Regular Meeting of the Metro Commission and Metro Wastewater JPA

AGENDA

Thursday November 5, 2020 - 12:00 p.m.

"The Metro JPA's mission is to create an equitable partnership with the San Diego City Council and Mayor on regional wastewater issues. Through stakeholder collaboration, open dialogue, and data analysis, the partnership seeks to ensure fair rates for participating agencies, concern for the environment, and regionally balanced decisions."

DUE TO THE STAY AT HOME ORDER IN CALIFORNIA AND IN ACCORDANCE WITH THE GOVERNOR'S EXECUTIVE ORDERS N-25-20 AND N-29-20, MEMBERS OF THE METRO COMMISSION/METRO JPA WILL BE PARTICIPATING REMOTELY FOR THIS MEETING AND THERE WILL BE NO LOCATION FOR IN-PERSON ATTENDANCE. METRO COMMISSION/METRO JPA IS PROVIDING ALTERNATIVES TO IN-PERSON ATTENDANCE FOR OBSERVING AND PARTICIPATING IN THE MEETING. FURTHER DETAILS ARE BELOW.

Note: Any member of the public may provide comments to the Metro Commission/Metro JPA on any agenda item or on a matter not appearing on the agenda, but within the jurisdiction of the Commission/JPA. Public comments must be submitted to lpeoples@chulavistaca.gov. Please indicate whether your comment is on a specific agenda item or a non-agenda item. When providing comments to the Commission/JPA, it is requested that you provide your name and city of residence for the record. Commenter's are requested to address their comments to the Commission/JPA as a whole through the Chair. Comments are limited to four hundred (400) words. If you have anything that you wish to be distributed to the Commission/JPA, please provide it to the Secretary via lpeoples@chulavistaca.gov, who will distribute the information to the members. It is requested that comments and other information be provided at least two (2) hours before the start of the meeting. All comments received by such time will be provided to the Commission/JPA members in writing. In the discretion of the Chair, the first five (5) comments received on each agenda item, or on non-agenda matters, may be read into the record at the meeting. Comments received after the two (2) hour limit will be collected, sent to the Commission/JPA members in writing, and be part of the public record.

The public may participate using the following remote options:

Teleconference Meeting Webinar

https://us02web.zoom.us/j/84293465967

Meeting ID: 842 9346 5967

Telephone (Audio Only)

One tap mobile
+16699009128,,84293465967# US (San Jose)
+13462487799,,84293465967# US (Houston)

Documentation Included		
	1.	ROLL CALL
	2.	PLEDGE OF ALLEGIANCE TO THE FLAG
	3.	PUBLIC COMMENT *Opportunity for members of the public to provide comments to the Commission/JPA on any items not on the agenda but within the jurisdiction of the Commission/JPA. Members of the public may use the e-mail noted above to provide a comment.*
X	4.	**ACTION**: CONSIDERATION AND POSSIBLE ACTION TO APPROVE THE MINUTES OF THE REGULAR MEETING OF October 1, 2020 **(Attachments)**
X	5.	**PRESENTATION:** SUMMARY OF APRIL 10, 2020 CITY OF SAN DIEGO SANITARY SEWER OVERFLOW INCIDENT (Tom Rosales/Dean Gipson HDR) (**Attachment**)
X	6.	**ACTION:** CONSIDERATION AND POSSIBLE ACTION TO APPROVE THE JCI JONES CHEMICALS, INC. CONTRACT FOR SODIUM HYPOCHLORITE 12.5% SOLUTION (Craig Boyd) (**Attachment**)
X	7.	**ACTION:** CONSIDERATION AND POSSIBLE ACTION TO APPROVE THE 2021 METRO JPA/METROTAC MEETING CALENDAR (ROBERTO YANO (**Attachment**)
	8.	**REPORT:** PURE WATER PROGRAM UPDATE (Standing Item) (John Stufflebean)
	9.	**REPORT:** PURE WATER PHASE II UPDATE (John Stufflebean/Doug Owen)
	10.	**REPORT:** CITY OF SAN DIEGO SECONDARY EQUIVALENCY LEGISLATION (Standing Item) (John Stufflebean)
	11.	**REPORT:** RESIDUAL AGREEMENT UPDATE (Allen Carlisle, GM, Padre Dam Municipal Water District/East County Advanced Water Purification JPA)
X	12.	METRO TAC UPDATE/REPORT (Standing Item) (Roberto Yano) **(Attachment)**

Documentation Included

13. IROC UPDATE (Standing Item) (Jerry Jones)

14. PURE WATER AD HOC COMMITTEE UPDATE (Standing Item) (Jerry Jones)

15. FINANCE COMMITTEE (Standing Item) (John Mullin)

16. REPORT OF GENERAL COUNSEL (Standing Item)

17. PROPOSED AGENDA ITEMS FOR THE NEXT METRO COMMISSION/METRO WASTEWATER JPA MEETING December 3, 2020

18. METRO COMMISSIONERS' AND JPA BOARD MEMBERS' COMMENTS

19. CLOSED SESSION:
CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION
Initiation of litigation pursuant to paragraph (4) of subdivision (d) of Section 54956.9: One (1) case

20. ADJOURNMENT OF METRO COMMISSION AND METRO WASTEWATER JPA

The Metro Commission and/or Metro Wastewater JPA may take action on any item listed in this Agenda whether or not it is listed "For Action."

Materials provided to the Metro Commission and/or Metro Wastewater JPA related to any open-session item on this agenda are available for public review at our website: https://www.metrojpa.org

In compliance with the
AMERICANS WITH DISABILITIES ACT

The Metro Commission/Metro Wastewater JPA requests individuals who require alternative agenda format or special accommodations to participate in the Metro Commission/ Metro Wastewater JPA meetings, contact Lori Peoples at lpeoples@chulavistaca.gov. Requests for disability-related modifications or accommodations require different lead times and should be provided at least 72-hours in advance of a meeting.

Metro JPA 2020 Meeting Schedule

January 2, 2020	February 6, 2020	March 5, 2020
April 2, 2020	May 7, 2020	June 4, 2020
July 2, 2020	August 6, 2020	September 3, 2020
October 1, 2020	November 5, 2020	December 3, 2020

ATTACHMENT 4

ACTION MINUTES FOR

THE REGULAR MEETING

OF

OCTOBER 1, 2020

Regular Meeting of the Metro Commission

and Metro Wastewater JPA

Zoom Meeting Held On Line

October 1, 2020
Minutes

Chairman Jones called the meeting to order at 12:08 p.m. A quorum of the Metro Wastewater JPA and Metro Commission was declared, and the following representatives were present:

1. ROLL CALL

Agencies	Representatives	Alternate
City of Chula Vista	Jill Galvez	
City of Coronado	Whitney Benzian	
City of Del Mar	Sherryl Parks	
City of El Cajon	Gary Kendrick	
City of Imperial Beach	Ed Spriggs	
City of La Mesa	Bill Baber	
Lemon Grove San District	Jerry Jones	
City of National City	Ron Morrison	
City of Poway	John Mullin	
County of San Diego	Dianne Jacob	(No representative)
Otay Water District	Mark Robak	
Padre Dam MWD	Jim Peasley	
Metro TAC Chair	Roberto Yano	

Others present: Metro JPA Assistant General Counsel Nicholaus Norvell - BBK Law; Metro JPA Secretary Lori Anne Peoples; Beth Gentry & Frank Rivera – City of Chula Vista; Ed Walton – City of Coronado; Dennis Davies – City of El Cajon; Eric Minicilli – City of Imperial Beach; Hamed Hashemian – City of La Mesa; Mike James – Lemon Grove Sanitation District; Roberto Yano – City of National City; Bob Kennedy – Otay Water District; Allen Carlisle– Padre Dam Municipal Water District; Eric Heidemann – Poway; John Stufflebean, Tom Rosales, Edgar Patino, Charles Modica; Elif Cetin; Luis Schaar; Wendy Gamboa; Lubna Arikat; CS Williams; Akram Bassyouni; Jason Grani; Dino Ciafre - City of San Diego and Christine Leone – Chief Deputy City Attorney, City of San Diego; Doug Owen - Stantec; Ken Weinberg – Water Resources Consulting; Dan Brogadir – County of San Diego; Carmen Kasner & Scott Tulloch – NV5; Dexter Wilson – Dexter Wilson Engineering; Karyn Keese – The Keze Group, LLC, Peter Wong – Member of the public.

2. PLEDGE OF ALLEGIANCE TO THE FLAG

Vice Chair Peasley, Padre Dam Municipal Water District, led the pledge.

3. PUBLIC COMMENT

None

4. ACTION: CONSIDERATION AND POSSIBLE ACTION TO APPROVE MINUTES OF THE REGULAR MEETING OF AUGUST 6, 2020 AND THE SPECIAL MEETING OF AUGUST 19, 2020

ACTION: Motion by Vice Chair Peasley, seconded by Commissioner Parks to approve the Minutes. The motion carried unanimously.

5. ACTION: CONSIDERATION AND POSSIBLE ACTION TO APPROVE THE STATINO 2 POWER RELIABILITY AND SURGE PROTECTION DESIGN CONSULTANT AND CONSTRUCTION MANAGEMENT CONTRACTS

Elif Cetin and Luis Schaar provided a brief verbal overview of their Power Point presentation.

ACTION: Motion by Vice Chair Peasley, seconded by Commissioner Galvez, to approve the contracts. The motion carried with Commissioner Spriggs abstaining.

6. ACTION: CONSIDERATION AND POSSIBLE ACTION TO APPROVE THE FIRST AMENDMENT TO SERVICE CONTRACT BID 10089637-20-W AGREEMENT WITH AMERICAN PROCESS GROUP, INC. (APG) FOR: POINT LOMA WASTEWATER TREATMENT PLANT (PLWTP) DIGESTERS C1 AND C2 AND METRO BIOSOLIDS CENTER (MBC) HOLDING TANK 17 CLEANING

Tom Rosales provided a brief overview of the staff report.

ACTION: Motion by Vice Chair Peasley, seconded by Commissioner Morrison, to approve the amendment. The motion carried unanimously.

7. ACTION: CONSIDERATION AND POSSIBLE ACTION TO AUTHORIZE THE METRO JPA SECRETARY TO DISPOSE OF VIDEO RECORDINGS OF PRIOR MEETINGS MORE THAN 90 DAYS OLD AND WITH APPROVED MINUTES

Assistant General Counsel Norvell stated this was a housekeeping item. Zoom meetings are being recorded for the purpose of minutes preparation. The Records Retention Policy states a request for approval for Lori to destroy after the minutes are approved. With Zoom there is limited storage space on the purchased system and addition would be required in order to safe the meetings. Chair Jones and Commissioner Morrison requested staff look into additional costs to purchase additional storage. MetroTAC Chair Yano suggested they take action on just removing the videos and leaving the recordings which may work out.

ACTION: Motion by Vice Chair Jones, seconded by Commissioner Spriggs, to approve the removal of the video recordings and save the audio. The motion carried unanimously.

8. REPORT: PURE WATER PHASE II UPDATE

John Stufflebean, Assistant Director of the Public Utilities Department, City of San Diego provided a brief update. He noted they were continuing to work on the alternative analysis; met with the regulatory side on how to proceed with Phase II since it is different than Phase I; are looking into coordinating more on the Mission Valley area existing pipeline and protocol replacement and repair needs and how to take advantage of coordination between the two as they may result in cost savings. Additionally he stated they had received the report on Pt. Loma issues that need to be discussed as there are concerns on things needed to protect the site and expenses added thereto. He will bring this information back to the next MetroTAC for discussion and may have cost implications.

MetroTAC Chair Yano stated he learned of this in discussions with John Stuffflebean, Dexter and Scott in discussions earlier this week. He will have Dexter dig in and discuss at the next TAC for the effects on Pure Water. They may be able to put the Mission Valley trunk sewer and upsizing of the pipes for Pure Water at the same time.

9. REPORT: RESIDUAL AGREEMENT UPDATE

Allen Carlisle, Padre Dam Municipal Water District/East County Advanced Water Purification JPA provided a brief verbal and Power Point update on the progress with the agreement. Their JPA has approved the first two contracts for executing the agreement early next week, October 7, 2020 with the Amended Restated Agreement contingent on the approval of the Residuals Agreement.

MetroTAC Chair Yano requested time for the MetroTAC to review the latest version provided. Mr. Carlisle stated he would provide copies as changes occur to TAC.

10. METRO TAC UPDATE/REPORT

MetroTAC Chair Yano congratulated Allen Carlisle for keeping the agenda moving forward. The County has already approved the Amended Restated Agreement which only leaves Padre Dam. Additionally he stated that under the next item, they will hear the progress on OPRAII and its movement in Congress. There were language changes made and some concerns were raised so Scott Tulloch will work through the changes with John Stufflebean and the Mayor's Office and bring it back to TAC and then the JPA. The City of San Diego has sent out a back billing for the Industrial Wastewater Discharge Program and TAC will be reviewing this at their next meeting. Lastly, Yazmin Arellano has switched with Beth Gentry as our Representative and Alternate on the IRWMP MetroTAC spot.

11. CITY OF SAN DIEGO SECONDARY EQUIVALENCY LEGISLATION UPDATE

John Stufflebean, Assistant Director Public Utilities, City of San Diego stated he had brought Allen Langworthy back in from retirement and he is working full time on the language and will also be working with MetroTAC representatives including Scott Tulloch.

12. PURE WATER PROGRAM UPDATE

John Stufflebean reported that bids have been received on two of the remaining ten Pure Water Phase 1 projects. The apparent low bid for the Pure Water Treatment Facility is at 77% of the Engineer's Estimate, and the apparent low bid for the north 1/3 of the Morena Pipeline is at 91% of the Engineer's Estimate. These bids together with the $300M saved by refinancing the WIFIA loan, the settlement of the labor issues, and the approval of the NPDES permit for discharge into the Miramar Reservoir, mean that for Phase 1 Pure Water, its full speed ahead.

13. IROC UPDATE

Chair Jones stated that he had not attended the meeting but had sent an email requesting Vice Chair Peasley attend in his absence. Vice Chair Peasley stated he missed the email so was not in attendance either.

14. PURE WATER AD HOC COMMITTEE UPDATE

Chair Jones stated there had not been a meeting and he had no update.

14. FINANCE COMMITTEE

Finance Committee Chair Mullin stated he had nothing to report.

Karyn Keese of the Keze Group provided an update on the audit status noting that she and Dexter were working hard and their work has become more difficult due to more Pure Water contracts coming into play. She has finished the review of the samples and has prepared packets to send to Assistant General Counsel Norvell for review and task orders for O & M to Dexter to confirm correct allocation. The next step will be to discuss issues identified with the City of San Diego.

15. REPORT OF GENERAL COUNSEL

Assistant General Counsel Norvell stated that he had no report.

16. PROPOSED AGENDA ITEMS FOR THE NEXT METRO COMMISSION/METRO WASTEWATER SPECIAL JPA MEETING NOVEMBER 5, 2020

None.

17. METRO COMMISSIONERS' AND JPA BOARD MEMBERS' COMMENTS

None.

18. ADJOURNMENT

At 1:32 p.m., there being no further business, Chair Jones declared the meeting adjourned.

_____

Recording Secretary

ATTACHMENT 5
A, B, & C

APRIL 10, 2020 CITY OF SAN DIEGO SANITARY SEWER OVERFLOW INCIDENT

Summary of April 10, 2020 City of San Diego Sanitary Sewer Overflow Incident

Metro JPA Technical Advisory Committee

October 21, 2020

Public Utilities Department

The City of SAN DIEGO

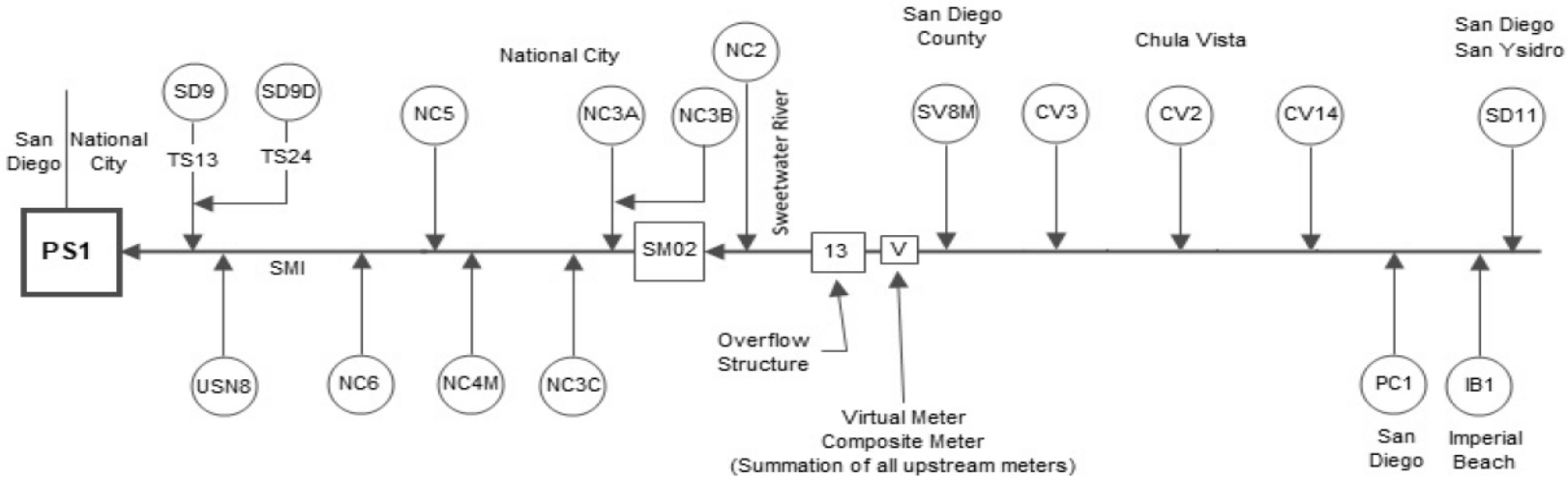
Public
Utilities

South Metro Interceptor South Siphon Transition Structure

Looking north across Sweetwater River

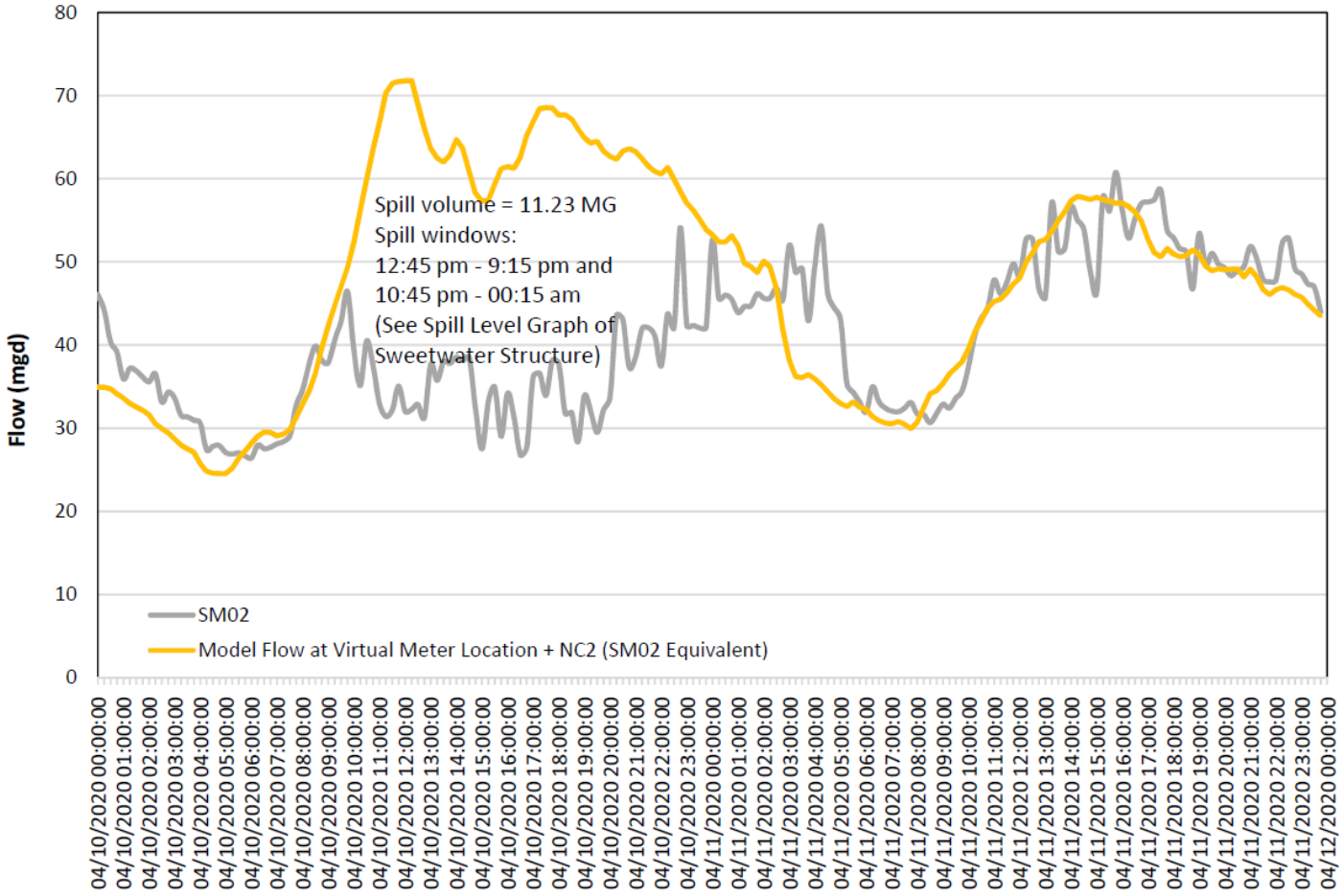
South Siphon Transition Structure

Calculating the Sanitary Sewer Overflow Volume

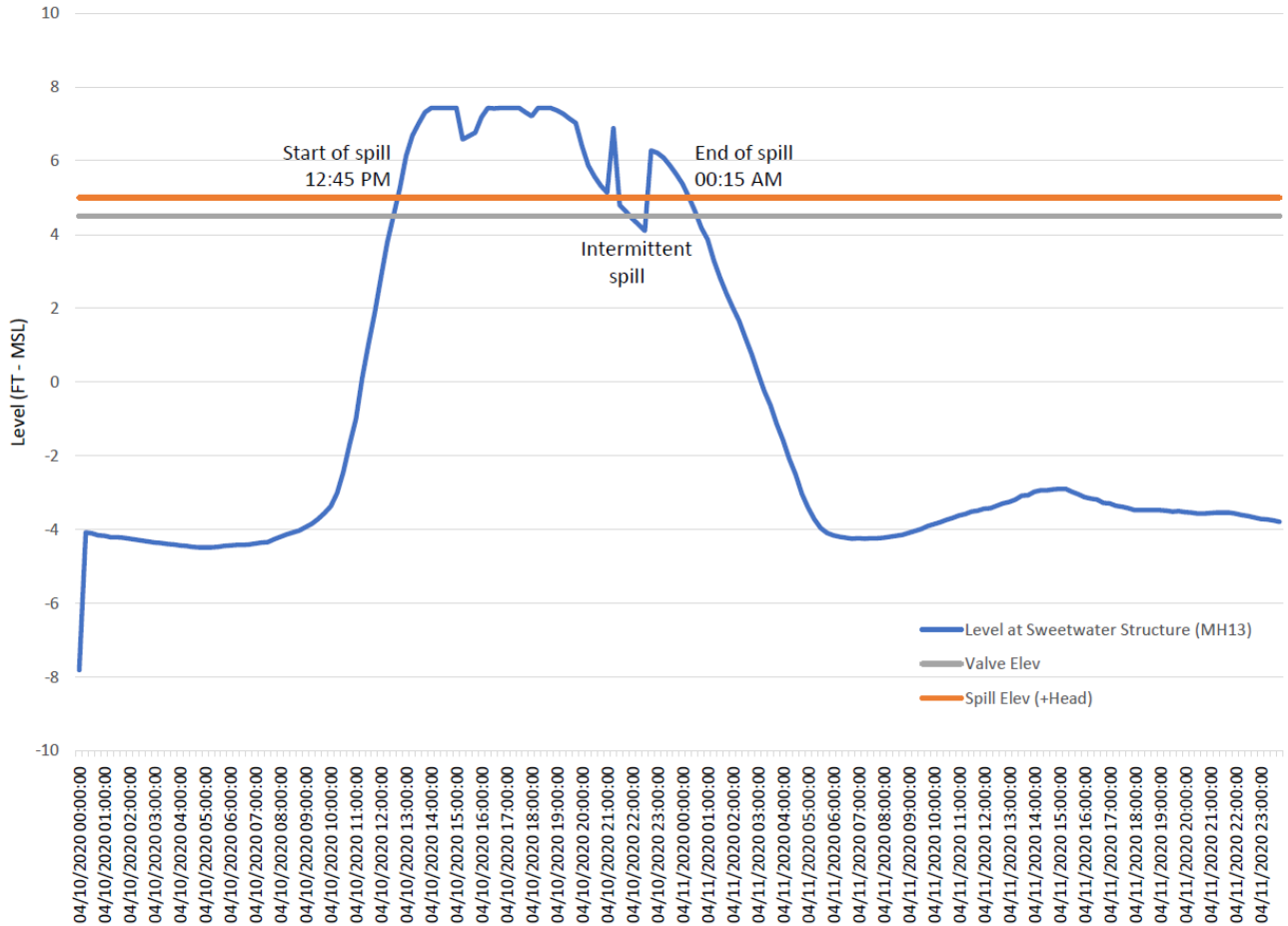


- flow from 17 tier-one meters was evaluated along the SMI that make up the total flow to PS1
- Subtracted volumes from the meter downstream of the overflow structure from the flow summation of all meters upstream of the overflow structure
- InfoWorks dynamic modeling software used to simulate the total flow of upstream meters

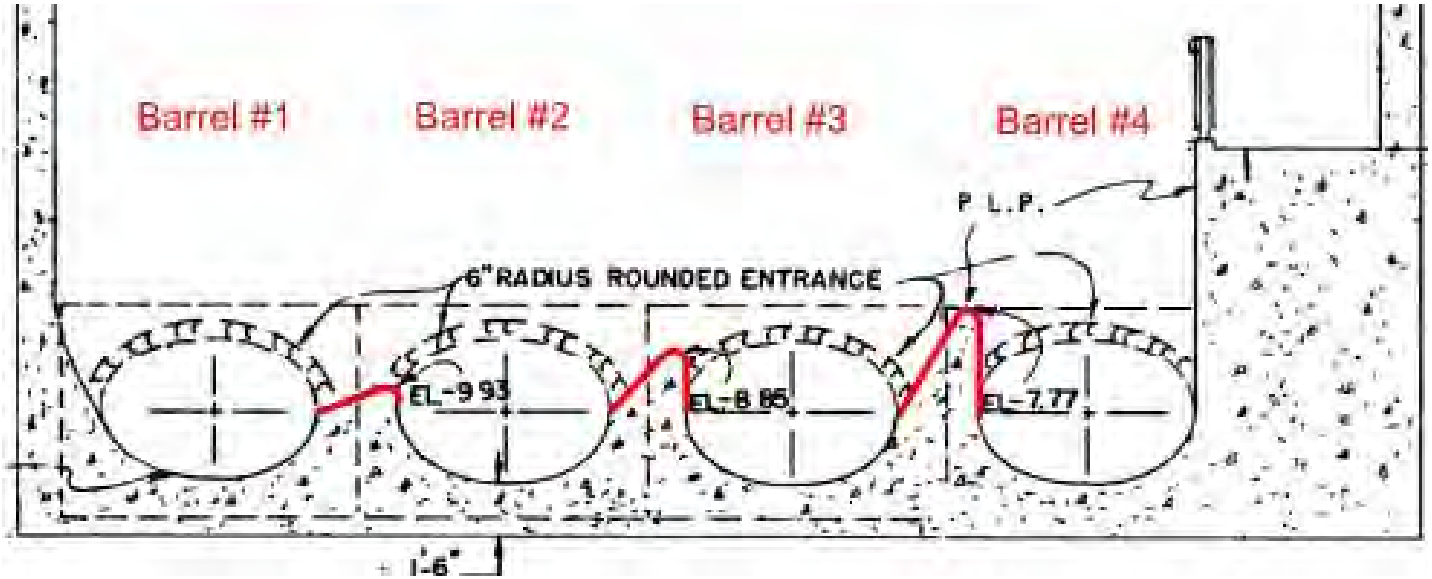
SM02 and Total Upstream Meter Volumes



Wastewater Level at Sweetwater Structure (MH13)



Cross Section of Sweetwater River Siphons



- Elliptical pipes flow under the Sweetwater River
- Blockage removed from Barrel #2

Remedial Measures Implemented

- Completed investigation and submitted SSO Technical Report June 17, 2020
- Removed blockage in Siphon Barrel #2 by July 15, 2020
- Cleaned debris from all 4 barrels at Sweetwater River by September 19, 2020
- Initiated programmatic inspection & cleaning of all siphons not yet on a routine cleaning program (12 locations)

Rags/debris in Barrel 2

Sonar on skid

Planned Mitigation Measures

- Replace level sensor in the south siphon transition structure with an upgraded redundant level indicator with cellular communication
- Repair concrete around duckbill valves to stop inflow at high tides
- Complete cleaning of all siphons
- Establish cleaning frequency of all siphons
- Review and update O&M procedures for wastewater pump stations

Questions?

The City of SAN DIEGO

The City of SAN DIEGO
Public Utilities Department
Director's Office

September 14, 2020

California Regional Water Quality Control Board, San Diego Region
Attn: Keith Yaeger
2375 Northside Drive, Suite 100
San Diego California 92108-2700

SENT VIA EMAIL (Keith.Yaeger@waterboards.ca.gov)

Subject: **Notice of Violation No. R9-2020-0204 and Investigative Order No. R9-2020-0205 for the Reported April 10, 2020 Unauthorized Discharge to Sweetwater River - Written Responses**

ATTN: 631631:KYaeger

Dear Mr. Yaeger:

As requested in the letter, dated July 31, 2020 from the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), the City of San Diego is providing complete responses to the information requests outlined in Investigative Order No. R9-2020-2025.

BACKGROUND

On April 17, 2020, the City reported that a sanitary sewer overflow (SSO) had occurred from April 10, 2020 to April 11, 2020 resulting in the discharge of 11,230,000 gallons of untreated wastewater to the Sweetwater River and, ultimately, the San Diego Bay (SSO Event ID 866196). Evidence indicates the SSO discharged from the South Metropolitan Interceptor (SMI) siphon transition structure, located on the south side of the Sweetwater River near 401 West 35th Street, National City, California 91950, and entered the Sweetwater River at this location. The City prepared a technical report for the SSO and submitted it to the San Diego Water Board on or about June 17, 2020 (Attachment A). The City has been taking several corrective actions since the incident, and is implementing regular inspection and maintenance of the facilities in this area as well as other similar siphons.

SUMMARY OF ALLEGED VIOLATIONS

The San Diego Water Board issued Notice of Violation (NOV) No. R9-2020-0204 which sets forth the following alleged violations:

1. Section 301 of the Federal Clean Water Act (33 U.S.C. § 1311) and Water Code Section 13376
2. Prohibition C.1 of Order No. 2006-003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems

3. Prohibition C.2 of Order No. 2006-003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems
4. Prohibition B.1 of Order No. R9-2007-0005, Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region

The City of San Diego continues to cooperate with the San Diego Water Board to resolve these alleged violations, including providing responses to the inquiries below.

RESPONSES TO INVESTIGATIVE ORDER NO. R9-2020-2025

To assist in its assessment of the alleged violations, the San Diego Regional Board requested information from the City on 15 items. Each item is enumerated below, and includes the requested information and responses.

1. **A detailed description of any extra precautionary measures taken or planned to prevent or intercept potential future SSOs from the collection system structures associated with the April 10-11, 2020 SSO event.**

   The City of San Diego has initiated and/or completed corrective actions to relieve the blockage in the SMI siphons under the Sweetwater River. A summary of the major activities include:

   - Removing the blockage (consisting of an inflatable sewer main plug entangled in ropes and other debris) from siphon #2 and cleaning all four siphon barrels by hydro-jetting and collecting the removed debris
   - Removing the corroded frame, repairing the damaged concrete area around the frame, mounting the existing duckbill valves and stainless steel plate on to the repaired concrete. This will prevent brackish water from the Sweetwater River from flowing into the south siphon transition structure
   - Replacing the level sensor at the south siphon transition structure with an upgraded redundant level indicator that uses a Long-Range Level Sensor Device and cellular base for data communication

   Moreover, the City is implementing additional precautionary measures to prevent and intercept future SSOs including:

   - Initiating a programmatic review of all siphons within the wastewater collection system by conducting sonar and cleaning of each siphon not yet on a routine maintenance cycle; based on the results, each siphon will be placed on an inspection, assessment, and cleaning schedule
   - Performing repairs in a timely manner with an emphasis on the repairs that have a purpose to prevent and intercept future SSOs
   - Initiating a comprehensive review, assessment and analysis of the operational and maintenance procedures and protocols related to the City's wastewater pump stations

- Reviewing and revising communication and training protocols to validate notifications, confirm responses, and perform critical tasks in an effort to prevent and intercept future SSOs

2. **A detailed explanation of the steps the City has taken or planned to address stormwater inflow and infiltration (I&I) into the collection system as an important contributing factor that led to the April 10-11, 2020 SSO event.**

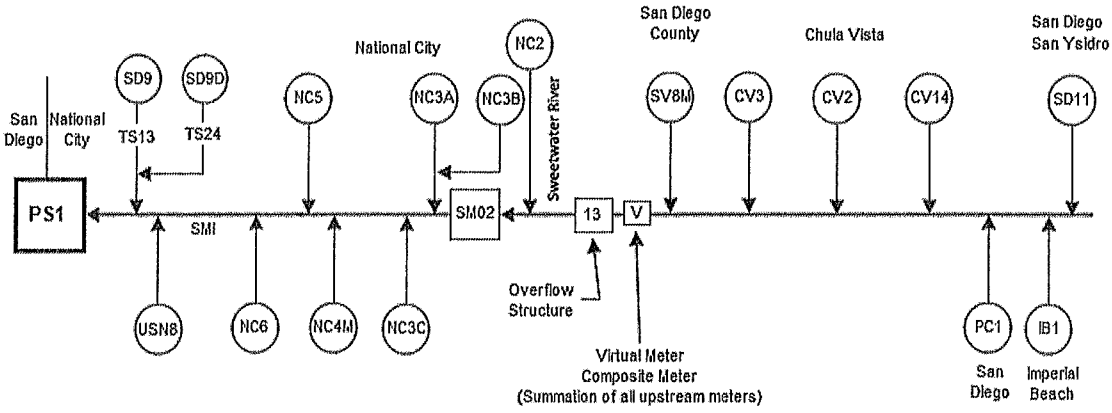
The City has taken many steps over the years to address and reduce inflow and infiltration (I&I) in its wastewater collection system. Several of the more notable and effective actions include:

- Since 2001, the City has implemented an aggressive program to replace or rehabilitate (primarily by lining) wastewater pipelines, and the laterals between the property line and wastewater pipelines, to reduce I&I entering into the system, with an average of about 40 miles of pipelines being renewed every year
- Regularly cleaning the wastewater collection system pipelines, and adjusting cleaning frequencies, particularly by increasing the cleaning efforts for pipelines that accumulate debris faster than other pipelines, which increases capacity within the system to convey wastewater and allow it to flow freely
- Implementing design standards for new and replacement sewer pipelines to reduce the ratio of depth of flow to pipeline diameter (d/D) to carry projected peak wet weather flows and accommodate additional flow if necessary
- Improving the monitoring of wastewater flow meter alarms to provide more timely identification of the impacted subsystems and sharing data among various City divisions, with a focus on large rain events

3. **An analysis addressing which portions of the collection system tributary to the April 10-11, 2020 SSO event are experiencing the most significant I&I, including an analysis of whether I&I into collection systems not owned by the City were a significant source of excessive flows during the April 2020 storm events.**

Pump Station 1 (PS1) serves a large service area consisting of 143 square miles. There are 31 City trunk sewers plus approximately 10 trunk sewers from other agencies that drain into the PS1 service area. For this analysis, flow from 17 tier-one meters was evaluated along the SMI that make up the total flow to PS1 (Figure 1).

Figure 1. Tier-one Wastewater Flow Meters and Their Locations Relative to PS1 and Each Other



To evaluate peak wet weather flow effects on the conveyance system during the April 10-11, 2020 SSO event, recorded peak I&I flow for the 17 tier-one meters were compared with the daily typical peak dry weather flow, and then ranked by the I&I severity expressed as a percentage of the typical peak dry weather flow (Table 1). As observed by the flow meter data, nearly all of the I&I volume and peak flows occurred on April 10, 2020. Therefore, only April 10, 2020 flow data were considered for this analysis. Regarding the data from the basins having a Typical Average Dry Weather Daily Flow of 1 million gallons per day (MGD) or less as outliers (these are the flow meters marked with a double asterisk in Table 1), this analysis focused on basins that could significantly contribute I&I. The data helped identify 1 meter entirely within the City and 1 meter that monitors flow from another agency as those basins that likely contributed significant I&I flow into the system.

Table 1. I&I Peak Ratio Summary by Basin for April 10, 2020

Meter Name	Typical Average Dry Weather Daily Flow (MGD)	Typical Peak Dry Weather Flow (MGD)	Peak I&I on April 10, 2020 (MGD)	Percentage of Peak I&I to Typ. Peak Dry Weather Flow	Ownership
CV2	4.9	6.4	5.0	79%	Other Agency
CV14 [1]	4.6	6.1	11.5	189%	Other Agency
CV3	2.2	3.8	3.7	98%	Other Agency
IB1	1.0	1.5	2.8	186%	Other Agency
NC2**	0.4	0.7	0.7	101%	Other Agency
NC3A	2.8	3.9	4.4	112%	Other Agency
NC3B**	0.8	1.1	0.7	59%	Other Agency
NC3C**	0.1	0.9	0.9	94%	Other Agency
NC4M**	0.4	1.2	0.7	61%	Other Agency
NC5**	0.9	1.2	1.1	96%	Other Agency
NC6**	0.02	0.06	0.13	221%	Other Agency
PC1 [2]	2.1	3.0	5.5	181%	San Diego
SD11*	3.4	4.5	6.1	136%	San Diego
SD9	23.7	34.7	54.9	159%	San Diego
SD9D	1.3	1.8	1.6	87%	San Diego
SV8M	9.5	12.6	18.9	151%	Other Agency
USN8**	0.2	0.7	4.1	568%	Navy

** Diverted dry weather flow was added back to typical daily volume for I/I ratio calculation purposes.*
*** Insignificant flow in system.*
Footnote 1 - Significant I/I contribution from a non-City-owned system
Footnote 2 - Significant I/I contribution from City-owned system

For this SSO event, meter PC1, which measures the Palm City trunk sewer system, is the City of San Diego meter that recorded the most significant I&I contribution based on the ratio of peak I&I versus the typical peak dry weather flow. While other City basins also measured I&I flows into the system, the Palm City trunk sewer system contributed significantly to the wastewater flows going to PS1 on April 10, 2020.

The analysis further revealed that, for other agencies, the Salt Creek Trunk Sewer system (meter CV14), owned by City of Chula Vista, was the significant I&I contributor for the April 10, 2020 SSO event. The data also indicates that the Imperial Beach Trunk Sewer system (meter IB1) and the Spring Valley Trunk Sewer system (meter SV8M) have ratios close to the Salt Creek Trunk Sewer system, indicating these basins also likely contributed high I&I to the system.

4. **An analysis of whether the SSO would have occurred if Pump Station 1 and the siphons were properly functioning.**

The flow data gathered from 17 tier-one flow meters (Figure 1) that are connected to South Metro Interceptor and ultimately drain to PS1 were used to estimate the peak wet weather flows of April 10 and 11, 2020. City staff estimated the I&I passing through PS1 by subtracting the typical dry weather flow from the recorded influent

flow. Based on the data, PS1 had a peak of about 158 MGD (Figure 2) that occurred on April 10, 2020. PS1 is designed to pump a maximum capacity of 160 MGD, which is sufficient volume to convey the flows experienced in the system on April 10, 2020.

In a similar manner, the peak wet weather flow at the south siphon transition structure was estimated to be approximately 73 MGD (Figure 3). The siphon system has a capacity of approximately 105 MGD. Therefore, based on the maximum pumping capacity of PS1 and the system storage available in the siphons an SSO would not have occurred.

Figure 2. PS1 Influent Flow on April 10-11, 2020

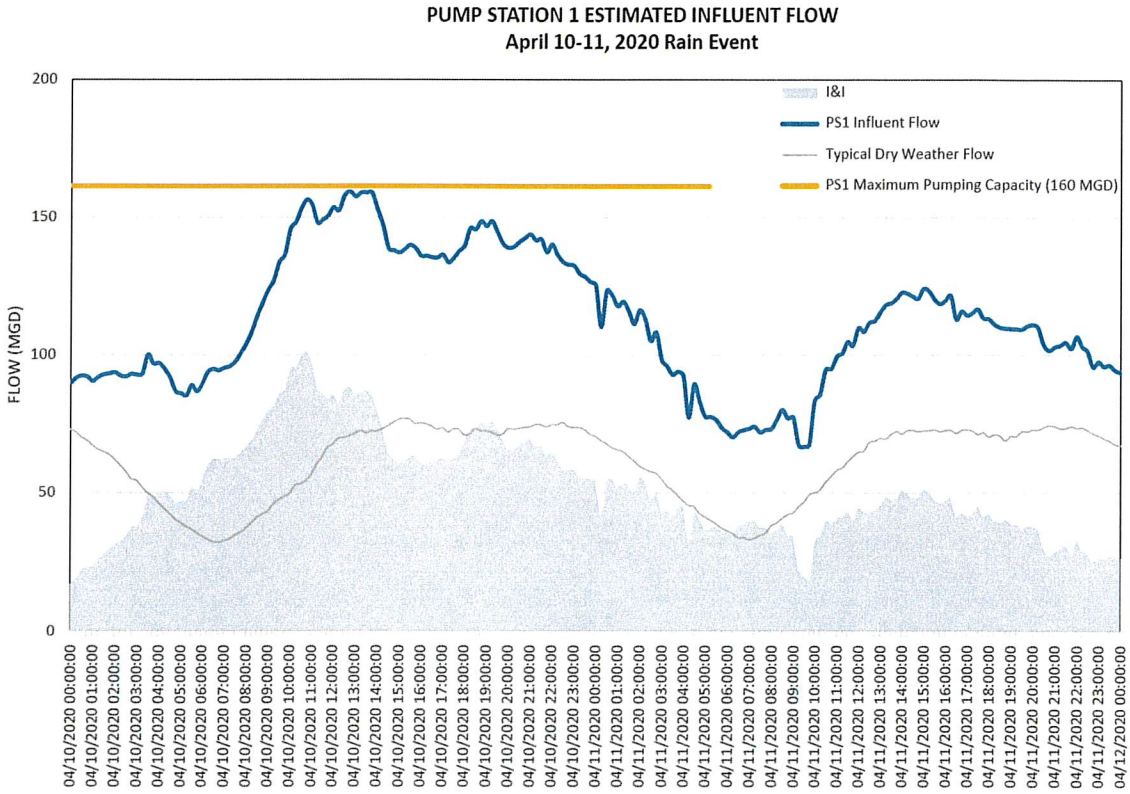
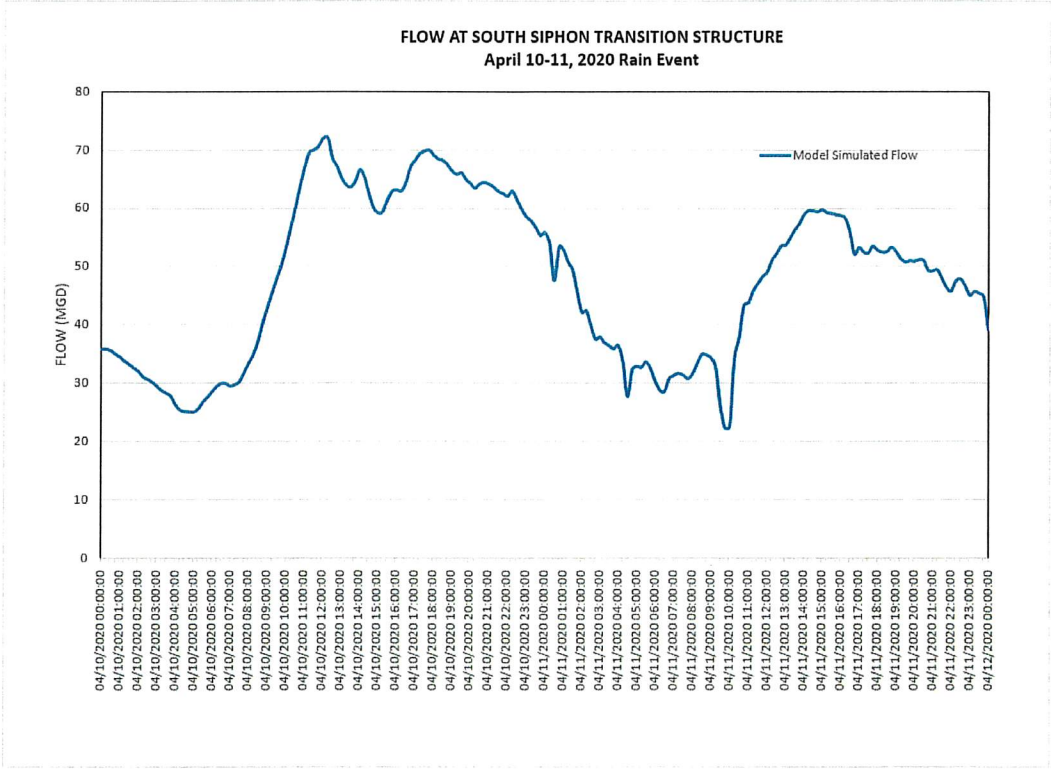


Figure 3. Flows at South Siphon Transition Structure (estimated)



5. **A detailed analysis of whether the SSO impacted the San Diego Bay National Wildlife Refuge. Please include the results of any post-spill biological assessments and water quality monitoring conducted within the refuge, and any communications with refuge staff regarding the SSO. If there were no post-spill communications with refuge staff, provide an explanation why they were not informed.**

On Friday, April 10, 2020 and into the early hours on Saturday, April 11, 2020, after several days of wet weather (April 5, 2020 to April 11, 2020), an SSO occurred at Site #1 (Figure 4). Although the City of San Diego's Marine Microbiology Lab in the Public Utilities Department performs routine sampling for fecal indicating bacteria (FIB) following a stormwater event, it does not perform routine sampling near or within the San Diego National Wildlife Refuge (shown in pink on Figure 4). The water sampling site that tests for FIB and is closest to the April 10-11, 2020 SSO is D-4, located near the Point Loma Lighthouse (Figure 4). On Wednesday, April 15, 2020, the FIB levels at D-4 were far below the single sample maximum (SSM) threshold (Table 2).

In addition to the routine testing, the Marine Microbiology Lab performed FIB analyses on Total Maximum Daily Loads (TMDL) samples for the City's Storm Water Division at CTL-1, Chollas Creek (Main Street in National City). The site is approximately 2.5 to 3 miles north of the SSO location and downstream of the Chollas Creek Hydrologic Unit (HU) or watershed, which is a separate watershed

from the Sweetwater River watershed, but can be tidally influenced. Samples taken on Wednesday, April 15, 2020 and Thursday, April 16, 2020 had SSM over limits. The recent wet weather events make it difficult to determine whether the contributions were from stormwater runoff and/or the SSO. However, because the CTL-1 site is from a different watershed than the location of the SSO, there is likely no connection between the SSO and exceedances recorded at CTL-1.

In response to the SSO, the Marine Microbiology Lab also gathered a sample on Friday, April 17, 2020 at Site #3 (Figure 4), in recreational water downstream of the SSO, which indicated no SSM over limits. Based on a conversation with the County Department of Environmental Health (DEH), DEH had sampled sites within San Diego Bay around the time of the SSO, but none of the DEH samples taken closest to the SSO resulted in exceedances.

Figure 4. City of San Diego Water Sampling Locations

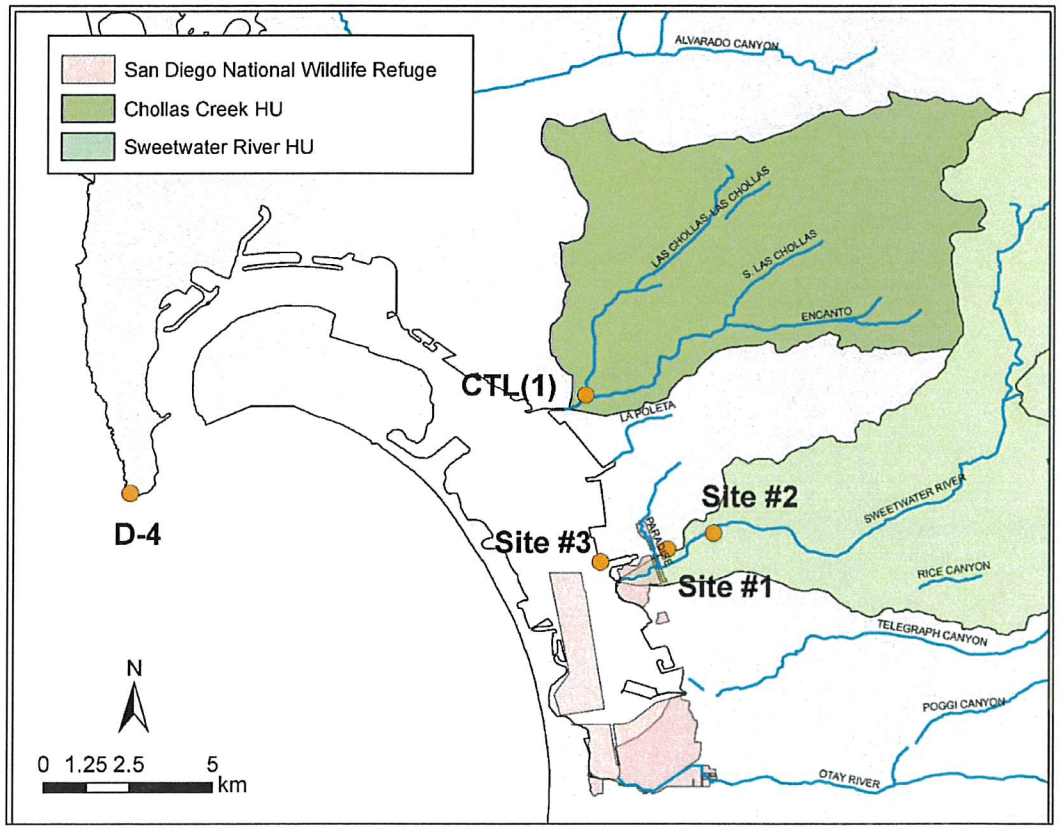


Table 2. Fecal Indicating Bacteria Samples in April 2020

Sample Date	Sample Time	Test Site	Location	Total Coliforms *	Fecal Coliforms *	Enterococci*
4/15/2020	0751	D-4	Pt. Loma Lighthouse	6e	<2	<2
4/15/2020	1040	CTL-1**	Chollas Creek, I-15 and Main St	<20,000	1,100	480
4/16/2020	1018	CTL-1**	Chollas Creek, I-15 and Main St	2,800e	180e	1,000e
4/17/2020	1542	SSO site 3	Far west corner from Pepper Park	8e	2e	6e
4/23/2020	1215	CTL-1**	Chollas Creek, I-15 and Main St	<2,000	18e	16e

**CFU / 100 mL*
***CTL-1 is a TMDL site that is sampled five times each month from April 1st to October 31st.*

As described in the Marine Microbiology Lab's microbiological analysis technical report, when "taken as a one-time event, the toxicity of the sewage spill may have had a short-term impact on the biota on Sweetwater River and portions of San Diego Bay in close proximity to the river [e.g. San Diego National Wildlife Refuge]. Increased nutrients may have depleted dissolved oxygen levels for a short-time but it is difficult to assess. Long-term effects on the Sweetwater River and the San Diego Bay are less likely due to volume of dilution and tidal flushing." Due to the sampling results taken on April 17, 2020 in the area of the SSO that resulted in SSM results below the allowable limits, there likely were not any long-term effects on the Sweetwater River or San Diego Bay.

Finally, the Marine Microbiology Lab reports FIB results to DEH, clients, and agencies specified on a weekly reporting list. The DEH and other agencies make beach closure determinations. As such, the Marine Microbiology Lab would defer to DEH or other agencies to report an SSO to the San Diego Bay National Wildlife Refuge.

6. **An explanation addressing why the deficiencies of the duckbill valves noted in the 2018 Technical Memorandum were not timely corrected.**

The May 2018 Technical Memorandum provided a condition assessment and series of recommendations for the SMI siphon transition structure that crosses the Sweetwater River (Facility Sequence Number [FSN] 113189). The SMI, primarily

constructed in 1971, has been in operation for about 50 years. The City is currently in Phase 1 of the planning process to upgrade and/or repair the SMI.

When the May 2018 memorandum was completed, the City determined it would be more efficient and cost effective to perform a complete restoration of FSN 113189 as part of the broader SMI Capital Improvement Project (CIP), rather than conduct smaller improvement projects providing limited or short-term value. While deferring smaller improvements to incorporate into a larger CIP process was a good interim approach, the April 10, 2020 overflow event has highlighted the need to complete selected repairs and/or restorations that address some, if not all the recommendations outlined in the memorandum. FSN 113189 will continue to be included in the broader SMI Capital Improvement Project, which will be expedited through the City CIP process. In the near term, the City has identified the following for improvements at FSN 113189:

- Repair the concrete around the duckbill valves to provide better support for the duckbill metal frame, and alleviate tidal flows from entering through this opening (City staff will be implementing in the near term)
- Engage the City's Engineering and Capital Projects Department to accelerate the improvements through the CIP process (ongoing)
- Perform an analysis with the City's primary vendor for odor and hydrogen sulfite control to evaluate the potential for mitigating the foul air at FSN 113189 (City staff will be implementing in the near term)

The City will prioritize the evaluation of the short- and long-term option(s) for improving the overall conditions at FSN 113189.

7. **An analysis of whether the duckbill valve allowed tidal water from San Diego Bay to enter the collection system and contributed to the high flows in the system.**

Because the Sweetwater River is influenced by the tides, two duckbill valves are used at the southerly SMI siphon transition structure which can become inundated during high tide events. Duckbill valves are designed to remain closed to prevent flow from entering a structure but will open to allow flow to leave the structure when sufficient pressure (hydraulic head) forces the duckbill valves to open. The pressure from the outgoing flow prevents water/liquid from entering through the duckbill valves when they open. The bottom of the SMI siphon transition structure spillway is approximately 5 feet above sea level, so tidal water above this elevation will submerge the duckbill valves.

The duckbill valves located at the south SMI siphon transition structure are designed properly and perform as designed. The duckbill valves replaced flapper gate valves, and they were installed on the existing flapper valve metal frame. The duckbill valves were assessed visually on May 11, 2020. The valves are in good condition with minimal wear.

The metal frame has corroded due to the salinity and odors in the south siphon transition structure. The corroding frame has contributed to the degradation of the concrete around the frame. The concrete structure has corroded to the extent that, during certain high tide events, water from the Sweetwater River can enter into the south SMI siphon transition structure. Figure 5 shows water entering the interior of the SMI siphon transition structure on July 7, 2020 at around 11:59 pm. On July 7, 2020, the high tide was at 6.25 feet around midnight (Table 3), which closely mirrors the conditions that would have occurred on April 10, 2020, the date and time of the SSO. A review of tidal information on April 10, 2020 (Table 4) indicates a height of 4.51 feet at 12:12 pm and 6.30 feet at 11:50 pm.

Consequently, it is possible that river water entered the south SMI siphon transition structure through the corroded concrete during the high tide event at 11:50 pm. The high tide event earlier in the day also likely allowed river water to enter the south SMI siphon transition structure if the stormwaters elevated the Sweetwater River elevation above the 5-foot elevation of the spillway.

Figure 5. Interior of the South SMI Siphon Transition Structure on July 7, 2020 around 11:59 pm (FSN 113389)

Table 3 Tides for San Diego Bay, July 7, 2020

TIDES FOR SAN DIEGO, SAN DIEGO BAY, CALIFORNIA FOR JULY 7, 2020

Time	Height	Tide
6:01 A.M. PDT	-0.98 feet	Low Tide
12:38 P.M. PDT	4.27 feet	High Tide
5:19 P.M. PDT	2.41 feet	Low Tide
11:25 P.M. PDT	6.25 feet	High Tide

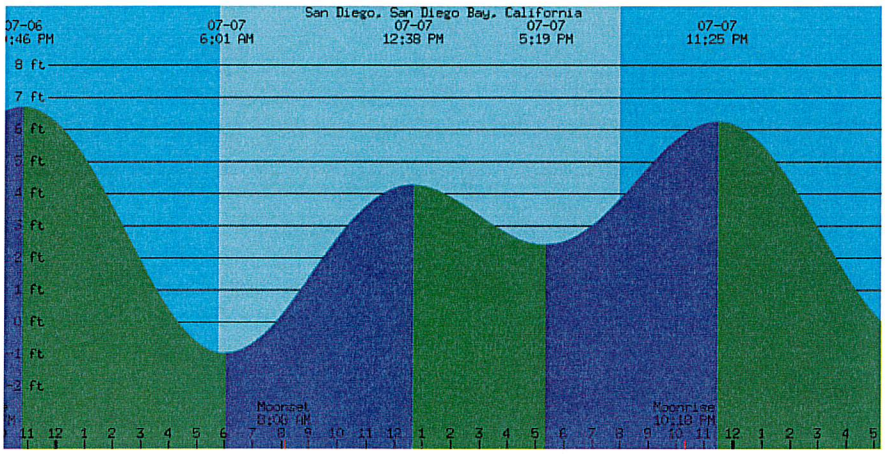
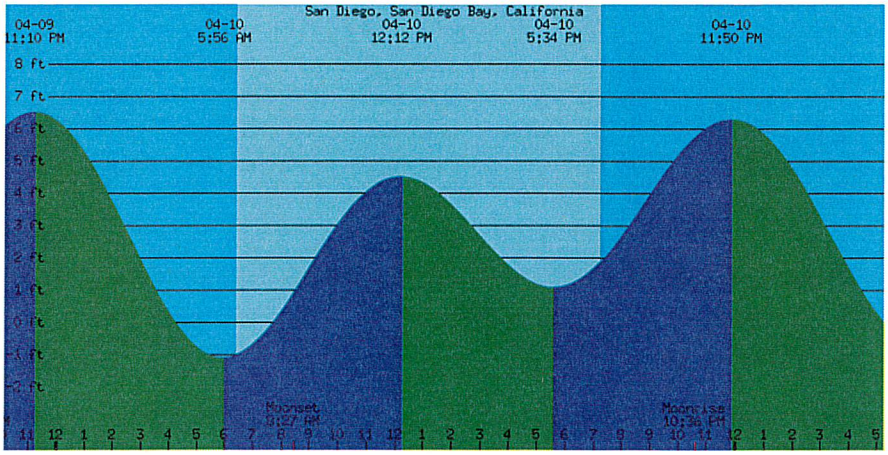


Table 4 Tides for San Diego Bay, April 10, 2020

TIDES FOR SAN DIEGO, SAN DIEGO BAY, CALIFORNIA FOR APRIL 10, 2020

Time	Height	Tide
5:56 A.M. PDT	-1.09 feet	Low Tide
12:12 P.M. PDT	4.51 feet	High Tide
5:34 P.M. PDT	1.09 feet	Low Tide
11:50 P.M. PDT	6.30 feet	High Tide



8. **An analysis of whether adequate spare parts are available for pump stations and, if applicable, a schedule for procuring the spare parts.**

   To maximize useful life, equipment is routinely refurbished until it reaches the point where it needs to be replaced. The City of San Diego routinely reviews, evaluates, and updates its stocking policy with respect to parts needed for pump station rotating elements and equipment. However, challenges arise with aging equipment and electrical gear, such as the electrical gear at PS1, where spare parts are not readily available as off-the-shelf items from vendors, requiring parts to be ordered and delivered. In the interim, City operators can repair equipment by borrowing parts from similar rotating and electrical gear at the same pump station or nearby pump stations, and then make the permanent repairs when the replacement parts arrive. The City is currently making changes to the process for evaluating and prioritizing CIP projects to better reflect operational needs.

   The City maintains an inventory of spare parts that support PS1 main pumps. Currently, the City has one assembled rotating assembly on-site, ready to be installed when needed and adequate parts in stock to rebuild another rotating assembly. The City also has a process in place to identify, order, and quickly procure necessary equipment and parts through the City's automated Enterprise Asset Management system. Therefore, the City generally has adequate spare parts to effect a repair needed to keep equipment operable, and a process to obtain needed equipment or parts necessary to keep facilities functioning adequately.

9. **A schedule and cost for replacing the level indicator at the South Siphon Transition Structure and upgrading the level indicator at Pump Station 1.**

   Instead of replacing the existing level indicator, the City opted to improve reliability of monitoring flow levels at the south siphon transition structure by adding a redundant level indicator that uses a Long-Range Level Sensor Device and cellular base for data communication. The instrument is ready for installation as soon as the recent ongoing inspection and cleaning activities at the South siphon transition structure (Sweetwater River) are complete. Installation was delayed to avoid conflict with the cleaning activities, but will occur on or around September 25, 2020.

10. **An analysis of whether the level indicator on the North Siphon Transition Structure should also be replaced, and if so the replacement schedule and cost for replacing the level indicator.**

    Because the south siphon transition structure has been designed to have a higher hydraulic grade-line and a spill elevation lower than the north siphon transition structure, any spill would occur at the south siphon transition structure rather than the north siphon transition structure. Consequently, it is not necessary to install a level indicator on the north siphon transition structure. Instead, the City proposes to enhance the SM02 flow meter, located north of the Sweetwater River on the SMI (Figure 1), to share the level data with PS1 staff. This enhanced feature will be implemented on or around September 25, 2020.

11. **A schedule for completing the review and analyses of the operation and maintenance procedures for pump stations, and the communication and training protocols, and the cost to complete the reviews. Provide the results when the reviews are completed.**

The City has begun its review and analyses of the pump stations and the related operations and maintenance procedures, as well as the communication and training protocols for notifications of and responses to alarms. The primary method for receiving and responding to pump station alarms is through the City's distributed control system (DCS). The wastewater collection system flow metering system (Prism ADS) also has high and low alarm for levels and flows that provide alerts to the City via the City's Central Operations Management Center (COMC) which is monitored 24 hours a day, 7 days a week. These notifications are used to alert pump station operators of possible operating adjustments that may be needed to maintain proper control of flow as well as dispatch Emergency Services crews to investigate the meter alarms in the collection system.

The process for evaluating and responding to these alarms and notifications is being updated and documented. Because updates to the process must be integrated into a larger, overall process involving various staff, vendors, and systems, the City has developed a schedule to document the updated process (Table 5).

Table 5 Schedule for Reviewing and Updating Pump Station Operations and Maintenance Procedures

Activity	Estimated Completion Date
Review/analyze pump station operation and maintenance procedures regarding equipment renewal and replacement	September 2021
Review/analyze alarms and responses to alarms for pump station alerts and high/low flow notifications	September 2021
Develop, circulate, and provide comments on draft documents	November 2021
Finalize documents, implement and integrate into existing procedures	March 2022

12. **The cost for review and analysis of the siphons within the collection system, including the cost for the initial inspection and assessment, and the cost to develop a schedule for routine inspections, assessments, and cleaning frequencies.**

The initial cost for assessing the Sweetwater siphons only using sonar technology was $94,628. The total cost including assessment of the north and south siphon transition structure, report, and project management including the siphon assessment was $187,627.

There are 12 additional large siphon sites within the City of San Diego's sewer system. These sites are included in a physical evaluation that will be completed prior to the start of the rainy season, assumed to be November 1.

City staff costs for initial inspection and assessment of the 12 large siphon sites within the system is $39,860. Attachment B includes cost recovery details. The City has contracted for sonar inspection of all large siphons to provide additional information related to the necessary schedule for cleaning of the large siphons.

The City also implemented a Standard Operating Procedure for evaluating and adjusting sewer main cleaning frequencies based on current cleaning crew data, historical data, and other defined criteria. This Standard Operating Procedure is based on the Accelerated Cleaning Program Plan developed in 2002 (Attachment C). The Standard Operating Procedure will be updated with the information obtained from the sonar siphon evaluation.

13. Confirmation that the blockage in Siphon 2 has been removed, and the cost of this action.

During the May 12, 2020 sonar assessment of the Sweetwater siphon barrel #2, crews visually observed an object blocking flow. The object, which seemed to be a pillow-shaped flow plug typically used to block flows during construction on sewer lines, had ropes and other debris wrapped around it. From July 11, 2020 to July 15, 2020, crews worked to dislodge the blockage in siphon barrel #2 and hydro-jet the siphon. It took several passes to remove all the debris from the line. When a jetter could pass freely through the entire 417 feet of siphon barrel #2, the crew confirmed no blockage or other impediments remained in the siphon. However, the north transition structure was checked and the plug was not found. Professional judgment suggests the plug is either intact or in pieces from having been bombarded with high pressure water and floated downstream into the 96-/108-inch-diameter SMI, making its way to the PS1 screens. Operations staff at PS1 has been notified and is routinely inspecting the screens for the plug or indications of the plug. To date, the plug has not been identified.

The cost for clearing the blockage in siphon barrel #2 is $69,522.

14. The cost to clean the siphons.

Cleaning costs for the five siphon sites larger than 30 inches in diameter (including the four siphon barrels crossing Sweetwater River) is approximately $1,410,200.00. This cost reflects the actual and estimated costs for the labor, equipment, and materials used by the City's vendor.

The cost to clean the remaining seven siphons that are 30 inches in diameter is $48,048. This cost was developed from actual costs incurred by City staff for labor, equipment, and materials.

15. **The cost to treat the 11,230,000 gallons of untreated wastewater that was released to the environment if the SSO had not occurred.**

    Using the estimated treatment and conveyance cost of $1,300 per million gallons, the estimated cost to treat the 11,230,000 gallons that was released is about $14,600.

CONCLUSION

With respect to the information provided herein:

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

Sincerely,

Shauna Lorance, P.E.
Director, City of San Diego Public Utilities Department

Enclosures:
1. Attachment A. SSO Technical Report for Spill Event ID 866196
2. Attachment B. Twelve Large Siphon Inspections and Assessment: City Costs Summary
3. Attachment C. Cleaning Frequency Adjustments Excerpt from Section 3.0

cc: David Gibson, Executive Officer, San Diego Regional Water Quality Control Board
Matthew Helm, Chief Compliance Officer, City of San Diego
Juan Guerreiro, Interim Executive Assistant Director, Public Utilities Department
Tom Rosales, Interim Assistant Director, Public Utilities Department
Michael Rosenberg, Deputy Director, Public Utilities Department, WWC Division
Craig Boyd, Interim Deputy Director, Public Utilities Department, WWTD Division
Katie Keach, Interim Deputy Director, Public Utilities Department, CSD Division

Keith Yaeger
SDRWQCB

September 14, 2020

Attachment A – SSO Technical Report for Spill Event ID 866196

SSO Technical Report for Spill Event ID 866196

South Metropolitan Interceptor Sweetwater River Crossing

City of San Diego

This Technical Report documents the Spill Event that occurred from the South Metropolitan Interceptor (SMI) siphon transition structure on the south shore of the Sweetwater River in National City as a result of the unusually excessive rainstorm events of April 9 and 10, 2020. Based on the volume of rainfall and circumstantial evidence from participating agency wastewater flow meter data, the City of San Diego (City) determined that wastewater was discharged from the SMI siphon transition structure at some time from April 10 to April 11, 2020. This report documents the activities to identify and mitigate the overflow.

1. Causes and Circumstances of the Sanitary Sewer Overflow

a. Complete and detailed explanation of how and when the Sanitary Sewer Overflow (SSO) was discovered.

The following chronological description of events led to the determination of an SSO:

- FRIDAY, April 10, 2020: excessive rainstorms deluge City of San Diego, National City, Chula Vista, and County of San Diego affecting drainage and increasing groundwater levels.
- FRIDAY, April 10, 2020: The City's Public Utilities Department's control center, COM-C, receives high flow level alarms at 50 sites throughout the City. City crews begin visiting sites to investigate. One of the alarms is a high flow level alarm at SM02 at 1103. A City wastewater crew performs field reconnaissance at SM02 at approximately 2200 and sees no evidence of discharge at the SM02 location. SM02 is located on the north side of the Sweetwater River.
- MONDAY, April 13, 2020: City of San Diego sewer modeling staff, while reviewing wastewater flow meter data from American Digital Systems (ADS™) meters used to monitor incoming wastewater flows from metropolitan agencies, suspect a potential flow release occurred. Staff notified management and began analyzing data further to confirm. Management initiates a work order to investigate the location and cause of the spill. A City wastewater crew visits the southerly siphon transition structure (SM03) and documents evidence of a spill event.
- TUESDAY, April 14, 2020: City of San Diego sewer modeling staff initiate further review by modeling the wastewater flows. At 1334, the City notifies the Regional Water Quality Control Board of a possible sewer spill via email and telephone; the communication indicates that the spill is under investigation. E-mail notification is provided as Attachment 1.
- TUESDAY, April 14, 2020: a City wastewater crew went to the probable spill location site, the siphon transition structure on the south side of the Sweetwater River, to investigate and reconfirm evidence of a sewer spill. The siphon transition

structure is designed to surcharge and spill to protect the downstream Pump Station #1 and other critical infrastructure.

- TUESDAY, April 14, 2020 to FRIDAY, April 17, 2020: City sewer modeling staff develop the model and evaluate the likely flow scenarios.
- FRIDAY, April 17, 2020: City modeling staff determine that a sewer spill likely occurred on April 10, 2020; City requests water quality samples of the Sweetwater River be taken.
- FRIDAY, April 17, 2020: City Environmental Monitoring and Technical Services Division staff collect water samples from three locations along the Sweetwater River and the laboratory processed the samples for microbiological analyses:
  - Test Site #1 - Spill site SM03 discharge point into the Sweetwater River (near 401 West 35th Street, National City, CA 91950)
  - Test Site #2 (control site) - Upstream of Test Site #1 (under Highland Avenue in the Sweetwater River)
  - Test Site #3 - Downstream of Test Site #1 (downstream in recreation water of the San Diego Bay, far west corner from Pepper Park)

- FRIDAY, April 17, 2020: At 1736, the City sent a follow up email to the Regional Water Quality Control Board to provide an update on the location of the discharge.
- SATURDAY, April 18, 2020: Microbiological results were determined within 24 hours and reported to the local Department of Environmental Health (DEH) at 1659:

  - Test Site #1:

    - Tested negative for ammonia.
    - Total Coliforms 11,199 MPN/ 100 ml
    - E.coli 109 MPN/100 ml
    - Enterococci 187 MPN/100 ml

  - Test Site #2: (control site)

    - Total Coliforms 13,960 MPN/ 100 ml
    - E.coli 520 MPN/100 ml
    - Enterococci 228 MPN/100 ml

  - Test Site #3: did not exceed SSM limit levels;

    - Total Coliforms 8e CFU/ 100 ml
    - E.coli 2e CFU/100 ml
    - Enterococci 6e CFU/100 ml

  - Test sites #1 and #2 exceeded the AB411 Single Sample Maximum (SSM) for Total Coliform and Enterococcus bacteria. Test site #1 tested under the SSM for E.coli whereas test site #2 exceeded the E.coli SSM. Test site #3 did not exceed the SSM limits for any parameter.

  - DEH determined that no further sampling was required based on email communications on April 18 and 19, 2020.

- MONDAY, April 27, 2020: California Integrated Water Quality System (CIWQS) report updated to convey estimated sewer overflow to be 12.1 million gallons.
- TUESDAY, May 26, 2020 to THURSDAY, June 4, 2020: After receiving audited and corrected data from the third party metering service provider ADS, City modeling staff conduct audits and refinement of the hydraulic model and determine that the sewer spill occurred intermittently (not continuously) and the volume is updated to approximately 11.23 million gallons.
- TUESDAY, June 9, 2020: The City updates the estimated sewer spill data report in CIWQS to 11.23 million gallons, based on the audited data, and updates the SSO location as the southerly siphon transition structure (FSN[1] 113189).

b. Diagram showing the SSO failure point, appearance point(s), and final destination(s).

Figure 1 shows the siphon, which directs wastewater flows from the SMI across the Sweetwater River, and which was constructed in 1971 to replace a 90-inch-diameter reinforced concrete pipe (RCP) sewer. The siphon consists of two transition structures, one on the south river bank (FSN 113189) and the other on the north river bank (FSN 113188) of the Sweetwater River and four elliptical barrels, each approximately 415 feet long, encased in concrete. The south transition structure is designed with two 48-inch duckbill valves that, when flow and surge exceeds the drawdown capacity of the downstream pump station (PS1), wastewater flow will discharge through the duckbill valves. Because of the elevation of the south transition structure, it can at times be submerged by tidal flows in the San Diego Bay. The duckbill valves are designed to not allow inflow into the system during high tide events. But as seen in Figure 6 of the HDR Technical Memorandum (dated 5/11/18 and included in Attachment 10), the aluminum frame embedded in the concrete around the duckbill valves, is severely corroded, and can allow tidal flows into the structure under certain circumstances.

[1] FSN means Facility Sequence number, which is a unique label used by the City of San Diego to identify each wastewater asset documented in the GIS.

Figure 1. Location Map

The paragraphs below describe each marker location on Figure 1.

- Marker #1: Based on post-SSO investigation and hydraulic modeling analysis, the City has determined that a large ragball partially blocked flow in Siphon 2 and debris accumulation in Siphon 3 reduced capacity of the siphons and contributed to the SSO.
- Marker #2: The location of the SSO appearance point is at the siphon transition structure (FSN 113189) on the south bank of the Sweetwater River, near the address 401 West 35th Street, National City, California 91950. The wastewater likely entered the Sweetwater River by exiting the siphon's south transition structure, then flowed westerly toward and into San Diego Bay. City crews investigating the area upon notification of a spill found minimal visual evidence of a spill at the south transition structure (Photo 1 through Photo 3 on pages 10 and 11). The lack of more physical evidence of an overflow is likely due to the tidal influences of the Sweetwater River that would have washed away visible evidence. Hydraulic modeling efforts identify a single point of spill, which is most likely the low point at the southerly siphon transition structure.
- Marker #3: The final destination of the discharge was into the Sweetwater River which flows into the San Diego Bay. No other storm drains or drainage channels were affected by the overflow.

c. Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.

Starting on April 6, 2020 and ending on April 11, 2020 there were a series of rain events that inundated the San Diego area. Table 1 summarizes the daily rainfall measured at San Diego County rain gauge 27107 (Bonita, CA) which is closest to the siphon transition structure.

Table 1. Daily Rainfall Measured at San Diego County Rain Gauge 27107

Date of Reading	Rainfall Value (inches)
2020-04-05	0
2020-04-06	0.62
2020-04-07	1.95
2020-04-08	0.33
2020-04-09	0.34
2020-04-10	2.74
2020-04-11	0.01
2020-04-12	0
2020-04-13	0
2020-04-14	0
2020-04-15	0

City hydraulic modeling staff, in the course of their routine duties, evaluate the wastewater flow meter data captured during rainstorm events to identify anomalies in the flow data that may indicate possible sanitary sewer overflows and/or areas of surge. The City has installed wastewater flow meters in the wastewater collection system, primarily at locations where adjacent agencies flow into the City's collection system. On or about April 14, 2020, City staff began evaluating the meters upstream and downstream of the siphon transition structure. City staff has since performed an audit of the data and updated the calculations and findings. Using ADS meters data and the dynamic modeling software, City staff performed the following activities to estimate the spill volume:

- The downstream meter of the overflow structure was subtracted from the flow summation of all meters upstream of the siphon transition structure (Attachment 2 - Meters Schematic shows the relative location of the referenced meters).
- The InfoWorks Dynamic Modeling Software was utilized to simulate the total flow of the upstream meters and the Virtual Meter (VM) to account for attenuated peak flow (travel time) at the spill location (Attachment 3 shows metered flows versus modeled flows and Attachment 4 shows flow levels).
- The spill duration was determined from the upstream meter depth at the spill point. The spill started at April 10, 2020 1245 and ended at April 11, 2020 0015 (Attachment 4).
- Detailed spill volume calculations are provided in Attachment 5.

- Using the raw meter data output, staff calculated a possible discharge of 12.1 million gallons. Since the initial evaluation, and as part of the standard practice, the ADS Vendor has provided certified meter results allowing City staff to reassess the model and estimated discharge. Based on this analysis, the estimated wastewater discharge is 11.23 million gallons. The method to calculate the spill volume is provided in Attachment 6.

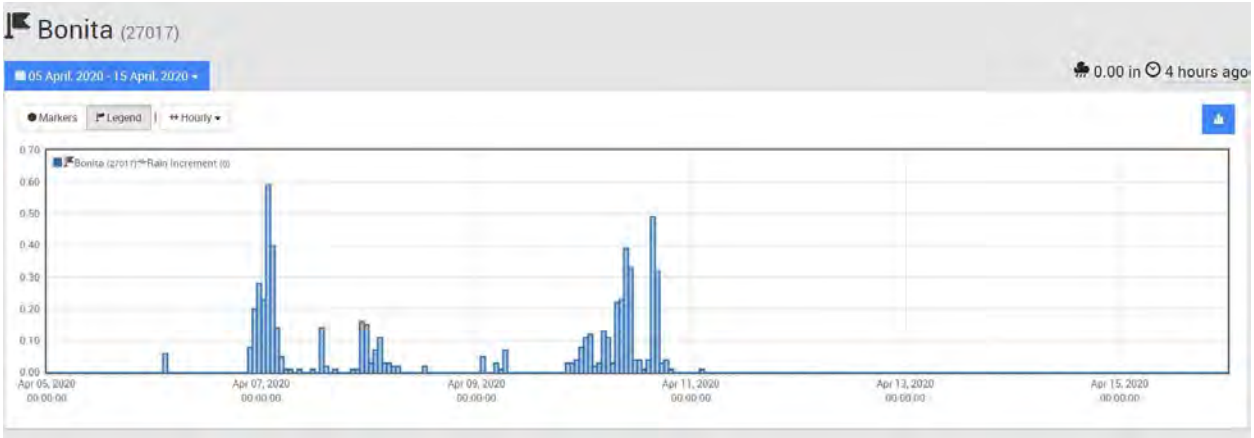
d. Detailed description of the cause(s) of the SSO.

Based on the hydraulic modeling evidence, during the last significant rain event on April 10, 2020, there was a possible wastewater discharge from the siphon transition structure south of the Sweetwater River (structure FSN 113189) on April 10, 2020 from approximately 1245 to April 11, 2020 at about 0015.

The specific cause of the discharge can be attributed to several factors, and when combined likely led to the overflow. These factors are described below.

- **Significant rainfall events:** From late at night on April 6, 2020 to the early morning of April 7, 2020, and again late at night on April 9, 2020 to the evening of April 10, 2020, significant amounts of rain inundated the San Diego area. The first rain event likely saturated the ground throughout San Diego County, creating conditions for immediately subsequent rain events to increase the groundwater runoff and water table levels. The intensity of similar rain events have historically caused infiltration and inflow into the wastewater collection system in volumes that increase flows within the systems. Based on the rainfall intensity patterns in the area closest to the transition structure, as shown in Figure 2, it is reasonable to assume that some of the April 10, 2020 storm runoff would have entered the wastewater collection system and contributed to the overflow.

Figure 2. Rainfall Volumes by Hour from April 5, 2020 to April 15, 2020



- **Blockage and Debris build up in the Siphons:** Based on confined space inspections of the south transitions structure and the siphon barrels on May 12, 2020 between 0630 and 1930, the inspection crew documented the following observations:
    - Siphon 1: access into siphon was unobstructed; observed adequate velocities of sewer flows (about 1.5 feet per second) allowing the parachute to pull the rope through – the rope is used to pull the sonar inspection equipment; siphon appeared free of obstructions and debris.
    - Siphon 2: a large ragball, which appears to be comprised mostly of remnants of fabric, caught on what appears to be a pillow-type plug with the inflation hose still connected, was found 3 to 5 feet inside Siphon 2; the inspection crew made several unsuccessful attempts to remove the blockage. The slippery debris on the blockage and the water-logged weight prevented the inspection team from getting a firm hold on it; approximately 1 foot of headspace exists, but the gap was insufficient to allow an inspection of Siphon 2. Although it cannot be determined when the blockage entered the siphon, it is assumed this blockage was in its current location on April 10, 2020, during the overflow event.
    - Siphon 3: the sonar inspection revealed debris and sediment, ranging in depth between 20 and 40 percent of the pipeline vertical diameter throughout Siphon 3.
    - Siphon 4: the sonar inspection revealed debris and sediment, ranging in depth between 0 to 20 percent for the last 50 feet of Siphon 4.
    - The level indicator located at the south siphon transition structure did not trigger a high level, as it was determined later after the overflow event, that the solar battery that powers the level indicator had no charge, making the indicator non-operational.
    - Table 2 summarizes the estimated debris.

Table 2. SMI Siphon Debris Volumes as Measured on May 12, 2020

PIPE OVERVIEW				
Asset No.	Distance Profiled (ft)	Debris (ft^3)	Average Water Level (in)	Dimension (in)
FSN113189_FSN113188 Barrel #1	415	55	41	43.4 x 68
FSN113189_FSN113188 Barrel #3	377	1332	42	43.4 x 68
FSN113189_FSN113188 Barrel #4	376	116	41	43.4 x 68
Totals	**1168 ft**	**1503 ft^3**	-	-

Pump Station Number 1 (PS1): At PS1 the following sequence of events regarding pump #4 occurred on April 10, 2020, which may have affected the system's ability to efficiently move wastewater through the SMI and siphons, considering the recent rain events that contributed flow to the system:

- On the morning of April 10, 2020 at about 0900, PS1 on-duty Pump Station Operator attempted to start #4 main pump but the unit's breaker was making excessive noise, and it failed to start. The on-duty operator immediately notified his Pump Station Operations Supervisor who notified one of the Division's Principal Plant Technician Supervisors of the situation.
- At about 1200 on April 10, 2020, the Principal Plant Technician Supervisor determined the unit could not be repaired until the following week because specific parts needed for the repair had to be ordered and delivered, which takes approximately five business days.
- Also on April 10, 2020, Principal Plant Technician Supervisor called a Plant Process Control Supervisor (Electrician) in to repair #8 main pump at Pump Station Number 2 (PS2), which is downstream of PS1. The #8 main pump was repaired and placed on-line at 1630 on April 10, 2020.
- The Electrician then went to PS1 to troubleshoot #4 main pump to make it operable until a permanent repair could be made the following week.
- The Electrician was able to swap some parts from #6 main pump, which was out of service at the time, and use them on #4 main pump.
- At 2000 on April 10, 2020, #4 main pump was repaired and placed on-line.
- The main level indicator showing flow coming into PS1 reached a level just under the maximum system level for a period of approximately 30 minutes around 1730 on April 10, 2020. The level indicator began gradually dropping thereafter.
- Once #4 main pump was put into service, the pump station level indicator continued to drop.

The combination of these factors together, and occurring at approximately the same time, likely led to the overflow at the siphon transition structure (FSN 113189).

e. Copies of original field crew records used to document the SSO.

Attachment 7 and Attachment 8 provide spill records.

f. Historical maintenance records for the failure location.

Attachment 9 and Attachment 10 provide historical maintenance efforts.

2. Enrollee's Response to the SSO

a. Chronological narrative description of all actions taken by enrollee to terminate the spill.

As the City was unaware a spill was occurring until after it had ceased, the City did not take actions during the event to terminate the spill. Once the City became aware a spill likely occurred the following actions were taken to investigate the site and cause of the spill to determine corrective actions and provide more information about the spill location.

- WEDNESDAY, April 29, 2020: City engaged Consultant to conduct a topside visual assessment of south transition structure (Facility Sequence Number [FSN] 113189) and compared the results with inspections conducted in 2014 and 2018; recommended internal inspection of the transition structure and the siphons.
- SUNDAY, May 10, 2020 to MONDAY, May 11, 2020: Conducted internal physical assessment of south transition structure, FSN 113189 and North transition structure, FSN 113188. Assessment of FSN 113189 indicated corrosion, loss of concrete around the duck bill valves, exposed concrete, delamination of liner and debris build up at the base of the structure. FSN 113188 is in better condition with some delamination, corrosion and exposed concrete.
- TUESDAY, May 12, 2020: Conducted sonar assessments of the four siphon barrels to determine whether any blockages existed and quantify sediment debris levels, if any. The inspection revealed a blockage in Siphon 2 that impedes the flow through the barrel. Siphons 3 and 4 had sediment ranging between approximately 20 and 35 percent; City staff commenced coordination for the cleaning and removal of blockage.
- MONDAY, June 22 to June 26, 2020: Tentatively scheduled unplugging and cleaning of siphon barrels.
- Near Term: Replace corroding frame around the duck bill valves at the south transition structure (FSN 113189) and repair the concrete wall around the duck bill valves.

b. Explanation of how the SSMP Overflow Emergency Response plan was implemented to respond to and mitigate the SSO.

The City of San Diego updated its Sewer System Management Plan (SSMP) Overflow Emergency Response Plan (OERP) in April 2018. The most common way to alert staff of a possible sewer overflow is a telephone call from the general public, City employee or official, plumber, contractor or other person to alert the City's call service operator who collects as much relevant information as possible and enters information into the work management system that then dispatches a work order to immediately investigate the complaint. Other ways of reporting potential spills include sewer pump station alarms as well as trunk sewer flow meter alarms that alert City staff of anomalies in flows that may or may not be caused by a sewer spill. In this situation, City hydraulic modeling staff, in the course of routine duties to review the performance of sewer alarm flow monitors and evaluate flow meter data after rain events, identified a possible release of flow at South Metropolitan Interceptor transition structure near Sweetwater River. In the afternoon on Monday, April 13, 2020, the modeling staff notified management of a possible sewer spill. This notification was made as soon as the modeling staff determined a potential overflow. Management initiated a work order to investigate the location and cause of the spill.

In accordance with the SSMP OERP, a City wastewater crew went to the probable spill location site, the siphon transition structure on the south side of the Sweetwater River, to investigate and locate evidence of a sewer spill. Because no visible evidence of an

ongoing overflow was found to be occurring, there was no need to barricade the area or call in assistance to recover spilled wastewater. Photo 1 through Photo 3 document the conditions around the southerly discharge area of the SMI siphon transition structure.

Photo 1. SMI Siphon Transition Structure on the South Bank of the Sweetwater River

Photo 2. Debris at the End of the Southerly SMI Siphon Discharge Structure before Entering the Sweetwater River.

Photo 3. Debris at the End of the Southerly SMI Siphon Discharge Structure Looking toward the Sweetwater River

Having not found an active overflow, Staff began researching whether an adjacent agency was investigating/reporting a sewer spill, one that may have caused the volume decrease in the sewer flow data. No agency was determined to be investigating such a spill.

The next day, Tuesday, April 14, 2020, in anticipation of the discharge being a significant event, the City of San Diego Interim Assistant Director, Tom Rosales, directed staff to notify, by telephone and email, the Regional Water Quality Control Board of a potential spill that was under investigation by the City. City staff notified the Regional Water Quality Control Board via email at 1334.

On Friday, April 17, 2020, using the hydraulic modeling and raw flow meter data, the preliminary estimate calculated by City staff indicated approximately 12.1 million gallons of sewage discharged into the Sweetwater River and subsequently San Diego Bay. Based on this estimate, the City, on the same day, performed water quality testing of the Sweetwater River in three locations: at the potential overflow location, and both upstream and downstream of the probable overflow location.

On Saturday, April 18, 2020, staff finalized and submitted the initial overflow report via CIWQS. Following the SSMP OERP requirements, City staff initiated an investigation by ordering a physical inspection of the siphon transition structure and the four siphon barrels. Staff also gathered information about the pump station flows for the period before, during, and after April 10, 2020, and staff worked with the wastewater flow meter vendor to normalize the raw flow meter data for further hydraulic analysis.

On Tuesday, June 9, 2020, using the updated flow information, City staff amended the overflow report to indicate the estimated volume to be 11.23 million gallons based on intermittent flow volumes during the spill window.

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

- Consultant is working to develop a plan for unplugging Siphon 2. The cleaning crew will access the barrel via the south transition structure. A metal roller and metal rod will be used to remove the blockage from the siphon barrel. (Tentative dates: June 22-26, 2020)
- After the plug is removed, all four siphon barrels will be cleaned by hydro jetting the siphons and removing the rag mat and debris. (City still determining if staff can conduct this cleaning or if this work will need to be outsourced. Tentative date for cleaning is September 2020.)
- City will also embark on repairing the corroding frame and concrete around the duck bill valves at the south transition structure. (Tentatively by October 31, 2020)
- The City has initiated a programmatic review of all of the siphons within its wastewater collection system. The review will include an inspection and assessment to understand the status of each siphon. After that process, each

siphon will then be placed on an inspection, assessment, and cleaning frequency. (Tentatively by October 31, 2020)

- ADS has been contacted to replace the level indicator at both the south siphon transition structure and upgrade the level indicator at PS1 to a newer version to provide better data for pump station operations.
- A complete review, assessment, and analysis of the operational and maintenance procedures and protocols are being undertaken for the City's network of pump stations.
- Communication and training protocols are being reviewed and analyzed to verify that notifications, responses, and critical issues are handled in a timely manner.

3. Water Quality Monitoring

a. Description of all water quality sampling activities conducted including analytical results and evaluation of the results.

Sampling for microbiological analyses was performed at three sites. The original map is from page 17 of the NOT-40200511275-complete-FINAL REPORT. Sites were sampled on April 17, 2020 as part of the initial investigation of the SSO requested by Waste Water Collections Division (WWC) and again on April 28, 2020 after an inquiry from the Mayor's Office.

Chronology of Environmental Monitoring and Technical Services Division response

April 17, 2020

The Supervisor of Marine Microbiology received a call from the Senior Water Utility Supervisor, WWC about an SSO investigation around 1300 on April 17, 2020, that samples may need to be collected and analyzed. The Senior Biologist and EMTS Deputy Director were notified. An initial address was given for the spill location but just before the Laboratory Technician left to meet the WWC Supervisor, a different address closer to the actual spill site (Test site #1: SM03 near 401 West 35th St) was disclosed. The following three sites were selected to sample:

- Test Site #1: Spill site SM03 discharge point into the Sweetwater River (near 401 West 35th St)
- Test Site #2 (control site): Upstream of Test Site #1 (under Highland Ave in the Sweetwater River)
- Test Site #3: Downstream of Test Site #1 (downstream in recreation water of the San Diego Bay, far west corner from Pepper Park)

A map of these locations and images from test sites # 1 and #3 can be seen below in section 3.b.

Site locations were described in the Chain of Custody. Samples arrived back at the NTC Lab at 1615 and were processed for microbiological analyses based on salinity

estimates derived from map locations of the test sites. Ammonia was tested only for the Site #1 sample and confirmed negative. Microbiological results were determined within 24 hours and reported to the local DEH on April 18, 2020 at 1659. DEH determined that no further sampling was required based on email communications on April 18, 2020 and April 19, 2020.

April 28, 2020

The Public Utilities Director contacted the EMTS Deputy Director regarding discussions on a SSO from April 10, 2020 from the Mayor's Office. Marine Microbiology provided the background and microbiological results of the samples from April 17, 2020. A Laboratory Technician was dispatched to resample the same three test sites in the mid-afternoon of April 28, 2020. GPS coordinates were taken of the sites and salinity of all samples was verified prior to bacteriological analyses when received by the lab at 1730. Sites #1 and #2 were brackish and Site #3 was seawater. Results were reported to the EMTS Deputy Director within 24 hours on April 29, 2020.

Results and Discussion

Visual Observations

Visual Observations were taken by the sampler on both sampling days. Observations included water color, odor, temperature, presences of debris, floatables, current, weather conditions including wind direction and speed and presence of seabirds or other animals and people.

Bacteria

There are no historical data on bacteria levels for Sweetwater River. The City is not required to monitor sites in the Sweetwater River watershed or enclosed recreational waters of San Diego Bay as part of the NPDES permits for the Point Loma Wastewater Treatment Plant (PLWTP) and South Bay Water Reclamation Plant (SBWRP). However, there are AB411 Single Sample Maximum and the Basin Plan Rec-1 Water Quality Objectives.

AB411 Single Sample Maximums Section 7958. Bacteriological Standards.

a. The minimum protective bacteriological standards for waters adjacent to public beaches and public water-contact sports areas shall be as follows:

    1. Based on a single sample, the density of bacteria in water from each sampling station at a public beach or public water contact sports area shall not exceed:

        A. 1,000 total coliform bacteria per 100 milliliters. if the ratio of fecal/total coliform bacteria exceeds 0.1; or
        B. 10,000 total coliform bacteria per 100 milliliters; or
        C. 400 fecal coliform bacteria per 100 milliliters; or
        D. 104 enterococcus bacteria per 100 milliliters.

Table 3. Results of samples taken on April 17, 2020

Sample Date	Sample Time	Test Site	Total Coliforms*	Fecal Coliforms*	E. coli*	Enterococci*
4/17/2020	1504	#1	**11,199**	NR	109	**187**
4/17/2020	1520	#2	**13,960**	NR	**520**	**228**
4/17/2020	1542	#3	8e	2e	NR	6e

*MPN / 100 mL for Test Sites #1 and #2; CFU/ 100 mL for Test Site #3. NR= Not required; Over limits in bold text.

Test Site #1 (initial spill location) was only slightly over the AB411 SSM over limit for Total Coliforms and *Enterococci*, and but not for *E. coli* (Fecal coliforms) which is the main indicator in fresh water. In addition, the initial spill site (Test Site #1) was less contaminated compared to the upstream Test Site #2. DEH was primarily concerned with Test Site #3 located in recreational water, and because Site #3 did not exceed SSM over limit levels, it was considered safe for recreational use. The final determination by DEH was that resampling was not needed.

Table 4. Results of samples taken on April 28, 2020

Sample Date	Sample Time	Test Site	Total Coliforms*	Fecal Coliforms*	Enterococci*
4/28/2020	1610	#1	40e	2e	20e
4/28/2020	1620	#2	<200	22e	2e
4/28/2020	1542	#3	<20	<2	<2

*CFU / 100 mL for Test Sites #1-#3.

Over a week after the initial samples were taken, all three sites did not exceed AB411 SSM over limits, and were considered safe for recreational use.

Potential Effects and River/Bay Recovery

Taken as a one-time event, the toxicity of the sewage spill may have had a short-term impact on the biota on Sweetwater River and portions of San Diego Bay in close proximity to the river. Increased nutrients may have depleted dissolved oxygens levels but it is difficult to assess. Sample salinities taken on April 28, 2020 indicate tidal influence up to Test Site #2 therefore long-term effects on the Sweetwater River and the San Diego Bay are less likely due to volume of dilution and tidal flushing.

b. Detailed location map illustrating all water quality sampling points.

Figure 3 through Figure 5 show the locations of the three sampling sites and images from two of the sampling sites on the day the samples were taken from the Sweetwater River.

Figure 3. Site Map for Water Quality Sampling

Figure 4. Test Site #1: View from the Southerly SMI Siphon Transition Structure and Spill Site

Figure 5. Test Site #3: View downstream of spill site where the Sweetwater River enters San Diego Bay

Attachment 1. Email Notification to SDRWQB

From: Jenkins, Isaac <IJenkins@sandiego.gov>
Sent: Thursday, May 7, 2020 2:00 PM
To: Rosenberg, Michael
Subject: FW: INVESTIGATION IN PROCESS

FYI

ISAAC Y. JENKINS
GENERAL WATER UTILITY SUPERVISOR
CITY OF SAN DIEGO
PUBLIC UTILITIES DEPARTMENT
WASTEWATER COLLECTION
OFFICE: 858-654-4130
IJENKINS@SANDIEGO.GOV

"Life doesn't require that we be the best, only that we try our best."

From: Jenkins, Isaac
Sent: Tuesday, April 14, 2020 1:34 PM
To: Keith.Yaeger@Waterboards.ca.gov
Subject: INVESTIGATION IN PROCESS

Hello Keith,

Can you reach out to me as soon as possible, I have an unique situation I want to run by you.

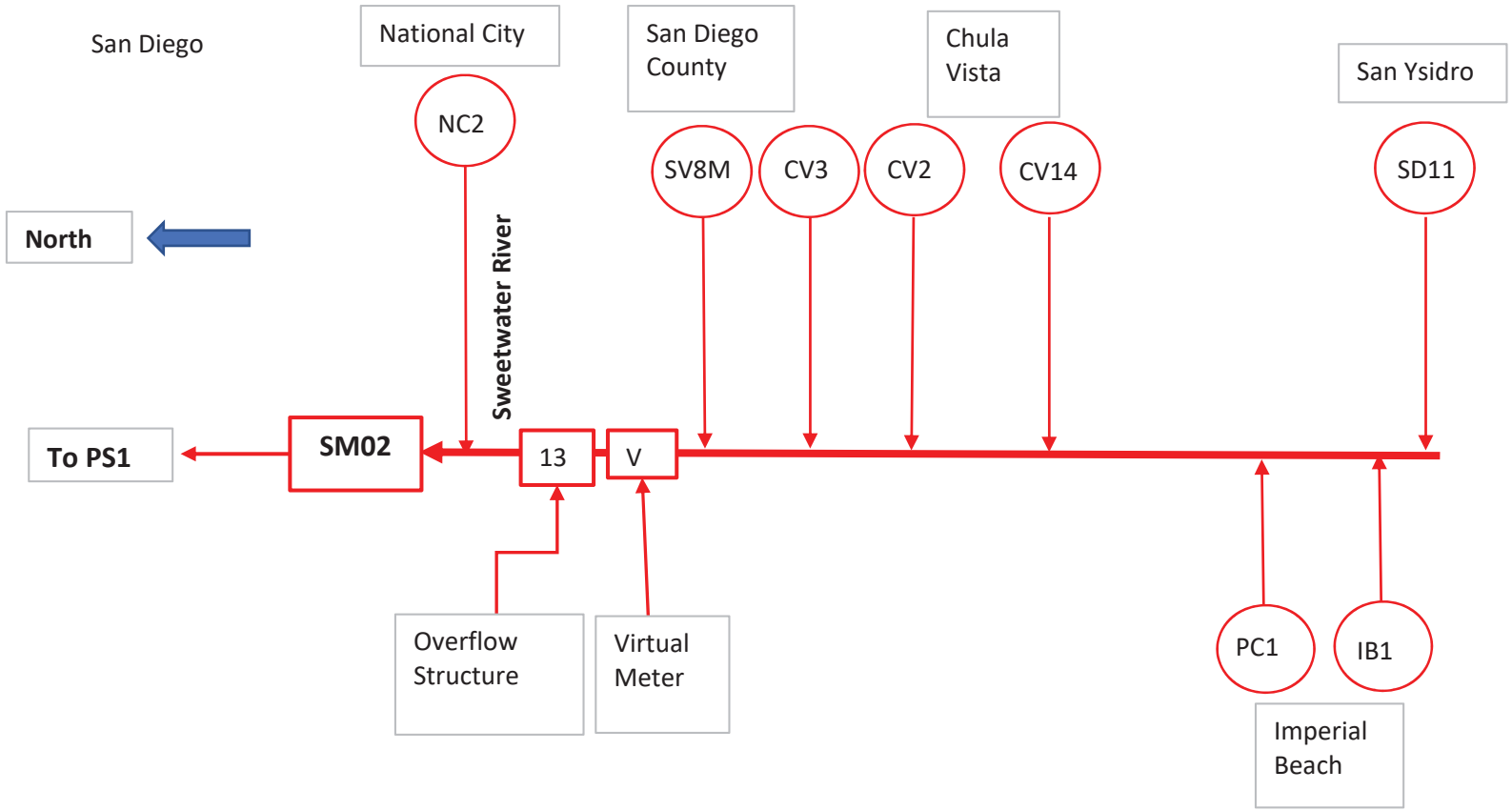
Ike
619-980-3835

ISAAC Y. JENKINS
GENERAL WATER UTILITY SUPERVISOR
CITY OF SAN DIEGO
PUBLIC UTILITES DEPARTMENT
WASTEWATER COLLECTION
OFFICE: 858-654-4130
IJENKINS@SANDIEGO.GOV

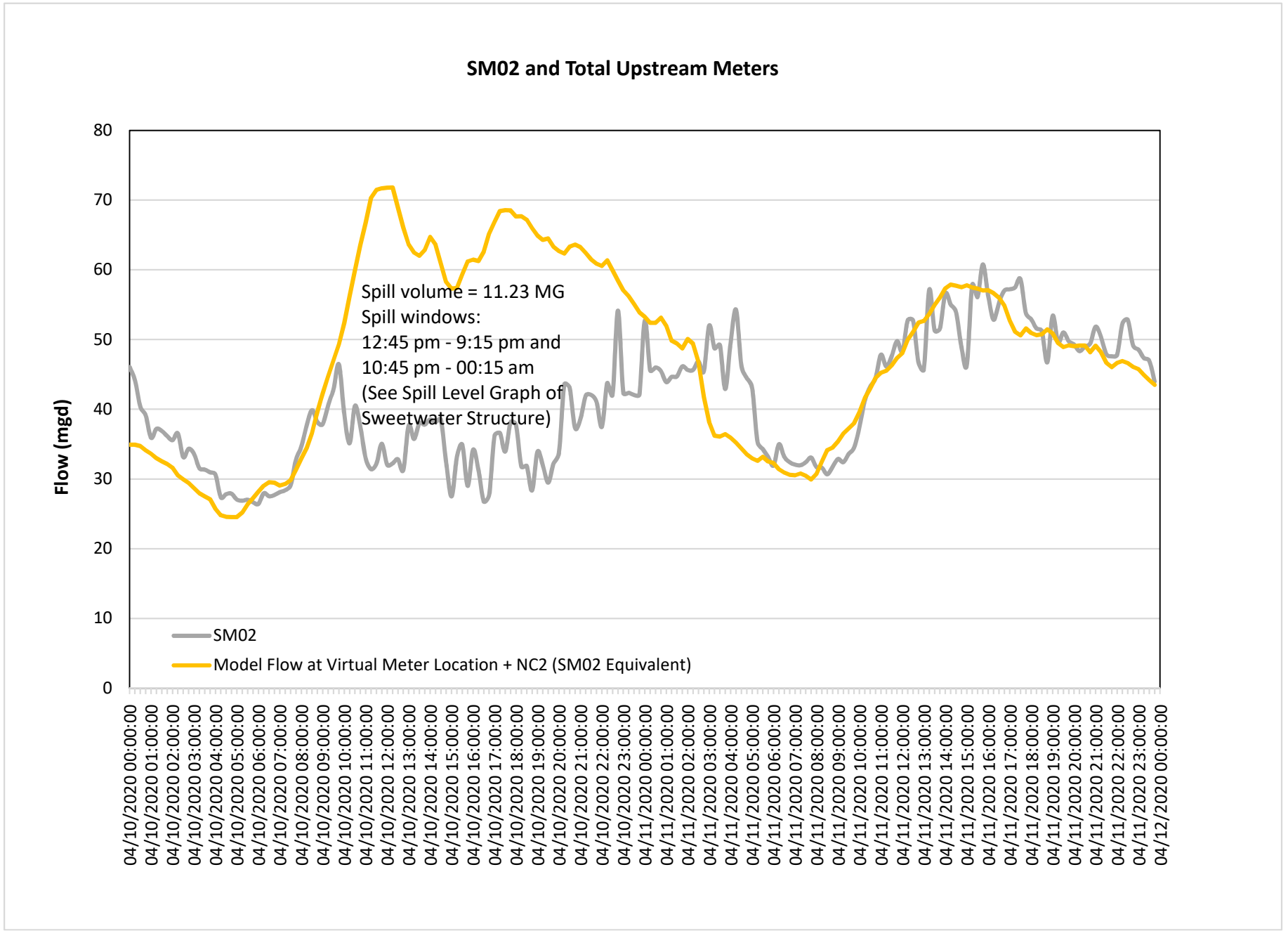
"Life doesn't require that we be the best, only that we try our best."

Attachment 2. Meters Schematic

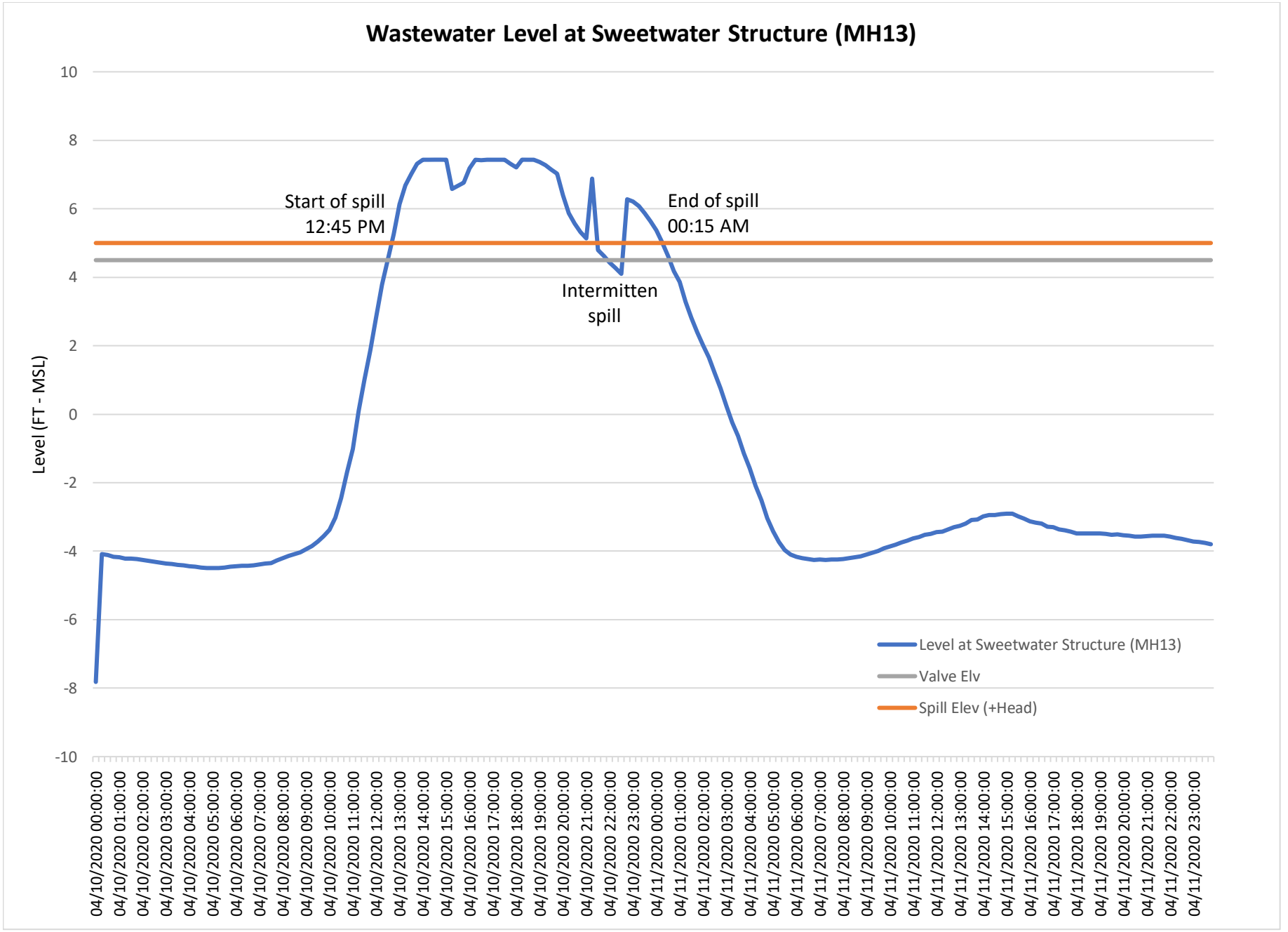
Upstream SM02 Flow Meters



Attachment 3. Flow and Level Graphs


SM02 and Total Upstream Meters
Flow (mgd)
80
70
60
50
40
30
20
10
0
Spill volume = 11.23 MG
Spill windows:
12:45 pm - 9:15 pm and
10:45 pm - 00:15 am
(See Spill Level Graph of
Sweetwater Structure)
SM02
Model Flow at Virtual Meter Location + NC2 (SM02 Equivalent)
04/10/2020 00:00:00
04/10/2020 01:00:00
04/10/2020 02:00:00
04/10/2020 03:00:00
04/10/2020 04:00:00
04/10/2020 05:00:00
04/10/2020 06:00:00
04/10/2020 07:00:00
04/10/2020 08:00:00
04/10/2020 09:00:00
04/10/2020 10:00:00
04/10/2020 11:00:00
04/10/2020 12:00:00
04/10/2020 13:00:00
04/10/2020 14:00:00
04/10/2020 15:00:00
04/10/2020 16:00:00
04/10/2020 17:00:00
04/10/2020 18:00:00
04/10/2020 19:00:00
04/10/2020 20:00:00
04/10/2020 21:00:00
04/10/2020 22:00:00
04/10/2020 23:00:00
04/11/2020 00:00:00
04/11/2020 01:00:00
04/11/2020 02:00:00
04/11/2020 03:00:00
04/11/2020 04:00:00
04/11/2020 05:00:00
04/11/2020 06:00:00
04/11/2020 07:00:00
04/11/2020 08:00:00
04/11/2020 09:00:00
04/11/2020 10:00:00
04/11/2020 11:00:00
04/11/2020 12:00:00
04/11/2020 13:00:00
04/11/2020 14:00:00
04/11/2020 15:00:00
04/11/2020 16:00:00
04/11/2020 17:00:00
04/11/2020 18:00:00
04/11/2020 19:00:00
04/11/2020 20:00:00
04/11/2020 21:00:00
04/11/2020 22:00:00
04/11/2020 23:00:00
04/12/2020 00:00:00

Attachment 4. Level Graph



\\ad.sannet.gov\dfs\MW-Dymodel\dymodel\ICM\Special Requests\Spills\PS1 Basin Spills 2020-04-10\Final Report 20200515\SM03 Levels 4-10-2020

Attachment 5. Spill Volume Calculations

SPILL VOLUME CALCULATION

Spill duration was determined from the level at overflow structure (See Level Graph):
From 12:45 pm to 9:15 pm and from 10:45 pm to 00:15 am
Spill volume calculation: Model flow at just before overflow structure (Virtual Meter) + NC2 meter subtracts the downstream meter SM02 flow within the spill windows (See Meter Schematic)
* A calibration adjustment factor of 9% increase was applied on SM02 metered flows.

		A	B	(B - A)
		9.0%	SM02 Equivalent	**11.23**
	SM02	SM02 (adjusted)*	Model VM+NC2	Spill Volume
DateTime	**(MGD)**	**(MGD)**	**(MGD)**	**(MG)**
04/10/2020 00:00:00	42.256	46.059	34.935	
04/10/2020 00:15:00	40.524	44.171	34.931	
04/10/2020 00:30:00	37.038	40.371	34.737	
04/10/2020 00:45:00	35.899	39.130	34.127	
04/10/2020 01:00:00	32.948	35.913	33.645	
04/10/2020 01:15:00	34.119	37.190	32.998	
04/10/2020 01:30:00	33.839	36.885	32.548	
04/10/2020 01:45:00	33.173	36.159	32.142	
04/10/2020 02:00:00	32.627	35.563	31.595	
04/10/2020 02:15:00	33.517	36.534	30.530	
04/10/2020 02:30:00	30.406	33.143	29.947	
04/10/2020 02:45:00	31.495	34.330	29.434	
04/10/2020 03:00:00	30.84	33.616	28.690	
04/10/2020 03:15:00	28.95	31.556	27.945	
04/10/2020 03:30:00	28.763	31.352	27.515	
04/10/2020 03:45:00	28.393	30.948	27.084	
04/10/2020 04:00:00	28.095	30.624	25.691	
04/10/2020 04:15:00	25.11	27.370	24.795	
04/10/2020 04:30:00	25.528	27.826	24.572	
04/10/2020 04:45:00	25.587	27.890	24.538	
04/10/2020 05:00:00	24.812	27.045	24.541	
04/10/2020 05:15:00	24.661	26.880	25.169	
04/10/2020 05:30:00	24.785	27.016	26.370	
04/10/2020 05:45:00	24.462	26.664	27.236	
04/10/2020 06:00:00	24.236	26.417	28.173	
04/10/2020 06:15:00	25.642	27.950	29.017	
04/10/2020 06:30:00	25.244	27.516	29.529	
04/10/2020 06:45:00	25.421	27.709	29.466	
04/10/2020 07:00:00	25.789	28.110	29.039	
04/10/2020 07:15:00	26.049	28.393	29.269	
04/10/2020 07:30:00	26.687	29.089	29.826	
04/10/2020 07:45:00	30.063	32.769	31.350	
04/10/2020 08:00:00	31.766	34.625	32.966	
04/10/2020 08:15:00	34.555	37.665	34.453	
04/10/2020 08:30:00	36.579	39.871	36.565	
04/10/2020 08:45:00	35.013	38.164	39.599	

		A	B	(B - A)	
		9.0%	SM02 Equivalent	**11.23**	
	SM02	SM02 (adjusted)*	Model VM+NC2	Spill Volume	
DateTime	**(MGD)**	**(MGD)**	**(MGD)**	**(MG)**	
04/10/2020 00:00:00	42.256	46.059	34.935		
04/10/2020 09:00:00	34.751	37.879	42.269		
04/10/2020 09:15:00	37.239	40.591	44.743		
04/10/2020 09:30:00	39.304	42.841	47.017		
04/10/2020 09:45:00	42.597	46.431	49.319		
04/10/2020 10:00:00	36.109	39.359	52.396		
04/10/2020 10:15:00	32.22	35.120	56.294		
04/10/2020 10:30:00	37.151	40.495	59.881		
04/10/2020 10:45:00	34.365	37.458	63.540		
04/10/2020 11:00:00	30.223	32.943	66.766		
04/10/2020 11:15:00	28.805	31.397	70.317		
04/10/2020 11:30:00	29.537	32.195	71.457		
04/10/2020 11:45:00	32.155	35.049	71.679		
04/10/2020 12:00:00	29.393	32.038	71.789		
04/10/2020 12:15:00	29.56	32.220	71.806		
04/10/2020 12:30:00	30.119	32.830	68.870		
04/10/2020 12:45:00	28.713	31.297	66.101	0.36	Spill starts
04/10/2020 13:00:00	34.543	37.652	63.656	0.27	
04/10/2020 13:15:00	32.787	35.738	62.481	0.28	
04/10/2020 13:30:00	34.857	37.994	62.003	0.25	
04/10/2020 13:45:00	34.679	37.800	62.855	0.26	
04/10/2020 14:00:00	35.355	38.537	64.723	0.27	
04/10/2020 14:15:00	34.992	38.141	63.616	0.27	
04/10/2020 14:30:00	35.336	38.516	60.871	0.23	
04/10/2020 14:45:00	29.616	32.281	58.283	0.27	
04/10/2020 15:00:00	25.236	27.507	57.305	0.31	
04/10/2020 15:15:00	30.438	33.177	57.391	0.25	
04/10/2020 15:30:00	32.026	34.908	59.355	0.25	
04/10/2020 15:45:00	26.613	29.008	61.192	0.34	
04/10/2020 16:00:00	31.364	34.187	61.465	0.28	
04/10/2020 16:15:00	28.772	31.361	61.284	0.31	
04/10/2020 16:30:00	24.552	26.762	62.617	0.37	
04/10/2020 16:45:00	25.408	27.695	65.134	0.39	
04/10/2020 17:00:00	33.208	36.197	66.854	0.32	
04/10/2020 17:15:00	33.583	36.605	68.444	0.33	
04/10/2020 17:30:00	31.142	33.945	68.544	0.36	
04/10/2020 17:45:00	35.013	38.164	68.512	0.32	
04/10/2020 18:00:00	34.629	37.746	67.656	0.31	
04/10/2020 18:15:00	29.171	31.796	67.682	0.37	
04/10/2020 18:30:00	29.232	31.863	67.169	0.37	
04/10/2020 18:45:00	26.016	28.357	65.958	0.39	
04/10/2020 19:00:00	31.097	33.896	64.932	0.32	

		A	B	(B - A)	
		9.0%	SM02 Equivalent	**11.23**	
	SM02	SM02 (adjusted)*	Model VM+NC2	Spill Volume	
DateTime	**(MGD)**	**(MGD)**	**(MGD)**	**(MG)**	
04/10/2020 00:00:00	42.256	46.059	34.935		
04/10/2020 19:15:00	29.323	31.962	64.298	0.34	
04/10/2020 19:30:00	27.041	29.475	64.497	0.36	
04/10/2020 19:45:00	29.563	32.224	63.306	0.32	
04/10/2020 20:00:00	30.923	33.706	62.701	0.30	
04/10/2020 20:15:00	39.952	43.548	62.319	0.20	
04/10/2020 20:30:00	39.54	43.099	63.326	0.21	
04/10/2020 20:45:00	34.257	37.340	63.633	0.27	
04/10/2020 21:00:00	35.381	38.565	63.259	0.26	
04/10/2020 21:15:00	38.498	41.963	62.414	0.21	Spill ends
04/10/2020 21:30:00	38.588	42.061	61.492		
04/10/2020 21:45:00	37.704	41.097	60.897		
04/10/2020 22:00:00	34.379	37.473	60.549		
04/10/2020 22:15:00	40.137	43.749	61.365		
04/10/2020 22:30:00	38.625	42.101	59.909		
04/10/2020 22:45:00	49.67	54.140	58.436	0.04	Spill starts
04/10/2020 23:00:00	38.84	42.336	57.062	0.15	
04/10/2020 23:15:00	38.867	42.365	56.230	0.14	
04/10/2020 23:30:00	38.58	42.052	55.105	0.14	
04/10/2020 23:45:00	38.629	42.106	53.913	0.12	
04/11/2020 00:00:00	48.362	52.715	53.268	0.01	
04/11/2020 00:15:00	41.836	45.601	52.407	0.07	Spill ends
04/11/2020 00:30:00	42.198	45.996	52.402		
04/11/2020 00:45:00	41.737	45.493	53.151		
04/11/2020 01:00:00	40.273	43.898	51.946		
04/11/2020 01:15:00	40.956	44.642	49.839		
04/11/2020 01:30:00	41.03	44.723	49.418		
04/11/2020 01:45:00	42.337	46.147	48.708		
04/11/2020 02:00:00	41.869	45.637	50.071		
04/11/2020 02:15:00	41.875	45.644	49.412		
04/11/2020 02:30:00	42.977	46.845	46.818		
04/11/2020 02:45:00	41.686	45.438	41.757		
04/11/2020 03:00:00	47.705	51.998	38.113		
04/11/2020 03:15:00	44.707	48.731	36.210		
04/11/2020 03:30:00	45.128	49.190	36.092		
04/11/2020 03:45:00	39.363	42.906	36.429		
04/11/2020 04:00:00	45.494	49.588	35.930		
04/11/2020 04:15:00	49.792	54.273	35.217		
04/11/2020 04:30:00	42.419	46.237	34.372		
04/11/2020 04:45:00	40.807	44.480	33.541		
04/11/2020 05:00:00	39.519	43.076	32.947		
04/11/2020 05:15:00	32.42	35.338	32.584		

		A	B	(B - A)
		9.0%	SM02 Equivalent	**11.23**
	SM02	SM02 (adjusted)*	Model VM+NC2	Spill Volume
DateTime	**(MGD)**	**(MGD)**	**(MGD)**	**(MG)**
04/10/2020 00:00:00	42.256	46.059	34.935	
04/11/2020 05:30:00	31.443	34.273	33.174	
04/11/2020 05:45:00	30.376	33.110	32.492	
04/11/2020 06:00:00	29.295	31.932	32.285	
04/11/2020 06:15:00	32.092	34.980	31.418	
04/11/2020 06:30:00	30.438	33.177	30.907	
04/11/2020 06:45:00	29.731	32.407	30.604	
04/11/2020 07:00:00	29.413	32.060	30.525	
04/11/2020 07:15:00	29.323	31.962	30.786	
04/11/2020 07:30:00	29.727	32.402	30.471	
04/11/2020 07:45:00	30.337	33.067	29.911	
04/11/2020 08:00:00	29.082	31.699	30.731	
04/11/2020 08:15:00	29.006	31.617	32.508	
04/11/2020 08:30:00	28.137	30.669	34.139	
04/11/2020 08:45:00	29.11	31.730	34.509	
04/11/2020 09:00:00	30.156	32.870	35.366	
04/11/2020 09:15:00	29.734	32.410	36.535	
04/11/2020 09:30:00	30.824	33.598	37.229	
04/11/2020 09:45:00	31.649	34.497	37.993	
04/11/2020 10:00:00	34.372	37.465	39.549	
04/11/2020 10:15:00	37.854	41.261	41.604	
04/11/2020 10:30:00	39.651	43.220	42.968	
04/11/2020 10:45:00	40.828	44.503	44.506	
04/11/2020 11:00:00	43.873	47.822	45.227	
04/11/2020 11:15:00	42.33	46.140	45.531	
04/11/2020 11:30:00	43.656	47.585	46.307	
04/11/2020 11:45:00	45.661	49.770	47.327	
04/11/2020 12:00:00	44.319	48.308	48.039	
04/11/2020 12:15:00	48.41	52.767	49.982	
04/11/2020 12:30:00	48.352	52.704	51.114	
04/11/2020 12:45:00	42.853	46.710	52.432	
04/11/2020 13:00:00	41.941	45.716	52.661	
04/11/2020 13:15:00	52.417	57.135	53.677	
04/11/2020 13:30:00	47.093	51.331	54.940	
04/11/2020 13:45:00	47.346	51.607	56.013	
04/11/2020 14:00:00	51.917	56.590	57.333	
04/11/2020 14:15:00	50.482	55.025	57.892	
04/11/2020 14:30:00	49.489	53.943	57.713	
04/11/2020 14:45:00	44.91	48.952	57.500	
04/11/2020 15:00:00	42.488	46.312	57.792	
04/11/2020 15:15:00	53.024	57.796	57.462	
04/11/2020 15:30:00	51.468	56.100	57.292	

		A	B	(B - A)
		9.0%	SM02 Equivalent	**11.23**
	SM02	SM02 (adjusted)*	Model VM+NC2	Spill Volume
DateTime	**(MGD)**	**(MGD)**	**(MGD)**	**(MG)**
04/10/2020 00:00:00	42.256	46.059	34.935	
04/11/2020 15:45:00	55.759	60.777	57.029	
04/11/2020 16:00:00	51.561	56.201	57.073	
04/11/2020 16:15:00	48.473	52.836	56.651	
04/11/2020 16:30:00	50.735	55.301	56.006	
04/11/2020 16:45:00	52.31	57.018	54.878	
04/11/2020 17:00:00	52.483	57.206	52.737	
04/11/2020 17:15:00	52.729	57.475	51.109	
04/11/2020 17:30:00	53.815	58.658	50.603	
04/11/2020 17:45:00	49.395	53.841	51.585	
04/11/2020 18:00:00	48.537	52.905	50.944	
04/11/2020 18:15:00	47.326	51.585	50.637	
04/11/2020 18:30:00	46.962	51.189	50.745	
04/11/2020 18:45:00	42.873	46.732	51.461	
04/11/2020 19:00:00	48.996	53.406	50.878	
04/11/2020 19:15:00	45.515	49.611	49.505	
04/11/2020 19:30:00	46.803	51.015	48.918	
04/11/2020 19:45:00	45.638	49.745	49.178	
04/11/2020 20:00:00	45.194	49.261	49.051	
04/11/2020 20:15:00	44.351	48.343	49.153	
04/11/2020 20:30:00	44.949	48.994	49.132	
04/11/2020 20:45:00	45.354	49.436	48.180	
04/11/2020 21:00:00	47.553	51.833	49.095	
04/11/2020 21:15:00	46.218	50.378	48.180	
04/11/2020 21:30:00	43.953	47.909	46.651	
04/11/2020 21:45:00	43.67	47.600	46.052	
04/11/2020 22:00:00	43.85	47.797	46.643	
04/11/2020 22:15:00	47.969	52.286	46.924	
04/11/2020 22:30:00	48.455	52.816	46.630	
04/11/2020 22:45:00	45.078	49.135	46.089	
04/11/2020 23:00:00	44.538	48.546	45.749	
04/11/2020 23:15:00	43.436	47.345	44.910	
04/11/2020 23:30:00	43.079	46.956	44.172	
04/11/2020 23:45:00	40.362	43.995	43.487	

Supporting Data

Q avg =	0.5		MH I.E. -7.77'	47.2	47.1	22.3	6.4	2.7	7.9	2.9	1.3	3.6
VM+NC2	NC2		SM03 Level	Model VM	Sum of US Meters	SV8M	CV2	CV3	CV14	PC1	IB1	SD11
(MGD)	(MGD)	DateTime	(INCHES)	(MGD)	Virtual Meter (MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)
34.935	0.40	04/10/2020 00:00:00	-0.58	34.54	34.54	15.42	5.345	1.967	6.217	2.241	0.949	2.4
33.912	0.40	04/10/2020 00:15:00	44.28	34.53	33.51	15.51	5.233	1.922	5.685	2.011	0.872	2.277
32.962	0.41	04/10/2020 00:30:00	43.91	34.33	32.55	15.13	5.062	1.829	5.517	1.919	0.859	2.234
32.433	0.39	04/10/2020 00:45:00	43.34	33.74	32.04	15.13	4.983	1.789	5.265	2.007	0.799	2.069
31.123	0.37	04/10/2020 01:00:00	43.16	33.27	30.75	14.29	4.891	2.107	4.942	1.925	1.185	1.41
30.034	0.38	04/10/2020 01:15:00	42.66	32.62	29.66	14.24	5.064	2.272	4.4	2.007	0.784	0.891
30.259	0.40	04/10/2020 01:30:00	42.59	32.14	29.86	14.09	4.982	2.268	4.806	2.31	0.756	0.644
30.415	0.58	04/10/2020 01:45:00	42.48	31.56	29.84	14.36	4.578	3.012	4.558	1.983	0.865	0.481
30.137	0.56	04/10/2020 02:00:00	42.09	31.03	29.57	14.32	4.608	1.909	5.559	1.891	0.905	0.38
29.760	0.54	04/10/2020 02:15:00	41.84	29.99	29.22	14.18	4.642	1.865	5.23	2.019	0.985	0.301
28.241	0.47	04/10/2020 02:30:00	41.58	29.48	27.77	13.82	4.454	1.822	5.181	1.673	0.567	0.255
26.903	0.43	04/10/2020 02:45:00	41.28	29.00	26.47	13.60	3.902	1.791	4.778	1.547	0.643	0.218
26.343	0.42	04/10/2020 03:00:00	40.93	28.27	25.93	13.47	3.813	1.638	4.446	1.652	0.712	0.199
25.349	0.42	04/10/2020 03:15:00	40.70	27.52	24.93	13.44	3.841	1.592	3.982	1.353	0.538	0.186
26.124	0.44	04/10/2020 03:30:00	40.50	27.07	25.68	13.34	3.56	2.741	3.638	1.388	0.832	0.181
24.724	0.41	04/10/2020 03:45:00	40.23	26.68	24.32	13.32	3.54	1.308	3.418	1.761	0.478	0.491
24.207	0.37	04/10/2020 04:00:00	39.95	25.32	23.84	12.92	3.529	1.293	3.272	1.407	0.66	0.756
24.569	0.34	04/10/2020 04:15:00	39.75	24.46	24.23	13.22	3.513	1.303	3.207	1.528	0.644	0.815
24.575	0.30	04/10/2020 04:30:00	39.49	24.27	24.27	13.19	3.549	1.33	3.182	1.666	0.604	0.754
24.293	0.30	04/10/2020 04:45:00	39.36	24.24	24.00	12.71	3.426	1.688	3.245	1.297	1.072	0.563
25.371	0.30	04/10/2020 05:00:00	39.36	24.25	25.08	12.68	4.091	1.851	3.253	1.934	0.875	0.396
27.396	0.31	04/10/2020 05:15:00	39.36	24.86	27.08	13.48	4.182	2.254	3.383	2.388	1.107	0.285
27.277	0.41	04/10/2020 05:30:00	39.56	25.96	26.87	13.54	4.383	2.685	3.481	1.823	0.702	0.25
28.084	0.48	04/10/2020 05:45:00	39.75	26.76	27.61	13.88	4.375	2.624	3.541	2.04	0.923	0.222
29.080	0.53	04/10/2020 06:00:00	39.93	27.65	28.55	14.02	4.419	3.173	3.565	2.26	0.904	0.216
29.089	0.48	04/10/2020 06:15:00	40.05	28.54	28.61	14.17	4.58	3.257	3.448	1.858	1.085	0.213
29.195	0.53	04/10/2020 06:30:00	40.10	28.99	28.66	14.43	4.451	3.215	3.537	1.94	0.877	0.21
28.420	0.47	04/10/2020 06:45:00	40.25	28.99	27.95	14.33	4.668	2.282	3.587	2.061	0.812	0.204
29.119	0.46	04/10/2020 07:00:00	40.53	28.58	28.66	15.07	4.937	2.048	3.607	1.941	0.864	0.198
28.886	0.43	04/10/2020 07:15:00	40.95	28.84	28.45	14.97	4.847	2.255	3.486	1.912	0.79	0.197
33.325	0.45	04/10/2020 07:30:00	41.08	29.38	32.87	16.65	4.838	2.554	4.72	2.62	1.297	0.198
35.612	0.52	04/10/2020 07:45:00	42.00	30.83	35.09	17.25	5.674	2.935	5.116	2.664	1.136	0.313
36.871	0.65	04/10/2020 08:00:00	42.84	32.31	36.22	17.19	5.509	2.971	5.305	2.685	1.33	1.23
38.829	0.79	04/10/2020 08:15:00	43.59	33.67	38.04	17.86	5.705	3.131	5.54	2.933	1.298	1.577
42.659	0.82	04/10/2020 08:30:00	44.16	35.74	41.84	19.70	6.583	3.145	6.208	2.934	1.34	1.922
44.018	0.88	04/10/2020 08:45:00	44.85	38.72	43.14	20.18	6.948	3.127	6.235	2.867	1.633	2.146
46.835	0.87	04/10/2020 09:00:00	45.93	41.40	45.97	21.12	7.245	3.747	6.864	3.021	1.592	2.379
48.297	0.76	04/10/2020 09:15:00	47.06	43.98	47.54	22.52	7.512	3.383	6.976	2.731	1.79	2.622
49.936	0.75	04/10/2020 09:30:00	48.59	46.26	49.18	22.67	7.435	4.688	6.707	2.977	1.951	2.754
55.571	0.77	04/10/2020 09:45:00	50.48	48.55	54.81	22.80	9.269	5.812	6.558	4.971	2.43	2.967
63.467	0.97	04/10/2020 10:00:00	52.64	51.42	62.50	25.63	9.861	5.598	7.017	7.057	3.635	3.698
66.546	1.17	04/10/2020 10:15:00	56.94	55.13	65.38	25.98	10.758	5.782	7.674	7.335	4.125	3.719
69.837	1.16	04/10/2020 10:30:00	63.88	58.73	68.68	26.97	11.076	6.331	8.189	7.777	4.053	4.291
72.737	1.13	04/10/2020 10:45:00	72.80	62.41	71.60	28.25	10.927	5.691	10.299	7.671	3.357	5.404
74.136	1.08	04/10/2020 11:00:00	80.98	65.69	73.06	29.39	10.95	4.87	10.294	6.777	2.785	7.989
72.582	1.10	04/10/2020 11:15:00	94.46	69.22	71.49	28.11	10.105	5.803	10.295	5.766	2.089	9.323
72.765	1.08	04/10/2020 11:30:00	105.51	70.37	71.68	28.57	10.475	4.388	11.159	5.88	1.9	9.316
69.354	0.99	04/10/2020 11:45:00	115.70	70.69	68.37	26.77	10.216	4.222	11.1	4.928	2.039	9.089
68.960	0.98	04/10/2020 12:00:00	127.36	70.81	67.98	29.03	9.739	4.702	10.946	3.179	1.732	8.652
68.941	0.92	04/10/2020 12:15:00	138.63	70.88	68.02	28.77	8.842	4.064	10.829	5.276	1.76	8.481
62.549	0.43	04/10/2020 12:30:00	147.40	68.44	62.12	26.33	8.668	3.987	10.945	2.494	1.76	7.94
63.356	0.58	04/10/2020 12:45:00	156.36	65.52	62.77	24.84	8.485	3.8	10.822	5.221	1.744	7.862
62.042	0.35	04/10/2020 13:00:00	166.86	63.30	61.69	25.05	7.232	4.508	11.189	4.045	1.958	7.709
60.679	0.49	04/10/2020 13:15:00	173.44	61.99	60.19	25.09	7.164	3.519	11.18	4.09	1.551	7.591
60.581	0.49	04/10/2020 13:30:00	177.39	61.52	60.10	25.58	6.93	3.517	10.914	4.017	1.573	7.56
64.853	0.39	04/10/2020 13:45:00	180.99	62.47	64.46	30.18	6.508	4.376	10.93	3.526	1.393	7.555
62.935	0.41	04/10/2020 14:00:00	182.35	64.31	62.53	29.38	6.454	3.779	10.709	3.34	1.589	7.276
59.759	0.40	04/10/2020 14:15:00	182.43	63.21	59.36	26.28	6.75	3.36	10.752	3.398	1.556	7.264
57.158	0.41	04/10/2020 14:30:00	182.44	60.46	56.75	23.62	6.899	3.17	10.67	3.531	1.511	7.35
57.060	0.38	04/10/2020 14:45:00	182.44	57.90	56.68	23.38	6.968	3.011	10.449	3.504	1.568	7.802
57.495	0.36	04/10/2020 15:00:00	182.43	56.95	57.14	23.16	7.04	3	10.58	3.671	1.584	8.104
59.140	0.35	04/10/2020 15:15:00	172.24	57.05	58.80	25.32	6.953	3.239	10.789	3.22	1.482	7.788
60.549	0.33	04/10/2020 15:30:00	173.26	59.02	60.22	27.76	6.968	3.1	10.793	3.393	1.48	6.72
61.388	0.33	04/10/2020 15:45:00	174.34	60.86	61.05	27.67	7.377	3.172	11.077	3.546	1.528	6.689

Supporting Data

Q avg =	0.5		MH I.E. -7.77'	47.2	47.1	22.3	6.4	2.7	7.9	2.9	1.3	3.6
VM+NC2	NC2		SM03 Level	Model VM	Sum of US Meters	SV8M	CV2	CV3	CV14	PC1	IB1	SD11
(MGD)	(MGD)	DateTime	(INCHES)	(MGD)	Virtual Meter (MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)
34.935	0.40	04/10/2020 00:00:00	-0.58	34.54	34.54	15.42	5.345	1.967	6.217	2.241	0.949	2.4
60.878	0.34	04/10/2020 16:00:00	179.38	61.13	60.54	26.42	7.702	3.273	11.283	3.603	1.437	6.82
67.214	0.39	04/10/2020 16:15:00	182.38	60.89	66.83	26.42	8.846	3.529	12.837	5.454	2.091	7.648
71.154	0.38	04/10/2020 16:30:00	182.26	62.24	70.77	26.13	10.055	4.178	12.89	5.798	2.307	9.42
67.421	0.47	04/10/2020 16:45:00	182.40	64.66	66.95	23.53	10.542	4.568	13.557	5.944	2.25	6.559
68.234	0.49	04/10/2020 17:00:00	182.40	66.36	67.74	24.41	10.505	4.574	13.308	5.515	2.022	7.407
67.537	0.72	04/10/2020 17:15:00	182.40	67.72	66.81	24.82	9.996	4.291	13.231	4.988	1.866	7.618
68.356	0.73	04/10/2020 17:30:00	182.40	67.81	67.63	25.85	10.036	4.403	12.698	4.613	1.822	8.2
67.001	0.73	04/10/2020 17:45:00	180.96	67.78	66.27	25.17	9.44	4.662	12.636	4.527	1.76	8.076
66.422	0.58	04/10/2020 18:00:00	179.70	67.07	65.84	26.73	9.483	3.467	12.359	3.904	1.738	8.161
66.358	0.66	04/10/2020 18:15:00	182.44	67.02	65.70	26.70	9.674	3.346	12.444	4	1.405	8.134
64.691	0.66	04/10/2020 18:30:00	182.40	66.51	64.04	25.84	9.415	3.277	12.218	3.616	1.651	8.015
64.686	0.63	04/10/2020 18:45:00	182.40	65.33	64.06	25.88	9.035	3.185	12.129	4.005	1.689	8.137
64.149	0.60	04/10/2020 19:00:00	181.71	64.33	63.55	24.72	8.999	3.212	12.114	4.06	1.79	8.653
64.993	0.62	04/10/2020 19:15:00	180.49	63.68	64.37	26.70	8.563	3.198	12.169	3.988	1.495	8.261
62.858	0.69	04/10/2020 19:30:00	178.93	63.80	62.17	24.52	8.025	3.186	12.086	3.981	1.561	8.808
62.656	0.65	04/10/2020 19:45:00	177.60	62.66	62.01	24.57	8.142	3.092	11.709	3.4	1.288	9.803
61.982	0.67	04/10/2020 20:00:00	170.06	62.03	61.31	23.35	7.866	2.979	11.734	3.732	1.654	9.995
63.034	0.69	04/10/2020 20:15:00	163.74	61.63	62.34	25.48	7.879	2.953	11.812	3.596	1.406	9.22
61.988	0.65	04/10/2020 20:30:00	160.01	62.68	61.34	25.82	7.727	2.891	11.772	3.571	1.327	8.231
61.390	0.64	04/10/2020 20:45:00	157.11	62.99	60.75	25.60	7.725	2.833	11.696	3.034	1.606	8.257
61.224	0.57	04/10/2020 21:00:00	154.90	62.69	60.66	25.67	7.174	3.754	11.67	3.146	1.18	8.06
59.273	0.55	04/10/2020 21:15:00	175.75	61.86	58.72	25.67	7.159	2.557	11.232	3.027	1.217	7.866
59.606	0.53	04/10/2020 21:30:00	150.79	60.96	59.07	26.70	7.07	2.495	11.141	2.785	1.389	7.495
57.955	0.41	04/10/2020 21:45:00	148.70	60.49	57.55	25.74	6.954	2.466	11.159	2.641	1.382	7.205
60.075	0.43	04/10/2020 22:00:00	146.30	60.12	59.64	29.32	6.556	2.473	10.687	2.674	0.975	6.958
58.363	0.44	04/10/2020 22:15:00	144.44	60.92	57.92	26.53	6.338	3.712	10.631	2.411	1.474	6.825
57.113	0.44	04/10/2020 22:30:00	142.38	59.47	56.67	26.88	6.299	2.489	10.384	2.774	1.2	6.646
55.741	0.43	04/10/2020 22:45:00	168.50	58.00	55.31	26.71	6.152	2.41	10.227	2.252	1.121	6.437
55.149	0.40	04/10/2020 23:00:00	167.79	56.66	54.75	27.02	5.95	2.316	9.651	2.399	1.119	6.287
54.511	0.37	04/10/2020 23:15:00	166.20	55.86	54.14	26.65	5.786	2.214	9.718	2.54	1.138	6.095
52.161	0.38	04/10/2020 23:30:00	163.74	54.73	51.79	25.79	5.731	2.158	9.506	2.129	0.92	5.555
51.463	0.39	04/10/2020 23:45:00	160.83	53.52	51.07	25.52	5.58	2.093	9.21	2.149	1.068	5.45
51.528	0.42	04/11/2020 00:00:00	157.70	52.84	51.10	25.50	5.623	2.89	8.769	2.325	0.682	5.315
50.931	0.289	04/11/2020 00:15:00	153.49	52.12	50.64	26.044	5.724	1.795	8.658	2.043	1.152	5.226
51.854	0.491	04/11/2020 00:30:00	148.66	51.91	51.36	28.743	5.734	1.785	8.262	1.851	0.811	4.177
48.698	0.465	04/11/2020 00:45:00	143.4	52.69	48.23	27.434	5.763	1.72	8.078	2.038	0.826	2.374
44.753	0.697	04/11/2020 01:00:00	139.56	51.25	44.06	25.457	5.261	1.663	7.495	1.956	0.785	1.439
46.774	0.412	04/11/2020 01:15:00	132.61	49.43	46.36	27.99	6.043	1.648	6.965	1.766	1.16	0.79
45.608	0.257	04/11/2020 01:30:00	126.96	49.16	45.35	25.773	7.64	1.464	6.95	1.944	0.759	0.821
51.329	0.255	04/11/2020 01:45:00	121.94	48.45	51.07	29.764	9.012	1.505	6.785	1.834	0.741	1.433
48.442	0.238	04/11/2020 02:00:00	117.38	49.83	48.20	25.866	11.549	1.413	5.468	1.516	0.755	1.637
45.561	0.249	04/11/2020 02:15:00	113.1	49.16	45.31	27.825	6.65	1.378	5.471	1.777	0.504	1.707
39.901	0.237	04/11/2020 02:30:00	107.59	46.58	39.66	24.592	3.893	1.37	5.365	1.703	0.989	1.752
36.682	0.226	04/11/2020 02:45:00	102.28	41.53	36.46	22.521	3.95	1.247	5.052	1.432	0.524	1.73
34.324	0.223	04/11/2020 03:00:00	96.23	37.89	34.10	20.445	3.65	1.233	4.824	1.59	0.717	1.642
34.595	0.23	04/11/2020 03:15:00	90.26	35.98	34.37	20.249	3.57	2.349	4.487	1.335	0.874	1.501
35.490	0.187	04/11/2020 03:30:00	85.61	35.91	35.30	22.744	3.485	1.135	4.475	1.376	0.654	1.434
36.141	0.185	04/11/2020 03:45:00	79.54	36.24	35.96	21.205	3.461	2.369	5.332	1.517	0.724	1.348
34.915	0.186	04/11/2020 04:00:00	74.3	35.74	34.73	21.811	3.107	1.201	5.431	1.246	0.672	1.261
34.962	0.203	04/11/2020 04:15:00	68.1	35.01	34.76	20.619	3.158	1.427	6.123	1.481	0.883	1.068
32.567	0.18	04/11/2020 04:30:00	63.09	34.19	32.39	19.581	3.1	1.094	5.745	1.587	0.502	0.778
30.478	0.178	04/11/2020 04:45:00	56.78	33.36	30.30	19.208	2.949	1.202	4.486	1.256	0.705	0.494
29.663	0.175	04/11/2020 05:00:00	52.25	32.77	29.49	18.517	2.99	0.994	4.635	1.362	0.653	0.337
32.692	0.17	04/11/2020 05:15:00	48.5	32.41	32.52	20.563	3.036	1.836	4.635	1.52	0.671	0.261
31.102	0.174	04/11/2020 05:30:00	45.63	33.00	30.93	19.958	3.046	1.125	4.604	1.231	0.765	0.199
32.038	0.174	04/11/2020 05:45:00	44.03	32.32	31.86	19.675	3.067	2.337	4.647	1.45	0.52	0.168
30.902	0.174	04/11/2020 06:00:00	43.31	32.11	30.73	19.471	3.077	1.151	4.5	1.534	0.842	0.153
30.378	0.166	04/11/2020 06:15:00	42.83	31.25	30.21	19.312	3.017	1.143	4.749	1.216	0.633	0.142
30.212	0.165	04/11/2020 06:30:00	42.5	30.74	30.05	18.816	3.199	1.273	4.632	1.513	0.478	0.136
30.507	0.168	04/11/2020 06:45:00	42.2	30.44	30.34	18.472	3.144	1.324	4.592	1.718	0.955	0.134
30.514	0.168	04/11/2020 07:00:00	42.29	30.36	30.35	19.078	3.176	1.37	4.686	1.426	0.48	0.13
30.828	0.169	04/11/2020 07:15:00	42.2	30.62	30.66	18.756	3.19	1.468	4.878	1.431	0.804	0.132
29.939	0.178	04/11/2020 07:30:00	42.26	30.29	29.76	17.217	3.367	1.522	4.937	1.79	0.794	0.134

Supporting Data

Q avg =	0.5		MH I.E. -7.77'	47.2	47.1	22.3	6.4	2.7	7.9	2.9	1.3	3.6
VM+NC2	NC2		SM03 Level	Model VM	Sum of US Meters	SV8M	CV2	CV3	CV14	PC1	IB1	SD11
(MGD)	(MGD)	DateTime	(INCHES)	(MGD)	Virtual Meter (MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)
34.935	0.40	04/10/2020 00:00:00	-0.58	34.54	34.54	15.42	5.345	1.967	6.217	2.241	0.949	2.4
31.109	0.183	04/11/2020 07:45:00	42.26	29.73	30.93	17.648	3.719	1.715	4.896	1.912	0.897	0.139
32.821	0.213	04/11/2020 08:00:00	42.48	30.52	32.61	18.823	4.269	1.82	5.017	1.591	0.934	0.154
35.501	0.227	04/11/2020 08:15:00	42.78	32.28	35.27	20.906	4.148	1.869	5.123	2.076	0.983	0.169
35.321	0.275	04/11/2020 08:30:00	43.05	33.86	35.05	20.115	4.28	1.98	5.418	2.227	0.839	0.187
36.426	0.312	04/11/2020 08:45:00	43.43	34.20	36.11	19.963	4.972	2.187	5.587	2.068	1.14	0.197
37.255	0.315	04/11/2020 09:00:00	44.03	35.05	36.94	20.199	5.36	2.309	5.574	2.186	1.105	0.207
37.550	0.33	04/11/2020 09:15:00	44.66	36.21	37.22	20.159	5.403	2.287	4.96	2.78	1.406	0.225
38.419	0.338	04/11/2020 09:30:00	45.29	36.89	38.08	20.43	5.667	2.403	5.179	2.739	1.423	0.24
39.741	0.364	04/11/2020 09:45:00	46.19	37.63	39.38	21.429	5.79	2.372	5.608	2.548	1.371	0.259
42.681	0.412	04/11/2020 10:00:00	46.83	39.14	42.27	22.043	6.169	3.902	5.831	3.045	0.988	0.291
43.374	0.427	04/11/2020 10:15:00	47.56	41.18	42.95	22.601	7.055	2.711	6.064	2.906	1.312	0.298
45.105	0.442	04/11/2020 10:30:00	48.26	42.53	44.66	23.725	7.226	2.789	6.202	3.014	1.402	0.305
46.009	0.469	04/11/2020 10:45:00	48.98	44.04	45.54	23.634	7.222	3.39	6.345	2.856	1.777	0.316
46.909	0.512	04/11/2020 11:00:00	49.75	44.71	46.40	23.868	7.287	2.909	6.396	3.116	1.755	1.066
49.117	0.478	04/11/2020 11:15:00	50.24	45.05	48.64	24.054	7.294	2.968	6.542	3.355	1.771	2.655
51.234	0.52	04/11/2020 11:30:00	50.93	45.79	50.71	25.027	7.481	3.016	7.089	3.108	1.802	3.191
49.632	0.556	04/11/2020 11:45:00	51.31	46.77	49.08	23.144	7.153	3.064	7.416	3.224	1.596	3.479
52.186	0.539	04/11/2020 12:00:00	51.94	47.50	51.65	24.726	7.343	3.225	7.701	3.24	1.694	3.718
51.624	0.536	04/11/2020 12:15:00	52.04	49.45	51.09	23.606	7.618	3.185	7.766	3.281	1.641	3.991
53.734	0.593	04/11/2020 12:30:00	52.94	50.52	53.14	25.292	7.598	3.205	7.875	3.362	1.653	4.156
51.917	0.581	04/11/2020 12:45:00	53.68	51.85	51.34	24.137	7.567	3.184	7.808	3.267	1.151	4.222
56.289	0.582	04/11/2020 13:00:00	54.13	52.08	55.71	25.117	7.751	3.191	10.199	3.45	1.696	4.303
56.524	0.561	04/11/2020 13:15:00	54.98	53.12	55.96	25.229	7.726	3.166	10.797	3.331	1.442	4.272
55.412	0.546	04/11/2020 13:30:00	56.1	54.39	54.87	24.677	7.809	3.089	10.57	3.319	1.622	3.78
56.522	0.574	04/11/2020 13:45:00	56.33	55.44	55.95	26.252	7.801	3.061	10.562	3.023	1.616	3.633
58.961	0.619	04/11/2020 14:00:00	57.36	56.71	58.34	27.215	7.873	3.126	10.648	3.239	1.716	4.525
59.883	0.612	04/11/2020 14:15:00	57.88	57.28	59.27	27.163	7.854	3.046	10.42	3.296	1.526	5.966
58.224	0.577	04/11/2020 14:30:00	57.94	57.14	57.65	25.746	7.935	3.079	10.406	3.265	1.247	5.969
58.214	0.581	04/11/2020 14:45:00	58.26	56.92	57.63	25.9	7.922	2.994	10.216	3.123	1.309	6.169
56.510	0.563	04/11/2020 15:00:00	58.39	57.23	55.95	24.918	7.818	2.826	10.019	2.82	1.379	6.167
57.456	0.568	04/11/2020 15:15:00	58.33	56.89	56.89	25.475	7.783	2.807	10.004	3.333	1.364	6.122
56.801	0.576	04/11/2020 15:30:00	57.36	56.72	56.23	24.975	7.759	2.821	10.123	3.256	1.156	6.135
56.617	0.581	04/11/2020 15:45:00	56.68	56.45	56.04	25.133	7.628	2.869	10.015	3.229	1.225	5.937
55.991	0.59	04/11/2020 16:00:00	55.71	56.48	55.40	24.923	7.497	2.823	9.759	3.223	1.296	5.88
54.028	0.541	04/11/2020 16:15:00	55.28	56.11	53.49	24.478	7.466	2.728	9.89	3.13	1.297	4.498
51.712	0.54	04/11/2020 16:30:00	54.96	55.47	51.17	24.507	7.393	2.761	9.554	3.094	1.003	2.86
49.364	0.578	04/11/2020 16:45:00	53.89	54.30	48.79	22.592	7.285	2.739	9.423	3.089	1.299	2.359
51.440	0.544	04/11/2020 17:00:00	53.61	52.19	50.90	22.854	7.277	2.698	9.571	3.016	1.242	4.238
51.715	0.519	04/11/2020 17:15:00	52.84	50.59	51.20	22.499	7.296	2.746	9.345	3.01	1.322	4.978
53.111	0.461	04/11/2020 17:30:00	52.6	50.14	52.65	24.729	6.966	2.726	9.273	2.782	0.941	5.233
51.661	0.484	04/11/2020 17:45:00	52.09	51.10	51.18	22.266	7.067	2.722	9.191	2.956	1.643	5.332
50.648	0.502	04/11/2020 18:00:00	51.53	50.44	50.15	22.242	6.833	2.714	8.848	2.821	1.375	5.313
49.603	0.455	04/11/2020 18:15:00	51.46	50.18	49.15	22.331	6.39	2.673	8.934	2.849	1.263	4.708
49.167	0.475	04/11/2020 18:30:00	51.46	50.27	48.69	23.962	6.663	2.59	8.818	2.589	1.303	2.767
47.574	0.455	04/11/2020 18:45:00	51.4	51.01	47.12	23.56	6.82	2.594	8.146	3.015	1.309	1.675
47.903	0.45	04/11/2020 19:00:00	51.44	50.43	47.45	23.565	6.851	2.589	8.535	2.706	1.396	1.811
48.350	0.502	04/11/2020 19:15:00	51.31	49.00	47.85	23.366	6.867	2.6	8.431	2.855	1.461	2.268
50.217	0.504	04/11/2020 19:30:00	51.05	48.41	49.71	24.13	6.879	3.388	8.361	3.052	1.359	2.544
50.418	0.481	04/11/2020 19:45:00	51.08	48.70	49.94	24.36	6.79	2.62	8.554	2.749	1.277	3.587
51.053	0.466	04/11/2020 20:00:00	50.75	48.59	50.59	24.052	6.744	2.621	8.515	2.905	1.516	4.234
51.167	0.459	04/11/2020 20:15:00	50.59	48.69	50.71	24.588	6.747	2.547	8.515	2.643	1.531	4.137
46.013	0.439	04/11/2020 20:30:00	50.36	48.69	45.57	20.382	6.707	2.609	8.649	2.812	1.434	2.981
46.641	0.475	04/11/2020 20:45:00	50.36	47.71	46.17	22.741	6.916	2.63	8.542	2.399	1.245	1.693
45.578	0.478	04/11/2020 21:00:00	50.5	48.62	45.10	21.943	7.003	2.583	8.083	2.862	1.509	1.117
44.491	0.467	04/11/2020 21:15:00	50.66	47.71	44.02	21.368	6.728	2.586	8.607	2.459	1.24	1.036
46.139	0.473	04/11/2020 21:30:00	50.63	46.18	45.67	21.481	6.624	2.544	8.805	2.852	1.269	2.091
47.271	0.471	04/11/2020 21:45:00	50.63	45.58	46.80	22.852	6.774	2.429	8.642	2.505	1.123	2.475
47.102	0.458	04/11/2020 22:00:00	50.29	46.19	46.64	22.772	6.538	2.39	8.723	2.369	1.176	2.676
46.745	0.461	04/11/2020 22:15:00	49.91	46.46	46.28	22.543	6.508	2.314	8.43	2.727	1.036	2.726
45.238	0.483	04/11/2020 22:30:00	49.49	46.15	44.76	21.513	6.326	2.359	8.254	2.421	1.09	2.792
45.096	0.423	04/11/2020 22:45:00	49.16	45.67	44.67	21.911	6.147	2.32	8.14	2.348	1.048	2.759
44.071	0.417	04/11/2020 23:00:00	48.65	45.33	43.65	20.946	5.944	2.259	8.253	2.468	1.036	2.748
42.987	0.408	04/11/2020 23:15:00	48.4	44.50	42.58	20.76	5.818	2.191	7.689	2.376	1.077	2.668

Supporting Data

Q avg =	0.5		MH I.E. -7.77'	47.2	47.1	22.3	6.4	2.7	7.9	2.9	1.3	3.6
VM+NC2	NC2		SM03 Level	Model VM	Sum of US Meters	SV8M	CV2	CV3	CV14	PC1	IB1	SD11
(MGD)	(MGD)	DateTime	(INCHES)	(MGD)	Virtual Meter (MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)
34.935	0.40	04/10/2020 00:00:00	-0.58	34.54	34.54	15.42	5.345	1.967	6.217	2.241	0.949	2.4
41.716	0.395	04/11/2020 23:30:00	48.16	43.78	41.32	20.364	5.709	2.127	7.438	1.829	1.246	2.608
41.361	0.37	04/11/2020 23:45:00	47.71	43.12	40.99	20.784	5.623	1.984	7.292	2.12	0.749	2.439

Attachment 6. Sewer Spill Volume Calculation Method

Sewer Spill Volume Calculations using Modeling Methodology

for the San Diego Rain Event on April 10th, 2020

The following is the Technical Report for the Spill Event that occurred in Sweetwater River as a direct result of the rain event in the week of April 6, 2020.

Overflow Start/confirm:

- Crews responded after alarm notification, investigated the area and no spill was found upon arrival.
- Reviewed the history data for the sites and gathered information from other agencies (National City & San Diego county).
- Investigated overflow destination and took water samples of the area. The sanitary overflow did not enter a storm drain but the overflow reached the Sweetwater River.
- Final investigation results revealed the sewer system was overtaken by the rain event, and the syphon was partially obstructed by the unknown construction plug which caused the sewer system to surcharge and overflow. (See Exhibit A - Spill Location Map)

Sewer overflow calculation Methodology:

- The spill volume was estimated by using ADS meters data and the dynamic modeling software.
- The downstream meter of the overflow structure was subtracted from the flow summation of all meters upstream of the overflow structure. (See Exhibit B Meters Schematic)
- The InfoWorks Dynamic Modeling Software was utilized to simulate the total flow of the upstream meters in order to account for attenuated peak flow (travel time) at the spill location (VM – Virtual Meter). (See Exhibit B & C).
- The spill duration was determined from the upstream meter depth at the spill point. (See Exhibit C)
- Detailed spill volume calculations were shown in Exhibit D

Attachment 7. COMC Daily Log

COMC DAILY LOG / DOR

DATE: 4-9-20

Facility	Time	Alarm / Event	Contact	Time 10-2	Time 10-34	Supv
SD38A	0748	Flow Loss	8793/732	0755	0820	RC
LM3	0816	High Level	8793/732	0820	0851	RC
SD11A	1342	FLOW LOSS	8793/732	1345	1426	RF
SDAM	0012	HIGH LEVEL	738	0013		RF
~~SD47~~	~~0137~~	~~" " /HIGH-HIGH~~		~~0138~~		
USN10	↓	" "	↓	↓		↓
SD21	0255	" "	↓	0256		↓
USN9	0524	" "	↓	0524		↓
P.L.	0910	Radio Check				

C = Cleared

SCADA Rounds- check graphics for alarms, verify live data, etc.

time	4	5	7	8	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	27
0600	✓	✓	—	✓	—	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	✓	✓
time	31	35	36	38	39	40	41	42	43	44	45	47	48	49	50	51	52	53	59	60	61
0600	✓	✓	✓	✓	✓	✓	—	✓	—	✓	—	—	✓	—	✓	✓	✓	✓	✓	✓	✓
time	63	68	71	72	73	74	75	76	77A	77B	78	79	80	81	82	84	85	86	87	88	89
0600	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
time	90	92	MBSIS	HAL	46	64	55	56	57	58											
0600	✓	✓	—	✓	✓	—	✓	✓	✓	✓											

COMC DAILY LOG / DOR

DATE: 4-10-20

Facility	Time	Alarm / Event	Contact	Time 10-2	Time 10-34	Supv
SAN DIEGO USN 9	0449	High Level	8793/732	0711	C	RC
SAN DIEGO USN 10	0530	High High Level	8793/732	0711	C	RC
SD4T	0700	High Level	8793/732	0711	0725	RC
SD4M	0734	High High Level	8793/732	0742	C	RC
~~SD36~~	~~0747~~	~~Flow Loss~~	~~8793/732~~	~~0750~~	~~C~~	~~RC~~
SD21	0817	High Level	8793/732	0820	C	RC
LM3	0831	High Level	8793/732	0842	C	RC
SD39M	0832	High Level	8793/732	0842		RC
LM4	0833	High Level	8793/732	0842	C	RC
SD30	0947	High Level	8793/732	0953	C	RC
SD9	1047	High High Level	8793/732	1056	C	RC
SM01	1047	High High Level	8793/732	1056	1620	RC
SD6M	1047	High High Level	8793/732	1056	C	RC
SD9B	1103	High High Level	8793/732	1123	C	RC
SM02	1103	High High Level	8793/732	1123	0931	RC
NC3A	1117	High High Level	8793/732	1123	C	RC
SD7C	1132	High High Level	8793/732	1153		RC
SD9C	1132	High High Level	8793/732	1153	C	RC
NM01	1149	High High Level	8793/732	1153	1646	RC
SD3	1203	High High Level	8793/732	1210	1424	RC
SD2B	1203	High Level	8793/732	1210		RC
NM03	1203	High High Level	8793/732	1210	C	RC
NC5	1204	High High Level	8793/732	1210	C	RC
NC4M	1216	High High Level	8793/732	1254	C	RC
NM02	1218	High High Level	8793/732	1254	2352	RC
SD2B	1218	High High Level	8793/732	1254	C	RC
P.L.	0920	Radio Check				

Pump Crew Vactor (Spill)

C = Cleared

Resend to Unit 738

SCADA Rounds- check graphics for alarms, verify live data, etc.

time	4	5	7	8	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	27
0600	✓	✓	—	✓	—	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	✓	✓
time	31	35	36	38	39	40	41	42	43	44	45	47	48	49	50	51	52	53	59	60	61
0600	✓	✓	✓	✓	✓	✓	—	✓	—	✓	—	—	✓	—	✓	✓	✓	✓	✓	✓	✓
time	63	66	71	72	73	74	75	76	77A	77B	78	79	80	81	82	84	85	86	87	88	89
0600	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
time	90	92	MBSIS	HAL	46	54	55	56	57	58											
0600	✓	✓	—	✓	✓	✓	—	✓	✓	✓											

COMC DAILY LOG / DOR

DATE: 4-10-20
Cont.

Facility	Time	Alarm / Event	Contact	Time 10-2	Time 10-34	Supv
NC2	1232	High High Level	8793/732	1254	2-24	RC
SD33	1232	High High Level	8793/732	1254		RC
SD9D	1232	High High Level	8793/732	1254		RC
SD7A	1233	High High Level	8793/732	1254	2502	RC
~~SD1E~~	~~1233~~	~~High High Level~~	~~8793/732~~	~~1254~~	~~0338~~	~~RC~~
C1M	1248	High High Level	8793/732	1259	2004	RC
SD42M	1302	High High Level	8793/732	1334		RC
SD1F	1302	High Level	8793/732	1334	1207	RC
SD34	1303	High Level	8793/732	1334	0328	RC
SD7D	1403	High High Level	8793/732			RC
SD15	1554	HIGH LEVEL	734/719	1620		RF
SD11A	1716	HIGH LEVEL	↓	1720		RF
LM3	1719	HIGH HIGH LEVEL	↓	1720	2133	RF
P00	1803	FLOW LOSS	↓			RF
SD44	2003		738	2123	0555	RF
SD6M	2148			2148		RF
LM3	2304	HIGH-HIGH LEVEL	738	2304	0007	RF
SD1A	0042	HIGH LEVEL / HIGH-HIGH LEVEL	↓	0050		↓
SD9A	0127	" " " " "	↓	0129		↓
SD26	↓	" " " " "	↓	↓		↓
SD80	0222	" " " " "	↓	0224	0527	↓
SD29	0222	" " / Q LOSS	↓	0222	0527	↓

Reason to Unit 738

SCADA Rounds- check graphics for alarms, verify live data, etc.

time	4	5	7	8	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	27
0600																					
time	31	35	36	38	39	40	41	42	43	44	45	47	48	49	50	51	52	53	59	60	61
0600																					
time	63	68	71	72	73	74	75	76	77A	77B	78	79	80	81	82	84	85	86	87	88	89
0600																					
time	90	92	MBSIS	HAL	46	54	55	56	57	58											
0600																					

COMC DAILY LOG / DOR

DATE: 4-11-20

Facility	Time	Alarm / Event	Contact	Time 10-2	Time 10-34	Supv
SD 19	0927	High High / High Level	8791/719	0933	1025	RC
SD 39M	0932	Flow Loss	8791/719	0935	0957	RC
SD 1F	0932	Flow Loss	8791/719	0935	1036	RC
SD 40	1217	High High / High Level	8791/719	1234	C	RC
~~SD 44~~	~~1935~~	~~Flow Loss~~	~~8791/719~~		1418	RC
SD40M2	1459	O Loss	719/8791	1636	C	SR
SD47	1935	O Loss	719/8791	1942	1957	SR

SCADA Rounds- check graphics for alarms, verify live data, etc.

time	4	5	7	8	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	27
0600	✓	✓	—	✓	—	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	✓	✓
time	31	35	36	38	39	40	41	42	43	44	45	47	48	49	50	51	52	53	59	60	61
0600	✓	✓	✓	✓	✓	✓	—	✓	—	✓	—	—	✓	—	✓	✓	✓	✓	✓	✓	✓
time	63	68	71	72	73	74	75	76	77A	77B	78	79	80	81	82	84	85	86	87	88	89
0600	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
time	90	92	MBSIS	HAL	46	54	55	56	57	58											
0600	✓	✓	—	✓	✓	✓	✓	✓	✓	✓											

Location	Timestamp	Value	Limit	Description
LAMESA_LM3	4/9/2020 1:30	HighLevel = 0.0000		High Level returned to normal at 04/09/2020 01:30:00
LAMESA_LM3	4/9/2020 8:15	HighLevel = 1.0000		High Level detected at 04/09/2020 08:15:00
LAMESA_LM3	4/9/2020 9:00	HighLevel = 0.0000		High Level returned to normal at 04/09/2020 09:00:00
MUNI_SD4M	4/9/2020 23:45	HighLevel = 1.0000		High Level detected at 04/09/2020 23:45:00

Attachment 8. ADS Alarm List

Location	Timestamp	Value	Limit	Description
MUNI_SD47	4/10/2020 0:30	HighLevel	= 1.0000	High Level detected at 04/10/2020 00:30:00
MUNI_SD47	4/10/2020 1:00	HighHigh	= 1.0000	High High detected at 04/10/2020 01:00:00
MUNI_SD47	4/10/2020 1:15	HighHigh	= 0.0000	High High returned to normal at 04/10/2020 01:15:00
MUNI_SD4M	4/10/2020 1:30	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 01:30:00
SANDIEGO_USN10	4/10/2020 1:30	HighLevel	= 1.0000	High Level detected at 04/10/2020 01:30:00
MUNI_SD4M	4/10/2020 2:00	HighLevel	= 1.0000	High Level detected at 04/10/2020 02:00:00
MUNI_SD21	4/10/2020 2:45	HighLevel	= 1.0000	High Level detected at 04/10/2020 02:45:00
MUNI_SD21	4/10/2020 3:15	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 03:15:00
MUNI_SD47	4/10/2020 3:30	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 03:30:00
MUNI_SD4M	4/10/2020 4:00	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 04:00:00
SANDIEGO_USN9	4/10/2020 4:45	HighLevel	= 1.0000	High Level detected at 04/10/2020 04:45:00
SANDIEGO_USN10	4/10/2020 5:30	HighHigh	= 1.0000	High High detected at 04/10/2020 05:30:00
MUNI_SD26	4/10/2020 6:30	HighLevel	= 1.0000	High Level detected at 04/10/2020 06:30:00
MUNI_SD47	4/10/2020 7:00	HighLevel	= 1.0000	High Level detected at 04/10/2020 07:00:00
SANDIEGO_USN9	4/10/2020 7:15	HighHigh	= 1.0000	High High detected at 04/10/2020 07:15:00
MUNI_SD4M	4/10/2020 7:30	HighLevel	= 1.0000	High Level detected at 04/10/2020 07:30:00
ColoradoAve	4/10/2020 7:40	HighLevel	= 1.0000	High Level detected at 04/10/2020 07:40:00
ColoradoAve	4/10/2020 7:50	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 07:50:00
MUNI_5D26	4/10/2020 8:15	HighHigh	= 1.0000	High High detected at 04/10/2020 08:15:00
MUNI_5D21	4/10/2020 8:15	HighLevel	= 1.0000	High Level detected at 04/10/2020 08:15:00
LAME5A_LM4	4/10/2020 8:30	HighLevel	= 1.0000	High Level detected at 04/10/2020 08:30:00
MUNI_5D39M	4/10/2020 8:30	HighLevel	= 1.0000	High Level detected at 04/10/2020 08:30:00
LAMESA_LM3	4/10/2020 8:30	HighLevel	= 1.0000	High Level detected at 04/10/2020 08:30:00
MUNI_5D39M	4/10/2020 8:45	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 08:45:00
MUNI_5D21	4/10/2020 9:00	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 09:00:00
MUNI_5D39M	4/10/2020 9:15	HighLevel	= 1.0000	High Level detected at 04/10/2020 09:15:00
LAMESA_LM3	4/10/2020 9:15	HighHigh	= 1.0000	High High detected at 04/10/2020 09:15:00
MUNI_SD52	4/10/2020 9:30	HighLevel	= 1.0000	High Level detected at 04/10/2020 09:30:00
MUNI_SD4M	4/10/2020 9:30	HighHigh	= 1.0000	High High detected at 04/10/2020 09:30:00
MUNI_SD47	4/10/2020 9:45	HighHigh	= 1.0000	High High detected at 04/10/2020 09:45:00
MUNI_SD30	4/10/2020 9:45	HighLevel	= 1.0000	High Level detected at 04/10/2020 09:45:00
MUNI_SD21	4/10/2020 9:45	HighLevel	= 1.0000	High Level detected at 04/10/2020 09:45:00
MUNI_SD47	4/10/2020 10:00	HighHigh	= 0.0000	High High returned to normal at 04/10/2020 10:00:00
MUNI_SD52	4/10/2020 10:15	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 10:15:00
MUNI_SD4M	4/10/2020 10:15	HighHigh	= 0.0000	High High returned to normal at 04/10/2020 10:15:00
MUNI_SD30	4/10/2020 10:15	HighHigh	= 1.0000	High High detected at 04/10/2020 10:15:00
LAMESA_LM4	4/10/2020 10:30	HighHigh	= 1.0000	High High detected at 04/10/2020 10:30:00
NATIONALCITY_NC5	4/10/2020 10:45	HighLevel	= 1.0000	High Level detected at 04/10/2020 10:45:00
MUNI_SD6M	4/10/2020 10:45	HighLevel	= 1.0000	High Level detected at 04/10/2020 10:45:00
MUNI_SD21	4/10/2020 10:45	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 10:45:00
MUNI_SM01	4/10/2020 10:45	HighLevel	= 1.0000	High Level detected at 04/10/2020 10:45:00
MUNI_SD9	4/10/2020 10:45	HighLevel	= 1.0000	High Level detected at 04/10/2020 10:45:00
MUNI_SM02	4/10/2020 11:00	HighLevel	= 1.0000	High Level detected at 04/10/2020 11:00:00
MUNI_SD9B	4/10/2020 11:00	HighLevel	= 1.0000	High Level detected at 04/10/2020 11:00:00
NATIONALCITY_NC5	4/10/2020 11:15	HighHigh	= 1.0000	High High detected at 04/10/2020 11:15:00
MUNI_SD3	4/10/2020 11:15	HighLevel	= 1.0000	High Level detected at 04/10/2020 11:15:00
MUNI_SM02	4/10/2020 11:15	HighHigh	= 1.0000	High High detected at 04/10/2020 11:15:00
NATIONALCITY_NC3A	4/10/2020 11:15	HighLevel	= 1.0000	High Level detected at 04/10/2020 11:15:00
MUNI_SD9	4/10/2020 11:15	HighHigh	= 1.0000	High High detected at 04/10/2020 11:15:00
MUNI_SM01	4/10/2020 11:15	HighHigh	= 1.0000	High High detected at 04/10/2020 11:15:00
MUNI_SD39M	4/10/2020 11:30	HighLevel	= 0.0000	High Level returned to normal at 04/10/2020 11:30:00
MUNI_SD9C	4/10/2020 11:30	HighLevel	= 1.0000	High Level detected at 04/10/2020 11:30:00
MUNI_SD9B	4/10/2020 11:30	HighHigh	= 1.0000	High High detected at 04/10/2020 11:30:00

MUNI_SD7C	4/10/2020 11:30	HighLevel = 1.0000	High Level detected at 04/10/2020 11:30:00
MUNI_SD3	4/10/2020 11:45	HighHigh = 1.0000	High High detected at 04/10/2020 11:45:00
MUNI_NM01	4/10/2020 11:45	HighLevel = 1.0000	High Level detected at 04/10/2020 11:45:00
MUNI_SD6M	4/10/2020 11:45	HighHigh = 1.0000	High High detected at 04/10/2020 11:45:00
MUNI_SD9C	4/10/2020 11:45	HighHigh = 1.0000	High High detected at 04/10/2020 11:45:00
MUNI_SD15	4/10/2020 11:45	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 11:45:00
NATIONALCITY_NC3A	4/10/2020 11:45	HighHigh = 1.0000	High High detected at 04/10/2020 11:45:00
NATIONALCITY_NC4M	4/10/2020 11:45	HighLevel = 1.0000	High Level detected at 04/10/2020 11:45:00
MUNI_SD9A	4/10/2020 12:00	HighLevel = 1.0000	High Level detected at 04/10/2020 12:00:00
MUNI_NM03	4/10/2020 12:00	HighLevel = 1.0000	High Level detected at 04/10/2020 12:00:00
MUNI_SD2B	4/10/2020 12:00	HighLevel = 1.0000	High Level detected at 04/10/2020 12:00:00
MUNI_SD9A	4/10/2020 12:15	HighHigh = 1.0000	High High detected at 04/10/2020 12:15:00
MUNI_SD2B	4/10/2020 12:15	HighHigh = 1.0000	High High detected at 04/10/2020 12:15:00
MUNI_NM02	4/10/2020 12:15	HighLevel = 1.0000	High Level detected at 04/10/2020 12:15:00
MUNI_NM03	4/10/2020 12:15	HighHigh = 1.0000	High High detected at 04/10/2020 12:15:00
MUNI_NM01	4/10/2020 12:15	HighHigh = 1.0000	High High detected at 04/10/2020 12:15:00
LAMESA_LM5A	4/10/2020 12:15	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 12:15:00
MUNI_SD7C	4/10/2020 12:15	HighHigh = 1.0000	High High detected at 04/10/2020 12:15:00
NATIONALCITY_NC4M	4/10/2020 12:15	HighHigh = 1.0000	High High detected at 04/10/2020 12:15:00
MUNI_SD1E	4/10/2020 12:30	HighLevel = 1.0000	High Level detected at 04/10/2020 12:30:00
MUNI_SD7A	4/10/2020 12:30	HighLevel = 1.0000	High Level detected at 04/10/2020 12:30:00
MUNI_SD9D	4/10/2020 12:30	HighLevel = 1.0000	High Level detected at 04/10/2020 12:30:00
MUNI_5D33	4/10/2020 12:30	HighLevel = 1.0000	High Level detected at 04/10/2020 12:30:00
NATIONALCITY_NC2	4/10/2020 12:30	HighLevel = 1.0000	High Level detected at 04/10/2020 12:30:00
LAMESA_LM4	4/10/2020 12:45	HighHigh = 0.0000	High High returned to normal at 04/10/2020 12:45:00
MUNI_SD4M	4/10/2020 12:45	HighHigh = 1.0000	High High detected at 04/10/2020 12:45:00
CORONADO_C1M	4/10/2020 12:45	HighLevel = 1.0000	High Level detected at 04/10/2020 12:45:00
MUNI_NM02	4/10/2020 12:45	HighHigh = 1.0000	High High detected at 04/10/2020 12:45:00
MUNI_SD7A	4/10/2020 12:45	HighHigh = 1.0000	High High detected at 04/10/2020 12:45:00
MUNI_SD19	4/10/2020 13:00	HighLevel = 1.0000	High Level detected at 04/10/2020 13:00:00
CORONADO_C1M	4/10/2020 13:00	HighHigh = 1.0000	High High detected at 04/10/2020 13:00:00
MUNI_SD34	4/10/2020 13:00	HighLevel = 1.0000	High Level detected at 04/10/2020 13:00:00
MUNI_5D47	4/10/2020 13:00	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 13:00:00
MUNI_5D9D	4/10/2020 13:00	HighHigh = 1.0000	High High detected at 04/10/2020 13:00:00
MUNI_SD33	4/10/2020 13:00	HighHigh = 1.0000	High High detected at 04/10/2020 13:00:00
MUNI_SD1F	4/10/2020 13:00	HighLevel = 1.0000	High Level detected at 04/10/2020 13:00:00
MUNI_SD42M	4/10/2020 13:00	HighLevel = 1.0000	High Level detected at 04/10/2020 13:00:00
MUNI_5D40M2	4/10/2020 13:15	HighLevel = 1.0000	High Level detected at 04/10/2020 13:15:00
MUNI_SD19	4/10/2020 13:15	HighHigh = 1.0000	High High detected at 04/10/2020 13:15:00
MUNI_SD1F	4/10/2020 13:15	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 13:15:00
NATIONALCITY_NC2	4/10/2020 13:15	HighHigh = 1.0000	High High detected at 04/10/2020 13:15:00
MUNI_SD1E	4/10/2020 13:30	HighHigh = 1.0000	High High detected at 04/10/2020 13:30:00
MUNI_SD42M	4/10/2020 13:30	HighHigh = 1.0000	High High detected at 04/10/2020 13:30:00
MUNI_SD7D	4/10/2020 14:00	HighHigh = 1.0000	High High detected at 04/10/2020 14:00:00
MUNI_SD45	4/10/2020 14:30	HighLevel = 1.0000	High Level detected at 04/10/2020 14:30:00
MUNI_5D40M2	4/10/2020 14:30	HighHigh = 1.0000	High High detected at 04/10/2020 14:30:00
MUNI_SD1A	4/10/2020 14:45	HighLevel = 1.0000	High Level detected at 04/10/2020 14:45:00
LAMESA_LM4	4/10/2020 14:45	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 14:45:00
LAMESA_LM3	4/10/2020 15:00	HighHigh = 0.0000	High High returned to normal at 04/10/2020 15:00:00
LAMESA_LM4	4/10/2020 15:15	HighLevel = 1.0000	High Level detected at 04/10/2020 15:15:00
MUNI_SD1F	4/10/2020 15:15	HighLevel = 1.0000	High Level detected at 04/10/2020 15:15:00
LAMESA_LM4	4/10/2020 15:30	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 15:30:00
MUNI_SD34	4/10/2020 15:30	HighHigh = 1.0000	High High detected at 04/10/2020 15:30:00
MUNI_SD1A	4/10/2020 15:45	HighHigh = 1.0000	High High detected at 04/10/2020 15:45:00

MUNI_SD15	4/10/2020 15:45	HighLevel = 1.0000	High Level detected at 04/10/2020 15:45:00
MUNI_SD47	4/10/2020 16:00	HighLevel = 1.0000	High Level detected at 04/10/2020 16:00:00
LAMESA_LM4	4/10/2020 16:15	HighLevel = 1.0000	High Level detected at 04/10/2020 16:15:00
MUNI_SD47	4/10/2020 16:15	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 16:15:00
MUNI_SD1F	4/10/2020 16:45	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 16:45:00
MUNI_SD11A	4/10/2020 17:00	HighLevel = 1.0000	High Level detected at 04/10/2020 17:00:00
LAMESA_LM3	4/10/2020 17:15	HighHigh = 1.0000	High High detected at 04/10/2020 17:15:00
MUNI_SD15	4/10/2020 17:45	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 17:45:00
LAMESA_LM4	4/10/2020 18:45	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 18:45:00
MUNI_SD1A	4/10/2020 19:00	HighHigh = 0.0000	High High returned to normal at 04/10/2020 19:00:00
SANDIEGO_USN9	4/10/2020 19:15	HighHigh = 0.0000	High High returned to normal at 04/10/2020 19:15:00
LAMESA_LM3	4/10/2020 19:15	HighHigh = 0.0000	High High returned to normal at 04/10/2020 19:15:00
SANDIEGO_USN10	4/10/2020 19:30	HighHigh = 0.0000	High High returned to normal at 04/10/2020 19:30:00
SANDIEGO_USN9	4/10/2020 19:45	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 19:45:00
LAMESA_LM3	4/10/2020 20:15	HighHigh = 1.0000	High High detected at 04/10/2020 20:15:00
LAMESA_LM3	4/10/2020 20:30	HighHigh = 0.0000	High High returned to normal at 04/10/2020 20:30:00
LAMESA_LM3	4/10/2020 20:45	HighHigh = 1.0000	High High detected at 04/10/2020 20:45:00
LAMESA_LM3	4/10/2020 21:00	HighHigh = 0.0000	High High returned to normal at 04/10/2020 21:00:00
LAMESA_LM3	4/10/2020 21:15	HighHigh = 1.0000	High High detected at 04/10/2020 21:15:00
LAMESA_LM3	4/10/2020 21:30	HighHigh = 0.0000	High High returned to normal at 04/10/2020 21:30:00
MUNI_SD26	4/10/2020 21:45	HighHigh = 0.0000	High High returned to normal at 04/10/2020 21:45:00
MUNI_SD1A	4/10/2020 22:30	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 22:30:00
MUNI_SD45	4/10/2020 22:45	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 22:45:00
LAMESA_LM3	4/10/2020 22:45	HighHigh = 1.0000	High High detected at 04/10/2020 22:45:00
MUNI_SD4M	4/10/2020 23:30	HighHigh = 0.0000	High High returned to normal at 04/10/2020 23:30:00
MUNI_SD7D	4/10/2020 23:45	HighHigh = 0.0000	High High returned to normal at 04/10/2020 23:45:00
MUNI_SD11A	4/10/2020 23:45	HighLevel = 0.0000	High Level returned to normal at 04/10/2020 23:45:00

Location	Timestamp	Value	Limit	Description
MUNI_SD9D	4/11/2020 0:00	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 00:00:00
MUNI_SD26	4/11/2020 0:15	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 00:15:00
MUNI_SD30	4/11/2020 0:15	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 00:15:00
NATIONALCITY_NC2	4/11/2020 0:15	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 00:15:00
MUNI_SD42M	4/11/2020 0:30	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 00:30:00
LAMESA_LM3	4/11/2020 0:45	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 00:45:00
MUNI_SD9A	4/11/2020 1:00	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 01:00:00
MUNI_SD1E	4/11/2020 1:00	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 01:00:00
MUNI_SD30	4/11/2020 1:00	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 01:00:00
MUNI_SD9D	4/11/2020 1:00	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 01:00:00
MUNI_SD7D	4/11/2020 1:00	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 01:00:00
LAMESA_LM3	4/11/2020 1:00	HighHigh	= 1.0000	High High detected at 04/11/2020 01:00:00
MUNI_SD40M2	4/11/2020 1:15	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 01:15:00
MUNI_SD40M2	4/11/2020 1:15	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 01:15:00
CORONADO_C1M	4/11/2020 1:15	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 01:15:00
MUNI_SD4M	4/11/2020 1:15	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 01:15:00
NATIONALCITY_NC2	4/11/2020 1:15	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 01:15:00
MUNI_SD19	4/11/2020 1:30	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 01:30:00
MUNI_SD33	4/11/2020 1:30	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 01:30:00
MUNI_SD19	4/11/2020 1:45	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 01:45:00
MUNI_SD42M	4/11/2020 1:45	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 01:45:00
LAMESA_LM3	4/11/2020 1:45	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 01:45:00
MUNI_SD9A	4/11/2020 2:00	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 02:00:00
MUNI_SD1E	4/11/2020 2:00	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 02:00:00
CORONADO_C1M	4/11/2020 2:00	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 02:00:00
MUNI_SD9C	4/11/2020 2:00	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:00:00
LAMESA_LM3	4/11/2020 2:00	HighHigh	= 1.0000	High High detected at 04/11/2020 02:00:00
MUNI_SD2B	4/11/2020 2:15	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:15:00
MUNI_NM02	4/11/2020 2:15	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:15:00
MUNI_SD30	4/11/2020 2:15	HighLevel	= 1.0000	High Level detected at 04/11/2020 02:15:00
MUNI_SD30	4/11/2020 2:15	HighHigh	= 1.0000	High High detected at 04/11/2020 02:15:00
MUNI_SD7A	4/11/2020 2:15	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:15:00
NATIONALCITY_NC4M	4/11/2020 2:15	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:15:00
LAMESA_LM3	4/11/2020 2:15	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:15:00
MUNI_SD9B	4/11/2020 2:30	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:30:00
MUNI_NM01	4/11/2020 2:30	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:30:00
MUNI_NM03	4/11/2020 2:30	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:30:00
MUNI_SD33	4/11/2020 2:30	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 02:30:00
LAMESA_LM3	4/11/2020 2:30	HighHigh	= 1.0000	High High detected at 04/11/2020 02:30:00
MUNI_NM02	4/11/2020 2:45	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 02:45:00
MUNI_SD9C	4/11/2020 2:45	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 02:45:00
MUNI_SD7A	4/11/2020 2:45	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 02:45:00
MUNI_SD29	4/11/2020 2:45	HighLevel	= 1.0000	High Level detected at 04/11/2020 02:45:00
NATIONALCITY_NC3A	4/11/2020 2:45	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:45:00
LAMESA_LM3	4/11/2020 2:45	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 02:4S:00
MUNI_SD2B	4/11/2020 3:00	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 03:00:00
MUNI_SD7C	4/11/2020 3:00	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 03:00:00
MUNI_SD29	4/11/2020 3:00	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 03:00:00
NATIONALCITY_NC4M	4/11/2020 3:00	HighLevel	= 0.0000	High Level returned to normal at 04/11/2020 03:00:00
MUNI_SD3	4/11/2020 3:00	HighHigh	= 0.0000	High High returned to normal at 04/11/2020 03:00:00
LAMESA_LM3	4/11/2020 3:00	HighHigh	= 1.0000	High High detected at 04/11/2020 03:00:00

MUNI_NM01	4/11/2020 3:15	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 03:15:00
MUNI_5D6M	4/11/2020 3:15	HighHigh = 0.0000	High High returned to normal at 04/11/2020 03:15:00
MUNI_SD9B	4/11/2020 3:15	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 03:15:00
MUNI_NM03	4/11/2020 3:15	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 03:15:00
NATIONALCITY_NC5	4/11/2020 3:30	HighHigh = 0.0000	High High returned to normal at 04/11/2020 03:30:00
NATIONALCITY_NC3A	4/11/2020 3:30	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 03:30:00
MUNI_SD9	4/11/2020 3:30	HighHigh = 0.0000	High High returned to normal at 04/11/2020 03:30:00
LAMESA_LM3	4/11/2020 3:30	HighHigh = 0.0000	High High returned to normal at 04/11/2020 03:30:00
MUNI_SD3	4/11/2020 3:45	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 03:45:00
MUNI_SM02	4/11/2020 3:45	HighHigh = 0.0000	High High returned to normal at 04/11/2020 03:45:00
MUNI_SD30	4/11/2020 3:45	HighHigh = 0.0000	High High returned to normal at 04/11/2020 03:45:00
MUNI_SD7C	4/11/2020 3:45	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 03:45:00
LAMESA_LM3	4/11/2020 3:45	HighHigh = 1.0000	High High detected at 04/11/2020 03:45:00
MUNI_SD30	4/11/2020 4:00	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 04:00:00
MUNI_SD6M	4/11/2020 4:00	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 04:00:00
MUNI_SM01	4/11/2020 4:00	HighHigh = 0.0000	High High returned to normal at 04/11/2020 04:00:00
LAMESA_LM3	4/11/2020 4:00	HighHigh = 0.0000	High High returned to normal at 04/11/2020 04:00:00
MUNI_SD34	4/11/2020 4:15	HighHigh = 0.0000	High High returned to normal at 04/11/2020 04:15:00
MUNI_SM01	4/11/2020 4:15	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 04:15:00
MUNI_SD9	4/11/2020 4:15	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 04:15:00
MUNI_SD34	4/11/2020 4:30	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 04:30:00
NATIONALCITY_NC5	4/11/2020 4:30	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 04:30:00
MUNI_SM02	4/11/2020 4:45	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 04:45:00
LAME5A_LM3	4/11/2020 5:00	HighHigh = 1.0000	High High detected at 04/11/2020 05:00:00
SANDIEGO_USN10	4/11/2020 16:45	HighLevel = 0.0000	High Level returned to normal at 04/11/2020 16:45:00

Attachment 9. Downstream Services Inspection Report (2010)

DownStream Services, Inc.

City of San Diego-Siphon
Sonar Inspection Report

February 2010

www.downstreamservices.com

City of San Diego-Siphon
Sonar Inspection Report

Executive Summary

Identification

Date(s):	March 19, 2009 – January 8, 2010
Total Linear Footage Inspected (feet):	4,736.40 LF
Pipe Size(s) Inspected (inches):	36”, 42”, 48”, 68”
Pipe Material(s) Inspected:	PLCP, PLRCP, VC
Number of Pipe Segments:	18

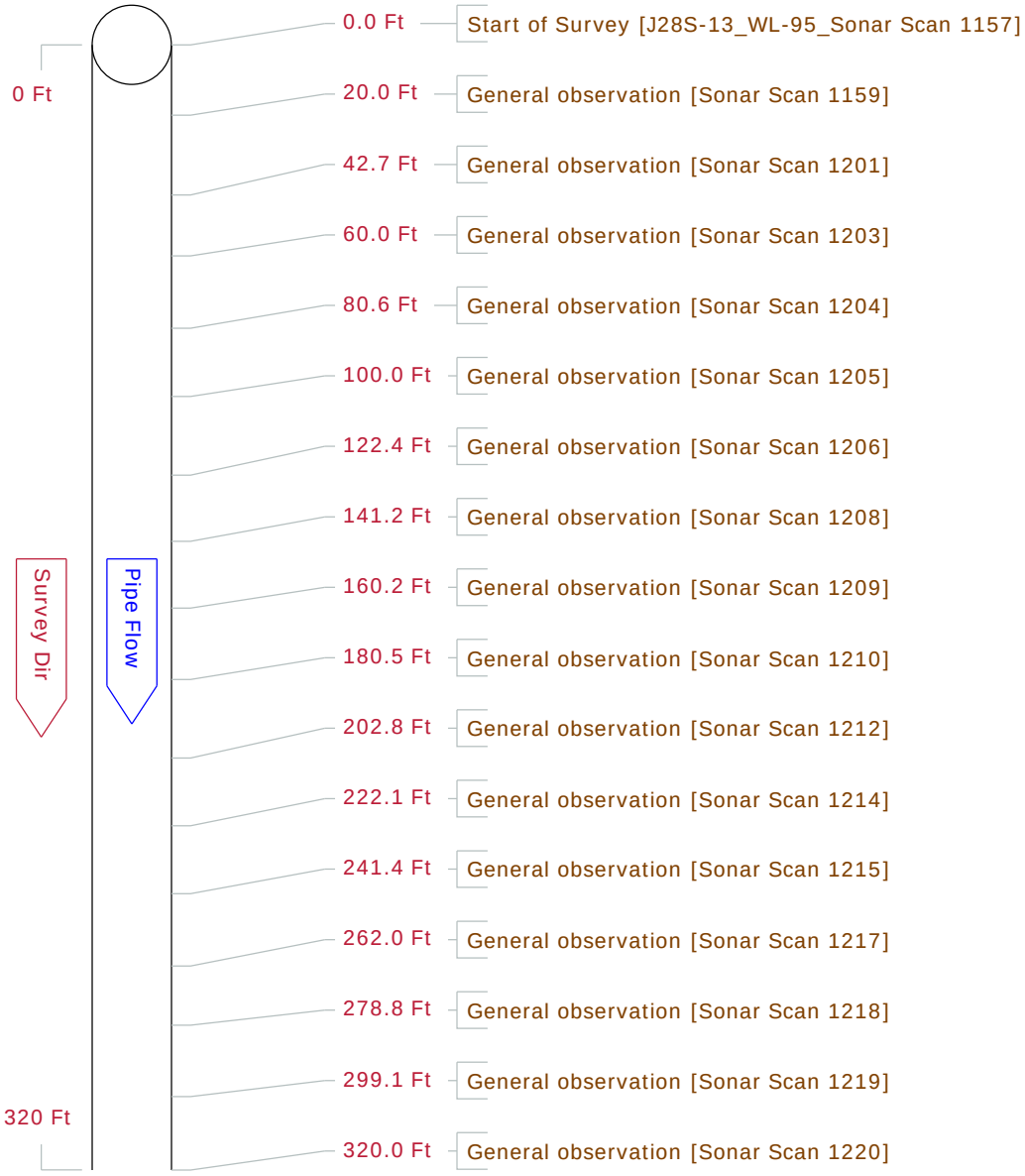
Pipe Graphic Report of PLR J28S-13 X **for** City of San Diego

Work Order		**Contract**		**Video**	**Setup** 1
Facility	46463	**Operator**	M. St. Mars	**Van Ref** 46	**Surveyed On** 09/16/2009

Street Name		**City**	Sweetwater River
Location type	Private - with easement		
Surface	Other (state in remarks)		
Survey purpose	General programmed inspection	**Weather**	Dry

Pipe Use	Sanitary	**Schedule length**	440.0 Ft	**From**	J28S-13	**Depth**	Ft
Shape	Oval	**Size**	68 **by** 43 ins	**To**	J28S-12	**Depth**	Ft
Material	Plastic Lined Reinforced Concrete Pipe	**Joint spacing**	Ft	**Direction**	Downstream		
Lining		**Year laid**		**Pre-clean**	Y	**Last cleaned**	

General note	Siphon Line 1 - Eastside	Structural	Service	Constructional
Location note		Miscellaneous	Hydraulic	



DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

Pipe Graphic Report of PLR J28S-13 X **for** City of San Diego

Work Order		**Contract**		**Video**	**Setup** 1
Facility	46463	**Operator**	M. St. Mars	**Van Ref** 46	**Surveyed On** 09/16/2009

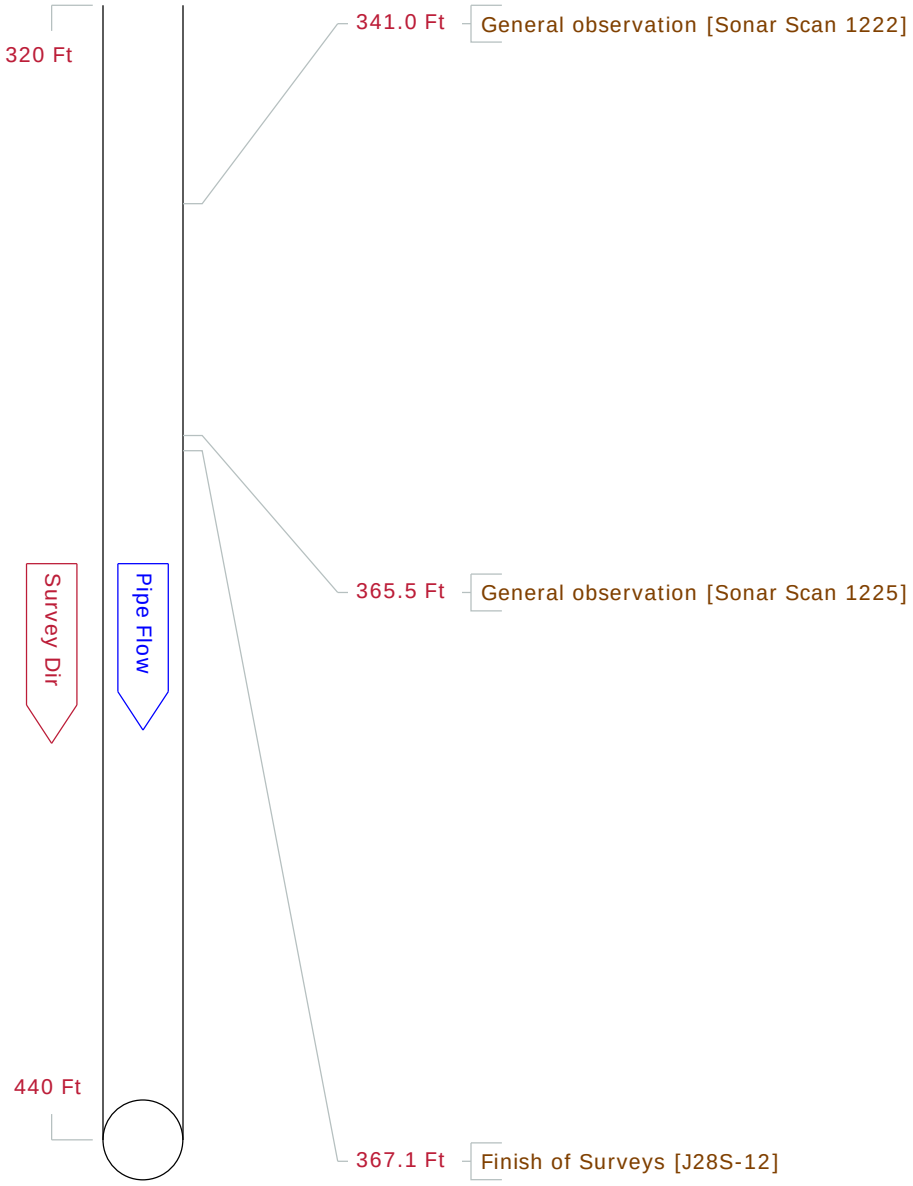
Street Name	**City** Sweetwater River
Location type	Private - with easement
Surface	Other (state in remarks)
Survey purpose	General programmed inspection **Weather** Dry

Pipe Use	Sanitary	**Schedule length**	440.0 Ft	**From** J28S-13	**Depth** Ft
Shape	Oval	**Size** 68 **by** 43 ins		**To** J28S-12	**Depth** Ft
Material	Plastic Lined Reinforced Concrete Pipe	**Joint spacing**	Ft	**Direction** Downstream	
Lining		**Year laid**		**Pre-clean** Y	**Last cleaned**

General note Siphon Line 1 - Eastside

Location note

Structural Service Constructional
Miscellaneous Hydraulic



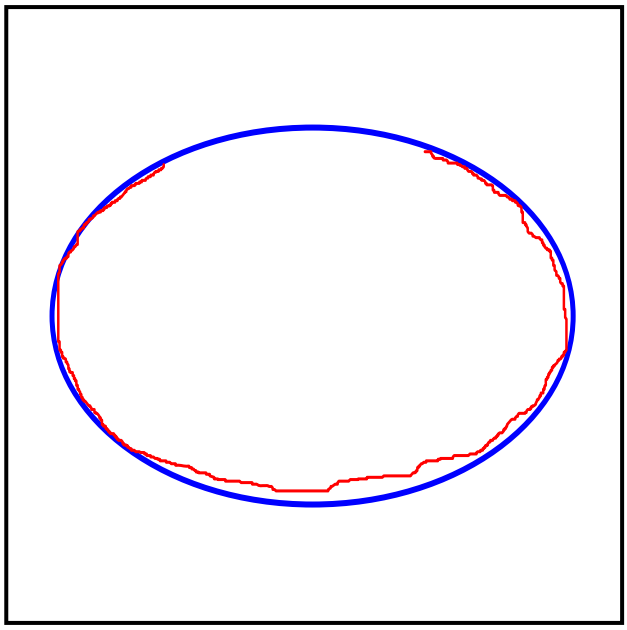
DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

Sonar Report of PLR J28S-13 X **for** **City of San Diego**

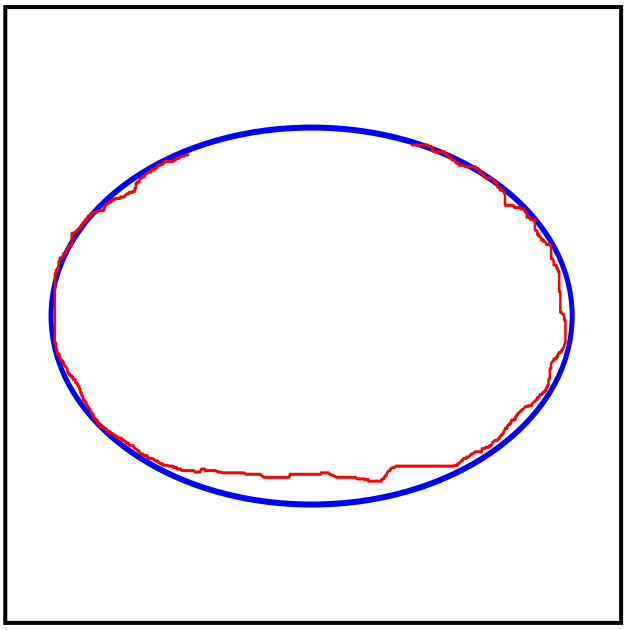
Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46463	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 0 ft.	
Direction Upstream		**Diam** 68 **by** 43 in.		**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Private - with easement		
Survey Remarks Siphon Line 1 - Eastside			**Surface** Other (state in remarks)		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 8.3 %		**Total Volume of Debris** 87.796 cu. ft.		**Average Depth of Debris** 0.1795 ft.	

Cross-Sectional View



Counter: 0.0 Ft
Code Description: Start of Survey
Remarks: J28S-13_WL-95_Sonar Scan 1157
Maximum X Restriction 5.61 %
Depth of Debris ft



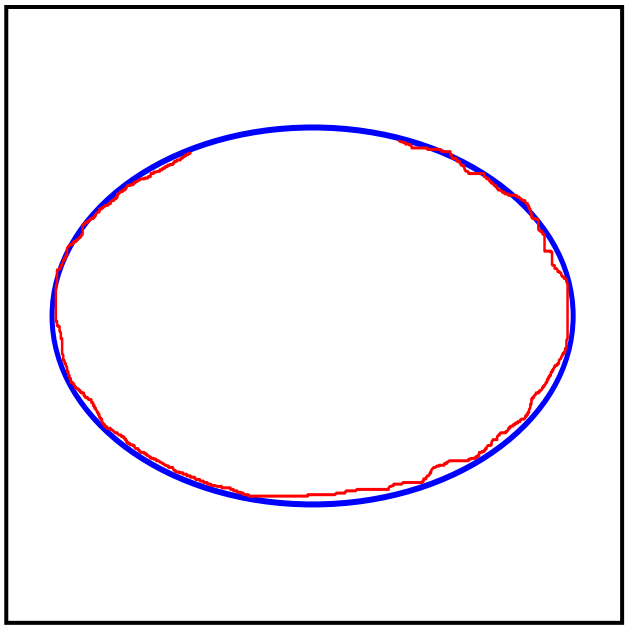
Counter: 20.0 Ft
Code Description: General observation
Remarks: Sonar Scan 1159
Maximum X Restriction 8.29 %
Depth of Debris 0.297 ft

Sonar Report of PLR J28S-13 X **for** **City of San Diego**

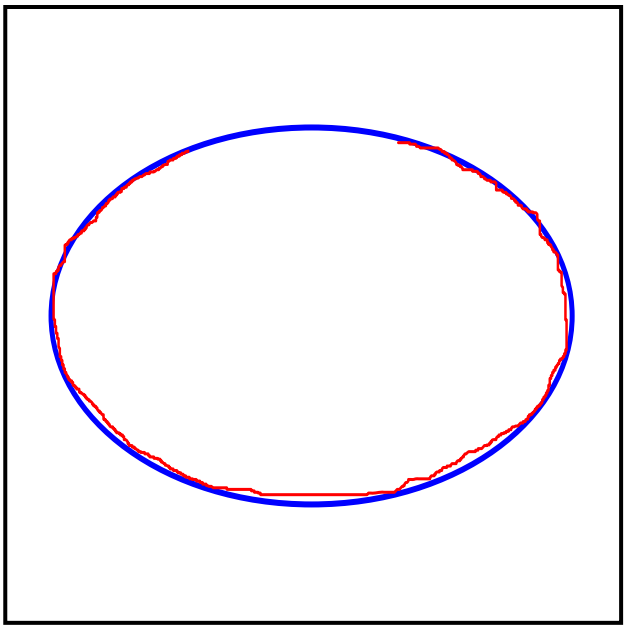
Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46463	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 0 ft.	
Direction Upstream		**Diam** 68 **by** 43 in.		**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Private - with easement		
Survey Remarks Siphon Line 1 - Eastside			**Surface** Other (state in remarks)		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 8.3 %	**Total Volume of Debris** 87.796 cu. ft.		**Average Depth of Debris** 0.1795 ft.		

Cross-Sectional View



Counter: 42.7 Ft
Code Description: General observation
Remarks: Sonar Scan 1201
Maximum X Restriction 2.41 %
Depth of Debris 0.0862 ft



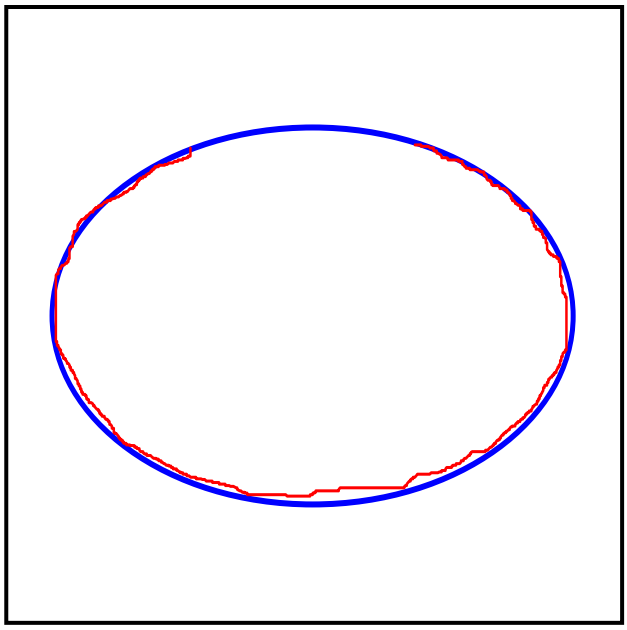
Counter: 60.0 Ft
Code Description: General observation
Remarks: Sonar Scan 1203
Maximum X Restriction 2.41 %
Depth of Debris 0.0862 ft

Sonar Report of PLR J28S-13 X **for** City of San Diego

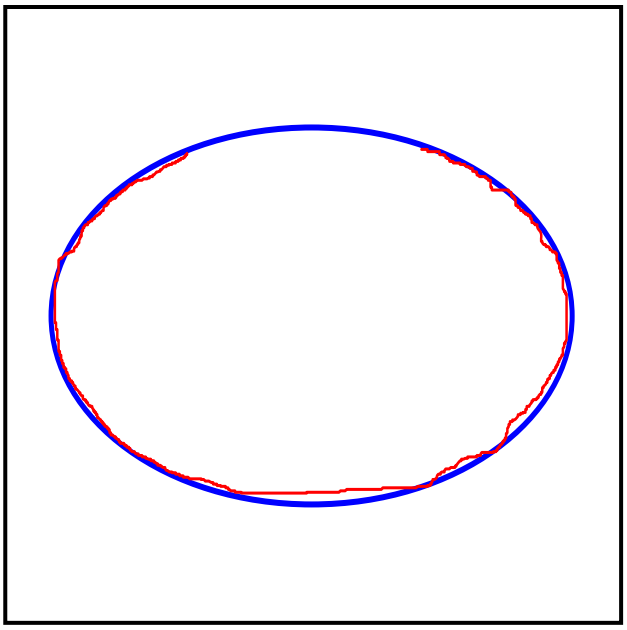
Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46463	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 0 ft.	
Direction Upstream		**Diam** 68	**by** 43 in.	**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Private - with easement		
Survey Remarks Siphon Line 1 - Eastside			**Surface** Other (state in remarks)		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 8.3 %	**Total Volume of Debris** 87.796 cu. ft.		**Average Depth of Debris** 0.1795 ft.		

Cross-Sectional View



Counter: 80.6 Ft
Code Description: General observation
Remarks: Sonar Scan 1204
Maximum X Restriction 3.74 %
Depth of Debris 0.1341 ft



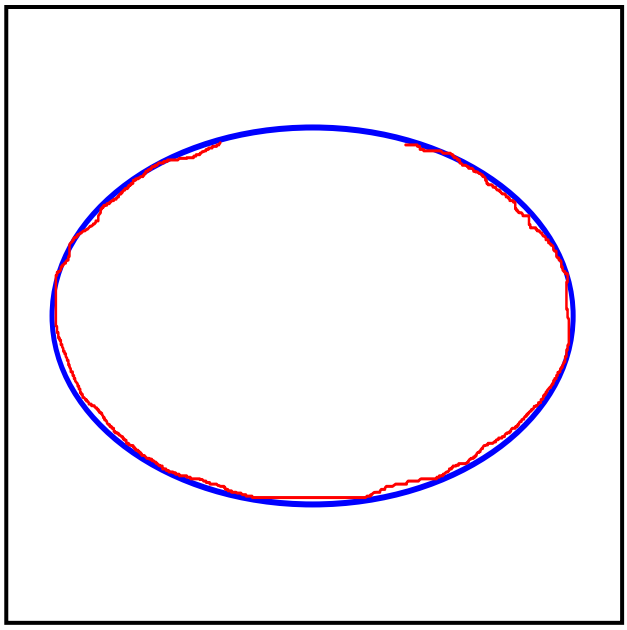
Counter: 100.0 Ft
Code Description: General observation
Remarks: Sonar Scan 1205
Maximum X Restriction 3.21 %
Depth of Debris 0.115 ft

Sonar Report of PLR J28S-13 X **for** City of San Diego

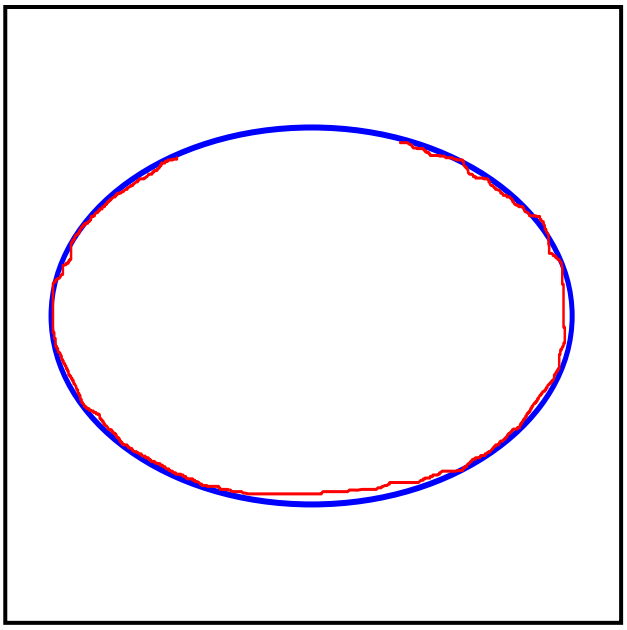
Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46463	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection	**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type** CD	
Result	**Weather** Dry	**Location** Private - with easement	
Survey Remarks Siphon Line 1 - Eastside		**Surface** Other (state in remarks)	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 8.3 %	**Total Volume of Debris** 87.796 cu. ft.	**Average Depth of Debris** 0.1795 ft.	

Cross-Sectional View



Counter: 122.4 Ft
Code Description: General observation
Remarks: Sonar Scan 1206
Maximum X Restriction 1.6 %
Depth of Debris 0.0575 ft



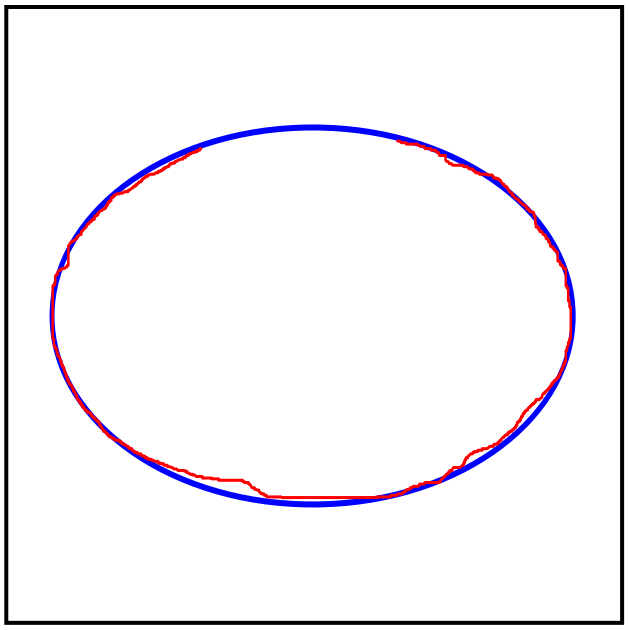
Counter: 141.2 Ft
Code Description: General observation
Remarks: Sonar Scan 1208
Maximum X Restriction 3.21 %
Depth of Debris 0.115 ft

Sonar Report of PLR J28S-13 X **for** **City of San Diego**

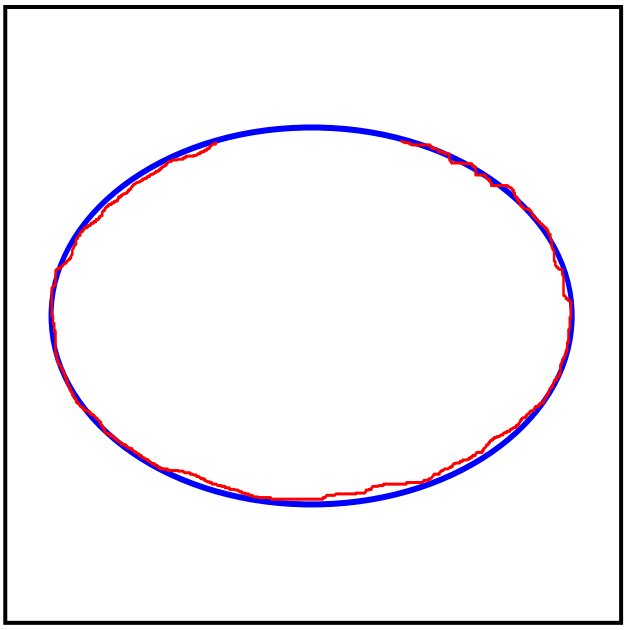
Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46463	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 0 ft.	
Direction Upstream		**Diam** 68	**by** 43 in.	**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Private - with easement		
Survey Remarks Siphon Line 1 - Eastside			**Surface** Other (state in remarks)		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 8.3 %	**Total Volume of Debris** 87.796 cu. ft.		**Average Depth of Debris** 0.1795 ft.		

Cross-Sectional View



Counter: 160.2 Ft
Code Description: General observation
Remarks: Sonar Scan 1209
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft



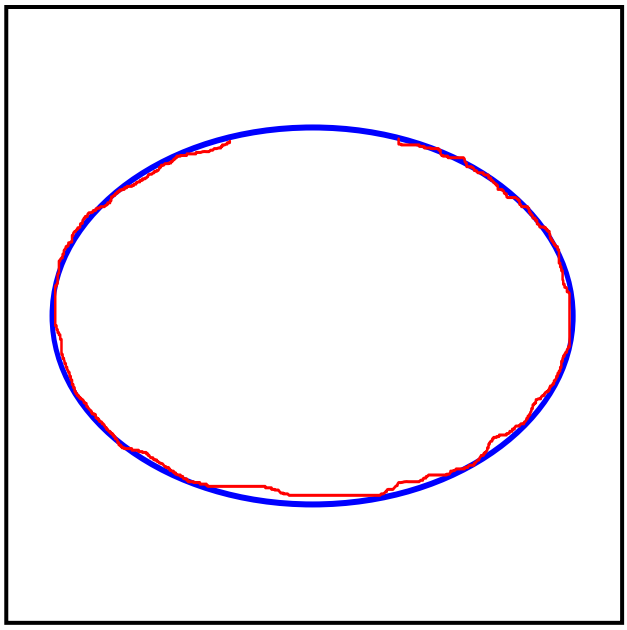
Counter: 180.5 Ft
Code Description: General observation
Remarks: Sonar Scan 1210
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft

Sonar Report of PLR J28S-13 X **for** City of San Diego

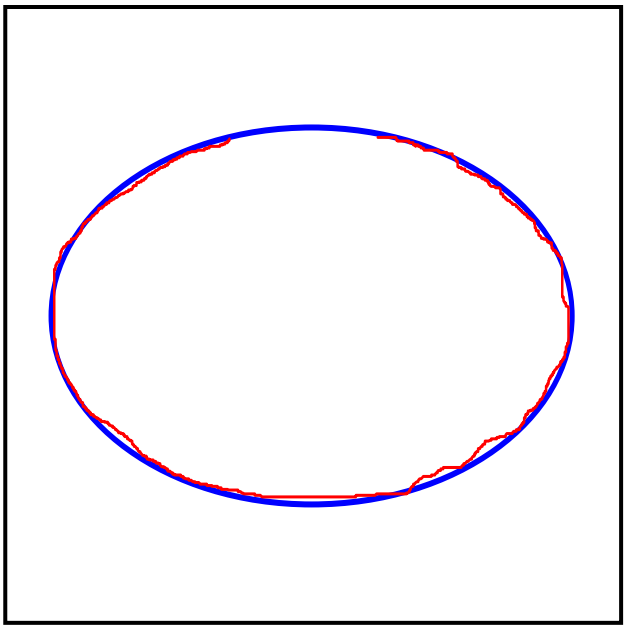
Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46463	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 0 ft.	
Direction Upstream		**Diam** 68 **by** 43 in.		**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Private - with easement		
Survey Remarks Siphon Line 1 - Eastside			**Surface** Other (state in remarks)		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 8.3 %	**Total Volume of Debris** 87.796 cu. ft.		**Average Depth of Debris** 0.1795 ft.		

Cross-Sectional View



Counter: 202.8 Ft
Code Description: General observation
Remarks: Sonar Scan 1212
Maximum X Restriction 2.94 %
Depth of Debris 0.1054 ft



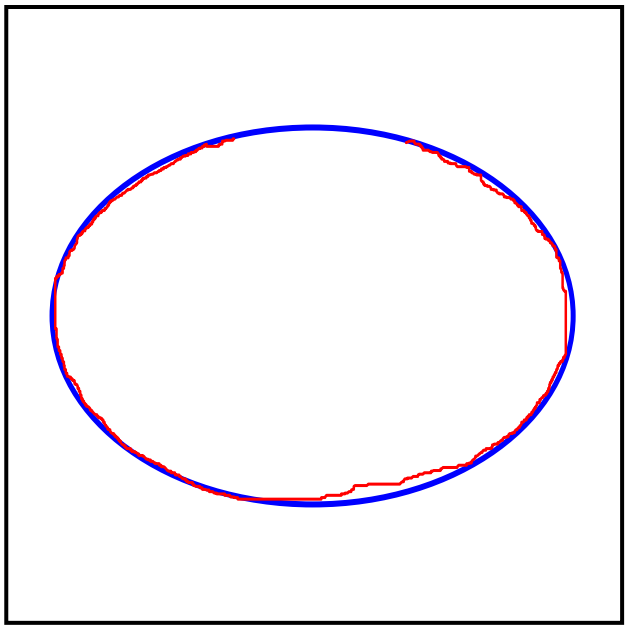
Counter: 222.1 Ft
Code Description: General observation
Remarks: Sonar Scan 1214
Maximum X Restriction 1.87 %
Depth of Debris 0.0671 ft

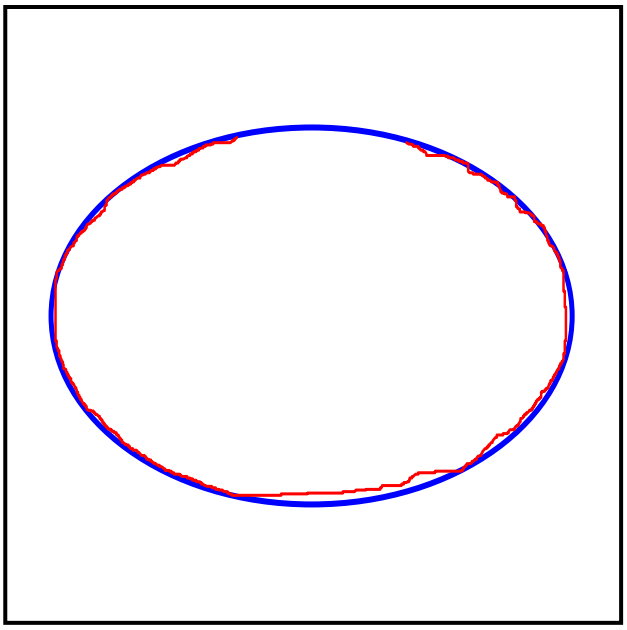
Sonar Report of PLR J28S-13 X **for** **City of San Diego**

Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46463	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 0 ft.	
Direction Upstream		**Diam** 68	**by** 43 in.	**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Private - with easement		
Survey Remarks Siphon Line 1 - Eastside			**Surface** Other (state in remarks)		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 8.3 %	**Total Volume of Debris** 87.796 cu. ft.		**Average Depth of Debris** 0.1795 ft.		

Cross-Sectional View





Counter: 241.4 Ft
Code Description: General observation
Remarks: Sonar Scan 1215
Maximum X Restriction 3.21 %
Depth of Debris 0.115 ft

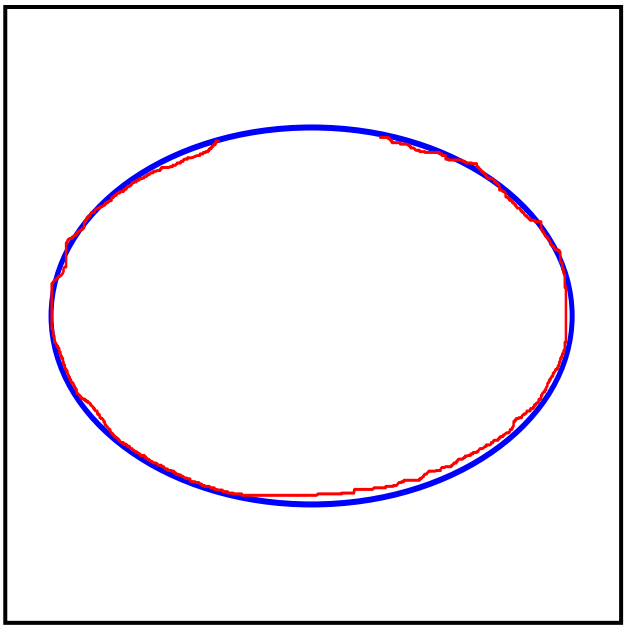
Counter: 262.0 Ft
Code Description: General observation
Remarks: Sonar Scan 1217
Maximum X Restriction 2.67 %
Depth of Debris 0.0958 ft

Sonar Report of PLR J28S-13 X **for** City of San Diego

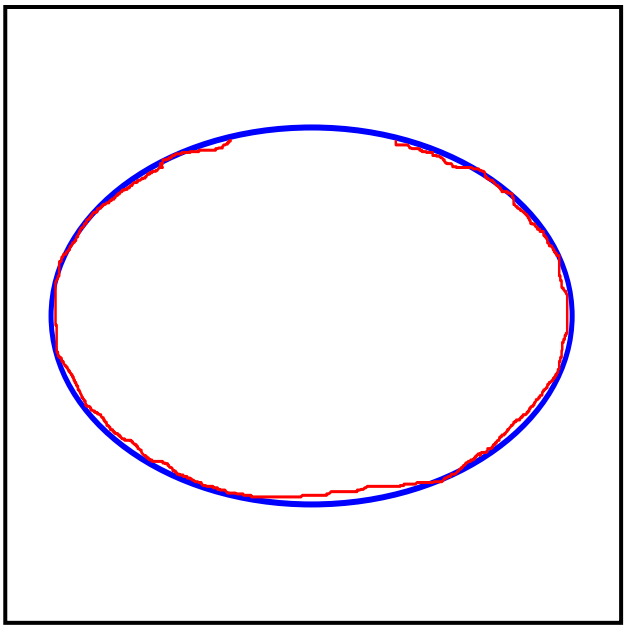
Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46463	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection	**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type** CD	
Result	**Weather** Dry	**Location** Private - with easement	
Survey Remarks Siphon Line 1 - Eastside		**Surface** Other (state in remarks)	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 8.3 %	**Total Volume of Debris** 87.796 cu. ft.	**Average Depth of Debris** 0.1795 ft.	

Cross-Sectional View



Counter: 278.8 Ft
Code Description: General observation
Remarks: Sonar Scan 1218
Maximum X Restriction 2.67 %
Depth of Debris 0.0958 ft



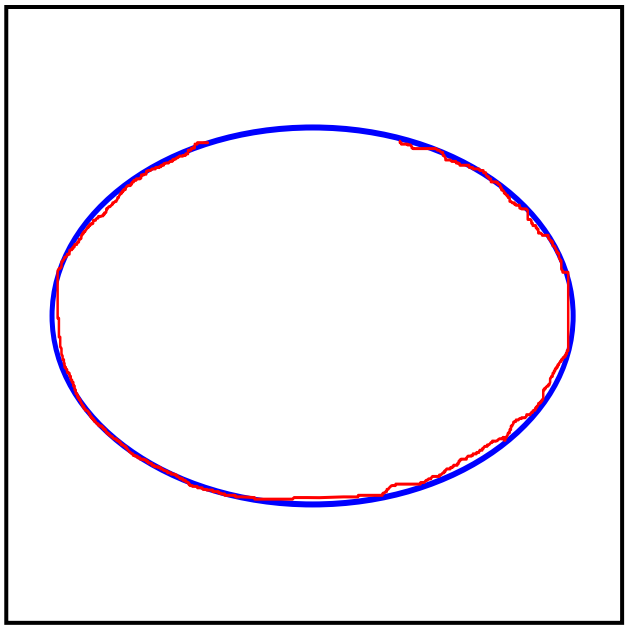
Counter: 299.1 Ft
Code Description: General observation
Remarks: Sonar Scan 1219
Maximum X Restriction 2.94 %
Depth of Debris 0.1054 ft

Sonar Report of PLR J28S-13 X **for City of San Diego**

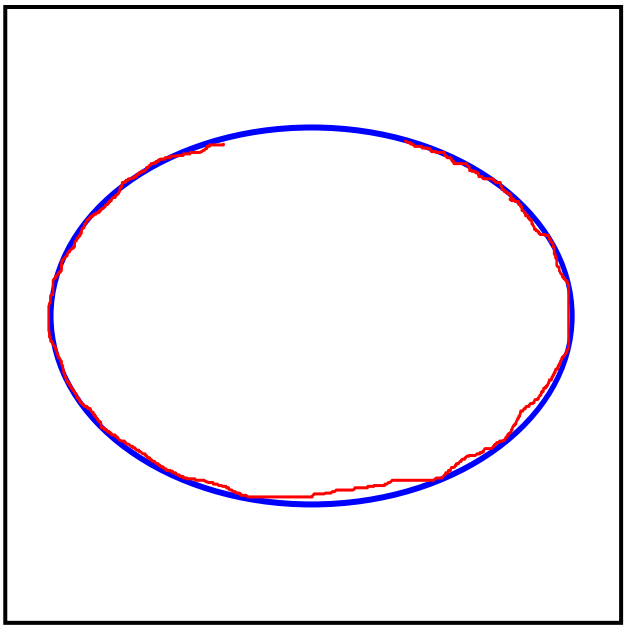
Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46463	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 0 ft.	
Direction Upstream		**Diam** 68	**by** 43 in.	**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Private - with easement		
Survey Remarks Siphon Line 1 - Eastside			**Surface** Other (state in remarks)		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 8.3 %		**Total Volume of Debris** 87.796 cu. ft.		**Average Depth of Debris** 0.1795 ft.	

Cross-Sectional View



Counter: 320.0 Ft
Code Description: General observation
Remarks: Sonar Scan 1220
Maximum X Restriction 1.6 %
Depth of Debris 0.0575 ft



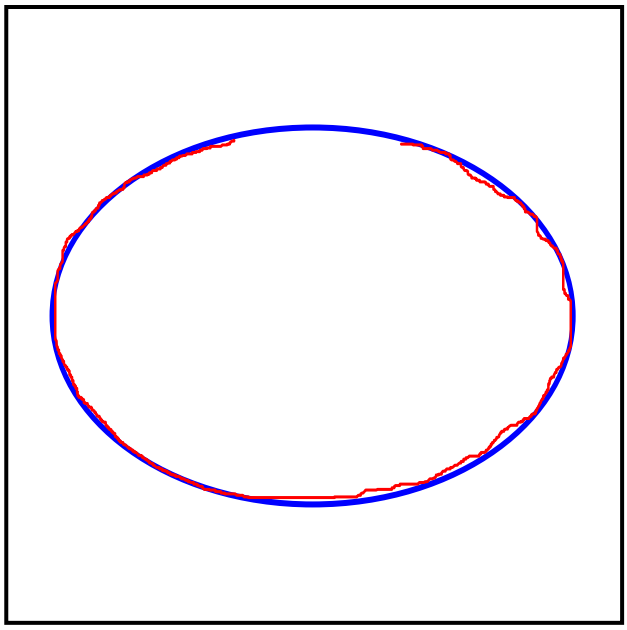
Counter: 341.0 Ft
Code Description: General observation
Remarks: Sonar Scan 1222
Maximum X Restriction 3.21 %
Depth of Debris 0.115 ft

Sonar Report of PLR J28S-13 X **for** City of San Diego

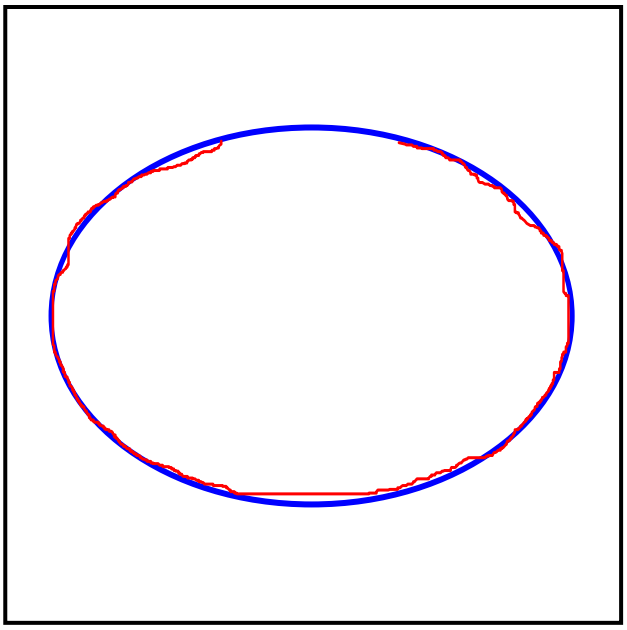
Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46463	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 0 ft.	
Direction Upstream		**Diam** 68	**by** 43 in.	**Map Length** 440.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 367.10 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Private - with easement		
Survey Remarks Siphon Line 1 - Eastside			**Surface** Other (state in remarks)		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 8.3 %	**Total Volume of Debris** 87.796 cu. ft.		**Average Depth of Debris** 0.1795 ft.		

Cross-Sectional View



Counter: 365.5 Ft
Code Description: General observation
Remarks: Sonar Scan 1225
Maximum X Restriction 1.6 %
Depth of Debris 0.0575 ft

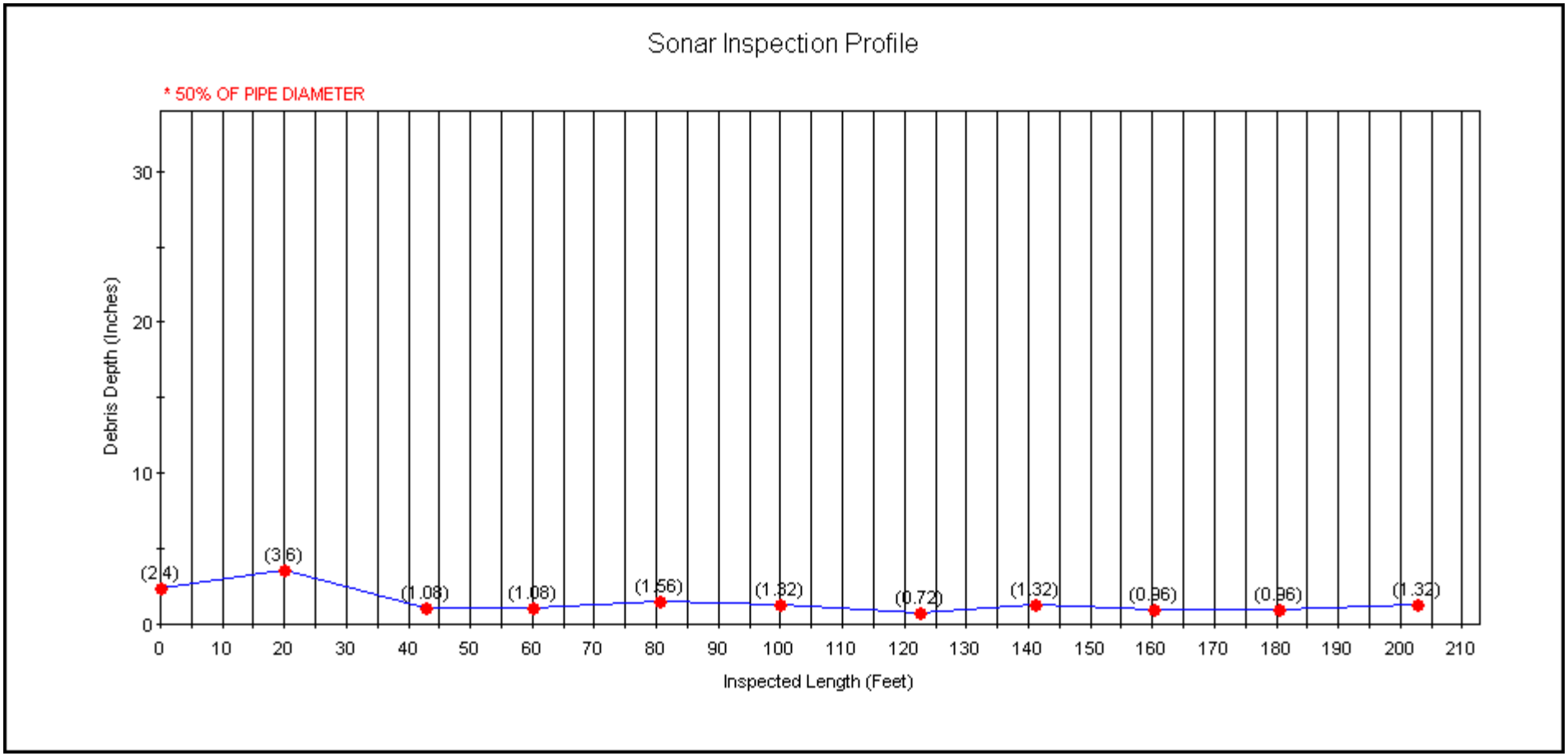


Counter: 367.1 Ft
Code Description: Finish of Surveys
Remarks: J28S-12
Maximum X Restriction 2.67 %
Depth of Debris ft

Sonar Report of PLR J28S-13 X **for City of San Diego**

Setup 1	**Date** 09/16/2009	**Time** 9:37:00 AM	**Operator** M. St. Mars	**Van ID** 46	**Key Op** MSM	**Vid Cassette**			
Work Order	**Neighborhood**	**District**	**Road**						
Place Sweetwater River	**Map Page Ref**								

Upstream J28S-12	**MH Depth** ft.	**FSN** 46463	**Verticle Offset** 0 ft.	**Direction** Upstream					
Downstream J28S-13	**MH Depth** ft.	**Diam** 68	**by** 43 in.	**Map Length** 440.0 ft.					
Use Sanitary	**Media Type** CD	**Material** Plastic Lined Reinforced Concrete Pipe	**Insp Length** 367.10 ft.						
Pipe Det	**Surface** Other (state in remarks)	**Weather** Dry	**Lining**						
Result	**Location** Private - with easement	**Loc'n remarks**							
Survey Remarks Siphon Line 1 - Eastside			**Purpose** General programmed inspection						
Maximum Cross Sectional Restriction 8.3 %		**Total Volume of Debris** 87.796 cu. ft.		**Average Depth of Debris** 0.1795 ft.					



DownStream Services, Inc.

DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

Sonar Report of PLR J28S-13 X **for City of San Diego**

Setup 1 **Date** 09/16/2009 **Time** 9:37:00 AM **Operator** M. St. Mars **Van ID** 46 **Key Op** MSM **Vid Cassette**

Work Order **Neighborhood** **District** **Road**

Place Sweetwater River **Map Page Ref**

Upstream J28S-12 **MH Depth** ft. **FSN** 46463 **Verticle Offset** 0 ft. **Direction** Upstream

Downstream J28S-13 **MH Depth** ft. **Diam** 68 **by** 43 in. **Map Length** 440.0 ft.

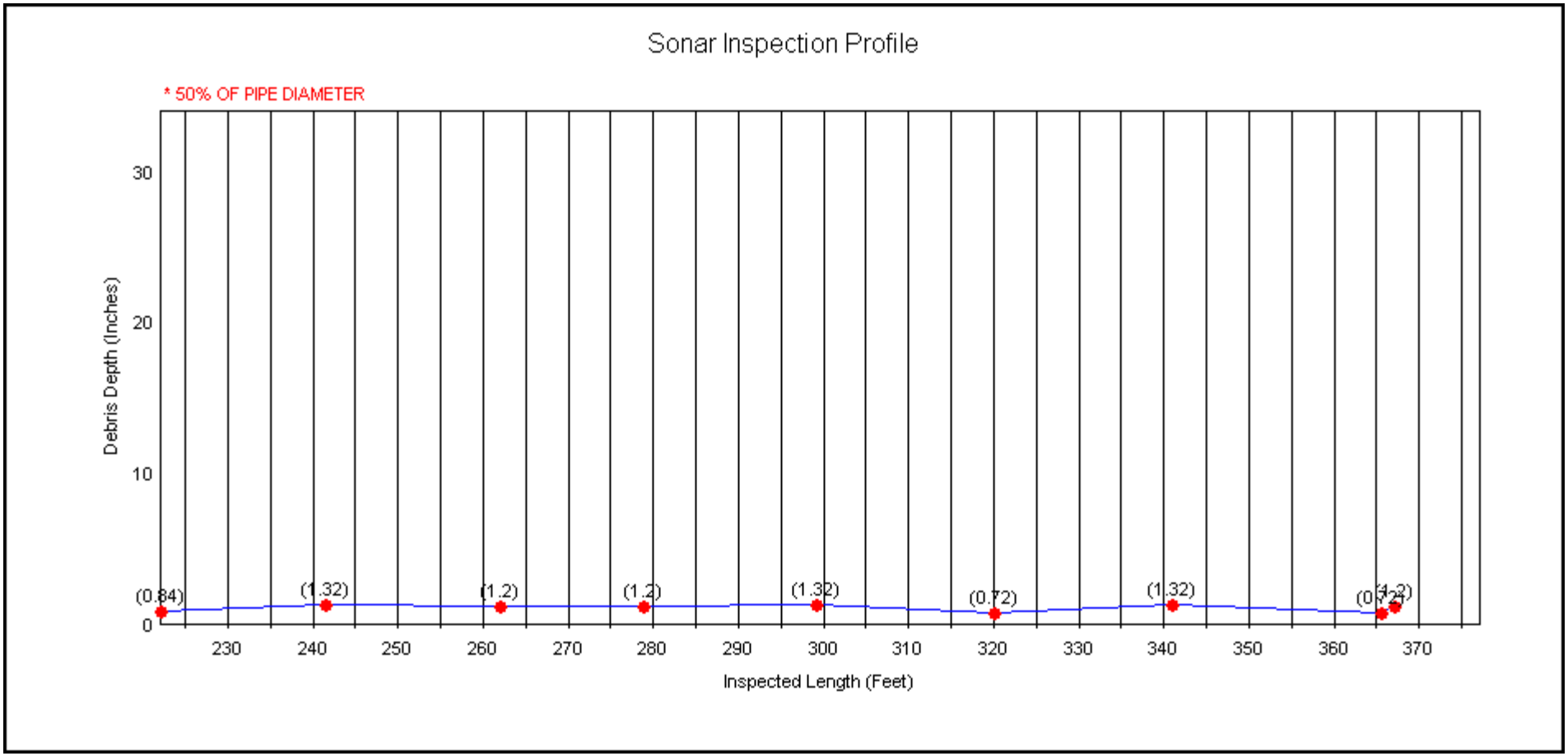
Use Sanitary **Media Type** CD **Material** Plastic Lined Reinforced Concrete Pipe **Insp Length** 367.10 ft.

Pipe Det **Surface** Other (state in remarks) **Weather** Dry **Lining**

Result **Location** Private - with easement **Loc'n remarks**

Survey Remarks Siphon Line 1 - Eastside **Purpose** General programmed inspection

Maximum Cross Sectional Restriction 8.3 % **Total Volume of Debris** 87.796 cu. ft. **Average Depth of Debris** 0.1795 ft.



DownStream Services, Inc.

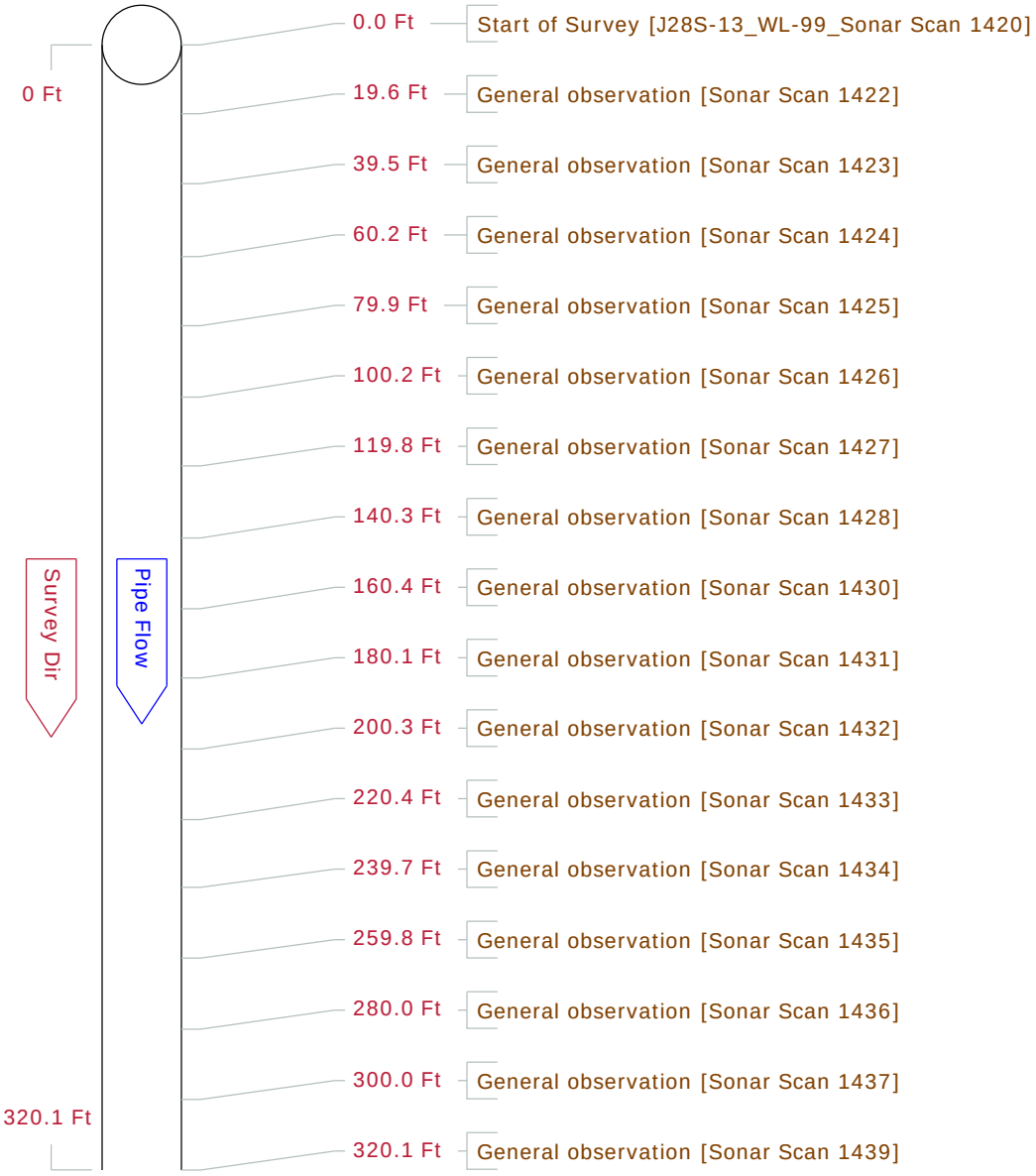
DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

Pipe Graphic Report of PLR J28S-13 A **for** City of San Diego

Work Order		**Contract**		**Video**	**Setup** 2
Facility	46462	**Operator**	M. St. Mars	**Van Ref** 46	**Surveyed On** 10/22/2009
Street Name		**City**	Sweetwater River		
Location type	Near environmentally sensitive area				
Surface	Wetland or saturated ground				
Survey purpose	General programmed inspection			**Weather**	Dry

Pipe Use	Sanitary	**Schedule length**	380.0 Ft	**From** J28S-13	**Depth** Ft
Shape	Oval	**Size** 68 **by** 43 ins		**To** J28S-12	**Depth** Ft
Material	Plastic Lined Reinforced Concrete Pipe	**Joint spacing**	Ft	**Direction**	Downstream
Lining		**Year laid**		**Pre-clean** Y	**Last cleaned** 10/23/2009

General note	Siphon Line 2	Structural	Service	Constructional
Location note		Miscellaneous	Hydraulic	



DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

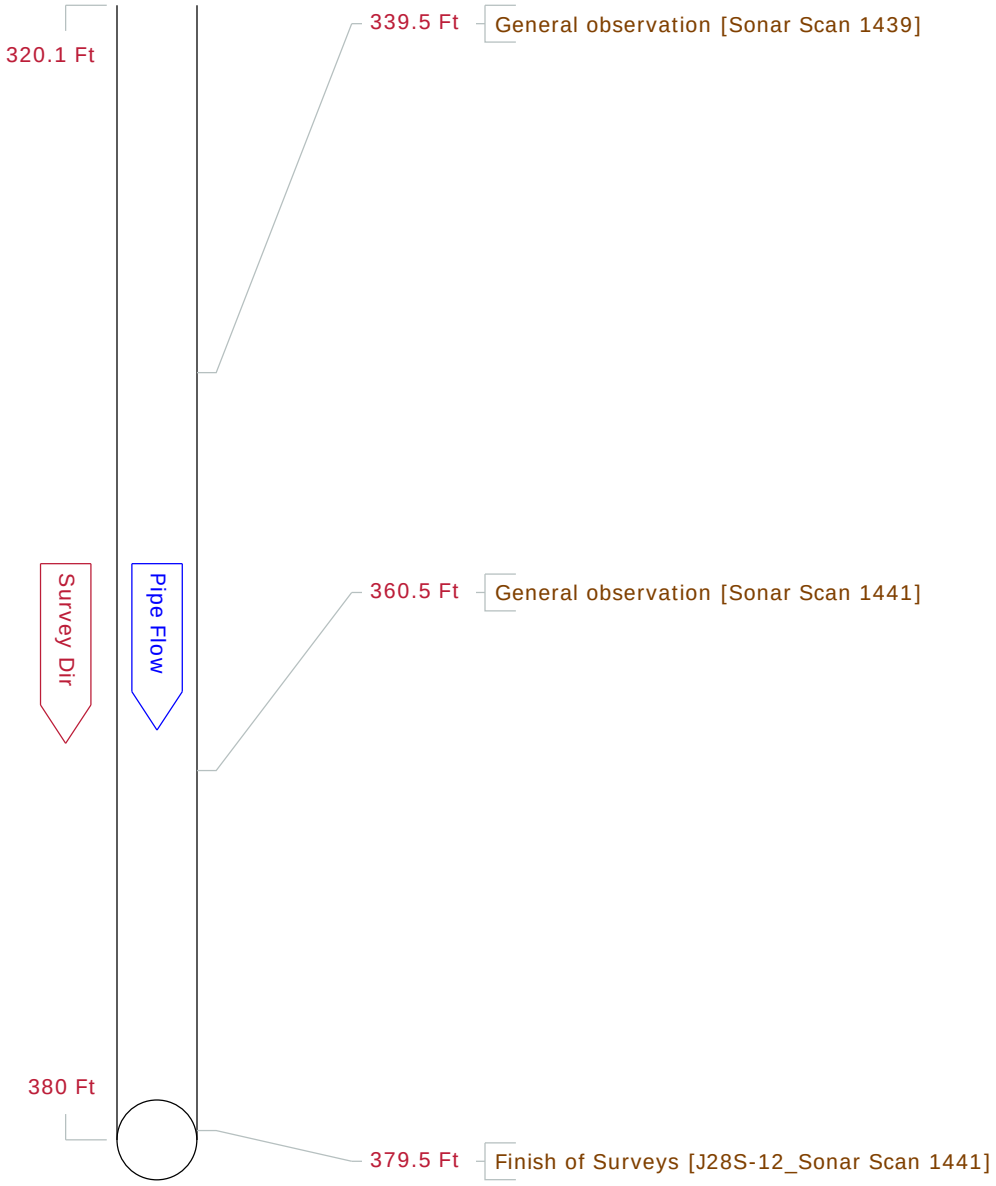
Pipe Graphic Report of PLR J28S-13 A **for** City of San Diego

Work Order		**Contract**		**Video**	**Setup** 2
Facility	46462	**Operator**	M. St. Mars	**Van Ref** 46	**Surveyed On** 10/22/2009

Street Name	**City** Sweetwater River
Location type	Near environmentally sensitive area
Surface	Wetland or saturated ground
Survey purpose	General programmed inspection **Weather** Dry

Pipe Use	Sanitary	**Schedule length**	380.0 Ft	**From** J28S-13	**Depth** Ft
Shape	Oval	**Size** 68 **by** 43 ins		**To** J28S-12	**Depth** Ft
Material	Plastic Lined Reinforced Concrete Pipe	**Joint spacing**	Ft	**Direction** Downstream	
Lining		**Year laid**		**Pre-clean** Y	**Last cleaned** 10/23/2009

General note	Siphon Line 2	Structural	Service	Constructional
Location note		Miscellaneous	Hydraulic	



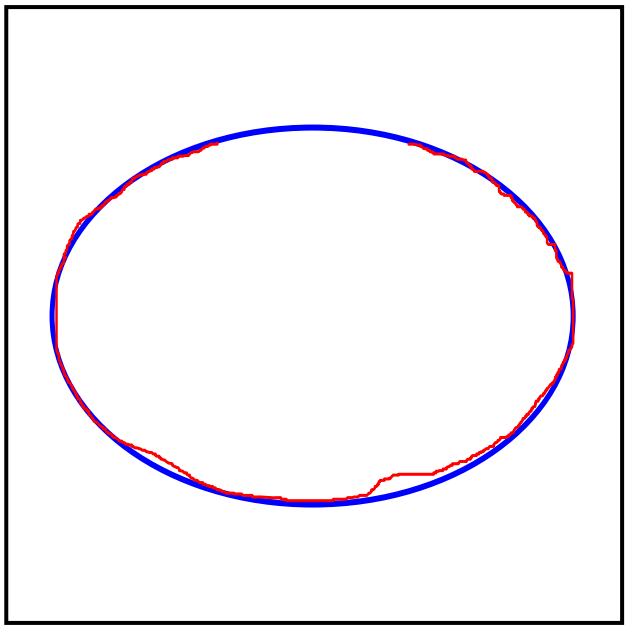
DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

Sonar Report of PLR J28S-13 A **for** City of San Diego

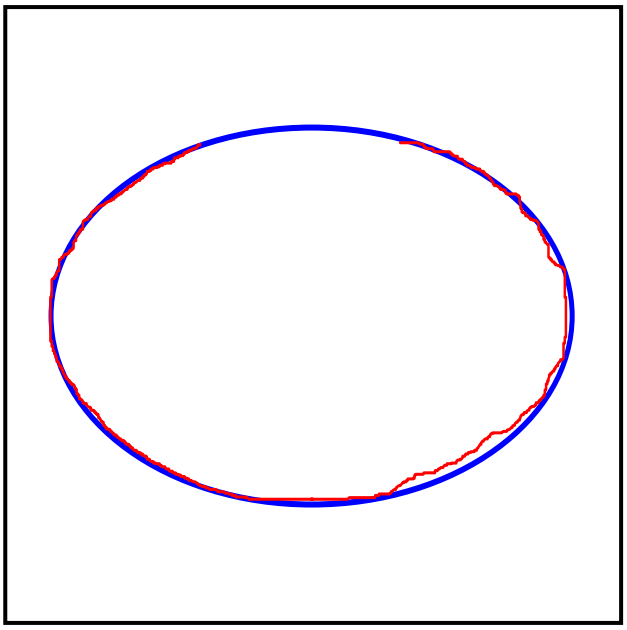
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46462	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 1 ft.	
Direction Upstream		**Diam** 68 **by** 43 in.		**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Near environmentally sensitive area		
Survey Remarks Siphon Line 2			**Surface** Wetland or saturated ground		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.		**Average Depth of Debris** 0.1364 ft.		

Cross-Sectional View



Counter: 0.0 Ft
Code Description: Start of Survey
Remarks: J28S-13_WL-99_Sonar Scan 1420
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft



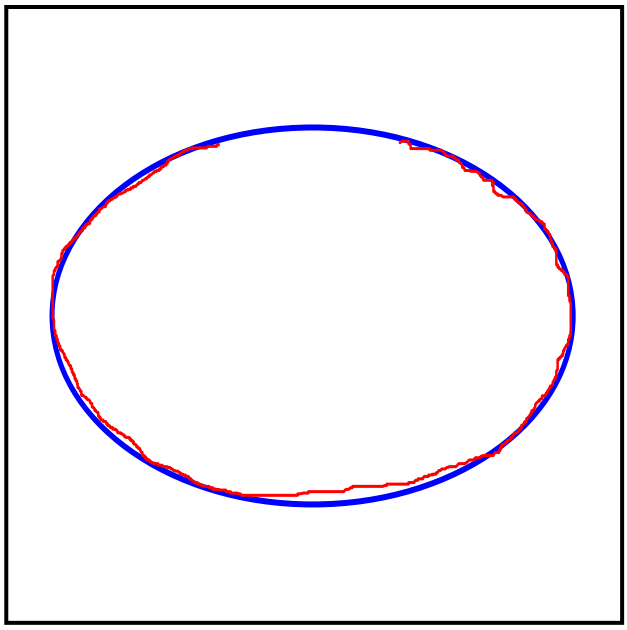
Counter: 19.6 Ft
Code Description: General observation
Remarks: Sonar Scan 1422
Maximum X Restriction 1.34 %
Depth of Debris 0.0479 ft

Sonar Report of PLR J28S-13 A **for** City of San Diego

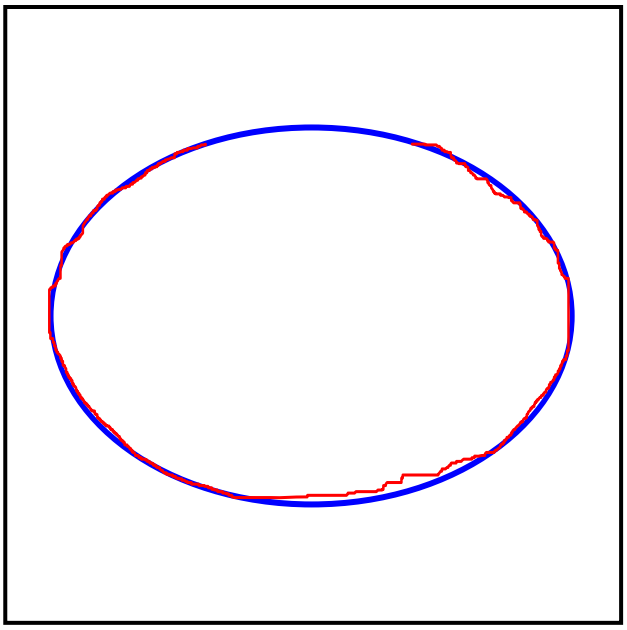
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46462	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 1 ft.	
Direction Upstream		**Diam** 68	**by** 43 in.	**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Near environmentally sensitive area		
Survey Remarks Siphon Line 2			**Surface** Wetland or saturated ground		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.		**Average Depth of Debris** 0.1364 ft.		

Cross-Sectional View



Counter: 39.5 Ft
Code Description: General observation
Remarks: Sonar Scan 1423
Maximum X Restriction 3.21 %
Depth of Debris 0.115 ft



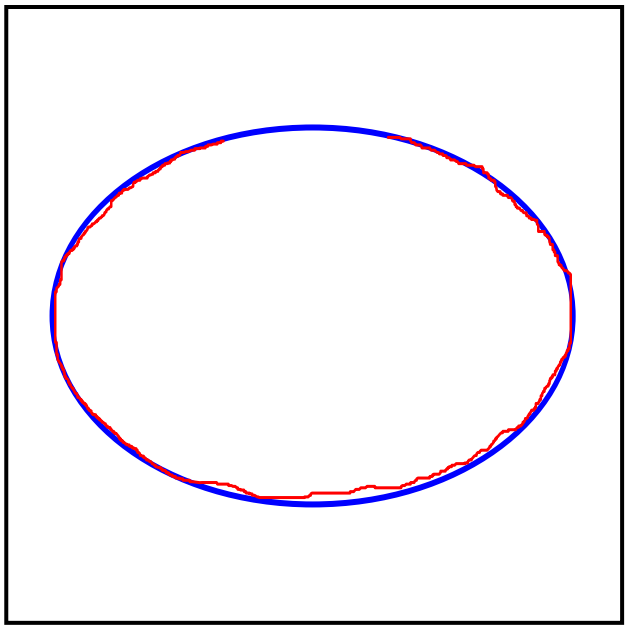
Counter: 60.2 Ft
Code Description: General observation
Remarks: Sonar Scan 1424
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft

Sonar Report of PLR J28S-13 A **for** City of San Diego

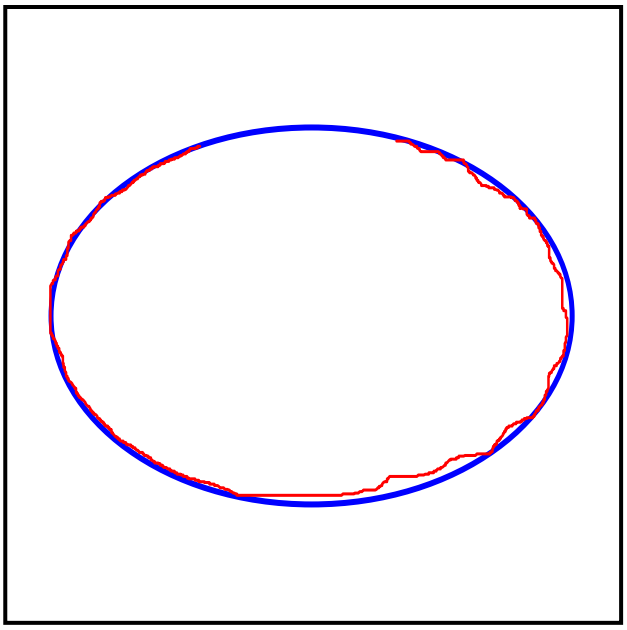
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46462	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 1 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection	**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type** CD	
Result	**Weather** Dry	**Location** Near environmentally sensitive area	
Survey Remarks Siphon Line 2		**Surface** Wetland or saturated ground	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.	**Average Depth of Debris** 0.1364 ft.	

Cross-Sectional View



Counter: 79.9 Ft
Code Description: General observation
Remarks: Sonar Scan 1425
Maximum X Restriction 2.94 %
Depth of Debris 0.1054 ft



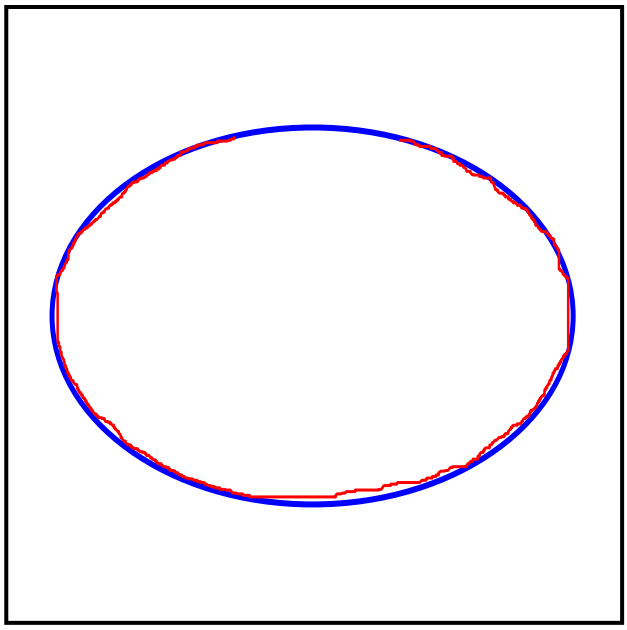
Counter: 100.2 Ft
Code Description: General observation
Remarks: Sonar Scan 1426
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft

Sonar Report of PLR J28S-13 A **for** City of San Diego

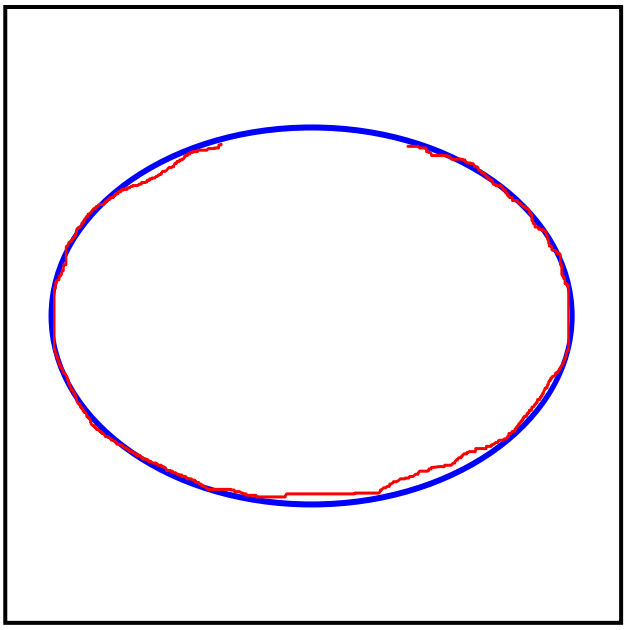
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46462	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 1 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection	**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type** CD	
Result	**Weather** Dry	**Location** Near environmentally sensitive area	
Survey Remarks Siphon Line 2		**Surface** Wetland or saturated ground	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.	**Average Depth of Debris** 0.1364 ft.	

Cross-Sectional View



Counter: 119.8 Ft
Code Description: General observation
Remarks: Sonar Scan 1427
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft



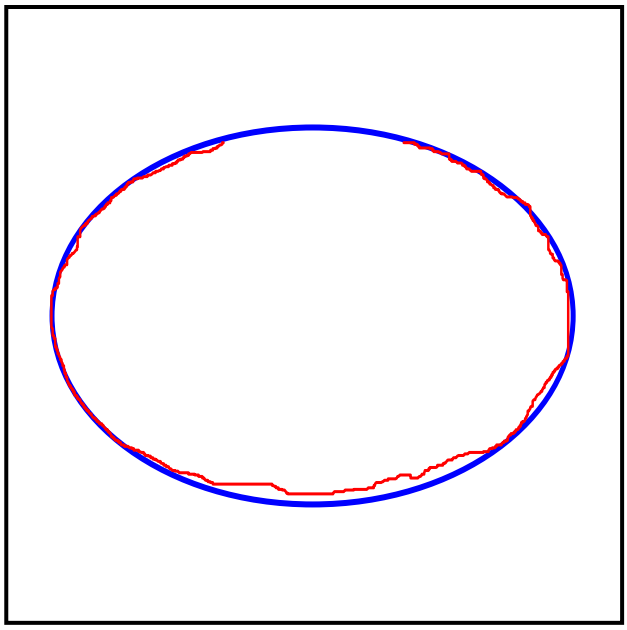
Counter: 140.3 Ft
Code Description: General observation
Remarks: Sonar Scan 1428
Maximum X Restriction 2.67 %
Depth of Debris 0.0958 ft

Sonar Report of PLR J28S-13 A **for** **City of San Diego**

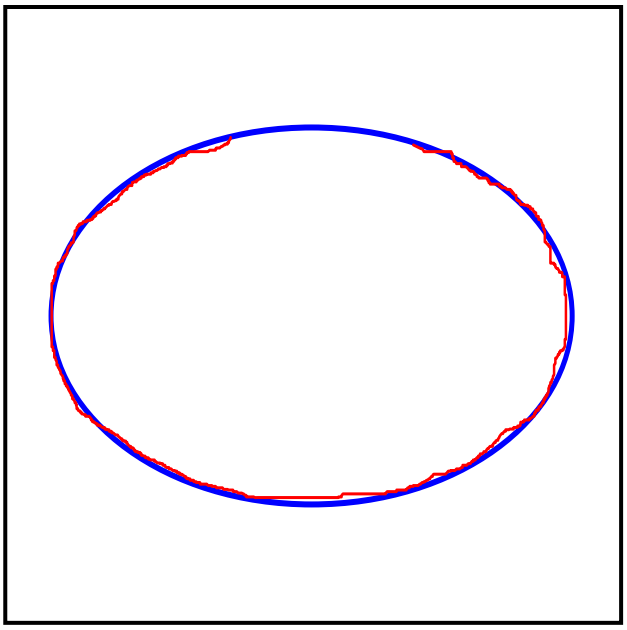
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46462	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 1 ft.	
Direction Upstream		**Diam** 68 **by** 43 in.		**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Near environmentally sensitive area		
Survey Remarks Siphon Line 2			**Surface** Wetland or saturated ground		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.		**Average Depth of Debris** 0.1364 ft.		

Cross-Sectional View



Counter: 160.4 Ft
Code Description: General observation
Remarks: Sonar Scan 1430
Maximum X Restriction 4.01 %
Depth of Debris 0.1437 ft



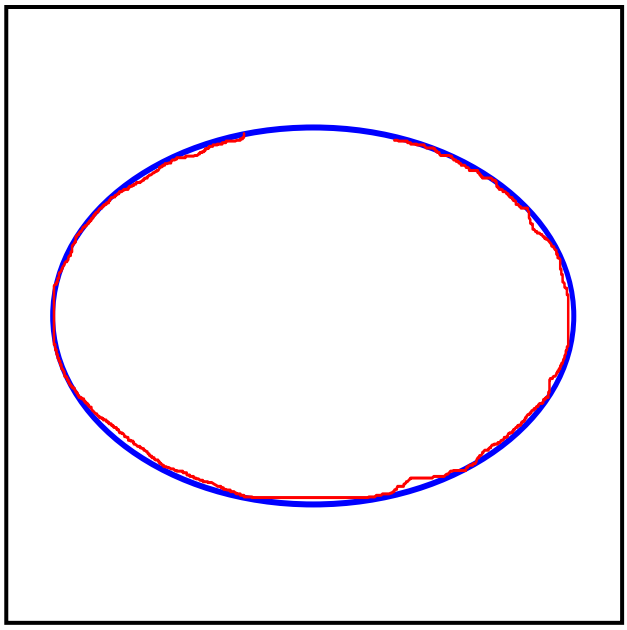
Counter: 180.1 Ft
Code Description: General observation
Remarks: Sonar Scan 1431
Maximum X Restriction 1.87 %
Depth of Debris 0.0671 ft

Sonar Report of PLR J28S-13 A **for** City of San Diego

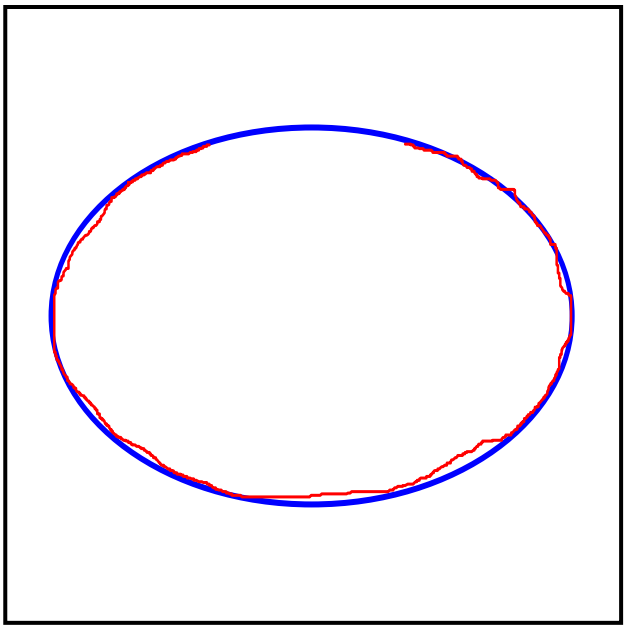
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46462	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 1 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection	**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type** CD	
Result	**Weather** Dry	**Location** Near environmentally sensitive area	
Survey Remarks Siphon Line 2		**Surface** Wetland or saturated ground	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.	**Average Depth of Debris** 0.1364 ft.	

Cross-Sectional View



Counter: 200.3 Ft
Code Description: General observation
Remarks: Sonar Scan 1432
Maximum X Restriction 1.6 %
Depth of Debris 0.0575 ft



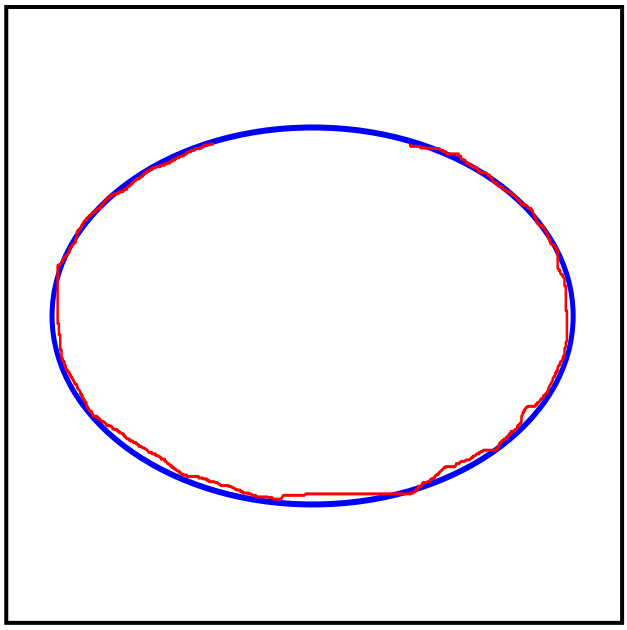
Counter: 220.4 Ft
Code Description: General observation
Remarks: Sonar Scan 1433
Maximum X Restriction 2.67 %
Depth of Debris 0.0958 ft

Sonar Report of PLR J28S-13 A **for** City of San Diego

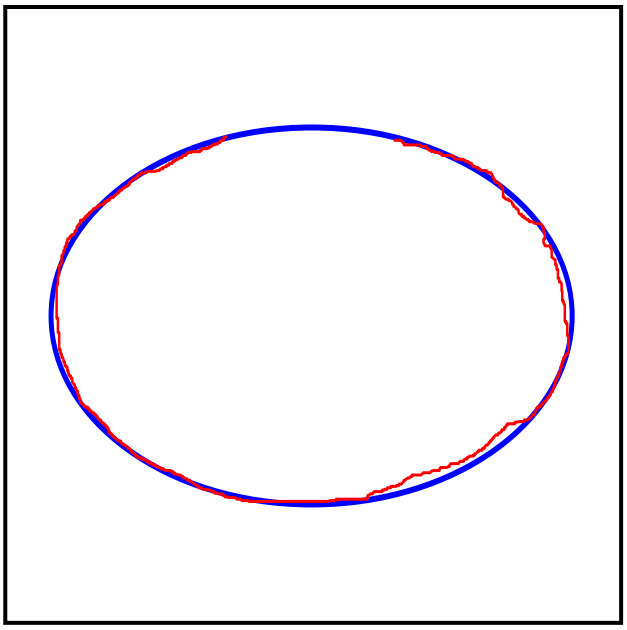
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12		**MH Depth** ft.		**FSN** 46462	
Downstream J28S-13		**MH Depth** ft.		**Verticle Offset** 1 ft.	
Direction Upstream		**Diam** 68 **by** 43 in.		**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection			**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**			**Media Type** CD	
Result	**Weather** Dry		**Location** Near environmentally sensitive area		
Survey Remarks Siphon Line 2			**Surface** Wetland or saturated ground		
Pipe Det	**Loc'n remarks**				
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.		**Average Depth of Debris** 0.1364 ft.		

Cross-Sectional View



Counter: 239.7 Ft
Code Description: General observation
Remarks: Sonar Scan 1434
Maximum X Restriction 2.67 %
Depth of Debris 0.0958 ft



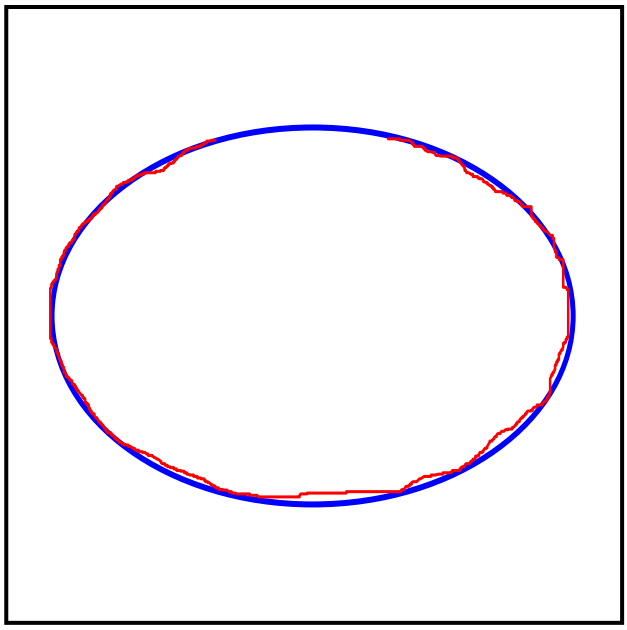
Counter: 259.8 Ft
Code Description: General observation
Remarks: Sonar Scan 1435
Maximum X Restriction 0.53 %
Depth of Debris 0.0192 ft

Sonar Report of PLR J28S-13 A **for** City of San Diego

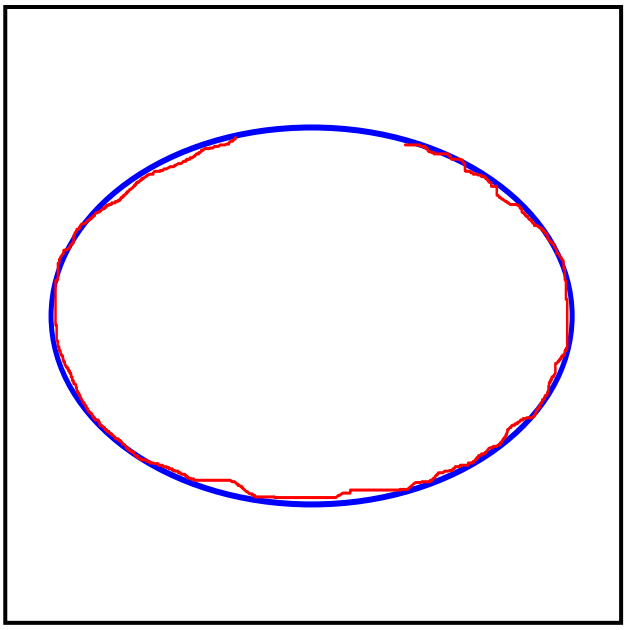
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46462	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 1 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection	**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type** CD	
Result	**Weather** Dry	**Location** Near environmentally sensitive area	
Survey Remarks Siphon Line 2		**Surface** Wetland or saturated ground	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.	**Average Depth of Debris** 0.1364 ft.	

Cross-Sectional View



Counter: 280.0 Ft
Code Description: General observation
Remarks: Sonar Scan 1436
Maximum X Restriction 2.94 %
Depth of Debris 0.1054 ft



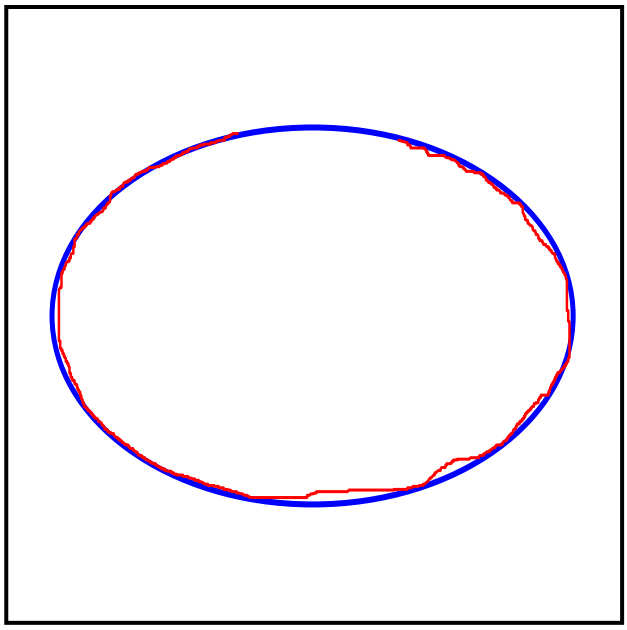
Counter: 300.0 Ft
Code Description: General observation
Remarks: Sonar Scan 1437
Maximum X Restriction 2.41 %
Depth of Debris 0.0862 ft

Sonar Report of PLR J28S-13 A **for** City of San Diego

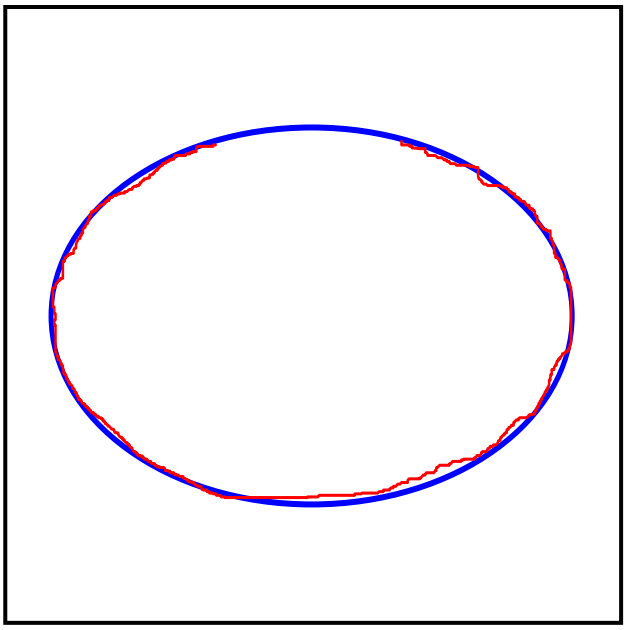
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46462	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 1 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection	**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type** CD	
Result	**Weather** Dry	**Location** Near environmentally sensitive area	
Survey Remarks Siphon Line 2		**Surface** Wetland or saturated ground	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.	**Average Depth of Debris** 0.1364 ft.	

Cross-Sectional View



Counter: 320.1 Ft
Code Description: General observation
Remarks: Sonar Scan 1439
Maximum X Restriction 3.21 %
Depth of Debris 0.115 ft



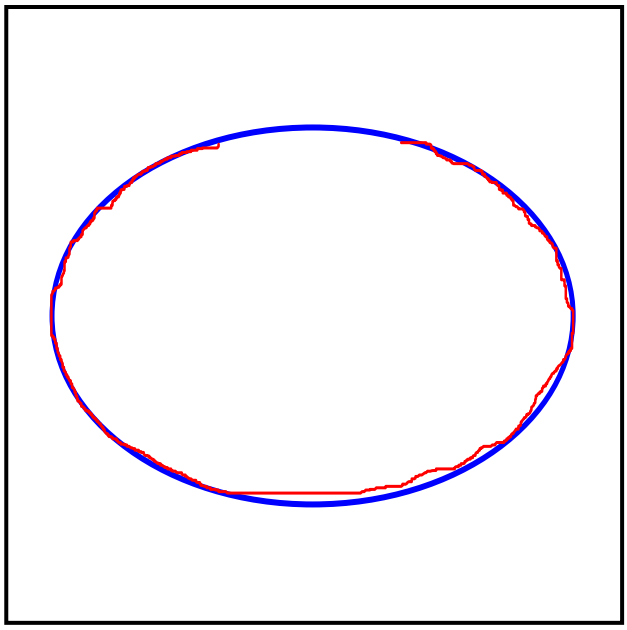
Counter: 339.5 Ft
Code Description: General observation
Remarks: Sonar Scan 1439
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft

Sonar Report of PLR J28S-13 A **for** City of San Diego

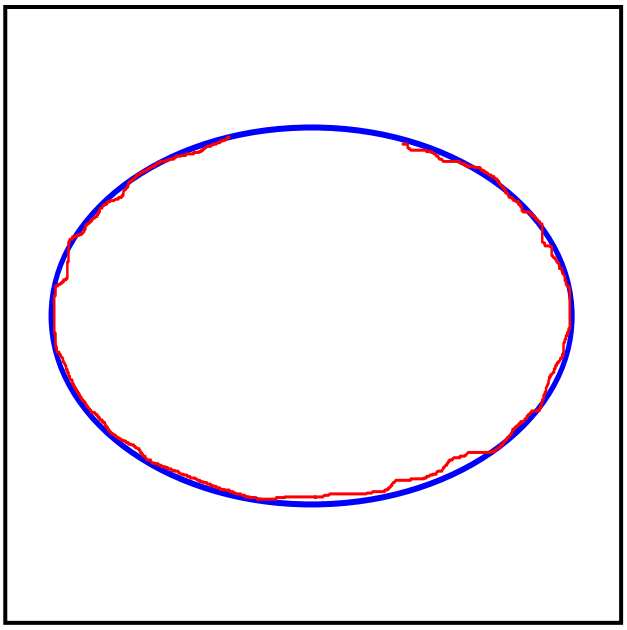
Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	
Key Op MSM	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road**		**Place** Sweetwater River		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46462	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 1 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 380.0 ft.	
Use Sanitary	**Purpose** General programmed inspection	**Insp Length** 379.50 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type** CD	
Result	**Weather** Dry	**Location** Near environmentally sensitive area	
Survey Remarks Siphon Line 2		**Surface** Wetland or saturated ground	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.	**Average Depth of Debris** 0.1364 ft.	

Cross-Sectional View



Counter: 360.5 Ft
Code Description: General observation
Remarks: Sonar Scan 1441
Maximum X Restriction 2.94 %
Depth of Debris 0.1054 ft



Counter: 379.5 Ft
Code Description: Finish of Surveys
Remarks: J28S-12_Sonar Scan 1441
Maximum X Restriction 2.41 %
Depth of Debris ft

Sonar Report of PLR J28S-13 A **for City of San Diego**

Setup 2 **Date** 10/22/2009 **Time** 12:12:00 PM **Operator** M. St. Mars **Van ID** 46 **Key Op** MSM **Vid Cassette**

Work Order **Neighborhood** **District** **Road**

Place Sweetwater River **Map Page Ref**

Upstream J28S-12 **MH Depth** ft. **FSN** 46462 **Verticle Offset** 1 ft. **Direction** Upstream

Downstream J28S-13 **MH Depth** ft. **Diam** 68 **by** 43 in. **Map Length** 380.0 ft.

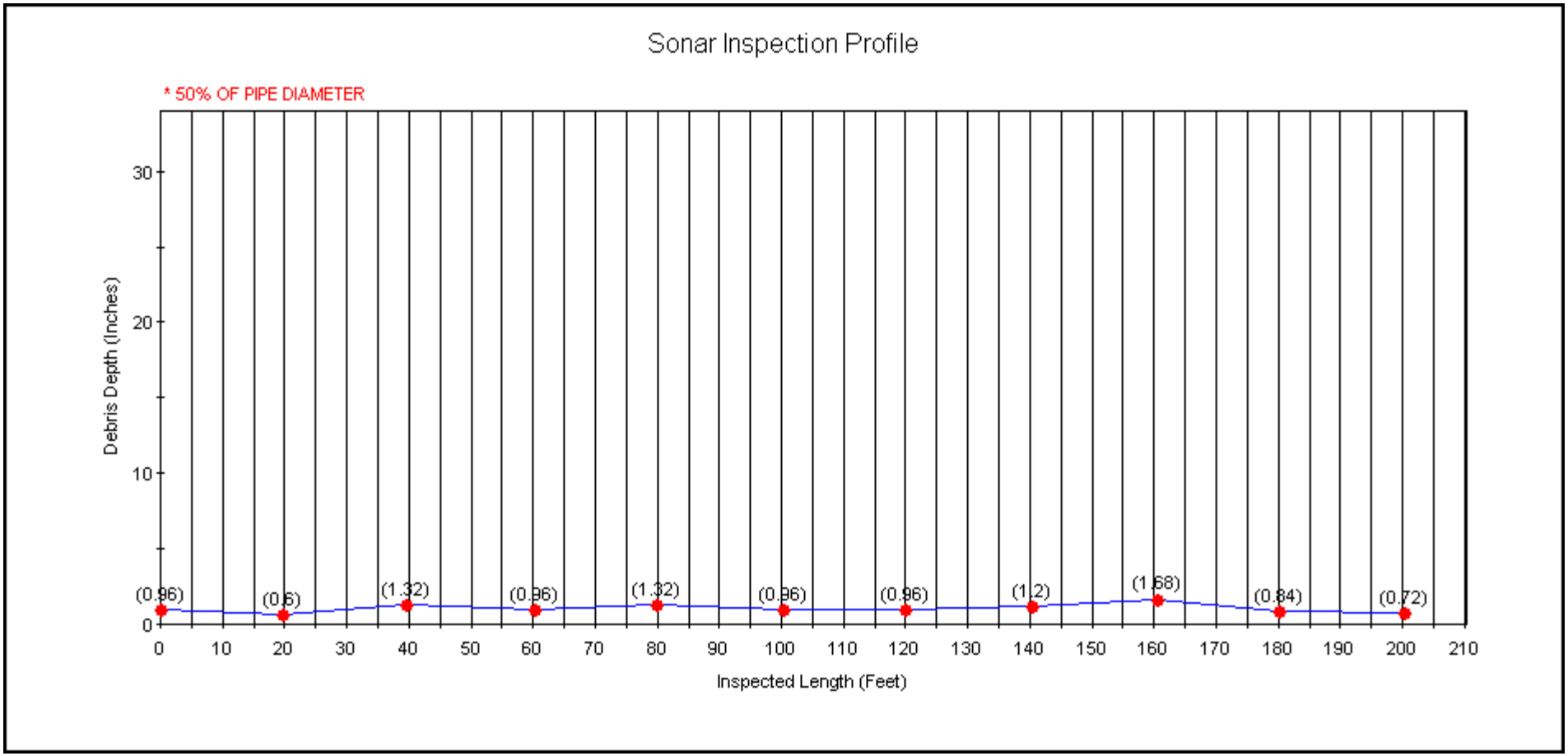
Use Sanitary **Media Type** CD **Material** Plastic Lined Reinforced Concrete Pipe **Insp Length** 379.50 ft.

Pipe Det **Surface** Wetland or saturated ground **Weather** Dry **Lining**

Result **Location** Near environmentally sensitive area **Loc'n remarks**

Survey Remarks Siphon Line 2 **Purpose** General programmed inspection

Maximum Cross Sectional Restriction 4.0 % **Total Volume of Debris** 60.215 cu. ft. **Average Depth of Debris** 0.1364 ft.



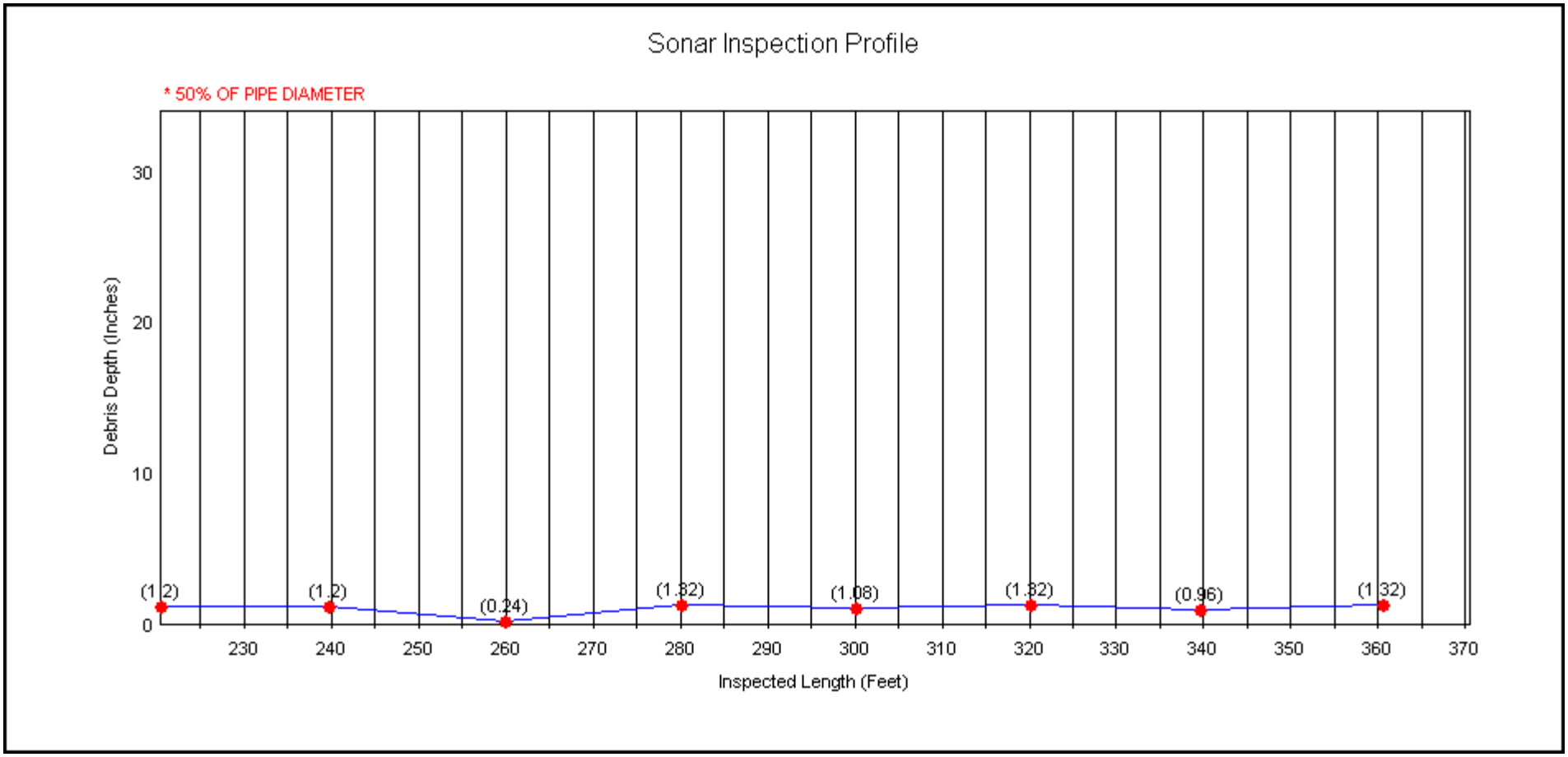
DownStream Services, Inc.

DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

Sonar Report of PLR J28S-13 A **for City of San Diego**

Setup 2	**Date** 10/22/2009	**Time** 12:12:00 PM	**Operator** M. St. Mars	**Van ID** 46	**Key Op** MSM	**Vid Cassette**			
Work Order	**Neighborhood**	**District**	**Road**						
Place Sweetwater River	**Map Page Ref**								

Upstream J28S-12	**MH Depth** ft.	**FSN** 46462	**Verticle Offset** 1 ft.	**Direction** Upstream					
Downstream J28S-13	**MH Depth** ft.	**Diam** 68	**by** 43 in.	**Map Length** 380.0 ft.					
Use Sanitary	**Media Type** CD	**Material** Plastic Lined Reinforced Concrete Pipe	**Insp Length** 379.50 ft.						
Pipe Det	**Surface** Wetland or saturated ground	**Weather** Dry	**Lining**						
Result	**Location** Near environmentally sensitive area	**Loc'n remarks**							
Survey Remarks Siphon Line 2	**Purpose** General programmed inspection								
Maximum Cross Sectional Restriction 4.0 %	**Total Volume of Debris** 60.215 cu. ft.	**Average Depth of Debris** 0.1364 ft.							



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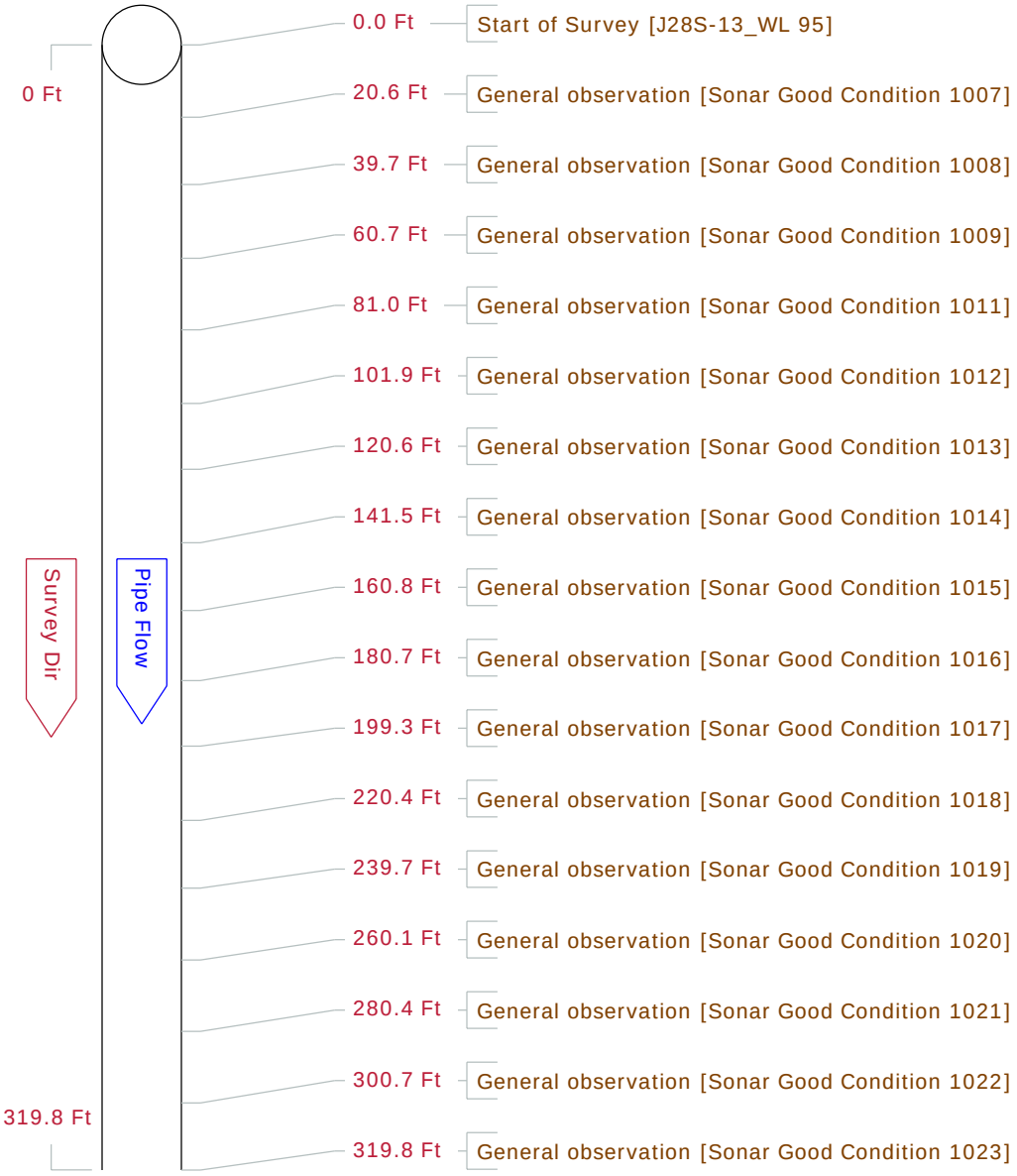
Fax: 760-746-2667

Pipe Graphic Report of PLR J28S-13 X **for** City of San Diego

Work Order		**Contract**		**Video**	**Setup** 1
Facility	46464	**Operator**	K.Lindquist	**Van Ref** T46	**Surveyed On** 01/05/2010
Street Name	National City	**City**			
Location type	Footpath				
Surface	Paving - footpath/cobbles				
Survey purpose				**Weather** Dry	
Pipe Use	Sanitary	**Schedule length**	400.6 Ft	**From** J28S-13	**Depth** Ft
Shape	Oval	**Size** 68	**by** 43 ins	**To** J28S-12	**Depth** Ft
Material	Plastic Lined Reinforced Concrete Pipe	**Joint spacing**	Ft	**Direction** Downstream	
Lining		**Year laid**		**Pre-clean** Y	**Last cleaned**
General note	Next to Sweetwater River Bed - South side			Structural	Service Constructional
Location note				Miscellaneous	Hydraulic



DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

Pipe Graphic Report of PLR J28S-13 X **for** City of San Diego

Work Order		**Contract**		**Video**	**Setup** 1
Facility	46464	**Operator**	K.Lindquist	**Van Ref** T46	**Surveyed On** 01/05/2010

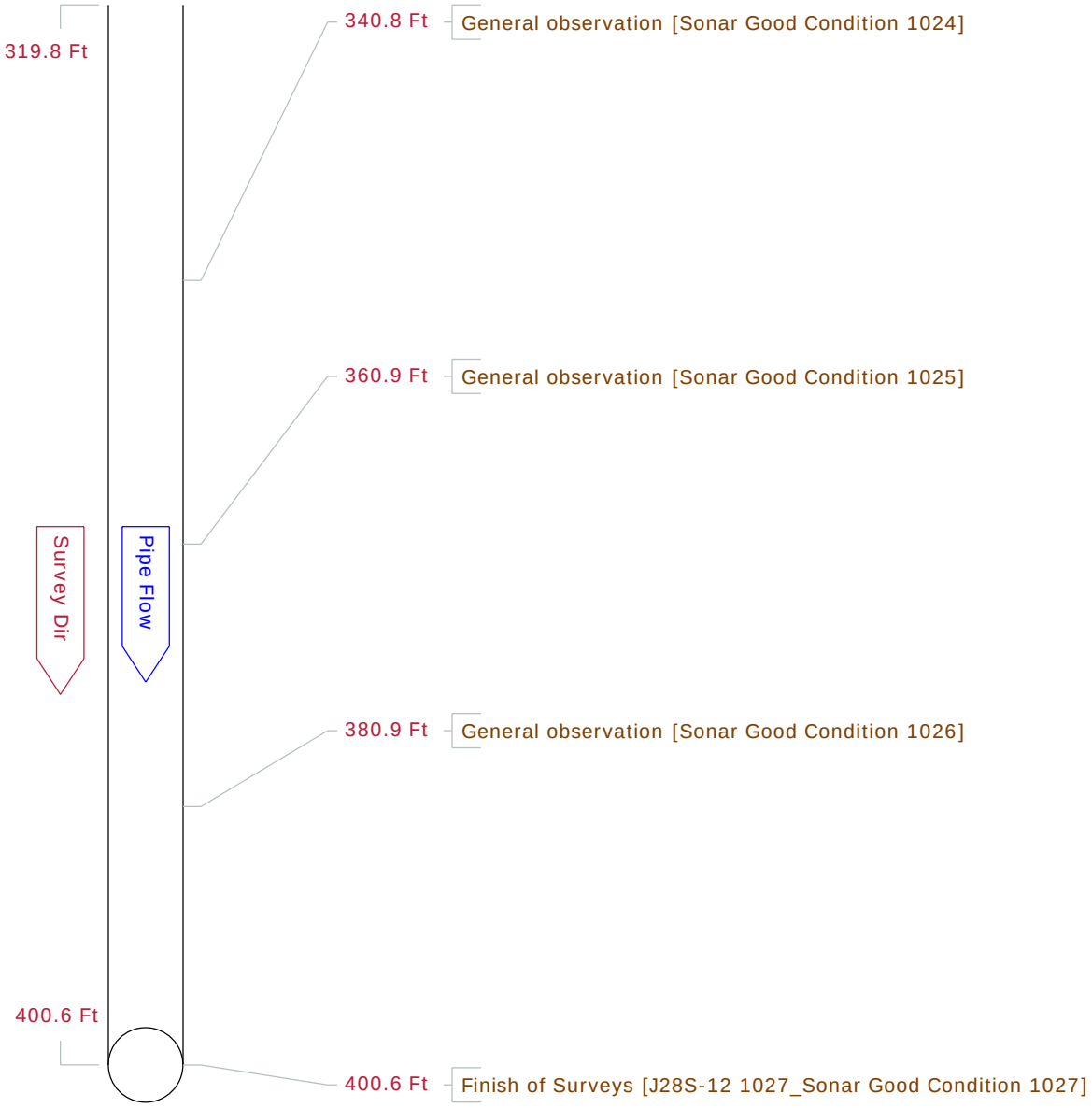
Street Name	National City **City**
Location type	Footpath
Surface	Paving - footpath/cobbles
Survey purpose	**Weather** Dry

Pipe Use	Sanitary	**Schedule length**	400.6 Ft	**From** J28S-13	**Depth** Ft
Shape	Oval	**Size** 68 **by** 43 ins		**To** J28S-12	**Depth** Ft
Material	Plastic Lined Reinforced Concrete Pipe	**Joint spacing**	Ft	**Direction** Downstream	
Lining		**Year laid**		**Pre-clean** Y	**Last cleaned**

General note Next to Sweetwater River Bed - South side

Location note

Structural Service Constructional
Miscellaneous Hydraulic



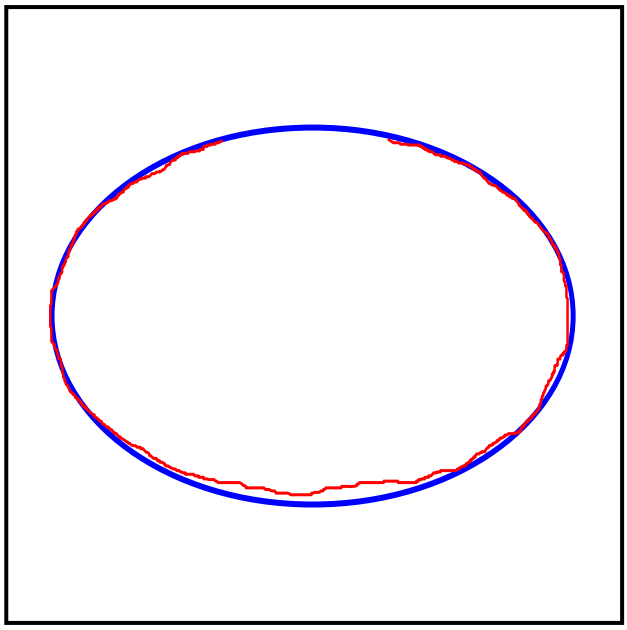
DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

Sonar Report of PLR J28S-13 X **for** City of San Diego

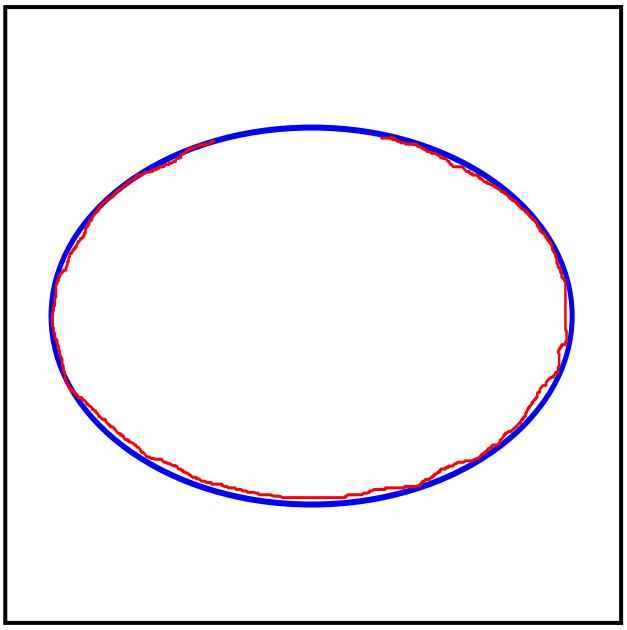
Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



Counter: 0.0 Ft
Code Description: Start of Survey
Remarks: J28S-13_WL 95
Maximum X Restriction 4.01 %
Depth of Debris 0.1437 ft



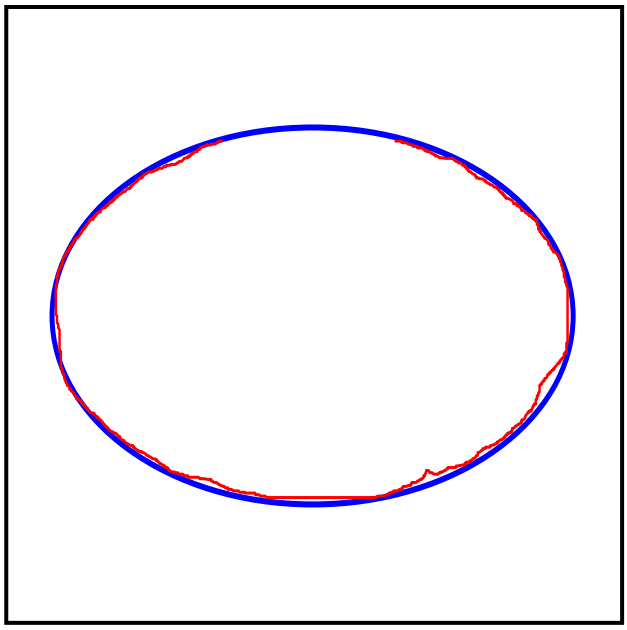
Counter: 20.6 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1007
Maximum X Restriction 1.6 %
Depth of Debris 0.0575 ft

Sonar Report of PLR J28S-13 X **for** **City of San Diego**

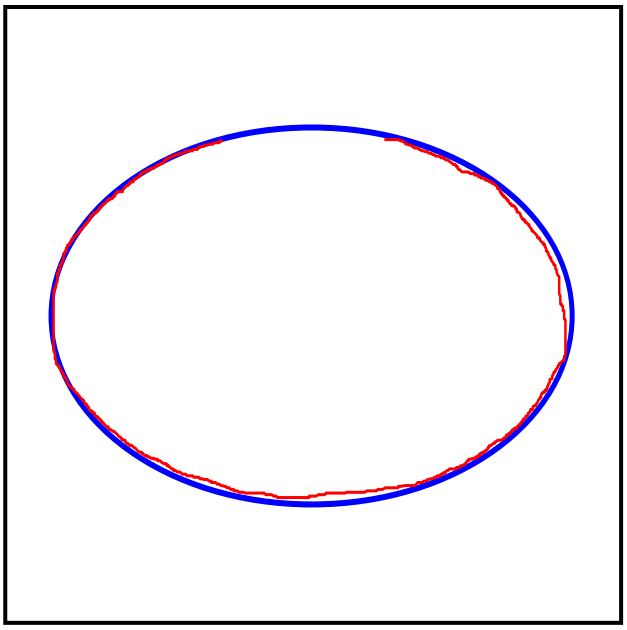
Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



Counter: 39.7 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1008
Maximum X Restriction 1.6 %
Depth of Debris 0.0575 ft



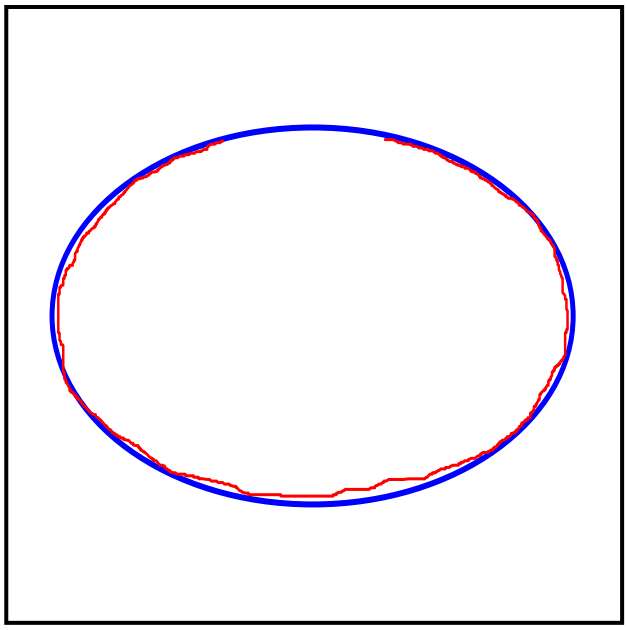
Counter: 60.7 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1009
Maximum X Restriction 2.41 %
Depth of Debris 0.0862 ft

Sonar Report of PLR J28S-13 X **for** City of San Diego

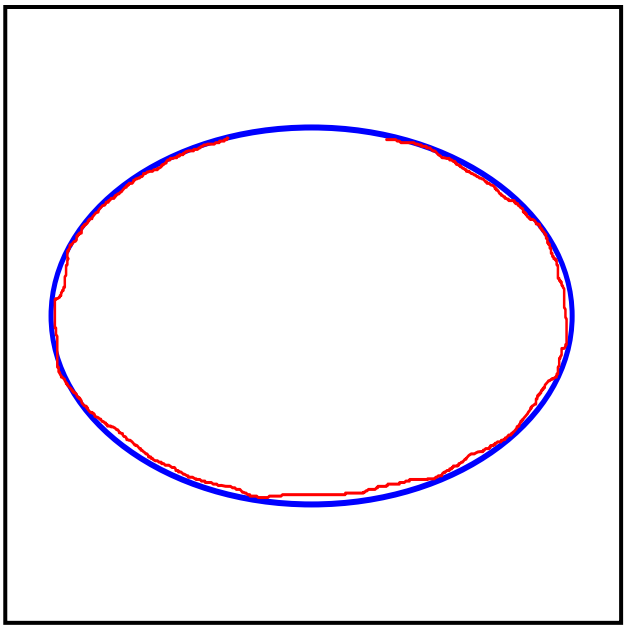
Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



Counter: 81.0 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1011
Maximum X Restriction 2.94 %
Depth of Debris 0.1054 ft



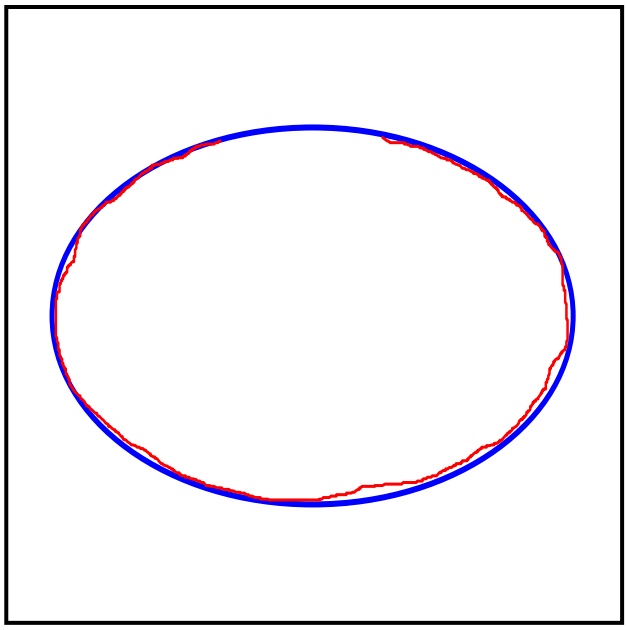
Counter: 101.9 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1012
Maximum X Restriction 2.41 %
Depth of Debris 0.0862 ft

Sonar Report of PLR J28S-13 X **for** City of San Diego

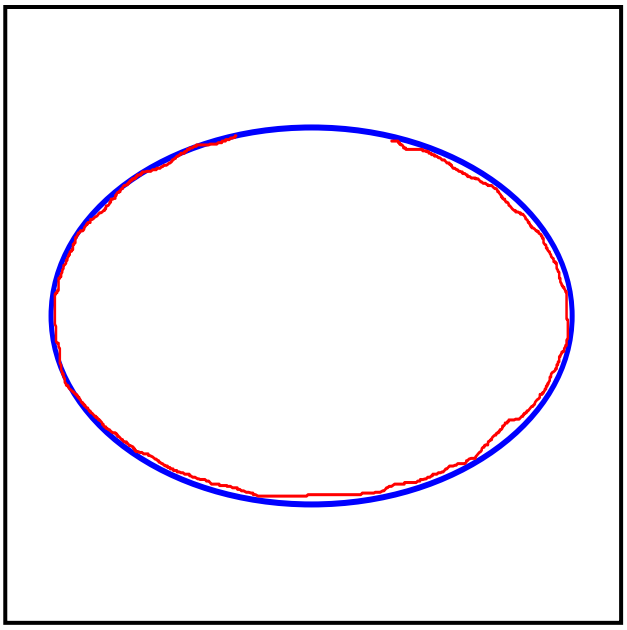
Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



Counter: 120.6 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1013
Maximum X Restriction 2.67 %
Depth of Debris 0.0958 ft



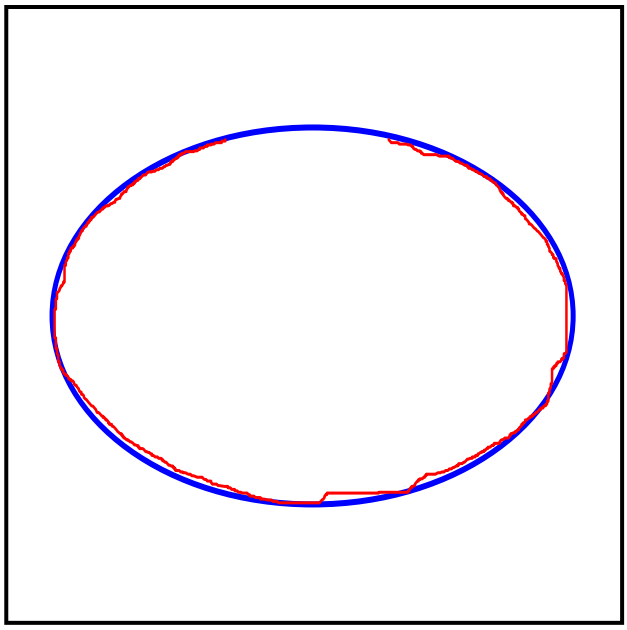
Counter: 141.5 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1014
Maximum X Restriction 2.41 %
Depth of Debris 0.0862 ft

Sonar Report of PLR J28S-13 X **for** **City of San Diego**

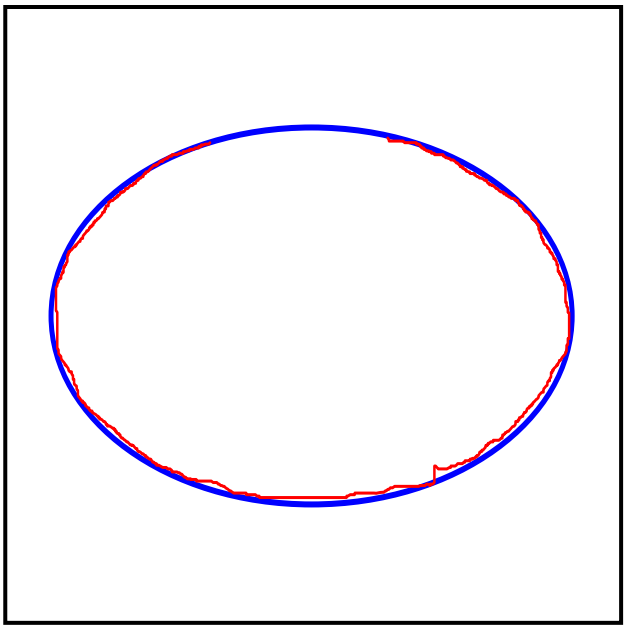
Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



Counter: 160.8 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1015
Maximum X Restriction 2.67 %
Depth of Debris 0.0958 ft



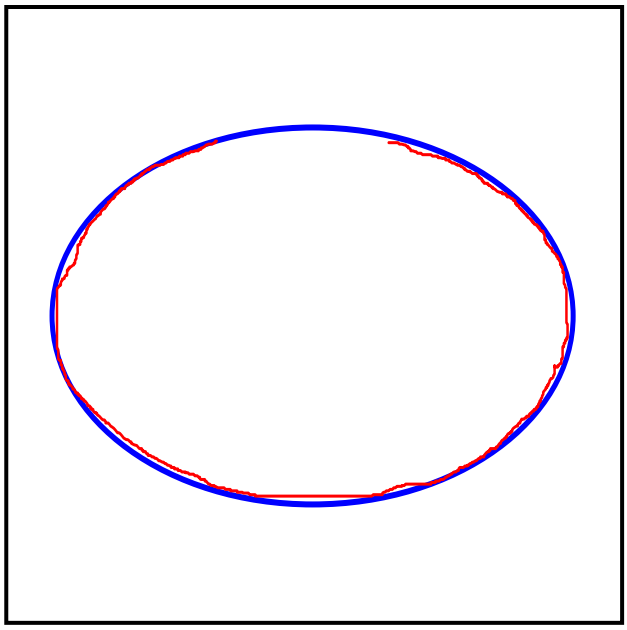
Counter: 180.7 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1016
Maximum X Restriction 1.6 %
Depth of Debris 0.0575 ft

Sonar Report of PLR J28S-13 X **for** City of San Diego

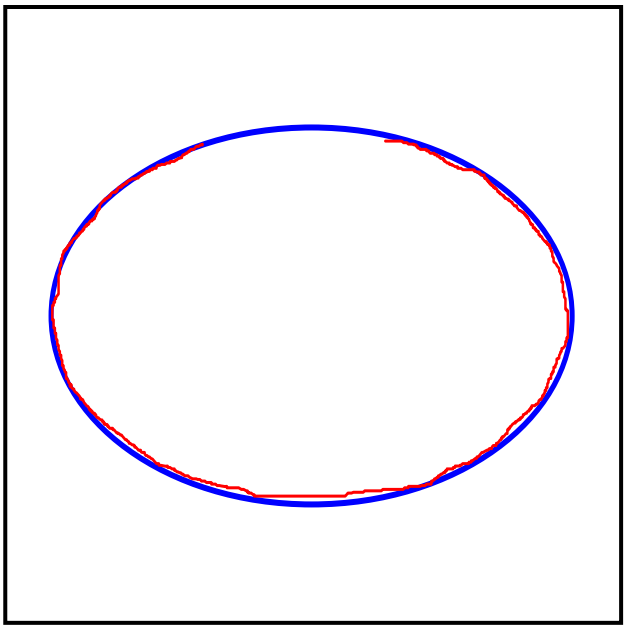
Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



Counter: 199.3 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1017
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft



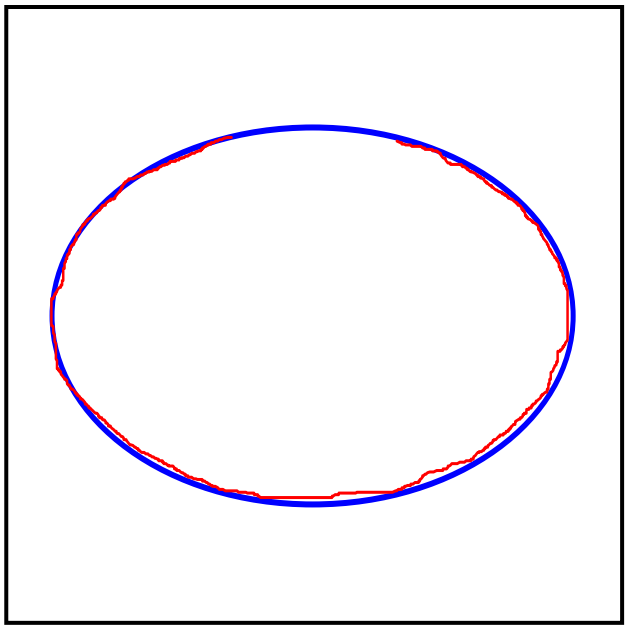
Counter: 220.4 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1018
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft

Sonar Report of PLR J28S-13 X **for** City of San Diego

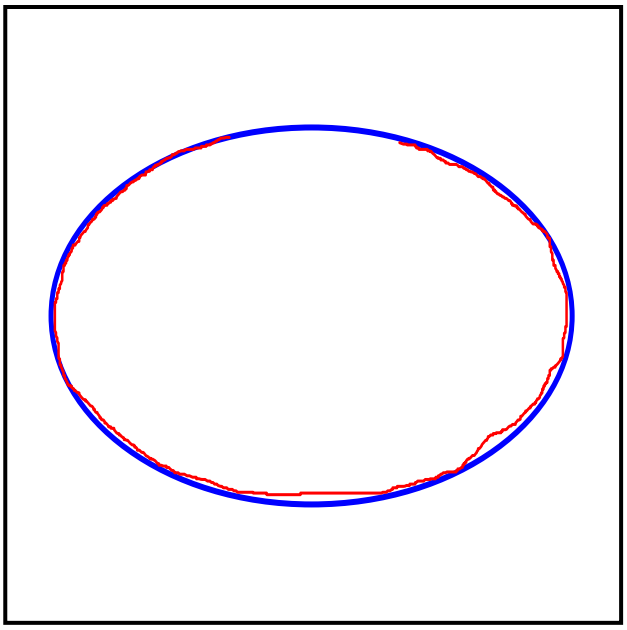
Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



Counter: 239.7 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1019
Maximum X Restriction 2.41 %
Depth of Debris 0.0862 ft



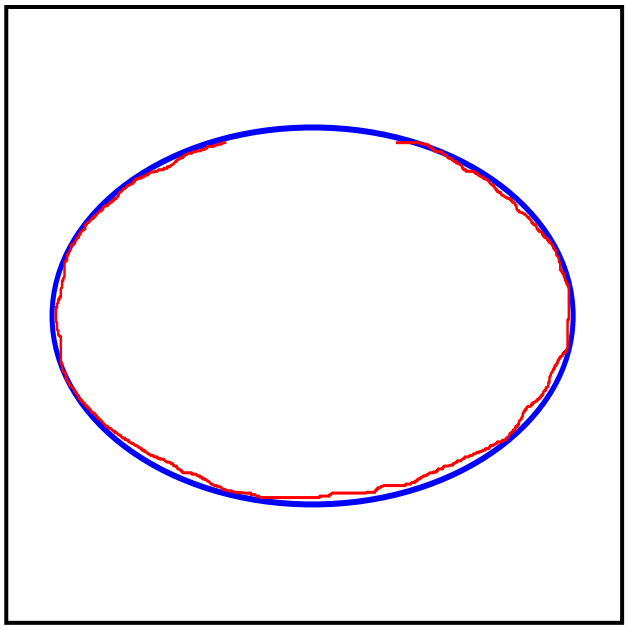
Counter: 260.1 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1020
Maximum X Restriction 2.94 %
Depth of Debris 0.1054 ft

Sonar Report of PLR J28S-13 X **for** **City of San Diego**

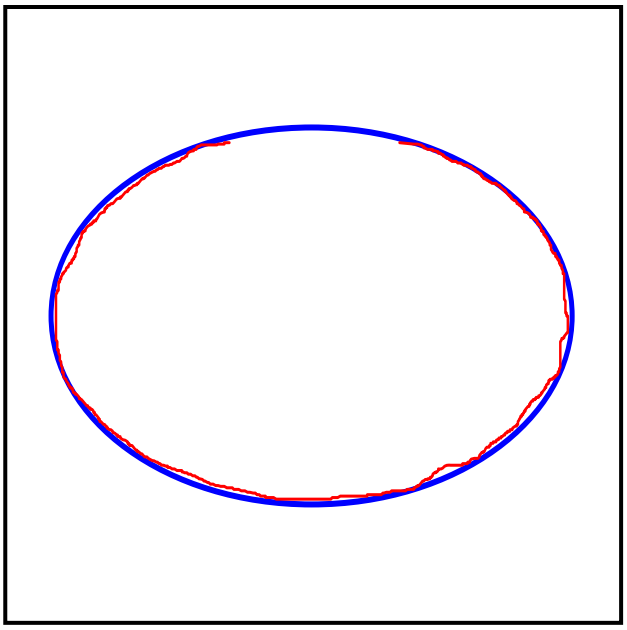
Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist		**Van ID** T46
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



Counter: 280.4 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1021
Maximum X Restriction 2.41 %
Depth of Debris 0.0862 ft



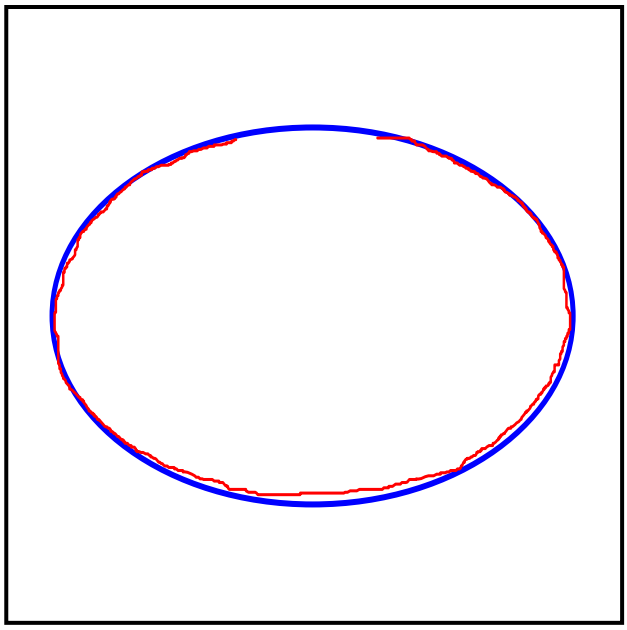
Counter: 300.7 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1022
Maximum X Restriction 1.6 %
Depth of Debris 0.0575 ft

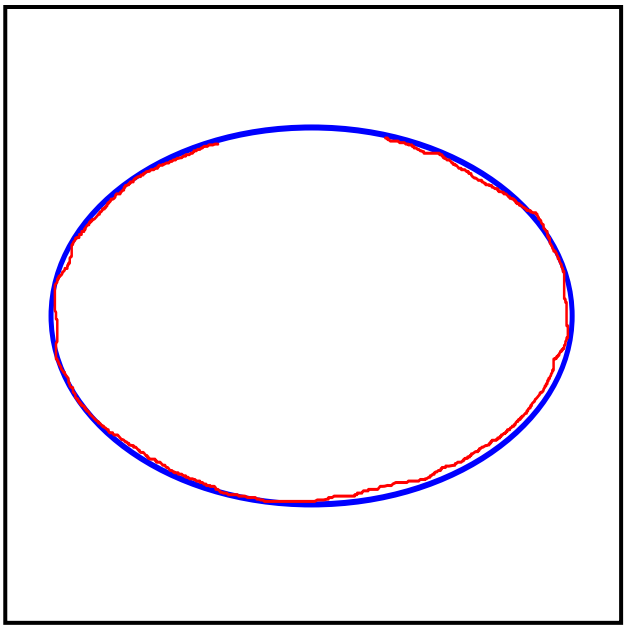
Sonar Report of PLR J28S-13 X **for** **City of San Diego**

Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View





Counter: 319.8 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1023
Maximum X Restriction 2.94 %
Depth of Debris 0.1054 ft

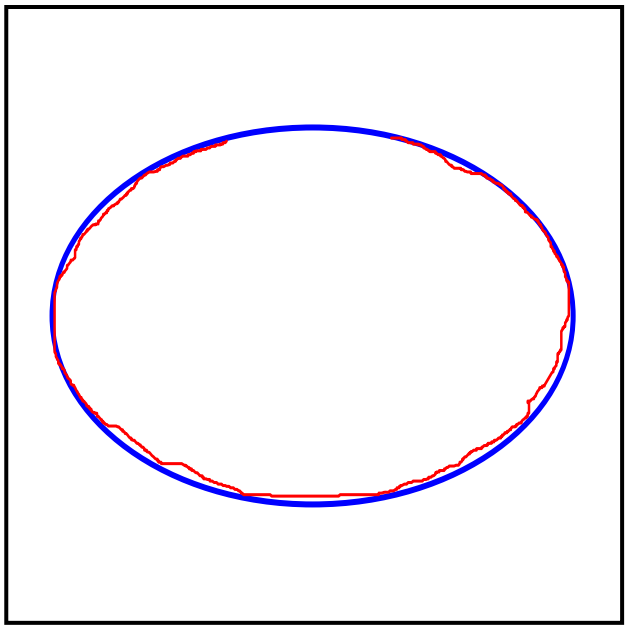
Counter: 340.8 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1024
Maximum X Restriction 1.34 %
Depth of Debris 0.0479 ft

Sonar Report of PLR J28S-13 X **for** **City of San Diego**

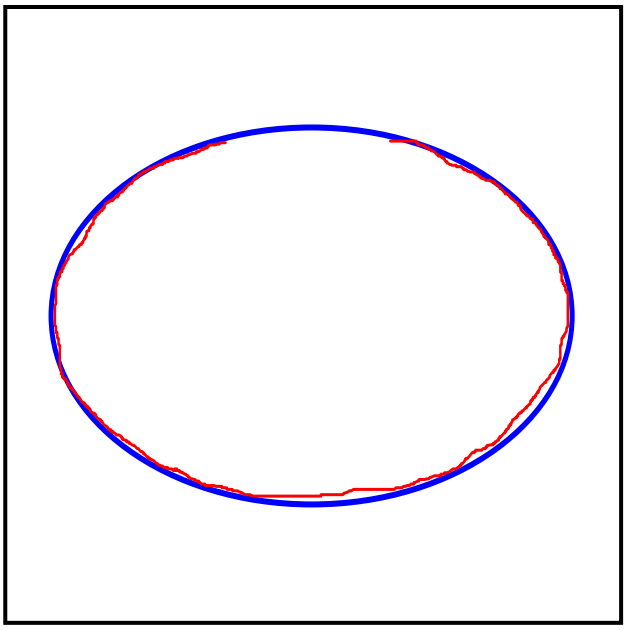
Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist		**Van ID** T46
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



Counter: 360.9 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1025
Maximum X Restriction 2.14 %
Depth of Debris 0.0766 ft



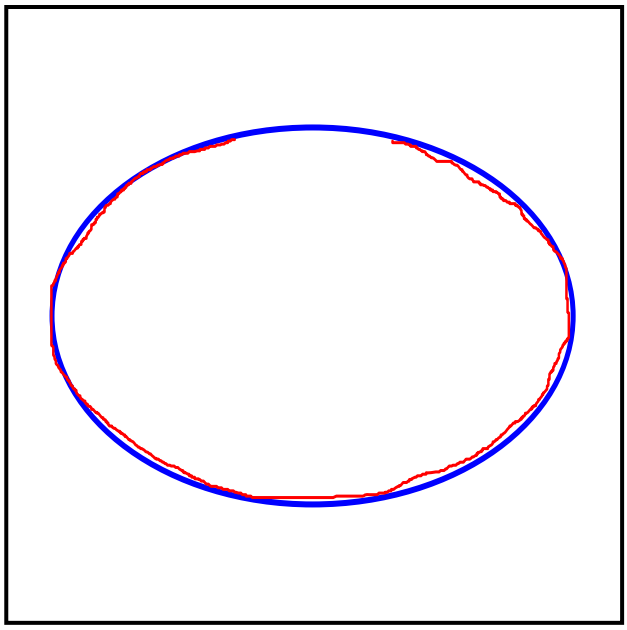
Counter: 380.9 Ft
Code Description: General observation
Remarks: Sonar Good Condition 1026
Maximum X Restriction 2.41 %
Depth of Debris 0.0862 ft

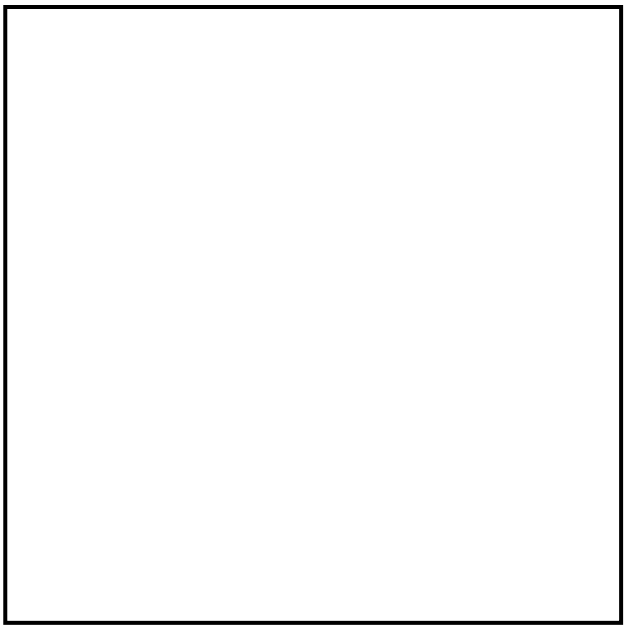
Sonar Report of PLR J28S-13 X **for** **City of San Diego**

Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	
Key Op KL	**Work Order**	**Vid Cassette**	**Neighborhood**		
District	**Road** National City		**Place**		
Map Page Ref					

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	
Downstream J28S-13	**MH Depth** ft.	**Verticle Offset** 0 ft.	
Direction Upstream	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.	
Use Sanitary	**Purpose**	**Insp Length** 400.60 ft.	
Material Plastic Lined Reinforced Concrete Pipe	**Lining**	**Media Type**	
Result	**Weather** Dry	**Location** Footpath	
Survey Remarks Next to Sweetwater River Bed - South side		**Surface** Paving - footpath/cobbles	
Pipe Det	**Loc'n remarks**		
Maximum Cross-Sectional Restriction 4.0 %	**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.	

Cross-Sectional View



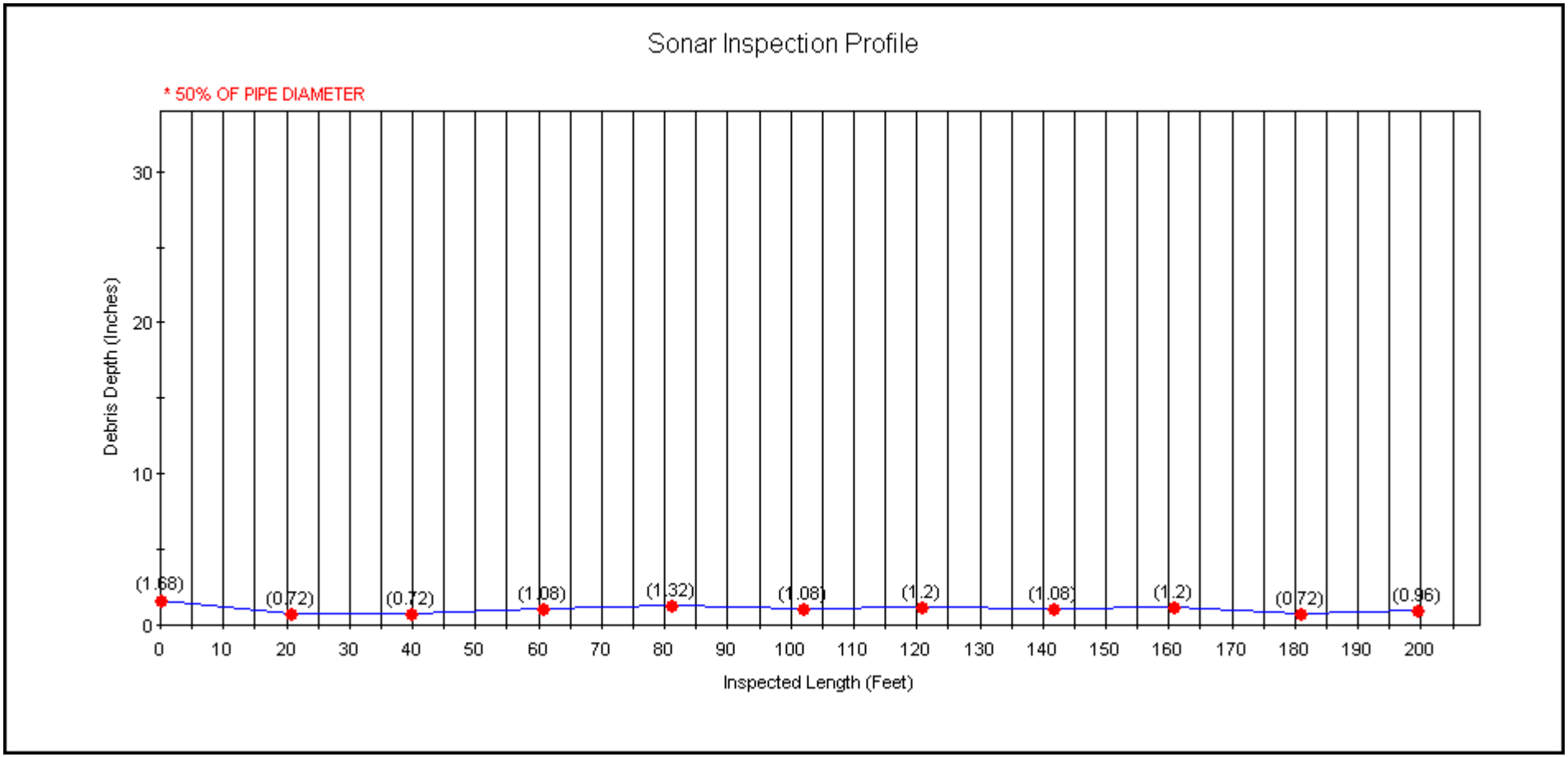


Counter: 400.6 Ft
Code Description: Finish of Surveys
Remarks: J28S-12 1027_Sonar Good Condition 1027
Maximum X Restriction 1.6 %
Depth of Debris 0.0575 ft

Sonar Report of PLR J28S-13 X **for** **City of San Diego**

Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	**Key Op** KL	**Vid Cassette**			
Work Order	**Neighborhood**	**District**	**Road** National City						
Place	**Map Page Ref**								

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	**Verticle Offset** 0 ft.	**Direction** Upstream					
Downstream J28S-13	**MH Depth** ft.	**Diam** 68	**by** 43 in.	**Map Length** 400.6 ft.					
Use Sanitary	**Media Type**	**Material** Plastic Lined Reinforced Concrete Pipe	**Insp Length** 400.60 ft.						
Pipe Det	**Surface** Paving - footpath/cobbles	**Weather** Dry	**Lining**						
Result	**Location** Footpath	**Loc'n remarks**							
Survey Remarks Next to Sweetwater River Bed - South side			**Purpose**						
Maximum Cross Sectional Restriction 4.0 %		**Total Volume of Debris** 59.588 cu. ft.		**Average Depth of Debris** 0.1306 ft.					



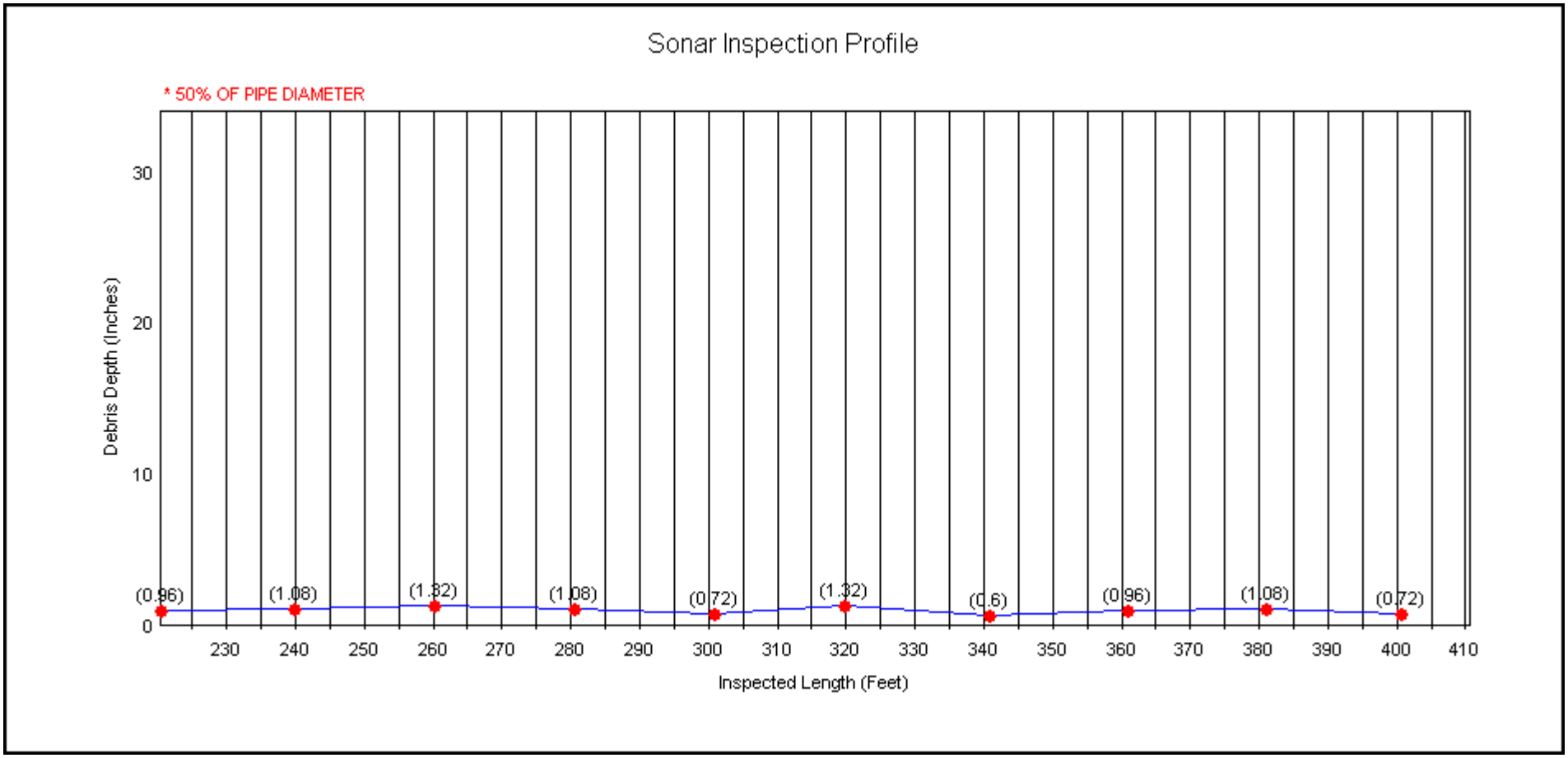
DownStream Services, Inc.

DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

Sonar Report of PLR J28S-13 X **for** **City of San Diego**

Setup 1	**Date** 01/05/2010	**Time** 8:58:00 AM	**Operator** K.Lindquist	**Van ID** T46	**Key Op** KL	**Vid Cassette**			
Work Order	**Neighborhood**	**District**	**Road** National City						
Place	**Map Page Ref**								

Upstream J28S-12	**MH Depth** ft.	**FSN** 46464	**Verticle Offset** 0 ft.	**Direction** Upstream					
Downstream J28S-13	**MH Depth** ft.	**Diam** 68 **by** 43 in.	**Map Length** 400.6 ft.						
Use Sanitary	**Media Type**	**Material** Plastic Lined Reinforced Concrete Pipe	**Insp Length** 400.60 ft.						
Pipe Det	**Surface** Paving - footpath/cobbles	**Weather** Dry	**Lining**						
Result	**Location** Footpath	**Loc'n remarks**							
Survey Remarks Next to Sweetwater River Bed - South side			**Purpose**						
Maximum Cross Sectional Restriction 4.0 %		**Total Volume of Debris** 59.588 cu. ft.	**Average Depth of Debris** 0.1306 ft.						



DownStream Services, Inc.

DownStream Services, Inc.
Phone: 760-746-2544
Fax: 760-746-2667

MANHOLE CONDITION ASSESSMENT FORM

TASK AREA #:	Siphon	INSPECTION Firm:	Downstream	MH FSN:	113188
INSPECTION DATE:	12/1/2009	INSPECTION TIME:	13:30	Field Book Page / Map ID#	J28S12
Dispatch:	Maintenance	INSPECTION Crew:	DR/HH	Street:	RoW, Sweetwater River
Dispatch Comments:	siphon cleaning in progress: lid & frame removed, tripod, ladder, ventilator set up for confined space entry				

DEFECT	BROKEN	CORROSION	ROOTS	I / I Code
Cover	0	2		
Frame	0	2	0	
Frame Seal	0	0	0	
Grade Ring	0	0	0	0
Riser	0	0	0	0
Cone	0	0	0	0
Wall	0	0	0	0
Bench	0	0	0	
Trough	0	0	0	

SEVERITY CODE 1-MILD:(<25%) 2-MODERATE:(25-50%) 3-SEVERE (>50%

ATMOSPHERE

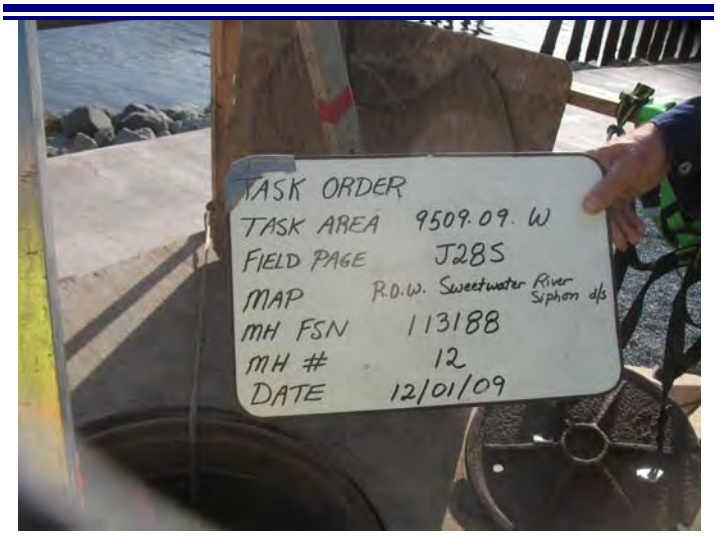
Note: All measurements at MH bottom.

OXYGEN	20.9	%
LEL	0	%
H2S	0	PPM
CO	0	PPM

I/I CODE 1-INFLOW 2-INFILTRATION

OBSERVATION		CODE NO.	CODE
Access		2	1-DRIVE (PAVED) 2-DRIVE (UNPAVED) 3-DRIVE WALK <30' 4-DRIVEWALK >30' 5-NO MAINT. ACCESS (EASY WALK) 6-NO MAINT. ACCESS (DIFFICULT WALK) 7-NO MAINT ACCESS (EASY WALK, CONTACT PROPERTY OWNER) 8-NO MAINT. ACCESS (DIFFICULT WALK, CONTACT PROPERTY OWNER)
Inspection Type		1	1-INTERNAL 2-SURFACE 3-NOT INSPECTED 4-BURIED 5-NOT FOUND
Structure Type		8	1-STND 2-CLN OUT 3-IN DROP 4-OUT DROP 5-ROCK TRAP 6-FILLED IN 7-TEE 8-JUNCTION
Location		10	1-STREET 2-ALLEY 3-SDWALK 4-DRVWY 5-PKWY 6-YARD 7-PKG LOT 8-CRK BED 9-POSS CRK BED 10-OPEN SPACE
Surface Type		3	1-ASPHALT 2-CONCRETE 3-GRAVEL 4-LANDSCAPING 5-NATIVE VEGETATION
Cover	Type:	4	1-PICK 2-CONCEALED PICK 3-GASKETED 4-VENTED 5-STORM 6-5/8" ALLEN BOLT 7-3/4" ALLEN BOLT 8- PLASTIC 5 BOLT 9-ALFALFA BOLT
	Fit:	5	1-GOOD 2-TIGHT 3-LOOSE 4-ROCKING 5-BOLT MISSING 6-GASKET BAD/GONE 7-GOOD O-RING
	Seal	1	1-NONE 2-GASKET 3-SILICONE
	Securing	1	1-NONE 2-STRAPPING BAR 3- ANGLE IRONS 4-5/8" ALLEN BOLT 5-3/4" ALLEN BOLT 6-5 POINT BOLT 7-ALFALFA BOLT 8-6 POINT BOLT 9-BURIED 10-ASPHALT CAP 11-CONCRETE CAP
	Size:	24	
Frame	Offset:	1	1-NO 2-YES
Grade Ring or	Type:	8	1-NONE 2-PRECAST 3-BRICK 4-BLOCK 5-POURED 6-PLASTIC 7-MORTAR 8-LINED
	Height (in)	23	IF > 18" ADD COMMENT, if the sum the grade ring and riser is > 18" it is difficult on a 24" opening
	Min. Dia (in)	40	IF < 36" ADD COMMENT
	Comment		
Cone	Type:	9	1-NONE 2-PRECST 3-BRICK 4-BLOCK 5-POURED 6-BRICK//CONCRETE 7-CLAY 8-PVC 9-LINED
	Shape:	3	1=CONCENTRIC, 2=ECCENTRIC, 3=FLAT TOP
Wall	Type:	9	1-NONE 2-PRECAST 3-BRICK 4-BLOCK 5-POURED 6-BRICK/CONCRETE 7-CLAY 8-PVC 9-LINED
	Diameter (in)		
	Height (in)	173	IF < = 36" ADD COMMENT (Calculated in field)
	Comment		**large vault**
Bench	Type	6	1-NONE 2-PRECAST 3-BRICK 4-BLOCK 5-POURED 6-LINED
Trough Type		2	1-NONE 2-PRECAST 3-POURED 4-VCP 5-PVC 6-BRICK
Steps	Type:	1	1-NONE 2-BAR 3-CAST IRON 4-PLASTIC 5-PLASTIC COATED STEEL
	Condition:	0	1-GOOD 2-CORRODED 3-MIS-ALIGNED 4-BROKEN 5-MISSING 6-UNSAFE
Drop Manhole		1	1-NO 2-YES
MH Insp Depth (ft)		16.3	Rim to Bench
SANGIS MH Depth: (ft)		0	
Surcharge:	Ht Above Bench	0	0=NONE, IF SURCHARGE EVIDENT, RECORD DEPTH OF SURCHARGE (INCHES)

M3 - Down Manhole



M1 - Closed Manhole

MANHOLE CONDITION ASSESSMENT FORM

TASK AREA #:	Siphon	INSPECTION Firm:	Downstream	MH FSN:	113189
INSPECTION DATE:	10/15/2009	INSPECTION TIME:	10:36	Field Book Page / Map ID#	J28S13
Dispatch:	Maintenance	INSPECTION Crew:	DR/HH	Street:	RoW, Sweetwater River
Dispatch Comments:	large vault, headworks of siphon; lightly corroded T-lock liner; siphon cleaning in progress: ventilator set up at insp.				

DEFECT	BROKEN	CORROSION	ROOTS	I / I Code
Cover	0	2		
Frame	0	3	0	
Frame Seal	0	1	0	
Grade Ring	0	1	0	0
Riser	0	1	0	0
Cone	0	1	0	0
Wall	0	1	0	0
Bench	0	1	0	
Trough	0	1	0	

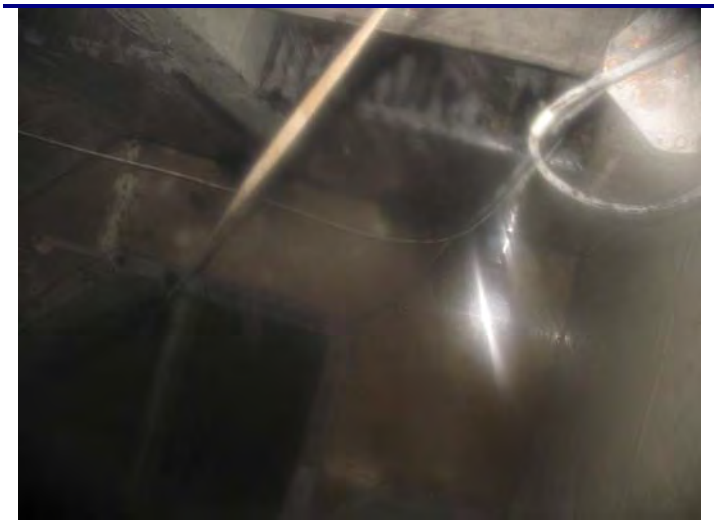
SEVERITY CODE 1-MILD:(<25%) 2-MODERATE:(25-50%) 3-SEVERE (>50%

Note: All measurements at MH bottom.

ATMOSPHERE		
OXYGEN	20.9	%
LEL	0	%
H2S	0	PPM
CO	0	PPM

I/I CODE 1-INFLOW 2-INFILTRATION

OBSERVATION		CODE NO.	CODE
Access		2	1-DRIVE (PAVED) 2-DRIVE (UNPAVED) 3-DRIVE WALK <30' 4-DRIVEWALK >30' 5-NO MAINT. ACCESS (EASY WALK) 6-NO MAINT. ACCESS (DIFFICULT WALK) 7-NO MAINT ACCESS (EASY WALK, CONTACT PROPERTY OWNER) 8-NO MAINT. ACCESS (DIFFICULT WALK, CONTACT PROPERTY OWNER)
Inspection Type		1	1-INTERNAL 2-SURFACE 3-NOT INSPECTED 4-BURIED 5-NOT FOUND
Structure Type		8	1-STND 2-CLN OUT 3-IN DROP 4-OUT DROP 5-ROCK TRAP 6-FILLED IN 7-TEE 8-JUNCTION
Location		10	1-STREET 2-ALLEY 3-SDWALK 4-DRVWY 5-PKWY 6-YARD 7-PKG LOT 8-CRK BED 9-POSS CRK BED 10-OPEN SPACE
Surface Type		2	1-ASPHALT 2-CONCRETE 3-GRAVEL 4-LANDSCAPING 5-NATIVE VEGETATION
Cover	Type:	1	1-PICK 2-CONCEALED PICK 3-GASKETED 4-VENTED 5-STORM 6-5/8" ALLEN BOLT 7-3/4" ALLEN BOLT 8- PLASTIC 5 BOLT 9-ALFALFA BOLT
	Fit:	1	1-GOOD 2-TIGHT 3-LOOSE 4-ROCKING 5-BOLT MISSING 6-GASKET BAD/GONE 7-GOOD O-RING
	Seal	1	1-NONE 2-GASKET 3-SILICONE
	Securing	1	1-NONE 2-STRAPPING BAR 3- ANGLE IRONS 4-5/8" ALLEN BOLT 5-3/4" ALLEN BOLT 6-5 POINT BOLT 7-ALFALFA BOLT 8-6 POINT BOLT 9-BURIED 10-ASPHALT CAP 11-CONCRETE CAP
	Size:	24	
Frame	Offset:	1	1-NO 2-YES
Grade Ring or	Type:	8	1-NONE 2-PRECAST 3-BRICK 4-BLOCK 5-POURED 6-PLASTIC 7-MORTAR 8-LINED
	Height (in)	16	IF > 18" ADD COMMENT, if the sum the grade ring and riser is > 18" it is difficult on a 24" opening
	Min. Dia (in)	36	IF < 36" ADD COMMENT
	Comment		
Cone	Type:	9	1-NONE 2-PRECST 3-BRICK 4-BLOCK 5-POURED 6-BRICK//CONCRETE 7-CLAY 8-PVC 9-LINED
	Shape:	3	1=CONCENTRIC, 2=ECCENTRIC, 3=FLAT TOP
Wall	Type:	9	1-NONE 2-PRECAST 3-BRICK 4-BLOCK 5-POURED 6-BRICK/CONCRETE 7-CLAY 8-PVC 9-LINED
	Diameter (in)		
	Height (in)	177	IF < = 36" ADD COMMENT (Calculated in field)
	Comment		large vault
Bench	Type	6	1-NONE 2-PRECAST 3-BRICK 4-BLOCK 5-POURED 6-LINED
Trough Type		2	1-NONE 2-PRECAST 3-POURED 4-VCP 5-PVC 6-BRICK
Steps	Type:	1	1-NONE 2-BAR 3-CAST IRON 4-PLASTIC 5-PLASTIC COATED STEEL
	Condition:	0	1-GOOD 2-CORRODED 3-MIS-ALIGNED 4-BROKEN 5-MISSING 6-UNSAFE
Drop Manhole		1	1-NO 2-YES
MH Insp Depth (ft)		16.1	Rim to Bench
SANGIS MH Depth: (ft)		24	
Surcharge:	Ht Above Bench	0	0=NONE, IF SURCHARGE EVIDENT, RECORD DEPTH OF SURCHARGE (INCHES)



M3 - Down Manhole

M1 - Closed Manhole

Attachment 10. HDR Inspection Report (2018)

Technical Memorandum

Date:	Friday, May 11, 2018
Project:	Wastewater Condition Assessment Program for Pipelines and Manholes Evaluation
To:	City of San Diego
From:	HDR Engineering, Inc.
Subject:	**SMI Siphon Access Structure Condition Assessment, Facility Sequence Number 113189**

1 Introduction

The siphon, which allows the South Metropolitan Interceptor (SMI) to cross the Sweetwater River, was constructed in 1971 to replace a 90-inch-diameter reinforced concrete pipe sewer. The siphon consists of two transition structures: one on the south river bank (Facility Sequence Number [FSN] 113189) and the other on the north (FSN 113188) river bank, as well as four elliptical barrels encased in concrete (Figure 1). The siphon location is shown in Figure 2.

Figure 1. Sweetwater River Crossing Siphon

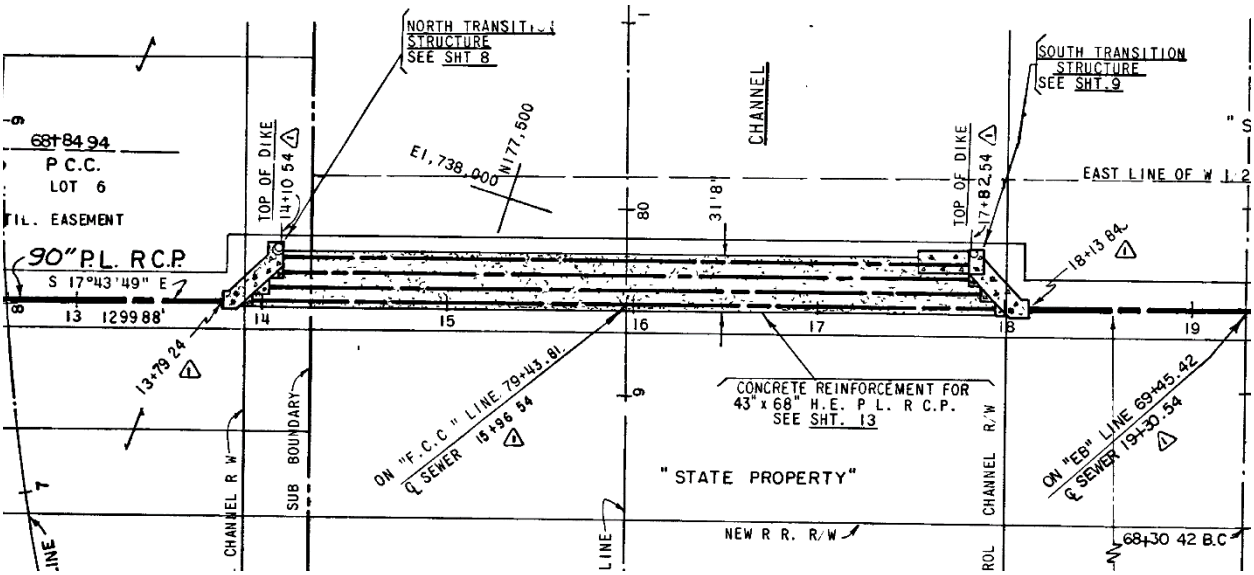
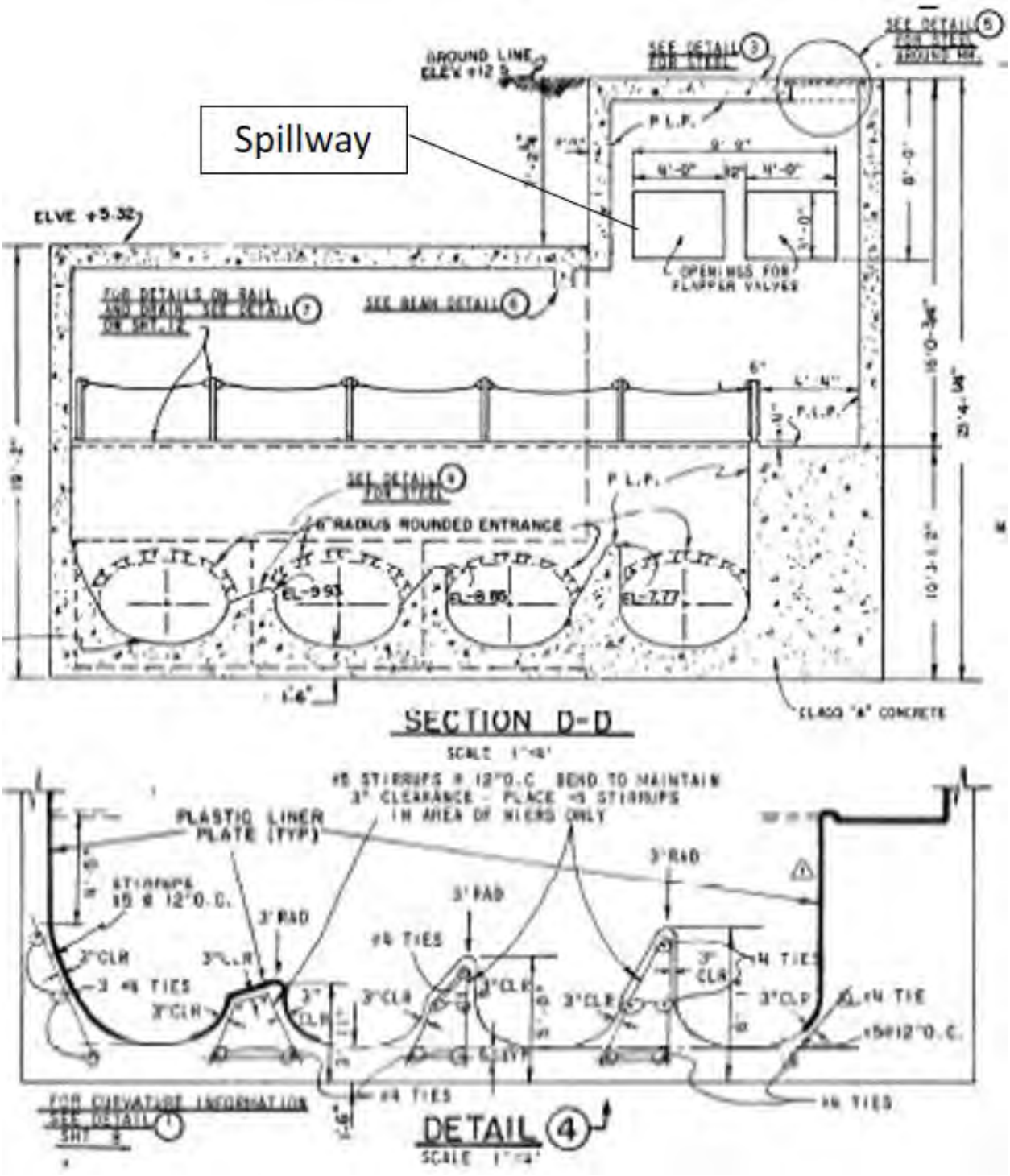


Figure 2. Sweetwater River Siphon Location

FSN 113189 receives wastewater flow through the 90-inch-diameter SMI reinforced concrete pipe and the 54- inch-diameter reinforced concrete pipe Sweetwater sewer pipe. The bottom channel includes ridges that facilitate distribution of the flow into the siphon barrels (Figure 3).

Figure 3. Sweetwater River Crossing Siphon



The siphon shaft is fitted with two square openings (Figure 3). These openings are overflow structures to be used in an emergency, allowing wastewater to overflow should Pump Station 1 fail. The overflow structures were originally fitted with flapper valves. The City of San Diego replaced these with duckbill valves at a later date. Figure 4 shows the FSN 113189 duckbill valves.

Figure 4. Spillway Duckbill Valves

The new duckbill valves are mounted on a stainless steel plate. This plate is bolted to the frame of the flapper valves that have been since replaced (Figure 5).

Figure 5. Stainless Steel Plate Connection to Existing Frame

2 Background

City of San Diego staff has reported severe odor issues around FSN 113189. The City of San Diego performed an initial assessment and observed acute concrete corrosion around the duckbill valves at the siphon overflow structure. The corroded concrete is allowing foul air from the siphon access structure to escape.

HDR Engineering (HDR), as part of Task Order 2, under the wastewater facilities condition assessment contract, assessed the internal condition of this access structure. The field-collected inspection data is presented in Attachment A. HDR's assessment indicated liner delamination inside

the overflow structure. The concrete was soft with some degradation; however, the assessment was conducted during night hours and low flow conditions, preventing an exterior structure assessment.

As part of the facilities condition assessment contract, HDR completed the external assessment of siphon access structure 113189 and provided recommendations for concrete repairs and foul air control/treatment.

3 Condition Inspection Findings

The concrete around the steel plates is experiencing corrosion and significant concrete loss. Concrete loss is more prevalent at the bottom and side edges of the stainless steel plates (Figure 6).

Figure 6. Duckbill Installation Plate Concrete Loss and Corrosion

Figure 7 illustrates corrosion of the manhole cover, ring, handrails, and other metal structures on top. Figure 8 shows the site around the south transitional structure.

Figure 7. Corrosion of the South Transition Structure Manhole Cover

Figure 8. Site around the South Transitional Structure

4 Condition Assessment Findings and Conclusions

Two issues are observed at the south transitional structure:

- The concrete corrosion is caused by direct contact with Hydrogen Sulfide (H_2S) gases.
- The odor problem is caused by foul air leaking at the south transitional structure.

The H_2S-laden air in the headspace in the 90-inch diameter SMI and 54-inch diameter Sweetwater sewer pipe is dragged in the flow direction. As the air reaches the FSN 113189 transition structure, it stops moving as it has nowhere to go. The siphon is not fitted with an air jumper to move the volume of air downstream. Air pressure increases and releases through vent holes in the manhole cover, manhole rim, cracks in the concrete, and gaps around the duckbill steel frame. When combined with the wastewater moisture, the atmospheric oxygen and H_2S create an ideal environment for the sulfur bacteria to thrive and generate sulfuric acid, which reacts with the concrete, causing deterioration.

5 Recommendations

5.1 Concrete Repair

HDR recommends the following steps for repairing the corroded concrete and damaged T-lock liner around the overflow structure:

- Remove the duckbill valves, stainless steel plate, and the old flapper valve frame
- Remove up to 1 inch of existing concrete, check for corrosion and damage to the rebar, as well as repair/splice the rebar, as needed

- Repair the concrete using fast setting polymer modified type V Type V concrete with Xypex Bio-San C500 or equal additive
- Repair the T-Lock liner inside the overflow structures
- Install the existing stainless steel frame properly sealed with H2S-resistant sealant to prevent foul air leakage and mount the duckbill valves

Because site access is difficult, a coffer dam or equal will be needed to allow working through varying tide conditions.

A preliminary cost estimate for the concrete repair is shown in Table 1. Direct costs for concrete repair are based on industry costs and contractor rough estimates. Indirect costs, assumed at 75 percent of the direct costs, include administration, design, construction management, bond and insurance, and contingency costs. A construction premium at 300 percent of the direct cost is applied to accommodate site constraints and work conditions.

Table 1. Concrete Repair Cost Estimate

Cost Component	Factor (%)	Estimated Cost ($)
Direct construction cost	—	50,000
Indirect costs	75	37,500
Construction premium	300	150,000
Total Cost	**—**	**237,500**

5.2 Foul Air and Odor Control

Several methodologies are available to move the foul air volume at the siphon and mitigate the H2S formation. These technologies are listed below and followed by a brief discussion for each technology. Before selecting an odor control solution it is important to collect and assess the following data: (a) the air flow in the wastewater pipes; (b) air pressure; and (c) H_2S levels.

HDR recommends that an assessment study to measure these parameters for both the 90-inch diameter SMI and 54-inch-diameter Sweetwater wastewater pipeline be completed prior to selection of a suitable foul air and odor control process.

Also, it is not feasible to estimate the costs associated with the mitigation measure for the odor control issue, as the size of the system, proximity of utilities location, permitting requirements, site conditions, including space availability, are unknown. A cost per cubic feet of foul air treated is included to allow for preliminary comparisons between the suggested methodologies.

The methodologies considered for foul air mitigation/treatment are as follows:

- Air jumper
- Foul air treatment:
  - Carbon adsorber
  - Photoionization

- Super oxygenation
- Iron salts addition

5.2.1 Air Jumper

This passive solution requires some maintenance, no downtime, no chemicals, and no additional utilities. An air jumper is a pipe that could be installed across the river and connect the two structures. An air jumper will create a passage for the air to pass from the south structure (FSN 113189) to the north structure (FSN 113188) and continue to flow downstream along with the wastewater. The pipe size will depends on the air flow and available pressure. The pipe may be constructed of chlorinated polyvinyl chloride pipe to eliminate corrosion issues. A feasibility study is recommended to pursue this option further. Based on preliminary findings, routing the air jumper pipe via the San Diego Metro Transit System Blue Line Bridge may be the best possible option (Figure 9).

Air jumper advantages:

- No chemicals addition required
- No utilities, such as power or water, required on site
- Passive system

Air jumper disadvantages:

- Selecting the right size requires field data
- Routing of the air jumper in this location will be challenging because of the limited crossing options
- Difficult and high construction costs
- Some maintenance and regular inspections will be required
- Difficult permitting process

Figure 9. Proposed Routing for the Air Jumper Pipe

5.2.2 Foul Air Treatment

It is possible to treat the foul air volume at FSN 113189 on site using different treatment technologies. HDR evaluated three viable technologies to install at FSN 113189. Because of the site constraints and difficulty of construction, adding a foul air treatment at this location will be expensive. Table 2 presents the technology comparison.

Table 2. Summary of Foul Air Treatment Technologies

Technology	Description	Cost per cubic feet of foul air treated ($)	Pros	Cons	Photo
Carbon adsorber	The air stream is passed over a bed of adsorbent (carbon), and the odor-causing compounds are attracted to and adhere to the surface of the adsorbent.	13- 15	• Simple to operate • >95% odor reduction • Handles changes in pollutant loading • Small footprint • No water or chemical required	• Carbon bed replacement can be costly and labor intensive • Spent carbon must be disposed of properly (landfill) • Not effective at removal of ammonia	

Table 2. Summary of Foul Air Treatment Technologies

Technology	Description	Cost per cubic feet of foul air treated ($)	Pros	Cons	Photo
Photo-ionization	Foul air passes through a chamber, where it is exposed to intense ultraviolet light. The ultraviolet light creates free radicals oxidizing the odor-causing compounds. The air then passes through a catalyst, where any remaining odor compounds are adsorbed and broken down by the constant flow of free radicals coming with the air from the ultraviolet section.	18-20	• Small footprint • Handle very high concentrations of odorous compounds (100s of parts per million of H2S). • Effective on all reduced sulfur compounds • Easily handles spikes • Low maintenance requirements • No water or chemicals required • Can easily be turned on or off and begins working immediately • Low energy demand • Low back pressure (2 to 3 inches water column)	• Limited installations and vendors in North America • High capital cost • Higher maintenance cost for repacking ultraviolet lights lamps and catalyst • Ozone generation and release to atmosphere	

Table 2. Summary of Foul Air Treatment Technologies

Technology	Description	Cost per cubic feet of foul air treated ($)	Pros	Cons	Photo
Super-oxygenation	A side stream of the wastewater into the siphon structure would be pumped through a conical shaped oxygen transfer device. Gaseous pure oxygen is metered into the cone and completely dissolved because of the exceptionally large gas/water interface generated by the bubble swarm inside of the cone. The oxygenated water is blended back into the receiving body. The added oxygen helps reduce the generation of hydrogen sulfide because of septic condition in the sewer pipe. The system takes atmospheric air and separates the oxygen to be injected in the side stream of sewage.	30-40	• No chemical use • Relatively low footprint • Reduces biochemical oxygen demand load in wastewater • Create aerobic condition in sewer	• High energy cost to operate (pumps and compressors) • Pure oxygen is explosive • Continual monitoring and maintenance for pumps and equipment • Need to be located upstream to be effective • Requires monitoring of flow inside the sewer pipe • H2S production will continue as the added oxygen is consumed	

Table 2. Summary of Foul Air Treatment Technologies

Technology	Description	Cost per cubic feet of foul air treated ($)	Pros	Cons	Photo
Iron Salts Addition	Iron salts, like ferrous chloride, ferric chloride, and ferrous sulfate, are applied to a wastewater collection system to oxidize and/or precipitate dissolved sulfide. Chemicals must be added upstream of the FSN 113187 on both 90-inch SMI and 54-inch Sweetwater sewer line, about two to three manholes upstream.	10-15	• Proven effective for H2S removal • Relatively low cost per gallon of sewage treated	• Not effective for other odorous compounds • Handling of corrosive and hazardous chemicals • Requires double containment tanks • Continuous monitoring for the dosing system • Relatively larger footprint • Highly corrosive to pipes and equipment • May impact downstream treatment processes	

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Attachment A. FSN 1131689, 2015 Inspection Report

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Facility Number: **113189**

Priority: **3 - Low Priority**
General Recommendation **Spot Repair**
Street: **California State Route 54**
Cross Street: **Interstate-5**

Inspection Firm: **V & A**
Inspection Crew: **O. Pohl**
Inspection Date: **1/21/2014**
Inspection Time: **2:55**

Access: **Truck Access**
Location: **Open Space**
Surface Type: **Native Vegetation**
Structure Type: **Standard**

General Comments: The structure is in fair condition. There is moderate debris and grease built up in the structure as a result of surcharging.

Analysis:

The area in front of the third and fourth siphons have collected a large grease and debris layer, a result of water rising and receding with the flow and depositing the grease and debris with each recession in flow. There is also evidence of surcharge events due to presence of debris and sediment on landing. Much of the vertical and top horizontal portions of the liner on the rectangular portion of the overflow structures have pulled away from the underlying concrete. The underlying concrete is soft and degrading. Inside the main chamber, the T-Lock liner is in good condition with no rips, tears, or large holes. There is a large horizontal beam located on the ceiling. On the northern portion of the vertical wall directly below this beam, at liner seam has four large bubbles underneath the liner. There is no cut or other compromise to the liner in the main chamber. On the transition from the riser to the main structure, there are tears in the liner that comprise 75% of the circumference of the riser. These tears are less than one-inch wide, the concrete underneath is soft in places indicating some attack. The lip of the manhole frame upon which the lid rests is worn and does not provide a complete seal.

Detailed Recommendation:

The manhole should be cleaned to remove the grease and debris that has accumulated as a result of surcharge. The liner on the riser should trimmed, the soft concrete below the liner should be removed and replaced with polymer concrete, and the riser should be lined with T-Lock. The manhole frame and cover should be sealed with silicone.

Estimated Construction Cost:

Quantity	Units	Rate	Description	Cost
1	EA	$2,000.00	Manhole Cleaning With Confined Space Entry	$2,000
1	EA	$1,000.00	Remove, Repair and Patch Liner	$1,000
1	DAY	$5,000.00	Confined Space Entry	$5,000
1	EA	$100.00	Seal Manhole Cover With Silicone	$100
			Total Estimated Construction Cost:	**$8,100**

Facility Number: **113189**

MH Insp Depth (ft): **16.75' Rim to Center of Channel**

Surcharge Above Bench (in): **N/A**

Frame and Cover

Direction	Securing	Seal	Type	Size	Depth
	5/8" Allen Bolts	Silicone	Pick	39"	

Connections

	Direction	Size	Interceptor
DS 1	11	42	☑
US 1	1	42	☑
US 2	5	90	☑
US 3			☐

Grade Ring

Direction	Type	Depth
	None	

Cone

Direction	Shape	Type
	None	N/A

Riser

Depth From	Depth To	Type	Shape

Wall

Type	Dimension 1	Dimension 2
Lined		

Landing

Depth	Type	Height
	Lined	

Facility Number: **113189**

Defects

Comment:
The majority of the vertical walls and top horizontal portion of each overflow box, where the liner terminates has delaminated from the underlying concrete and has allowed the concrete to be deteriorated.

Type: Liner Defect

Location: Overflow Channel

Severity: Moderate

Comment:
Approximately 75% of the circumference has splits/tears in liner. The concrete underneath is soft.

Type: Liner Defect

Location: Riser

Severity: Moderate

Comment:
The lip of the manhole frame upon which the manhole lid rests is corroded and provides a poor seal when closed.

Type: Corrosion

Location: Manhole Frame

Severity: Moderate

Facility Number: **113189**

Comment:

Blisters were noted in the liner on the wall of the main structure.

Type: Lining Defect

Location: Wall

Severity: Small

Facility Number: **113189**

Inspection Photos

Manhole lid.

Manhole frame.

Close up of lip of manhole frame.

Plan view of manhole structure.

View of 1 of 2 overflow box structures.

View of interior of 'duckbill' valve and overflow box structure.

Facility Number: **113189**

View of vertical walls in main structure.

View of landing in main structure.

View of 1 of 2 overflow box structures.

Overall view of main structure, looking towards main influent pipeline.

Overall view of main structure, looking towards main influent pipeline.

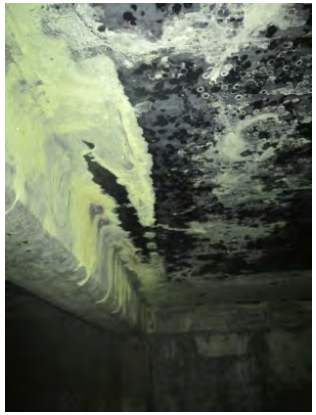
Overall view of main structure, looking towards main influent pipeline.

Facility Number: **113189**

View of angled weir walls in main open channel.

View of open channel.

View of landing in main structure.



View of beam and ceiling in main structure.

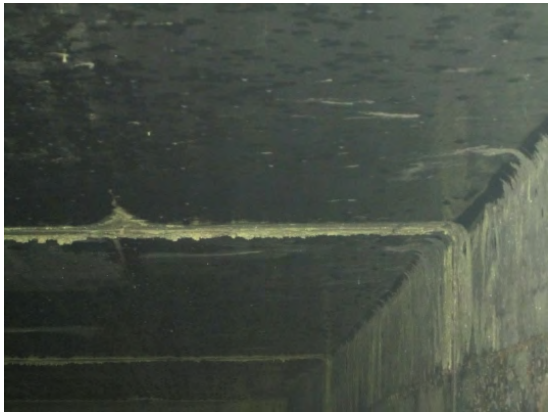
View of liner on main structure wall.

View of liner on main structure wall.

Facility Number: **113189**

View of open channel near influent channel.

View of open channel near influent channel.



Ceiling in main structure.

Ceiling in main structure.

View of seam and bubbles on vertical wall in main structure.

View of interior of 'duckbill' valve and overflow box structure.

Facility Number: **113189**

View of liner of overflow box structure.

View of vertical portion of liner of overflow box structure.

View of liner of overflow box structure.

View of cuts in liner at bottom of short barrel section in manhole.

View of corroded manhole frame and cuts in liner at bottom of short barrel section in manhole.

View of cuts in liner at bottom of short barrel section in manhole.

Keith Yaeger
SDRWQCB

September 14, 2020

Attachment B – Twelve Large Siphon Inspections and Assessment: City Costs Summary

Public Utilities Department, Wastewater Collection Division

FY 2021 COST RECOVERY SHEET

Service Request (SR) # or Event: Notice of Violation - Response #12

Today's Date: 8/27/20

Date of Job:

Notice of Completion (NOC):

The cost for review and analysis of the siphons within the collection system, including the cost for the initial inspection and assessment, and the cost to develop a schedule for routine inspections, assessments, and cleaning frequencies.

Personnel Expense (PE):

Class No.	Classification		Hourly Wage Straight 1	Straight Hours (Enter)	Straight Time Total		Overtime Hourly Wage 1	Overtime Hours (Enter)	Overtime Total		Totals
1153	Assistant Civil Engineer		$127.22	70.0	$8,905.69		$175.21		$0.00		$8,905.69
1221	Associate Civil Engineer		$164.98	95.0	$15,672.77		$220.04		$0.00		$15,672.77
1293	Cement Finisher		$120.64		$0.00		$162.68		$0.00		$0.00
1439	Equipment Operator I		$100.72	8.0	$805.76		$130.20		$0.00		$805.76
1440	Equipment Operator II		$106.55		$0.00		$138.90		$0.00		$0.00
1445	Equipment Operator III		$120.46		$0.00		$153.93		$0.00		$0.00
1488	General Water Utility Supervisor		$166.19	6.5	$1,080.24		$218.61		$0.00		$1,080.24
1513	Heavy Truck Driver I		$90.62		$0.00		$118.58		$0.00		$0.00
1668B	Planner		$166.19		$0.00		$219.36		$0.00		$0.00
1666	Plant Process Control Electrician		$135.58		$0.00		$186.79		$0.00		$0.00
1668	Plant Process Control Supervisor		$172.56	6.0	$1,035.36		$226.67		$0.00		$1,035.36
1652	Plant Technician I		$86.75		$0.00		$117.63		$0.00		$0.00
1653	Plant Technician II		$103.55		$0.00		$136.76		$0.00		$0.00
1654	Plant Technician III		$114.60		$0.00		$152.01		$0.00		$0.00
1734	Principal Engineering Aide		$121.58		$0.00		$163.63		$0.00		$0.00
1727	Principal Water Utility Supervisor		$143.56	11.0	$1,579.15		$183.14		$0.00		$1,579.15
1855	Senior Civil Engineer		$208.36	20.0	$4,167.28		$268.32		$0.00		$4,167.28
1861	Senior Engineering Aide		$109.41		$0.00		$144.69		$0.00		$0.00
1870	Senior Water Utility Supervisor		$134.02	40.0	$5,360.92		$170.44		$0.00		$5,360.92
1978	Utility Worker I		$72.38	8.0	$579.06		$96.02		$0.00		$579.06
1376	Wastewater Pretreatment Insp. III		$177.09		$0.00		$239.26		$0.00		$0.00
1991	Water Utility Supervisor		$120.32		$0.00		$152.81		$0.00		$0.00
1992	Water Utility Worker		$84.12	8.0	$672.95		$110.27		$0.00		$672.95
					$39,859.19				$0.00		$39,859.19
Total PE:											**$39,859.19**

1 - Wage is Loaded and Includes Loaded Fringe and Overhead as per PE Calculation Tab

Non-Personnel Expense (NPE):

Equipment:

Note: Equipment is Owned by PUD-WWC. Rates are Used to Request Approximate Reimbursement. Items that have an * are Rented from Fleet Operations Department

Vehicle Type/Class 1	Vehicle Type Description 1		Hourly Rate	Hours (Enter Data)	Total
110	PU-1/2T-MWWD		$6.00		$0.00
113	SUV-5K GVW-4X4		$6.00		$0.00
201	VAN-CARGO-MWWD		$7.00		$0.00
207	PU-3/4T		$8.00		$0.00
217	DUMP-TRUCK 1.5 CY*		$15.00		$0.00
303	VAN-TELEVISION		$30.00		$0.00
401	TRK-SVC-LEAK-DSL-MWWD		$12.00		$0.00
514	TRK-SVC-COMPRESS-17.5K GVW		$18.00		$0.00
610	RODDER-SEWER-MWWD		$19.00		$0.00
702	TRK-DUMP-5CY		$19.00		$0.00
703	TRUCK-DUMP, 4X4, 5 CY*		$22.00		$0.00
712	TRK-SVC-COMPRESSOR-HEAVY		$18.00		$0.00
720	TRUCK-CREW*		$15.00		$0.00
803	TRK-DUMP-8-10CY		$20.00		$0.00
804	TRK-DUMP-10-12CY		$22.00		$0.00
810	VACTOR-CLEANER-DRAIN-10CY		$43.00		$0.00
824	VACTOR-CLEANER-DRAIN-5CY		$43.00		$0.00
829	TRK-TRACTOR-5TH WHL-2AXLE		$13.00		$0.00
831	TRK-SVC-CREW-4X4		$26.00		$0.00
903	TRACTOR - BACKHOE*		$16.00		$0.00
904	TRACTOR-SKID STEER		$7.00		$0.00
917	TRAILER - MEDIUM (5TH WHEEL)		$4.00		$0.00
933	EXCAVATOR-TRACK		$11.00		$0.00
937	TRACTOR-BACKHOE-CONSTRUCT		$20.00		$0.00
956	TRACTOR-EXCAVATOR-MINI		$11.00		$0.00
	6" TRASH PUMP		$205.00		$0.00
	8"/10" TRASH PUMP		$465.00		$0.00
					$0.00

Equipment Total

1 - Vehicle Type/Class & Description Based on Usage & Assignment Rates FY 2019' Spreadsheet Provided by Fleet Operations Department

Material:	NOTE: PLEASE PROVIDE RATES BASED ON ACTUAL EXPENSES FOR THESE SERVICES										
	Material		**Unit Cost 1**	**Unit(s)**	**Total**		**Material**		**Unit Cost 1**	**Unit(s)**	**Total**
	4 PVC SWR GXG 22-1/2 BEND		$7.47		$0.00		CONCRETE C/BOX		$23.00		$0.00
	4 PVC SWR GXS 22-1/2 BEND		$7.12		$0.00		CONCRETE PER BAG		$21.63		$0.00
	4 PVC SWR GXG 45 BEND		$7.50		$0.00		8 GRIPPER MECH PLUG		$37.78		$0.00
	4 PVC SWR GXS 45 BEND		$6.73		$0.00		DUCK BUTTER LUB		$6.41		$0.00
	4 PVC SWR GXG 90 ELL		$11.78		$0.00		MISC ITEM				$0.00
	4 PVC SWR GXS 90 BEND		$8.66		$0.00						$0.00
	4 PVC SWR GXGXG WYE		$12.91		$0.00						$0.00
	4 PVC SWR GXGXG TEE		$12.13		$0.00						$0.00
	4X3 ABS DWV COUP		$6.00		$0.00						$0.00
	6 PVC SWR GXG 22-1/2 BEND		$14.75		$0.00						$0.00
	6 PVC SWR GXS 22-1/2 BEND		$13.99		$0.00						$0.00
	6 PVC SWR GXG 45 BEND		$15.20		$0.00						$0.00
	6 PVC SWR GXS 45 BEND		$13.47		$0.00						$0.00
	6 PVC SWR GXG 90 BEND		$17.33		$0.00						$0.00
	6 PVC SWR GXS 90 BEND		$18.32		$0.00						$0.00
	6 PVC SWR GXGXG WYE		$29.64		$0.00						$0.00
	8 PVC SWR GXG 22-1/2 BEND		$42.93		$0.00						$0.00
	8 PVC SWR GXS 22-1/2 BEND		$44.84		$0.00						$0.00
	8 PVC SWR GXG 45 BEND		$42.54		$0.00						$0.00
	10 PVC SWR GXG 22-1/2 BEND		$117.48		$0.00						$0.00
	10 PVC SWR GXG 22-1/2 BEND		$114.28		$0.00						$0.00
	10 PVC SWR GXG 45 BEND		$110.38		$0.00						$0.00
	12 PVC SWR GXG 22-1/2 BEND		$153.20		$0.00						$0.00
	12 PVC SWR GXS 22-1/2 BEND		$149.92		$0.00						$0.00
	12 PVC SWR GXG 45 BEND		$160.30		$0.00		* Plates applies drop-off and pick up charge				$0.00
	Misc Materials (Items not in table type them in)										
Material Total										**$0.00**	
1 - Unit Cost Determined by Field Staff in Construction Section and Updated As Needed											
Total NPE:											**$0.00**
Total PE & NPE:											**$39,859.19**

Preparer's Name, Title, & Date:

Attachment C – Cleaning Frequency Adjustments Excerpt from Section 3.0

There are several reasons why a pipe would be included under the Accelerated Cleaning Program. These include maintenance-related SSOs or blockages occurring on a pipe previously not under this program, cleaning condition data from a different program which indicates a maintenance-related issue, and inspection data which indicates a maintenance issue. There are also several reasons why a pipe would not be included under the Accelerated Cleaning Program. One example is a pipe that used to have a maintenance issue, but was repaired. Adding and deleting pipes from the Accelerated Cleaning Program are discussed in Sections 3.1.3.1 through 3.1.3.3.

3.1.3.1 Cleaning Frequency Adjustments based on Cleaning Crew Data

The first method for adjusting cleaning frequencies will be based on current cleaning cycle condition findings and historical condition findings. There are four standard condition findings: "clear", "light", "medium", and "heavy". Table 3-1 contains descriptions of "clear", "light", "medium", and "heavy" findings. The condition of a pipe just beginning to need cleaning returns a "light" finding of roots, grease, or debris. If a pipe is found to have "medium" or "heavy" findings, this might be an indication the cleaning frequency at the pipe is not frequent enough. There are always situations where this may not be true (such as a structural failure, vandalism, construction-related blockages, etc.) Also, if a pipe consistently has a "clear" finding, then its cleaning frequency may be too high and could be reduced.

Table 3-1
Guidelines for Condition Findings

Clear	Light	Medium	Heavy
No observable grease, roots, or sludge	1.0 – 1.5 gallons of sludge, small chunks of grease, 20 – 30 minutes to clean a line, 1 – 2 passes to clear the water	2 – 3 gallons of sludge, moderate chunks of grease, 30 minutes to clean a line, 2 – 3 passes to clear the water	4 or more gallons of sludge, grease, clumps of roots, more than 30 minutes to clean, more than 4 passes to clear the water
Note: A "line" is a pipe segment of approximately 300-feet between two manholes.			

Sections 3.1.3.1.1 through 3.1.3.1.3 describe the process which will be implemented within the new Microsoft Access-based asset management system in the fourth quarter of calendar year 2002. The purpose of this system is to direct the Maintenance Coordination/Scheduling section to those pipes needing to have changes made in their cleaning frequency based on current condition findings and condition history. No suggestion will be made if the algorithm detects that a pipe is being maintained at the proper frequency, or if insufficient historical data exists to make a recommendation.

3.1.3.1.1 Decreasing a Pipe's Cleaning Frequency

The following logic will be used to recommend a decrease in cleaning frequency. If a pipe is on a:

- 1 to 6-month cleaning frequency, has three "clear" findings in a row, and is cleaned within its target cleaning window each time, then the suggestion will be to decrease its cleaning frequency one step. For example, if a pipe on a 3-month cleaning schedule gets cleaned three times, each time within its target cleaning window and the findings are "clear", then this algorithm would suggest this pipe is a candidate to be maintained at a 6-month frequency instead of a 3-month frequency.
- 12 to 24-month frequency and it has two "clear" findings in a row and is cleaned within its target cleaning window each time, then this algorithm would suggest decreasing its cleaning frequency one step. For example, if a pipe on a 12-month cleaning schedule gets cleaned two times, each time within its target cleaning window and the findings are "clear", then this algorithm would suggest this pipe is a candidate to be maintained at a 24-month frequency instead of a 12-month frequency. Pipes on a 24-month frequency receiving two "clear" findings will be suggested to move to a 120-month cleaning frequency under the area cleaning category of the System-Wide Cleaning Program.
- Pipes on a 120-month schedule will never be cleaned less frequently unless the policies stated in the System-Wide Cleaning Program Report are changed.

Pipes cleaned *past* their target cleaning window will still be considered for a decrease in their cleaning frequencies. For example, if a pipe with a 3-month cleaning frequency was cleaned four weeks after its scheduled cleaning date and still came back with a "clear" finding, that cleaning would count towards one of the three "clear" findings needed to decrease its frequency.

Pipes cleaned *before* their target cleaning window will not be considered for a decrease in their cleaning frequencies.

3.1.3.1.2 Increasing a Pipe's Cleaning Frequency

The following logic will be used to recommend an increase in cleaning frequency. If a pipe is on a:

- 3 to 6-month frequency and receives a "medium" or "heavy" condition finding and is cleaned within its target cleaning window, then the suggestion will be to increase the cleaning frequency one step. For example, if a pipe on a 3-month cleaning schedule gets cleaned one time within its target cleaning window and the finding is "medium", then this algorithm would suggest that this pipe is a candidate to be maintained at a 1-month frequency instead of a 3-month frequency.
- 12 to 24-month frequency and it has two "medium" findings in a row, or one "heavy" condition finding and is cleaned within its target cleaning window each time, then the suggestion will be to increase the cleaning frequency one step. For example, if a pipe on a 12-month cleaning schedule gets cleaned two times, each time within its target cleaning

window, and the findings are both "medium", then this algorithm would suggest this pipe is a candidate to be maintained at a 6-month frequency instead of a 12-month frequency.

- 120-month frequency and it gets a "medium" or "heavy" condition finding, then the suggestion will be to increase the cleaning frequency one step. For example, if a pipe on a 120-month cleaning schedule gets cleaned one time and the finding is "medium", then, this algorithm would suggest that this pipe is a candidate to be maintained at a 24-month frequency instead of a 120-month frequency. This constitutes transferring a pipe from the area cleaning category of the System-Wide Cleaning Program into the Accelerated Cleaning Program.

Pipes which are cleaned *before* their target cleaning windows are still to be considered for an increase in their cleaning frequencies. For example, if a pipe with a 3-month cleaning frequency was cleaned 4-weeks before its scheduled cleaning date and still came back with a "medium" or "heavy" finding, then that cleaning would count towards increasing the cleaning frequency to 1-month.

Pipes which are cleaned *past* their scheduled target windows will not be considered for an increase in their cleaning frequencies. The Maintenance Coordination/Scheduling section may still chose to consider this pipe for a change in cleaning frequency.

3.1.3.1.3 Maintaining a Pipe's Cleaning Frequency

The following logic will be used to determine that pipes are being cleaned at the proper frequency. If a pipe is on a:

- 1 to 6-month frequency and its condition findings are "light" or vary between "light" and "clear", with less than three "clear" findings in a row, and is cleaned within its target cleaning window, then it is believed that the pipe is being maintained at the proper frequency and no suggestion will be made.

- 12 to 24-month frequency and its condition findings are "light" or, vary between "clear", "light" and up to one "medium", with less than two "clear" findings in a row, and is cleaned within its target cleaning window, then it is believed that the pipe is being maintained at the proper frequency and no suggestion will be made.

- 120-month frequency and its condition findings are either "light" or "clear" every time, and is cleaned within its target cleaning window, then it is believed that the pipe is being maintained at the proper frequency and no suggestion will be made.

3.1.3.2 Cleaning Frequency Adjustments based on CCTV Crew Data

A second substantial source of pipe condition information is generated from Closed Circuit Television (CCTV) inspection work. CCTV inspections are completed by the Construction and TV section or by contractors directed by the Engineering Planning section. One of the CCTV program's primary goals is the focus on high maintenance frequency pipes. The intent of MWWD is to use this data to help determine which cleaning program a pipe should be a part of, then to help optimize the pipe's maintenance frequency. CCTV data is used along with any

available cleaning history to make such a decision. The following logic for frequency adjustments will be implemented in the first or second quarter of calendar year 2003. The following logic may be updated as the program is implemented.

3.1.3.2.1 Decreasing a Pipe's Cleaning Frequency

At this time, CCTV data alone will not be used to decrease a pipe's cleaning frequency. MWWD believes that, although CCTV data provides excellent condition data, an investigation during a single visit cannot provide adequate justification to decrease the cleaning frequency. A more conservative approach using longer term investigations through cleaning activities (as described earlier in Section 3.1.3.1) will be used.

3.1.3.2.2 Increasing a Pipe's Cleaning Frequency

CCTV investigations will be used to increase a pipe's cleaning frequency. The same logic as described in Section 3.1.3.1.2 will be used to recommend an increase in cleaning frequency. Essentially, this approach treats CCTV condition data findings equal to cleaning findings.

The following logic will be used to recommend an increase in cleaning frequency. If a pipe is on a:

- 3 to 6-month frequency and it ever gets a "medium" or "heavy" condition finding and is CCTV inspected within its target cleaning window and the cleaning has not taken place, then the suggestion will be to increase the cleaning frequency one step. For example, if a pipe on a 3-month cleaning schedule gets CCTV inspected within its target cleaning window, has not been cleaned yet, and the finding is "medium", then this algorithm would suggest that this pipe is a candidate to be maintained at a 1-month frequency instead of a 3-month frequency.

- 12 to 24-month frequency and it has two "medium" findings in a row, or one "heavy" condition finding and is CCTV inspected or cleaned within its target cleaning window each time, then the suggestion will be to increase the cleaning frequency one step. For example, if a pipe on a 12-month cleaning schedule gets cleaned once within its target cleaning window and the finding is "medium", then, gets CCTV inspected within its next target cleaning window, but has yet to be cleaned, this algorithm would suggest that this pipe is a candidate to be maintained at a 6-month frequency instead of a 12-month frequency.

- 120-month frequency and it receives a "medium" or "heavy" condition finding, the suggestion will be to increase the cleaning frequency one step. For example, if a pipe on a 120-month cleaning schedule gets CCTV inspected and the finding is "medium", then this algorithm would suggest this pipe is a candidate to be maintained at a 24-month frequency instead of a 120-month frequency. This constitutes transferring a pipe from the area cleaning category of the System-Wide Cleaning Program into the Accelerated Cleaning Program.

Pipes which are CCTV inspected *before* their target cleaning windows are still to be considered for an increase in their cleaning frequencies. For example, if a pipe with a 3-month cleaning

frequency was CCTV inspected 4-weeks before its scheduled cleaning date and still came back with a "medium" or "heavy" finding, then that CCTV inspection would count towards increasing the cleaning frequency to 1-month.

Pipes which are CCTV inspected *past* their scheduled target windows will not be considered for an increase in their cleaning frequencies.

Pipes found to pose an immediate risk of causing a blockage or a spill based on CCTV inspections will be immediately reported to Emergency Response section. Cleaning frequency adjustments for such pipes will be made on a case by case basis based on all available data.

3.1.3.2.3 Maintaining a Pipe's Cleaning Frequency

CCTV inspections will be used to maintain a pipe's cleaning frequency. Similar logic as described in Section 3.1.3.1.3 will be used to validate the decision to maintain a pipe's cleaning frequency. Essentially, this approach treats CCTV condition data findings equal to cleaning findings.

The following logic will be used to determine that pipes are being cleaned at the proper frequency. If a pipe is on a:

- 1 to 6-month frequency and its condition findings, based on CCTV or cleaning, are "light" or vary between "light" and "clear", with less than three "clear" findings in a row, and is cleaned or CCTV inspected within its target cleaning window, then it is believed that the pipe is being maintained at the proper frequency and no suggestion will be made.

- 12 to 24-month frequency and its condition findings, based on CCTV or cleaning, are "light" or, vary between "clear", "light" and up to one "medium", with less than two "clear" findings in a row, and is cleaned or CCTV inspected within its target cleaning window, then it is believed that the pipe is being maintained at the proper frequency and no suggestion will be made.

- 120-month frequency and its condition findings, based on CCTV or cleaning, are either "light" or "clear" every time, and is cleaned or CCTV inspected within its target cleaning window, then it is believed that the pipe is being maintained at the proper frequency and no suggestion will be made.

For CCTV data to count in the above logic, the CCTV inspection must take place within the pipe's target cleaning window, but before the pipe is cleaned.

3.1.3.3 Adjustments Based on Other Sources

Additionally, frequency adjustments can be made based on information gathered at the Sanitary Sewer Overflow Report Tracking (SSORT) meetings. One of the SSORT meetings primary functions is to decide how to best deal with pipes that have had a possible maintenance-related preventable SSO or blockage. Corrective actions and appropriate frequency adjustments will be made based on SSO/blockage relief cleaning findings, historical cleaning data, and if available,

CCTV data. The SSORT meeting is further described below, in Section 3.4.2 of this plan. If the pipe was part of the System-Wide Cleaning Program and the problem was maintenance-related (i.e. not vandalism or construction-related), then the pipe determined to have caused the SSO or blockage will be moved into the Accelerated Cleaning Program at an appropriate cleaning frequency.

Also, changes to cleaning frequencies for pipes with maintenance issues that have been repaired or replaced will be made on a case by case basis in the Project Meetings described in Section 3.4.3 below.

3.2 Current Accelerated Cleaning Program Frequencies

Based on the condition stated in Section 3.1.1.2, the current mileages for each cleaning technique and frequency are shown in Table 3-2. Figure 3-1 provides a map that illustrates the cleaning frequency for each pipe under the Accelerated Cleaning Program. Figure 3-2 provides a map illustrating the type of cleaning technique each pipe under the Accelerated Cleaning Program receives.

Table 3-2
Current Accelerated Cleaning Program
Pipe Mileage, Frequencies, and Techniques

TYPE OF CLEANING	FREQUENCY (months)					TOTAL
	1	3	6	12	24	
Flushing	1.4	52.5	92.3	393.1	297.0	836.3
Rodding	0.0	12.5	53.4	299.5	142.3	507.7
Hand-Rodding	0.0	0.5	2.1	6.3	2.0	10.9
Bucketing	0.0	0.1	1.7	3.2	12.1	17.1
TOTAL	1.4	65.6	149.5	702.1	501.5	1,372.0

ATTACHMENT 6

JCI Jones Chemical Contract

METRO JPA/TAC
Staff Report
Date: 9/10/20

Project Title: JCI Jones Chemicals, Inc. contract for Sodium Hypochlorite 12.5% Solution

Requested Action:
JPA/TAC authorization to use up to $13,020,245 of Metro funds to purchase wastewater treatment plant chemical from JCI Jones Chemicals, Inc.

Recommendations:
Approve and forward to the Metro Commission.

Metro TAC:	To be submitted for consideration
IROC:	N/A
Prior Actions: (Committee/Commission, Date, Result)	This is an on-going chemical purchase. Last time it was submitted for approval: JPA/TAC on June 17, 2015 and Metro Commission on July 2, 2015.

Fiscal Impact:

Is this projected budgeted?	Yes X No ____
Cost breakdown between Metro & Muni:	The estimated five-year funding will be distributed as follows: Metro $13,020,245 and Muni $279,655
Fiscal impact to the Metro JPA:	33% of Metro costs to be reimbursed by JPA is approximately $4,296,681

Capital Improvement Program:

New Project?	Yes ___ No ___ N/A _X__
Existing Project?	Yes ___ No ___ Upgrade/addition ___ Change ___ N/A X

Previous TAC/JPA Action:
Prior approvals: Metro TAC on June 17, 2015 and the Metro JPA Commission on July 2, 2015

Additional/Future Action: Environmental Committee Meeting by October 22, 2020

City Council Action: November 17, 2020

Background: *Provide background information on the need for the project*
Sodium Hypochlorite 12.5% solution is a chemical used for disinfection and odor control at the North City Water Reclamation Plant, South Bay Water Reclamation Plant, Metropolitan Biosolids Center, Point Loma Wastewater Treatment Plant, and five wastewater pump stations (PS) – PS 1, PS 2, PS 64, PS 65, and Penasquitos PS.

Discussion: *Provide information on decisions made to advance the project*
Sodium Hypochlorite 12.5% solution is required to comply with all Federal, State, and County regulations and to ensure the health and safety of residents. Insufficient or any interruption in the application of this chemical for these processes would lead to violations of compliance regulations which could result in fines and penalties.

Bid Results: *If bidding was done provide bidding format and results*
The bid for a five-year Sodium Hypochlorite 12.5% solution contract was released on June 19, 2020 and closed on July 8, 2020. The City received two (2) responsive bids. After bid and sample testing evaluations, JCI Jones Chemicals, Inc. was deemed the lowest, responsive and responsible bidder, therefore, was notified on August 14, 2020 of the City's intent to award the contract. The five-year estimated expenditure would not exceed $13,300,000.

Breakdown:

Metro Funds: FY21 - $2,343,335 FY22-25 - $10,677,010

Muni Funds: FY21 - $ 50,655 FY22-25 - $ 229,000

ATTACHMENT 7

2021 Meeting Calendar

Metro Commission/Metro Wastewater JPA
and
MetroTAC Committee

2021 Meeting Schedules

METRO COMM/METROJPA 1st Thursday of the month		METRO TAC 3rd Wednesday of the month	
January 7, 2021 (if needed)	12:00 – 1:00	January 20, 2021	11:00 – 1:30
February 4, 2021	12:00 – 1:00	February 17, 2021	11:00 – 1:30
March 4, 2021	12:00 – 1:00	March 17, 2021	11:00 – 1:30
April 1, 2021	12:00 – 1:00	April 21, 2021	11:00 – 1:30
May 6, 2021	12:00 – 1:00	May 19, 2021	11:00 – 1:30
June 3, 2021	12:00 – 1:00 (SANDIST meeting immediately following)	June 16, 2021	11:00 – 1:30
July 1, 2021	12:00 – 1:00	July 21, 2021	11:00 – 1:30
August 5, 2021	12:00 – 1:00	August 18, 2021	11:00 – 1:30
September 2, 2021	12:00 – 1:00	September 15, 2021	11:00 – 1:30
October 7, 2021	12:00 – 1:00	October 20, 2021	11:00 – 1:30
November 4, 2021	12:00 – 1:00	November 17, 2021	11:00 – 1:30
December 2, 2021	12:00 – 1:00	December 15, 2021	11:00 – 1:30
January 6, 2022 (if needed)	12:00 – 1:00	January 19, 2022	11:00 – 1:30

Meetings are held at
MWWD PUD II Auditorium, 9192 Topaz Way, SD, CA 92023
(*unless otherwise noted on the agenda*)

ATTACHMENT 12

METROTAC

WORK PLAN

Metro TAC & JPA Work Plan
Active & Pending Items
February 2020
Updated Items in Red Italics

Active Items	Description	Member(s)
Strategic Plan Ad HOC	*The JPA last updated their strategic plan in 2015. The Ad Hoc was formed to determine should there be a 2019 strategic plan update and if so what format it should follow. First meeting held June 2019. Two work sessions to be held in August are planned with the goal of presenting a draft 2019 Strategic Plan to the JPA in October 2019.*	*Whitney Benzian* *Jerry Jones* *Gary Kendrick* *John Mullin* *Ed Spriggs* *JPA staff*
SB 332 Working Group	*SB 332 (Hertzberg/Weiner) relates to wastewater treatment for recycled water and agencies with ocean outfalls. It requires the entity that owns the wastewater treatment facility that discharges through an ocean outfall and affiliated water suppliers (it defines water not wastewater suppliers) to reduce the facilities annual flow as compared to the average annual dry weather wastewater discharge baseline volume as prescribed by at least 50% on or before January 1, 2030 and by at least 95% on or before January 1, 2040. The working group was formed to track the process of this legislation.*	*Yazmin Arellano* *Beth Gentry* *Hamed Hashemian*
Muni Transportation Rate Study Working Group	San Diego has hired Carollo Engineers to review the existing transportation rate structure. A work group has been formed to review and give input. First meeting will be in December 2017. Although this is a muni issue it is included on the work plan due to its significance and potential effect on all Metro TAC members. 3/18: Technical consultants to meet with PUD staff and Carollo on 3/22/18 to review model in detail 6/18: JPA technical consultants continue to work with PUD staff on understanding rate calculations 1/19: Working group still meeting with PUD staff & consultants. 6/19: Working Group has presented an alternative plan in November 2018 which the City and their consultants are reviewing.	Roberto Yano Yazmin Arellano Dan Brogadir Carmen Kasner Mark Niemiec Dexter Wilson SD staff
Point Loma Permit Ad Hoc	Metro Commission/JPA Ad Hoc established 9/17. GOAL: Create regional water reuse plan so that both a new, local, diversified water supply is created AND maximum offload at Point Loma is achieved to support legislation for permanent acceptance of Point Loma as a smaller advanced primary plant. Minimize ultimate Point Loma treatment costs and most effectively spend ratepayer dollars through successful coordination between water and wastewater agencies. 10/17: Group has met several times. Discussions are ongoing. 3/18: Group continues to meet at least monthly. 6/18: Group continues to meet monthly. Outreach subgroup formed. 1/19: This group continues to meet as needed.	Jerry Jones Jim Peasley Ed Spriggs Bill Baber Steve Padilla Metro TAC staff & JPA consultants
Phase II Pure Water Facilities Working Group	Created to work with SD staff & consultants on determining Phase II facilities. 1/19: Work group has eliminated two alternatives and continues to review updated facilities and their costs. Presentation to Metro TAC by Stantec re: Phase 2 Flows and Loads. Copy attached to Metro TAC minutes.6/19: Phase II alternative presented to Metro TAC in May and JPA in June 2019. Copy of presentation can be found in minutes to those meetings. Alternatives narrowed to two main alternatives.	Roberto Yano Seval Sen Scott Tulloch Dexter Wilson SD staff & consultants

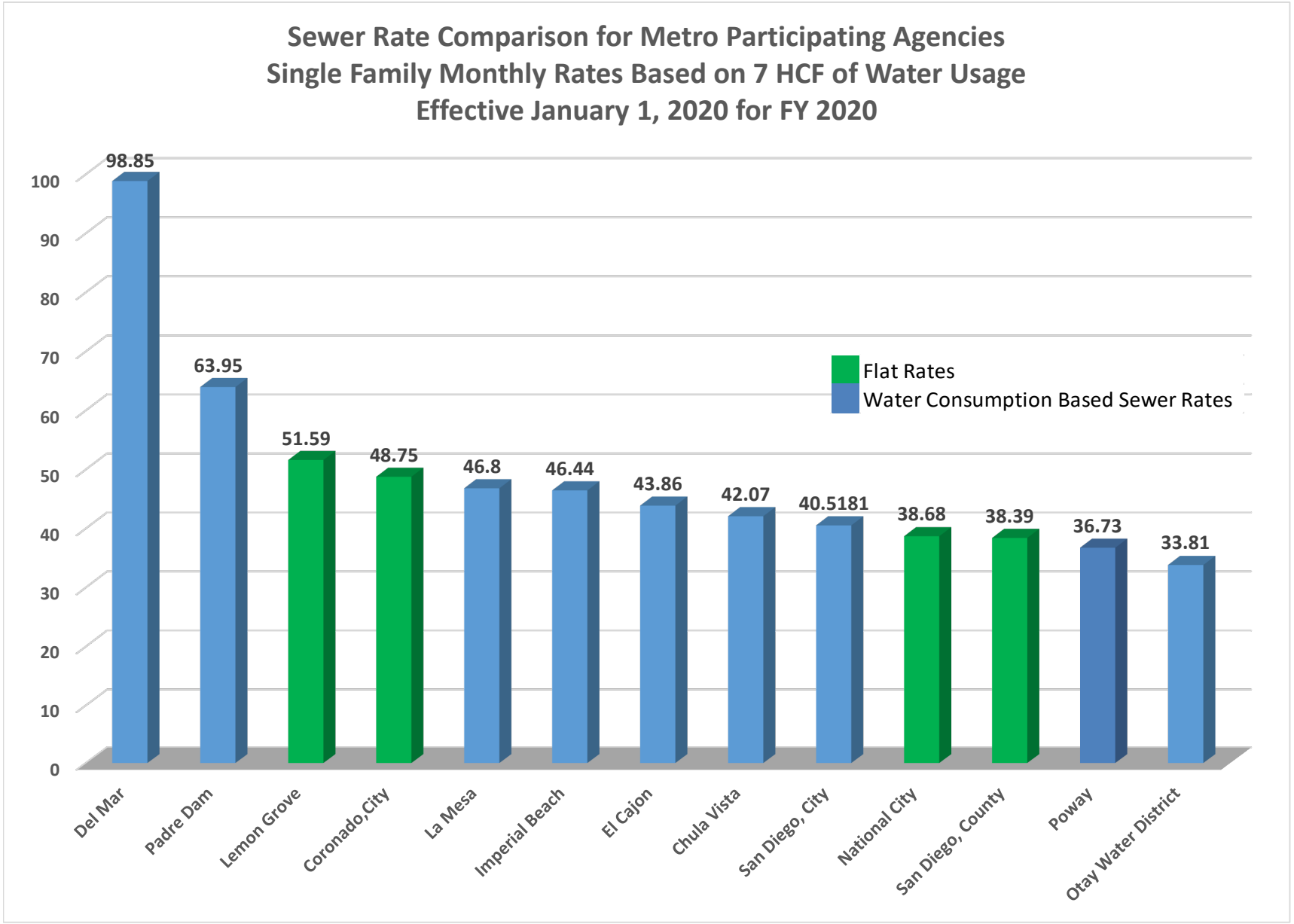
METRO WASTEWATER JPA

Metro TAC & JPA Work Plan
Active & Pending Items
February 2020
Updated Items in Red Italics

Active Items	Description	Member(s)
Residuals Management Working Group	This working group was formed to continue work on Sections 2.9.2 and 2.9.3 of the Amended and Restated Agreement regarding the potential transfer of the East Mission Gorge Pumps Station and the disposal, treatment, or transfer of residuals. 1/19: Group continues to meet.3/19: Working Group has been meeting w/Padre Dam, Coronado, & Otay. 6/19: Draft agreement has been prepared and is being reviewed/refined.	Eric Minicilli Yazmin Arellano Dan Brogadir Seval Sen Scott Tulloch Dexter Wilson SD staff & consultants
Phase I Financial Implementation Working Group	This working group was formed to continue to work on Section 2.9.1 and other financial implementations issues associated with the Amended Restated Agreement. 1/19: Working group had formation meeting. Has prepared draft task list and task assignments for group members and SD staff. Will meet at least monthly until tasks are complete. Ownership of EMGPS determined. Appraisal in complete. 6/19: Group will start meeting in July 2019 on a regular basis.	Roberto Yano Karyn Keese Dexter Wilson SD staff & consultants
Phase II Disposal Agreement Working Group	This group replaces the Debt Allocation Working Group with the approval of the Amended and Restated Agreement for Phase 1. 1/19: Group will start meeting in February.	Roberto Yano Karyn Keese Scott Tulloch Dexter Wilson SD staff & consultants
Pretreatment Working Group	Formed to work with San Diego on new standards for industrial waste discharge. 1/19: SD has received draft report from consultant but has sent back for revisions. Second draft will be reviewed by working group. 6/19: Working group has met and reviewed draft of report. Presentation made by Stantec of recommendations to Metro TAC. Copy attached to June agenda.	Yazmin Arellano Mark Niemiec Ed Walton Beth Gentry Dexter Wilson SD Staff & Consultants
JPA Website Update Working Group	The JPA Website, especially the New Director Manual, has not been updated for several years. As we have several new Directors, the manual needs to be updated. 1/19: Working group formed. First meeting 2/20/19. 6/19: Group continues to meet and work on updating website. Goal is to totally revise New Director's Manual by end of October once Strategic plan is completed.	Roberto Yano Karyn Keese Lori Peoples Susan Spotts
Exhibit E Audit	*1/19: FYE 2017 fieldwork complete. 3/19: FYE 2018 entrance conference complete. Sample selection complete.6/19: FY 2018 fieldwork completed week of June 17, 2019.*	Karen Jassoy Karyn Keese Dexter Wilson
IRWMP	Members should monitor funding opportunities at: http://www.sdirwmp.org 1/19: PA representatives continue to report monthly at Metro TAC 3/19: Minutes from 3/20/19 Meeting attached to work plan. 6/19: Metro TAC given monthly updates. See Metro TAC minutes for updates.	Yazmin Arellano Beth Gentry
Strength Based Billing Evaluation	San Diego will hire a consultant every three years to audit the Metro metered system to insure against billing errors. 1/19: 2019 is the year for the billing review. Scope to be discussed at Financial Implementation Work Group and then brought to TAC. This group combined w/ Sample Rejection Protocol Working Group. SBB workshop by SD staff still outstanding. 3/20: JH will provide training schedule for SBB at April TAC meeting.	Dan Brogadir Dennis Davies? Karyn Keese Mark Niemiec Dexter Wilson SD Staff

Metro TAC & JPA Work Plan
Active & Pending Items
February 2020
Updated Items in Red Italics

Active Items	Description	Member(s)
Changes in water legislation	Metro TAC and the Board should monitor and report on proposed and new legislation or changes in existing legislation that impact wastewater conveyance, treatment, and disposal, including recycled water issues	Inactive; Members added as needed


Sewer Rate Comparison for Metro Participating Agencies
Single Family Monthly Rates Based on 7 HCF of Water Usage
Effective January 1, 2020 for FY 2020
100
90
80
70
60
50
40
30
20
10
0
98.85
63.95
51.59
48.75
46.8
46.44
43.86
42.07
40.5181
38.68
38.39
36.73
33.81
Flat Rates
Water Consumption Based Sewer Rates
Del Mar
Padre Dam
Lemon Grove
Coronado,City
La Mesa
Imperial Beach
El Cajon
Chula Vista
San Diego, City
National City
San Diego, County
Poway
Otay Water District