## Arizona Department of Transportation Annual Report for MS4 Permit AZS0000018-2015

## **Part 1: General Information**

Reporting Period: July 1, 2018– June 30, 2019

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As the Certifying Official, Julia Manfredi
authorize the Water Resources Manager, Eileen Dunn, to be
a representative and signatory on the Arizona Department of Transportation Annual Report

Form, MS4 Permit AZS0000018-2015.

#### Part 2: Annual Report Certification

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 gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

DocuSigned by: Julia Manfredi

Signature of Certifying Official

9/27/2019

Date

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## Part 3: Narrative Summary of Stormwater Management Program Activities

This section provides the narrative summary of the SWMP implementation activities, progress, successes and challenges in each area during the reporting year. The discussion contains an overall annual program review for each of the components, including an assessment of the effectiveness of stormwater control measures and best management practices designed to reduce the discharge of pollutants to and from the MS4 to the maximum extent practicable, and to assess improvements in stormwater quality (Permit Part 4.1.3). Each section will summarize the permit requirements and whether the requirements were satisfied or not, and if not, provide an explanation why the permit condition could not be met. In addition, any changes or revisions to the water quality monitoring program, a summary and assessment of the monitoring data, and an update to the current listing of impaired waters and recently modified TMDLs will be provided here. For those permit conditions that require certain activities to be completed throughout the permit term, the narrative will include an estimated percent complete for that task or activity. Substantial developments or changes to the number and/or type of activities, frequency or schedule of activities, and/or the priorities or procedures for specific best management practices (BMPs) will be identified and significant timelines or proposed milestones associated with the next annual reporting period may be discussed.

# If applicable, the summary will provide a description of modifications and updates to the stormwater management program (SWMP) (Section 4.1.4) for the following activities under each subsection:

1) Addition of New Control Measures (Part 4.1.4.1): Summarize the development and implementation of any new stormwater best management practices or control measures each year;

In order to improve stabilization and better protect exposed soils from erosion following construction, ADOT has updated the conventional granite mulch/decomposed granite standard specification used in the erosion control and final stabilization plans for highway projects. The new standard for Gradation "C" Rock Mulch (Item 8101029) applies to granite material used in the "clear zone/recovery area" immediately adjacent to highway pavement. The maximum sieve size for this gradation has been increased from 3 inches to 3.75 inches to provide more effective erosion/sediment control through a greater energy/velocity dissipation due to the larger maximum size of the material, while remaining within the highway clear zone/recovery area requirements for hazard objects. The table below shows the modified specification that has been developed for the rock mulch gradation.

Gradation C Rock Mulch (fractured/crushed rocks in angular shape)					
<u>Sieve Size</u>	Percent Passing				
3.75 Inch	100				
2.5 Inch	50 — 75				
2 Inch	30 — 50				
1 Inch	10 — 20				

- 2) Addition of Temporary or Experimental Control Measures (Part 4.1.4.2): Specify the occasions when these control measures were initiated and terminated, and the perceived success of these temporary control measures; None during the current reporting period.
- 3) Increase of Existing Control Measures (Part 4.1.4.3): Summarize modifications to existing stormwater best management practices that increase the number of activities, increase the frequency of activities, or other increases in the level of implementation;

Two modifications to existing control measures were developed during the current reporting period, the first consisting of a revision to the standard detail drawing for erosion control plans and the second is to the water quality specification for seeding operations.

Engineering detail "ES2 – Rock Protection for Cut & Fill Transition and Channel Lining" (below) was revised to more clearly depict the intended flow path for rock protection structural BMPs in the erosion control and final stabilization plans for highway construction projects. The revised detail (see below) better informs contractors and field inspectors to ensure that the controls are installed properly and effectively.



The seeding specification now includes a quality testing requirement for the water sources used in seeding operations for stabilization on construction projects. The revised specification reads as follows:

ITEM 8050003 – SEEDING [CLASS II], subsection 2.07: "Water shall be free of oil, acid, salts or other substances which are harmful to plants. All non-potable water shall be tested for its suitability for seeding/planting with the water quality-related concerns of salinity, pathogens and contaminants. The water quality testing result shall be presented for Construction PLA's evaluation through the Engineer. An <u>Arizona Guide to Water Quality and Uses</u> (web link: <u>https://extension.arizona.edu/sites/</u><u>extension.arizona.edu/files/pubs/az1610.pdf</u>) Figure 8, Water Quality and Uses Triangle, shall be considered as a reference for testing result evaluation and approval.

Water Quality Standards for seeding on construction projects that reach or exceed one-contiguous-acre ( $\geq$  1 contiguous acre) permit threshold soil/ground disturbance defined under current Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permit (CGP) and/or National Pollutant Discharge Elimination System (NPDES) CGP:

• On Arizona Non-Native Americans Land (Non-Tribal), water quality for seeding construction within 0.25-mile buffer zones of Impaired and/or Outstanding Arizona Waters (OAWs) shall meet the standards of current AZPDES CGP, as well as requirements of these Special Provisions.

The URL for ADEQ's eMaps is: <u>http://qisweb.azdeq.gov/arcqis/emaps/?topic=impaired</u>

• Water quality for seeding construction within Arizona Native Americans Land (Tribal) shall meet the standards of EPA-established or approved Total Maximum Daily Loads (TMDLs) under current NPDES CGP, as well as requirements of these Special Provisions.

The URL for EPA-established or approved TMDLs is: <u>https://iaspub.epa.gov/waters10/attains\_index.control?p\_area=AZ</u>

"The source of water shall be approved by Construction PLA through the Engineer prior to use."

- 4) Replacement of Existing Control Measures (Part 4.1.4.4): Briefly summarize any replacements of existing control measures made with prior approval of ADEQ pursuant to section SWMP Revisions Requiring Permit Modification; *None during the current reporting period.*
- **5) Discontinuing or Decreasing an Existing Control Measure (Part 4.1.4.5):** Briefly summarize any discontinuing or decreasing of existing control measures, including an explanation of why the controls were eliminated and analysis of how the goals of the existing control measure are expected to be achieved once the control is eliminated or reduced;
  - Annually, ADOT will post a SWMP Review Meeting and invite the public to provide input on the stormwater program.

Removed because it isn't feasible based on the lack of understanding by the public to provide usable feedback based on online polls conducted by the STORM group.

Instead, and as a replacement, an annual meeting will be conducted that includes District personnel from each of ADOT's seven Districts to in order facilitate understanding and solicit input relevant to SWMP activities and requirements. This opportunity for District input will also serve to inform and garner buy-in from District personnel who are largely responsible for conducting, recording, and maintaining SWMP activities and information at each of the seven District offices.

## The narrative summary shall include the following:

## A. Mapping the MS4 Program - Stormwater Sewer System, Outfall Inventory, and mapping status update.

The requirement for Year 4 of the permit term (i.e., 2018-2019), as stipulated in Section 5.1, was to complete mapping for the Interstate 8 and Interstate 19 corridors. This effort was completed early, during Year 3 of the permit term, and was reported in the 2017-2018 Annual Report. As such, no additional MS4 mapping or outfall inventory was completed during the 2018-2019 reporting period. However, ADOT reviewed proposals to fulfill the Year 5 mapping requirement for the Interstate 40 corridor during the 2018-2019 reporting period, and will be moving forward with this effort in the upcoming year. As required in permit Section 5.2, a proposal to identify and map all remaining outfalls within the next three 5-year permit terms is included with this report in the renewal application addendum.

## B. Summarize Illicit Discharge, Detection and Elimination (IDDE) program activities.

- Describe any changes in authority. *None during the current reporting period.*
- IDDE Trainings. IDDE training material is incorporated into ADOT's Stormwater Awareness, Environmental Awareness, and Storm Sewer and Highway Maintenance courses. The number of trainings successfully completed for these courses during the 2018-2019 reporting period is included in Part 4 of this report. Additional guidance and mentoring are provided to District personnel upon request.
- Outfall Inspections and tracking systems, includes reporting and any follow-up activities. During the 2018-2019 reporting period, ADOT inspected 21.6% of currently identified priority outfalls. The associated outfall identification information and inspection reports are included in this report as Appendix A. Tracking information on inspection findings and follow-up was captured in an Excel spreadsheet. ADOT is currently exploring the use of its Features Inventory System for outfall inspection and IDDE mapping and tracking purposes, and anticipates implementing the enhanced tracking procedures in the upcoming permit year. The FIS system will enhance ADOT's ability to identify chronic or repeat violators. To date, no chronic or repeat violators have been identified.

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- Illicit discharge prevention activities. ADOT personnel within the Districts statewide are provided training via multiple courses to identify, investigate, and respond to potential illicit discharges. In addition, ADOT's Central District, where dry weather flows are frequently observed, have a standard procedure for review and follow-up of any unidentified discharge that found to originating from an adjacent landowner or occupant to ADOT's system are developed, to provide environmental review and guidance for encroachment permit and maintenance personnel. This process is being evaluated for potential use statewide.
- Outfall inspection and field screening procedures and significant findings. The field screening procedures remain unchanged from previous years. This past reporting period included 74 priority outfall inspections that were conducted predominantly in rural locations across the state. Flows, vegetation, and/or deposits were observed at 30 locations detailed as follows: 8 outfalls had standing water, 3 had excessive vegetation present, 16 outfalls had sediment deposits, 9 had debris deposits, 7 had a waterline stain, and 3 had "other" deposits present. Inspection reports along with photos of observed issued are provided in Appendix A. Inspections were performed by qualified ADOT environmental personnel using the Dry Weather Screening method.
- Number of illicit discharges identified and resolutions. The total number of illicit discharge discharges identified and resolutions for the current reporting period is provided in Part 4, Sections 6.3, 6.4 and 6.4.3.
- Complaint driven inspections and investigations. *None during the current reporting period.*
- IDDE field screening program and investigations including identified source identification, and any resolutions/corrective or enforcement actions, including those reported to other jurisdictions for follow-up. Upon preliminary investigation, most of the issues observed during IDDE field screening in the current reporting period were due to poor drainage conditions near the outfall or indicated a need to conduct street sweeping on a more frequent basis, particularly near bridge structures. No corrective or enforcement actions were necessary, and no issues were any reported to other jurisdictions for follow-up during the current reporting period. Coordination with local maintenance units and operations management is ongoing to address issues that were identified during field screening.
- Spills within permit area. Information on highway spills for the permit term, as reported from ADOT's Hazardous Materials Response team, is included in Part 4, Section 6.5.
- Describe updates to Dry Weather Screening Manual. *None during the current reporting period.*
- Describe updates to Stormwater Monitoring Guidance Manual. None during the current reporting period.
- Describe updates to Enforcement Response Plan (ERP). None during the current reporting period. The ERP plan will be updated and finalized during the 2020 reporting period.

## **C.** Construction Program Activities

- Trainings for construction and post-construction. ADOT and its contractors are trained on constructionspecific control measures through the Arizona Chapter Associated General Contractors, Erosion Control Coordinator Training courses. ADOT's Stormwater Awareness, Environmental Awareness, and Storm Sewer and Highway Maintenance courses also include information on control measure maintenance for the post-construction period. The number of trainings successfully completed for these courses during the 2018-2019 reporting period is included in Part 4 of this report. Additional guidance and mentoring are provided to District personnel upon request. In addition, informal guidelines for erosion and pollution control plans for projects that do not require coverage under the CGP were developed in ADOT's Northwest District. These guidelines were shared with contractors and ADOT personnel at project kickoff meetings or tailgate safety meetings to reinforce the pollution prevention objectives for projects without a SWPPP. The guidelines are also available to ADOT construction personnel across the Districts for wider use as an awareness tool for non-CGP projects.
- Annual updated inventory of construction activities. *The inventory of ADOT construction activities has been updated for the reporting period, and is included as Appendix B.*
- Status of inventory/plan review of these facilities. *The inventory has been updated for the reporting period, and is included as Appendix B.*
- An overview of inspection findings and significant findings. Stormwater inspection reports and documentation of follow-up activities are stored on-site for each construction project within the Stormwater Pollution Prevention Plan, as applicable. Inspection reports indicated that BMP maintenance and housekeeping were generally kept in compliance with plans.
- Corrective and enforcement actions needed and taken in response to construction inspections. *None during the current reporting period.*
- Summary of any new post-construction controls for discharges from new development and redevelopment ADOTs projects. *None during the current reporting period.*
- An overview of the ADOT's post-construction inspection program. *Post-construction controls are inspected and maintained as needed by District Maintenance units. ADOT's maintenance tracking system, PeCos, records when drainage or drainage related activities are conducted. Information on maintenance activities during the reporting period is included in Part 4.*
- Annual updated inventory of post-construction water quality control measures/BMPs. *The current inventory of post-construction water quality control measures is provided in Appendix C.*
- Corrective and enforcement actions needed and taken in response to post-construction inspections. *None during the current reporting period.*

- Summary of any new or revised post-construction requirements issues. *None during the current reporting period.*
- Describe updates to Erosion and Pollution Control Manual. *None during the current reporting period.*
- Describe updates to Post-Construction BMP Inventory/Manual. None during the current reporting period.

## D. Measures to Control Discharges for Roadways

- Trainings. Material on control measures for discharges associated with the highway system is incorporated into ADOT's Stormwater Awareness, Environmental Awareness, and Storm Sewer and Highway Maintenance courses. The number of trainings successfully completed for these courses during the 2018-2019 reporting period is included in Part 4 of this report. Additional guidance and mentoring are provided to District personnel upon request.
- Summary of roadway and stormwater sewer repairs, maintenance schedules and priorities, inspections, control measures, cleaning, vegetation management are included in Part 4, Section 8 of the table. ADOT's maintenance tracking system, PeCos, records highway maintenance resource utilization. Information on maintenance activities related to the stormwater program during the reporting period is included in Part 4 of this report.
- Updates to roadway BMPs. *None during the current reporting period.*
- Pollution Prevention and Control Measures for Pesticides and Fertilizer Applications in ROWs. Pollution prevention and control measures for pesticide application in ROWs are described in ADOT's Roadside Vegetation Management Guidelines, updated in March 2018 (https://azdot.gov/business/ environmental-planning/biology/roadside-vegetation-management-guidelines). Control measures include scheduling and planning herbicide use based on weather conditions and proximity to water bodies, application by licensed professionals in accordance with PMD regulations, use of approved chemicals consistent with the product label, and proper storage and disposal of chemicals. ADOT avoids using pesticides in waters of the US to the extent possible and complies with the Pesticide General Permit when applicable. Pesticide use plans are prepared and followed for application of herbicide on federal lands. Fertilizer is used for revegetation and landscaping efforts on construction projects, but is not typically used in ADOT maintenance operations. Control measures for fertilizer use are stipulated in the seeding specification (ITEM 8050003) for construction projects and are subject to field verification procedures including inspection of seeding materials and techniques. These control measures are included in ADOT's required training for construction inspectors.
- Erosion Abatement Projects. During the reporting period, 40 federally funded construction projects addressing erosion issues were advertised for bid. These projects were identified as having a major landscape, erosion control, or drainage component. Project types include scour retrofit, bridge

rehabilitation and replacement, and pavement preservation. Information on each project is provided in Appendix D.

• Status of Retrofit Updates. Three ADOT initiatives that relate to the Retrofit Program are currently underway:

**Resilience Program**. ADOT has developed a programmatic approach to addressing all aspects of weather and natural hazards – including extreme weather and future measurable climate trends through a formal Resilience Program. The approach is a new end-to-end engineering-based asset adaption process – a structured sequence to incorporate extreme weather and climate adaptation into the design engineering process. The process now in use at ADOT allows engineering and technical areas to manage risk, develop long term asset management strategies, and incorporate these risks into project level assessments; it specifically also allows for the management of assets (bridges, culverts, pavement, and roadside vegetation/stabilization) in relation to the extreme weather-climate risk of intense precipitation, system flooding, wildfires, wildfire-induced floods, drought-related dust storms, rockfall incidents, slope failures, and measurable climate trends (especially as it relates to precipitation and direct effects of increased surface temperatures) by regions or specific segments emphasized as critical.

**USGS Partnership**. Infrastructure in or near dryland river channels are susceptible to a variety of geomorphologic and hydrologic hazards caused by floodwaters. Historically, many dryland channels were broad, shallow, and mainly un-vegetated. As a result, floodwaters in the past were conveyed slowly and gently through stream channels and surrounding floodplains at relatively low velocities and shallow flood depth. Today, many dryland channels have changed dramatically and have become largely incised into the floodplain, while the carved banks are being stabilized by vegetation, in many cases by nonnative vegetation. The increase in bank stability may cause channels to incise deeper into floodplains, leading to narrower, less sinuous stream beds that can potentially convey floods at higher velocities can erode the outside of channel bends where velocities are typically high, and deposit sediment on the inside of bends where velocities are naturally lower. This commonly causes channel migration, meander cutoff, and avulsion. This reality caused the ADOT and the U.S. Geological Survey (USGS) Arizona Water Science Center to develop a partnership to improve water data collection and new technology adoption to help better understand the dynamic hydrologic conditions

**Sustainable Transportation Program**. Arizona's transportation infrastructure is spread over 114,000 square miles, operates from sea level to 8,000 feet, and withstands temperatures that range from below 0°F to over 120°F. Maintaining optimum health and performance of this infrastructure is critical to Arizona's economic vitality, quality of life, and natural and built environments. ADOT recognizes the critical need to plan and prioritize resources more efficiently in order to maintain and operate a robust, economically beneficial transportation network. Through continuous improvement practices, ADOT strives to strategically invest resources to achieve the highest possible return. ADOT also recognizes, in relation to investment and return dynamics, the importance of delivering transportation solutions in a

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more sustainable manner to achieve economic, social, and environmental goals. ADOT has moved from the early stages of identifying sustainable strategies to operationalizing a sustainable transportation program into core administrative, planning, design, construction, operations, and maintenance activities.

• Winter Storm Policies. ADOT's Winter Storm Management Operations Manual, which was last updated in 2014, is available online at <a href="https://azdot.qov/business/environmental-planning/programs/winter-storm-management">https://azdot.qov/business/environmental-planning/programs/winter-storm-management</a>). During the current reporting period, updates in winter storm best practices were conveyed at the annual Winter Readiness Workshop held in Phoenix in September 2018. This annual workshop is mandatory for all ADOT CDL snowplow operators (approximately 500 employees). The workshop informs and refreshes snowplow operators of best practices to control discharges, with a focus on equipment calibration, snowplow techniques, housekeeping measures, and the use of appropriate de-icing and anti-icing materials based on site-specific conditions.

## E. Summarize public awareness activities including outreach and education/public participation activities

- Summarize outreach events, topics, number of events, number of people reached, number and type of materials distributed, and target groups. ADOT is an active member in the Stormwater Outreach for Regional Municipalities (STORM) organization (www.azstorm.org). During the current reporting period, ADOT presented at STORM construction workshops and participated in the development of outreach materials targeting construction contractors and facilities managers. Additionally, as part of the STORM membership, ADOT receives educational and promotional items for stormwater outreach opportunities. These items were distributed to facilitate discussion of stormwater pollution at various meetings with contractors as well as ADOT construction, environmental, design, and maintenance personnel. Items were also distributed for awareness with transportation industry practitioners at the Annual Arizona Roads and Streets Conference in April 2019. In FY 2019, ADOT continued implementation of outreach to the general public to prevent trash and debris entering the MS4 through both the Adopt-a-Highway program (<u>http://azdot.qov/business/programs-and-partnerships/adopt-highway</u>) and as a partner in the Don't Trash Arizona program (<u>http://www.donttrashaz.com/</u>). Detailed information on these outreach programs is included in Part 4 of this report.
- Public access to stormwater documents. Stormwater documents are available to the public on ADOT's Water Resources website (<u>http://www.azdot.qov/business/environmental-planning/water-resources</u>). In addition, requests for stormwater information can be submitted via ADOT's website at <u>https://apps.azdot.gov/contact\_adot/</u>.
- Identify activities, number of people involved, number and type of materials distributed if applicable. *This information is included in Part 4, Section 10 of this report.*
- Describe MS4 procedures for public reporting of spills, dumping, discharges, and related stormwater issues. Several methods of reporting spills, dumping, discharges, and related stormwater issues within ADOT's MS4 are available to the public: stormwater issues can be reported through ADOT's Contact Us and Feedback web forms (<u>https://apps.azdot.gov/contact\_adot/</u>); dumping and litter can be reported

via the Litter Hotline (877.354.8837) or online (<u>https://litter.az.qov/</u>); and a new litter reporting feature was added to ADOT's 511 system in June 2019. In addition, ADOT Water Resources staff contact information is provided online (<u>https://azdot.qov/business/environmental-planning/water-resources/</u> <u>contact-water-resources</u>) for general public inquiries and reporting.

## F. ADOT Facilities

- Trainings. Facilities trainings are incorporated into ADOT's Stormwater Awareness and Environmental Awareness courses. The number of trainings successfully completed for these courses during the 2018-2019 reporting period is included in Part 4 of this report. Additional guidance and mentoring are provided to District personnel upon request.
- Status of inventory/prioritization of ADOT facilities. During the current reporting period, the inventory/risk prioritization of ADOT facilities was updated. The list, comprised of of maintenance yards, storage yards, administrative complexes, multi-function complexes, ports of entry, rest areas and MVD offices, was reviewed to identify facilities that were no longer in ADOT possession, and/or not located with the permit coverage area. These were removed from the inventory, resulting in a total of 234 facilities on the current list. Of the listed facilities, 67 were evaluated for risk prioritization in this reporting period.
- Annual updated inventory of ADOT facilities. *The inventory of ADOT facilities has been updated for the reporting period, and is included as Appendix E.*
- Update/changes to the SWMP procedures for maintenance and facilities BMPs. *None during the current reporting period.*
- Summary of inspection findings. Facility inspections are ongoing for compliance under each site's respective pollution prevention plans. Inspections are tracked and documented at the individual facilities. Inspection reports indicated that BMP maintenance and housekeeping were generally kept in compliance with plans. No facility inspections requiring a corrective action were reported during the current reporting period.
- Describe updates to Maintenance and Facilities BMP Manual. *None during the current reporting period.*
- Representative Outfalls, including a discussion of essentially identical outfall(s) if applicable incorporating outfall ID, outfall location, drainage area [ft<sup>2</sup>], runoff coefficient of drainage area [%]. Outfall information for facilities that require sampling is listed in the following table. Monitoring data for these locations are provided in Part 7.

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Site Location	Location of the outfallEssentially identical outfallDrainage area(sq ft)		F Co	Runoff efficient	
Spring Creek Storage Site	West side of site	N/A	218,000	0.35	Low
Roosevelt Maintenance Yard	Northeast corner of site	N/A	50,928	0.4	Medium
Superior Maintenance Yard	West side of site	N/A	55,290	0.6	Medium
Superior Office	South side of site	N/A	37,069	0.7	High
Nogales Maintenance Yard	Southwest corner of site	N/A	115,037	0.55	Medium

- G. Description of any new or revised policies related to stormwater management, if applicable. *None during the current reporting period.*
- H. Instances of Other Non-Compliance (part 14.18.6): None during the current reporting period.

## Part 4: Numeric Summary of Statewide Stormwater Management Program Activities

The number of best management practices performed each year is indicated in the table. If no measurable goal has been identified in the table below, the progress of the BMP is described in Part 3 Narrative Summary.

Section		Annual Reporting Year (July 1 – June 30)				
Number	Control Measure, BMP or Activity	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	STORMWATER SEWER AND O	UTFALL MAPP	ING		-	
5.2	Update Storm Sewer System Mapping and Outfalls					
	Miles of MS4 mapped I-10 Corridor	391	391	391	391	
	Outfalls identified I-10 Corridor	1615	1,824	1,824	1,824	
	Miles of MS4 mapped I-17 Corridor	118	118	118	118	
	Outfalls identified I-17 Corridor	381	646	646	646	
	Miles of MS4 mapped I-8 and I-19 Corridor	0	0	243	243	
	Outfalls identified I-8 and I-19 Corridor	0	0	596	596	
	Miles of MS4 mapped I-40 Corridor	0	0	0	0	
	Outfalls identified I-40 Corridor	0	0	0	0	
	ILLICIT DISCHARGE DETECTION AN	D ELIMINATIO	N (IDDE)			
6.2.2	Enforce Standard Encroachment Permit-					
	Encroachment permits issued	5069	5920	1813	1153	
	(Other Numeric measurable goal(s))					
6.3	Detecting Potential Illicit Discharges and Illicit Connections					
6.3.1	Outfalls inspected	46	59	73	74	
6.3.1	Priority outfalls identified to date	230	295	342	342	
	Priority outfalls inspected	46	59	73	74	
	Percent priority outfalls inspected	20	20	21.3	21.6	
6.3.1.B	IDDE discharges within ¼ of impaired or OAW	0	0	0	0	
	Storm drain cross connection detected	0	0	0	0	
6.3.2	Other dry weather flows detected	11	9	3	0	
	Illicit discharges detected	4	6	4	0	

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Section			Annual Repo	rting Year (July	7 1 – June 30)	
Number	Control Measure, BMP or Activity	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	(Other numeric measurable goal(s))					
6.4	Investigate Illicit Discharges (Source Identification and Elimination)					
	Storm drain cross connection investigated	0	0	0	0	
	Illicit connections eliminated	0	0	0	0	
	Other dry weather flows investigated	0	9	3	0	
	Other dry weather flows eliminated	0	0	3	0	
	Illicit discharges investigated	4	6	5	4	
	Illicit discharges eliminated	4	6	4	4	
	(Other numeric measurable goal(s))					
6.4.1(b)	Report Incidental Dry Weather Discharges					
	Discharges reported to ADEQ	0	0	0	0	
	(Other numeric measurable goal(s))					
6.4.3	Duty to Eliminate Illicit Discharges					
	Follow-up Investigations	0	2	4	0	
	(Other numeric measurable goal(s))					
6.4.4	Coordinate with Local Jurisdictions for Complaint Response and Investigation					
	Illicit discharges reported to other jurisdictions for follow-up	0	1	0	3	
	(Other numeric measurable goal(s))					
6.5	Responding to Spills					
	Highway accident spills responded to	209	217	222	227	
	Highway accident spills prioritized (potential for discharge)	27	16	15	11	
	Hazardous materials released	182	185	164	160	
	(Other numeric measurable goal(s))					
	MEASURES TO CONTROL DISCHARGES I		UCTION SITES			
7.2	ADOT Construction Activity					
	NOIs submitted to ADEQ	387	96	118	39	

Section			Annual Repo	rting Year (July	1 – June 30)	
Number	Control Measure, BMP or Activity	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	NOTs submitted to ADEQ	Not Reported	45	0	29	
7.3	ADOT Contractor Construction Activity					
	NOIs submitted to ADEQ	203	172	133	53	
	NOTs submitted to ADEQ	Not Reported	61	0	52	
7.4	Violations and Enforcement					
	Stormwater violations	0	0	0	0	
	Contractors w/ enforcement action	0	0	0	0	
	(Other numeric measurable goal(s))					
7.5	Post-Construction and Measures to Control Discharges from New Development and Redevelopment					
	Projects reviewed for program	4	1	3	0	
	Post-construction BMPs installed	3	0	1	1	
	Post-construction BMPs inspected	0	0	0 (tasks are recorded in PeCos, documented in Section 8.1.3 of this table)	Not available	
	(Other numeric measurable goal(s))					
	MEASURES TO CONTROL DISCHAR	GES FROM RO	ADWAYS			
8.1.1	Inspect Storm Sewer System					
	Drainage inspections performed	128	19,098	12,443.29	16,669	
	(Other numeric measurable goal(s))					
8.1.2	System Maintenance Schedules and Priorities					
	Drainage work planned	ongoing	ongoing	ongoing	ongoing	
	(Numeric measurable goal(s))					
8.1.3	Perform Repair, Maintenance, and Cleaning					
	Pavement protection and repair- Activities listed below	1408				

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Section			Annual Repo	orting Year (July	/ 1 – June 30)	
Number	Control Measure, BMP or Activity	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	101- Patch with Premix- CU YDS		1,072.7	4,407.7	86,272.6 (sq	
					ft)	
	102-Level with Premix- 12 FT Lane Miles (LM)		6,293.0	46.5	48.6	
	103- Fill Cracks- 12 FT LM		11.7	114.9	12.2	
	105- Replace Surface/Base- CU YDS		73.9	1,052.4	9,505.4 (sq	
					ft)	
	106- Chip Seal Coat (Major)- 12 FT LM		24.5	4.5	29.4	
	107- Seal Coat (Minor)- 12 FT LM		0.1	0.6	21.0	
	108- Flush Coat- 12 FT LM		1,516.9	1,783.1	3,209.9	
	109-Spot Flush/Seal Coat- 12 FT LM		24.0	38.7	79.7	
	111- Emergency Patch with Bulk Premix- CU YDS		1,325.5	588.5	2,441.3	
	112-Tight Blading – CU YDS		1,733.5	1,349.5	10	
	113- Seal Cracks with Asphalt Rubber Sealant -12 FT LM		4,519.9	1,008.1	594.4	
	116- Emergency Patch with Special Material- pounds		1,356,569.5	This code was	Not recorded	
				PeCos		
	117-Patching with Recycler- CU YDS		448.1	201.3	148.4	
	119- Other Paved Surface Maintenance- Labor Hours		3,696.0	3,020.5	Not recorded	
	9102- Contract Pavement Leveling- 12 FT LM		6.1	0.3	5.3	
	9103- Contract on-call Concrete Repair- CU YDS		255.7	404	501.1	
	9106- Contract Seal Coat-State- 12 FT LM		23.9	156.00	253	
	9109-Contract Flushing- 12 FT LM		101.4	377.1	955	
	9111- Contract Pavement Milling and Replacement-12 FT LM		132.2	100.0	108.8	
	9112-Contract Pavement Profiling- 12 FT LM		53.0	This code was	31.1	
				not recorded in PeCos		
	9113- Contract Crack Filling/Asphalt Rubberized Sealant- 12 FT LM		96.0	380.7	191.2	
	121-Blade unpaved roads-12 FT LM	118	511.2	12,531.8	658.8	
	131- Blade unpaved shoulders- Acres	96	369.8	This code was not recorded in PeCos	Not recorded	

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Section			Annual Repo	orting Year (July	/ 1 – June 30)	
Number	Control Measure, BMP or Activity	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	134-Maintain unpaved turnout/crossover- SQ FT	48	306,629.2	613,007.6	305,670	
	Litter removal	222				
	1501-Full Width Litter Pick Up- Acres		2,689.5	2,771.25	3,493.1	
	9313-Contract Litter (on-call)- Acres		596,710	706,966	589,962	
	1502-Spot litter and Debris Pick-up- Labor Hours	326	42,593.8	46,943.2	45,480.3	
	Mechanical sweeping	35				
	1507-Mechanical Sweeping- 12 FT LM		6,918.1	130,611.1	52,303.5	
	9157-Contract Mechanical Sweeping-Miles		23,735.4	79,929.3	232,569.6	
	1601-Routine drainage maintenance-number of occurrences	238	15,603	10,149.1	14,408.0	
	1602-Emergency drainage maintenance- number of occurrences	78	555.0	841.50	1,026.6	
	1603- Clean cuts/channel/dikes/curbs- Linear FT	224	1,130,546.6	906,165.7	975,533.2	
	1604-Minor slide removals-SQ FT	98	878 <i>,</i> 462.0	76,549.5	185,785	
	1605-Routine structural repair-SQ FT	82	342,246.5	1,030,590.3	140 (ea)	
	1607-Storm and rock patrol- miles	195	52,550.9	33,271.7	61,238.2	
	1608-Drainage inspection-number of occurrences	128	19,098	12,443.3	16,668.9	
	1610-Roadway pump inspections-number of occurrences	161	709	630.0	604	
	1690-Other drainage maintenance-Labor Hours	280	6,851.8	7,315.8	5,091.9	
	180-Major damage -Labor Hours	Not currently separated from regular emergency or damage repair in tracking system.	Not currently separated from regular emergency or damage repair in tracking system Total Hours – 2,341.5	Not currently separated from regular emergency or damage repair in tracking system Total Hours – 3,612.5	6,680.5	
	181-Emergency (If stormwater related)- Labor Hours		32	355.0	294.5	
	191-Encroachment permit (for Bluestake. Maintenance)-Labor Hours	340	23,348.5	22,640.5	25,704.2	
	Irrigation inspection	234				
	332- Irrigation Inspection-Units		494,279.5	221,610.0	277,553.3	

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Section		Annual Reporting Year (July 1 – June 30)				
Number	Control Measure, BMP or Activity	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	9307-Contract Irrigation Inspection/Repair-Labor Hours		24.8	This code was not recorded in PeCos	Not recorded	
	333-Irrigation repair- Labor Hours	274	9,626.5	15,457.74	16	
	341-Granite erosion control- Labor Hours	102	1,950.0	619.00	1,396.5	
	343-Non-granite erosion control-CU YDS	27	1,950.0	2,494.50	14,441.01	
	1400-Soil Stabilization- Acres	0	4.0	This code was not recorded in PeCos	11	
	Chemical vegetation control	395				
	351-Herbicide Vegetation Control - Acres		3,649.6	3,675.76	3,871.23	
	354-Chemical Control of Vegetation-Acres		83.8	67.61	82.61	
	1420-1430-1431-1432-1440-1441- Chemical Control of Vegetation - Acres		7,018.5	5,462.48	4,530.75	
	1433- Spot Pre-Emergent Shoulder Application- Acres		2,031.0	2,322.10	2,318.27	
	456-Wash interstate signs- SF Signs	74	1,871.5	1,651.00	1,912.25	
	603-Building and yard maintenance-	98	Not recorded	66,252.38	76,740.08	
	611- Material handling- Labor Hours	260	11,520.0	14,949.90	18,279.85	
	891-Premix material	65	Not recorded	4,347.24	1,700	
	892-Stockpile material- CU YDS	130	8,136.5	247,705.50	52,270.95	
	897-Screen material- CU YDS	20	6,106.0	2,450.00	6,098.62	
	899-Other material operations- Labor Hours	173	3,120.0	3,522.58	3,457.1	
	901-Administrative- Labor Hours	XX	93,917.0	77,018.41	62,037.21	
	(Other numeric measurable goal(s))					
8.2.3	Stabilize Roadway Slopes (attach summary of tracking & prioritization)					
	Acres of roadway slopes stabilized	Project in process – H8907, priority list in Appendix D	See Appendix D	See Appendix D	94.7	
	(Other numeric medsarable goal(s))					

Section			Annual Repo	orting Year (July	/ 1 – June 30)	
Number	Control Measure, BMP or Activity	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
8.2.4	Develop a program to Retrofit Existing Developed Highways					
	Retrofits completed	$\geq$	$\geq$	$\geq$	0	
	(Other numeric measurable goal(s))					
	TRAINING					
9.1.1	Train ADOT Employees- Stormwater Awareness					
	Employees trained	243	149	463	286	
	Employees Trained through Environmental Awareness	30	73	117	102	
9.1.3	Train ADOT Employees- Construction Site Inspections					
	Employees trained	23	44	28	20	
	Employees Recertified	13	25	41	11	
9.1.4	Train ADOT Employees - New development and significant redevelopment					
	Employees trained	143	0	0	0	
	(Other numeric measurable goal(s))					
9.1.5	Train ADOT Employees - Storm sewer system and highway maintenance					
	Employees trained	162	113	388	310	
	Employees Trained through Environmental Awareness	30	74	117	102	
9.1.6	Train ADOT Employees - Good housekeeping					
	Employees trained	131	149	463	286	
	(Other numeric measurable goal(s))					
9.2	ADOT Contractor Training and Certification					
	Contractors trained/certified	117	111	147	162	
	Contractors re-certified	69	31	77	69	
	(Other numeric measurable goal(s))					

Section		Annual Reporting Year (July 1 – June 30)				
Number	Control Measure, BMP or Activity	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	PUBLIC OUTREACH and EDUCATION / PUBLIC	INVOLVEMENT	and PARTICIP	ATION		
10.1.2(a)	Distribution of Educational Materials Through Public Places					
	Materials distributed	156	Not recorded	380	1050	
	Public events attended	1	12	9	5	
	People reached	100	400+	12,000	150	
	(Other numeric measurable goal(s))					
10.1.2(b)	Distribution of Educational Materials Through ADOT's Stormwater Webpage					
	Hits on webpage	3465	3,267	3,962	28,704	
	(Other numeric measurable goal(s))					
10.2.2	Record and Consider Public Comments on SWMP					
	Public meetings or forums held	0	0	0	0	
	Public comments received	0	0	0	0	
	(Other numeric measurable goal(s))					
10.2.3	Implement a Public Reporting System					
	Reports received from public	0	0	4	0	
	Reports investigated	0	0	1 (handled at District level when applicable)	0	
	(Other numeric measurable goal(s))					
10.2.4	Develop, Implement, and Maintain a Litter Pick-up Program		•		•	
	Groups participating	1449	569	810	953	
	Lane miles cleaned	1873	1,288	1,500	1,672	
	Tons of trash collected	59.53	Not Recorded	Not Recorded	95	
	(Other numeric measurable goal(s))					
10.2.5	Continue Implementation of Litter Hotline					
	Calls received	1276	1323	1,347	1,399	

Section			Annual Repo	orting Year (July	y 1 – June 30)	
Number	Control Measure, BMP or Activity	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Letters sent	1153	2,459	1,213	1,232	
	Number of people reached on Facebook	N/A	76,644	68,704	160,008	
	Number of likes on Instagram	N/A	5,169	1,379	Not available	
	(Other numeric measurable goal(s))					
	MEASURES TO CONTROL DISCHARGES FROM	I ADOT MAINT	ENANCE FACILI	TIES		
11.1	ADOT Facility Inventory					
	Facilities on inventory	270	270	275	250	
	High risk facilities	7	7	7	17	
	(Other numeric measurable goal(s))					
11.3.4.k	Spill Prevention at ADOT Facilities					
	Facilities identified with hazardous materials	126	67	67	67	
	Spills at ADOT Facilities	Not Reported	4	2	6	
	(Other numeric measurable goal(s))					
11.3.4.1	Number of ADOT facilities that Store Salt and Anti-Icing Chemicals					
	Facilities	27 MgCl, 38 Salt barns	32 MgCl, 43 Salt Barns	32 MgCl, 43 Salt Barns	30 MgCl, 46 Salt Barns	
	(Other numeric measurable goal(s))					
11.6	ADOT Facility Monitoring					
	Facilities within ¼ of impaired water or OAW	4	5	5	5	
	(Other numeric measurable goal(s))					

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#### Part 5: Evaluation of the SWMP and SWMP Modifications

ADOT's SWMP was revised in 2019 to reflect current program conditions and documentation in accordance with the permit requirements. The current SWMP is included in the Addendum to this Annual Report (4<sup>th</sup> Year Application Renewal). The revisions made include: correction of typos, clarification and updates to details of ADOT personnel and unit structure, adding headers corresponding to permit sections, updating document references, updating Key Groups and control measures to reflect current ADOT management structure, updating TMDL information, and revising the control measure requiring an annual SWMP review meeting for public input. This measure has been determined in practice to be infeasible due to the lack of understanding by the public to provide usable feedback based on online polls conducted by AZ STORM. Instead, and as a replacement, an annual update review meeting will be conducted that includes key personnel from each of ADOT's seven Districts to in order facilitate understanding and solicit input relevant to SWMP activities and requirements. This opportunity for District input will also serve to inform and garner buy-in from District personnel who are largely responsible for conducting, recording, and maintaining SWMP activities and information at each of the seven District offices.

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## Part 6: Storm Event Records

All measurable storm events (greater than 0.1 inch) recorded at each monitoring location during the winter and summer wet seasons will be included in the table until samples have been collected at the given location. The date, the amount of precipitation, and status of sampling will be documented, including any explanation on the conditions that prevented sampling.

Summer 2018	Status*	Inches
Flagst	aff	
June 16, 2018	IF	0.46
July 11-12, 2018	IF	0.52
July 15-16, 2018	PS	2.21
July 19, 2018	PS	0.83
July 29, 2018	SC	0.48
August 14, 2018	SC	0.79
September 3-4, 2018	SC	0.45
September 19, 2018	SC	0.29
September 25, 2018	SC	0.98
October 2, 2018	SC	1.97
October 4, 2018	SC	0.14
October 6-7, 2018	SC	1.14
October 11, 2018	SC	0.1
October 13, 2018	SC	0.33
October 23, 2018	SC	0.15
Sedor	na	
June 16, 2018	IF	0.15
July 10-11, 2018	IF	0.35
July 16, 2018	IF	0.23
July 27, 2018	FS	0.35
July 29, 2018	SC	0.31
August 1, 2018	SC	0.25

Summer 2018	Status*	Inches		
Sedona	(cont.)			
August 18, 2018	SC	0.12		
August 22, 2018	SC	0.2		
September 2, 2018	SC	0.17		
October 7, 2018	SC	0.64		
October 13, 2018	SC	0.15		
Phoe	enix			
July 30, 2018	IF	0.4		
August 10-11, 2018	FS	0.37		
August 14, 2018	SC	0.14		
October 2, 2018	SC	1.28		
October 7, 2018	SC	0.44		
October 13-14, 2018	SC	1.14		
October 23, 2018	SC	0.87		
Tucs	son			
June 15-16, 2018	FS	0.35		
July 8, 2018	SC	0.12		
July 10, 2018	SC	0.1		
July 15, 2018	SC	0.15		
August 8, 2018	SC	0.14		
August 11-12, 2018	SC	0.44		
August 22-23, 18	SC	0.58		
August 25, 2018	SC	0.11		

Summer 2018 Sta	atus*	Inches
Tucson (con	t.)	
September 2-3, 2018	SC	0.23
September 19, 2018	SC	0.22
October 1, 2018	SC	0.83
October 12-13, 2018	SC	1.37
October 15-16, 2018	SC	0.51
October 21, 2018	SC	0.36
October 23, 2018	SC	0.3
Nogales		
June 15-16, 2018	IF	0.47
July 8-9, 2018	PS	0.46
July 12, 2018	IF	0.5
July 16, 2018	PS	0.34
July 20, 2018	SC	0.19
July 29, 2018	SC	0.13
August 7-9, 2018	SC	3.08
August 15, 2018	SC	0.52
August 18-20, 2018	SC	1.06
August 23, 2018	SC	1.65
September 18-19, 2018	SC	0.71
October 1, 2018	SC	0.12
October 12-13, 2018	SC	0.77
October 23, 2018	SC	2.28

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Winter 2018-19	Status*	Inches		
Flagst	aff			
December 5-7, 2018	IF	0.48		
January 7, 2019	IF	0.22		
January 15-17, 2019	IF	1.07		
February 2-3, 2019	IF	1.22		
February 14, 2019	IF	1.27		
February 25, 2019	IF	0.14		
March 2, 2019	IF	0.27		
March 6, 2019	IF	0.1		
March 8, 2019	**	0.22		
March 11-12, 2019	IF	0.56		
April 29, 2019	IF	0.29		
May 8-9, 2019	IF	0.66		
May 19, 2019	IF	0.26		
May 23, 2019	IF	0.12		
May 26-27, 2019	IF	0.41		
Sedor	na			
November 29, 2018	IF	0.2		
December 6, 2018	IF	0.12		
January 1, 2019	IF	0.2		
January 5-6, 2019	IF	0.92		
January 15, 2019	IF	0.76		
January 17, 2019	**	0.19		
February 3-5, 2019	IF	1.27		
February 14, 2019	FS	0.94		
March 2, 2019	SC	0.25		
March 11-13, 2019	SC	1.4		
March 21, 2019	SC	0.12		

Winter 2018-19 S	tatus*	Inches
Sedona (co	ont.)	-
April 29, 2019	SC	0.3
May 7-9, 2019	SC	0.73
May 20, 2019	SC	0.14
May 23, 2019	SC	0.63
Phoenix	ĸ	
January 12, 2019	IF	0.17
January 15, 2019	IF	0.12
February 3, 2019	IF	0.29
February 12, 2019	IF	0.24
February 14, 2019	IF	0.21
February 21-22, 2019	FS	1.25
March 12, 2019	SC	0.32
April 25, 2019	SC	0.15
May 23, 2019	SC	0.14
Tucson		
November 30, 2018	IF	0.16
December 7, 2018	IF	0.22
December 25, 2018	IF	0.14
December 27, 2018	**	0.27
January 6, 2019	IF	0.84
February 3-4, 2019	IF	0.77
February 6, 2019	**	0.22
February 14, 2019	PS	0.49
February 18, 2019	IF	0.11
February 21-22, 2019	PS	1.05
March 12, 2019	SC	0.42
May 11, 2019	SC	0.16

Winter 2018-19 S	tatus*	Inches
Nogales	5	
December 6-7, 2018	FS	0.72
December 28, 2018	SC	0.29
January 2, 2019	SC	0.29
January 6, 2019	SC	0.37
January 13, 2019	SC	0.1
February 21-23, 2019	SC	1.79
March 12, 2019	SC	0.79

\*Status:

FS-Full Sample Collected

**PS-Partial Sample Collected** 

**IF-Insufficient Flow** 

SC-Sampling Complete for Season

\*\* - 72-hour rule

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#### Part 7: Summary of Monitoring Data

A separate table is provided for each monitoring location. The analytical results are reported each season for five years prior. The laboratory reports are attached. Pollutants monitored more frequently than required by the permit will be included in this section.

## Maintenance Facilities located within ¼ miles of an impaired water or OAW (Part 12.3)

Monitoring data are provided for the following maintenance facilities because they are located within ¼ mile of an impaired water:

- Roosevelt Maintenance Yard
- Spring Creek Maintenance Yard
- Superior Maintenance Yard
- Superior Storage and Fuel Yard
- Nogales Maintenance Yard

The Permit Part 12.3.2 requires ADOT to sample these five locations for Total Dissolves Solids (TDS), Total Suspended Solids (TSS), Polycyclic Aromatic Hydrocarbons (PAH), and any pollutants listed for impairment at each location.

Lab reports for the current reporting period's samples are included in Appendix F.

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Site ID: Roosevelt Maintenance Yard					MONITORII	NG SEASON	S			
Address and Physical Location: State Route 188 Milepost										
242-243, Roosevelt			Summer: June 1 – October 31							
Latitude/Longitude: 33° 39' 46.13" N; 111° 8' 1.36"	W									
Receiving Water: Roosevelt Lake				Wir	nter: Noven	nber 1 – Ma	y 31			
Impaired: Mercury in fish tissue		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	
Designated Uses: DWS, FC, FBC, A&Ww, AgI, AgL		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19	
SAMP	LING DATE:	NR	11/4/2015	6/30/2016	NS/IF	NS	1/20/2018	6/16/2018	2/23/2019	
MONITORING PARAMETERS	SWQS									
Total Dissolved Solids (TDS) (mg/L)	500	NR	43	78	NS/IF	NS	260	NA/IF	8	
Total Suspended Solids (TSS) (mg/L)	NNS	NR	14	161	NS/IF	NS	380	210	157	
Total Metals										
Mercury (µg/L)	2	NR	<0.2	<0.2	NS/IF	NS	<1	<0.2	<0.2	
Polynuclear Aromatic Hydrocarbon (µg/L)										
Acenaphthene	198	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Acenaphthylene	NNS	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Anthracene	74	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Benz(a)anthracene	0.005	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Benzo(a)pyrene	0.02	NR	ND	ND	NS/IF	NS	<0.05	<0.04	<0.05	
Benzo(b)fluoranthene	0.005	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Benzo(g,h,i)perylene	NNS	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Benzo(k)fluoranthene	0.005	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Chrysene	0.005	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Dibenzo(a,h)anthracene	0.005	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Fluroranthene	28	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Fluorene	280	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Indeno(1,2,3-cd)pyrene	0.05	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Naphthalene	140	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.5	
Phenanthrene	30	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	
Pyrene	210	NR	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	

Indicates detection with exceedance

IF - Insufficient Flow

NNS - No Numerical Standard

NS - No Sample

ND - Not Detected

NR - Not Required

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Site ID: Spring Creek Maintenance Yard				Ν	/IONITORIN	G SEASONS	5		
Address and Physical Location: 1340 N. Hohokam Drive,									
Nogales		Summer: June 1 – October 31							
Latitude/Longitude: 34° 48' 0.22" N; 111° 55' 23.84	" W								
Receiving Water: Spring Creek				Win	ter: Novem	ber 1 – May	/ 31		
Impaired: E. coli		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Designated Uses: FC, FBC, A&Ww, AgI, AgL		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
SAMP	LING DATE:	NR	11/4/2015	NS/IF	NS/IF	NS	NS	NS	NS
MONITORING PARAMETERS	SWQS								
Total Dissolved Solids (TDS) (mg/L)	500	NR	262	NS/IF	NS/IF	NS	NS	NS	NS
Total Suspended Solids (TSS) (mg/L)	NNS	NR	24	NS/IF	NS/IF	NS	NS	NS	NS
Microbiological									
E.Coli (MPN/100 ml)	235	NR	2	NS/IF	NS/IF	NS	NS	NS	NS
Polynuclear Aromatic Hydrocarbon (µg/L)									
Acenaphthene	198	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Acenaphthylene	NNS	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Anthracene	74	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Benz(a)anthracene	0.02	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Benzo(a)pyrene	0.02	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Benzo(b)fluoranthene	0.02	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Benzo(g,h,i)perylene	NNS	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Benzo(k)fluoranthene	0.02	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Chrysene	0.02	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Dibenzo(a,h)anthracene	0.02	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Fluroranthene	28	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Fluorene	1067	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Indeno(1,2,3-cd)pyrene	0.49	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Naphthalene	1524	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Phenanthrene	30	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS
Pyrene	800	NR	ND	NS/IF	NS/IF	NS	NS	NS	NS

Indicates detection with exceedance

IF - Insufficient Flow

NNS - No Numerical Standard

NS - No Sample

ND - Not Detected

NR - Not Required

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Site ID: Superior Maintenance Yard		MONITORING SEASONS									
Address and Physical Location: 951 Main Street, Su	perior	Summer June 1 October 21									
Latitude/Longitude: 33° 17' 14.14" N; 111° 6' 40.31	" W										
Receiving Water: Queen Creek			Winter: November 1 – May 31								
Impaired: Copper (dissolved), lead (total), selenium	(total)	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter		
Designated Uses: PBC, A&Ww, AgL		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19		
SAMPI	LING DATE:	6/5/2015	11/4/2015	6/30/2016	12/17/2016	NS	2/15/2018	6/16/2018	2/22/2019		
MONITORING PARAMETERS	SWQS										
Total Dissolved Solids (TDS) (mg/L)	500	240	16	297	86	NS	160	260	146		
Total Suspended Solids (TSS) (mg/L)	NNS	26	249	45	19	NS	11	25	723		
Hardness (mg/L)	NNS	NR	NA	NA	46.1	NS	76	170	201		
Total Metals											
Lead (µg/L)	15	NR	8.38	24	4.3	NS	3.3	3.5	80.8		
Selenium (μg/L)	50	NR	<10	<10	<0.5	NS	0.62	<0.5	<2		
Dissolved Metals											
Copper (μg/L)	*	NR	48.8	12	18 (6.5*)	NS	49 (10.4*)	16 (22.2*)	16.1 (25.9*)		
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene	850	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Acenaphthylene	NNS	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Anthracene	280000	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Benz(a)anthracene	0.2	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Benzo(a)pyrene	0.2	NR	ND	ND	<0.05	NS	<0.02	<0.02	<0.05		
Benzo(b)fluoranthene	1.9	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Benzo(g,h,i)perylene	NNS	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Benzo(k)fluoranthene	1.9	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Chrysene	19	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Dibenzo(a,h)anthracene	1.9	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Fluroranthene	2000	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Fluorene	37333	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Indeno(1,2,3-cd)pyrene	1.9	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Naphthalene	3200	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.5		
Phenanthrene	30	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		
Pyrene	28000	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05		

\* Dissolved Copper Surface Water Quality Standard is hardness based Indicates detection with exceedance

NNS - No Numerical Standard

ND - Not Detected

NR - Not Required

NS - No Sample

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Site ID: Superior Storage and Fuel Yard		MONITORING SEASONS								
Address and Physical Location: 952 Main Street, Su	perior			S	ummer: lune	1 – October	• 21			
Latitude/Longitude: 33° 17' 17.12" N; 111° 6' 43.49	" W		Summer: June 1 – October 31							
Receiving Water: Queen Creek			Winter: November 1 – May 31							
Impaired: Copper (dissolved), lead (total), selenium	(total)	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	
Designated Uses: PBC, A&Ww, AgL		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19	
SAMPI	ING DATE:	6/5/2015	11/4/2015	6/30/2016	12/17/2016	NS	2/15/2018	6/16/2018	2/14/2019	
MONITORING PARAMETERS	SWQS									
Total Dissolved Solids (TDS) (mg/L)	500	191	143	122	91	NS	420	130	280	
Total Suspended Solids (TSS) (mg/L)	NNS	46	122	374	336	NS	50	240	130	
Hardness (mg/L)	NNS	NR	NA	NA	91.4	NS	98	110	100	
Total Metals										
Lead (µg/L)	15	NR	11	<5	36	NS	5.2	34	48	
Selenium (μg/L)	50	NR	<10	<10	<0.5	NS	0.57	1.2	<50	
Dissolved Metals										
Copper (µg/L)	*	NR	114	59.3	30 (12.3*)	NS	60 (13.2*)	110 (14.7*)	42 (13.4*)	
Polynuclear Aromatic Hydrocarbon (µg/L)										
Acenaphthene	850	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	
Acenaphthylene	NNS	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	
Anthracene	280000	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	
Benz(a)anthracene	0.2	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	
Benzo(a)pyrene	0.2	NR	ND	ND	<0.05	NS	0.093	<0.02	<0.05	
Benzo(b)fluoranthene	1.9	NR	ND	ND	<0.05	NS	0.14	<0.1	<0.05	
Benzo(g,h,i)perylene	NNS	NR	ND	ND	<0.05	NS	0.15	<0.1	<0.05	
Benzo(k)fluoranthene	1.9	NR	ND	ND	<0.05	NS	0.11	<0.1	<0.05	
Chrysene	19	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	
Dibenzo(a,h)anthracene	1.9	NR	ND	ND	<0.05	NS	0.14	<0.1	<0.05	
Fluroranthene	2000	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	
Fluorene	37333	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.1	
Indeno(1,2,3-cd)pyrene	1.9	NR	ND	ND	<0.05	NS	0.16	<0.1	<0.05	
Naphthalene	3200	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	
Phenanthrene	30	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	
Pyrene	28000	NR	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	

\* Dissolved Copper Surface Water Quality Standard is hardness based

NNS - No Numerical Standard

ND - Not Detected

NR - Not Required

NS - No Sample

Indicates detection with exceedance

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Site ID: Nogales Maintenance Yard		MONITORING SEASONS							
Address and Physical Location: 1340 N. Hohokam Drive,	Nogales	Summer: June 1 – October 31							
Latitude/Longitude: 31° 21' 22.97" N; 110° 55' 38.96" W	1			Summer Sum		<b>J</b> 1			
Receiving Water: Nogales Wash		Winter: November 1 – May 31							
Impaired: Ammonia and copper (dissolved), total re	esidual	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
chlorine, E. coli		Summer		Summer		Summer	White	Summer	Vincer
Designated Uses: PBC, A&Ww		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
SAMP	LING DATE:	7/13/2015	12/12/2015	6/25/2016; 7/6/2016; 8/9/2016	12/22/2016	NS	2/15/2018	6/16/2018	12/7/2018
MONITORING PARAMETERS	SWQS				-			-	
Total Dissolved Solids (TDS) (mg/L)	500	330	160	210	220	NS	94	200	110
Total Suspended Solids (TSS) (mg/L)	NNS	1000	280	800	54	NS	52	110	1600
Hardness (mg/L)	NNS	NR	NA	NA	79	NS	36	120	200
Nutrients									
Total Ammonia (mg/L)	**	NR	ND	ND	<0.5	NS	<1	<0.5	<0.5
Microbiological									
E.Coli (MPN/100 ml)	575	NR	52	210 (H); 2600	980	NS	248.1	220	68
Dissolved Metals									
Copper (µg/L)	*	NR	15	25	22 (10.8*)	NS	<10	31 (16.0*)	17 (25.8*)
Organic Toxic Pollutants									
Chlorine, residual (μg/L)	19	NR	73	ND	<100	NS	470	190	40
Polynuclear Aromatic Hydrocarbon (µg/L)									
Acenaphthene	198	NR	ND	ND	<0.05	NS	<0.1	0.52	<0.05
Acenaphthylene	NNS	NR	ND	ND	<0.05	NS	<0.1	<0.05	0.15
Anthracene	74	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Benz(a)anthracene	0.02	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Benzo(a)pyrene	0.02	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Benzo(b)fluoranthene	0.02	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Benzo(g,h,i)perylene	NNS	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Benzo(k)fluoranthene	0.02	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Chrysene	0.02	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Dibenzo(a,h)anthracene	0.02	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Fluroranthene	28	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Fluorene	1067	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.1
Indeno(1,2,3-cd)pyrene	0.49	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Naphthalene	1524	NR	ND	ND	<0.05	NS	<1	<0.05	<0.05
Phenanthrene	30	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Pyrene	800	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05

\* Dissolved Copper Surface Water Quality Standard is hardness based \*\* Ammonia Surface Water Quality Standard is pH based

Indicates detection with exceedance

(H) - Sampled outside of hold time

ND - Not Detected

NNS - No Numerical Standard

NS - No Sample

NR - Not Required

#### Wet Weather Monitoring at Outfalls in Phoenix, Tucson, Sedona, Nogales and Flagstaff (Part 12.4.2)

Provide the outfall identification number, the outfall address and physical location including latitude/longitude, size of outfall drainage, land use percentages, the receiving water (including whether the receiving water is impaired or an OAW, designated uses, and the lowest surface water quality standards applicable to the receiving water.

Information on the wet weather monitoring outfall locations is provided in the table below. Monitoring data for each location are provided following the table. Sampling event data and lab reports for the current reporting period are provided in Appendix F.

Outfall Identification,	Physical Location	Land Use by Percent /	Receiving Water/Designated Uses	Equipment Type
Latitude, Longitude		Drainage Area		
Flagstaff	South side of	Urban Highway 80%	AZ15020015-004A Rio de Flag:	Auto-sampler –
35 11 53.29N	intersection at Business	Commercial Streets 20%	PBC, A&We	Isco Model 6712
111 39 05.48W	40 and State Route 180	29.3 Acres		
Sedona	Below western	State/Business Route	AZ15060202-018C Oak Creek:	Auto-sampler –
34 51 43.93N	abutment of State	90% Commercial Streets	FBC, OAW, impaired, FC, AgL,	Isco Model 6712
111 45 42.68W	Route 179 bridge over	10%	A&Wc, DWS, AgI	
	Oak Creek	7.35 Acres		
Phoenix	East of State Route 101	Urban Highway 90%	AZ15070102-003 Skunk Creek:	Auto-sampler –
33 37 19.84N	on north bank of Skunk	Commercial Streets 10%	inconclusive	Isco Model 6712
112 14 21.61W	Creek	17.5 Acres		
Tucson	West of Interstate 10,	Urban Highway 90%	AZ15050301-003A Santa Cruz	Auto-sampler –
32 15 17.19N	north of Grant Road,	ADOT Facility 10%	River: PBC, AgL, A&We	Isco Model 6712
110 59 49.39W	within ADOT Yard	4.8 Acres		
Nogales	Morley Road at	Urban Highway 80%	AZ15050301-011 Nogales	Auto-sampler –
31 21 02.10N	Intersection of State	<b>Residential Streets 20%</b>	Wash: PBC, impaired, FC,	Isco Model 6712
110 55 24.48W	Route 82	59.5 Acres	A&Ww	

#### Designated Water Body Use Abbreviations:

Agricultural Irrigation = Agl

Agricultural Livestock Watering = AgL Aquatic & Wildlife coldwater = A&Wc Aquatic & Wildlife ephemeral = A&We Aquatic & Wildlife warmwater = A&Ww Fish Consumption = FC Full Body Contact = FBC, Outstanding Arizona Water = OAW Partial Body Contact = PBC

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Outfall ID: Flagstaff				1	MONITORING	SEASONS			
Outfall Address and Physical Location: South side of	f								
intersection at Business 40 and State Route 180				Sun	nmer: June 1	– October 31	<u>.</u>		
Latitude/Longitude: 35° 11' 53.29" N, 111° 39' 5.48'	' W								
Size of Outfall Drainage (acres): 29.3				Win	ter: Novembe	er 1 – May 31	1		
Land Use Percentages: Urban Highway 80%; Comme	ercial								
Streets 20%									
Receiving Water: Rio de Flag									
Impaired OAW (include other parameters)	)						-		
Designated Uses: PBC, A&We		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Sample Method: first flush manual auto composite		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
SAMPL	ING DATE:	6/5/2015; 6/28/2015; 8/7/2015	11/15/2015; 1/7/2016	6/10/2016; 6/28/2016	3/23/2017	NS	NS/IF	7/16/2018; 7/20/2018	NS/IF
MONITORING PARAMETERS	SWQS								
Flow [field]	NNS	332.9	EF	301.2; 4073.5	174.4	NS	NS/IF	3011.6; 1014.4	NS/IF
pH [field]	6.5-9.0	8.59	8.63	7.7; 8.48	NA	NS	NS/IF	NA	NS/IF
Temperature ( <sup>°</sup> C) [field]	NNS	16.4	3	19.5; 19.4	NA	NS	NS/IF	NA	NS/IF
Total Dissolved Solids (TDS) (mg/L)	500	205	222	285	250	NS	NS/IF	<20	NS/IF
Total Suspended Solids (TSS) (mg/L)	NNS	816	185	178	260	NS	NS/IF	230	NS/IF
Turbidity	NNS	432	110	153	400	NS	NS/IF	15	NS/IF
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	68	57	300	65	NS	NS/IF	13	NS/IF
Chemical Oxygen Demand (COD) (mg/L)	NNS	209	178	330	490	NS	NS/IF	46	NS/IF
Inorganics									
Sulfates	250	16.3	<5	6.1	5.3	NS	NS/IF	<2	NS/IF
Nutrients (mg/L)									
Nitrate (NO <sub>3</sub> -N)	3733.333	0.38	0.108 (H)	* 0.48	0.67	NS	NS/IF	0.25	NS/IF
Nitrite (NO <sub>2</sub> -N)	233.333	<0.1	0.108 (H)	* 0.48	<0.1	NS	NS/IF	<0.1	NS/IF
Sodium	NNS	23	55	11.1	40	NS	NS/IF	3.3	NS/IF
Calcium	NNS	39	13.7	16.8	27	NS	NS/IF	1.1	NS/IF
Chloride	250	<10	81.6	14.2	50	NS	NS/IF	<2	NS/IF
Microbiological									
Escherichia coli (E. coli ) (CFU/100 mg or MPN)	575	119.8	>2419.6	1203.3; 435.2; 727; 178.5	<1	NS	NS/IF	ND	NS/IF
Fecal Coliform	NNS	TNTC	TNTC	TNTC(H); TNTC	270	NS	NS/IF	ND	NS/IF

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Outfall ID: Flagstaff (continued)		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
MONITORING PARAMETERS	SWQS	2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
Total Metals (μg/L)									
Arsenic	280	<10	<10	<10	3.2	NS	NS/IF	2.2	NS/IF
Barium	98000	350	84.6	101	250	NS	NS/IF	130	NS/IF
Cadmium	700	<1	<20	<2	0.29	NS	NS/IF	0.19	NS/IF
Chromium	NNS	29	<10	13.2	27	NS	NS/IF	13	NS/IF
Copper	1300	110	22	49.8	57	NS	NS/IF	30	NS/IF
Lead	15	30.1	6.85	10.6	15	NS	NS/IF	12	NS/IF
Mercury	280	<0.2	<0.2	<0.2	<0.2	NS	NS/IF	<0.2	NS/IF
Nickel	28000	40	<10	12.6	22	NS	NS/IF	9.6	NS/IF
Selenium	33	<20	<10	<10	2.3	NS	NS/IF	0.91	NS/IF
Silver	4667	<1	<5	<5	<100	NS	NS/IF	<0.1	NS/IF
Zinc	280000	550	151	215	270	NS	NS/IF	120	NS/IF
Polynuclear Aromatic Hydrocarbon (µg/L)									
Acenaphthene	56000	NR	ND	ND	<1	NS	NS/IF	<0.1; <0.1	NS/IF
Acenaphthylene	NNS	NR	ND	ND	<1	NS	NS/IF	<0.1; <0.1	NS/IF
Anthracene	280000	NR	ND	ND	<0.051	NS	NS/IF	<0.1; <0.1	NS/IF
Benz(a)anthracene	0.2	NR	ND	ND	<0.2	NS	NS/IF	<0.1; 0.17	NS/IF
Benzo(a)pyrene	0.2	NR	ND	ND	<0.051	NS	NS/IF	0.021; 0.026	NS/IF
Benzo(b)fluoranthene	1.9	NR	ND	ND	<0.1	NS	NS/IF	<0.1; 0.21	NS/IF
Benzo(g,h,i)perylene	NNS	NR	ND	ND	<0.1	NS	NS/IF	<0.1; <0.1	NS/IF
Benzo(k)fluoranthene	1.9	NR	ND	ND	<0.051	NS	NS/IF	<0.1; <0.1	NS/IF
Chrysene	19	NR	ND	ND	<0.1	NS	NS/IF	<0.1; 0.12	NS/IF
Dibenzo(a,h)anthracene	1.9	NR	ND	ND	<0.1	NS	NS/IF	<0.1; <0.1	NS/IF
Fluroranthene	37333	NR	ND	ND	<0.1	NS	NS/IF	<0.1; 0.22	NS/IF
Fluorene	37333	NR	ND	ND	<0.1	NS	NS/IF	<0.1; <0.1	NS/IF
Indeno(1,2,3-cd)pyrene	1.9	NR	ND	ND	<0.1	NS	NS/IF	<0.1; 0.1	NS/IF
Naphthalene	18667	NR	ND	ND	<0.51	NS	NS/IF	<0.1; <0.1	NS/IF
Phenanthrene	NNS	NR	ND	ND	<0.1	NS	NS/IF	<0.1; <0.1	NS/IF
Pyrene	28000	NR	ND	ND	<0.1	NS	NS/IF	<0.1; 0.18	NS/IF

\* nitrate & nitrite reported as combined nitrate-nitrite

Indicates detection with exceedance

EF - Equipment Failure

ND - Not Detected

NS - No Sample

(H) - Sampled outside of hold time

IF - Insufficient Flow

NNS - No Numerical Standard NR - Not Required

TNTC - Too Numerous to Count

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Outfall ID: Sedona					MONITORIN	G SEASONS	5		
Outfall Address and Physical Location: Below west	ern								
abutment of State Route 179 bridge over Oak Cree	ĸ			Sur	nmer: June 1	1 – October	31		
Latitude/Longitude: 34° 51' 43.93" N, 111° 45' 42.6	68" W								
Size of Outfall Drainage (acres): 7.35				Wir	nter: Novem	ber 1 – May	/ 31		
Land Use Percentages: State/Business Route 90%;									
Commercial Streets 10%									
Receiving Water: Oak Creek									
Impaired: E. coli; OAW									
Designated Uses: DWS, FC, FBC, A&Wc, AgI, AgL		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Sample Method: first flush manual auto composite		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
		6/14/2015;						7/27/2010.	
SAMPL	ING DATE\:	7/6/2015;	11/3/2015	6/29/2016	2/28/2017	NS	1/10/2018	//2//2018;	2/14/2019
		7/31/2015						10/2/2018	
MONITORING PARAMETERS	SWQS								
Flow [field]	NNS	EF	126	499.3	332.9	NS	618.2	98.3	NA/EF
pH [field]	6.5-8.5	9.17	8.5	8.54	NA	NS	NA	6.6	NA
Temperature (°C) [field]	NNS	17.8	13.9	14.1	NA	NS	NA	8	NA
Total Dissolved Solids (TDS) (mg/L)	500	204	44	67	120	NS	210	52	146
Total Suspended Solids (TSS) (mg/L)	NNS	389	118	468	65	NS	320	130	237
Turbidity	NNS	118	53	207	110	NS	140	95	179
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	51	12	16	11	NS	70	26	27.9
Chemical Oxygen Demand (COD) (mg/L)	NNS	154	290	75.4	83	NS	310	<20	59
Inorganics							-	-	
Sulfates	250	6.1	<5	<5	3.7	NS	6.8	<5	3.77
Nutrients (mg/L)									
Nitrate (NO <sub>3</sub> -N)	10	* 0.297	0.63	0.58	0.23	NS	0.8	<0.5	0.319
Nitrite (NO <sub>2</sub> -N)	1	* 0.297	<0.2	<0.1	<0.1	NS	<0.1	<0.1	0.0229
Sodium	NNS	3.93	3.29	2.39	10	NS	5.2	<5	22.3
Calcium	NNS	39.1	35.8	32.8	15	NS	38	11	24.1
Chloride	250	2.46	6.89	1.14	10	NS	7.1	1.1	29.7
Microbiological									
Escherichia coli (E. coli) (CFU/100 mg or MPN)	235	118.7	107.6	6.3	11000	NS	NA	730	67
Fecal Coliform	NNS	TNTC	TNTC	289	930	NS	NA	1200	40

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Outfall ID: Sedona (continued)		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
MONITORING PARAMETERS	SWQS	2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
Total Metals (μg/L)									
Arsenic	10	<20	<10	<10	<100	NS	3.7	1.2	<4
Barium	2000	157	119	180	53	NS	190	43	109
Cadmium	5	<5	<2	<2	<1	NS	<0.1	<0.25	<2
Chromium	100	10.2	<10	15.2	<10	NS	13	2.6	6.41
Copper	500	62.2	37.7	57.9	21	NS	78	15	35.8
Lead	15	29.1	8.51	6.82	<15	NS	8	2.6	4.62
Mercury	2	<0.2	<0.2	<0.2	<0.2	NS	<0.2	<1	<0.2
Nickel	140	<20	15.8	22.8	<10	NS	21	5.2	11.3
Selenium	20	<20	<10	<10	<100	NS	1.5	<2.5	<2
Silver	35	<20	<5	<5	<10	NS	0.11	<0.5	<2
Zinc	2100	520	316	369	210	NS	650	110	347
Polynuclear Aromatic Hydrocarbon (µg/L)									
Acenaphthene	198	NR	ND	ND	<1	NS	NA	<0.05; <0.4	<0.0505
Acenaphthylene	NNS	NR	ND	ND	<1	NS	NA	<0.05; <0.4	<0.0505
Anthracene	74	NR	ND	ND	<0.051	NS	NA	<0.05; <0.4	<0.0505
Benz(a)anthracene	0.005	NR	ND	ND	<0.2	NS	NA	<0.05; <0.4	<0.0505
Benzo(a)pyrene	0.02	NR	ND	ND	<0.051	NS	NA	<0.05; 0.24	<0.0505
Benzo(b)fluoranthene	0.005	NR	ND	ND	<0.1	NS	NA	<0.05; <0.4	0.109
Benzo(g,h,i)perylene	NNS	NR	ND	ND	<0.1	NS	NA	<0.05; <0.4	0.0949
Benzo(k)fluoranthene	0.005	NR	ND	ND	<0.051	NS	NA	<0.05; 0.4	<0.0505
Chrysene	0.005	NR	ND	ND	<0.1	NS	NA	<0.05; <0.4	0.076
Dibenzo(a,h)anthracene	0.005	NR	ND	ND	<0.1	NS	NA	<0.05; 0.41	<0.0505
Fluroranthene	28	NR	ND	0.00104	<0.1	NS	NA	<0.05; <0.4	0.0925
Fluorene	280	NR	ND	ND	<0.1	NS	NA	<0.05; <0.4	<0.0505
Indeno(1,2,3-cd)pyrene	0.05	NR	ND	ND	<0.1	NS	NA	<0.05; <0.4	< 0.0505
Naphthalene	140	NR	ND	ND	<0.51	NS	NA	<0.05; <0.4	<0.505
Phenanthrene	30	NR	ND	ND	<0.1	NS	NA	<0.05; <0.4	<0.0505
Pyrene	210	NR	ND	ND	<0.1	NS	NA	<0.05, <0.4	0.113

\* nitrate & nitrite reported as combined nitrate-nitrite

Indicates detection with exceedance

EF - Equipment Failure

ND - Not Detected

NS - No Sample

(H) - Sampled outside of hold time

NNS - No Numerical Standard TNTC - Too Numerous to Count NR - Not Required

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Outfall ID: Phoenix				Μ	IONITORING S	SEASONS			
Outfall Address and Physical Location: East of State	Route								
101 on north bank of Skunk Creek				Sum	mer: June 1 –	October 31	<u>.</u>		
Latitude/Longitude: 33° 37' 19.84" N, 112° 14' 21.6	1" W								
Size of Outfall Drainage (acres): 17.5				Wint	er: November	<sup>.</sup> 1 – May 32	1		
Land Use Percentages: Urban Highway 90%; Commo	ercial								
Streets 10%									
Receiving Water: Skunk Creek									
Impaired OAW (include other parameters	)								
Designated Uses: Inconclusive		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Sample Method: first flush manual auto composite		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
SAMPL	ING DATE:	6/5/2015	11/15/2015	6/30/2016; 8/5/2016; 8/20/2016; 9/7/2016	12/22/2016	NS	2/15/2018	8/11/2018; 10/2/2018	2/21/2019
MONITORING PARAMETERS	SWQS								
Flow [field]	NNS	105	EF	31.7; 427.9; 171.9; 142.7	3011.6	NS	NA	14.8	NA/EF
pH [field]	6.5-9.0	7.93	8.6	7.42	NA	NS	7.98	NA	9.07
Temperature ( <sup>°</sup> C) [field]	NNS	25.9	16.1	31.4	NA	NS	14	NA	7.1
Total Dissolved Solids (TDS) (mg/L)	500	240	117	96	180	NS	300	150	58
Total Suspended Solids (TSS) (mg/L)	NNS	57	44	169	73	NS	14	430	153
Turbidity	NNS	54	36.8	18.1	21	NS	22	21	28.2
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	80	<7.66	105	7	NS	29	18	35.1
Chemical Oxygen Demand (COD) (mg/L)	NNS	220	125	537	86.5	NS	210	190	24
Inorganics									
Sulfates	250	17	14.3	11.9	8.4	NS	24	13	4.62
Nutrients (mg/L)									
Nitrate (NO <sub>3</sub> -N)	3733.333	2.5	0.98	5.18	1	NS	2.5	1.1	0.373
Nitrite (NO <sub>2</sub> -N)	233.333	0.2	<0.1	0.14	<0.1	NS	0.33	0.22	0.373
Sodium	NNS	10	9	9	8.9	NS	20	6.7	5.16
Calcium	NNS	26	16	18	12.6	NS	34	28	11
Chloride	250	10	6	19	4.2	NS	16	8	4.72
Microbiological									
Escherichia coli (E. coli ) (CFU/100 mg or MPN)	575	770	980	>2419.6	330	NS	<1.0	520	34.2
Fecal Coliform	NNS	CONF	108000	122000; >2000	>2419.6	NS	<1.0	>2419.6	>200

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Outfall ID: Phoenix (continued)		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
MONITORING PARAMETERS	SWQS	2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
Total Metals (μg/L)									
Arsenic	200	ND	<1	1	1.3	NS	2.5	3.7	<4
Barium	98000	83	50	80	32	NS	61	140	93.7
Cadmium	50	ND	0.1	0.2	<0.08	NS	<0.1	0.19	<2
Chromium	1000	ND	<5	7	2.3	NS	2.8	10	6.98
Copper	500	61	2.5	56	23	NS	49	72	41.4
Lead	15	ND	2.5	5.9	1.5	NS	1.3	11	5.83
Mercury	10	ND	<0.2	<0.2	0.012	NS	<0.2	<0.2	<0.2
Nickel	28000	ND	<0.2	<20	2.8	NS	5.6	16	6.42
Selenium	33	ND	<2	<2	<0.5	NS	0.54	1.3	<2
Silver	4667	ND	6.1	<0.1	<0.5	NS	<0.1	<0.1	<2
Zinc	25000	160	100	130	44	NS	72	370	201
Polynuclear Aromatic Hydrocarbon (µg/L)									
Acenaphthene	56000	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Acenaphthylene	NNS	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Anthracene	280000	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Benz(a)anthracene	0.2	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Benzo(a)pyrene	0.2	NR	ND	ND; ND	<0.05	NS	<0.02	<0.02	<0.05
Benzo(b)fluoranthene	1.9	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Benzo(g,h,i)perylene	NNS	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Benzo(k)fluoranthene	1.9	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Chrysene	19	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Dibenzo(a,h)anthracene	1.9	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Fluroranthene	37333	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Fluorene	37333	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Indeno(1,2,3-cd)pyrene	1.9	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Naphthalene	18667	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.5
Phenanthrene	NNS	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05
Pyrene	28000	NR	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

Indicates detection with exceedance

ND - Not Detected

NNS - No Numerical Standard

NR - Not Required

EF - Equipment Failure NS - No Sample

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Outfall ID: Tucson				r	MONITORING	SEASONS			
Outfall Address and Physical Location: West of Inte	erstate 10								
north of Grant Road within ADOT Yard				Sun	nmer: June 1 -	- October 3	1		
Latitude/Longitude: 32° 15' 17.19" N, 110° 59' 49.3	9" W								
Size of Outfall Drainage (acres): 4.8				Win	ter: Novembe	er 1 – May 3	31		
Land Use Percentages: Urban Highway 90%; ADOT	Facility								
Receiving Water: Santa Cruz River									
Impaired OAW (include other parameter	rs)								
Designated Uses: PBC, A&We, AgL		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Sample Method: first flush manual auto composite		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
SAMP	LING DATE:	7/28/2015; 8/1/2015; 8/7/2015	12/12/2015; 1/4/2016	8/9/2016	12/22/2016	NS	12/17/2017; 1/10/2018	6/16/2018	2/14/2019; 2/22/2019
MONITORING PARAMETER	SWQS								
Flow [field]	NNS	276.5	EF	EF	15.9	NS	NA	276	507; 4
pH [field]	6.5-9.0	8.59; 8.48	8.87	8.58	NA	NS	NA	8.08	8.25; NA
Temperature (°C) [field]	NNS	30.9; 32.7	14	25.6	NA	NS	NA	13.9	16.2; NA
Total Dissolved Solids (TDS) (mg/L)	500	110; 114	130	110	80	NS	228	160	82
Total Suspended Solids (TSS) (mg/L)	NNS	16; 110; 186	40	380	200	NS	18	33	170
Turbidity	NNS	40; 95.8	52	350	170	NS	43.6	63	140
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	27	14	<5	20	NS	24	11	20
Chemical Oxygen Demand (COD) (mg/L)	NNS	78; 147	100	56	180	NS	201	170	100
Inorganics									
Sulfates	250	6.8; 8.8	7.4	3.9	70	NS	18.6	9.7	6.6
Nutrients (mg/L)									
Nitrate (NO <sub>3</sub> -N)	3733.333	1.1; 1.49	0.75	0.93	0.74	NS	1.73	0.6	0.76
Nitrite (NO <sub>2</sub> -N)	233.333	0.19; 0.16	0.1	<0.1	<0.1	NS	0.24	0.13	0.11
Sodium	NNS	3.8; 4	7.1	2.9	<5	NS	11	7.5	9.6
Calcium	NNS	19; 22	17	36	22	NS	25	24	19
Chloride	250	<2; <5	20	2.2	2.8	NS	8	4.8	6.5
Microbiological									
Escherichia coli (E. coli ) (CFU/100 mg or MPN)	575	790	<10 (H)	16000	2400	NS	170	1700	490
Fecal Coliform	NNS	CONF	690 (H)	TNTC	2400	NS	2400	2400	2400

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Outfall ID: Tucson (continued)		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
MONITORING PARAMETERS	SWQS	2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
Total Metals (μg/L)									
Arsenic	200	3.4; <5	1.2	4.9	2.4	NS	1.9	2.5	2.5
Barium	98000	58; 90	52	150	110	NS	84	78	130
Cadmium	50	<1; <0.5	0.26	0.53	0.42	NS	0.2	<0.25	0.31
Chromium	1000	<10; 7	ND	12	14	NS	<25	3.1	7.9
Copper	500	68; 91	64	100	150	NS	120	78	100
Lead	15	<15; <100	ND	52	24	NS	4.3	5.9	15
Mercury	10	<0.2; <0.2	ND	ND	<1	NS	<0.2	<1	<1
Nickel	28000	<10; <20	ND	16	11	NS	<100	4.9	7
Selenium	33	<2; <10	0.49	1.7	<2.5	NS	<2	<2.5	<2.5
Silver	4667	<1; <0.5	ND	0.49	<0.5	NS	0.1	<0.5	<0.5
Zinc	25000	160; 210	270	240	230	NS	120	140	910
Polynuclear Aromatic Hydrocarbon (µg/L)									
Acenaphthene	56000	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Acenaphthylene	NNS	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Anthracene	280000	NR	ND	ND	0.07	NS	<0.1	<0.05	<0.05
Benz(a)anthracene	0.2	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Benzo(a)pyrene	0.2	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Benzo(b)fluoranthene	1.9	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Benzo(g,h,i)perylene	NNS	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Benzo(k)fluoranthene	1.9	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Chrysene	19	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Dibenzo(a,h)anthracene	1.9	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Fluroranthene	37333	NR	ND	ND	<0.05	NS	<0.1	<0.05	0.053
Fluorene	37333	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.1
Indeno(1,2,3-cd)pyrene	1.9	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Naphthalene	18667	NR	ND	ND	<0.05	NS	<1	<0.05	<0.05
Phenanthrene	NNS	NR	ND	ND	<0.05	NS	<0.1	<0.05	<0.05
Pyrene	28000	NR	ND	ND	<0.05	NS	<0.1	<0.05	0.062

CONF - Confluent bacteria growth observed, accurate colony count of the presence or non-presence of Fecal Coliforms could not be determined

(H) - Sampled outside of hold time

ND - Not Detected

NNS - No Numerical Standard

NR - Not Required

EF - Equipment Failure NS - No Sample

Indicates detection with exceedance

TNTC - Too Numerous to Count

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Outfall ID: Nogales	MONITORING SEASONS								
Outfall Address and Physical Location: Morley Roa	d at								
Intersection of State Route 82				Summer	: June 1 – C	ctober 31			
Latitude/Longitude: 31° 21' 2.1" N, 110° 55' 24.48"	W								
Size of Outfall Drainage (acres): 59.5				Winter: I	November 1	L – May 31			
Land Use Percentages: Urban Highway 80%; Reside	ntial								
Streets 20%									
Receiving Water: Tributary to Nogales Wash									
Impaired: Ammonia, copper (dissolved), total resid	ual								
chlorine, E. coli									
Designated Uses: PBC, A&Ww, FC		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Sample Method: first flush manual auto composite		2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
SAMP	LING DATE:	8/20/2015	12/12/2015; 1/4/2016	6/25/2016; 7/6/2016; 8/9/2016	NS/EF	NS	2/15/2018	7/9/2018; 7/16/2018	12/7/2018
MONITORING PARAMETERS	SWQS								
Flow [field]	NNS	1895.7	465.34; 1012.16	459.4; 1087.3; 792.5	NS/EF	NS	NA	1363.1	NA
pH [field]	6.5-9.0	8.78	8.72; 9.2	8.54	NS/EF	NS	7.35	6.7	NA
Temperature (°C) [field]	NNS	23.6	7.2; 12.3	19.9	NS/EF	NS	13.9	9.6	NA
Total Dissolved Solids (TDS) (mg/L)	500	81	66	82	NS/EF	NS	69	89	20
Total Suspended Solids (TSS) (mg/L)	NNS	718	160	350	NS/EF	NS	36	310	510
Turbidity	NNS	450	180	40; 220	NS/EF	NS	73.8	95	400
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	9.9	14	22; 12	NS/EF	NS	5	12	4.5
Chemical Oxygen Demand (COD) (mg/L)	NNS	303	120	56	NS/EF	NS	72	140	190
Hardness (mg/L)	NNS	67	NR	NR	NS	NS	31	84	61
Inorganics									
Sulfates	250	<5	2.9	6.3	NS/EF	NS	2.37	<5	<5
Nutrients (mg/L)									
Nitrate (NO <sub>3</sub> -N)	3733.333	0.89	0.6	1.2; 0.78	NS/EF	NS	0.431	0.85	0.98
Nitrite (NO <sub>2</sub> -N)	233.333	<0.1	ND	ND	NS/EF	NS	<0.1	<0.1	<0.1
Sodium	NNS	2	2.2	3.3	NS/EF	NS	1.7	<5	<5
Calcium	NNS	19	14	17	NS/EF	NS	9.9	23	16
Chloride	250	<5	2.2	ND	NS/EF	NS	1.1	1.5	2.4
Total Ammonia (mg/L)	**	<1	NR	NR	NS/EF	NS	<1	<0.5	<0.5
Microbiological									
Escherichia coli (E. coli) (CFU/100 mg or MPN)	575	≥1600 (H)	<10 (H)	4400 (H); 1700	NS/EF	NS	770.1	2400	2400
Fecal Coliform	NNS	125000 (H)	310 (H)	TNTC (H); TNTC	NS/EF	NS	>800	2400	2400

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Outfall ID: Nogales (continued)		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
MONITORING PARAMETERS	SWQS	2015	2015-16	2016	2016-17	2017	2017-18	2018	2018-19
Total Metals (µg/L)									
Arsenic	80	4.6	4.6	5.3	NS/EF	NS	<1	7.7	4.9
Barium	98000	140	50; 130	150	NS/EF	NS	43	230	140
Cadmium	84	0.5	0.29	0.43	NS/EF	NS	0.1	<0.25	<0.25
Chromium	NNS	10	ND	12	NS/EF	NS	<5	19	7.6
Copper	1300	65	36; 680	68	NS/EF	NS	17	85	46
Lead	15	38	25	38	NS/EF	NS	7.4	47	66
Mercury	280	<0.2	ND	ND	NS/EF	NS	<0.2	<1	<1
Nickel	4600	<20	ND	14	NS/EF	NS	<20	19	16
Selenium	667	<2	1.1	1.1	NS/EF	NS	<2	<2.5	<2.5
Silver	4667	<0.1	NA	0.25	NS/EF	NS	<0.1	<0.5	<0.5
Zinc	5106	190	110; 200	230	NS/EF	NS	52	300	190
Dissolved Metals (µg/L)									
Copper	*	NA	NA	NA	NS/EF	NS	<0.01	21 (11.4*)	<20 (8.4*)
Organic Toxic Pollutants									
Chlorine, residual (μg/L)	19	320	NA	NA	NS/EF	NS	870 (H)	100	40
Polynuclear Aromatic Hydrocarbon (µg/L)									
Acenaphthene	198	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Acenaphthylene	NNS	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Anthracene	74	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Benz(a)anthracene	0.02	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Benzo(a)pyrene	0.02	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Benzo(b)fluoranthene	0.02	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Benzo(g,h,i)perylene	NNS	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Benzo(k)fluoranthene	0.02	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Chrysene	0.02	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Dibenzo(a,h)anthracene	0.02	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Fluroranthene	28	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Fluorene	1067	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.1
Indeno(1,2,3-cd)pyrene	0.49	NR	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05
Naphthalene	1524	NR	ND	ND	NS/EF	NS	<1	<0.05	<0.05
Phenanthrene	30	NR	ND	ND	NS/EF	NS	<0.1	<0.05	< 0.05
Pyrene	800	NR	ND	ND	NS/FF	NS	<0.1	< 0.05	< 0.05

\* Dissolved Copper Surface Water Quality Standard is hardness based EF - Equipment Failure

\*\* Ammonia Surface Water Quality Standard is pH based

Indicates detection with exceedance

(H) - Sampled outside of hold time

NNS - No Numerical Standard

ND - Not Detected

TNTC - Too Numerous to Count

NS - No Sample

NR - Not Required

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### Part 8: Assessment of Monitoring Results

A. <u>Stormwater Quality</u>: Provide an evaluation of the sampling results for each monitoring location, including an assessment of any improvements or degradation of stormwater quality from each drainage area. Discuss possible explanations for stormwater quality trends, including the implementation of stormwater management best management practices to reduce the discharge of pollutants to and from the municipal separate storm sewer system to the maximum extent practicable.

The table below summarizes the winter 2018-2019 sampling season's event. The data is segregated by location and includes the date sampled, and the corresponding laboratory report's number and the date issued. The sampling event data and lab reports are provided in Appendix F.

Sampling Location (Type)	<b>Collection Date</b>	Report Number	Report Date
Tucson (comp & grab)	6/16/2018	18F0500	7/6/2018
Nogales (comp)	7/9/2018	18G0285	8/7/2018
Nogales (grab)	7/16/2018	18G0464	7/23/2018
Flagstaff (comp)	7/16/2018	550-106064-1	8/6/2018
Flagstaff (grab)	7/20/2018	550-106424-1	7/27/2018
Sedona (comp)	7/27/2018	18G0728	8/15/2018
Phoenix (comp)	8/11/2018	550-107826-1	8/27/2018
Phoenix (grab)	10/2/2018	550-110697-1	10/8/2018
Sedona (grab)	10/2/2018	550-110752-1	10/8/2018
Nogales (comp & grab)	12/7/2018	18L0271	12/21/2018
Sedona (comp & grab)	2/14/2019	614667	2/28/2019
Tucson (comp)	2/14/2019	19B0468	3/4/2019
Phoenix (comp & grab)	2/21/2019	615339	3/4/2019
Tucson (grab)	2/22/2019	19B0585	2/25/2019
Nogales Yard (grab)	6/16/2018	18F0502	7/6/2018
Roosevelt (grab)	6/16/2018	550-104568-1	7/12/2018
Superior (grab)	6/16/2018	550-104566-1	7/12/2018
Nogales Yard (grab)	12/7/2018	18L0263	12/21/2018
Superior Fuel (grab)	2/14/2019	19B0467	3/4/2019
Superior Maint Yard (grab)	2/22/2019	615631	3/7/2019
Roosevelt (grab)	2/23/2019	615630	3/13/2019

MS4 monitoring data for the past five years is tabulated in Part 7. The following trends provide an evaluation of the data:

## Flagstaff Monitoring Station

- E. coli levels exceeded the water quality standards in two seasons in the past five years. One exceedance during summer 2013 and the other during winter 2015-2016. This outfall site is located within and adjacent to some of the most heavily used roads, and residentially and commercially active areas in Flagstaff. Both Humphreys Street and Old Route 66 are located at this outfall. Humphreys Street provides a main thoroughfare to Flagstaff's north-northwest commercial and residential areas and Route 66 is heavily traveled by locals and tourist as the primary means for accessing the old downtown business district of Flagstaff. In addition, a community park and several businesses and residential houses are comprised of historical infrastructure within this outfall site. The community park receives a notable amount of human and pet use. It is well documented in the literature that pet feces, especially dog feces, contribute considerable amounts of E. coli to stormwater. Potential sources contributing to elevated E. coli levels may include sanitary sewer overflows due to old infrastructure, pet waste from high recreational use, and/or excessive vegetation or fertilizer use from landscaping practices. In addition, aggradation of the bed of the Rio de Flag has resulted in negative flow from the stream into the culvert during high flow events. This hydraulic condition mixes contaminated stream flow with stormwater at the sampling site. Samples may not be reflective of transportation impacts.
- Lead concentrations exceeded the water quality standards in one season of the past five years. The exceedance was during summer 2015 (30.1 μg/L). The reported concentration was more than double the water quality standard of 15 μg/L. The lead concentration is at the water quality standard in winter 2016-2017. This outfall site is located adjacent to some of the most heavily used roads and residential and commercial active areas containing some of the oldest infrastructure in Flagstaff. Potential sources of elevated lead levels may include left over soil residue from when leaded gas was used, activities conducted at local business in the downtown (e.g., businesses that use paint), excessive lead deteriorating from old lead pipes, and paint in the residential and commercial areas, and/or loss of lead wheel weights along the roadway.

## Sedona Monitoring Station

- The pH exceeded water quality standards in two seasons of the past five years. pH exceeded water quality standards during summer 2015 (9.17 SU) and summer 2016 (8.54 SU). It is proposed that ADOT continue to monitor pH levels closely to determine if pH levels continue to exceed water quality standards in the future. If future trends warrant further attention, then ADOT and the City of Sedona should collaborate to identify and control potential sources contributing to elevated pH levels that are presenting in stormwater.
- E. coli levels exceeded the water quality standards in three seasons in the past five years. The exceedances occurred during winter 2014-15 (>2,419.6 MPN/100 mL), winter 2016-2017 (11,000 MPN/100 mL), and summer 2018 (730 MPN/100 mL). This outfall site is located in a heavily used commercial, residential, and tourist visited area that receives a notable amount of human use and is a high traffic given Highway 179 connects north and south Sedona. Several years ago, ADOT installed a stormceptor to treat roadway runoff prior to discharge which is currently maintained under an intergovernmental agreement with the City of Sedona. Potential sources for elevated E. coli levels

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include inadequate maintenance of the stormceptor, failing septic systems, sanitary sewer overflows, increased deposit of pet waste, and baby diapers, increased use of the area by human transients, excessive tourist numbers, and/or excessive vegetation or fertilizer use from landscaping practices.

- Lead concentrations exceeded water quality standards in one season in the past five years. The exceedance was during summer 2015. As mentioned previously, the Sedona outfall site is located in a high use residential and commercial area with a major highway serving as the main thoroughfare connecting north and south Sedona. Potential sources of elevated lead levels may include activities conducted at local business or residents (e.g., use paint), excessive lead deteriorating from old lead pipes and paint in the ageing residential and commercial areas, and/or excessive loss of lead wheel weights along the roadway.
- PAHs Benzo(a)pyrene, Benzo(k)fluoranthene, and Dibenzo(a,h)anthracene exceeded water quality standards during summer 2018. PAHs Benzo(b)fluoranthene and Chrysene exceeded water quality standards during winter 2018/19.

## **Phoenix Monitoring Station**

- *pH exceeded water quality standards in one season of the past five years. pH exceeded water quality standards during winter 2018-19 (9.07 SU).*
- E. coli levels exceeded water quality standards in four seasons of the past five years. At this outfall site there is a high density of residential and commercial development, and roadways in this densely populated area receive high use. Potential sources of E. coli may come from transient humans (e.g., hobos frequent the area), human and pet waste, excessive vegetation or fertilizer use from landscaping practices, and/or failing sewage systems.

## Tucson Monitoring Station

- E. coli levels exceeded water quality standards in five seasons of the past five years. The majority of this outfall site is composed of an urban highway and adjacent commercial businesses; therefore, sewage is not likely contributing to the elevated E. coli levels. However, all the sources that commonly contribute to elevated E. coli levels should be evaluated, including: livestock transport along Interstate 10, excessive transient human waste, pet waste, vegetation or fertilizer use from landscaping practices, sanitary sewer overflows, and/or failing sewage systems.
- Lead concentrations exceeded water quality standards in three seasons in the past five years. As noted previously, the majority of this outfall site is composed of an urban highway and adjacent commercial businesses. Potential sources of elevated lead levels may include activities conducted at local business or residents (e.g., use paint), excessive lead deteriorating from old lead pipes and paint in the ageing residential and commercial areas, previously contaminated soil due a time when leaded gas was used, and/or excessive loss of lead wheel weights along the roadway.

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#### Nogales Monitoring Station

- *pH exceeded water quality standards in two seasons of the past five years. pH exceeded water quality standards during winter 2014-2015 with a measured reading of 9.2 SU. It is proposed that ADOT continue to monitor pH levels closely to determine if pH levels continue to exceed water quality standards in the future.*
- Ammonia exceeded water quality standards in one season in the past five years. Ammonia exceeded water quality standards during winter 2014-15 (5.14 mg/L).
- E. coli levels exceeded water quality standards in six seasons of the past five years. During winter 2015-2016 E. coli levels were within the water quality standard. Within this outfall site there is densely populated residential area dominated by older, low income housing. There are many homeowner pets in this area. Potential sources contributing to elevated E. coli levels may include failing septic systems, sanitary sewer overflows, homeless population, small animal feeding operations (e.g., dog kennels), and/or homeowner pet wastes.
- Lead exceeded water quality standards in six seasons of the past five years. Three of the exceedances were greater than three times the water quality standard. As noted previously, within this outfall site there is a densely populated residential area dominated by older, low income housing. Some potential sources of elevated lead levels may include lead-based application of lead products (e.g., home-owner activities), the excessive deterioration of old lead pipes and paint chippings from old housing infrastructure, and/or excessive lead paint deterioration from old parked cars and loss of lead wheel weights along the roadway.
- Dissolved copper exceeded water quality standards in one season in the past five years. Dissolved copper exceeded water quality standards during summer 2018 (21 μg/L).
- Residual chlorine exceeded water quality standards in five seasons in the past five years. The exceedances occurred in summer 2014 (300 μg/L), summer 2015 (350 μg/L), winter 2017-18 (870 μg/L), summer 2018 (100 μg/L), and winter 2018-19 (40 μg/L). The source of chlorine was investigated during the summer of 2018. The source tracked to veterinary clinic on the hill behind the sampling location which was disposing of their mop water down the slope. ADOPT is working with the City of Nogales to resolve the problem.
- B. Surface Water Quality Standards (SWQS): Compare the sampling results for each monitoring location with the applicable SWQS for the receiving water.

The majority of exceedances reported in the last five years do not appear as trends, but rather as isolated, single events or repeated only twice. Because exceedances of E. coli and lead are pollutants that have been commonly documented in ADOT runoff these elements will be discussed here.

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*E.* coli persists in the desert environment and is seen at all five sample sites. Flagstaff conditions are improving over the past two sampled seasons; Sedona samples only exceeded the numeric standard three times in the past five years; Phoenix conditions are improving with all samples during the past five seasons below water quality limit; Tucson and Nogales are variable. Communities could share data with resource agencies to pinpoint the most appropriate action(s).

Lead concentrations in Flagstaff and Sedona are lower than previous years and remain low in Phoenix. However, exceedances occurred in both summer 2016 and winter 2016-2017 in Tucson and in summer 2016, summer 2018, and winter 2018-19 in Nogales. It is possible that tourism is responsible for this trend because increased traffic result in increased brake wear and deposition on the roadway.

- C. Pollutant Concentration Greater than Applicable SWQS: Note any pollutant concentration that is greater than an applicable SWQS (as measured at the monitoring location) during the reporting year, including, at a minimum, the following information:
  - a. Sampling date;
  - b. Monitoring location (outfall identification number);
  - c. Waters of the U.S. that received the discharge and the SWQS that was exceeded;
  - d. Outfall monitoring results (laboratory reports);
  - e. A description of the circumstances that may have caused or contributed to the pollutant concentration being greater than the applicable SWQS;
  - f. If discharges of the same pollutants(s) are reoccurring (i.e., detected more than once at an outfall), a description of the efforts to investigate potential sources of the pollutants(s) and identify the sources/ circumstances that may have caused or contributed to the reoccurrence(s);
  - g. Recommended actions for reducing the discharge of pollutants and any recommended actions for water quality improvement, if any, including feasible changes in management practices or existing pollution control measures; to prevent the discharge from causing or contributing to an exceedance of a SWQS in the future; and
  - h. If applicable, a schedule for implementing the proposed stormwater or non-stormwater best management practices.

The following table summarizes SWQS exceedance information for the current reporting period. Sampling event data and lab reports are provided in Appendix F.

Location	Sample Season	Sample Date	Parameter	Receiving Water	Standard	Monitoring Result	Circumstances	Proposed BMP	Schedule to Implement BMP
			E. coli		235	730			
	Summor 2019	10/2/2018	Benzo(a)pyrene		0.02	0.24			
Sadana	Summer 2016		Benzo(k)fluoranthene	e Oak Creek	0.005	0.4			
Sedona			Dibenzo(a,h)anthracene		0.005	0.41			
	Wintor 2018 10	2/11/2010	Benzo(b)fluoranthene		0.005	0.109			
	Winter 2018-19	2/14/2019	Chrysene		0.005	0.076	Soo Part 74		
Tucson	Summer 2018	6/16/2018	E. coli	Santa Cruz River	575	1700		ee Fait /A	
			E. coli		575	2400			
	Summer 2018	7/16/2018	Dissovled Copper	Tributany to Nogaloc	11.4	21			
Nogales			Chlorine, residual	Mach	19	100			
	Wintor 2018 10	12/7/2010	E. coli	vvasii	575	2400			
	Winter 2018-19 12/7/2018 Chlor		Chlorine, residual		19	40			

D. Total Maximum Daily Loads: Assess the effectiveness of BMPs in meeting wasteload allocations or load allocations associated with any TMDL established for any receiving water.

During the current reporting period, ADOT contracted with a consultant to provide an assessment of TMDLs for receiving waters to which ADOT discharges. The review addressed affected receiving waters, their constituents of concern, and ADOT's likelihood of contributing those constituents, as well as reviewing changes to WQS and draft documents for upcoming TMDLs that may name ADOT as a contributor or result in assignment of a WLA. The assessment is anticipated to be finalized in September 2019.

In the upcoming year, ADOT will be investigating TMDLs for which ADOT has been listed as a contributor through a proposed research project designed to identify points of compliance and ADOT's contribution of the pollutant(s) of concern to the impaired waters in each case. This project was initially planned for the third permit term (FY 2018) but was delayed due to an insufficiently qualified pool of applicants in response to the RFP advertised. During the current reporting period, the RFP was updated to clarify requirements. The new RFP will be advertised during FY 2020. Based on monitoring results, pollutant sources, and site-specific conditions, ADOT will identify and implement

#### BMPs to mitigate any demonstrated ADOT contribution to the TMDL receiving waters.

E. Reference(s), if applicable. *None*.

#### Part 9: Annual Expenditures

Provide a brief statement of the expenditures incurred each reporting period (July 1 – June 30) to implement and maintain the stormwater management program, including associated monitoring and reporting activities. This figure should include funds related <u>exclusively</u> to implementation of the stormwater management program; if a control measure is shared (e.g., street sweeping) the amount in terms of dollars and percentage of cost allocated to the stormwater management program shall be provided. Provide the estimated budget for implementing and maintaining the stormwater management program in the subsequent reporting period. Include a statement of the funding sources used to support program expenditures.

Costs associated with implementing and maintaining the Stormwater Management Plan (SWMP) for the reporting period includes the following: ADOT's 810 and 805 Specifications for erosion control and seeding was \$1,157,453; Source: federal programs associated with construction projects. Program management costs for illicit discharge cleanup, guidance manual updates, consultant support and monitoring were \$600,000; Source: state funding. A new Statewide Stormwater and Erosion Control Plan was initiated in May 2019 for \$220,158; P2P Research Grant.

Program funding for implementing and maintaining the Stormwater Management Plan (SWMP) for FY 2020 is expected to be approximately \$500,000. Projects planned include replacing outdated ancillary communication equipment, replacing sampling equipment damaged at the Sedona location during a storm, purchasing software to support the tablet based dry-weather inspection project, and the relocation of the Flagstaff wetweather monitoring station.

#### Part 10: Attachments/ Appendices

Attach a copy of each of the following documents or include the required summary, as appropriate. This information may be included either as a separate volume to the Annual Report, or as an appendix to the same volume as the Annual Report.

- A. Dry Weather Screening Forms
- B. Construction Program Inventory
- C. Post-Construction BMP Inventory
- D. Erosion Abatement Projects

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- E. Facility Inventory
- F. Sampling Event Data and Laboratory Reports
- G. Changes to Authorization Letter Not applicable

#### Part 11: Other Reporting Requirements

- 1. First Year
  - ADOT shall submit the ERP, including any intergovernmental agreements in the first Annual Report.

## 2. Fourth Year

- The fourth year Annual Report shall include a proposal to identify and map the remaining outfalls statewide. The proposal shall identify and prioritize all remaining unmapped areas and propose schedule for completing the mapping of these areas in phases within the next three 5-year permit terms. *Refer to Addendum: 4<sup>th</sup> Year Renewal Application Information.*
- The fourth year Annual Report include Renewal Application (Part 13.1.3) information. *Refer to Addendum:* 4<sup>th</sup> Year Renewal Application Information.