



## Phase II MS4 Annual Report

Reporting Term: January 24, 2020 – January 23, 2021

Texas Pollutant Discharge Elimination System  
(TPDES) General Permit # TXR040000  
Authorization# TXR040277

Prepared for:

The City of San Angelo  
301 W. Beauregard  
San Angelo, TX 76903

Date:

05/26/2021

Prepared by:

Centurion Planning and Design

To: Texas Commission on Environmental Quality  
Stormwater Team Leader (MC-148)  
P.O. Box 13087  
Austin, TX 78711-3087

Subject: Phase II MS4 Annual Report Transmittal for *City of San Angelo*  
TPDES Authorization: *TXR040277*

Dear Team Leader,

This letter conveys the Annual Report for the Texas Pollutant Discharge Elimination System Small Municipal Separate Storm Sewer System General Permit on behalf of the City of San Angelo. The specific authorization number is TXRO40277.

The attached annual report is for permit year two, reporting term beginning January 24, 2020, and ending January 23, 2021. A separate Notice of Change has not been submitted; changes are not proposed.

A copy of this Annual Report has been provided to TCEQ's Region 8 office in San Angelo and other applicable MS4s.

Kind regards,



Shannon McMillan  
[shannon@plan.design](mailto:shannon@plan.design)  
Cell: (409)200-8074  
Office: (325)757-1001

Attachment: Permit Year Two MS4 Annual Report

Cc: TCEQ Region 8  
San Angelo TxDOT District  
Tom Green County  
Goodfellow Airforce Base  
Angelo State University

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### Appendices:

Appendix A – SWMP Annual Review

Appendix B – Stormwater Analysis

**I. Certification Page**

*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.*

Name: Daniel Valenzuela

Title: City Manager

Signed:   
(Daniel Valenzuela - City Manager)

Date: 06-07-2021

MS4: City of San Angelo

## 2. General Information

**Authorization #:** TXR040277

**Reporting Year:** 2

**Annual Report Year Option:** Permit Year

**Reporting Period Beginning Date:** 01/24/2021

**Reporting Period End Date:** 01/23/2021

**MS4 Operator Level:** 3

**Name of MS4:** City of San Angelo

### **Contact Information:**

Kevin Pate, P.E. – City Engineer

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*\*A copy of this Annual Report was sent to TCEQ Region 8\**

### 3. Compliance Status with MS4 General Permit and SWMP

#### 3.1 Status of Compliance with Permit Conditions

The City of San Angelo is currently in compliance with the stormwater management plan submitted to TCEQ. The stormwater management plan has been administratively approved but is now awaiting final approval from TCEQ.

The City of San Angelo is currently in compliance with recordkeeping and reporting compliance. The City has requested an extension in submitting this report, and it was approved by TCEQ Region 8. The extension request is due to a staff shortage.

The City of San Angelo meets all eligibility requirements of the permit.

The City of San Angelo has conducted an annual review of the stormwater management plan in conjunction with preparing this annual report. Written documentation of program effectiveness is provided in **Appendix A**.

#### 3.2 Assessment of Appropriateness of Best Management Practices

Below you will find a general assessment of the City of San Angelo's selected Best Management Practices and their appropriateness in reducing the discharge of pollutants in stormwater.

Minimum Control Measure	Best Management Practice	Appropriateness
1	1. Stormwater Information Website	Yes. It offers an avenue to educate the public about pollution prevention and the importance of stormwater quality on a local level.
1	2. Public Reference	Yes. Allows the public access to information in print. Creates awareness for the stormwater program.
1	3. Stormwater Educational Videos	Yes. Offers an opportunity to reach more of the public via YouTube channel and Public Access Channel.

Minimum Control Measure	Best Management Practice	Appropriateness
1, 2	4. Storm Drain Marking	Yes. Marked drains are obvious in public areas and promote understanding of the City's stormwater drainage system and pollution prevention.
1	5. Youth Education Programs	Yes. Youth programs offer a fun way to learn about pollution prevention. Programs set a foundation for future adults to be stormwater smart.
1	6. City Employee Stormwater Education	Yes. Stormwater pollution prevention starts with City employees. This program ensures that City employees understand the importance of being mindful regarding stormwater and pollution prevention.
1	7. Stormwater Education for Elected Officials/Public	Yes. Elected officials represent citizens and their best interests. When they understand the importance of stormwater pollution prevention, they can positively create awareness and influence citizens' views.
1, 2, 3, 4	8. Developer/Builder/Engineer/Realtor Education Programs	Yes. Programs and materials provided to the development community offer an opportunity to ensure

<b>Minimum Control Measure</b>	<b>Best Management Practice</b>	<b>Appropriateness</b>
		compliance is achieved when construction occurs. Reaching realtors and engineering firms also assists with creating awareness among a joint interest group.
1, 2, 3, 4, 5	9. City Inspector Training	Yes. Inspectors are typically out on location in the field. Inspectors can offer an avenue to finding issues within the City. Pieces of training offer inspectors the knowledge needed to identify potential stormwater compliance issues.
1, 2	10. Stormwater Public Reporting	Yes. The hotline and email reporting mechanisms offer the public a way to report stormwater issues or learn more about stormwater in San Angelo.
1, 2	11. Adopt a Spot	Yes. This program directly removes trash and debris from reaching surface waters.
2	12. Illicit Discharge Detection and Elimination Program	Yes. This program allows the City the ability to ensure polluted discharges from citizens or commercial facilities are mitigated and



Minimum Control Measure	Best Management Practice	Appropriateness
		prevented in the future.
2	13. MS4 Mapping	Yes. Mapping allows Stormwater operations to keep track of the City's stormwater conveyance system to ensure the system is maintained. Mapping also helps identify areas where improvements are needed within the system.
2	14. Bulk Trash Program	Yes. The curbside bulk pickup program reduces illegal dumping by offering citizens a way to dispose of large items that typically show up on the side of the road and often in storm drains.
2	15. Sanitary Sewer Line Maintenance and Inspection	Yes. Maintenance and inspection of sewer lines reduce the likelihood of leaks infiltrating the soil and reaching surface waters. Proper care of sewer lines also reduces the probability of system failures and main breaks.
2, 3	16. Construction Site Operator Inspection and Enforcement	Yes. Regular inspections at public and private sector construction sites ensure that erosion control measures are

Minimum Control Measure	Best Management Practice	Appropriateness
		regularly and adequately installed and maintained. It reduces the potential of sediment and other pollutants from leaving construction sites.
3	17. Site Plan Review	Yes. Site plan reviews are the first line of defense in preventing contaminated stormwater discharges. Site plans also assist in ensuring that certain businesses implement permanent structural controls based on the type of discharges that may be present at the facility.
4	18. Post-Construction Stormwater Management	Yes. The City's drainage ordinance and design specifications ensure that stormwater flows are metered to prevent flooding, erosion and offer an opportunity to reduce suspended solids in stormwater runoff.
4	19. Engineering Design Review	Yes. This review program offers an avenue to safeguard the City and surrounding properties from flooding, unauthorized discharges, and other issues that may not be

Minimum Control Measure	Best Management Practice	Appropriateness
		included in the short-term of construction. This review program protects the City long-term and offers a variety of benefits.
5	20. Chemical Applications and Materials Management	Yes. Fertilizers, pesticides, and other chemicals are necessary for certain circumstances. Proper management, storage, and application reduce the likelihood of impacts to surface waters.
2, 4, 5	21. Storm Sewer System/Structural Control Maintenance and Inspection	Yes. Proper maintenance of the City's storm sewer system assists with the removal of pollutants reaching surface waters and improves drainage flows.
5	22. Street Sweeping/Spoil Disposal Program	Yes. Street sweeping contributes to one of the most significant reductions in stormwater pollutants. Proper spoils disposal also prevents contaminants in stormwater runoff.
5	23. Public Spill Response	Yes. Quick response to large spills offers a direct reduction in potential pollutants from reaching surface waters.
5	24. Municipal Facility Pollution Prevention/Good Housekeeping	Yes. This program holds municipal

Minimum Control Measure	Best Management Practice	Appropriateness
		facilities accountable for pollution prevention and good housekeeping.
5	25. Municipal Industrial Inspection Program	Yes. This program offers the City to self-audit the performance of their industrial pollution prevention plan. The program assists City-owned permitted facilities with compliance with stormwater regulations. The program ultimately reduces the likelihood of unauthorized discharges from municipal facilities.
2, 5	26. River Cleanups	Yes. River cleanups directly remove pollutants from surface waters. They also promote awareness and identification of urban impacts on stormwater quality.
1, 2, 5	27. Pet Waste Reduction Program	Yes. The program creates awareness and offers a solution to pet waste impacts on surface waters. This program also supports the City's focused BMPs for bacteria impairments.
1, 2, 5	28. Keep San Angelo Beautiful	Yes. Programs offer another mechanism for public outreach and education, and

Minimum Control Measure	Best Management Practice	Appropriateness
		community events to clean up the City. Trash collected from these events directly reduces the amount that reaches surface waters.
1, 2	29. Fats, Oils, and Greases Program	Yes. The evolution of this program educates citizens and businesses about their impacts on the City's sewer system when it comes to FOG. A reduction of sewer pipes clogged by FOG prevents sewer backups and ultimate discharges to the City's MS4.

### 3.3 Progress Towards Reducing the Discharge of Pollutants

Below you will find descriptions of quantifiable measures taken by the City to reduce pollutants to the maximum extent practicable and progress made towards reducing pollutants.

Minimum Control Measure	Best Management Practice	Quantity	Units	Does BMP Demonstrate Direct Reduction in Pollutants?
1	1. Stormwater Information Website	960	Page Views	No direct reduction but creates awareness and educates the public about measures to reduce pollutants in stormwater.
1	2. Public Reference	450	Flyers/ Publications	BMP does not directly reduce pollutants but offers another way to educate the public, leading to a reduction in contaminants.

<b>Minimum Control Measure</b>	<b>Best Management Practice</b>	<b>Quantity</b>	<b>Units</b>	<b>Does BMP Demonstrate Direct Reduction in Pollutants?</b>
<b>1</b>	3. Stormwater Educational Videos	365	Video Airings	BMP does not directly reduce pollutants but reaches a large audience to further education about pollution prevention.
<b>1, 2</b>	4. Storm Drain Marking	14	Drain Markings	Yes. Markings create a visual opportunity to deter discharging anything but rain down the storm drain.
<b>1</b>	5. Youth Education Programs	50	Attendees	BMP does not directly reduce pollutants but plays a role in creating awareness among school-aged children.
<b>1</b>	6. City Employee Stormwater Education	0	Attendees	Yes. City employees can quickly identify potential stormwater violations and pass the information along to the City's Stormwater Inspector.
<b>1</b>	7. Stormwater Education for Elected Officials/Public	8	Attendees	No. Although education for public officials assists in informing the public, this program does not directly reduce pollutants.
<b>1, 2, 3, 4</b>	8. Developer/Builer/Engineer/Realtor Education Programs	5	Attendees	Yes. This program offers programs catered for the development community, decreasing the likelihood of future violations. This program also assists in developing a good working relationship with the regulated community.
<b>1, 2, 3, 4, 5</b>	9. City Inspector Training	7	Certified Inspectors	The program ensures that inspectors quickly identify stormwater violations and allows the ability to ensure compliance is reached before discharges occur.

<b>Minimum Control Measure</b>	<b>Best Management Practice</b>	<b>Quantity</b>	<b>Units</b>	<b>Does BMP Demonstrate Direct Reduction in Pollutants?</b>
1, 2	10. Stormwater Public Reporting	16	Calls/Emails	Yes. The public can quickly report stormwater concerns and lessen the likelihood of the potential violation creating a stormwater issue.
1, 2	11. Adopt a Spot	4	Events	Yes. These events prevent trash and other debris from entering surface waters and reducing water quality.
2	12. Illicit Discharge Detection and Elimination Program	3	IDDE Inspections	Yes. Staff is trained to identify potential IDDE and conduct inspections, potentially identifying and mitigating a source of stormwater pollution.
2	13. MS4 Mapping	247	Map Revisions	Although MS4 mapping does not directly reduce pollutants, it does assist in finding areas for dry weather screening and inspect outfalls for potential illicit discharges.
2	14. Bulk Trash Program	5,163.65	Tons Collected	Yes. This program contributes to a direct reduction in pollutants by offering citizens an opportunity to have bulk trash picked up from their homes, rather than hauling to the landfill or dumping it out on the side of the road.
2	15. Sanitary Sewer Line Maintenance and Inspection	87, 234	Feet Inspected	Yes. This BMP allows the City to identify potential issues before becoming possible discharge. Repairs are made, and maintenance is performed, resulting in a direct reduction of pollutants reaching surface waters.

<b>Minimum Control Measure</b>	<b>Best Management Practice</b>	<b>Quantity</b>	<b>Units</b>	<b>Does BMP Demonstrate Direct Reduction in Pollutants?</b>
<b>2, 3</b>	16. Construction Site Operator Inspection and Enforcement	1168	Inspections	Yes. City inspectors regularly inspect private and public sector construction projects. They can find potential issues before rain events, thus directly reducing pollutants.
<b>3</b>	17. Site Plan Review	84	Reviewed Plans	Site plan reviews offer staff the opportunity to learn about new construction sites. These reviews also serve as the first line of education for stormwater regulations as they are included in the City's standard comments.
<b>4</b>	18. Post-Construction Stormwater Management	43	Inspections	Regular inspections of structural controls ensure that controls effectively work and help with maintenance and repairs, creating a direct reduction in pollutants.
<b>4</b>	19. Engineering Design Review	17	Reviewed Studies	Drainage study reviews do not directly reduce pollutants, but reviews guarantee good design and applicability of structural controls.
<b>5</b>	20. Chemical Applications and Materials Management	9	TDA Licensed Applicators	Proper training and licenses are essential to understand the importance of appropriate usage rates of chemicals and response to incidental spills. This program does have a direct impact on reducing pollutants.
<b>2, 4, 5</b>	<b>21. Storm Sewer System/</b>	39.95	Tons of Debris	Structural controls are only as good as the maintenance



<b>Minimum Control Measure</b>	<b>Best Management Practice</b>	<b>Quantity</b>	<b>Units</b>	<b>Does BMP Demonstrate Direct Reduction in Pollutants?</b>
	Structural Control Maintenance and Inspection			program. This program removes debris and repairs voids in City-owned stormwater controls resulting in a direct reduction in pollutants.
<b>5</b>	22. Street Sweeping/ Spoil Disposal Program	5,645.8	Miles Swept	The street sweeping program directly reduces pollutants by removing yard waste and sediment from the curb and gutters, the City's most prominent conveyance system.
<b>5</b>	23. Public Spill Response	1	Spill Response	Prevention of spills from leaving the area results in a direct reduction in pollutants. A quick response also assists in reducing the scope of mitigation/cleanup.
<b>5</b>	24. Municipal Facility Pollution Prevention/ Good Housekeeping	8	Inspections	This program contributes to a direct reduction in pollutants by establishing pollution prevention and good housekeeping in City-owned facilities that can negatively impact stormwater.
<b>5</b>	25. Municipal Industrial Inspection Program	0	Inspections	Yes. Annual compliance inspections offer a second look at compliance and potential stormwater issues.
<b>2, 5</b>	26. River Cleanups	14.2	Tons of Debris	Yes. Debris removed from the river is a direct reduction of pollutants.
<b>1, 2, 5</b>	27. Pet Waste Reduction Program	150	Materials Distributed	Yes. Offering receptacles and bags for pet waste in park areas results in a direct reduction in pollutants. This BMP also serves as a

<b>Minimum Control Measure</b>	<b>Best Management Practice</b>	<b>Quantity</b>	<b>Units</b>	<b>Does BMP Demonstrate Direct Reduction in Pollutants?</b>
				focused BMP for bacteria impairment.
<b>1, 2, 5</b>	28. Keep San Angelo Beautiful	67	Events Held	Yes. The cleanup events held by KSAB remove trash and hazardous waste from the City.
<b>1, 2</b>	29. Fats, Oils, and Greases Program	2	Inspections	Yes. This program ensures that grease and grit traps are maintained and prevents the City's sewer from being clogged with grease blocks, backing up the system, creating unnecessary overflows.

### 3.4 Measurable Goals for Minimum Control Measures and Effectiveness

Measurable goals for Permit Year 2 for each of the six minimum control measures, as well as progress made towards achieving those goals, are listed below. Some of the measurable goals highlight several MCMs; additional MCMs are denoted with asterisks.

## MCM 1 – Public Education and Outreach

Measurable Goal	Progress towards achieving goal or how goal was achieved	Additional MCMs
Update/Revise Website	Met Goal – Updates were made to the website that included easier public access to the website and information updates.	
Distribute materials to at least three public locations annually	Exceeded Goal – Materials were distributed in over four public places covering stormwater, pollution prevention, and FOG.	
Review materials annually	Met Goal – Materials reviewed to ensure applicability and relevance. In the review, it was determined that FOG materials were needed. Educational materials were purchased for use in public outreach events.	
Air videos on public access channel at least once per week	Exceeded Goal – Stormwater-related videos aired at least once per day on the public access channel.	
Air stormwater-related videos at least three times a year on social media outlets	Goal not met – Due to the COVID pandemic, the social media outlets were restricted to updates regarding COVID-related information. In January 2021, an educational video was posted on social media and was viewed over 50 times.	
Develop artistic program and offer an opportunity for public involvement	Goal not met – The City's SWMP has been administratively approved but not fully approved by TCEQ. This program does require a budget and cannot be implemented until the SWMP has been fully approved.	
At least two drains marked per permit years 2, 3, 4, 5	Goal not met – Program has not been implemented as stated above. Moving forward, the City hopes to mark four storm drains during permit year 3.	*MCM 2

<b>Measurable Goal</b>	<b>Progress towards achieving goal or how goal was achieved</b>	<b>Additional MCMs</b>
Minimum of one educational program annually for school-aged children	Exceeded Goal – Over 12 events were held for school-aged children.	
One public presentation annually	Exceeded Goal – Staff conducted four presentations either in person or virtually. City Council members were provided with an annual stormwater report in place of a council presentation. Due to the COVID pandemic, City Council meetings were restricted to higher priority presentations.	
At least one developer/builder/engineer training annually	Met Goal – COVID brought new challenges in developer education. Five tailgate training were held in the field in place of formal training.	*MCM 2, 3, 4
Reach at least 50 members of the development community	Goal not met – Due to COVID, large gatherings were challenging to coordinate. In place of formal training events, one-on-one training and tailgate pieces of training were conducted.	*MCM 2, 3, 4
Goal of 80% CSI for Engineering Inspectors	Exceeded Goal – 100% of engineering inspectors have their CSI.	*MCM 2, 3, 4, 5
One training for inspection staff annually	Goal not met – In following office COVID policy, inspection staff did not come into the office. The office staff worked from home, and meetings were limited to virtual.	*MCM 2, 3, 4, 5
Stormwater reporting number/email will be advertised on the City's Facebook page twice a year.	Goal not met – The Stormwater Reporting number/email was only shared once on the City's Facebook page. As previously mentioned, most posts were limited to information about COVID.	*MCM 2
Have at least five volunteer cleanup events annually	Exceeded Goal - Four adopt-a-spot cleanups documented and three volunteer pop-up cleaning events reported.	*MCM 2

## MCM 2 – Illicit Discharge Detention and Elimination

Measurable Goal	Progress towards achieving goal or how goal was achieved	Additional MCMs
Develop reporting procedures for illicit discharges	Met Goal – IDDE procedural manual developed and inspection and reporting procedures established.	
Document all changes to MS4 outfalls/City-owned stormwater structures	Met Goal – 247 revisions and additions to the City's GIS MS4 mapping system made during the permit term.	
Evaluate program effectiveness to hit a measurable goal of 2% reduction annually	Goal not met: Illegal dumping increased 4.8 tons during the permit year. Evaluation of the program was conducted and bulk collection increased by 1,460 tons this year.	
Inspect at least 70,000 linear feet annually	Exceeded Goal: City crews inspected 87,234 feet of sewer lines.	* <i>Bacteria Impairment</i>
SAFD HAZMAT to attend at least one training annually for spill response	Met Goal: All SAFD firefighters attended at least one HAZMAT training course.	

## MCM 3 – Construction Site Stormwater Runoff Control

Measurable Goal	Progress towards achieving goal or how goal was achieved	Additional MCMs
Inspect at least 70% of all private-sector construction activities annually	Exceeded Goal - 121 active construction sites inspected an average of 9 times per year.	*MCM 2
Complete document review at least twice a year	Goal not met - 31 total document reviews completed. COVID protocols required limiting face-to-face contact with the public, thus inhibiting reaching this goal.	*MCM 2
Review at least 80% of site plans annually	Exceeded Goal – 100% of site plans reviewed by engineering staff.	

**MCM 4 – Post Construction Stormwater Management in New Development and Redevelopment**

<b>Measurable Goal</b>	<b>Progress towards achieving goal or how goal was achieved</b>	<b>Additional MCMs</b>
Identify all City-owned structural controls	Met Goal – All City-owned structural controls have been identified.	*DDO Impairment
Conduct 4 inspections per year on City-owned structural controls	Exceeded Goal – 48 inspections conducted on City-owned controls during the permit year.	*DDO Impairment

**MCM 5 – Pollution Prevention and Good Housekeeping for Municipal Operations**

<b>Measurable Goal</b>	<b>Progress towards achieving goal or how goal was achieved</b>	<b>Additional MCMs</b>
Conduct/coordinate training for licensed and non-licensed applicators at least one time/year	Exceeded Goal – Licensed and non-licensed applicators attended over ten training events.	
Develop inspection program for City-owned storm sewer system	Met Goal – Inspection procedures for City-owned structural controls developed.	*MCM 2 & 4
Conduct maintenance on at least 10% of City-owned drains	Exceeded Goal – Open drains mowed, culverts cleaned, and 39.95 tons of debris cleaned from City-owned drains annually. Out of 47 network structures, all drains were maintained as necessary.	*MCM 2 & 4
Inspect at least 20% of City-owned drains annually	Exceeded Goal – Over 50% of network structures were inspected.	*MCM 2 & 4
Sweep at least 80% of City streets annually	Exceeded Goal: All lane miles within the City's jurisdiction were swept at least once a year.	
Develop and implement pollution prevention/good housekeeping plan for vehicle maintenance and street and bridge	Met Goal – Pollution prevention plan checklist developed for street and bridge and vehicle maintenance.	
Begin implementing a municipal, industrial inspection program	Goal not met – City COVID policies inhibited the implementation of this program.	

Conduct at least two river cleanups annually	Exceeded Goal – Five river cleanups completed by Stormwater Operations and three river cleanups completed by KSAB volunteers.	*MCM 2, DDO Impairment
Develop educational programs or acquire materials for distribution	Exceeded Goal – Pet waste holders and bags were purchased and provided to the City's Animal Shelter and other local adoption events.	*MCM 1
Conduct at least one Keep San Angelo Beautiful Event annually	Exceeded Goal – 67 KSAB events held during the year.	*MCM 1 & 2

**MCM 6 – Industrial Stormwater Sources** (Only applicable for Level 4 Operators)

*Not Applicable* (The City is a Level 3 Operator)

**MCM 7 – Authorization for Construction Activities where the Small MS4 is the Site Operator** (The City does not participate in this optional MCM)

*Not Applicable*

## 4. Stormwater Data Summary

Eureka Water Probe - First Flush Samples								
Water Treatment Plant								
Date	Temp deg C	pH units	SpCond uS/cm	HDO %Sat	HDO mg/l	pH mV	Salinity PSS	TDS mg/l
3/5/2020	15.71	7.61	395.4	90.6	8.76	-43.5	0.19	253

McDonalds								
Date	Temp deg C	pH units	SpCond uS/cm	HDO %Sat	HDO mg/l	pH mV	Salinity PSS	TDS mg/l
3/5/2020	19.37	8.06	3963	70.8	6.28	-69.8	2.1	2536

COSA Water Lab Analysis - Composite Samples									
Water Treatment Plant									
Date	BOD-5 mg/L	CL mg/L	Nitrate as N mg/L	Nitrite as N mg/L	pH	s-TKN mg/	Temp deg c	TSS mg/L	P mg/L
9/10/2020	15	24	0.885	0.015	7.98	0.49	13.9	77	0.37

Police Department									
Date	BOD-5 mg/L	CL mg/L	Nitrate as N mg/L	Nitrite as N mg/L	pH	s-TKN mg/	Temp deg c	TSS mg/L	P mg/L
6/23/2020	15	392	5.04	0.043	8.39	6.36 L	12.8	124	0.24

McDonalds									
Date	BOD-5 mg/L	CL mg/L	Nitrate as N mg/L	Nitrite as N mg/L	pH	s-TKN mg/	Temp deg c	TSS mg/L	P mg/L
9/10/2020	7	12	0.426	0.02	8.2	0.37	13.3	206	0.34

Knickerbocker									
Date	BOD-5 mg/L	CL mg/L	Nitrate as N mg/L	Nitrite as N mg/L	pH	s-TKN mg/	Temp deg c	TSS mg/L	P mg/L
9/10/2020	20	24	2.52	0.033	7.48	1.45	14.1	80	0.24

Sherwood									
Date	BOD-5 mg/L	CL mg/L	Nitrate as N mg/L	Nitrite as N mg/L	pH	s-TKN mg/	Temp deg c	TSS mg/L	P mg/L
9/10/2020	9	20	0.554	0.03	7.96	0.45	14.5	79	0.47

### 4.1 Lab Analysis

Stormwater samples are collected throughout the year to offer an extra opportunity for monitoring stormwater quality. The City can better understand seasonal issues, facility violations, and potential pollutant source areas by conducting sample analysis. The City is not required to sample stormwater by TCEQ or EPA-approved TMDL. Instead, they understand the benefits of sampling as another way to monitor the effectiveness of the SWMP. Above you will find tables with sample results. You may also find actual sample analysis lab reports in **Appendix B**.

### 4.2 Visual Inspections/Drain Maintenance

Storm sewer system inspections and maintenance are critical to the effectiveness of the City's SWMP. The City's visual inspection program occurs when a project is planned in a specific district. Crews will document the area, visually inspect drains, culverts, etc., and perform maintenance on drains. Below you will find a monthly breakdown of the drain maintenance program:

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<b>Drain Cleaning/Structural Control Maintenance</b>	
<b>Month</b>	<b>Debris Removal in Tons</b>
January	22.18
February	0
March	10.39
April	2.66
May	3.26
June	1.46
July	0
August	0
September	0
October	0
November	0
December	0
January	2.15
<b>Yearly Total</b>	<b>39.95</b>
<b>2019 Total</b>	<b>280.52</b>

<b>Structural Control Inspections</b>	
<b>Month</b>	<b>Inspections</b>
January	2
February	6
March	5
April	6
May	8
June	0
July	1
August	7
September	7
October	7
November	0
December	0
January	7
<b>Yearly Total</b>	<b>56</b>
<b>2019 Total</b>	<b>43</b>

#### 4.3 Street Sweeping/Illicit Discharge Identification

The City's IDDE program includes dry weather monitoring, public reporting, and response/enforcement procedures. During the permit year, the City responded to three IDDE violations. The program allows the City to mitigate potentially hazardous issues and offer

compliance resolution to those who created the discharge. This program has shown to be effective in the prevention of future releases.

The City's street sweeping program offers an impressive impact to ensuring stormwater quality is improved every year. The program provides the opportunity for every City-owned street to be swept at least once a year. The program also has a high-priority sweeping schedule that cleans areas closest to the river weekly. Below you will find a monthly breakdown of miles swept and spoils collected.

<b>Street Sweeping Monthly Totals</b>		
<b>Month</b>	<b>Miles Swept</b>	<b>Spoils in Tons</b>
January	418	359.1
February	266.3	167.78
March	455.7	57.11
April	592.9	170.68
May	477.7	177.12
June	436.1	303.69
July	560.7	170.79
August	653.3	258.59
September	491.6	294.45
October	493.3	375.5
November	374.9	217.86
December	217.5	103.61
January	207.8	133.21
<b>Yearly Total</b>	<b>5,645.8 Miles</b>	<b>2,789.49 Tons</b>
<b>2019 Total</b>	<b>6,618.2 Miles</b>	<b>3,390.68 Tons</b>

## **5. Impaired Waterbodies**

### 5.1 303(d) List and New Impaired Waterbodies

*The 2016 Texas Integrated Report – Texas 303(d) List*, approved by EPA in August of 2019, shows segment 1421(Concho River) has only one impairment for depressed dissolved oxygen. Although the impairment for bacteria is removed, the City still implements focused BMPs for the impairment to maintain water quality. There are no new segment impairments listed in the approved list.

Depressed dissolved oxygen occurs when the oxygen dissolved in water drops below optimal levels. Aeration and photosynthesis are the primary sources of dissolved oxygen in streams. The Concho River is essentially a series of damned up ponds and typically does not flow unless the City experiences a heavy rain event. The City has implemented several best management

practices to alleviate some of the issues associated with stormwater quality but understands the nature of the river impacts oxygen levels.

## 5.2 Best Management Practices to Address Discharges to Impaired Waterbodies

Best management practices to address discharges for depressed dissolved oxygen and bacteria are described in detail below:

**Depressed Dissolved Oxygen** – As noted above, depressed dissolved oxygen is a problem the City will always face unless the river becomes an actual flowing river. Still, the City's stormwater management plan does include best management practices to reduce urban impacts. Methods include the City's street sweeping program, which removes organic matter and sediment from curbs and gutters. The City also participates in the chemicals and materials management program, focusing on the importance of proper chemical application, such as fertilizers in parks and drainage ways. The construction stormwater inspection program prevents sediment from entering the City's MS4. Other elements include park and river cleanup programs, illicit discharge detection and elimination programs, structural controls maintenance programs, and green infrastructure programs. Finally, the City is beginning to implement its Fats, Oils, and Greases (FOG) program to prevent sewer blockage and sewer overflow.

**Bacteria** – Although bacteria is removed from the 2016 Integrated Report, the City still applies best management practices to maintain improvements. The sanitary sewer inspection and line maintenance program offers an approach to prevent and mitigate issues before reaching surface waters. Small leaks or potentially significant issues identified by the inspection program can be repaired or maintained to avoid discharges. The SCADA system improvements to lift stations offer 24-hour monitoring in real-time for sewer overflows and other malfunctions that could create a pollutant release. On a smaller scale, the Pet Waste Reduction program provides information, materials, and waste receptacles in parks to address pet waste. This program will grow to reach a larger target audience in years to come, which will create more awareness of pet waste impacts on water quality.

## 5.3 Discharges to Impaired Waterbodies with Approved TMDL

The City of San Angelo does not discharge to an impaired water body with an approved TMDL. Therefore, targeted controls, measurable goals, and benchmarking requirements listed in Part II.D.4(a) and Part II.D.4(a)(2) are not applicable.

## 5.4 Focused Best Management Practices for Bacteria Impairment

Focused best management practices for the impairment of bacteria include the following previously discussed BMPs:

- Pet Waste Reduction Program

- Sanitary Sewer Line Maintenance and Inspection
- Sanitary Sewer Overflow Initiative
- SCADA Installation on Lift Stations

As stated above, this segment does not have an approved TMDL, and no benchmark assessments are required.

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## 6. Stormwater Activities

### 6.1 Future Activities Planned 2021-2022

Below you will find a table that describes activities planned for the next reporting term per Part II.B.2.(d):

<b>BMP Number</b>	<b>Activity</b>	<b>Measurable Goal</b>
4	Storm Drain Marking	Develop artistic program; mark at least four drains
12	Illicit Discharge Detection and Elimination Program	Document 100% IDDE responses, Document 100% of enforcement actions, Document 100% of follow-up investigations
15	Sanitary Sewer Line Maintenance and Inspection	Install SCADA on all lift stations
19	Engineering Design Review	Implement water quality aspects into City's Master Drainage Plan
24	Municipal Facility Pollution Prevention/Good Housekeeping	Develop and implement pollution prevention/good housekeeping for Parks and Lake Operations
25	Municipal Industrial Inspection Program	Conduct one document review and one site inspection per permitted facility
27	Pet Waste Reduction Program	Develop collaborative outreach/education programs with local pet interest groups (rescues, animal shelters, etc.)
29	Fats, Oils, and Greases Program	Inspect 100% of new grease trap applications, conduct at least one outreach event, or distribute educational materials to local restaurants.

## **7. Stormwater Management Plan Modifications**

### 7.1 Annual Stormwater Management Plan Review

Per Part II.E.4, an annual review of the stormwater management plan to analyze the plan's effectiveness is required. The review and findings may be found in **Appendix A**.

### 7.2 Proposed Changes

No changes or proposed changes have been made to the SWMP since the last Annual Report or since the submittal of the NOI.

### 7.3 Additional Changes

There are no additional changes proposed that have not been previously mentioned.

## **8. Additional BMPs for TMDLs and I-Plans**

*Not applicable.* The City of San Angelo does not discharge into an impaired segment with an established TMDL. Furthermore, no I-Plans are implemented or required.

## **9. Additional Information**


*Not applicable.* The City of San Angelo is not relying on any other permittee to satisfy any permit obligations. The City of San Angelo is not part of a group sharing a stormwater management plan with other entities.

## **10. Construction Activities**

The City of San Angelo had 121 small and large construction activities within the jurisdictional area of the MS4. *The City does not participate in the optional seventh minimum control measure for municipal construction activities.*

**Appendix A – Stormwater Management Plan Annual Review**

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 <b>SWMP Annual Review</b> <b>MCM</b>	<b>Program Effective</b>		<b>Notes</b>
	Yes	No	
<b>Public Education/Outreach</b>			
Stormwater Website	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Public Reference	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Stormwater Videos	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Storm Drain Marking	<input type="checkbox"/>	<input checked="" type="checkbox"/>	This program has not been implemented. Further evaluation may be considered.
Youth Education Programs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
City Employee Education	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A newsletter 2X a year may be more beneficial than formal stormwater training for City employees.
Elected Official Education	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Developer Education	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
City Inspector Training	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Stormwater Reporting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Adopt-A-Spot	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>Illicit Discharge Detection and Elimination</b>			
IDDE Program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MS4 Mapping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Bulk Trash Curbside Program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	This program is effective, but measurable goals may need to be reconsidered.
Public Spill Response	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sanitary Sewer Line Maint. & Inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



SWMP Annual Review  MCM	Program Effective		Notes
	Yes	No	
Fats, Oils, and Greases Program	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	This program will be effective if it is implemented. Due to COVID and other variables, measurable goals may need to be modified.
<b>Construction Site Stormwater</b>			
Site Operator Inspection and Enforcement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Site Plan Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>Post-Construction Stormwater</b>			
Post-Construction Stormwater Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Engineering Design Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>Municipal Pollution Prevention</b>			
Chemical Applications and Material Mgmt.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MS4 Structural Control Program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Street Sweeping Program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Municipal Facility Good Housekeeping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Municipal Industrial Program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	This program has not been implemented but will be a benefit once implemented.
River Cleanup	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pet Waste Reduction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Keep San Angelo Beautiful	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Reviewer: Kevin Pate   
 Title: Interim City Engineer

Date: 6.7.21

Signature:  \_\_\_\_\_

## STORMWATER MANAGEMENT PLAN ANNUAL REVIEW NARRATIVE

Per Part II, Section E.4 of the TPDES General Permit TXR040000, the City of San Angelo must participate in an annual review of its stormwater management plan (SWMP) in conjunction with the preparation of the required annual report. This document and subsequent program effectiveness matrix provide required documentation of such review. The annual review of the City of San Angelo's SWMP was conducted with Centurion Planning and Design, City of San Angelo Operations Department, and the City of San Angelo Engineering Services Department. The evaluation breaks down each of the five applicable minimum control measures (MCM) and the associated best management practices (BMP). Any modifications or changes suggested within the assessment will be assessed by City staff. If changes are made to the SWMP notification requirements, such as submittal of a Notice of Change, or internal documentation will be required per Part II Section E.6.

Below you will find a brief narrative explaining areas of improvement and the basis for further assessing the effectiveness of the best management practice.

### **MCM 1: Public Education, Outreach, and Involvement**

All selected BMPs under MCM 1 must make educational materials available to the public that conveys the program's message, post its approved SWMP and annual report on the public web page, and create public involvement and input opportunities.

BMP 4 Storm Drain Marking – The development of the artistic program and two drain markings per permit year have not been attained. This BMP serves a dual purpose MCM for illicit discharge detection and elimination and meets several essential components for each MCM. It is suggested that the City of San Angelo continue to progress towards developing the drain marking program. If funding, response, and other barriers prevent the City from expanding the program, modifications to the program should be made. Removal of the BMP is not suggested.

BMP 6 City Employee Education – The measurable goal was not met due to COVID precautions. This BMP was selected to address the need for educational material distribution to City employees. Development of materials and distribution of those materials should be implemented before the permit term ends. Removal of the BMP is not suggested.

### **MCM 2: Illicit Discharge Detection and Elimination**

All selected BMPs under MCM 2 must incorporate one of the following: MS4 mapping, methods for training field staff, procedures for tracing the source of an illicit discharge, policies for removing the source of the illicit discharge, and procedures to prevent and correct any leaking OSSFs, if applicable.

BMP 14 Bulk Trash Curbside Program – The correlation between bulk curbside pickup and illegal dumping seemed to be an appropriate way to measure the program's effectiveness. Unfortunately, the numbers provided for illegal dumping do not show this program reduces illegal dumping. It is suggested that the measurable goals be modified to reflect the benefits of curbside bulk pickup. \*May require Notice of Change\*

BMP 29 Fats, Oils, and Greases Program – This program is effective when properly implemented. Specific barriers may inhibit the ability to enact certain goals established in the SWMP. Modifications to goals and programs may be necessary. \*May require Notice of Change\*

## STORMWATER MANAGEMENT PLAN ANNUAL REVIEW NARRATIVE

### **MCM 5: Municipal Facility Pollution Prevention and Good Housekeeping**

All selected BMPs under MCM 5 must incorporate the following elements: Inventory list of all City-owned facilities and stormwater controls, Employee training program, Contractor Oversight, Municipal Operations and Maintenance, Storm Sewer System Operations and Maintenance, Facility Assessment, and Stormwater Controls for High Priority Facilities.

BMP 25 Municipal Industrial Program – Program development of standard operating procedures and inspection reports was started during permit year one. No further development of the written systems has been addressed. It is recommended that the final development of SOPs and inspection reports should be completed to ensure permit term compliance. Once written procedures are established, inspections will begin for City-owned industrial facilities. No changes or modifications are suggested for this BMP.

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## **Appendix B – Stormwater Sample Analysis**



City of San Angelo

# Water Quality Laboratory

1324 Metcalfe St.

San Angelo, TX 76903

Ph: 325.481.2722 - Fax: 325.653.7278



## LABORATORY REPORT

<b>Report To:</b> City of San Angelo Engineering Services/Stormwater 72 West College San Angelo, TX 76903			<b>Lab Number:</b> 484 <b>Collected:</b> 10:00:00 AM <b>Received:</b> 6/23/2020 <b>Reported:</b> 10/23/2020			
<b>Project Name:</b> Engineering-Stormwater <b>Contact:</b> <b>Sample ID:</b> Police Department - Station 5						
Analyte	Results	Units	Test Date	By	DL	Method
Biochemical Oxygen Demand (BOD-5)	15	mg/L	6/23/2020	TTS	2	SM 5210-B
Chloride (Cl)	392	mg/L	6/23/2020	TTS	4	SM 4500-Cl-B
Nitrate as N	5.04	mg/L	6/23/2020	TTS	0.20	SM 4500-NO3-
Nitrite as N	0.043	mg/L	6/23/2020	TTS	0.015	SM 10207
pH Value	8.39	units	6/23/2020	TTS		SM 4500-H+
s-TKN	6.36	mg/L	6/23/2020	TTS	0	Hach 10242
Temperature (C°)	12.8	C°	6/23/2020	TTS		SM 2550-B
Total Suspended Solids (TSS)	124	mg/L	6/23/2020	TTS	1	SM 2540-D
Total-phosphate (P)	0.24	mg/L	6/23/2020	TTS		calc.

Elena Velez-Reyes  
Laboratory Manager

cc: Lab File  
Allison Strube  
Andy Vecellio  
Tymn Combest  
Ann Pierce  
Shannon McMillan



City of San Angelo  
**Water Quality Laboratory**

1324 Metcalfe St.  
 San Angelo, TX 76903  
 Ph: 325.481.2722 - Fax: 325.653.7278



**LABORATORY REPORT**

<b>Report To:</b> City of San Angelo Engineering Services/Stormwater 72 West College San Angelo, TX 76903	<b>Lab Number:</b> 488 <b>Collected:</b> 2:35:00 PM <b>Received:</b> 9/10/2020 <b>Reported:</b> 10/23/2020
<b>Project Name:</b> Engineering-Stormwater <b>Contact:</b> <b>Sample ID:</b> WTP - Station 2	

Analyte	Results	Units	Test Date	By	DL	Method
Biochemical Oxygen Demand (BOD-5)	15	mg/L	9/10/2020	TTS	2	SM 5210-B
Chloride (Cl)	24	mg/L	9/10/2020	TTS	4	SM 4500-Cl-B
Nitrate as N	0.885	mg/L	9/10/2020	TTS	0.20	SM 4500-NO3-
Nitrite as N	0.015	mg/L	9/10/2020	TTS	0.015	SM 10207
pH Value	7.98	units	9/10/2020	TTS		SM 4500-H+
s-TKN	0.49	mg/L	9/10/2020	TTS	0	Hach 10242
Temperature (C°)	13.9	C°	9/10/2020	TTS		SM 2550-B
Total Suspended Solids (TSS)	77	mg/L	9/10/2020	TTS	1	SM 2540-D
Total-phosphate (P)	0.37	mg/L	9/10/2020	TTS		calc.

Elena Velez-Reyes  
 Laboratory Manager

cc: Lab File  
 Allison Strube  
 Andy Vecellio  
 Tymn Combest  
 Ann Pierce  
 Shannon McMillan



City of San Angelo

# Water Quality Laboratory

1324 Metcalfe St.

San Angelo, TX 76903

Ph: 325.481.2722 - Fax: 325.653.7278



## LABORATORY REPORT

<b>Report To:</b> City of San Angelo Engineering Services/Stormwater 72 West College San Angelo, TX 76903			<b>Lab Number:</b> 487 <b>Collected:</b> 2:15:00 PM <b>Received:</b> 9/10/2020 <b>Reported:</b> 10/23/2020			
<b>Project Name:</b> Engineering-Stormwater <b>Contact:</b> <b>Sample ID:</b> Knickerbocker - Station 7						
Analyte	Results	Units	Test Date	By	DL	Method
Biochemical Oxygen Demand (BOD-5)	20	mg/L	9/10/2020	TTS	2	SM 5210-B
Chloride (Cl)	24	mg/L	9/10/2020	TTS	4	SM 4500-Cl-B
Nitrate as N	2.52	mg/L	9/10/2020	TTS	0.20	SM 4500-NO3-
Nitrite as N	0.033	mg/L	9/10/2020	TTS	0.015	SM 10207
pH Value	7.48	units	9/10/2020	TTS		SM 4500-H+
s-TKN	1.45	mg/L	9/10/2020	TTS	0	Hach 10242
Temperature (C°)	14.1	C°	9/10/2020	TTS		SM 2550-B
Total Suspended Solids (TSS)	80	mg/L	9/10/2020	TTS	1	SM 2540-D
Total-phosphate (P)	0.24	mg/L	9/10/2020	TTS		calc.

Elena Velez-Reyes  
Laboratory Manager

cc: Lab File  
Allison Strube  
Andy Vecellio  
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Shannon McMillan



City of San Angelo

# Water Quality Laboratory

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San Angelo, TX 76903

Ph: 325.481.2722 - Fax: 325.653.7278



## LABORATORY REPORT

**Report To:** City of San Angelo  
 Engineering Services/Stormwater  
 72 West College  
 San Angelo, TX 76903

**Lab Number:** 486  
**Collected:** 2:00:00 PM  
**Received:** 9/10/2020  
**Reported:** 10/23/2020

**Project Name:** Engineering-Stormwater

**Contact:**

**Sample ID:** McDonalds - Station 8

Analyte	Results	Units	Test Date	By	DL	Method
Biochemical Oxygen Demand (BOD-5)	7	mg/L	9/10/2020	TTS	2	SM 5210-B
Chloride (Cl)	12	mg/L	9/10/2020	TTS	4	SM 4500-Cl-B
Nitrate as N	0.426	mg/L	9/10/2020	TTS	0.20	SM 4500-NO3-
Nitrite as N	0.020	mg/L	9/10/2020	TTS	0.015	SM 10207
pH Value	8.20	units	9/10/2020	TTS		SM 4500-H+
s-TKN	0.37	mg/L	9/10/2020	TTS	0	Hach 10242
Temperature (C°)	13.3	C°	9/10/2020	TTS		SM 2550-B
Total Dissolved Solids (TDS)	206	mg/L	9/10/2020	TTS	5	calc.
Total-phosphate (P)	0.34	mg/L	9/10/2020	TTS		calc.

Elena Velez-Reyes  
 Laboratory Manager

cc: Lab File  
 Allison Strube  
 Andy Vecellio  
 Tynn Combest  
 Ann Pierce  
 Shannon McMillan