



Environmental Planning

Douglas A. Ducey, Governor
John S. Halikowski, Director
Dallas Hammit, Deputy Director for Transportation

September 30, 2016

Christopher M. Henninger, Supervisor
Stormwater and General Permits Unit
Surface Water Section
Arizona Department of Environmental Quality
110 W. Washington Street
Phoenix, AZ 85007

Subject: AZS000018-2015 Annual Report: Reporting Year 1

Dear Mr. Henninger:

Enclosed is The Arizona Department of Transportation's (ADOT's) Annual Report for the subject permit. The reporting period is for July 1, 2015 through June 30, 2016, with the exception of the monitoring data being only for the 2015 Winter Sampling due to the Summer Sampling information having been submitted in the December 2015 report.

Should you have any questions or need more copies of the report, please do not hesitate to contact me at 602-712-7947 or JManfredi@azdot.gov.

Sincerely,

DocuSigned by:

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Julia Manfredi, CPESC, CPSWQ
Water Resources Manager

Enclosures (1)

CC: Jennifer Widlowski, ADEQ

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

Part 1: General Information

Reporting Period: July 1, 2015– June 30, 2016

MS4 Program Contact: Julia Manfredi

Title: Water Resources Manager

Mailing Address: 1611 West Jackson St, Mail Drop EM04

City: Phoenix Zip: 85007 Phone: 602-712-7947

Email Address: JManfredi@azdot.gov

Name of Certifying Official: Paul O'Brien, PE
(Section 14.3 of this permit)

Title: Environmental Planning Manager

Mailing Address: Same as above

City: _____ Zip: _____ Phone: 602-712-8669

Email Address: PO'Brien@azdot.gov

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.

Paul O'Brien
Signature of Certifying Official

9/30/16
Date

Part 3: Narrative Summary of Stormwater Management Program Activities

This section provides a status summary of 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 best management practices in reducing 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 identify the permit requirements and whether the requirements were satisfied or not satisfied, and explained if a permit condition could not be met. Additionally, any changes or revisions to the water quality monitoring program, including providing 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 a percent complete for that permit task. Substantial developments or changes to the number or type of activities, frequency or schedule of activities, 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; *ADOT is in the process of increasing training programs and public outreach programs. Public outreach will include bilingual messages through ADOT's Communications Adopt-A-Highway program. In addition, ADOT recently implemented a post-construction control measure, a Rock-Filled Infiltration Trench designed for the Cameron Turtle-Graphic Roundabout on US89-SR64 to Little Colorado River project (H7915). It is located in an area where ADOT's system is located on both tribal and non-tribal land and is an example of stormwater Volume Reduction Approaches (VRAs) and Low Impact Development (LID) method. It intercepts, infiltrates, and alleviates stormwater surface runoffs as a part of the VRAs.*
- 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; *The measures discussed in part 1 above are new and can be considered experimental, since they will be adjusted if no successful.*
- 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; *ADOT is working to increase training, both formal computer-based training, and general internal outreach. In*

addition, as the post-construction BMP program continues to mature, ADOT expects to increase use of existing post-construction control measures (as well as development/implementation of new measures).

- 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; *No replacement of existing control measures was made over the 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. *Existing control measures were not discontinued or decreased over the reporting period.*

The narrative summary shall include the following:

A. Mapping the MS4 Program

- Stormwater Sewer System and Outfall inventory and mapping status update. *During the 2015-2016 reporting period, ADOT began mapping both the I-10 and I-17 corridors. This work will be finalized by the timeframes required in the permit.*

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

- Describe any changes in authority. *There have been no changes in authority during this reporting period.*
- IDDE Trainings. *IDDE trainings are incorporated into ADOT's Stormwater Awareness and Environmental Awareness classes. Separate training and outreach specific to IDDE are planned for the next reporting periods of the permit term.*
- Outfall Inspections and tracking systems, includes reporting and any follow-up activities. *During the 2015-2016 reporting period, ADOT inspected 20% of currently identified priority outfalls.*
- Illicit discharge prevention activities. *In addition to dry weather screening activities, ADOT personnel working around the state have been trained to look for, investigate, and respond to potential illicit discharges.*
- Outfall inspection and field screening procedures and significant findings. *Forty-six outfalls were inspected during this reporting period. Eleven locations were found to have water (standing or flowing) at the outlet. All locations with water at the outlet (during the dry season) were located in the Central District. Screening procedures include inspection by a qualified person (such as an Engineer-In-Training, Water Resources Staff, Erosion Control Coordinator, or District Environmental Coordinator) and documentation of the outfall location, date and time of inspection, time since last rainfall, surrounding landuse, type and condition of structure, documentation of presence of flows and notable smells or floatables. Inspector should collect*

photographs and/or make additional notes as appropriate. Follow-up investigations should be conducted if, based on the inspections, illicit discharges are suspected.

- *Number of illicit discharges identified and resolutions. ADOT identified and eliminated four illicit discharges over the reporting period. One of those discharges required follow up investigation and additional explanation/education. All instances were eliminated, and each situation was treated as a chance to educate adjacent business owners.*
- *Complaint driven inspections and investigations. One complaint was received regarding compliance with Construction General Permit requirements. A member of the public questioned whether a SWPPP was developed and NOI obtained for vegetation removal work in ADOT ROW on US 93 at a bridge over the Big Sandy River. ADOT investigated the activity and coordinated with ADEQ and EPA staff, concluding that the work was in compliance with regulations.*
- *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. Field screening efforts resulted in eleven outfall locations with dry weather flows. Surrounding landuse is commercial and agricultural in many of the locations. ADOT is in the process of investigating the source of the flows at each location. So far, none have been reported to other jurisdictions for follow-up.*
- *Spills within permit area. Number of spills within the roadway system have been reported in Section 4. ADOT HAZMAT notifies ADOT Water Resources and ADEQ of all spills. Additionally, whether or not the spilled material reached a stormdrain or waterbody is documented. Spills often consist of fuel. Absorbent material and Microblaze are typically used to control and clean up the spill immediately. Following the initial response, an environmental response contractor is hired to conduct the full remediation.*
- *Described updates to Dry Weather Screening Manual. No updates were made to this manual. It will continue to be reviewed annually and updated as necessary.*
- *Describe updates to Stormwater Monitoring Guidance Manual. The Stormwater Monitoring Guidance Manual is currently under revision. In the meantime, ADOT has provided a Sampling and Analysis Plan template for use on projects. The template incorporates the guidance from the manual.*
- *Describe updates to Enforcement Response Plan (ERP). No updates were made to this manual. It will continue to be reviewed annually and updated as necessary.*

C. Construction Program Activities

- *Trainings for construction and post-construction. Both ADOT and contractors are trained through the Erosion Control Coordinator training courses, administered by the Associated General Contractors. In addition, ADOT employees are trained in new development and redevelopment, as well as good housekeeping. During this reporting period, ADOT Water Resources also provided outreach presentations and webinars regarding the post-construction program to 63 ADOT employees.*
- *Annual updated inventory of construction activities. An inventory for the reporting period is attached.*

- Status of inventory/plan review of these facilities. *The inventory has been created, as required, during this first year of the permit term, and is included as Appendix B.*
- An overview of inspection findings and significant findings. ADOT inspections/results are documented in the Stormwater Pollution Prevention Plan for each project.
- Corrective and enforcement actions needed and taken in response to construction inspections. *No enforcement actions have been necessary for construction inspections. ADOT and the contractor meet a minimum of weekly to discuss projects, including stormwater controls, and typically conduct inspections together. ADOT and its contractors follow a formal partnering program and escalation process for issues as needed, and ADOT maintains the ability to stop work, if justified.*
- Summary of any new post-construction controls for discharges from new development and redevelopment ADOTs projects. *ADOT continues to use currently identified post-construction controls, as well as testing others, such as the Rock-filled Infiltration Trench mentioned in Part 3.1 of this report.*
- An overview of the ADOT's post-construction inspection program. *Post-construction controls are inspected and maintained as needed by District Maintenance Orgs.*
- Annual updated inventory of post-construction water quality control measures/BMPs. *An inventory is included as Appendix C.*
- Corrective and enforcement actions needed and taken in response to post-construction inspections. *None needed/taken at this time.*
- Summary of any new or revised post-construction requirements issues. *ADOT continues to develop the post-construction program. The program and initial training were provided in December 2015. The Post-Construction BMP Manual was revised and made available on ADOT's website in January 2016. During the rest of the permit term, ADOT will work on integrating the post-construction control considerations further into the design/ development process as well as researching other potential post-construction BMPs.*
- Describe updates to Erosion and Pollution Control Manual. *No updates were made to the Erosion and Pollution Control Manual.*
- Describe updates to Post-Construction BMP Inventory/Manual. *The most recent updates to the manual were administrative in nature.*

D. Measures to Control Discharges for Roadways

- Trainings. *ADOT staff are trained in measures to control discharges to roadways through stormwater awareness, environmental awareness, and storm sewer system and highway maintenance classes. Number of employees trained is included in the table in Section 4.*
- Summary of roadway and stormwater sewer repairs, maintenance schedules and priorities, inspections, control measures, cleaning, vegetation management.
- Updates to roadway BMPs. *There have been no major updates to roadway BMPs.*
- Pollution Prevention and Control Measures for Pesticides and Fertilizer Applications in ROWs. *Control measures include application by licensed professionals, use of approved materials, and timing with respect to precipitation and proximity to water bodies. ADOT avoids using*

pesticides and fertilizers near waters where possible, and complies with the Pesticide General Permit where needed. In addition, ADOT utilizes pesticide use plans (PUPs) where applicable.

- *Erosion Abatement Projects. One erosion abatement project is currently in the design phase. This project is TRACS number H8907 and is planned to mitigate the erosion along State Route 89A, mile posts 387.15 – 389.00 in Coconino County, near Sedona. The project was prioritized in part due to its proximity to Oak Creek, which is both Impaired and Outstanding. Additionally, other projects have been prioritized, which is attached in Appendix D. However, the designated funding for this work has been combined with other funds and will likely need to be justified in combination with other agency priorities.*
- *Status of Retrofit Updates. ADOT has not completed any retrofit updates for this reporting period. ADOT plans to address retrofits as part of other planned construction or maintenance work*
- *Winter Storm Policies. ADOT's Winter Storm Policies and Guidance are outlined through the Winter Storm Management Operations Manual: <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. ADOT participated in the AZ Wildlife Techniques Workshop in April of 2016, reaching approximately 100 people, distributing 44 materials. In addition, ADOT has distributed 112 materials to ADOT Districts during outreach. ADOT also accomplishes outreach through Environmental Resources Roadshows (<http://www.azdot.gov/business/programs-and-partnerships/environmental-resources-roadshow>) and membership in STormwater Outreach for Regional Municipalities (STORM). STORM provided outreach through a Stormwater Summit in May 2016. ADOT participated in this summit, for which approximate 150 people registered, through event coordination, presentation, and attendance. Additionally, as part of STORM, ADOT reached the public through movie advertisements (1 million views at 9 theater locations), newspaper ads (700,000 views), billboards (over 30,000 impressions), and Facebook (160 posts, 2188 views).*
- *Public access to stormwater documents. Stormwater documents can be found on ADOT's Water Resources Website at <http://www.azdot.gov/business/environmental-planning/water-resources>. Adopt-a-Highway information is also found online: <http://www.azdot.gov/business/programs-and-partnerships/AdoptaHighway> with links to Keep Arizona Beautiful. ADOT also participates in STORM, whose website includes stormwater information (www.azstorm.org, 2,800 users) The STORM FY16 Annual Report (will be available here: <http://www.azstorm.org/about-us/annual-reports>) provides additional details regarding the group's outreach activities.*
- *Identify activities, number of people involved, number and type of materials distributed if applicable. This information is included in the table in Section 4 below.*

- Describe MS4 procedures for public reporting of spills, dumping, discharges, and related stormwater issues. *Spills can be reported through the Traffic Operations Center, which in turn, notifies ADOT’s HAZMAT team. Dumping and littering can be reported through Keep Arizona Beautiful/Adopt-a-Highway hotline. In addition, contact for ADOT Water Resources staff is available online for use as well.*

F. ADOT Facilities:

- Trainings. *Facilities trainings are currently incorporated in other stormwater awareness and good housekeeping trainings (documented in the table in Part 4 of this report).*
- Status of inventory/prioritization of ADOT facilities. *ADOT has identified approximately 270 sites throughout the state comprised of Maintenance Yards, Storage Yards, Administrative Complexes, Multi-function Complexes, Ports of Entry, Rest Areas, and MVD offices. Of the 270 sites identified 54 sites have been evaluated. Of those sites approximately 7 are high risk based on the stormwater criteria set forth in the permit.*
- Annual updated inventory of ADOT facilities. *This is the first reporting period of the permit term. The status of the inventory is above. The inventory is included with this report as an electronic Excel Spreadsheet.*
- Update/changes to the SWMP procedures for maintenance and facilities BMPs. *No updates were made.*
- Summary of inspection findings. *Facility inspections are ongoing for compliance under facility pollution prevention plans and documented in the plans. In addition, each facility is being visited as part of the inventory and risk assessment.*
- Describe updates to Maintenance and Facilities BMP Manual. *No updates were deemed necessary.*
- 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 [%]. *ADOT does not currently utilize any representative outfalls at facility locations. Outfall information for facilities that require sampling is listed below.*

<u>Site Location</u>	<u>Location of the outfall</u>	<u>Substantially identical effluents</u>	<u>Drainage area (sqft)</u>	<u>Runoff Coefficient</u>	
Spring Creek Storage Site	West side of site	There is one one outfall for the entire site	218,000	0.35	Low
Roosevelt Maintenance Yard	Northeast corner of site	There is one one outfall for the entire site	50,928	0.4	Medium
Superior Maintenance Yard	West side of site	There is one one outfall for the entire site	55,290	0.6	Medium
Superior Office	South side of site	There is one one outfall for the entire site	37,069	0.7	High
Nogales Maintenance Yard	Southwest corner of site	There is one one outfall for the entire site	115,037	0.55	Medium

- G. Description of any new or revised policies related to stormwater management, if applicable. *ADOT has not developed any new policies, nor have they revised policies as they relate to stormwater management. ADOT currently supplements policies with process and guidance documents.*
- H. Instances of Other Non-Compliance (part 14.18.6): *One instance was reported to ADEQ on January 19, 2016 regarding a spill of approximately 8,000 gallons of diesel and unleaded fuel into the ADOT MS4. The spill originated from Jonesco Leasing, Inc and occurred on December 31, 2015 as the result of an accidental truck roll over. The spill was immediately abated with berms and absorptive media, with additional cleanup occurring in the days and weeks following. See letter from Wendy Terlizzi (ADOT) to Mindy Cross (ADEQ), dated January 19, 2016.*

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				
	Outfalls identified I-10 Corridor	1615				
	Miles of MS4 mapped I-17 Corridor	118				
	Outfalls identified I-17 Corridor	381				
	Miles of MS4 mapped I-8 and I-19 Corridor	0				
	Outfalls identified I-8 and I-19 Corridor	0				
	Miles of MS4 mapped I-40 Corridor	0				
	Outfalls identified I-40 Corridor	0				
ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)						
6.2.2	Enforce Standard Encroachment Permit					
	Encroachment permits issued	5069				
	<i>(Other Numeric measurable goal(s))</i>					
6.3	Detecting Potential Illicit Discharges and Illicit Connections					
6.3.1	Outfalls inspected	46				
6.3.1	Priority outfalls identified to date	230				
	Priority outfalls inspected	46				
	Percent priority outfalls inspected	20				

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
6.3.1.B	IDDE discharges within ¼ of impaired or OAW	0				
	Storm drain cross connection detected	0				
6.3.2	Other dry weather flows detected	11				
	Illicit discharges detected	Pending investigation				
	<i>(Other numeric measurable goal(s))</i>					
6.4	Investigate Illicit Discharges (Source Identification and Elimination)					
	Storm drain cross connection investigated	0				
	Illicit connections eliminated	0				
	Other dry weather flows investigated	0				
	Other dry weather flows eliminated	0				
	Illicit discharges investigated	4				
	Illicit discharges eliminated	4				
	<i>(Other numeric measurable goal(s))</i>					
6.4.1(b)	Report Incidental Dry Weather Discharges					
	Discharges reported to ADEQ	0				
	<i>(Other numeric measurable goal(s))</i>					
6.4.3	Duty to Eliminate Illicit Discharges					
	Follow-up Investigations	1				
	<i>(Other numeric measurable goal(s))</i>					
6.4.4	Coordinate with Local Jurisdictions for Complaint Response and Investigation					
	Illicit discharges reported to other jurisdictions for follow-up	0				
	<i>(Other numeric measurable goal(s))</i>					
6.5	Responding to Spills					

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Highway accident spills responded to	209				
	Highway accident spills prioritized (potential for discharge)	27				
	Hazardous materials released	182				
	<i>(Other numeric measurable goal(s))</i>					
MEASURES TO CONTROL DISCHARGES FROM CONSTRUCTION SITES						
7.2	ADOT Construction Activity					
	NOIs submitted to ADEQ	387				
	NOTs submitted to ADEQ	Not Reported				
7.3	ADOT Contractor Construction Activity					
	NOIs submitted to ADEQ	203				
	NOTs submitted to ADEQ	Not Reported				
7.4	Violations and Enforcement					
	Stormwater violations	0				
	Contractors w/ enforcement action	0				
	<i>(Other numeric measurable goal(s))</i>					
7.5	Post-Construction and Measures to Control Discharges from New Development and Redevelopment					
	Projects reviewed for program	4				
	Post-construction BMPs installed	3				
	Post-construction BMPs inspected	0				
	<i>(Other numeric measurable goal(s))</i>					
MEASURES TO CONTROL DISCHARGES FROM ROADWAYS						

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
8.1.1	Inspect Storm Sewer System					
	Drainage inspections performed	128				
	<i>(Other numeric measurable goal(s))</i>					
8.1.2	System Maintenance Schedules and Priorities					
	Drainage work planned	ongoing				
	<i>(Numeric measurable goal(s))</i>					
8.1.3	Perform Repair, Maintenance, and Cleaning					
	Pavement protection and repair	1408				
	Blade unpaved roads	118				
	Blade unpaved shoulders	96				
	Maintain unpaved turnout/crossover	48				
	Litter removal	222				
	Spot litter	326				
	Mechanical sweeping	35				
	Routine drainage maintenance	238				
	Emergency drainage maintenance	78				
	Clean cuts/channel/dikes/curbs	224				
	Minor slide removals	98				
	Routine structural repair	82				
	Storm and rock patrol	195				
	Drainage inspection	128				
	Roadway pump inspections	161				
	Other drainage maintenance	280				
	Major damage (if stormwater related)	Not				

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Emergency (if stormwater related)	currently separated from regular emergency or damage repair in tracking system.				
	Encroachment permit (for Bluestake. Maintenance)	340				
	Irrigation inspection	234				
	Irrigation repair	274				
	Granite erosion control	102				
	Non-granite erosion control	27				
	Soil stabilization	0				
	Chemical vegetation control	395				
	Wash interstate signs	74				
	Building and yard maintenance	98				
	Material handling	260				
	Premix material	65				
	Stockpile material	130				
	Screen material	20				
	Other material operations	173				
	Administrative	XX				
	<i>(Other numeric measurable goal(s))</i>					
8.2.3	Stabilize Roadway Slopes (attach summary of tracking & prioritization)					

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Acres of roadway slopes stabilized	Project in process – H8907, priority list in Appendix C				
	<i>(Other numeric measurable goal(s))</i>					
8.2.4	Develop a program to Retrofit Existing Developed Highways					
	Retrofits completed	 	 			
	<i>(Other numeric measurable goal(s))</i>					
TRAINING						
9.1.1	Train ADOT Employees- Stormwater Awareness					
	Employees trained	243				
	Employees Trained through Environmental Awareness	30				
9.1.3	Train ADOT Employees- Construction Site Inspections					
	Employees trained	23				
	Employees Recertified	13				
9.1.4	Train ADOT Employees - New development and significant redevelopment					
	Employees trained	143				
	<i>(Other numeric measurable goal(s))</i>					
9.1.5	Train ADOT Employees - Storm sewer system and highway maintenance					
	Employees trained	162				
	Employees Trained through Environmental Awareness	30				
9.1.6	Train ADOT Employees - Good housekeeping					

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Employees trained	131				
	<i>(Other numeric measurable goal(s))</i>					
9.2	ADOT Contractor Training and Certification					
	Contractors trained/certified	117				
	Contractors re-certified	69				
	<i>(Other numeric measurable goal(s))</i>					
PUBLIC OUTREACH and EDUCATION / PUBLIC INVOLVEMENT and PARTICIPATION						
10.1.2(a)	Distribution of Educational Materials Through Public Places					
	Materials distributed	156				
	Public events attended	1				
	People reached	100				
	<i>(Other numeric measurable goal(s))</i>					
10.1.2(b)	Distribution of Educational Materials Through ADOT's Stormwater Webpage					
	Hits on webpage	3465				
	<i>(Other numeric measurable goal(s))</i>					
10.2.2	Record and Consider Public Comments on SWMP					
	Public meetings or forums held	0				
	Public comments received	0				
	<i>(Other numeric measurable goal(s))</i>					
10.2.3	Implement a Public Reporting System					
	Reports received from public	0				
	Reports investigated	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
	<i>(Other numeric measurable goal(s))</i>					
10.2.4	Develop , Implement, and Maintain a Litter Pick-up Program					
	Groups participating	1449				
	Lane miles cleaned	1873				
	Tons of trash collected	59.53				
	<i>(Other numeric measurable goal(s))</i>					
10.2.5	Continue Implementation of Litter Hotline					
	Calls received	1276				
	Letters sent	1153				
	<i>(Other numeric measurable goal(s))</i>					
MEASURES TO CONTROL DISCHARGES FROM ADOT MAINTENANCE FACILITIES						
11.1	ADOT Facility Inventory					
	Facilities on inventory	270				
	High risk facilities	7				
	<i>(Other numeric measurable goal(s))</i>					
11.3.4.k	Spill Prevention at ADOT Facilities					
	Facilities identified with hazardous materials	126				
	Spills at ADOT Facilities	Not reported				
	<i>(Other numeric measurable goal(s))</i>					
11.3.4.1	Number of ADOT facilities that Store Salt and Anti-Icing Chemicals					
	Facilities	27 – MgCL, 38 Salt barns				
	<i>(Other numeric measurable goal(s))</i>					
11.6	ADOT Facility Monitoring					

Section Number	Control Measure, BMP or Activity	Annual Reporting Year (July 1 – June 30)				
		2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
	Facilities within ¼ of impaired water or OAW	4				
	<i>(Other numeric measurable goal(s))</i>					

The Stormwater Management Plan (SWMP) was recently revised, and submitted to ADEQ on September 16, 2016. The modifications were completed to create a clearer document in line with the new MS4 permit, which no longer includes those sites and facilities that qualify for coverage under the Construction General Permit or Multi-Sector General Permits. Based on the permit requirements, the SWMP, and the data provided above, ADOT sees that both the IDDE and Post-Construction Programs will focus on building more mature processes and programs over the rest of the permit term. This includes the implementation of the updated Post-Construction BMP Manual and continued coordination and outreach with ADOT project managers and design engineers for implementation of the measures where appropriate. ADOT will also update the Post-Construction BMP inventory and evaluate Post-Construction BMP inspection procedures. Further work on the IDDE program will include more outreach to the Districts and additional guidance, as needed.

Information tracking and data collection for the program can be challenging. Tracking and implementation occur at the District level or through other programs, which feed back to the central location of Water Resources within Environmental Planning. This requires strong communication between Water Resources and the other groups within ADOT.

ADOT continues to conduct wet weather monitoring at five MS4 locations and four facilities. The status and challenges documented in the December 28, 2015 Annual Report remain the same. ADOT is currently planning for updating/replacement of the sampling equipment in the coming years.

Part 5: 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.

Winter 2015-16	Status*	Inches
Flagstaff		
11/03/15 – 11/04/15	PS	0.91
11/06/15	IF/NS	0.23
11/10/15	IF/NS	0.15
11/15/15 – 11/16/15	PS	0.31
12/13/15	IF/NS	0.12
1/5/16	PS	0.26
Sedona		
11/03/15	SC	0.50
Phoenix		
11/15/15	SC	0.36
Tucson		
11/4/15	EF/NS	0.15
12/11/15 – 12/12/15	PS	0.28
12/14/15	IF/NS	0.10
1/4/2016	PS	0.29
Nogales		
11/26/15	IF/NS	0.15
12/11/15-12/12/15	PS	0.37
12/14/15	IF/NS	0.11
1/4/16	PS	0.79
*Status: SC-Sample Collected; PS-Partial Sample Collected; NS-No Sample Collected; EF-Equipment Failure; IF-Insufficient Flow		

Part 6: 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. Part 3 Narrative Summary contains information on adverse conditions that prevented sampling or conditions that prevent sampling within the first 30 minutes of storm event.

In order to provide analytical results reported for the prior 5 years, ADOT has used the table format that was used in previous reports. MS4 monitoring locations are documented below.

Outfall Identification, Latitude, Longitude	Physical Location	Land Use by Percent and Drainage Area	Receiving Water	Equipment Type
Flagstaff 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, Partial Body Contact, effluent dependent, assessment inconclusive	Auto-sampler – Avalanche
Sedona 34 51 43.93N 111 45 42.68W	Below western abutment of State Route 179 bridge over Oak Creek	State/Business Route 90% Commercial Streets 10% 7.35 Acres	AZ15060202-018C Oak Creek, Full Body Contact, outstanding Arizona water, impaired water, Fish Consumption, Agricultural Livestock Watering	Auto-sampler – Avalanche
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 Skunk Creek, Partial Body Contact, effluent dependent	Auto-sampler – 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	AZ15050301-003B Santa Cruz River, Partial Body Contact, effluent dependent	Auto-sampler – 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 Tributary to Nogales Wash, Partial Body Contact, impaired water	Auto-sampler – Avalanche

A summary of monitoring data by location (including maintenance facilities within ¼ mile of impaired water or OAW) are included in the table below.

Location Name	Physical Address	Latitude	Longitude	Acres Drained	Land Use by Percent	Receiving Water/Designated Use	Monitoring Equipment	Sampling Parameters
Flagstaff	South side of intersection at Business 40 and State Route 180	35 11 53.29N	111 39 05.48W	29.3	Urban Highway 80%, Commercial Streets 20%	AZ15020015-004A Rio de Flag, Partial Body Contact, effluent dependent, assessment inconclusive	ISCO Auto-sampler	Table 12.1
Sedona	Below western abutment of State Route 179 bridge over Oak Creek	34 51 43.93N	111 45 42.68W	7.35	State/Business Route 90%, Commercial Streets 10%	AZ15060202-018C Oak Creek, Full Body Contact, outstanding Arizona water, impaired water, Fish Consumption, Agricultural Livestock Watering	ISCO Auto-sampler	Table 12.1
Phoenix	East of State Route 101 on north bank of Skunk Creek	33 37 19.84N	112 14 21.61W	17.5	Urban Highway 90%, Commercial Streets 10%	AZ15070102 Skunk Creek, Partial Body Contact, effluent dependent	ISCO Auto-sampler	Table 12.1
Tucson	West of Interstate 10 north of Grant Road within ADOT Yard	32 15 17.19N	110 59 49.39W	4.8	Urban Highway 90%, ADOT Facility 10%	AZ15050301 Santa Cruz River, Partial Body Contact, effluent dependent	ISCO Auto-sampler	Table 12.1
Nogales	Morley Road at Intersection of State Route 82	31 21 02.10N	110 55 24.48W	59.5	Urban Highway 80%, Residential Streets 20%	AZ15050301-011 Tributary to Nogales Wash, Partial Body Contact, impaired water	ISCO Auto-sampler	Table 12.1, and ammonia, chlorine, dissolved copper
Spring Creek	State Route 89A milepost 362-363, National Forest Road 9571, Cornville	34 48 00.20N	111 55 23.80W	Not Applicable	Not Applicable	AZ15060202-022 Spring Creek, not attaining e. coli	Manual	TDS, TSS, PAH, e. coli

Roosevelt	State Route 188 milepost 242-243, Roosevelt	33 39 46.11N	111 08 01.32W	Not Applicable	Not Applicable	AZ15060103-1240 Cottonwood Creek, Tributary to Roosevelt Lake, Full Body Contact, impaired for mercury (fish tissue)	Manual	TDS, TSS, PAH, mercury
Superior	951 Main Street, Superior	33 17 14.12N	111 06 40.27W	Not Applicable	Not Applicable	AZ15050100-014A Queen Creek, Partial Body Contact, impaired for dissolved copper	Manual	TDS, TSS, PAH, dissolved copper, lead, selenium
Superior Fuel	952 Main Street, Superior	33 17 17.10N	111 06 43.45W	Not Applicable	Not Applicable	AZ15050100-014A Queen Creek, Partial Body Contact, impaired for dissolved copper	Manual	TDS, TSS, PAH, dissolved copper, lead, selenium
Nogales	1340 N Hohokam Drive, Nogales	31 21 22.97N	110 55 38.96W	Not Applicable	Not Applicable	AZ15050301-011 Nogales Wash, Partial Body Contact, impaired for ammonia, chlorine, dissolved copper, and e. coli	Manual	TDS, TSS, PAH, ammonia, chlorine, dissolved copper, e. coli

TDS - total dissolved solids
 TSS - total suspended solids
 PAH – polycyclic aromatic
 hydrocarbons

Superior Maintenance Yard (Lab Report #151085)

Parameter	WQS	11/5/15
Total Dissolved Solids	500.00	16
Total Suspended Solids	NNS	249
Copper	1.300	0.0488
Selenium	0.020	<0.0100
Lead	0.015	0.00838
Acenaphthene	56,000	ND

Acenaphthylene	NNS	ND
Anthracene	280,000	ND
Benzo(a)anthracene	0.2	ND
Benzo(a)pyrene	0.2	ND
Benzo(b)fluoranthene	NNS	ND
Benzo(g,h,i)perylene	NNS	ND
Benzo(k)fluoranthene	1.9	ND
Chrysene	19	ND
Dibenz(a,h)anthracene	1.9	ND
Fluoranthene	37,333	ND
Fluorene	37,333	ND
Indeno(1,2,3-cd)pyrene	1.9	ND
Naphthalene	18,667	ND
Phenanthrene	NNS	ND
Pyrene	28,000	ND
p-Terphenyl (surrogate)	NNS	Not reported
WQS-water quality standard; NNS-no numeric standard; BDL-below detection limit; NS-not sampled; ND-not detected		

Superior Fuel & Storage Yard (Lab Report #151083)

Parameter	WQS	11/5/15
Total Dissolved Solids	500.00	143
Total Suspended Solids	NNS	122
Copper	1.300	0.114
Selenium	0.020	<0.0100
Lead	0.015	0.0110
Acenaphthene	56,000	ND
Acenaphthylene	NNS	ND
Anthracene	280,000	ND
Benzo(a)anthracene	0.2	ND
Benzo(a)pyrene	0.2	ND
Benzo(b)fluoranthene	NNS	ND
Benzo(g,h,i)perylene	NNS	ND
Benzo(k)fluoranthene	1.9	ND
Chrysene	19	ND
Dibenz(a,h)anthracene	1.9	ND
Fluoranthene	37,333	ND
Fluorene	37,333	ND
Indeno(1,2,3-cd)pyrene	1.9	ND
Naphthalene	18,667	ND
Phenanthrene	NNS	ND
Pyrene	28,000	ND
p-Terphenyl (surrogate)	NNS	Not reported

WQS-water quality standard; NNS-no numeric standard; ND-not detected

Nogales Maintenance Yard (Lab Report #550-55859-1)

Parameter	WQS	12/14/15
Total Dissolved Solids	500.00	160
Total Suspended Solids	NNS	280
<i>E. coli</i>	100.00	52
Chlorine	0.70000	0.073
Copper	1.300	0.015
Ammonia	NNS	ND
Acenaphthene	56,000	ND
Acenaphthylene	NNS	ND
Anthracene	280,000	ND
Benzo(a)anthracene	0.2	ND
Benzo(a)pyrene	0.2	ND
Benzo(b)fluoranthene	NNS	ND
Benzo(g,h,i)perylene	NNS	ND
Benzo(k)fluoranthene	1.9	ND
Chrysene	19	ND
Dibenz(a,h)anthracene	1.9	ND
Fluoranthene	37,333	ND
Fluorene	37,333	ND
Indeno(1,2,3-cd)pyrene	1.9	ND
Naphthalene	18,667	ND
Phenanthrene	NNS	ND

Pyrene	28,000	ND
p-Terphenyl (surrogate)	NNS	55
WQS-water quality standard; NNS-no numeric standard; ND-not detected		

Roosevelt Lake Yard (Lab Report #151084)

Parameter	WQS	11/5/15
Total Dissolved Solids	500.00	43
Total Suspended Solids	NNS	14
Mercury	0.002	<0.000200
Acenaphthene	56,000	ND
Acenaphthylene	NNS	ND
Anthracene	280,000	ND
Benzo(a)anthracene	0.2	ND
Benzo(a)pyrene	0.2	ND
Benzo(b)fluoranthene	NNS	ND
Benzo(g,h,i)perylene	NNS	ND
Benzo(k)fluoranthene	1.9	ND
Chrysene	19	ND
Dibenz(a,h)anthracene	1.9	ND
Fluoranthene	37,333	ND
Fluorene	37,333	ND
Indeno(1,2,3-cd)pyrene	1.9	ND
Naphthalene	18,667	ND
Phenanthrene	NNS	ND
Pyrene	28,000	ND

p-Terphenyl (surrogate)	NNS	55
WQS-water quality standard; NNS-no numeric standard; ND-not detected		

Spring Creek Yard (Lab Report #151086/15-4681)

Parameter	WQS	11/5/15
Total Dissolved Solids	500.00	262
Total Suspended Solids	NNS	24
<i>E. coli</i>	100.00	2.0
Acenaphthene	56,000	ND
Acenaphthylene	NNS	ND
Anthracene	280,000	ND
Benzo(a)anthracene	0.2	ND
Benzo(a)pyrene	0.2	ND
Benzo(b)fluoranthene	NNS	ND
Benzo(g,h,i)perylene	NNS	ND
Benzo(k)fluoranthene	1.9	ND
Chrysene	19	ND
Dibenz(a,h)anthracene	1.9	ND
Fluoranthene	37,333	ND
Fluorene	37,333	ND
Indeno(1,2,3-cd)pyrene	1.9	ND
Naphthalene	18,667	ND
Phenanthrene	NNS	ND
Pyrene	28,000	ND
p-Terphenyl (surrogate)	NNS	Not reported

WQS-water quality standard; NNS-no numeric standard; ND-not detected

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.

Flagstaff		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		System Start	NS/EF	10/12/12	1/25/13	8/21/13	IF	8/11/14	12/3/14 3/1/15 4/25/15	6/5/15 6/28/15 8/7/15	11/15/15 1/7/16
Monitoring Parameters ¹	WQS										
Flow ²	NNS	NS	NS/EF	45.5	18.35	84.34	IF	1,643	1,089.1	332.9	EF
pH	5.0-9.0	NS	NS/EF	7.36	7.62	7	IF	7.35	8.16	8.59	8.63
Temperature (°C)	NNS	NS	NS/EF	20.2	11.3	22.3	IF	21.8	5.0	16.4	3.0
Hardness	NNS	NS	NS/EF	67	120	34	IF	280	41	153	NR
Specific Conductance	NNS	NS	NS/EF	160	220	120	IF	92	668	313	NR
Total Dissolved Solids (TDS) (mg/L)	500.00	NS	NS/EF	100	120	110	IF	110	372	205	222
Total Suspended Solids (TSS) (mg/L)	NNS	NS	NS/EF	95	260	65	IF	110	1112	816	185
Turbidity	NNS	NS	NS/EF	33	180	96	IF	63	305	432	110
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	NS	NS/EF	<5.00	15	28	IF	34	9	68	57
Chemical Oxygen Demand (COD) (mg/L)	NNS	NS	NS/EF	44	200	100	IF	160	180	209	178
Surfactants	NNS	NS	NS/EF	0.13	<0.10	0.45	IF	0.22	NS	0.68	NR
Inorganics											
Cyanide, total (µg/L)	0.20	NS	NS/EF	<0.0050	0.016	<0.0050	IF	<0.0050	<0.010	<0.010	NR
Sulfates	250.00	NS	NS/EF	<5.0	<5.0	8.8	IF	<5.0	<5.0	16.3	<5.00
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	10.00	NS	NS/EF	0.63	0.08	0.05	IF	0.59	672	0.38	0.108
Nitrite (NO ₂ -N)	1.00	NS	NS/EF	0.19	0.08	0.05	IF	<0.10	<0.10	<0.10	0.108
Ammonia as N	NNS	NS	NS/EF	0.12	0.34	0.73	IF	0.52	672	<1.00	NR
Total Kjeldahl Nitrogen (TKN)	NNS	NS	NS/EF	1.1	3.2	2.8	IF	<1.2	<1.00	4.99	NR
Total Phosphorus	NNS	NS	NS/EF	0.34	2	0.31	IF	0.29	0.39	1.43	NR
Ortho-P	NNS	NS	NS/EF	0.18	0.36	NA/IS	IF	0.35	0.14	0.2	NR

Flagstaff		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		System Start	NS/EF	10/12/12	1/25/13	8/21/13	IF	8/11/14	12/3/14 3/1/15 4/25/15	6/5/15 6/28/15 8/7/15	11/15/15 1/7/16
Monitoring Parameters ¹	WQS										
Benzo(a)anthracene	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(a)pyrene	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(b)fluoranthene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(g,h,i)perylene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(k)fluoranthene	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Chrysene	19	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Dibenz(a,h)anthracene	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Fluoranthene	37,333	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Fluorene	37,333	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Indeno(1,2,3-cd)pyrene	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Naphthalene	18,667	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Phenanthrene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Pyrene	28,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
p-Terphenyl (surrogate)	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Not reported
<p>NR-Not Required (2015 Permit does not require these); NS-No Sample; ND-Not Detected; EF-Equipment Failure; IF-Insufficient Flow for Collection; IS-Insufficient Flow for Analysis; NNS-Non-numeric Standard; TNTC-Too Many to Count; CONF-Confluent bacteria growth observed, accurate colony count of the presence or non-presence of fecal coliforms could not be determined; ¹Analytical results shall be reported in the units specified for each category or parameter. ²Report the average flow rate for the sampling period (no more than 3 hours). ³Metals shall be analyzed for total metals (a 1:1 ratio of total to dissolved is assumed).</p>											

Sedona		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		None	System Start	NS/EF	1/25/13	NS/IF	NS/IF	7/31/14 8/26/14	4/24/15	6/14/15 7/6/15 7/31/15	11/3/15
Monitoring Parameters ¹	WQS										
Flow ²	NNS	NS	NS	NS/IF	<5	NS/IF	NS/IF	3.9	216.6	SM	126
pH	5.0-9.0	NS	NS	NS/IF	7.47	NS/IF	NS/IF	7.63	8.2	9.17	8.5
Temperature (°C)	NNS	NS	NS	NS/IF	12.4	NS/IF	NS/IF	21.3	13.5	17.8	13.9
Hardness	NNS	NS	NS	NS/IF	190	NS/IF	NS/IF	54	241	81	NR
Specific Conductance	NNS	NS	NS	NS/IF	160	NS/IF	NS/IF	110	173.7	5.8	NR

Sedona		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
		2011	2011-12	2012	2012-13	2013	2013-14	2014	2014-15	2015	2015-16
SAMPLING DATE:		None	System Start	NS/EF	1/25/13	NS/IF	NS/IF	7/31/14 8/26/14	4/24/15	6/14/15 7/6/15 7/31/15	11/3/15
Monitoring Parameters ¹		WQS									
Total Dissolved Solids (TDS) (mg/L)	500.00	NS	NS	NS/IF	180	NS/IF	NS/IF	171	236	204	44
Total Suspended Solids (TSS) (mg/L)	NNS	NS	NS	NS/IF	1,200	NS/IF	NS/IF	80	732	389	118
Turbidity	NNS	NS	NS	NS/IF	1,100	NS/IF	NS/IF	240	NS	118	53
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	NS	NS	NS/IF	<5	NS/IF	NS/IF	23	NS	51	12
Chemical Oxygen Demand (COD) (mg/L)	NNS	NS	NS	NS/IF	84	NS/IF	NS/IF	220	NS	154	290
Surfactants	NNS	NS	NS	NS/IF	<0.10	NS/IF	NS/IF	1.4	NS	0.834	NR
Inorganics											
Cyanide, total (µg/L)	0.20	NS	NS/IF	0.16	NS/IF	NS/IF	<0.010	<0.010	<0.0050	NS	NR
Sulfates	250.00	NS	NS/IF	8	NS/IF	NS/IF	8.2	7.7	6.1	NS	<5.00
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	10.00	NS	NS	NS/IF	0.85	NS/IF	NS/IF	0.92	NS	0.594	0.63
Nitrite (NO ₂ -N)	1.00	NS	NS	NS/IF	0.85	NS/IF	NS/IF	<0.10	NS	0.594	<0.20
Ammonia as N	NNS	NS	NS	NS/IF	0.85	NS/IF	NS/IF	<1.00	NS	1.08	NR
Total Kjeldahl Nitrogen (TKN)	NNS	NS	NS	NS/IF	2.5	NS/IF	NS/IF	3.92	6.12	2.7	NR
Total Phosphorus	NNS	NS	NS	NS/IF	5.7	NS/IF	NS/IF	0.22	1.36	0.779	NR
Ortho-P	NNS	NS	NS	NS/IF	0.21	NS/IF	NS/IF	0.15	NS	0.084	NR
Sodium	NNS	NS	NS	NS/IF	3.5	NS/IF	NS/IF	4	6	3.93	3.29
Calcium	NNS	NS	NS	NS/IF	53	NS/IF	NS/IF	18	71	39.1	35.8
Chloride	NNS	NS	NS	NS/IF	11	NS/IF	NS/IF	5	<5.00	2.46	6.89
Microbiological											
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	100.00	NS	NS	NS/IF	<9	NS/IF	NS/IF	>20,000	NS	TNTC	107.6
Fecal Coliform	NNS	NS	NS	NS/IF	4	NS/IF	NS/IF	42	NS	118.7	TNTC
Total Metals (µg/L) ³											
Antimony	0.006	NS	NS	NS/IF	<0.020	NS/IF	NS/IF	0.0021	<0.0005	<0.0200	NR
Arsenic	0.050	NS	NS	NS/IF	<0.020	NS/IF	NS/IF	<0.0010	<0.0010	<0.0200	<0.0100
Barium	2.000	NS	NS	NS/IF	0.08	NS/IF	NS/IF	0.04	0.36	0.157	0.119
Beryllium	0.004	NS	NS	NS/IF	<0.0020	NS/IF	NS/IF	<0.002	<0.002	<0.0020	NR
Cadmium	0.005	NS	NS	NS/IF	<0.0050	NS/IF	NS/IF	0.0001	<0.0001	<0.0050	<0.00200

Sedona		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		None	System Start	NS/EF	1/25/13	NS/IF	NS/IF	7/31/14 8/26/14	4/24/15	6/14/15 7/6/15 7/31/15	11/3/15
Monitoring Parameters ¹	WQS										
Pyrene	28,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
p-Terphenyl (surrogate)	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Not reported
<p>NR-Not Required (2015 Permit does not require these); NS-No Sample; ND-Not Detected; EF-Equipment Failure; IF-Insufficient Flow for Collection; IS-Insufficient Flow for Analysis; NNS-Non-numeric Standard; TNTC-Too Many to Count; CONF-Confluent bacteria growth observed, accurate colony count of the presence or non-presence of fecal coliforms could not be determined; ¹Analytical results shall be reported in the units specified for each category or parameter. ²Report the average flow rate for the sampling period (no more than 3 hours). ³Metals shall be analyzed for total metals (a 1:1 ratio of total to dissolved is assumed).</p>											

Phoenix		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		None	11/5/11	System Start	12/14/12	9/8/13	11/22/13	8/12/14	12/4/14 2/23/15 3/19/15	6/5/15	11/15/15
Monitoring Parameters ¹	WQS										
Flow ²	NNS	NS	42	NS/EF	24.5	72.5	39.5	840.0	505.3	105	EF
pH	5.0-9.0	NS	7.23	NS/EF	7.2	7.2	7.6	7.57	8.16	7.93	8.6
Temperature (°C)	NNS	NS	14.0	NS/EF	13.4	28.3	13.1	26.2	17.2	25.9	16.1
Hardness	NNS	NS	IS	NS/EF	130.0	67.0	41.0	41.0	54	81	NR
Specific Conductance	NNS	NS	IS	NS/EF	320.0	200.0	100.0	120	118	220	NR
Total Dissolved Solids (TDS) (mg/L)	500.00	NS	IS	NS/EF	310.0	230.0	80.0	150.0	132	240	117
Total Suspended Solids (TSS) (mg/L)	NNS	NS	IS	NS/EF	53.0	24.0	26.0	49.0	58	57	44
Turbidity	NNS	NS	IS	NS/EF	130.0	30.0	16.0	65.0	39	54	36.8
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	NS	IS	NS/EF	68.0	22.0	9.3	14.0	17	80	<7.66
Chemical Oxygen Demand (COD) (mg/L)	NNS	NS	IS	NS/EF	420.0	220.0	72.0	130.0	166	220	125
Surfactants	NNS	NS	IS	NS/EF	0.9	1.0	0.4	0.2	0.56	0.74	NR
Inorganics											
Cyanide, total (µg/L)	0.20	NS	<0.0080	NS/EF	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	ND	NR
Sulfates	250.00	NS	IS	NS/EF	26.0	31.0	6.2	8.2	8.2	17	14.3
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	10.00	NS	IS	NS/EF	2.5	2.8	0.5	1.0	1.27	2.5	0.98
Nitrite (NO ₂ -N)	1.00	NS	IS	NS/EF	0.3	0.4	<0.10	<0.10	0.13	0.2	<0.10

Phoenix		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		None	11/5/11	System Start	12/14/12	9/8/13	11/22/13	8/12/14	12/4/14 2/23/15 3/19/15	6/5/15	11/15/15
Monitoring Parameters ¹	WQS										
Ammonia as N	NNS	NS	IS	NS/EF	4.1	1.0	0.8	0.26	5.49	2.5	NR
Total Kjeldahl Nitrogen (TKN)	NNS	NS	IS	NS/EF	9.1	3.5	1.9	2.9	4.09	5.9	NR
Total Phosphorus	NNS	NS	IS	NS/EF	0.9	0.2	0.1	0.33	0.49	0.63	NR
Ortho-P	NNS	NS	IS	NS/EF	1.8	<0.12	0.1	0.26	0.12	ND	NR
Sodium	NNS	NS	IS	NS/EF	15.0	10.0	5.6	4.3	7	10	9
Calcium	NNS	NS	IS	NS/EF	41.0	22.0	12.0	15.0	17	26	16
Chloride	NNS	NS	IS	NS/EF	16.0	10.0	2.4	4.4	<5.00	10	6
Microbiological											
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	100.00	NS	IS	NS/EF	>400	1,100,000	>600	560,000	46,000	CONF	980
Fecal Coliform	NNS	NS	170	NS/EF	>2,400	63.0	1100	20.0	>2,419.6	770	108,000
Total Metals (µg/L) ³											
Antimony	0.006	NS	IS	NS/EF	<0.020	<0.020	<0.020	<0.020	0.0046	0.0058	NR
Arsenic	0.050	NS	IS	NS/EF	<0.020	<0.020	<0.020	<0.020	<0.001	ND	<0.0010
Barium	2.000	NS	IS	NS/EF	0.1	0.042	0.022	0.064	0.05	0.083	0.05
Beryllium	0.004	NS	IS	NS/EF	<0.0020	<0.0020	<0.0020	<0.0020	<0.002	ND	NR
Cadmium	0.005	NS	IS	NS/EF	<0.0050	<0.0050	<0.0050	<0.0050	0.0001	ND	0.0001
Chromium	0.100	NS	IS	NS/EF	0.023	<0.010	<0.010	<0.010	<0.005	ND	<0.005
Copper	1.300	NS	IS	NS/EF	0.1	0.045	<0.020	0.035	0.04	0.061	0.0025
Lead	0.015	NS	IS	NS/EF	0.0084	<0.0050	<0.0050	0.0083	0.0028	ND	0.0025
Mercury	0.002	NS	IS	NS/EF	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	ND	<0.0002
Nickel	0.140	NS	IS	NS/EF	0.025	<0.020	<0.020	<0.020	<0.02	ND	<0.0020
Selenium	0.020	NS	IS	NS/EF	<0.020	<0.020	<0.020	<0.020	<0.002	ND	<0.0020
Silver	NNS	NS	IS	NS/EF	<0.010	<0.010	<0.010	<0.010	<0.0001	ND	0.0061
Zinc	2.10	NS	IS	NS/EF	0.25	0.08	0.061	0.12	0.10	0.16	0.10
Organic Toxic Pollutants											
Total Petroleum Hydrocarbons (TPH) (mg/L)	NNS	NS	0.29	NS/EF	<5.0	6	2.2	2.8	<5.00	<5.00	NR
Total Oil and Grease (mg/L)	NNS	NS	7.3	NS/EF	<5.0	<5.3	<5.7	<5.6	<5.00	<5.00	NR
Chlorine	0.70000	NS	IS	NS/EF	NS	<0.10	<0.10	0.39	0.3	ND	NR

Phoenix		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		None	11/5/11	System Start	12/14/12	9/8/13	11/22/13	8/12/14	12/4/14 2/23/15 3/19/15	6/5/15	11/15/15
Monitoring Parameters ¹	WQS										
Polycyclic Aromatic Hydrocarbons (PAH) (µg/L)											
Acenaphthene	56,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Acenaphthylene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Anthracene	280,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(a)anthracene	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(a)pyrene	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(b)fluoranthene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(g,h,i)perylene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(k)fluoranthene	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Chrysene	19	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Dibenz(a,h)anthracene	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Fluoranthene	37,333	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Fluorene	37,333	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Indeno(1,2,3-cd)pyrene	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Naphthalene	18,667	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Phenanthrene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Pyrene	28,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
p-Terphenyl (surrogate)	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Not reported
<p>NR-Not Required (2015 Permit does not require these); NS-No Sample; ND-Not Detected; EF-Equipment Failure; IF-Insufficient Flow for Collection; IS-Insufficient Flow for Analysis; NNS-Non-numeric Standard; TNTC-Too Many to Count; CONF-Confluent bacteria growth observed, accurate colony count of the presence or non-presence of fecal coliforms could not be determined;</p> <p>¹Analytical results shall be reported in the units specified for each category or parameter. ²Report the average flow rate for the sampling period (no more than 3 hours). ³Metals shall be analyzed for total metals (a 1:1 ratio of total to dissolved is assumed).</p>											

Tucson		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		None	System Start	8/22/12	12/13/12	7/19/13 8/2/13	11/26/13	8/12/14 8/18/14	12/4/14 3/19/15	7/28/15 8/1/15 8/7/15	12/12/15 1/4/16
Monitoring Parameters ¹	WQS										
Flow ²	NNS	NS	276	27.0	<10	<10	<10	236	20,667	276.5	EF
pH	5.0-9.0	NS	7.1	8.57	7.54	7.46	7.86	7.4	7.7	8.59,	8.87

Tucson		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
		2011	2011-12	2012	2012-13	2013	2013-14	2014	2014-15	2015	2015-16
SAMPLING DATE:		None	System Start	8/22/12	12/13/12	7/19/13 8/2/13	11/26/13	8/12/14 8/18/14	12/4/14 3/19/15	7/28/15 8/1/15 8/7/15	12/12/15 1/4/16
Monitoring Parameters ¹		WQS									
										8.48	
Temperature (°C)	NNS	NS	18.4	27.6	16.2	28.6	18.2	25.1	NS	30.9, 32.7	14.0
Hardness	NNS	NS	IS	35.0	28	IS	IS	42	70	55, 68	NR
Specific Conductance	NNS	NS	235	92.0	89	59	IS	108	177	120, 117	NR
Total Dissolved Solids (TDS) (mg/L)	500.00	NS	IS	72.0	66	82	IS	112	186	110, 114	130
Total Suspended Solids (TSS) (mg/L)	NNS	NS	IS	65.0	69	350	IS	14	88	16, 110, 186	40
Turbidity	NNS	NS	IS	82.0	46	230	IS	6.53	104	40, 95.8	52
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	NS	IS	<5.0	5.8	7.2	IS	8	27	27	14
Chemical Oxygen Demand (COD) (mg/L)	NNS	NS	IS	62.0	95	IS	IS	108	273	78, 147	100
Surfactants	NNS	NS	IS	0.1	0.122	<.05	IS	0.30	0.30	0.70	NR
Inorganics											
Cyanide, total (µg/L)	0.20	NS	<0.0080	IS	<0.050	<0.050	<0.010	<0.010	<0.010	ND, <0.01	NR
Sulfates	250.00	NS	IS	4.2	7.5	2.2	IS	9.5	16.6	6.8, 8.8	7.4
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	10.00	NS	IS	1.0	IS	0.50	IS	0.62	1.31	1.1, 1.49	0.75
Nitrite (NO ₂ -N)	1.00	NS	IS	<0.20	IS	<0.2	IS	0.18	<0.10	0.19, 0.16	0.10
Ammonia as N	NNS	NS	IS	<0.50	<0.50	IS	IS	<1	5.83	ND, 4.24	NR
Total Kjeldahl Nitrogen (TKN)	NNS	NS	IS	1.0	1.6	IS	IS	2.17	4.52	1.8, 2.59	NR
Total Phosphorus	NNS	NS	IS	0.2	0.18	IS	IS	0.05	1.38	0.27, 0.3	NR
Ortho-P	NNS	NS	IS	<0.20	<0.20	<0.20	IS	<0.05	0.10	ND, 0.2	NR
Sodium	NNS	NS	IS	3.5	4.9	IS	IS	5	8	3.8, 4	7.1
Calcium	NNS	NS	IS	14.0	11	IS	IS	15	24	19, 22	17
Chloride	NNS	NS	IS	<2.0	2.8	<2	IS	<5	<5.00	ND, <5	20
Microbiological											
Escherichia coli (E. coli) (CFU/100 mg or MPN)	100.00	NS	IS	<1	2,200	IS	IS	>20,000	>200	CONF	690
Fecal Coliform	NNS	NS	<2	300	300	IS	650	5.2	980	790	<10

Tucson		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		None	System Start	8/22/12	12/13/12	7/19/13 8/2/13	11/26/13	8/12/14 8/18/14	12/4/14 3/19/15	7/28/15 8/1/15 8/7/15	12/12/15 1/4/16
Monitoring Parameters ¹	WQS										
Anthracene	280,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(a)anthracene	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(a)pyrene	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(b)fluoranthene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(g,h,i)perylene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Benzo(k)fluoranthene	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Chrysene	19	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Dibenz(a,h)anthracene	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Fluoranthene	37,333	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Fluorene	37,333	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Indeno(1,2,3-cd)pyrene	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Naphthalene	18,667	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Phenanthrene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Pyrene	28,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
p-Terphenyl (surrogate)	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	97
<p>NR-Not Required (2015 Permit does not require these); NS-No Sample; ND-Not Detected; EF-Equipment Failure; IF-Insufficient Flow for Collection; IS-Insufficient Flow for Analysis; NNS-Non-numeric Standard; TNTC-Too Many to Count; CONF-Confluent bacteria growth observed, accurate colony count of the presence or non-presence of fecal coliforms could not be determined;</p> <p>¹Analytical results shall be reported in the units specified for each category or parameter. ²Report the average flow rate for the sampling period (no more than 3 hours). ³Metals shall be analyzed for total metals (a 1:1 ratio of total to dissolved is assumed).</p>											

Nogales		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		None	System Start	NS	12/14/12	7/19/13	NS/IF	8/10/14	2/15/15	8/20/15	12/12/15 1/4/16
Monitoring Parameters ¹	WQS										
Flow ²	NNS	NS	NS/EF	NS	<10	<10	NS/IF	2,757	2,372.3	1,895.7	465.34, 1,012.16
pH	5.0-9.0	NS	NS/EF	NS	7.33	7.21	NS/IF	7.46	9.32	8.78	8.72, 9.2
Temperature (°C)	NNS	NS	NS/EF	NS	18.2	27.4	NS/IF	26.8	11.0	23.6	7.2, 12.3

Nogales		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015- 16
SAMPLING DATE:		None	System Start	NS	12/14/12	7/19/13	NS/IF	8/10/14	2/15/15	8/20/15	12/12/15 1/4/16
Monitoring Parameters ¹	WQS										
Hardness	NNS	NS	NS/EF	NS	NS	IS	NS/IF	64	99	67	NR
Specific Conductance	NNS	NS	NS/EF	NS	NS	59	NS/IF	130	63.9	66.4	NR
Total Dissolved Solids (TDS) (mg/L)	500.00	NS	NS/EF	NS	NS	82	NS/IF	121	43	81	66
Total Suspended Solids (TSS) (mg/L)	NNS	NS	NS/EF	NS	NS	350	NS/IF	54	1330	718	160
Turbidity	NNS	NS	NS/EF	NS	NS	230	NS/IF	47	508	450	180
Biochemical Oxygen Demand (BOD) (mg/L)	NNS	NS	NS/EF	NS	NS	7.2	NS/IF	6	NS	9.9	14
Chemical Oxygen Demand (COD) (mg/L)	NNS	NS	NS/EF	NS	NS	IS	NS/IF	56	497	303	120
Surfactants	NNS	NS	NS/EF	NS	NS	<0.05	NS/IF	0.10	NS	<0.100	NR
Inorganics											
Cyanide, total (µg/L)	0.20	NS	NS/EF	NS	<0.050	<0.050	NS/IF	<0.010	<0.010	<0.010	NR
Sulfates	250.00	NS	NS/EF	NS	NS	2.2	NS/IF	5.6	6.8	<5.0	2.9
Nutrients (mg/L)											
Nitrate (NO ₃ -N)	10.00	NS	NS/EF	NS	NS	0.5	NS/IF	2.31	1.33	0.89	0.60
Nitrite (NO ₂ -N)	1.00	NS	NS/EF	NS	NS	IS	NS/IF	<0.10	<0.10	<0.10	ND
Ammonia as N	NNS	NS	NS/EF	NS	NS	IS	NS/IF	<1.0	5.14	<1.00	NR
Total Kjeldahl Nitrogen (TKN)	NNS	NS	NS/EF	NS	NS	IS	NS/IF	<1.0	3.81	2.9	NR
Total Phosphorus	NNS	NS	NS/EF	NS	NS	IS	NS/IF	0.42	3.40	2.75	NR
Ortho-P	NNS	NS	NS/EF	NS	NS	IS	NS/IF	0.29	<0.05	0.18	NR
Sodium	NNS	NS	NS/EF	NS	NS	IS	NS/IF	4	2	2	2.2
Calcium	NNS	NS	NS/EF	NS	NS	IS	NS/IF	21	28	19	14
Chloride	NNS	NS	NS/EF	NS	NS	IS	NS/IF	<5	<5.00	<5.00	2.2
Microbiological											
<i>Escherichia coli</i> (<i>E. coli</i>) (CFU/100 mg or MPN)	100.00	NS	NS/EF	NS	20,000	IS	NS/IF	>2,000	NS	125,000	<10
Fecal Coliform	NNS	NS	NS/EF	NS	9,000	2,400	NS/IF	1,986	NS	≥1,600	310
Total Metals (µg/L) ³											
Antimony	0.006	NS	NS/EF	NS	NS	IS	NS/IF	0.0016	<0.0025	0.0011	NR
Arsenic	0.050	NS	NS/EF	NS	NS	IS	NS/IF	0.003	0.0069	0.0046	0.0046
Barium	2.000	NS	NS/EF	NS	NS	IS	NS/IF	0.04	0.26	0.14	0.13

Nogales		Summer 2011	Winter 2011-12	Summer 2012	Winter 2012-13	Summer 2013	Winter 2013-14	Summer 2014	Winter 2014-15	Summer 2015	Winter 2015-16
SAMPLING DATE:		None	System Start	NS	12/14/12	7/19/13	NS/IF	8/10/14	2/15/15	8/20/15	12/12/15 1/4/16
Monitoring Parameters ¹	WQS										
Naphthalene	18,667	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Phenanthrene	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
Pyrene	28,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
p-Terphenyl (surrogate)	NNS	NS	NS	NS	NS	NS	NS	NS	NS	NS	84
<p>NR-Not Required (2015 Permit does not require these); NS-No Sample; ND-Not Detected; EF-Equipment Failure; IF-Insufficient Flow for Collection; IS-Insufficient Flow for Analysis; NNS-Non-numeric Standard; TNTC-Too Many to Count; CONF-Confluent bacteria growth observed, accurate colony count of the presence or non-presence of fecal coliforms could not be determined; ¹Analytical results shall be reported in the units specified for each category or parameter. ²Report the average flow rate for the sampling period (no more than 3 hours). ³Metals shall be analyzed for total metals (a 1:1 ratio of total to dissolved is assumed).</p>											

Part 7: 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 sample collection dates and laboratory reports for sampling efforts conducted during Winter 2015-16 sampling season. Lab reports are located in Appendix F.

Sampling Location (Type)	Collection Date	Report Number	Report Date
Flagstaff (Grab)	11/3/15	15-4636/151071	11/23/15
Flagstaff (Composite)	11/15/15	151107/15-4812/F15-1988	12/1/15
Flagstaff (Composite)	1/7/16	6010845	1/20/16
Sedona (Grab)	11/3/15	15-4646/151073	11/23/15
Sedona (Composite)	11/3/15	151074/F15-1912/15-4647	11/24/15
Phoenix (Composite)	11/15/15	5111260	1/4/15
Phoenix (Composite)	11/15/15	550-54402-1	11/24/15
Phoenix (Grab)	1/5/16	6010335	2/1/16
Tucson (Grab)	12/11/15	550-55860-1	12/23/15
Tucson (Composite)	12/12/15	550-55867-1	12/22/15

Sampling Location (Type)	Collection Date	Report Number	Report Date
Tucson (Composite)	1/4/16	550-56632-1	1/14/16
Nogales (Composite)	12/12/15	550-55866-1	12/18/15
Nogales (Composite)	1/4/16	550-56634-1	1/14/16
Nogales (Grab)	1/4/16	550-56621-1	1/14/16

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

- Flagstaff – *E. coli* levels exceeded the water quality standards in seven of the seven seasons that this analyte was sampled. *E. coli* levels were too numerous to count (TNTC) during the past three seasons. This outfall site is located within and adjacent to some of the most heavily used roads, and residentially and commercially active areas in Flagstaff. Both Humphreys Street and Old Route 66 are located in this outfall. Humphreys street provides a main thoroughfare to Flagstaff’s north-northwest commercial and residential areas and Route 66 is heavily traveled by locals and tourist as the primary means for accessing the old downtown business district of Flagstaff. In addition, a community park and several businesses and residential houses are comprised of historical infrastructure within this outfall site. The community park receives a notable amount of human and pet use. It is well documented in the literature that pet feces, especially dog feces, contribute considerable amounts of *E. coli* in the environment. Potential sources contributing to elevated *E. coli* levels may include sanitary sewer overflows due to old infrastructure, pet waste from high recreational use, and/or excessive vegetation or fertilizer use from landscaping practices. In addition, the lack of maintenance on the hydrology that flows through this outfall site has not been maintained in recent years and thus may be contributing to the elevated fecal coliform levels as waters stagnates around the sampling site. Also, currently stormwater samples for fecal coliform and *E. coli* are more times than not submitted past their proposed hold-time for analysis. ADOT should consider having samples analyzed within a six hour hold-time to see if lab results provide a more accurate reading (and possibly lower concentrations of fecal coliform and *E. coli*) in comparison to samples that are submitted with hold-times greater than six hours. It is proposed that ADOT and the City of Flagstaff collaborate during Summer 2016 to identify and control potential sources of fecal coliform that are presenting in stormwater. As a place to start on the ground to eliminate potential sources of elevated fecal coliform, ADOT and the City of Flagstaff should consider restoring the hydrology through this outfall site.
- Flagstaff – Lead exceeded water quality standards in two of the seven seasons that this analyte was sampled. Although lead levels did not exceed the water quality standards during Winter 2015-2016, lead levels exceeded water quality standards twice in the past four years. One exceedance was during Winter 2012-2013 and the other during Summer 2015; both results were over double the water quality standard. As mentioned above, this outfall site is located adjacent to some of the most heavily used

roads and residential and commercial active areas containing some of the oldest infrastructure in Flagstaff. Potential sources of elevated lead levels may include activities conducted at local business in the downtown (e.g., businesses that use paint), excessive lead deteriorating from old lead pipes and paint in the residential and commercial areas, and/or loss of lead wheel weights along the roadway. It is proposed that ADOT and the City of Flagstaff collaborate during Summer 2016 to identify and control potential sources of lead that are presenting in stormwater.

- Sedona – *E. coli* levels exceeded water quality standards in three of the four seasons this analyte was sampled. *E. coli* levels were within water quality standards when it was first sampled in Winter 2012-2013. By Summer 2014 and Summer 2015, *E. coli* levels notably increased. As of Winter 2015-2016, *E. coli* levels decreased but still exceed water quality standards. This outfall site is located in a heavily used commercial and residential 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 and the equipment is currently maintained under an intergovernmental agreement with the City of Sedona. Potential sources for elevated fecal coliform levels include inadequate maintenance of the stormceptor, failing septic systems, sanitary sewer overflows, increased deposit of pet waste, increased use of the area by human transients (e.g., hobos have been observed frequently), and/or excessive vegetation or fertilizer use from landscaping practices. ADOT should consider having samples analyzed within a six hour hold-time to see if lab results provide a more accurate reading (and possibly lower concentrations of fecal coliform and *E. coli*) in comparison to samples that are submitted with hold-times greater than six hours. It is proposed that ADOT and the City of Sedona collaborate during Summer 2016 to identify and control potential sources of fecal coliform that are presenting in stormwater. ADOT and the City of Sedona should review stormceptor maintenance records and inspect sewage systems within the outfall area and above the outfall area, and consider enforcing pet waste management and management of transient peoples.
- Sedona – Lead exceeded water quality standards in two of the five seasons that this analyte was sampled. Noteworthy, lead exceeded water quality standards during Winter 2012-2013 and Summer 2015, at both the Flagstaff and Sedona outfall sites. As mentioned previously, the Sedona outfall site is located in a high use residential and commercial area with a major highway serving as the main thoroughfare connecting north and south Sedona. Potential sources of elevated lead levels may include activities conducted at local business or residents (e.g., use paint), excessive lead deteriorating from old lead pipes and paint in the ageing residential and commercial areas, and/or excessive loss of lead wheel weights along the roadway. It is proposed that ADOT and the City of Sedona collaborate during Summer 2016 to identify and control potential sources of lead that are presenting in stormwater.
- Phoenix – *E. coli* levels exceeded water quality standards in six of the six seasons that this analyte was sampled and detected. *E. coli* has continued to exceed water quality standards during the last five years and levels are notably high every season. At this

outfall site there is a high density of residential and commercial development, and roadways in this densely populated area receive high use. Potential sources of fecal coliform may come from transient humans (e.g., hobos frequent the area), human pet waste, excessive vegetation or fertilizer use from landscaping practices, and/or failing sewage systems. ADOT should consider having samples analyzed within a six hour hold-time to see if lab results provide a more accurate reading (and possibly lower concentrations of fecal coliform and *E. coli*) in comparison to samples that are submitted with hold-times greater than six hours. It is proposed that ADOT and the local municipalities of the Phoenix area collaborate during Summer 2016 to identify and control potential sources of lead that are presenting in stormwater.

- Tucson – *E. coli* levels exceeded water quality standards in five of the six seasons that this analyte was sampled and detected. *E. coli* levels were last observed within water quality standards during Summer 2012, while *E. coli* levels have exceeded the water quality standards since Summer 2012. The majority of this outfall site is composed of an urban highway and adjacent commercial businesses, therefore human fecal waste is not likely contributing to the elevated *E. coli* levels. However, all the sources that commonly contribute to elevated *E. coli* levels should be evaluated, including: livestock transport along Interstate 10, excessive transient human waste, pet waste, vegetation or fertilizer use from landscaping practices, sanitary sewer overflows, and/or failing sewage systems. ADOT should consider having samples analyzed within a six hour hold-time to see if lab results provide a more accurate reading (and possibly lower concentrations of *E. coli*) in comparison to samples that are submitted with hold-times greater than six hours. It is proposed that ADOT and the City of Tucson collaborate during Summer 2016 to identify and control potential sources of fecal coliform that are presenting in stormwater. The city of Tucson may have documented similar trends in fecal coliform levels in the nearby area, which may lead to the source of elevated fecal coliform levels at this outfall site.
- Nogales – Fecal coliform levels exceeded water quality standards in three of the four seasons that this analyte was sampled. *E. coli* levels exceeded water quality standards in three previous sampling seasons; however, during Winter 2015-2016 *E. coli* levels were within the water quality standard. Within this outfall site there is densely populated residential area dominated by older, low income housing. There are many home-owner pets in this area. Potential sources contributing to elevated fecal coliform levels (and subsequently notably high levels of *E. coli*) may include failing septic systems, sanitary sewer overflows, small animal feeding operations (e.g., dog kennels), and/or home-owner pet wastes. ADOT should consider having samples analyzed within a six hour hold-time to see if lab results provide a more accurate reading (and possibly lower concentrations of fecal coliform and *E. coli*) in comparison to samples that are submitted with hold-times greater than six hours. It is proposed that ADOT and the city of Nogales collaborate during Summer 2016 to identify and control potential sources of fecal coliform that are presenting in stormwater.

- Nogales – Lead exceeded water quality standards in three of the four seasons that this analyte was sampled. Two of the exceedances were greater than two times the water quality standard. During the Winter 2015-2016, lead was sampled twice. The first sample showed that lead exceeded water quality standards (0.025mg/L), while results from the second sample showed that lead was within water quality standards (none detected). 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. It is proposed that ADOT and the city of Nogales collaborate during Summer 2016 to identify and control potential sources of fecal coliform that are presenting in stormwater.
- Nogales – pH exceeded water quality standards in two of the six seasons that this analyte was sampled. pH exceeded water quality standards during Winter 2014-2015 and once during Winter 2015-2016. However, during Winter 2015-2016, pH was sampled twice. During Winter 2015-2016, results from the first sample showed that pH levels were within water quality standards (8.72), while results from the second sample showed that pH levels exceeded water quality standards (9.20). It is proposed that ADOT continue to monitoring pH levels closely to determine if pH levels continue to exceed water quality standards in the future. If future trends warrant further attention, then ADOT and the city of Nogales should collaborate to identify and control potential sources contributing to elevated pH levels that are presenting in stormwater.

ADOT has not yet implemented BMPs specifically for meeting WLAs or LAs developed through a TMDL.

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.

Costs associated with implementation of ADOT's 810 and 805 Specifications for erosion control and seeding were **\$5,428,832.39** for FY2016, funded through federal programs associated with construction projects. Costs for program management, including funding a municipal stormwater coordinator position and consultant support, through state funding are approximately **\$310,000**. Stormwater

related projects may also be implemented and funded through District Minor funding, if considered a priority by the review committee. This takes the place of the previous stormwater subprogram 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. *Dry Weather Screening Forms*
- B. *Construction Program Inventory*
- C. *Post-Construction BMP Inventory*
- D. *Erosion Abatement Prioritization*
- E. *Facility Inventory*
- F. *Laboratory Reports*
- G. *Enforcement Response Plan*

Part 11: Other Reporting Requirements

1. First Year

- *ADOT shall submit the ERP, including any intergovernmental agreements in the first Annual Report. **The ERP is attached in Appendix G.***

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.*
- *The fourth year Annual Report –include Renewal Application (Part 13.1.3) information.*

Appendix A
Dry Weather Screening Forms

Appendix B
Construction Program Inventory

Appendix C
Post-Construction BMP Inventory

Appendix D
Erosion Abatement Prioritization

Appendix E
Facility Inventory
(Electronic Excel Spreadsheet)

Appendix F
Laboratory Reports

Appendix G
Enforcement Response Plan