FACT SHEET
FOR STORMWATER INDUSTRIAL GENERAL PERMIT (IGP) ARR000000

Information in this fact sheet is organized as follows:

1 Background

A general permit is designed to provide coverage for a group of related facilities or operations of a specific industry type or group of industries. It is appropriate when the discharge characteristics are sufficiently similar and a standard set of permit requirements can effectively provide environmental protection and comply with water quality standards for discharges. In most cases the proposed general permit will provide sufficient and appropriate stormwater management requirements for discharges of stormwater from industrial sites.

As required by 40 CFR 122.46(a), ADEQ reissues NPDES permits every 5 years. The Department is beginning the process to update and reissue the Industrial Stormwater General Permit (IGP) ARR000000. The IGP covers discharges of stormwater associated with industrial activity. The current permit was issued on June 30th, 2009. The 2009 permit will expire on June 30th, 2014.

2 Permit Coverage

This Stormwater Industrial General Permit (IGP) authorizes discharges from facilities composed of stormwater associated with industrial activity as defined in Part 8.29 of the permit, where those discharges enter waters of the State or a Municipal Separate Storm Sewer System (MS4) leading to waters of the State, are subject to the conditions set forth in this permit. The goal of this permit is to minimize the discharge of stormwater pollutants from industrial activity. The Operator shall read and understand the conditions of the permit.

2.1 Exclusions

The following stormwater discharges associated with industrial activity are not covered by this permit:

a. Discharges mixed with non-stormwater
b. Stormwater discharges associated with construction activity
c. Discharges currently covered by another permit
d. Discharges subject to effluent guidelines with the exception of those listed in Part 1.4.3
e. Discharges into impaired receiving waters (303(d) list), if additional BMPs do not sufficiently protect water quality
f. Discharges into Receiving Waters with an Approved TMDL, if additional BMPs do not sufficiently protect water quality
g. Direct Discharges into an Extraordinary Resource Water (ERW), Natural and Scenic Waterway (NSW), or Ecologically Sensitive Waterbody (ESW), if additional BMPs do not sufficiently protect water quality

3 Basis of Permit Conditions

The limits and benchmark parameter values in the 2014 IGP have not changed from those in the 2009 IGP. For an explanation of the basis for the limits and benchmark values, please see Part 3.3 of the 2009 IGP Fact Sheet, which can be found on the Department's website at the following address:

http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/pdfs/arr000000_renewal_fact_sheet_20090629.pdf

Conditions in Parts 2 through 7 are self-explanatory and are incorporated in the permit based on 40 CFR 122.41, 40 CFR 122.43, 40 CFR 122.62, 40 CFR 124.5, 40 CFR 136, 40 CFR 122.44(d), and Appendix D of the Continuing Planning Process (CPP) in order to provide and ensure compliance with all applicable requirements of the CWA and regulations.

Definitions in Part 8 are self-explanatory and have been included in the permit in order to provide and ensure compliance with all applicable requirements of the CWA and regulations.

The following section is an explanation of the major changes from the 2009 IGP and the basis for those conditions.

4 Major Changes from 2009 IGP

The proposed permit offers several changes from the 2009 IGP, including the following major changes:

a. Added Effluent Limitations Guideline (ELG) for Airport deicing at primary airports (40 CFR 449)
b. Reorganized Best Management Practices
c. Change from bi-annual sampling to annual sampling
d. COD and Oil & Grease (O&G) removed from the standard monitoring requirements to become industrial sector specific requirements (COD sectors: A, B, C, D, I, L, M, N, P, Q, T, U, AA, AB, and AD; O&G sectors: A, D, N, P, U, AA, and AB)
e. Combined 2009 IGP's Discharge Monitoring Report (DMR) and Annual Report requirements into one document, the Stormwater Annual Report (SWAR)
f. Removed requirement to submit reports annually to the Department
g. Removed sampling waivers for 4 consecutive samples under the benchmark value
h. Removed sampling reductions for 6 consecutive samples over the benchmark value

i. Added limitations of coverage (exclusions) for direct discharges to Extraordinary Resource Waters (ERWs), Natural and Scenic Waterways (NSWs), and Ecologically Sensitive Waterbodies (ESWs)
j. Changed application submission deadlines
k. Added Departmental approval statement to similar outfalls requirement

4.1 Justification for Permit Changes

4.1.1 Added Effluent Limitations Guideline (ELG) for Airport deicing at primary airports (40 CFR 449)

The Department has made the decision to cover discharges subject to the ELG promulgated under 40 CFR 449, Airport deicing at primary airports. Discharges subject to this ELG have a limit of 14.7 mg/L (daily maximum) of Ammonia as Nitrogen. In addition to the Ammonia as Nitrogen limit, new sources projected to have at least 10,000 annual departures within the next five years must collect at least 60 percent of available aircraft deicing fluid. The Department decided to incorporate this ELG in order to allow these discharges the ability to be covered under a general permit, rather than be required to obtain an individual permit.

4.1.2 Reorganized Best Management Practices

The Department has moved several sections from the Stormwater Pollution Prevention Plan (SWPPP) and added them to a new section "Best Management Practices," which also includes two new items. Listed below are the Best Management Practices (BMPs) designed to reduce the potential for pollution from industrial facilities.

a. Minimize Exposure (Part 3.1.1; moved from SWPPP)
b. Good Housekeeping (Part 3.1.2; moved from SWPPP)
c. Maintenance (Part 3.1.3; moved from SWPPP)
d. Spill Prevention and Response Procedures (Part 3.1.4; moved from SWPPP)
e. Erosion and Sediment Controls (Part 3.1.5; moved from SWPPP)
f. Management of Runoff (Part 3.1.6; moved from SWPPP)
g. Salt Storage Piles or Piles Containing Salt (Part 3.1.7; moved from SWPPP)
h. Employee Training (Part 3.1.8; moved from SWPPP)
i. Non-Stormwater Discharges (Part 3.1.9; moved from SWPPP)
j. Waste, Garbage and Floatable Debris (Part 3.1.10; new item)
k. Dust Generation and Vehicle Tracking of Industrial Materials (Part 3.1.11; new item)

Items a-i were incorporated as mandatory sections of the SWPPP in the 2009 IGP. By moving these sections to a separate area of the permit, the Department is emphasizing the implementation of these items. The Department believes that by having these BMPs as a separate section, the facilities will implement these practices more thoroughly, leading to lower pollutant levels in the stormwater effluent. Items j & k were included in the EPA's 2008 Multi-Sector General Permit. The Department looked at these BMPs and believed they were necessary items for industrial facilities to implement to prevent pollution from waste, garbage and floatable debris and dust generation and vehicle tracking activities.

4.1.3 Bi-Annual to Annual Monitoring Change

During the 2009 Stormwater Industrial General Permit (IGP) renewal cycle, a comment was received asking the Department if two sampling periods were necessary. The ADEQ responded stating it was not known if any of the parameters were seasonally dependent and that an analysis of the data from the 2009 IGP cycle would be performed to determine if sampling could be reduced to annually.

The basic four parameters (Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Oil & Grease (O&G), and pH) were each analyzed to determine if there was a statistically significant difference between the January – June and July – December sampling periods. To do this, a two-tailed z-test was performed for each parameter at a 95% confidence level. A two-tailed z-test is a widely-accepted statistical test that determines whether two averages for a population are equivalent or not. The hypothesis for this test is that the averages for January – June and July – December should be equivalent for each parameter ($\mu 1-\mu 2=0$). To do this, a z value is calculated for each of the basic four parameters, then compared to a critical z value. If the parameter's z value is greater than the critical z value, the hypothesis is rejected (ie, the two averages would not be equivalent). See **Appendix A** for calculations.

There were two conclusions drawn from the statistical testing. The first is that COD has a statistically significant difference between the January – June and July – December averages for the period tested. The second conclusion is that TSS, O&G, and pH do NOT have a statistically significant difference between the January – June and July – December averages for the period tested.

From the results of this statistical test, it is recommended that annual sampling be performed for all parameters. Even though the results from the testing of COD values shows that there is a statistically significant difference between the two monitoring periods, the Department believes the confusion caused by having only one parameter tested twice per year while all others are once per year would be so great as to cause unnecessary violations of the permit requirements. Therefore, it was recommended for consistency that all parameters be tested only once per year.

4.1.4 COD and O&G Removed from "Basic Four"

The data collected during the 2009 IGP cycle for the "basic four" parameters COD, TSS, O&G, and pH was analyzed to determine if these four parameters are needed for all industrial sectors. Due to the low number of exceedances (46 total in both 2011 and 2012), it was determined that O&G should not be a required parameter for all industrial sectors, as it is clearly not an issue for most permittees. For COD, a large number of exceedances in 2012 were from the top 5 sectors (264 exceedances out of 344; 76.7% of COD exceedances). It was therefore determined that COD should be sampled only in those sectors that it was a problem. Due to the high number of exceedances for TSS and pH and the fact that the exceedances were widespread among the different sectors, it was determined that no change should be made to the monitoring requirements for TSS and pH. See **Appendix B** for benchmark exceedance data.

The following limiting factors were used to determine which sectors should sample for COD or O&G:

1. Top 5 industrial sectors for number of exceedances in 2012
2. Industrial sectors whose average value for 2012 exceeded 50% of the benchmark
3. Industrial sectors whose median value for 2012 exceeded 50% of the benchmark

The Department believes that the number of exceedances should be a factor. If an industrial sector had benchmark exceedances for COD or O&G for 2012, this means some facilities in that industrial sector had difficulty meeting the benchmark. The Department believes that the top 5 industrial sectors for number of exceedances is a fair factor to consider. Also, the Department believes that while some industrial sectors did not exceed the benchmark frequently in 2012, if the facility's data shows a value more than 50% of the benchmark, the potential for pollutants to escape the facility in the stormwater discharge exists. Therefore, the Department is requiring all industrial sectors where the average value for COD or O&G for that sector exceeded 50% of the benchmark to sample for COD or O&G in order to monitor for the potential pollutants.

COD:

Top 5 sectors for exceedances: U, A, P, N, C

Sectors whose average exceeded 50% of 120: Q, A, U, N, AD, C, L, I, B, P, T, M

Sectors whose median exceeded 50% of 120: A, T, U, L, Q

Industrial sectors proposed to sample COD in 2014 IGP: A, B, C, I, L, M, N, P, Q, T, U, and AD

O&G:

Top 5 sectors for exceedances: U, P, AB, A, N, AA (A, N, & AA had same number of exceedances)

Sectors whose average exceeded 50% of 15: D

Sectors whose median exceeded 50% of 15: none

Industrial sectors proposed to sample O&G in 2014 IGP: A, D, N, P, U, AA, and AB

4.1.5 Combined 2009 IGP's Discharge Monitoring Report (DMR) and Annual Report Requirements into One Document, the Stormwater Annual Report (SWAR)

The 2009 IGP required the submission of two documents annually, the DMR and Annual Report forms. For easier recordkeeping, the Department has combined the requirements of both reports onto one form, which has been named the SWAR. The requirements included on the SWAR in the 2014 IGP are not significantly different than those of the DMR and Annual Report separately from the 2009 IGP.

4.1.6 Removed Requirement to Submit Reports Annually to the Department

In the 2009 IGP, permittees were required to submit reports annually to the Department by January 31st of the year following the monitoring period. The 2014 IGP has removed annual reporting requirements in favor of permittees filling out the SWAR and keeping it with the SWPPP records. The Department plans an audit of a percentage of permittees' paperwork, which will be required to be submitted within 5 business days of request. This change reduces the burden on Departmental resources required to review all permittees' reports, and also gives staff more time for review per report. The Department believes this will result in a more thorough enforcement of the permit requirements and will give more opportunity for quality communication between permittees and staff regarding how well they are complying with permit requirements.

4.1.7 Removed Sampling Waivers for 4 Consecutive Samples under the Benchmark Value

The sampling waiver in the 2009 IGP was available for permittees who met benchmark value of a parameter for four consecutive sampling periods. Under the 2009 IGP, this could be accomplished in two years' time (with two samples taken per year), allowing for a three-year waiver of sampling requirements. Due to the change to one sample per year, a sample waiver granted after four monitoring periods would take four years to gain enough data, leaving only a one-year waiver of sampling requirements. The Department believes that the data gained from annual sampling is useful for facilities that consistently

achieve results below the benchmarks to confirm they are still complying with their Best Management Practices.

4.1.8 Removed Sampling Reductions for 6 Consecutive Samples over the Benchmark Value

In the 2009 IGP, facilities that had samples over the benchmark who had done everything technologically feasible to reduce pollutants could receive a reduction of sampling to once per year from twice per year. Since the benchmark monitoring was changed to once per year, the Department felt that any further reduction would not be needed.

4.1.9 Added Limitations of Coverage (Exclusions) for Direct Discharges to Extraordinary Resource Waters (ERWs), Natural and Scenic Waterways (NSWs), and Ecologically Sensitive Waterbodies (ESWs)

Arkansas Pollution Control & Ecology Commission (APC&EC) Regulation No. 2 defines certain bodies of water as ERWs, NSWs, and ESWs, which are to be protected by stringent water quality standards. In order to protect these special bodies, the Department will require additional BMPs to be implemented for direct discharges into ERWs, NSWs, and ESWs.

4.1.10 Changed Application Submission Deadlines

Existing dischargers who are authorized for discharge under the 2009 IGP will be required to submit an application to continue coverage under the 2014 IGP by the effective date of the permit. Existing dischargers will be required to comply with updated SWPPP requirements by the effective date of the permit, although the submittal of the SWPPP is not required with the renewal application. The 2014 IGP is required by Arkansas law to be issued 180 days prior to the expiration date of the 2009 IGP, therefore, existing permittees will have 180 days from the issuance date to the effective date to apply for coverage and update the SWPPP. The Department believes that the 180 day period prior to the effective date will give permittees enough time to become familiar with new requirements in order to comply with the 2014 IGP.

4.1.11 Similar Outfalls

The Department added the language, “The permittee must get approval of the similar outfall designation from the Department prior to monitoring” in Part 3.8.1 to clarify the Department’s existing policy regarding similar outfall designation approval. The Notice of Intent under the 2009 IGP requires the facility to indicate outfalls they consider similar. The Department currently reviews similar outfall designations and indicates that a facility has been approved for similar outfalls sampling by including a statement on the Notice of Coverage (NOC) for the facility. It is the Department’s current policy that the only similar outfall designations that are valid are those shown on the NOC for a facility. The addition of this language was to clarify this policy of pre-approval.

5 Contact Information

For additional information regarding this permit, please contact the General Permits Section of the Water Division:

General Permits Section
ADEQ Water Division
5301 Northshore Drive
North Little Rock, AR 72218-5317
(501) 682-0623
water-permit-application@adeq.state.ar.us

Permit writer:

Katherine Yarberry, PE
Engineer Supervisor
ADEQ Water Division
5301 Northshore Drive
North Little Rock, AR 72218-5317
(501) 682-0647
yarberryk@adeq.state.ar.us

Technical review:

Jamal Solaimanian, PhD, PE
Engineer Supervisor
ADEQ Water Division
5301 Northshore Drive
North Little Rock, AR 72218-5317
(501) 682-0620
jamal@adeq.state.ar.us

6 Economic Impact

The Arkansas Industrial Stormwater General Permit ARR000000 incorporates the effluent limitations based on 40 CFR 411, 418, 423, and 443. The permit is also in compliance with state-level regulations (APC&EC Regulation Nos. 2, 5, 6, 8, and 9) concerning the permitting process.

Most of the requirements included in this permit were in the previous permit. The Department expects this permit to reduce the cost of compliance for most permittees. By reducing the monitoring frequency from biannual to annual, the sampling costs are greatly reduced for all facilities. By removing the Chemical Oxygen Demand (COD) and Oil & Grease (O&G) requirements from all facilities and only requiring some industrial sectors to monitor for COD and O&G, sampling costs are further reduced for many facilities.

Therefore, this permit does not place any additional undue burden on any private business entity, large or small. It does not restrict any opportunities that are available to any small businesses. The inspection and control requirements are set at a level to protect water quality while minimizing the resources required for compliance.

The permit fee of $200 is allowed by APC&EC Regulation No. 9.

7 Public Notice, Public Hearing, and Workshop Meeting

The public notice describes the procedures for the formulation of final determinations and shall provide for a public comment period of 30 days. During this period, any interested persons may submit written comments on the permit and may request a public hearing to clarify issues involved in the permitting decision. A request for a public hearing shall be in writing and shall state the nature of the issue(s) proposed to be raised in the hearing.

A copy of the permit and public notice will be sent via email to the Corps of Engineers, the Regional Director of the U.S. Fish and Wildlife Service, the Department of Arkansas Heritage, the EPA, and the Arkansas Department of Health.

On May 9, 2013, the Department held a workshop with industry stakeholders. The purpose of the meeting was to gain perspective on how the 2009 IGP was working and to get ideas for improving the permit for the 2014 IGP issuance.

8 Sources

The following sources were used to draft this permit:

a. 40 CFR 122
b. APCEC Regulation 2
c. APCEC Regulation 6
d. APCEC Regulation 9
e. EPA 2008 Multi-Sector General Permit for Industrial Stormwater
f. May 9, 2013 Workshop Meeting
g. 2014 IGP Public Comments

Appendix A – Sampling Period Statistical Calculations

Hypothesis: Population mean of January – June, μ1, should be equal to population mean of July – December, μ2. (μ1-μ2=0)

Testing Formula: $$z = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)_0}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

95% Confidence Level: Critical z = 1.96 (reject if sample z is greater than this)

Table A1: Calculation Values

Jan-June	COD	TSS	O&G	pH
Sample Average, x̄1	85.89	122.18	5.50	7.37
Sample Variance, s1	24845.1	112141	314.388	26.0957
Number of Samples, n1	1164	1213	732	1211

July-Dec	COD	TSS	O&G	pH
Sample Average, x̄2	70.55	114.24	58.34	7.14
Sample Variance, s2	10724	186672	2232802	1.11613
Number of Samples, n2	1311	1352	762	1349

Critical z = 1.96	COD	TSS	O&G	pH
z=	2.82	0.52	-0.98	1.56
	Fail	**Pass**	**Pass**	**Pass**

Conclusions: At a 95% confidence level, COD values are significantly different between the January to June and July to December sampling periods.

At a 95% confidence level, TSS, O&G, and pH values are NOT significantly different between the January to June and July to December sampling periods.

Appendix B – Basic 4 Parameter Benchmark Exceedance Data

% of Samples within Benchmarks

COD

2011	2012
86.0%	87.7%

TSS

2011	2012
76.5%	80.0%

O&G

2011	2012
98.1%	98.4%

pH

2011	2012
89.4%	92.8%

	Total Number of Exceedances			
	COD	TSS	O&G	pH
2011	335	560	46	254
2012	344	559	46	202

Number of Exceedances – Top 5 Industrial Sectors							
2012	COD	2012	TSS	2012	O&G	2012	pH
U	93	**P**	86	**U**	13	**E**	32
A	76	**A**	80	**P**	9	**U**	25
P	41	**U**	75	**AB**	4	**F**	23
N	35	**E**	46	**A**	3	**A**	18
C	19	**N**	42	**N**	3	**P**	16
				AA	3		

Number of Exceedances				
2012	**COD**	**TSS**	**O&G**	**pH**
A	76	80	3	18
B	8	12	0	2
C	19	28	0	9
D	4	8	1	10
E	5	46	1	32
F	9	15	0	23
G	0	0	0	1
I	8	33	1	4
J	3	26	1	12
K	0	1	0	3
L	6	14	1	1
M	9	17	2	5
N	35	42	3	13
O	1	5	0	3
P	41	86	9	16
Q	5	10	0	12
R	0	3	0	1
S	0	4	2	1
T	0	2	0	1
U	93	75	13	25
V	0	1	0	1
W	1	1	0	1
X	0	0	0	0
Y	5	10	1	3
AA	5	16	3	5
AB	9	28	4	8
AC	5	5	1	5
AD	8	12	0	1
Totals	**344**	**559**	**46**	**202**

Average Values Within 50% of Benchmark - 2012							
COD		**TSS**		**O&G**		**pH – Top 5 & Bottom 5**	
Q	215.94	**Q**	421.72	**D**	10.589	**P**	8.0177
A	145.28	**I**	318.26			**Q**	7.9975
U	134.92	**N**	274.29			**S**	7.7433
N	125.04	**L**	270.92			**T**	7.5237
AD	95.196	**B**	224.08			**E**	7.4719
C	92.238	**O**	186.68				
L	82.897	**A**	168.5			**G**	5.92
I	78.752	**M**	158.17			**K**	6.2392
B	71.197	**P**	150.66			**V**	6.6089
P	67.383	**R**	134.58			**M**	6.7128
T	65.857	**U**	104.19			**W**	6.7511
M	60.631	**AD**	91.354				
		C	84.697				
		AB	75.023				
		J	73.031				
		E	67.871				
		F	54.238				
		AA	51.513				

Median Values Within 50% of Benchmark - 2012							
COD		**TSS**		**O&G**		**pH – Top 5 & Bottom 5**	
A	80	**I**	120	**No O&G median values within 50% of benchmark**		**Q**	8.55
T	72.5	**Q**	78			**S**	7.675
U	71	**L**	67			**E**	7.4
L	65.5	**A**	55.5			**D**	7.3
Q	61.4	**R**	53			**C**	7.2
		G	52			**J**	7.2
						P	7.2
						K	6.07
						M	6.62
						V	6.64
						B	6.84
						G	6.86
						AC	6.86