

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

Part 1: General Information

Reporting Period: July 1, 2019– June 30, 2020

MS4 Program Contact: Eileen Dunn, MS, CPMSM

Title: Water Resources Manager

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Name of Certifying Official: Julia Manfredi, CPESC, CPSWQ
(Section 14.3 of this permit)

Title: Environmental Programs Manager

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As the Certifying Official, Julia Manfredi ^{DocuSigned by: *Julia Manfredi*} 5108F62603B3404, I hereby duly authorize the Water Resources Manager, Eileen Dunn ^{DocuSigned by: *Eileen Dunn*} 88728DE9770046F..., 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

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Signature of Certifying Official

9/30/2020

Date

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; *During the current reporting period, ADOT emphasized the application/implementation of drought-tolerant native forbs, low subshrubs, and legumes with enhanced deep roots system diversity for ongoing and future construction projects. Legumes create nitrogen availability in the soil through their roots and transfer nutrients into the local ecosystem, which boosts the health and long-term sustainability of other plant species within the seeding area. Greater native plant species diversity, genetic diversity, and root system diversity for seeding as a part of development and implementation of control measures will promote cost-effectiveness in large-scale site stabilization, rapid erosion/sediment control, and reduced runoff pollutant loads for stormwater quality protection.*
- 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; *During the current reporting period, the standard ADOT Class II seeding specification for construction projects was modified to augment stabilization practices by adding the following stipulations:*
 - *All construction support activities creating disturbed areas on unpaved areas, such as temporary construction access, on-site staging, on-site material storage, and on-site stockpiling, shall ultimately be seeded unless otherwise stabilized by equivalent permanent stabilization measures. If not seeded, the*

equivalent permanent stabilization measures shall be evaluated by a Construction Professional Landscape Architect (PLA) and approved by the Engineer.

- If wind exceeds 10 miles per hour, the seeding operation shall be evaluated by a Construction PLA and approved by the Engineer. If approved, the contractor shall perform seeding operations close to the ground surface with a hydro-seeding hose and hand-held hose-end sprayer nozzle or other equivalently effective seeding methods to guarantee all seeding materials are applied on the target area without being blown away by wind. The contractor is responsible to protect ambient air and water quality during seeding operation.*
- Regardless of the seeding method(s), the contractor is responsible to guarantee intimate seed-soil contact. Seed application on top of straw mulch cover or hydraulically applied straw mulch cover shall be rejected.*
- On slope areas, all tillage shall be horizontal and parallel to the contours of the areas involved in order to create a roughened surface condition to reduce stormwater runoff velocity and volume. All seeded areas suitable for tillage shall be pre-tilled to promote on-site stormwater infiltration and alleviate stormwater surface runoff, as a part of stormwater peak flow and Volume Reduction Approaches (VRAs).*
- Cut slopes shall be prepared with ridges and deep tillage, or shall be mini-benched so as to detain rainwater/moisture close to its source. On fill slopes, the operations shall be conducted in such a manner as to form minor ridges thereon to assist in retarding runoff associated erosion/pollution and favor germination of the seed through detaining rainwater/moisture close to its source.*

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; *None during the current reporting period.*

The narrative summary shall include the following:

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

During the current reporting period, ADOT completed mapping for the Interstate 40 (I-40) corridor as stipulated in Section 5.1 for Year 5 of the permit term (i.e., 2019-2020). The I-40 corridor consists of 360 miles of highway that traverse ADOT's Northwest, Northcentral and Northeast Districts. As a result of the mapping effort, 651 outfall features were identified in the I-40 corridor. None were identified as priority outfalls. Maps showing the location of outfalls identified are included in Appendix A. This concludes all MS4 mapping requirements identified in the permit term.

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 2019-2020 reporting period is included in Part 4 of this report. Additional guidance and mentoring are provided to District personnel as needed and upon request.*
- Outfall Inspections and tracking systems, includes reporting and any follow-up activities. *During the 2019-2020 reporting period, a master inventory of priority outfalls was created to improve inspection tracking and organize the most current data on the associated MS4 assets. Redundant, outdated or inaccurate asset and outfall data were identified and corrected in the new master spreadsheet. As a result, the number of identified priority outfalls in ADOT's MS4 was reduced to 284. No new priority outfalls were identified as a result of the I-40 corridor mapping conducted during the reporting period. ADOT inspected 21.1% of currently identified priority outfalls during the current reporting period. Tracking information on inspection findings and follow-up was collected in a spreadsheet. The associated outfall identification information and inspection reports are included in this report as Appendix B.*
- 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 uses its Features Inventory System for IDDE mapping and tracking purposes, to assist in identifying chronic or repeat violators. To date, no chronic or repeat violators have been identified.*
- Outfall inspection and field screening procedures and significant findings. *ADOT inspected 60 priority outfalls during the 2019-2020 reporting period. Inspections were performed by qualified ADOT environmental personnel using the Dry Weather Screening method. Flow was observed at two outfalls, standing water was present at eight outfalls, and one outfall was observed to have floatables. Varying amounts of vegetation was observed at 23 outfalls. Deposits consisting of debris, sediment or a waterline were observed at 31 outfalls. Illegally dumped construction material was observed at one outfall location. 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, vegetation removal, or litter pick-up in the vicinity. One dry weather flow was identified and investigated; follow up testing and source identification indicated the discharge consisted of clean water likely originating from leaking potable water lines, although the exact source could not be located. Inspection reports along with photos of observed issues are provided in Appendix B.*
- Number of illicit discharges identified and resolutions. *A total of four illicit discharge cases were investigated during the current reporting period, and six illicit discharges were eliminated (two consisted of sanitary sewer overflows reported after remediation had occurred and thus did not require*

investigation). The case investigations consisted of the following: a sewage discharge from a private vehicle; discharge of sediment from a construction site; discharge of pollutants from a commercial property; and discharge of dry material from adjacent mining operations. The four discharges investigated and cleaned or removed appropriately and the cases closed.

- *Complaint driven inspections and investigations. One complaint driven inspection and investigation occurred during the current reporting period. A municipality reported an illicit discharge originating from a commercial operation adjacent to ADOT's right-of-way. ADOT and the municipality coordinated with the operator to inspect and clean up the yard and incorporate control measures to prevent future discharges.*
- *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. Coordination with local maintenance units and operations management is ongoing to address issues that were identified during field screening and discharge investigations. During the current reporting period, no corrective or enforcement actions were necessary for illicit discharge cases. The contractor storage yard and mining operations discharges were reported to other jurisdictions for follow-up.*
- *Spills within permit area. Information on highway spills for the permit term, as reported from ADOT's Hazardous Materials Response team and District maintenance units, 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. ADOT's stormwater monitoring program Quality Assurance Manual was updated in August 2020 and is available on the ADOT Water Resources web page.*
- *Describe updates to Enforcement Response Plan (ERP). The ADOT ERP was updated in June 2020 and is available on the ADOT Water Resources web page.*

C. Construction Program Activities

- *Trainings for construction and post-construction. ADOT and its contractors are trained on construction-specific 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 2019-2020 reporting period is included in Part 4 of this report. Additional guidance and mentoring are provided to District personnel upon request. In addition, ADOT leveraged the review and release of ADEQ's 2020 Construction General Permit to develop an internal outreach effort with District personnel. During spring 2020, ADOT's District Environmental Coordinators worked along with Water Resources personnel to identify outreach opportunities and needs, and create ADOT-specific CGP educational*

materials for use within the construction units and with contractors statewide. This effort is planned to continue into FY 2021.

- Annual updated inventory of construction activities. *The inventory of ADOT construction activities has been updated for the reporting period, and is included as Appendix C.*
- Status of inventory/plan review of these facilities. *The inventory has been updated for the reporting period, and is included as Appendix C.*
- 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 local 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 (PCWQC) measures/BMPs. *During the current reporting period, the I-40 corridor was assessed through the use of aerial imagery to identify PCWQCs during the outfall mapping process. A total of 687 previously unidentified PCWQC features were located and known FIS assets were evaluated to determine if they were PCWQCs, resulting in the addition of 8,876 new PCWQC features to the inventory. The new additions to the PCWQC inventory are listed in Appendix D (for information on the 26,940 previously identified PCWQC features in the ADOT system, please refer to the FY 2018-2019 Annual Report, 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 2019-2020 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. Also included in the numeric summary are activities reported by the Connect 202 Partnership maintenance contractor for the new South Mountain Loop 202 segment which began operations as of March 27, 2020 ("Stormwater Reporting Annual Report March 27 through June 30, 2020," prepared by Fluor Industrial Services, September 1, 2020).*
- *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 within the ADOT highway system addressing erosion issues were advertised for bid. These projects were identified as having a major landscape, erosion control, and/or drainage component. Project types include scour retrofit, bridge rehabilitation and replacement, pavement preservation, roadway improvements, rest area improvements, and drainage improvements. Information on each project is provided in Appendix E.*

- *Status of Retrofit Updates. During the current reporting period, ADOT continued its Sustainable Transportation and Resilience Programs, which have been developed to maintain optimum health and performance of transportation infrastructure as a critical piece of Arizona’s economic vitality, quality of life, and natural and built environments. Specific program accomplishments during FY 2020 include further operations integration of the FHWA TSMO Climate Resilience Guidebook through a multiyear effort with FHWA and the completion of a web-based Stormwater Pump System Reliability Analysis Tool for the TSMO Pump and Tunnel Group. Additional information on these programs is available at <https://azdot.gov/business/environmental-planning/programs/sustainable-transportation>.*
- *Winter Storm Policies. During the current reporting period, updates in winter storm best practices were conveyed at the annual ADOT Winter Readiness Workshop held in August 2019. This annual workshop is mandatory for all ADOT CDL snowplow operators (approximately 450 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. ADOT’s Winter Storm Management Operations Manual, which was last updated in 2014, is available online at <https://azdot.gov/business/environmental-planning/programs/winter-storm-management>).*

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. *In FY 2020, ADOT continued implementation of outreach to the general public to prevent trash and debris entering the MS4 through the Adopt-a-Highway program (<http://azdot.gov/business/programs-and-partnerships/adopt-highway>), the ADOT Litter Hotline, and as a partner in the Don’t Trash Arizona program (<http://www.donttrashaz.com/>). In addition, ADOT is an active member in the Stormwater Outreach for Regional Municipalities (STORM) organization (www.azstorm.org), and as part of the STORM membership, ADOT receives educational and promotional items for stormwater outreach opportunities. During the current reporting period, ADOT Water Resources worked with the Communications Group and Adopt-A-Highway Program to promote the message of the link between stormwater pollution and highway litter. A public service video titled “Stash Your Trash” was produced and released during Stormwater Awareness Week in January 2020 (<https://azdot.gov/adot-blog/help-keep-stormwater-clean-and-rolling-along>) to promote proper disposal of trash and discourage littering from vehicles. The video and story were also included in ADOT’s employee newsletter during the awareness week. Stormwater awareness brochures and promotional items from STORM were given away along with information on the Adopt-a-Highway program at the Arizona Summit on Volunteerism and Civic Engagement at ASU West on November 7, 2019, and the Tempe Fantasy of Lights Boat Parade on December 14, 2019. Promotional items were also provided as rewards for children participating in ADOT’s online Keep It Grand Art Challenge in spring 2020. ADOT Water Resources participated in a televised Partner of the Day segment on Sonoran Living as part of Stormwater Awareness week on January 21, 2020 (<https://www.azstorm.org/resources/videos-psas#>), and participated in the development of STORM’s FY 2020 digital media campaign targeting commercial and industrial property managers. ADOT’s stormwater outreach also included presentations to the Environmental Professionals of Arizona in August 2019, the Arizona Airport Association in October 2019,*

ASU Fulton School of Engineering for the Water Certification program students in January 2020, and ADOT's Environmental Planning Group in March 2020.

- Public access to stormwater documents. *Stormwater documents are available to the public on ADOT's Water Resources website (<http://www.azdot.gov/business/environmental-planning/water-resources>). In addition, requests for stormwater information can be submitted via ADOT's website at https://apps.azdot.gov/contact_adot/.*
- 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 (https://apps.azdot.gov/contact_adot/), and dumping and litter can be reported via the Litter Hotline (877.354.8837), online (<https://litter.az.gov/>), or through ADOT's 511 travel information system. In addition, ADOT Water Resources staff contact information is provided online (<https://azdot.gov/business/environmental-planning/water-resources/contact-water-resources>) 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 to include pump house facilities in the Central District. The 15 pump house facilities identified 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 F.*
- 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. *During the current reporting period, a plan to update ADOT's Maintenance and Facilities BMP Manual, originally released in 2010, was initiated. A contractor was selected to begin revising the text, links and control measures, as necessary, and key ADOT personnel were identified to be included on the project technical advisory committee. The updated manual is expected to be released in mid-FY 2021.*
- Representative Outfalls, including a discussion of essentially identical outfall(s) if applicable incorporating outfall ID, outfall location, drainage area [ft²], 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.*

Site Location	Location of the outfall	Essentially identical outfall	Drainage area (sq ft)	Runoff Coefficient	
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.

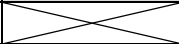
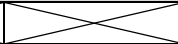
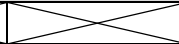
Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
STORMWATER SEWER AND OUTFALL MAPPING						
5.2	Update Storm Sewer System Mapping and Outfalls					
	Miles of MS4 mapped I-10 Corridor	391	391	391	391	391
	Outfalls identified I-10 Corridor	1615	1,824	1,824	1,824	1,824
	Miles of MS4 mapped I-17 Corridor	118	118	118	118	118
	Outfalls identified I-17 Corridor	381	646	646	646	646
	Miles of MS4 mapped I-8 and I-19 Corridor	0	0	243	243	243
	Outfalls identified I-8 and I-19 Corridor	0	0	596	596	596
	Miles of MS4 mapped I-40 Corridor	0	0	0	0	360
	Outfalls identified I-40 Corridor	0	0	0	0	651
ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)						
6.2.2	Enforce Standard Encroachment Permit-					
	Encroachment permits issued	5069	5920	1813	1153	1997
6.3	Detecting Potential Illicit Discharges and Illicit Connections					
6.3.1	Outfalls inspected	46	59	73	74	98
6.3.1	Priority outfalls identified to date	230	295	342	342	284
	Priority outfalls inspected	46	59	73	74	60
	Percent priority outfalls inspected	20	20	21.3	21.6	21.1
6.3.1.B	IDDE discharges within ¼ of impaired or OAW	0	0	0	0	0
	Storm drain cross connection detected	0	0	0	0	0
6.3.2	Other dry weather flows detected	11	9	3	0	1
	Illicit discharges detected	4	6	4	0	0

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
6.4	Investigate Illicit Discharges (Source Identification and Elimination)					
	Storm drain cross connection investigated	0	0	0	0	0
	Illicit connections eliminated	0	0	0	0	0
	Other dry weather flows investigated	0	9	3	0	1
	Other dry weather flows eliminated	0	0	3	0	0
	Illicit discharges investigated	4	6	5	4	4
	Illicit discharges eliminated	4	6	4	4	6
6.4.1(b)	Report Incidental Dry Weather Discharges					
	Discharges reported to ADEQ	0	0	0	0	0
6.4.3	Duty to Eliminate Illicit Discharges					
	Follow-up Investigations	0	2	4	0	2
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	2
6.5	Responding to Spills					
	Highway accident spills responded to	209	217	222	227	227
	Highway accident spills prioritized (potential for discharge)	27	16	15	11	25
	Hazardous materials released	182	185	164	160	191
MEASURES TO CONTROL DISCHARGES FROM CONSTRUCTION SITES						
7.2	ADOT Construction Activity					
	NOIs submitted to ADEQ	387	96	118	39	43
	NOTs submitted to ADEQ	Not Reported	45	0	29	33
7.3	ADOT Contractor Construction Activity					
	NOIs submitted to ADEQ	203	172	133	53	46
	NOTs submitted to ADEQ	Not Reported	61	0	52	53

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
7.4	Violations and Enforcement					
	Stormwater violations	0	0	0	0	0
	Contractors w/ enforcement action	0	0	0	0	0
7.5	Post-Construction and Measures to Control Discharges from New Development and Redevelopment					
	Projects reviewed for program	4	1	3	0	0
	Post-construction BMPs installed	3	0	1	1	0
	Post-construction BMPs inspected	0	0	0 (tasks are recorded in PeCos, documented in Section 8.1.3 of this table)	Not available	38
MEASURES TO CONTROL DISCHARGES FROM ROADWAYS						
8.1.1	Inspect Storm Sewer System					
	Drainage inspections performed	128	19,098	12,443.29	16,669	35,381
8.1.2	System Maintenance Schedules and Priorities					
	planned Drainage work	ongoing	ongoing	ongoing	ongoing	ongoing
8.1.3	Perform Repair, Maintenance, and Cleaning					
	Pavement protection and repair- Activities listed below	1408				
	101- Patch with Premix- CU YDS		1,072.7	4,407.7	86,272.6 (sq ft)	301,575.5 (sq ft)
	102-Level with Premix- 12 FT Lane Miles (LM)		6,293.0	46.5	48.6	132.2
	103- Fill Cracks- 12 FT LM		11.7	114.9	12.2	Not recorded
	105- Replace Surface/Base- CU YDS		73.9	1,052.4	9,505.4 (sq ft)	5,813.5 (sq ft)
	106- Chip Seal Coat (Major)- 12 FT LM		24.5	4.5	29.4	Not recorded
	107- Seal Coat (Minor)- 12 FT LM		0.1	0.6	21.0	35.4

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	108- Flush Coat- 12 FT LM		1,516.9	1,783.1	3,209.9	3,900.8
	109-Spot Flush/Seal Coat- 12 FT LM		24.0	38.7	79.7	9.7
	111- Emergency Patch with Bulk Premix- CU YDS		1,325.5	588.5	2,441.3	3,104.6
	112-Tight Blading – CU YDS		1,733.5	1,349.5	10	Not recorded
	113- Seal Cracks with Asphalt Rubber Sealant -12 FT LM		4,519.9	1,008.1	594.4	685.7
	116- Emergency Patch with Special Material- pounds		1,356,569.5	This code was not recorded in PeCos	Not recorded	Not recorded
	117-Patching with Recycler- CU YDS		448.1	201.3	148.4	33.9
	119- Other Paved Surface Maintenance- Labor Hours		3,696.0	3,020.5	Not recorded	Not recorded
	9102- Contract Pavement Leveling- 12 FT LM		6.1	0.3	5.3	0.2
	9103- Contract on-call Concrete Repair- CU YDS		255.7	404	501.1	549.7
	9106- Contract Seal Coat-State- 12 FT LM		23.9	156.00	253	371.2
	9109-Contract Flushing- 12 FT LM		101.4	377.1	955	817.0
	9111- Contract Pavement Milling and Replacement-12 FT LM		132.2	100.0	108.8	52.2
	9112-Contract Pavement Profiling- 12 FT LM		53.0	This code was not recorded in PeCos	31.1	Not recorded
	9113- Contract Crack Filling/Asphalt Rubberized Sealant- 12 FT LM		96.0	380.7	191.2	1,795.0
	121-Blade unpaved roads-12 FT LM	118	511.2	12,531.8	658.8	565.2
	131- Blade unpaved shoulders- Acres	96	369.8	This code was not recorded in PeCos	Not recorded	Not recorded
	134-Maintain unpaved turnout/crossover- SQ FT	48	306,629.2	613,007.6	305,670	158,705.4
	Litter removal	222				
	1501-Full Width Litter Pick Up- Acres		2,689.5	2,771.25	3,493.1	4,184.4
	9313-Contract Litter (on-call)- Acres		596,710	706,966	589,962	697,226.0
	1502-Spot litter and Debris Pick-up- Labor Hours	326	42,593.8	46,943.2	45,480.3	45,263.8
	Mechanical sweeping	35				

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	1507-Mechanical Sweeping- 12 FT LM		6,918.1	130,611.1	52,303.5	12,247.1
	9157-Contract Mechanical Sweeping-Miles		23,735.4	79,929.3	232,569.6	187,983.3
	1601-Routine drainage maintenance-number of occurrences	238	15,603	10,149.1	14,408.0	13,372.0
	1602-Emergency drainage maintenance- number of occurrences	78	555.0	841.50	1,026.6	1,047.0
	1603- Clean cuts/channel/dikes/curbs- Linear FT	224	1,130,546.6	906,165.7	975,533.2	1,165,024.4
	1604-Minor slide removals-SQ FT	98	878,462.0	76,549.5	185,785	344,612.8 (lin ft)
	1605-Routine structural repair-SQ FT	82	342,246.5	1,030,590.3	140 (ea)	250 (ea)
	1607-Storm and rock patrol- miles	195	52,550.9	33,271.7	61,238.2	61,676.7
	1608-Drainage inspection-number of occurrences	128	19,098	12,443.3	16,668.9	35,381.0
	1610-Roadway pump inspections-number of occurrences	161	709	630.0	604	626.0
	1690-Other drainage maintenance-Labor Hours	280	6,851.8	7,315.8	5,091.9	5,189.1
	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	10,234.5
	181-Emergency (if stormwater related)- Labor Hours		32	355.0	294.5	102.0
	191-Encroachment permit (for Bluestake. Maintenance)-Labor Hours	340	23,348.5	22,640.5	25,704.2	26,725.0
	Irrigation inspection	234				
	332- Irrigation Inspection-Units		494,279.5	221,610.0	277,553.3	127,028.1
	9307-Contract Irrigation Inspection/Repair-Labor Hours		24.8	This code was not recorded in PeCos	Not recorded	197.0
	333-Irrigation repair- Labor Hours	274	9,626.5	15,457.74	16	20,333.9
	341-Granite erosion control- Labor Hours	102	1,950.0	619.00	1,396.5	539.0

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	343-Non-granite erosion control-CU YDS	27	1,950.0	2,494.50	14,441.01	5,476.0 (lin ft)
	1400-Soil Stabilization- Acres	0	4.0	This code was not recorded in PeCos	11	Not recorded
	Chemical vegetation control	395				
	351-Herbicide Vegetation Control - Acres		3,649.6	3,675.76	3,871.23	9,906.2
	354-Chemical Control of Vegetation-Acres		83.8	67.61	82.61	46.4
	1420-1430-1431-1432-1440-1441- Chemical Control of Vegetation - Acres		7,018.5	5,462.48	4,530.75	6,713.5
	1433- Spot Pre-Emergent Shoulder Application- Acres		2,031.0	2,322.10	2,318.27	2602.3
	456-Wash interstate signs- SF Signs	74	1,871.5	1,651.00	1,912.25	342.0
	603-Building and yard maintenance-	98	Not recorded	66,252.38	76,740.08	72,866.7
	611- Material handling- Labor Hours	260	11,520.0	14,949.90	18,279.85	22,882.9
	891-Premix material	65	Not recorded	4,347.24	1,700	4,695.0
	892-Stockpile material- CU YDS	130	8,136.5	247,705.50	52,270.95	33,701.1
	897-Screen material- CU YDS	20	6,106.0	2,450.00	6,098.62	14,824.0
	899-Other material operations- Labor Hours	173	3,120.0	3,522.58	3,457.1	3,624.1
	901-Administrative- Labor Hours	XX	93,917.0	77,018.41	62,037.21	78,764.0
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	128.7
8.2.4	Develop a program to Retrofit Existing Developed Highways					
	Retrofits completed				0	0
TRAINING						
9.1.1	Train ADOT Employees- Stormwater Awareness					
	Employees trained	243	149	463	286	255
	Employees Trained through Environmental Awareness	30	73	117	102	67

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
9.1.3	Train ADOT Employees- Construction Site Inspections					
	Employees trained	23	44	28	20	41
	Employees Recertified	13	25	41	11	10
9.1.4	Train ADOT Employees - New development and significant redevelopment					
	Employees trained	143	0	0	0	0
9.1.5	Train ADOT Employees - Storm sewer system and highway maintenance					
	Employees trained	162	113	388	310	235
	Employees Trained through Environmental Awareness	30	74	117	102	67
9.1.6	Train ADOT Employees - Good housekeeping					
	Employees trained	131	149	463	286	255
9.2	ADOT Contractor Training and Certification					
	Contractors trained/certified	117	111	147	162	137
	Contractors re-certified	69	31	77	69	33
PUBLIC OUTREACH and EDUCATION / PUBLIC INVOLVEMENT and PARTICIPATION						
10.1.2(a)	Distribution of Educational Materials Through Public Places					
	Materials distributed	156	Not recorded	380	1050	529
	Public events attended	1	12	9	5	3
	People reached	100	400+	12,000	150	653
10.1.2(b)	Distribution of Educational Materials Through ADOT's Stormwater Webpage					
	Hits on webpage	3465	3,267	3,962	28,704	28,253
10.2.2	Record and Consider Public Comments on SWMP					
	Public meetings or forums held	0	0	0	0	0
	Public comments received	0	0	0	0	0

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
10.2.3	Implement a Public Reporting System					
	Reports received from public	0	0	4	0	0
	Reports investigated	0	0	1 (handled at District level when applicable)	0	0
10.2.4	Develop , Implement, and Maintain a Litter Pick-up Program					
	Groups participating	1449	569	810	953	1,108
	Lane miles cleaned	1873	1,288	1,500	1,672	1,982
	Tons of trash collected	59.53	Not Recorded	Not Recorded	95	109
10.2.5	Continue Implementation of Litter Hotline					
	Calls received	1276	1323	1,347	1,399	1,954
	Letters sent	1153	2,459	1,213	1,232	829
	Number of people reached on Facebook	N/A	76,644	68,704	160,008	325,783
	Number of likes on Instagram	N/A	5,169	1,379	Not available	Not available
MEASURES TO CONTROL DISCHARGES FROM ADOT MAINTENANCE FACILITIES						
11.1	ADOT Facility Inventory					
	Facilities on inventory	270	270	275	250	265
	High risk facilities	7	7	7	17	17
11.3.4.k	Spill Prevention at ADOT Facilities					
	Facilities identified with hazardous materials	126	67	67	67	90
	Spills at ADOT Facilities	Not Reported	4	2	6	4
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	30 MgCl, 46 Salt Barns
11.6	ADOT Facility Monitoring					
	Facilities within ¼ of impaired water or OAW	4	5	5	5	5

Part 5: Evaluation of the SWMP and SWMP Modifications

ADOT's current SWMP was revised in 2019 to reflect more accurately the programmatic activities and metrics tracked to meet the requirements of Permit number AZS0000018-2015. No modifications were made to the SWMP during the current reporting period due to the upcoming Permit renewal. It is anticipated that the SWMP will be substantially revised to comply with the new MS4 Permit expected to be issued by the end of 2020.

Although the SWMP document was not revised during FY 2019-2020, and in spite of challenges posed by the COVID pandemic, the SWMP's modifications in 2019 have aided in improving the Program's performance as indicated through the metrics tracked. ADOT Water Resources continued to improve its internal agency coordination for stormwater activities through virtual interaction whenever possible in order to practice social distancing. Examples of new internal agency activities include a new District outreach program, regular MS4 team coordination meetings, and an Annual Report review. Examples of metrics tracked improvement when compared to the previous year for Public Outreach and Participation is a better understanding of stormwater protection concepts when polled, an increased amount of feedback from post-event outreach and increased number of participants at events, and increased interaction and actions taken from Facebook statistics. Overall, and based on reviewing the metrics tracked for the SWMP and feedback from agency personnel, some positive progress has been made.

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.

Storm event records for the Summer 2019 and Winter 2019/2020 wet seasons are provided in the following tables.

Summer 2019	Status*	Inches
Flagstaff		
July 30, 2019	NS	0.45
August 1, 2019	FS	0.28
August 3, 2019	SC	0.39
September 3, 2019	SC	0.1
September 23, 2019	SC	0.52

Sedona		
August 2, 2019	PS	0.31
September 10, 2019	NS	0.10
September 16, 2019	NS	0.14
September 23, 2019	PS/FS	0.30

Phoenix		
August 28, 2019	PS	0.88
September 23, 2019	PS/FS	0.30

Summer 2019	Status*	Inches
Tucson		
July 13, 2019	NS	0.63
July 14, 2019	IF	0.18
July 22, 2019	NS	0.29
August 5, 2019	NS	0.33
August 10, 2019	PS	0.29
August 12, 2020	SC	0.30
September 16, 2019	SC	0.10
September 23, 2019	IF	0.13
September 24, 2019	PS/FS	0.42

Nogales		
July 5, 2019	IF	0.27
July 18, 2019	FS	1.35
July 21, 2019	SC	0.38
September 15, 2019	SC	0.33
September 24, 2019	SC	1.52

*Status:

FS-Full Sample Collected

NS - No Sample

PS-Partial Sample Collected

IF-Insufficient Flow

SC-Sampling Complete for Season

** - 72-hour rule

Winter 2019/2020	Status*	Inches
Flagstaff		
November 20, 2019	FS	1.01
November 22, 2019	SC	0.21
November 23, 2019	SC	0.15
December 7, 2019	SC	0.22

Flagstaff2		
February 22, 2020	SC	0.53
March 10, 2020	SC	0.77
March 11, 2020	SC	0.54
March 12, 2020	SC	0.22
March 13, 2020	SC	0.61
March 14, 2020	SC	0.33
March 18, 2020	FS	0.39
March 20, 2020	SC	0.31
March 23, 2020	SC	0.14

Sedona		
November 20, 2019	PS	2.03
November 21, 2019	**	0.48
February 9, 2020	IF	0.12
February 22, 2020	PS/FS	0.78
March 10, 2020	SC	0.15
March 26, 2020	SC	0.13

Phoenix		
November 19, 2019	IF	0.17
November 20, 2019	FS	2.05
November 21, 2019	SC	0.25
December 7, 2019	SC	0.24
December 9, 2019	SC	0.57
December 24, 2019	SC	0.36
November 25, 2019	SC	0.16
February 10, 2020	SC	0.15

Winter 2019/2020	Status*	Inches
Phoenix (cont.)		
February 11, 2020	SC	0.60
February 22, 2020	SC	0.78
March 10, 2020	SC	0.18
March 11, 2020	SC	0.39
March 12, 2020	SC	0.93
March 13, 2020	SC	0.54
March 18, 2020	SC	0.43

Tucson		
November 20, 2019	NS	0.60
November 21, 2019	NS	0.35
December 9, 2019	NS	0.55
December 24, 2019	NS	0.34
December 27, 2019	NS	0.37
January 16, 2020	IF	0.10
February 21, 2020	NS	0.30
February 10, 2020	FS	0.48
February 22, 2010	SC	0.28
March 10, 2020	SC	0.10
March 13, 2020	SC	0.14
March 18, 2020	SC	0.49

Nogales		
November 20, 2019	IF	0.17
November 21, 2019	PS	0.74
December 9, 2019	IF	0.23
December 24, 2019	IF	0.16
February 9, 2020	IF	0.12
February 10, 2020	FS	0.39
February 22, 2020	SC	0.11
March 3, 2020	SC	0.16
March 8, 2020	SC	0.23
March 12, 2020	SC	0.34
March 18, 2020	SC	0.69

*Status:

- FS-Full Sample Collected
- NS - No Sample
- PS-Partial Sample Collected
- IF-Insufficient Flow
- SC-Sampling Complete for Season
- ** - 72-hour rule

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*

Permit Part 12.3.2 requires ADOT to monitor these five locations for Total Dissolved 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 G.

Site ID: Roosevelt Maintenance Yard Address and Physical Location: State Route 188 Milepost 242-243, Roosevelt Latitude/Longitude: 33° 39' 46.13" N; 111° 8' 1.36" W Receiving Water: Roosevelt Lake Impaired: Mercury in fish tissue Designated Uses: DWS, FC, FBC, A&Ww, AgI, AgL	MONITORING SEASONS									
	Summer: June 1 – October 31									
	Winter: November 1 – May 31									
	Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20	
SAMPLING DATE:	11/4/2015	6/30/2016	NS/IF	NS	1/20/2018	6/16/2018	2/23/2019	7/31/2019	11/21/2019	
MONITORING PARAMETERS		SWQS								
Total Dissolved Solids (TDS) (mg/L)	500	43	78	NS/IF	NS	260	NA/IF	8	402	70
Total Suspended Solids (TSS) (mg/L)	NNS	14	161	NS/IF	NS	380	210	157	2630	64.3
Total Metals										
Mercury (µg/L)	2	<0.2	<0.2	NS/IF	NS	<1	<0.2	<0.2	<0.2	<0.2
Polynuclear Aromatic Hydrocarbon (µg/L)										
Acenaphthene	198	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Acenaphthylene	NNS	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Anthracene	74	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Benz(a)anthracene	0.005	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Benzo(a)pyrene	0.02	ND	ND	NS/IF	NS	<0.05	<0.04	<0.05	<0.187	<0.0002
Benzo(b)fluoranthene	0.005	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Benzo(g,h,i)perylene	NNS	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Benzo(k)fluoranthene	0.005	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Chrysene	0.005	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Dibenzo(a,h)anthracene	0.005	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Fluoranthene	28	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Fluorene	280	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Indeno(1,2,3-cd)pyrene	0.05	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Naphthalene	140	ND	ND	NS/IF	NS	<0.05	<0.2	<0.5	<0.374	<0.000399
Phenanthrene	30	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002
Pyrene	210	ND	ND	NS/IF	NS	<0.05	<0.2	<0.05	<0.187	<0.0002

Indicates detection with exceedance

IF - Insufficient Flow
 NA - Not Analyzed

ND - Not Detected
 NNS - No Numerical Standard

NR - Not Required
 NS - No Sample

Site ID: Spring Creek Maintenance Yard Address and Physical Location: State Route 89A, Milepost 362 Latitude/Longitude: 34° 48' 0.22" N; 111° 55' 23.84" W Receiving Water: Spring Creek Impaired: E. coli Designated Uses: FC, FBC, A&Ww, AgI, AgL		MONITORING SEASONS								
		Summer: June 1 – October 31								
		Winter: November 1 – May 31								
		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20
SAMPLING DATE:		11/4/2015	NS/IF	NS/IF	NS	NS	NS	NS	NS	NS
MONITORING PARAMETERS		SWQS								
Total Dissolved Solids (TDS) (mg/L)		500	262	NS/IF	NS/IF	NS	NS	NS	NS	NS
Total Suspended Solids (TSS) (mg/L)		NNS	24	NS/IF	NS/IF	NS	NS	NS	NS	NS
Microbiological										
E.Coli (MPN/100 ml)		235	2	NS/IF	NS/IF	NS	NS	NS	NS	NS
Polynuclear Aromatic Hydrocarbon (µg/L)										
Acenaphthene		198	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Acenaphthylene		NNS	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Anthracene		74	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Benz(a)anthracene		0.02	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Benzo(a)pyrene		0.02	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Benzo(b)fluoranthene		0.02	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Benzo(g,h,i)perylene		NNS	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Benzo(k)fluoranthene		0.02	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Chrysene		0.02	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Dibenzo(a,h)anthracene		0.02	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Fluoranthene		28	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Fluorene		1067	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Indeno(1,2,3-cd)pyrene		0.49	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Naphthalene		1524	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Phenanthrene		30	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS
Pyrene		800	ND	NS/IF	NS/IF	NS	NS	NS	NS	NS

Indicates detection with exceedance

IF - Insufficient Flow
 NA - Not Analyzed

ND - Not Detected
 NNS - No Numerical Standard

NR - Not Required
 NS - No Sample

Site ID: Superior Maintenance Yard Address and Physical Location: 951 Main Street, Superior Latitude/Longitude: 33° 17' 14.14" N; 111° 6' 40.31" W Receiving Water: Queen Creek Impaired: Copper (dissolved), lead (total), selenium (total) Designated Uses: PBC, A&Ww, AgL		MONITORING SEASONS									
		Summer: June 1 – October 31									
		Winter: November 1 – May 31									
		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20	
SAMPLING DATE:		11/4/2015	6/30/2016	12/17/2016	NS	2/15/2018	6/16/2018	2/22/2019	9/9/2019	11/21/2019	
MONITORING PARAMETERS		SWQS									
Total Dissolved Solids (TDS) (mg/L)		500	16	297	86	NS	160	260	146	95	319
Total Suspended Solids (TSS) (mg/L)		NNS	249	45	19	NS	11	25	723	135	72.4
Hardness (mg/L)		NNS	NA	NA	46.1	NS	76	170	201	41.4	248
Total Metals											
Lead (µg/L)		15	8.38	24	4.3	NS	3.3	3.5	80.8	<0.0100	98.9
Selenium (µg/L)		50	<10	<10	<0.5	NS	0.62	<0.5	<2	<3	<3
Dissolved Metals											
Copper (µg/L)		*	48.8	12	18 (6.5*)	NS	49 (10.4*)	16 (22.2*)	16.1 (25.9*)	15.3(5.9*)	19.4(31.6*)
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene		850	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Acenaphthylene		NNS	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Anthracene		280000	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Benz(a)anthracene		0.2	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Benzo(a)pyrene		0.2	ND	ND	<0.05	NS	<0.02	<0.02	<0.05	<0.201	<0.193
Benzo(b)fluoranthene		1.9	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Benzo(g,h,i)perylene		NNS	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	0.246	<0.193
Benzo(k)fluoranthene		1.9	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Chrysene		19	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	0.225	<0.193
Dibenzo(a,h)anthracene		1.9	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Fluoranthene		2000	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Fluorene		37333	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Indeno(1,2,3-cd)pyrene		1.9	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Naphthalene		3200	ND	ND	<0.05	NS	<0.1	<0.1	<0.5	<0.201	<0.193
Phenanthrene		30	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193
Pyrene		28000	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.201	<0.193

* Dissolved Copper Surface Water Quality Standard is hardness based

IF - Insufficient Flow

ND - Not Detected

NR - Not Required

NA - Not Analyzed

NNS - No Numerical Standard

NS - No Sample

Indicates detection with exceedance

Site ID: Superior Storage and Fuel Yard Address and Physical Location: 952 Main Street, Superior Latitude/Longitude: 33° 17' 17.12" N; 111° 6' 43.49" W Receiving Water: Queen Creek Impaired: Copper (dissolved), lead (total), selenium (total) Designated Uses: PBC, A&Ww, AgL		MONITORING SEASONS									
		Summer: June 1 – October 31									
		Winter: November 1 – May 31									
		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20	
SAMPLING DATE:		11/4/2015	6/30/2016	12/17/2016	NS	2/15/2018	6/16/2018	2/14/2019	9/23/19	11/21/19	
MONITORING PARAMETERS		SWQS									
Total Dissolved Solids (TDS) (mg/L)		500	143	122	91	NS	420	130	280	337	670
Total Suspended Solids (TSS) (mg/L)		NNS	122	374	336	NS	50	240	130	537	629
Hardness (mg/L)		NNS	NA	NA	91.4	NS	98	110	100	150	354
Total Metals											
Lead (µg/L)		15	11	<5	36	NS	5.2	34	48	<10	88.9
Selenium (µg/L)		50	<10	<10	<0.5	NS	0.57	1.2	<50	<30	<30
Dissolved Metals											
Copper (µg/L)		*	114	59.3	30 (12.3*)	NS	60 (13.2*)	110 (14.7*)	42 (13.4*)	70(19.7*)	26(44.2)
Polynuclear Aromatic Hydrocarbon (µg/L)											
Acenaphthene		850	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.198	<0.198
Acenaphthylene		NNS	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.198	<0.198
Anthracene		280000	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.198	<0.198
Benz(a)anthracene		0.2	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.198	<0.198
Benzo(a)pyrene		0.2	ND	ND	<0.05	NS	0.093	<0.02	<0.05	<0.198	<0.198
Benzo(b)fluoranthene		1.9	ND	ND	<0.05	NS	0.14	<0.1	<0.05	<0.198	<0.198
Benzo(g,h,i)perylene		NNS	ND	ND	<0.05	NS	0.15	<0.1	<0.05	<0.198	<0.198
Benzo(k)fluoranthene		1.9	ND	ND	<0.05	NS	0.11	<0.1	<0.05	<0.198	<0.198
Chrysene		19	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.198	<0.198
Dibenzo(a,h)anthracene		1.9	ND	ND	<0.05	NS	0.14	<0.1	<0.05	<0.198	<0.198
Fluoranthene		2000	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.198	<0.198
Fluorene		37333	ND	ND	<0.05	NS	<0.1	<0.1	<0.1	<0.198	<0.198
Indeno(1,2,3-cd)pyrene		1.9	ND	ND	<0.05	NS	0.16	<0.1	<0.05	<0.198	<0.198
Naphthalene		3200	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.198	<0.198
Phenanthrene		30	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.198	<0.198
Pyrene		28000	ND	ND	<0.05	NS	<0.1	<0.1	<0.05	<0.198	<0.198

* Dissolved Copper Surface Water Quality Standard is hardness based

Indicates detection with exceedance

IF - Insufficient Flow

NA - Not Analyzed

ND - Not Detected

NNS - No Numerical Standard

NR - Not Required

NS - No Sample

Site ID: Nogales Maintenance Yard Address and Physical Location: 1340 N. Hohokam Dr., Nogales Latitude/Longitude: 31° 21' 22.97" N; 110° 55' 38.96" W Receiving Water: Nogales Wash Impaired: Ammonia and copper (dissolved), total residual chlorine, E. coli Designated Uses: PBC, A&Ww	MONITORING SEASONS									
	Summer: June 1 – October 31 Winter: November 1 – May 31									
	Winter 2015-16	Summer 2016		Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20
SAMPLING DATE:	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	7/17/2019	11/21/2019
MONITORING PARAMETERS	SWQS									
Total Dissolved Solids (TDS) (mg/L)	500	160	210	220	NS	94	200	110	190	250
Total Suspended Solids (TSS) (mg/L)	NNS	280	800	54	NS	52	110	1600	460	210
Hardness (mg/L)	NNS	NA	NA	79	NS	36	120	200	100	120
Nutrients										
Total Ammonia (mg/L)	**	ND	ND	<0.5	NS	<1	<0.5	<0.5	1.4	ND
Microbiological										
E.Coli (MPN/100 ml)	575	52	210 (H); 2600	980	NS	248.1	220	68	NA	NA
Dissolved Metals										
Copper (µg/L)	*	15	25	22 (10.8*)	NS	<10	31 (16.0*)	17 (25.8*)	14 (13.4*)	20 (16.0*)
Organic Toxic Pollutants										
Chlorine, residual (µg/L)	19	73	ND	<100	NS	470	190	40	NA	NA
Polynuclear Aromatic Hydrocarbon (µg/L)										
Acenaphthene	198	ND	ND	<0.05	NS	<0.1	0.52	<0.05	NA	ND
Acenaphthylene	NNS	ND	ND	<0.05	NS	<0.1	<0.05	0.15	NA	ND
Anthracene	74	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Benz(a)anthracene	0.02	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Benzo(a)pyrene	0.02	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Benzo(b)fluoranthene	0.02	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Benzo(g,h,i)perylene	NNS	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Benzo(k)fluoranthene	0.02	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Chrysene	0.02	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Dibenzo(a,h)anthracene	0.02	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Fluoranthene	28	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Fluorene	1067	ND	ND	<0.05	NS	<0.1	<0.05	<0.1	NA	ND
Indeno(1,2,3-cd)pyrene	0.49	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Naphthalene	1524	ND	ND	<0.05	NS	<1	<0.05	<0.05	NA	ND
Phenanthrene	30	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND
Pyrene	800	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	NA	ND

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

** Ammonia Surface Water Quality Standard is pH based
 NA - Not Analyzed ND - Not Detected

(H) - Sampled outside of hold time
 NNS - No Numerical Standard NS - No Sample

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.

MONITORING SYSTEM UPDATE:

With ADEQ's approval, ADOT petitioned to relocate the Flagstaff sampling station. The new location for the sampling station is designated as Flagstaff2. The move was prompted by a planned roadway and drainage reconstruction project of the original location. Therefore, a new nearby location was chosen with similar site conditions, albeit without the construction impacts. The new monitoring location was installed in August 2019, and is composed of all new components of the same brand and type as the original equipment in order to limit any operational variation in set-up, sampling, and/or data collection. It also negates the need to update the SOP or QAM for sampling, which simplified the move. Flagstaff2 can be found on the west side of South Beulah Boulevard, south of the eastbound I-40 overpass, and north of the I-40 eastbound exit to I-17 south ramp exit. The stormwater collected at this point is representative of I-40 and the ADOT right-of-way impacts. The original sampling station was decommissioned once Flagstaff2 was shown to be fully functional. Flagstaff2 was fully operational as of February 2020 and collected its first sample in March 2020.

The wet-weather monitoring outfall locations descriptions and sample data is outlined in the following two tables. Monitoring data for each location is provided in the following table. Sampling event data and lab reports for the current reporting period are provided in Appendix G.

Outfall Identification, Latitude, Longitude	Physical Location	Land Use by Percent/ Drainage Area	Receiving Water/Designated Uses	Equipment Type
Flagstaff (DECOMMISSIONED) 35 11 53.29N 111 39 05.48W	South side of intersection at Business 40 and State Route 180	Urban Highway 80% Commercial Streets 20% 29.3 Acres	AZ15020015-004A, Rio De Flag: PBC, A&We	Auto-sampler – ISCO Model 6712
Flagstaff2 35 10 19.2N 111 39 56.9W	West side of S. Beulah Boulevard between the eastbound I-40 overpass and southbound I-17 exit ramp	Urban Highway 76% Desert Landscape 24% 28.9 Acres	AZ15020015-004A, Rio De Flag: PBC, EDW	Auto-sampler – ISCO Model 6712
Sedona 34 51 43.93N 111 45 42.68W	Below west abutment of State Route 179 bridge over Oak Creek	State/Business Rte 90% Commercial Streets 10% 7.35 Acres	AZ15060202-018C, Oak Creek: FBC, FC, AgL, AgI, A&Wc, DWS, OAW, Impaired	Auto-sampler – ISCO Model 6712
Phoenix 33 37 19.84N 112 14 21.61W	East of State Route 101 on north bank of Skunk Creek	Urban Highway 90% Commercial Streets 10% 17.5 Acres	AZ15070102-003, Skunk Creek: PBC, A&We	Auto-sampler – ISCO Model 6712
Tucson 32 15 17.19N 110 59 49.39W	West of Interstate 10, north of Grant Road, within ADOT Yard	Urban Highway 90% ADOT Facility 10% 4.8 Acres	AZ15050301-003A, Santa Cruz River: PBC, AgL, A&We	Auto-sampler – ISCO Model 6712
Nogales 31 21 02.10N 110 55 24.48W	Morley Road at Intersection of State Route 82	Urban Highway 80% Residential Streets 20% 59.5 Acres	AZ15050301-011, Nogales Wash: PBC, FC, A&Ww Impaired	Auto-sampler – ISCO Model 6712

Designated Water Body Use Abbreviations:

Agricultural Irrigation = AgI
 Agricultural Livestock Watering = AgL
 Aquatic & Wildlife coldwater = A&Wc

Aquatic & Wildlife ephemeral = A&We
 Aquatic & Wildlife warmwater = A&Ww
 Fish Consumption = FC
 Effluent Dependent Water = EDW

Full Body Contact = FBC,
 Outstanding Arizona Water = OAW
 Partial Body Contact = PBC

Outfall ID: Flagstaff Outfall Address and Physical Location: South side of intersection at Business 40 and State Route 180 Latitude/Longitude: 35° 11' 53.29" N, 111° 39' 5.48" W Size of Outfall Drainage (acres): 29.3 Land Use Percentages: Urban Highway 80%; Commercial Streets 20% Receiving Water: Rio de Flag Impaired ___ OAW ___ (include other parameters) Designated Uses: PBC, A&We Sample Method: first flush manual auto composite		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31							
		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019
		SAMPLING DATE: 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	EF	301.2; 4073.5	174.4	NS	NS/IF	3011.6; 1014.4	NS/IF	NA
pH [field]	6.5-9.0	8.63	7.7; 8.48	NA	NS	NS/IF	NA	NS/IF	NA
Temperature (°C) [field]	NNS	3	19.5; 19.4	NA	NS	NS/IF	NA	NS/IF	NA
Total Dissolved Solids (TDS) (mg/L)	500	222	285	250	NS	NS/IF	<20	NS/IF	65
Total Suspended Solids (TSS) (mg/L)	NNS	185	178	260	NS	NS/IF	230	NS/IF	37.1
Turbidity	NNS	110	153	400	NS	NS/IF	15	NS/IF	57.5
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	57	300	65	NS	NS/IF	13	NS/IF	57.4
Chemical Oxygen Demand (COD) (mg/L)	NNS	178	330	490	NS	NS/IF	46	NS/IF	85
Inorganics									
Sulfates	250	<5	6.1	5.3	NS	NS/IF	<2	NS/IF	2.27
Nutrients (mg/L)									
Nitrate (NO ₃ -N)	3733.333	0.108 (H)	* 0.48	0.67	NS	NS/IF	0.25	NS/IF	<.02
Nitrite (NO ₂ -N)	233.333	0.108 (H)	* 0.48	<0.1	NS	NS/IF	<0.1	NS/IF	<0.1
Sodium	NNS	55	11.1	40	NS	NS/IF	3.3	NS/IF	3.5
Calcium	NNS	13.7	16.8	27	NS	NS/IF	1.1	NS/IF	11.5
Chloride	250	81.6	14.2	50	NS	NS/IF	<2	NS/IF	4.21
Microbiological									
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	575	>2419.6	1203.3; 435.2; 727; 178.5	<1	NS	NS/IF	ND	NS/IF	12300
Fecal Coliform	NNS	TNTC	TNTC(H); TNTC	270	NS	NS/IF	ND	NS/IF	>200

Outfall ID: Flagstaff (continued)		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019
MONITORING PARAMETERS	SWQS								
Total Metals (µg/L)									
Arsenic	280	<10	<10	3.2	NS	NS/IF	2.2	NS/IF	<0.4
Barium	98000	84.6	101	250	NS	NS/IF	130	NS/IF	3.75
Cadmium	700	<20	<2	0.29	NS	NS/IF	0.19	NS/IF	<0.2
Chromium	NNS	<10	13.2	27	NS	NS/IF	13	NS/IF	7.84
Copper	1300	22	49.8	57	NS	NS/IF	30	NS/IF	16.7
Lead	15	6.85	10.6	15	NS	NS/IF	12	NS/IF	26.9
Mercury	280	<0.2	<0.2	<0.2	NS	NS/IF	<0.2	NS/IF	<0.2
Nickel	28000	<10	12.6	22	NS	NS/IF	9.6	NS/IF	3.71
Selenium	33	<10	<10	2.3	NS	NS/IF	0.91	NS/IF	<0.2
Silver	4667	<5	<5	<100	NS	NS/IF	<0.1	NS/IF	<0.2
Zinc	280000	151	215	270	NS	NS/IF	120	NS/IF	NA
Polynuclear Aromatic Hydrocarbon (µg/L)									
Acenaphthene	56000	ND	ND	<1	NS	NS/IF	<0.1; <0.1	NS/IF	<0.2
Acenaphthylene	NNS	ND	ND	<1	NS	NS/IF	<0.1; <0.1	NS/IF	<0.2
Anthracene	280000	ND	ND	<0.051	NS	NS/IF	<0.1; <0.1	NS/IF	<0.2
Benzo(a)anthracene	0.2	ND	ND	<0.2	NS	NS/IF	<0.1; 0.17	NS/IF	<0.2
Benzo(a)pyrene	0.2	ND	ND	<0.051	NS	NS/IF	0.021; 0.026	NS/IF	<0.2
Benzo(b)fluoranthene	1.9	ND	ND	<0.1	NS	NS/IF	<0.1; 0.21	NS/IF	<0.2
Benzo(g,h,i)perylene	NNS	ND	ND	<0.1	NS	NS/IF	<0.1; <0.1	NS/IF	<0.2
Benzo(k)fluoranthene	1.9	ND	ND	<0.051	NS	NS/IF	<0.1; <0.1	NS/IF	<0.2
Chrysene	19	ND	ND	<0.1	NS	NS/IF	<0.1; 0.12	NS/IF	<0.2
Dibenzo(a,h)anthracene	1.9	ND	ND	<0.1	NS	NS/IF	<0.1; <0.1	NS/IF	<0.2
Fluoranthene	37333	ND	ND	<0.1	NS	NS/IF	<0.1; 0.22	NS/IF	<0.2
Fluorene	37333	ND	ND	<0.1	NS	NS/IF	<0.1; <0.1	NS/IF	<0.2
Indeno(1,2,3-cd)pyrene	1.9	ND	ND	<0.1	NS	NS/IF	<0.1; 0.1	NS/IF	<0.2
Naphthalene	18667	ND	ND	<0.51	NS	NS/IF	<0.1; <0.1	NS/IF	<0.38
Phenanthrene	NNS	ND	ND	<0.1	NS	NS/IF	<0.1; <0.1	NS/IF	<0.2
Pyrene	28000	ND	ND	<0.1	NS	NS/IF	<0.1; 0.18	NS/IF	<0.2

* nitrate & nitrite reported as combined nitrate-nitrite

Indicates detection with exceedance

NA - Not available

ND - Not Detected

NNS - No Numerical Standard

NR - Not Required

NS - No Sample

TNTC - Too Numerous to Count

Outfall ID: Flagstaff2		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31
Outfall Address and Physical Location: West side of S. Beulah Blvd between the EB I-40 OP and SB I-17 exit ramp		
Latitude/Longitude: 35° 10' 19.2" N, 111° 39' 56.9" W		
Size of Outfall Drainage (acres): 10.3		
Land Use Percentages: Urban Highway 76%; Desert Landscape 24%		
Receiving Water: Rio de Flag		
Impaired ___ OAW ___ (include other parameters)		
Designated Uses: PBC, A&We		Winter 2019-20
Sample Method: first flush manual auto composite		
SAMPLING DATE:		3/18/2020
MONITORING PARAMETERS		SWQS
Flow (gpm)	NNS	97.2
pH	6.5-9.0	NA
Temperature (°C)	NNS	NA
Total Dissolved Solids (TDS) (mg/L)	500	2880
Total Suspended Solids (TSS) (mg/L)	NNS	28.3
Turbidity (NTU)	NNS	56
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	ND
Chemical Oxygen Demand (COD) (mg/L)	NNS	91.8
Inorganics		
Sulfates (mg/L)	250	7.87
Nutrients (mg/L)		
Nitrate (mg/L)	3733.333	0.218
Nitrite (mg/L)	233.333	ND
Sodium (mg/L)	NNS	1120
Calcium (mg/L)	NNS	27.7
Chloride (mg/L)	250	435
Microbiological		
<i>E. coli</i> (MPN/100 ml)	575	123.6
Fecal Coliform (MPN/100 ml)	NNS	>2419.6

Outfall ID: Flagstaff2 (continued)		Winter
MONITORING PARAMETERS	SWQS	2019-20
Total Metals (µg/L)		
Arsenic	280	2.05
Barium	98000	110
Cadmium	700	ND
Chromium	NNS	8.65
Copper	1300	9.19
Lead	15	2.2
Mercury	280	ND
Nickel	28000	5.61
Selenium	33	<0.002
Silver	4667	<0.001
Zinc	280000	110
Polynuclear Aromatic Hydrocarbon (µg/L)		
Acenaphthene	56000	<0.00005
Acenaphthylene	NNS	<0.00005
Anthracene	280000	<0.00005
Benzo(a)anthracene	0.2	<0.00005
Benzo(a)pyrene	0.2	<0.00005
Benzo(b)fluoranthene	1.9	<0.00005
Benzo(g,h,i)perylene	NNS	<0.00005
Benzo(k)fluoranthene	1.9	<0.00005
Chrysene	19	<0.00005
Dibenzo(a,h)anthracene	1.9	<0.00005
Fluoranthene	37333	<0.00005
Fluorene	37333	<0.00005
Indeno(1,2,3-cd)pyrene	1.9	<0.00005
Naphthalene	18667	<0.00005
Phenanthrene	NNS	<0.00005
Pyrene	28000	<0.00005

Indicates detection with exceedance

NA - Not Analyzed

ND - Not Detected

NNS - No Numerical Standard

Outfall ID: Sedona Outfall Address and Physical Location: Below western abutment of State Route 179 bridge over Oak Creek Latitude/Longitude: 34° 51' 43.93" N, 111° 45' 42.68" W Size of Outfall Drainage (acres): 7.35 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 Sample Method: first flush manual auto composite		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20	
SAMPLING DATE:		11/3/2015	6/29/2016	2/28/2017	NS	1/10/2018	7/27/2018; 10/2/2018	2/14/2019	8/2/19	2/22/20	
MONITORING PARAMETERS		SWQS									
Flow [field]	NNS	126	499.3	332.9	NS	618.2	98.3	NA/EF	29.6	NA	
pH [field]	6.5-8.5	8.5	8.54	NA	NS	NA	6.6	NA	NA	NA	
Temperature (°C) [field]	NNS	13.9	14.1	NA	NS	NA	8	NA	NA	NA	
Total Dissolved Solids (TDS) (mg/L)	500	44	67	120	NS	210	52	146	68	106	
Total Suspended Solids (TSS) (mg/L)	NNS	118	468	65	NS	320	130	237	779	117	
Turbidity	NNS	53	207	110	NS	140	95	179	6.8	96.1	
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	12	16	11	NS	70	26	27.9	48.3	NA	
Chemical Oxygen Demand (COD) (mg/L)	NNS	290	75.4	83	NS	310	<20	59	68	NA	
Inorganics											
Sulfates	250	<5	<5	3.7	NS	6.8	<5	3.77	3.18	ND	
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	10	0.63	0.58	0.23	NS	0.8	<0.5	0.319	0.5446	0.515	
Nitrite (NO ₂ -N)	1	<0.2	<0.1	<0.1	NS	<0.1	<0.1	0.0229	0.0284	ND	
Sodium	NNS	3.29	2.39	10	NS	5.2	<5	22.3	4.86	6.32	
Calcium	NNS	35.8	32.8	15	NS	38	11	24.1	44.7	16.7	
Chloride	250	6.89	1.14	10	NS	7.1	1.1	29.7	3.37	5.11	
Microbiological											
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	235	107.6	6.3	11000	NS	NA	730	67	NA	75.4	
Fecal Coliform	NNS	TNTC	289	930	NS	NA	1200	40	NA	>2419.6	

Outfall ID: Sedona (continued)		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20
MONITORING PARAMETERS	SWQS									
Total Metals (µg/L)										
Arsenic	10	<10	<10	<100	NS	3.7	1.2	<4	<4	0.00238
Barium	2000	119	180	53	NS	190	43	109	292	0.0761
Cadmium	5	<2	<2	<1	NS	<0.1	<0.25	<2	<2	ND
Chromium	100	<10	15.2	<10	NS	13	2.6	6.41	14.7	7.05
Copper	500	37.7	57.9	21	NS	78	15	35.8	77.1	70
Lead	15	8.51	6.82	<15	NS	8	2.6	4.62	11.7	3.02
Mercury	2	<0.2	<0.2	<0.2	NS	<0.2	<1	<0.2	<0.2	ND
Nickel	140	15.8	22.8	<10	NS	21	5.2	11.3	35.1	11.6.
Selenium	20	<10	<10	<100	NS	1.5	<2.5	<2	<2	ND
Silver	35	<5	<5	<10	NS	0.11	<0.5	<2	<2	ND
Zinc	2100	316	369	210	NS	650	110	347	717	252
Polynuclear Aromatic Hydrocarbon (µg/L)										
Acenaphthene	198	ND	ND	<1	NS	NA	<0.05; <0.4	<0.0505	NA	ND
Acenaphthylene	NNS	ND	ND	<1	NS	NA	<0.05; <0.4	<0.0505	NA	ND
Anthracene	74	ND	ND	<0.051	NS	NA	<0.05; <0.4	<0.0505	NA	ND
Benz(a)anthracene	0.005	ND	ND	<0.2	NS	NA	<0.05; <0.4	<0.0505	NA	ND
Benzo(a)pyrene	0.02	ND	ND	<0.051	NS	NA	<0.05; 0.24	<0.0505	NA	ND
Benzo(b)fluoranthene	0.005	ND	ND	<0.1	NS	NA	<0.05; <0.4	0.109	NA	0.000131
Benzo(g,h,i)perylene	NNS	ND	ND	<0.1	NS	NA	<0.05; <0.4	0.0949	NA	<0.05; <0.4
Benzo(k)fluoranthene	0.005	ND	ND	<0.051	NS	NA	<0.05; 0.4	<0.0505	NA	ND
Chrysene	0.005	ND	ND	<0.1	NS	NA	<0.05; <0.4	0.076	NA	<0.05; <0.4
Dibenzo(a,h)anthracene	0.005	ND	ND	<0.1	NS	NA	<0.05; 0.41	<0.0505	NA	ND
Fluoranthene	28	ND	0.00104	<0.1	NS	NA	<0.05; <0.4	0.0925	NA	ND
Fluorene	280	ND	ND	<0.1	NS	NA	<0.05; <0.4	<0.0505	NA	ND
Indeno(1,2,3-cd)pyrene	0.05	ND	ND	<0.1	NS	NA	<0.05; <0.4	<0.0505	NA	ND
Naphthalene	140	ND	ND	<0.51	NS	NA	<0.05; <0.4	<0.505	NA	ND
Phenanthrene	30	ND	ND	<0.1	NS	NA	<0.05; <0.4	<0.0505	NA	<0.05; <0.4
Pyrene	210	ND	ND	<0.1	NS	NA	<0.05; <0.4	0.113	NA	<0.05; <0.4

* nitrate & nitrite reported as combined nitrate-nitrite

Indicates detection with exceedance

ND - Not Detected

NNS - No Numerical Standard

NS - No Sample

NR - Not Required

TNTC - Too Numerous to Count

Outfall ID: Phoenix Outfall Address and Physical Location: East of State Route 101 on north bank of Skunk Creek Latitude/Longitude: 33° 37' 19.84" N, 112° 14' 21.61" W Size of Outfall Drainage (acres): 17.5 Land Use Percentages: Urban Highway 90%; Commercial Streets 10% Receiving Water: Skunk Creek Impaired ___ OAW ___ (include other parameters) Designated Uses: Inconclusive Sample Method: first flush manual auto composite		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31								
		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20
SAMPLING DATE:		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	8/29/19	11/20/19
MONITORING PARAMETERS		SWQS								
Flow [field]	NNS	EF	31.7; 427.9; 171.9; 142.7	3011.6	NS	NA	14.8	NA/EF	1537.5	3521
pH [field]	6.5-9.0	8.6	7.42	NA	NS	7.98	NA	9.07	7.45	7.2
Temperature (°C) [field]	NNS	16.1	31.4	NA	NS	14	NA	7.1	30.5	62.9
Total Dissolved Solids (TDS) (mg/L)	500	117	96	180	NS	300	150	58	NS	75
Total Suspended Solids (TSS) (mg/L)	NNS	44	169	73	NS	14	430	153	NS	45.5
Turbidity	NNS	36.8	18.1	21	NS	22	21	28.2	NS	20.2
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	<7.66	105	7	NS	29	18	35.1	NS	13.1
Chemical Oxygen Demand (COD) (mg/L)	NNS	125	537	86.5	NS	210	190	24	NS	<20
Inorganics										
Sulfates	250	14.3	11.9	8.4	NS	24	13	4.62	NS	2.93
Nutrients (mg/L)										
Nitrate (NO ₃ -N)	3733.333	0.98	5.18	1	NS	2.5	1.1	0.373	NS	0.454
Nitrite (NO ₂ -N)	233.333	<0.1	0.14	<0.1	NS	0.33	0.22	0.373	NS	<0.0200
Sodium	NNS	9	9	8.9	NS	20	6.7	5.16	NS	2.58
Calcium	NNS	16	18	12.6	NS	34	28	11	NS	7.03
Chloride	250	6	19	4.2	NS	16	8	4.72	NS	2.57
Microbiological										
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	575	980	>2419.6	330	NS	<1.0	520	34.2	9800	388
Fecal Coliform	NNS	108000	122000; >2000	>2419.6	NS	<1.0	>2419.6	>200	NS	>200

Outfall ID: Phoenix (continued)		Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
MONITORING PARAMETERS		2015-16	2016	2016-17	2017	2017-18	2018	2018-19	2019	2019-20
SWQS										
Total Metals (µg/L)										
Arsenic	200	<1	1	1.3	NS	2.5	3.7	<4	NS	<0.00400
Barium	98000	50	80	32	NS	61	140	93.7	NS	33.1
Cadmium	50	0.1	0.2	<0.08	NS	<0.1	0.19	<2	NS	<0.00200
Chromium	1000	<5	7	2.3	NS	2.8	10	6.98	NS	<0.00400
Copper	500	2.5	56	23	NS	49	72	41.4	NS	23.2
Lead	15	2.5	5.9	1.5	NS	1.3	11	5.83	NS	2.37
Mercury	10	<0.2	<0.2	0.012	NS	<0.2	<0.2	<0.2	NS	<0.000200
Nickel	28000	<0.2	<20	2.8	NS	5.6	16	6.42	NS	3.23
Selenium	33	<2	<2	<0.5	NS	0.54	1.3	<2	NS	<0.00200
Silver	4667	6.1	<0.1	<0.5	NS	<0.1	<0.1	<2	NS	<0.00200
Zinc	25000	100	130	44	NS	72	370	201	NS	94.1
Polynuclear Aromatic Hydrocarbon (µg/L)										
Acenaphthene	56000	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Acenaphthylene	NNS	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Anthracene	280000	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Benzo(a)anthracene	0.2	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Benzo(a)pyrene	0.2	ND	ND; ND	<0.05	NS	<0.02	<0.02	<0.05	<0.195	<0.196
Benzo(b)fluoranthene	1.9	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Benzo(g,h,i)perylene	NNS	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Benzo(k)fluoranthene	1.9	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Chrysene	19	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Dibenzo(a,h)anthracene	1.9	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Fluoranthene	37333	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Fluorene	37333	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Indeno(1,2,3-cd)pyrene	1.9	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Naphthalene	18667	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.5	<0.391	<0.391
Phenanthrene	NNS	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196
Pyrene	28000	ND	ND; ND	<0.05	NS	<0.1	<0.1	<0.05	<0.195	<0.196

Indicates detection with exceedance

EF - Equipment Failure

ND - Not Detected

NNS - No Numerical Standard

NS - No Sample

Outfall ID: Tucson Outfall Address and Physical Location: West of Interstate 10 north of Grant Road within ADOT Yard Latitude/Longitude: 32° 15' 17.19" N, 110° 59' 49.39" W Size of Outfall Drainage (acres): 4.8 Land Use Percentages: Urban Highway 90%; ADOT Facility Receiving Water: Santa Cruz River Impaired ____ OAW ____ (include other parameters) Designated Uses: PBC, A&We, AgL Sample Method: first flush manual auto composite		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31								
		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20
SAMPLING DATE:		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	8/10/2019	2/11/2020
MONITORING PARAMETER	SWQS									
Flow [field]	NNS	EF	EF	15.9	NS	NA	276	507; 4	EF	
pH [field]	6.5-9.0	8.87	8.58	NA	NS	NA	8.08	8.25; NA	7	NA
Temperature (°C) [field]	NNS	14	25.6	NA	NS	NA	13.9	16.2; NA	22.6	NA
Total Dissolved Solids (TDS) (mg/L)	500	130	110	80	NS	228	160	82	100	100
Total Suspended Solids (TSS) (mg/L)	NNS	40	380	200	NS	18	33	170	75	45
Turbidity	NNS	52	350	170	NS	43.6	63	140	28	70
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	14	<5	20	NS	24	11	20	25	8.5
Chemical Oxygen Demand (COD) (mg/L)	NNS	100	56	180	NS	201	170	100	120	57
Inorganics										
Sulfates	250	7.4	3.9	70	NS	18.6	9.7	6.6	6.5	5.9
Nutrients (mg/L)										
Nitrate (NO ₃ -N)	3733.333	0.75	0.93	0.74	NS	1.73	0.6	0.76	0.92	1
Nitrite (NO ₂ -N)	233.333	0.1	<0.1	<0.1	NS	0.24	0.13	0.11	<0.1	ND
Sodium	NNS	7.1	2.9	<5	NS	11	7.5	9.6	<5	ND
Calcium	NNS	17	36	22	NS	25	24	19	17	15
Chloride	250	20	2.2	2.8	NS	8	4.8	6.5	2.8	4.3
Microbiological										
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	575	<10 (H)	16000	2400	NS	170	1700	490		130
Fecal Coliform	NNS	690 (H)	TNTC	2400	NS	2400	2400	2400		2400

Outfall ID: Tucson (continued)		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20
MONITORING PARAMETERS	SWQS									
Total Metals (µg/L)										
Arsenic	200	1.2	4.9	2.4	NS	1.9	2.5	2.5	2	0.0012
Barium	98000	52	150	110	NS	84	78	130	78	0.07
Cadmium	50	0.26	0.53	0.42	NS	0.2	<0.25	0.31	<0.25	ND
Chromium	1000	ND	12	14	NS	<25	3.1	7.9	3.3	5.3
Copper	500	64	100	150	NS	120	78	100	64	52
Lead	15	ND	52	24	NS	4.3	5.9	15	7.3	8
Mercury	10	ND	ND	<1	NS	<0.2	<1	<1	<1	ND
Nickel	28000	ND	16	11	NS	<100	4.9	7	9.1	0.0055
Selenium	33	0.49	1.7	<2.5	NS	<2	<2.5	<2.5	<2.5	ND
Silver	4667	ND	0.49	<0.5	NS	0.1	<0.5	<0.5	<0.5	ND
Zinc	25000	270	240	230	NS	120	140	910	180	0.13
Polynuclear Aromatic Hydrocarbon (µg/L)										
Acenaphthene	56000	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Acenaphthylene	NNS	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Anthracene	280000	ND	ND	0.07	NS	<0.1	<0.05	<0.05	<0.25	ND
Benz(a)anthracene	0.2	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Benzo(a)pyrene	0.2	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Benzo(b)fluoranthene	1.9	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Benzo(g,h,i)perylene	NNS	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Benzo(k)fluoranthene	1.9	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Chrysene	19	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Dibenzo(a,h)anthracene	1.9	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Fluoranthene	37333	ND	ND	<0.05	NS	<0.1	<0.05	0.053	<0.5	ND
Fluorene	37333	ND	ND	<0.05	NS	<0.1	<0.05	<0.1	<0.25	ND
Indeno(1,2,3-cd)pyrene	1.9	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Naphthalene	18667	ND	ND	<0.05	NS	<1	<0.05	<0.05	<0.25	ND
Phenanthrene	NNS	ND	ND	<0.05	NS	<0.1	<0.05	<0.05	<0.25	ND
Pyrene	28000	ND	ND	<0.05	NS	<0.1	<0.05	0.062	<0.25	ND

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

Outfall ID: Nogales Outfall Address and Physical Location: Morley Road at Intersection of State Route 82 Latitude/Longitude: 31° 21' 2.1" N, 110° 55' 24.48" W Size of Outfall Drainage (acres): 59.5 Land Use Percentages: Urban Highway 80%; Residential Streets 20% Receiving Water: Tributary to Nogales Wash Impaired: Ammonia, copper (dissolved), total residual chlorine, E. coli Designated Uses: PBC, A&Ww, FC Sample Method: first flush manual auto composite		MONITORING SEASONS Summer: June 1 – October 31 Winter: November 1 – May 31									
		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20	
SAMPLING DATE:		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	7/17/2019	2/10/2020	
MONITORING PARAMETERS		SWQS									
Flow [field]	NNS	465.34; 1012.16	459.4; 1087.3; 792.5	NS/EF	NS	NA	1363.1	NA	3138.4	NA	
pH [field]	6.5-9.0	8.72; 9.2	8.54	NS/EF	NS	7.35	6.7	NA	7.2	NA	
Temperature (°C) [field]	NNS	7.2; 12.3	19.9	NS/EF	NS	13.9	9.6	NA	4	NA	
Total Dissolved Solids (TDS) (mg/L)	500	66	82	NS/EF	NS	69	89	20	96	71	
Total Suspended Solids (TSS) (mg/L)	NNS	160	350	NS/EF	NS	36	310	510	1300	24	
Turbidity	NNS	180	40; 220	NS/EF	NS	73.8	95	400	180	50	
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	14	22; 12	NS/EF	NS	5	12	4.5	17	9.5	
Chemical Oxygen Demand (COD) (mg/L)	NNS	120	56	NS/EF	NS	72	140	190	160	36	
Hardness (mg/L)	NNS	NR	NR	NS	NS	31	84	61	110	NA	
Inorganics											
Sulfates	250	2.9	6.3	NS/EF	NS	2.37	<5	<5	<5	ND	
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	3733.333	0.6	1.2; 0.78	NS/EF	NS	0.431	0.85	0.98	0.81	0.72	
Nitrite (NO ₂ -N)	233.333	ND	ND	NS/EF	NS	<0.1	<0.1	<0.1	<0.1	ND	
Sodium	NNS	2.2	3.3	NS/EF	NS	1.7	<5	<5	<5	ND	
Calcium	NNS	14	17	NS/EF	NS	9.9	23	16	26	11	
Chloride	250	2.2	ND	NS/EF	NS	1.1	1.5	2.4	2.3	1.6	
Total Ammonia (mg/L)	**	NR	NR	NS/EF	NS	<1	<0.5	<0.5	58.4	NA	
Microbiological											
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	575	<10 (H)	4400 (H); 1700	NS/EF	NS	770.1	2400	2400	NA	2400+	
Fecal Coliform	NNS	310 (H)	TNTC (H); TNTC	NS/EF	NS	>800	2400	2400	NA	2400	

Outfall ID: Nogales (continued)		Winter 2015-16	Summer 2016	Winter 2016-17	Summer 2017	Winter 2017-18	Summer 2018	Winter 2018-19	Summer 2019	Winter 2019-20
MONITORING PARAMETERS		SWQS								
Total Metals (µg/L)										
Arsenic	80	4.6	5.3	NS/EF	NS	<1	7.7	4.9	6.8	1.1
Barium	98000	50; 130	150	NS/EF	NS	43	230	140	190	0.039
Cadmium	84	0.29	0.43	NS/EF	NS	0.1	<0.25	<0.25	<0.25	ND
Chromium	NNS	ND	12	NS/EF	NS	<5	19	7.6	7.1	2.1
Copper	1300	36; 680	68	NS/EF	NS	17	85	46	38	20
Lead	15	25	38	NS/EF	NS	7.4	47	66	57	39
Mercury	280	ND	ND	NS/EF	NS	<0.2	<1	<1	<1	ND
Nickel	4600	ND	14	NS/EF	NS	<20	19	16	20	3.4
Selenium	667	1.1	1.1	NS/EF	NS	<2	<2.5	<2.5	<2.5	ND
Silver	4667	NA	0.25	NS/EF	NS	<0.1	<0.5	<0.5	<0.5	ND
Zinc	5106	110; 200	230	NS/EF	NS	52	300	190	150	69
Dissolved Metals (µg/L)										
Copper	*	NA	NA	NS/EF	NS	<0.01	21 (11.4*)	<20 (8.4*)	15	0.02
Organic Toxic Pollutants										
Chlorine, residual (µg/L)	19	NA	NA	NS/EF	NS	870 (H)	100	40	NA	NA
Polynuclear Aromatic Hydrocarbon (µg/L)										
Acenaphthene	198	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Acenaphthylene	NNS	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Anthracene	74	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Benz(a)anthracene	0.02	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Benzo(a)pyrene	0.02	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Benzo(b)fluoranthene	0.02	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Benzo(g,h,i)perylene	NNS	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Benzo(k)fluoranthene	0.02	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Chrysene	0.02	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Dibenzo(a,h)anthracene	0.02	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Fluoranthene	28	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Fluorene	1067	ND	ND	NS/EF	NS	<0.1	<0.05	<0.1	NA	ND
Indeno(1,2,3-cd)pyrene	0.49	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Naphthalene	1524	ND	ND	NS/EF	NS	<1	<0.05	<0.05	NA	ND
Phenanthrene	30	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND
Pyrene	800	ND	ND	NS/EF	NS	<0.1	<0.05	<0.05	NA	ND

Indicates detection with exceedance

* Dissolved Copper Surface Water Quality Standard is hardness based

** Ammonia Surface Water Quality Standard is pH based

NA - Not Analyzed

ND - Not Detected

NS - No Sample

NNS - No Numerical Standard

TNTC - Too Numerous to Count

Part 8: Assessment of Monitoring Results

- A. **Stormwater Quality:** 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 2019-2020 sampling season's events. 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 G.

Sampling Location (Type)	Collection Date	Report Number	Report Date
Flagstaff (Grab & Comp)	11/20/19	643926	12/4/19
Flagstaff2 (Grab & Comp)	3/18/20	L1201039	3/30/20
Sedona (Grab & Comp)	8/2/19	632997	8/15/19
Sedona (Grab & Comp)	2/20/20	L1192497	3/4/20
Phoenix (Grab & Comp)	8/29/19	635505	9/11/19
Phoenix (Grab & Comp)	11/20/19	643882	12/5/19
Tucson (Grab & Comp)	8/10/19	19I0584	9/27/19
Tucson (Grab & Comp)	2/11/20	20B0320	2/27/20
Nogales (Grab & Comp)	7/17/19	19G0551	7/31/19
Nogales (Grab & Comp)	2/10/20	20B0320	2/27/20
Nogales (Grab & Comp)	6/2/20	20F0144	6/18/20
Nogales Yard (Grab)	7/17/19	19G0550	7/31/19
Nogales Yard (Grab)	11/21/19	19K0594	12/18/19
Nogales Yard (Grab)	6/2/20	20F0145	6/15/20
Superior Yard (Grab)	9/11/19	636576	9/23/19
Superior Yard (Grab)	11/21/19	644075	12/5/19
Superior Fuel (Grab)	9/24/19	637846	10/2/19
Superior Fuel (Grab)	11/21/19	644081	12/5/19
Roosevelt (Grab)	7/31/19	632675	8/7/19
Roosevelt (Grab)	11/21/19	644077	11/30/19

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

Flagstaff2 Monitoring Station

- *Total Dissolved Solids (TDS) exceeded the water quality standards the past two sampling events. The exceedance was during summer 2019 (1980 mg/L) and winter 2019/2020 (2880 mg/L). The reported concentration was more than the water quality standard of 500 mg/L. This outfall site is located at the I-40 and I-17 Interchange in Flagstaff. Potential sources of elevated TDS levels may be due to culverts that collect sediment and release it during storm events. ADOT is currently working with the Flagstaff District to conduct routine maintenance of the culverts within this area.*

Sedona Monitoring Station

- *The pH exceeded water quality standards once in the past five years. pH exceeded water quality standards during 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.*
- *E. coli levels exceeded the water quality standards in one season in the past five years. The exceedances occurred during 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 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.*
- *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 three seasons of the past five years. The densely populated drainage area of this outfall consists of seasonally driven high density residential and commercial development, and heavily utilized roadways. Potential sources of E. coli may come from transient humans, recreational visitors, and pet waste, and/or failing sewage systems.*

Tucson Monitoring Station

- *E. coli levels exceeded water quality standards in four seasons of the past five years. The majority of this outfall site is composed of an urban highway and adjacent commercial businesses with a substantial local homeless population; the area has old infrastructure and likely remnant or failing septic systems that could produce 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.*

Nogales Monitoring Station

- *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. Since January of 2017, there have been at least three separate incidences of major sewage line breakage with significant quantities of raw sewage discharged directly into Nogales Wash less than eight miles upstream. The drainage area is dominated by densely packed old homes, buildings, infrastructure, with a significant portion of residents being renters with low income, and a sizable transient population. Septic systems are common in these types of areas and no doubt many are neglected and in need of maintenance or repair. In addition, there is a dense population of domestic pets and even a County Pet Shelter nearby. Potential sources of elevated E. coli may include failing septic systems, sanitary sewer overflows, homeless population, small animal feeding operations (e.g., dog kennels), and/or 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. The USACE has noted in their reports about the water quality of Nogales Wash that heavy metals are known to be present from illicitly connected industrial discharges and businesses, with lead being one of the most prevalent.*

- *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 four seasons in the past five years. The exceedances occurred in 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 was tracked to veterinary clinic on the hill behind the sampling location which was disposing of their mop water down the slope. ADOT is working with the City of Nogales to resolve the problem. The sanitary sewer breakage is likely a significant contributing factor, since some of the high levels coincided with periods immediately following the sewage spills upstream and therefore should be investigated. In addition, and according to USACE report about the condition of the infrastructure (concrete lined channel where it exists) in the wash, there is a high number of illicit connections that discharge to wash raw sewage and industrial waste known to have heavy metals such as lead and cadmium in it from the Mexican side of the boarder and as a result, the County and WWTP on the US side, routinely supply large amounts of liquid chlorine to the wash to lower the risk for U.S. municipal workers and residents who may unknowingly be exposed to the bacteria and contaminants in the wash. In addition, ADEQ has investigated and is concerned about the build-up of residual byproducts from the routine chlorination because of the risk to groundwater. The Corp found that the bottom of the concrete lined channel is eroded to half of the original thickness due to the water velocity and grit present normally and say that the failure events will like continue to increase in intensity and frequency.*
- B. Surface Water Quality Standards (SWQS): Compare the sampling results for each monitoring location with the applicable SWQS for the receiving water.

The most of the exceedences reported in the last five years do not appear as trends, but rather as isolated, single events or are 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.

E. coli persists in the desert environment and has been detected at four of five current sample sites. Sedona samples only exceeded the numeric standard once in the past five years. In the summer of 2019, Phoenix had one exceedance of the SWQS after several consecutive seasons below the water quality limit. Tucson and Nogales samples have the largest variation in E. coli detection levels from season to season. Mitigation for Nogales is unlikely without numerous organizations from both sides of the boarder working together to solve the issue as a single problem.

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 tourism is responsible for this trend; increased traffic may equal 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 G.

Location	Sample Season	Sample Date	Parameter	Receiving Water	Standard	Monitoring Result	Circumstances	Proposed BMP	Schedule to Implement BMP
Flagstaff	Summer 2019	8/1/2019	Total Dissolved Solids (mg/L)	Rio De Flag	500	1980	See Part 11A		
	Winter 2019-20	3/18/2020	Total Dissolved Solids (mg/L)		500	2880			
Phoenix	Summer 2019	8/29/2019	E. coli (MPN/100 ml)	Skunk Creek	575	9800			
Nogales	Summer 2019	7/17/2019	Lead (ug/L)	Tributary to Nogales Wash	15	57			
			Lead (ug/L)		15	39			
	Winter 2019-20	2/10/2020	E. coli (MPN/100 ml)		575	2400+			
			Lead (ug/L)		15	23			
Summer 2020	7/17/2019	E. coli (MPN/100 ml)	575	2000					

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.

ADOT initiated a research project to investigate TMDLs for which ADOT is listed as a contributor which was determined based on two factors. The first is having the potential to contribute storm runoff to the identified points of compliance, and the second is having the potential to contribute the pollutant(s) of concern to identified impaired waters. During the current reporting period, the project RFP was updated to clarify requirements and advertised. An applicant was selected and the Notice to Proceed was issued in June 2020. The project is anticipated to take approximately one year to complete. Based on the research project findings, 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 exclusively 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.

2019/2020: This Reporting Period:

Costs associated with implementing and maintaining the Stormwater Management Plan (SWMP) for the reporting period includes the following activities and funding sources:

- *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 program & mapping support, and wet-weather monitoring were \$450,000; Source: state funding.*
- *Development of a new Statewide Stormwater and Erosion Control Project Prioritization Tool was initiated in May 2019 for \$220,158 (October 2020 expected completion) and is state funded through a P2P Research Grant.*
- *STORM Group outreach activities and materials- \$5K, state funds*
- *Southeast Valley Regional Drainage System monitoring/sampling equipment upgrade - \$18.5K, state funds*

NOTE: *Stormwater related projects may also be implemented and funded through District Minor funding, if considered a priority by the review committee.*

2020/2021: Next Reporting Period

Program funding for implementing and maintaining the Stormwater Management Plan (SWMP) for FY 2020/2021 is expected to be approximately \$500,000.

Projects planned for 2020/2021 include:

- *New fillable SWPPP & Sample Plan Templates to compliment the new 2020 AZPDES CGP - \$19K*
- *SWPPP/SPCC facility plans update - \$30K*
- *Statewide wet-weather monitoring - \$225K*
- *GIS/Data software to support the tablet based dry-weather inspection project - \$5K –state funds*
- *Public Involvement Outreach Project- \$20K*
- *Consultant fees for Final Mapping Phase 1 of 5 for state route's mapping - \$153K – state funds*
- *BMP Manual update – \$18K*
- *TMDL Investigation Research Project - \$220K – state P2P research grant*

- *STORM Group activities and outreach materials - \$5K – state funds*

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. I-40 Outfall Mapping Results
- B. Dry Weather Screening Forms
- C. Construction Program Inventory
- D. Post-Construction Water Quality Control Measure Inventory
- E. Erosion Projects
- F. Facility Inventory
- G. Sampling Event Data and Laboratory Reports
- H. 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. *This information was included with the FY 2018-2019 Annual Report.*
- The fourth year Annual Report – include Renewal Application (Part 13.1.3) information. *This information was included with the FY 2018-2019 Annual Report.*