSTEM OVERFLOWS FOR JUNE 2017

The Novato Sanitary District Collection System had no (zero) sewer system overflows (SSOs) in June 2017.

The No Spill Certification Confirmation number is: 2489768

For: May 2017

COLLECTION SYSTEM OVERFLOWS FOR MAY 2017

The Novato Sanitary District Collection System had no (zero) sewer system overflows (SSOs) in May 2017.

The No Spill Certification Confirmation number is: 2487664

For: April 2017

COLLECTION SYSTEM OVERFLOWS FOR APRIL 2017

The Novato Sanitary District Collection System had no (zero) sewer system overflows (SSOs) in April 2017.

The No Spill Certification Confirmation number is: 2484632

For: March 2017

COLLECTION SYSTEM OVERFLOWS FOR MARCH 2017

The Novato Sanitary District Collection System had no (zero) sewer system overflows (SSOs) in March 2017.

The No Spill Certification Confirmation number is: 2482077

For: February 2017

COLLECTION SYSTEM OVERFLOWS FOR FEBRUARY 2017

The Novato Sanitary District Collection System had no (zero) sewer system overflows (SSOs) in February 2017.

The No Spill Certification Confirmation number is: 2480636

For: JANUARY 2017

COLLECTION SYSTEM OVERFLOWS FOR JANUARY 2017

The Novato Sanitary District Collection System had one overflow in January 2017:

1. Sunday, January 8, 2017, 2013 Feliz Road, Novato, CA, 90 gallon SSO, CIWQS Event ID 831612, Certification ID 300536, Category 3 event of which 0.0% was recovered.

EVALUATION OF OVERFLOWS FOR JANUARY 2017

1. 2013 Feliz Road: This SSO was categorized as a Category 3 event because the overflow volume did not exceed one-thousand gallons and did not reach a separate storm drain or waterway. This discharge was determined to be the result of severe I&I and areal flooding due to an intense rain storm event.

Initial actions

1. On Sunday, January 8, 2017, at 5:55am, during a severe storm event, Collection Systems Worker II (CSW II), Aaron Hendricks and Collection Systems Superintendent, Dasse de longh received a Smart Cover alarm. The alarm indicated storm related surcharging in the Feliz Road sewer. Dasse called Javier Vega and Liam O'Sullivan, directing them to meet him and Aaron at the Novato Treatment Plant to assist with storm response activities.
2. When Javier and Aaron arrived at manhole F13027 on Simmons Lane to install a weir plug to divert sewage into another tributary system, the street was flooded and the manhole was under about two feet of water. A City of Novato crew was working to clear the storm drain. Javier reported the conditions to Dasse who directed him to try the plug at the next manhole upstream (F13008). Dasse called Roto-Rooter to dispatch a "Pumper" truck to 2008 Feliz Road.
3. Javier and Aaron made several attempts to install the weir plug at the upstream manhole, but attempts sent all the upstream flow into the relief sewer. They removed the plug and went to inspect the low manhole downstream on Feliz Road. The level in the manhole was near the elevation of the private lateral cleanout elevation at 2013 Feliz Road. The

crew went to the cleanout and witnessed the start of the SSO from the cleanout. Javier reported the overflow to Dasse while Aaron documented with photos.

4. Javier returned to the upstream manhole on Simmons Lane while Aaron and Liam prepared to mitigate the SSO using the hydro-flusher truck. Javier found that the City crew had just cleared the storm drain. He installed the flow-thru plug and returned to Feliz Road to confirm that the levels downstream were dropping. The overflow from the cleanout at 2013 Feliz Road ceased moments later.
5. The initial report to Cal-EMA was made with an abundance of caution, within the two-hour reporting requirement, with the assumption that the SSO had reached a storm drain due to areal flooding and heavy, continuous rain. After making the report, further information and photos were received from the field that confirmed a lower volume, and containment within a bordered garden area in front of the house.
6. Staff estimated the spill volume to be 90 gallons based on crew observations and by using the Water Height Above Standpipe chart for 4" diameter cleanouts published by the Environmental Services Department of Jefferson County, Alabama to quantify this discharge.
7. Recovery: Staff was unable to recover any of the discharge before it soaked into the soil.
8. Volume Estimation: As described above, crew observations and the Water Height Above Standpipe chart for 4" diameter cleanouts published by the Environmental Services Department of Jefferson County, Alabama were used to estimate the volume of this event.
9. This event was determined to be a Category III event because the discharge did not exceed 1,000 gallons and did not reach a separate storm drain or waterway.

Follow-up actions

1. On January 9, 2017, Dasse provided Eithne Bullick of Marin County Environmental Health Services, with a detailed explanation of the cause of the overflow, what was done to correct it, and why it was changed from a Category I to a Category III SSO.
2. On January 9, 2017, staff replaced one manhole cover in the flooded area with a sealed cover to reduce the amount of areal surface floodwater that can enter the collection system.
3. Staff raked and removed contaminated debris and tanbark from the affected area.

Subsequent Analysis and Actions

1. District staff amended the Severe Wet Weather Procedures to install the flow-thru weir plug at manhole F13027 prior to certain forecasted wet weather events so as to further reduce the effects of flooding on District operations.
2. On January 25, 2017 Dasse contacted Cal-EMA to provide updated information for the initial Hazardous Materials Spill Report # 17-0154.
3. Since this discharge event was caused by severe I&I and areal flooding due to an intense rain storm event, the District is investigating options to alleviate these impacts from such events to this tributary basin.
4. This event was reported into the CIWQS database on January 11, 2017 as a Category 3 event, SSO Event ID # 831612 and was certified in CIWQS on January 26, 2017, Certification ID # 300536.

For: December 2016**COLLECTION SYSTEM OVERFLOWS FOR DECEMBER 2016**

The Novato Sanitary District Collection System had no (zero) sewer system overflows (SSOs) in December 2016.

The No Spill Certification Confirmation number is: 2473487

For: November 2016**COLLECTION SYSTEM OVERFLOWS FOR NOVEMBER 2016**

The Novato Sanitary District Collection System had no (zero) sewer system overflows (SSOs) in November 2016.

The No Spill Certification Confirmation number is: 2471435

For: OCTOBER 2016**COLLECTION SYSTEM OVERFLOWS FOR OCTOBER 2016**

The Novato Sanitary District Collection System had one overflow in October 2016:

1. Saturday, October 22, 2016, 608 Rowland Blvd., Novato, CA, 7,900 gallon SSO, CIWQS Event ID 829331, Certification ID 356695, Category I event of which 0.63% was recovered.

EVALUATION OF OVERFLOWS FOR OCTOBER 2016

1. 608 Rowland Boulevard: This SSO was categorized as a Category 1 event because the overflow volume exceeded one-thousand gallons and was not captured before reaching surface waters. Staff recovered 50 gallons (0.63%) of the discharge. This discharge was determined to be the result of grease accumulation.

Initial actions

1. On Saturday, October 22, 2016 at 8:24am, Joe Moreno received a page from the Novato Police Department reporting a possible sewage overflow at 608 Rowland Boulevard. Joe responded to the address, confirmed that the stoppage was in the District main and notified Dasse de longh of the SSO. Dasse directed Joe to call for assistance and retrieve the hydro-flusher truck from NTP.
2. Dasse arrived on site and saw sewage coming from the front yard of the residence and flowing down the gutter to a storm drain catch basin. Dasse checked the upstream manhole (G20002) and saw that it was surcharged indicating a stoppage in the sewer main. Dasse notified Steve Krautheim of the overflow.
3. Joe returned with the hydro-flusher and set up at the downstream manhole (G20001). Joe noted $\frac{1}{4}$ pipe flow prior to set up. The stoppage was broken at 9:10am. An accumulation of grease and wipes was recovered and was determined to be the probable cause of the overflow.
4. Aaron Hendricks arrived on site to assist and the crew proceeded with clean up and recovery efforts in the immediate area where exposure to the public posed a potential hazard. Dasse interviewed the resident to determine the start time. The resident reported that, at 8:30pm Friday evening, she contacted the Novato Police Department reporting a water leak in her front yard. The Police Department contacted the North Marin Water District on-call employee who responded to the scene. The Water District representative was unable to determine the source of water and advised the resident to "maybe call the Sanitary District if it is still going in the morning." Based on the resident's observations, staff determined that the earliest possible start time was 8:00pm Friday night.
5. Steve arrived on site and began tracking the overflow that had entered the storm drain system to determine the final spill destination. Steve determined that the storm drain discharges into Lynwood Slough, 875 feet downstream from the catch basin where the overflow entered the storm drain system. The initial determination was that this was a Category 1 event because the overflow volume exceeded one-thousand gallons and was not captured before reaching surface waters. Staff contacted Marin EHS and Cal OES to report the Category 1 event.

6. The crew flushed the storm drain system with fresh water to insure all sewage was removed from the storm drain. All flushing water was recovered at a drainage structure just upstream of the discharge point at Lynwood Slough. Warning signs were posted along the upper reach of Lynwood Slough.
7. Jennifer Snow of Marin County Environmental Health Services visited the site and was satisfied with all clean up and recovery efforts.
8. Staff estimated the spill volume to be 7,900 gallons which was based on staff and reporting party observations and timeline calculations. Approximately 50 gallons were recovered from the gutter pan using the hydro-flusher truck. An estimated 570 gallons soaked into the ground. Ground saturation calculations were based on area/volume calculations and soil saturation testing, as described in the SMART Sewer Overflow Volume Estimation Workbook.
9. Recovery: As stated above, staff recovered 50 gallons (0.63%) of the discharge.
10. Volume Estimation: As described above, staff and reporting party observations, timeline and volumetric calculations, as well as soil saturation testing were used to estimate the volume of the event.
11. The initial determination was that this was a Category I event because the overflow volume exceeded one-thousand gallons and was not captured before reaching surface waters.

Follow-up actions

1. Follow up CCTV inspection revealed signs of grease accumulation at the location of the stoppage.
2. Staff made arrangements with a landscape contractor to replace the mulch in the front yard of the affected residence which was saturated with sewage.

Subsequent Analysis and Actions

1. This line segment was last cleaned using a hydro-flusher truck on April 28, 2015 and is on a 36-month frequency. The cleaning frequency will be increased to every 12 months.
2. Staff will distribute educational flyer packets, including grease and wipes informational flyers, to all residents upstream of the overflow manhole.
3. Staff will reach out to NMWD and NPD encouraging them to contact NSD personnel immediately whenever the source of a water leak is in question.

4. This event was reported into the CIWQS database on October 25, 2016 as a Category 1 event, SSO Event ID # 829331 and was certified in CIWQS on November 4, 2016, Certification ID # 356695.

For: SEPTEMBER 2016

COLLECTION SYSTEM OVERFLOWS FOR SEPTEMBER 2016

The Novato Sanitary District Collection System had one overflow in September 2016:

1. Thursday, September 29, 2016, 4 Calypso Shores, Novato, CA, 65 gallon SSO, CIWQS Event ID 828824, Certification ID 350119, Category III event of which 100% was recovered.

EVALUATION OF OVERFLOWS FOR SEPTEMBER 2016

1. 4 Calypso Shores: This SSO was categorized as a Category III event because the overflow volume was under one-thousand gallons, was fully recovered and did not reach surface waters of the state. Staff recovered 65 gallons (100%) of the discharge. This discharge was determined to be the result of grease accumulation.

Initial actions

1. On Thursday, September 29, 2016 at 9:22am, Robin Merrill received a call from Dan Baker of Bel Marin Keys reporting sewage coming out of a manhole at 4 Calypso Shores. Robin notified Dasse de longh, Collection System Superintendent, of the possible overflow. Dasse, contacted Aaron Hendricks, CSW II, Liam O'Sullivan, CSW I and PJ Siragusa, CSW I and directed them to respond immediately to the reported location.
2. Aaron and Liam arrived on site first and confirmed an overflow at manhole M21023, and that some of the overflow had entered the storm drain. They sand bagged the catch basin as a preventive measure. Aaron inspected the downstream manhole, M21002, and observed no flow in the manhole channel potentially indicating a complete stoppage upstream.
3. Dasse arrived on site with the hydro-flusher truck and the crew set up to break the stoppage from the downstream manhole. Dasse noted that the overflow rate was approximately one gallon per minute and was intermittent. He took photos and then attempted to track the overflow sewage that had entered the storm drain system at a catch basin in front of 4 Calypso Shores.
4. The stoppage was broken at 84 feet from the downstream manhole. An accumulation of grease was recovered after the stoppage was broken and was determined to be the probable cause of the overflow.

5. The crew then worked to recover all contaminated water from the storm drain by vacuuming up approximately 1000 gallons of standing water from the catch basin that was the point of entry. The full debris tank was decanted back into the collection system. Dasse worked to determine the final destination of the overflow within the storm drain system and found an adjacent catch basin that contained standing water.
6. The crew cleaned the second catch basin found to be holding water. In addition, the crew jetted the storm drain between the two catch basins. An additional 250 gallons that included 150 gallons of water used for washdown and storm drain jetting activities was recovered at the second catch basin. Storm drain system maps were not available at the time and Dasse could only find what appeared to be dry catch basins in the surrounding area. Another 36 gallons was recovered from a utility box located near the overflow manhole. The crew also washed and swept the driveway and gutter pan with chlorinated water and recovered the washdown water with the hydro-flusher.
7. During follow up interviews with residents conducted by Dasse, Steve Pointer, who is a Keys Landing HOA Board member and was also the first to witness the overflow, stated that he first saw the overflow at 9am and that it looked like it had just started. Based on this information, a conservative start time of 8:45am was established. He also stated that all of the catch basins on that block flow to "the moat" in the center of Bel Marin Keys Boulevard and are not connected to the lagoon. The moat was absolutely dry and showed no signs of any water having entered it in some time. Clean up and recovery activities were completed at 12pm.
8. Staff estimated the spill volume to be 65 gallons, based on staff and reporting party observations and comparing them to the CWEA Southern Section Collection System Committee Manhole Overflow Gauge. Staff recovered 36 gallons, based on volumetric calculations, from the utility box near the overflow manhole. Based on follow up spill footprint and volumetric bucket tests, another 21 gallons was recovered from the driveway and gutter pan.
9. Recovery: As stated above, staff was able to recover 65 gallons (100%) of the discharge.
10. Volume Estimation: As described above, staff and reporting party observations, volumetric calculations, spill footprint tests and volumetric bucket tests were used to estimate the volume of the event.
11. The initial determination was that this was a Category III event because the overflow volume was under one-thousand gallons, was fully recovered and did not reach surface waters of the state.

Follow-up actions

1. Later that day Steve Krautheim, Field Services Manager, looked through the subdivision plans for the Bel Marin Keys Unit 2 Subdivision and found the storm drain map for that area. The map indicated that, contrary to previously provided information, the storm drain system appeared to connect to a lagoon. Dasse reported that he had inspected a particular catch basin in the system that had appeared completely dry, but given the new information, he would conduct a follow up inspection.
2. Dasse returned to the site and inspected the catch basin in question. The lid could not be removed, but through the opening in the gutter Dasse once again observed what appeared to be a dry catch basin, with cob webs, dry grass, plastic bottles and a ball all laying completely motionless at the bottom. However, Dasse noticed that he could not see the downstream pipe shown on the map. Using a shovel, he attempted to see how much debris was in the catch basin and found that the dry, motionless debris was floating on standing water. Dasse called Steve immediately to inform him of the new findings.
3. After discussion, Dasse decided, as a precaution, to contact David Smail of the Marin County Environmental Health Services to report details of the overflow. Dasse informed David of the low volume of the overflow, and that given the much greater volume of static water recovered from the storm drain system, he did not think any flow had actually entered the lagoon. Dasse further noted that the analysis was ongoing but that he wanted to "err on the side of caution" and make the call to EHS. David agreed and said that no sign posting or follow up sampling of the lagoon would be necessary.
4. The next morning, Dasse met Steve on site and together ran calculations of storm drain volumes and water recovered. It was noted that the static water in the storm drain would itself function as a barrier. After considering the low volume, 8 gallons, that reached the catch basin, and the relatively large volume, 1,100 gallons, of water recovered from the storm drain system, they concluded that all of the overflow had been recovered before it had the potential to reach the storm drain outfall.
5. On October 4th Dasse performed follow up spill footprint and volumetric bucket tests to mimic the overflow characteristics and assist in estimating overflow recovery volumes. Based on the results of these tests, staff estimates that 21 gallons were recovered from the driveway and gutter pan.
6. Follow up CCTV inspection revealed signs of grease accumulation at the location of the stoppage.

Subsequent Analysis and Actions

1. This line segment was last cleaned using a hydro-flusher truck on December 22, 2015 and is on a 24-month frequency. The cleaning

- frequency will be increased to 6 months and the line segment will also be added to the rodder schedule.
2. Staff distributed educational flyer packets, including grease and wipes informational flyers, to all residents upstream of the overflow manhole.
 3. This event was reported into the CIWQS database on October 5, 2016 as a Category III event, SSO Event ID # 828824 and was certified in CIWQS on October 11, 2016, Certification ID # 350119.

For: August 2016

COLLECTION SYSTEM OVERFLOWS FOR August 2016

The Novato Sanitary District Collection System had no (zero) sewer system overflows (SSOs) in August 2016.

The No Spill Certification Confirmation number is: 2464659

For: July 2016

COLLECTION SYSTEM OVERFLOWS FOR July 2016

The Novato Sanitary District Collection System had no (zero) sewer system overflows (SSOs) in July 2016.

The No Spill Certification Confirmation number is: 2462668
