

**NPDES  
REPORTING  
REQUIREMENTS  
HANDBOOK**

**ADEQ**

**A R K A N S A S**  
Department of Environmental Quality

March 23, 2009  
NPDES ENFORCEMENT BRANCH  
WATER DIVISION

This booklet is designed to assist the permittee in complying with the reporting requirements in the NPDES permit. It will take you through the process of filling out the Discharge Monitoring Report (DMR) and submitting non-compliance and other reports. We have listed the most commonly asked questions with the answers. You will also find helpful information in the form of commonly used math formulas and acceptable abbreviations for filling out the DMR.

### **PROGRAM AUTHORITY**

Facilities that discharge wastewater to the waters of the State must apply for a National Pollutant Discharge Elimination System (NPDES) permit. Program Authority is in accordance with Sections 301, 302, 308, 402 and 503 of the Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977 and the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended; Ark. Code Ann. 8-4-101 et seq.) and the regulations issued thereunder. The Permittee is responsible for understanding and meeting all permit requirements and submitting complete, accurate and legible self-monitoring data.

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## **DISCHARGE MONITORING REPORTS (DMRS)**

The sample collection and analytical results required by the NPDES Permit must be reported to the Arkansas Department of Environmental Quality, Water Enforcement Branch, 5301 Northshore Drive, North Little Rock, AR. 72218. The reporting of this information is through the submission of Discharge Monitoring Report (DMR) forms (EPA Form 3320-1). DMRs must be submitted to the Department by the 25<sup>th</sup> of the month following the end of the monitoring period. For example, if the monitoring period specified on the DMR ends on July 31, 2009, then the DMR must be postmarked to the Department by August 25, 2009. The original and one copy of the DMR must be submitted. Please remember a DMR must be submitted even if the facility did not have a discharge during the monitoring period.

It is extremely important that the data reported on the DMR be legible, accurate, and timely. The information on the DMR is entered into the EPA national database. If the information is not accurate and legible, the public may get inaccurate information about the facility. In addition, inaccurate, illegible, and/or late reporting adds to the Department's cost of administering the NPDES Program due to additional processing requirements. Help keep permit fees down by ensuring the DMR is legible, accurate, and submitted on time.

**SEE PAGES 7-9 FOR**  
**FIGURE 1 INSTRUCTIONS FOR**  
**COMPLETION**  
**DISCHARGE MONITORING REPORTS (DMRS)**

**Figure 1**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME 1

ADDRESS 1

FACILITY LOCATION 2

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

PERMIT NUMBER 3 DISCHARGE NUMBER 4

PERMIT NUMBER 3 DISCHARGE NUMBER 4

Form Approved.  
 OMB No. 2040-0004  
 Approval expires 05-31-88

MONITORING PERIOD FROM YEAR MO DX TO YEAR MO DX Check here if No Discharge

NOTE: Read instructions before completing this form

PARAMETER (32-37)	SAMPLE MEASUREMENT	(3 Card Only) QUANTITY (45-53)			(4 Card Only) QUALITY OR CONCENTRATION (64-81)			NO. EX (82-83)	FREQUENCY OF ANALYSIS (84-88)	SAMPLE TYPE (89-90)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
7	8							8A	8B	8C
	PERMIT REQUIREMENT	9								
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
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	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

10 TYPED OR PRINTED

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 PREPARE AND EVALUATE THE INFORMATION SUBMITTED. BASED ON 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. SEE 18 U.S.C. 1001 AND 33 U.S.C. 1918. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 8 months and 5 years.)

11 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE DATE

12 13 AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

14

Instructions for Completion of  
**DISCHARGE MONITORING REPORTS**  
*(Items 1-5, 7 and 9 are already completed on the preprinted DMRs supplied by ADEQ, NPDES Enforcement Branch)*  
 See Figure 1 (page 6)

1. **Permittee Name/Address** - Name and mailing address of the permittee.
2. **Facility/Location** - Enter if different from the mailing address.
3. **Permit Number** - State abbreviation (AR) and permit number as it appears on the NPDES permit, which consists of two alpha and seven numeric characters. In the case of General Permits, the first three characters will be alpha (ARG) with the last six numeric. Municipal Stormwater permits start with the alpha characters, ARS and the General Stormwater permits start with ARR. Finally, the EPA 503 Sludge Permits begin with the alpha characters, ARL.
4. **Discharge Number (Outfall Number)** - Consists of a combination of four alpha and numeric characters. (EX: 001A, 002Q, 003S, 004Y). In the State of Arkansas, generally the alpha character is used to designate monitoring frequency. For instance:
  1. An **A** usually indicates a DMR that has a monthly monitoring period.
  2. A **Q** usually indicates a DMR that has a calendar quarter monitoring period.
  3. An **F** usually indicates a DMR that has a seasonal quarter monitoring period.
  4. An **S** usually indicates a DMR that has a semi-annual monitoring period.
  5. A **Y** usually indicates a DMR that has a yearly monitoring period.
  6. **B, C, or D** is usually used for conditional monitoring or unusual monitoring periods such as two (2) month monitoring periods.

Some exceptions include, but are not limited to, toxicity testing, stream monitoring, etc. For toxicity testing the first two characters are TX. The last two characters are usually an assigned code used for Agency tracking purposes (EX: TX1A, TX1S, TX1Y). Other discharge number exceptions include SMS (Stream Monitoring Station); SUM (Sum of Multiple Outfalls); NET (Net Total of Multiple Monitoring locations); and INT (Intake Monitoring).
5. **Monitoring Period** - From the first day of the monitoring period through the last day of the monitoring period. The dates should be displayed as YR MO DAY. Applicable monitoring periods will be specified in each permit. Some examples include but are not limited to:

	<u>Yr Mo Day</u>	to	<u>Yr Mo Day</u>
Monthly (A) -	09 01 01	to	09 01 31
Quarterly (Q) -	09 01 01	to	09 03 31
Seasonal Quarter (F) -	09 02 01	to	09 04 30
Semi-annual (S) -	09 01 01	to	09 06 30
Annual (Y) -	09 01 01	to	09 12 31

6. **No Discharge** - If facility has no flow/no discharge for a specific outfall and/or monitoring period, "NO DISCHARGE" must be indicated for that outfall and monitoring period. This is accomplished by checking the "No Discharge" block in the upper right portion of the DMR. **Do not check the no discharge block if you had a discharge but failed to collect a sample.**
  
7. **Parameters** - Specified in the permit as effluent characteristics for each discharge number (outfall), one parameter per box. Each box must display the parameter name and corresponding STORET code number. (EX: BOD (00310), pH (00400), TSS (00530), Flow (50050)). The parameters and monitoring locations should be displayed on the DMR form in numeric order by STORET code number.
  
8. **Sample Measurement** - Sample measurement data for each parameter under "Quantity or Loading" or "Quality or Concentration" in accordance with permit limitations. Be sure to report the sample measurement in the units indicated in the Units column on the preprinted DMR. The measurement units (lbs/day, mg/l, su, etc) are as specified in the permit. It may be necessary to do calculations to convert data to the units required in the permit. "30-Day Average" is an arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during the monitoring period. A Monthly Average is an arithmetic average weighted by flow of all sample measurements for each parameter obtained during the monitoring period. "Maximum" and "Minimum" are normally the highest and lowest measurements obtained during the monitoring period.
  - A. **No. EX (Number of Exceedances)** - Total of **sample measurements** that exceed the *daily maximum, daily minimum, 7-day (weekly) average* permit limit. **DO NOT** include monthly average or daily average violations in this field. If none, enter "0". Permittees with continuous pH, or temperature monitoring requirements should consult the permit for what constitutes an exceedance and report accordingly.
  
  - B. **Frequency of Analysis** - **Actual** frequency of analysis used during the monitoring period; the minimum requirement is as specified in the permit. Enter "CONT" for continuous monitoring, "01/07" for one day per week, "01/30" for one day per month, "01/90" for one day per quarter, etc. Some examples are included in **TABLE 2**.
  
  - C. **Sample Type** - **Actual** sample type used during monitoring period. Enter "GRAB" for individual sample, "COMP24" for 24-hour composite, "CONTIN" for continuous monitoring. Some examples are included in **TABLE 3**.
  
9. **Permit Requirement** - Effluent limitations for each parameter as specified in the permit are displayed on the DMR under "Quantity" or "Loading" and/or "Quality" or "Concentration". Monitoring requirements for frequency of analysis and sample type as specified in the permit are also displayed. The DMR must reflect the most current monitoring and reporting requirements.
  
10. **Name/Title Principal Executive Officer or Authorized Agent** - See the permit for qualifications of Principal Executive Officer and signature authorization.
  
11. **Signature** - Original legible signature in blue ink of authorized Principal Executive Officer or Authorized Agent. Every page of the DMR must have an original signature in blue ink. The Department will not accept a faxed signature, a copied signature, a stamped signature, or a scanned signature.

In the event a revised or corrected DMR is necessary, an original authorized signature and date of signature is required on each page. The words "**CORRECTED COPY**" should be clearly visible on each page of the form.

12. **Telephone** - Telephone number of Principal Executive Officer.

.....,



13. **Date** - **Actual date** of signature certifying authenticating data submitted on DMR.
14. **Comments** - Normally contains preprinted clarifications of permit requirements or reporting instructions.

**NOTE:** The results of any additional monitoring of parameters at the location(s) designated in the permit, using approved analytical methods, must be included on the DMR (see Part III.C.6 of permit). This includes flow values collected by the contract laboratory when collecting the sample.

**ADDITIONAL NOTE:** NPDES Permittees that use contract laboratory services for sampling and/or analysis must include the name and address of the contract laboratory on the DMR form. The contract laboratory must be certified by the State of Arkansas Laboratory Certification Program. A complete list of certified laboratories and approved parameters can be found on the ADEQ web page or can be requested from the Technical Services Department. The web page address for certified laboratories is:

**<http://www.adeg.state.ar.us/techsvs/labcert.htm>**

**Formulas Used for DMR Calculations and Examples:**

**1. Loading Calculation:**

(Concentration in mg/l or ppm) x (Flow in MGD) x (8.34) = lbs of pollutant

Example:       Flow on date or time of sample collection = 0.500 mgd  
                   BOD = 10 mg/l  
                   (10) x (0.50) x (8.34) = 41.7 lbs of BOD

**2. Monthly Average Loading Calculation:**

$$\frac{(L_1 + L_2 + L_3 + \dots + L_N)}{N} = \text{Loading Average}$$

Where L = the calculated loading for a sample day  
 N = the number of samples

Example:       1st sample day - flow 0.50 mgd, BOD 10 mg/l  
                   2nd sample day - flow 0.60 mgd, BOD 15 mg/l  
                   3rd sample day - flow 0.40 mgd, BOD 5 mg/l

$$L_1 = (0.5 \text{ mgd}) (10 \text{ mg/l}) (8.34) = 41.7 \text{ lbs}$$

$$L_2 = (0.6 \text{ mgd}) (15 \text{ mg/l}) (8.34) = 75.06 \text{ lbs}$$

$$L_3 = (0.4 \text{ mgd}) (5 \text{ mg/l}) (8.34) = 16.68 \text{ lbs}$$

$$\frac{(41.7 \text{ lbs} + 75.06 \text{ lbs} + 16.68 \text{ lbs})}{3} = 44.48 \text{ lbs}$$

**3. 30 Day Average Calculation:**

$$\frac{(C_1 + C_2 + C_3 + \dots + C_N)}{N} = C_{\text{avg}}$$

Where C = concentration of sample  
 N = number of samples

Example:       1st sample day - BOD 10 mg/l  
                   2nd sample day - BOD 15 mg/l  
                   3rd sample day - BOD 5 mg/l

$$\frac{(10 \text{ mg/l} + 15 \text{ mg/l} + 5 \text{ mg/l})}{3} = 10 \text{ mg/l}$$

**4. Monthly Average Concentration\***

$$\frac{(C_1F_1 + C_2F_2 + C_3F_3 + \dots + C_NF_N)}{(F_1 + F_2 + F_3 + \dots + F_N)} = C_{\text{FLOW WEIGHTED AVERAGE}}$$

Where C = concentration of sample  
 F = discharge flow on the day or time of sample

Example: 1st sample day - flow 0.50 mgd, BOD 10 mg/l  
 2nd sample day - flow 0.60 mgd, BOD 15 mg/l  
 3rd sample day - flow 0.40 mgd, BOD 5 mg/l

$$\frac{[(10 \text{ mg/l})(.5 \text{ mgd})+(15 \text{ mg/l})(.6 \text{ mgd})+(5 \text{ mg/l})(.4 \text{ mgd})]}{(.5 \text{ mgd} + .6 \text{ mgd} + .4 \text{ mgd})} =$$

$$\frac{(5 + 9 + 2)}{1.5} = \mathbf{12.16 \text{ mg/l}}$$
 - reported on DMR as <12.2 mg/l (see significant figures, page 14)

5. **Geometric Mean for Fecal Coliform:**

$$\frac{\text{Log(FCB1)} + \text{Log(FCB2)} + \text{Log(FCB3)} + \dots + \text{Log(FCBN)}}{N} = \text{Log}_{\text{avg}}$$

Antilog(Log<sub>avg</sub>) = Geometric Mean

Where Log(FCB) = the logarithm of the fecal coliform colony count  
 N = Number of samples

Example: 1st sample day - FCB 100 colonies/100 ml  
 2nd sample day - FCB 1000 colonies/100 ml  
 3rd sample day - FCB 275 colonies/100 ml

$$\begin{aligned} \text{Log}(100) &= 2 \\ \text{Log}(1000) &= 3 \\ \text{Log}(275) &= \underline{2.44} \\ 7.44/3 &= 2.48 \end{aligned}$$

Antilog (2.48) = 302 colonies/100 ml

**\* Most Permits effective after March 31, 2004 have had the flow weighting component removed from the definition of monthly average concentration and will be calculated in the same manner as 30-day average.**

### DMR CALCULATIONS INVOLVING LESS THAN VALUES

One of the more frequently asked questions is, How do I use less than values in the DMR calculations? The answer to the question depends upon your permit. Some permits in Part II have specific language that under certain conditions allows less than values to be considered as zero. This language is most commonly associated with toxic pollutants not conventional pollutants. Otherwise for DMR calculations using an analytical result that is less than the detection limit, the permittee will use the reported detection limit in the calculation and place the less than symbol (<) on the results. Below are some examples:

#### Monthly Average Concentration With Less Than Value

$$\frac{(C_1F_1 + C_2F_2 + C_3F_3 + \dots + C_NF_N)}{(F_1 + F_2 + F_3 + \dots + F_N)} = C$$

FLOW WEIGHTED AVERAGE

Where C = concentration of sample  
F = discharge flow on the day or time of sample

Example: 1st sample day - flow 0.50 mgd, BOD 10 mg/l  
2nd sample day - flow 0.60 mgd, BOD 15 mg/l  
3rd sample day - flow 0.40 mgd, BOD <5 mg/l

$$\frac{[(10 \text{ mg/l})(.5 \text{ mgd}) + (15 \text{ mg/l})(.6 \text{ mgd}) + (<5 \text{ mg/l})(.4 \text{ mgd})]}{(.5 \text{ mgd} + .6 \text{ mgd} + .4 \text{ mgd})} =$$

$$\frac{(5 + 9 + <2)}{1.5} <12.16 \text{ mg/l} - \text{reported on DMR as } <12.2 \text{ mg/l (see significant figures, page 16)}$$

#### Loading Calculation With Less Than Value

(Concentration in mg/l or ppm) x (Flow in MGD) x (8.34) = lbs of pollutant

Example: Flow = 0.500 mgd  
BOD <5 mg/l

$$(<5) \times (0.50) \times (8.34) <20.8 \text{ lbs of BOD}$$

**Geometric Mean for Fecal Coliform With Less Than Value**

$$\frac{\text{Log}(\text{FCB1}) + \text{Log}(\text{FCB2}) + \text{Log}(\text{FCB3}) + \dots + \text{Log}(\text{FCBN})}{N} = \text{Log}_{\text{avg}}$$

Antilog(Log<sub>avg</sub>) = Geometric Mean

Where Log(FCB) = the logarithm of the fecal coliform colony count  
N = Number of samples

Example: 1st sample day - FCB <1 colonies/100 ml  
2nd sample day - FCB 1000 colonies/100 ml  
3rd sample day - FCB 275 colonies/100 ml

$$\begin{aligned} \text{Log} (<1) &= 0 \\ \text{Log} (1000) &= 3 \\ \text{Log} (275) &= \underline{2.44} \\ \hline 5.44/3 &= 1.81 \end{aligned}$$

Antilog (1.81) < 65 colonies/100 ml

**ANY LESS THAN VALUE THAT EXCEEDS AN EFFLUENT LIMIT IS A PERMIT VIOLATION.**

- **EXAMPLE:** If the permit limit is 30 mg/l and the calculated value is <31 mg/l, then an effluent violation has occurred and a noncompliance report is required.

## ROUNDING AND SIGNIFICANT FIGURES

**ROUNDING** - Values from one (1) through four (4) shall be rounded down, values from five (5) through nine (9) shall be rounded up.

**SIGNIFICANT FIGURES** - The issue of how many places to the right of the decimal must be reported on the DMR has been the subject of much debate. While many of the arguments are valid for statistical and/or analytical purposes, for reporting purposes conventional pollutant concentrations shall be reported as follows:

1. BOD, CBOD, TSS, nitrogen as ammonia, DO and COD shall be reported to nearest tenth of a mg/l. For example a calculated BOD value of 20.23 mg/l shall be reported as 20.2 mg/l.
2. Fecal Coliform Bacteria shall be reported to the nearest whole number. For example a calculated 30-day geometric mean of 120.6 col/100 ml shall be reported as 121 col/100 ml.
3. pH shall be reported to the tenth of a S.U. For example, a pH of 7.72 S.U. shall be reported as 7.7 S.U.
4. Other pollutants shall be reported to the level of resolution of the analytical method.
5. **LOADING** – Loading values shall be reported to the level contained in the permit. For example a loading limit of 5.3 pounds shall be reported to the tenth of a pound.

## REVISED/CORRECTED DMRS

Sometimes it will be necessary for the facility to submit a revised or corrected DMR either because the Agency has requested it or the facility has discovered an error. Some reasons for submitting a revision/correction are:

1. Missing original or unauthorized signature
2. Monthly average improperly calculated
3. Missing sample measurements
4. Parameters not reported
5. Loading measurements not correctly calculated
6. Missing Frequency of Analysis, Sample Type and/or Number of Excursions

When a revised/corrected DMR is submitted, it **must**:

1. Have an **original authorized signature in blue ink**. Signatures from a copy, stamp, or computer scanner are not acceptable.
2. Date of new signature
3. Be clearly marked as a “**CORRECTED COPY**” DMR
4. The corrected information on the DMR should be highlighted or otherwise indicated.

### **SELF-GENERATED DMR FORMS**

The State of Arkansas does not currently allow the permittee to self-generate DMRs except on a temporary basis. Allowing the permittee to self generate DMRs would require additional administration of the NPDES Enforcement's review process since each self generated DMR would have to be cross-checked with the permit. The Department will allow self-generated DMRs only as a temporary measure when preprinted DMRs are not available. **Prior approval is required to use self-generated DMRs on a temporary basis.**



### **NONCOMPLIANCE REPORTS (NCRs)**

The Permittee shall report any instances of noncompliance with their permit. See your permit for specific requirements for reporting anticipated non-compliance, 24-hour reporting of conditions which may endanger health and the environment (via phone, email or fax) and other noncompliance which must be reported. A noncompliance report (NCR) must be submitted for any violation reported on the DMR.

An NCR must include the following information as indicated on Figure 2, SAMPLE NON-COMPLIANCE REPORT:

- A. a description of the violations,
- B. the reason for the violations,
- C. the duration of the violations,
- D. the corrective action being taken to eliminate the violations,
- E. the compliance date or expected compliance date,
- F. an original signature of the cognizant official.

**SAMPLE NON-COMPLIANCE REPORT**

**Permit Number:**

**Facility Name:**

**Month/Year:**

**Authorized Signature/Date:** \_\_\_\_\_

Type of Violation (Avg/Max,,Bypass Overflow, Etc.)	Permit Limit	Date of Violation	Duration of Viol.	Cause of Violation	Corrective Action or Other Narrative
<b>EXAMPLE:</b> TSS, daily max 67 mg/l	45 mg/l	3/16/00	1 day	Failure of sludge pump	Repaired pump, wasted sludge
TSS, daily max 63 mg/l	45 mg/l	3/21/00	1 day	Hydraulic overload due to inflow and infiltration	The City is currently implementing an SSES and I&I reduction program.
TSS, mo. avg. 43 mg/l	30 mg/l	March 00	Month	Failure of sludge pump and hydraulic overloading due to I&I	See above
<p>I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C 1001 AND 33 U.S.C. 1319. (Penalties under these statutes may includes fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)</p>					

**Figure 2**

## **SCHEDULES/REPORTS REQUIRED BY PERMIT AND/OR ADMINISTRATIVE ORDERS**

In addition to DMRs and non-compliance reports (NCRs), the permit or administrative order may contain additional reporting provisions with specific reporting requirements. These specific provisions could include compliance schedule progress reports, pretreatment requirements, toxicity, sludge and stormwater reports. The actual completion date of any schedules activity must be included in the submitted report and the report is due within fourteen (14) days of completion of the scheduled activities. Any report which indicates non-compliance with a scheduled event should include the reason for the delay and whether it will effect the remaining scheduled events. For specific reporting dates and requirements, see Part III, Section D of the NPDES permit.

### **BYPASS REPORTS**

Arkansas NPDES Permit requires any bypass of treatment be reported to the Department within 24 hours of becoming aware of the bypass. This notice must be made by telephone, email, or fax. The 24 hour notice must include the following information:

- A. a description of the noncompliance (bypass);
- B. the period of noncompliance including the exact date and time of the noncompliance;  
and
- C. steps taken to eliminate and prevent reoccurrence of the noncompliance.

The Department cannot accept faxed or emailed follow up reports because the permit requires all NPDES reports to be signed by the cognizant official and the signature must be an original. **Faxed copies and other forms of signature reproduction are not acceptable.**

### **MANHOLE OVERFLOW REPORTS**

All municipal permits have a requirement to report manhole overflows to the Department monthly in tabular format. The requirement can be found in Part II of the NPDES Permit. Specifically, the permit states:

*The Permittee shall report all overflows with the Discharge Monitoring Report (DMR) submittal. These reports shall be summarized and reported in tabular format. The summaries shall include: the date, time, duration, location, estimated volume, cause of overflow, observed environmental impacts from the overflow, action taken to address the overflow and ultimate discharge location if not contained (e.g., storm sewer system, ditch, tributary). Overflows which endanger health or the environment shall be orally reported to this Department (Enforcement Branch of the Water Division), within 24 hours from the time the Permittee becomes aware of the circumstance.*

## MOST COMMONLY ASKED QUESTIONS

### 1. HOW DO I REPORT "TOO NUMEROUS TO COUNT" COLIFORM SAMPLES?

*Fecal Coliform samples that are "too numerous to count" must be reported as a greater (>) than value on the DMR form. A greater (>) than value reported on the DMR exceeds the permit limit and is considered a permit violation.*

### 2. HOW DO I COUNT NUMBER OF EXCEEDANCES?

*Exceedances for DMR reporting are the number of sample measurements that exceed a daily maximum, daily minimum, 7-day average, or instantaneous limit (pH and dissolved oxygen). Just count each sample measurement that is a violation of the daily maximum, daily minimum, 7-day average, or instantaneous limit and enter the number in the **NO. EX.** column.*

**DO NOT INCLUDE 30-DAY AVERAGES, DAILY AVERAGES, OR MONTHLY AVERAGES AS EXCEEDANCES ON DMR.** *It is obvious if you have exceeded an average measurement since you report the one average measurement on the DMR. Daily maximum, daily minimum, 7-day average, or instantaneous limit measurements only require the highest or lowest sample value during the monitoring period be reported on the DMR. Therefore, the number of exceedances (No.Ex.) column is designed to inform the Department of other samples which exceeded the daily maximum, daily minimum, 7-day average, or instantaneous limit. The individual violations should be detailed in the required noncompliance report.*

### 3. HOW DO I CALCULATE AND REPORT 7-DAY AVERAGES?

*A 7-day average is an arithmetic average of the samples collected during a calendar week. In the State of Arkansas, the 7-day week ends on Saturday, and therefore, the 7-day average must be reported in the month in which the Saturday falls. For example, August 1, 2009, is a Saturday. Samples collected from July 25, 2009 through July 31, 2009, should be averaged and reported as a 7-day average during the month of August since the Saturday of the week falls in August. The samples collected during July 25 through July 31 will be included with the other July samples for the purpose of reporting the monthly average in July. Only the highest 7-day average during the month will be reported on the DMR.*

**4. WHO CAN SIGN A DMR?**

*The NPDES Permit and EPA regulation 40CFR122 are very specific about who can sign **any NPDES required report** including DMRs. The authorized signatory official (also known as cognizant official) is the individual who signs the permit application and must meet the requirements contained in the permit (mayor, corporate officer, etc.). The authorized signatory official can delegate signatory authority to another person provided that the **individual is responsible for the overall operation** of the facility and this authorization must be made in writing and on file at ADEQ. ADEQ has developed a form to facilitate signatory delegation which can be found in the Appendix.*

**5. DO I HAVE TO SIGN EACH PAGE OF MY DMR?**

*Yes. Each page must be signed in blue ink and dated. If any revisions are submitted, the revised page must also have an original signature in blue ink and new signature date.*

**6. HOW MANY COPIES OF THE DMR DO I SUBMIT TO THE DEPARTMENT?**

*You must submit the original and one copy to the Department. The original is the official file copy and the copy is routed to the Enforcement Administrator for review.*

**7. I RECEIVED A LETTER FROM EPA TELLING ME THAT THE STATE HAS NPDES AUTHORITY. DO I HAVE TO SEND ANY MORE REPORTS TO EPA?**

*Once you have received a letter from EPA transferring enforcement authority for your facility to an approved NPDES state, you no longer need to send DMRs, non-compliance reports, or other reports to EPA, unless you receive a specific request or action from EPA. The NPDES Program in Arkansas has not been delegated authority for the 503 Sludge Program. 503 Sludge DMRs with the permit number starting "ARL" must be submitted to EPA*

**8. DO I NEED TO SUBMIT A DMR IF THERE IS "NO DISCHARGE" DURING THE MONITORING PERIOD?**

*Yes, a DMR must be submitted even if there is "No Discharge". The DMR has a "NO DISCHARGE" block in the upper right portion of the form which is checked instead of including the required analytical data.*

### **COMMON ERRORS MADE IN THE COMPLETION AND SUBMITTAL OF THE DMRS**

1. Improperly completing the "No Ex." column.
2. Improperly completing the "Frequency of Analysis" column.
3. Submitting the original and no copies.
4. Submitting only the copies and not the original DMR.
5. Not completing all blocks on the DMR. Specifically, the date, telephone, and principal executive officer blocks.
6. Failing to sign the DMR.
7. DMR signed by an individual that has not been authorized.
8. Monitoring results are not legible.
9. Reporting an average value that is higher than the reported maximum.
10. Reporting results in the wrong units. Such as reporting flow in units other than mgd or metals results in mg/l rather than  $\mu\text{g/l}$ .
11. Not including the name and address of the contract laboratory on the DMR.
12. Using an old DMR form that does not reflect the current requirements of your permit or Administrative Order. This most commonly occurs in the first few months after a permit is renewed with a new requirement or an Administrative Order is issued.
13. Failure to complete all sample measurement entries.

### **COMMONLY MADE MISTAKES IN CALCULATIONS FOR DMR REPORTING**

1. Calculating monthly average loading using average flow and average concentration of pollutant.
2. Calculating maximum loading using maximum flow and highest concentration of pollutant.
3. Calculating Fecal Coliform as an arithmetic mean. (Fecal Coliform is calculated as a geometric mean)
4. Calculating monthly average concentration without flow weighting.
5. Calculating 7-day average as a flow weighted average.
6. Using sample data from outside the monitoring period to calculate monthly average. This usually occurs because the 7-day average may have results outside of the monitoring period.

## TABLES

### Table 1

#### Other Useful Math Formulas

##### Conversion Factors:

$$1 \text{ gallon} = 8.34 \text{ lbs.}$$

$$1 \text{ cu. ft.} = 7.48 \text{ gallons}$$

$$1 \text{ acre} = 43,560 \text{ sq. ft.}$$

$$1 \text{ ft. head} = .43 \text{ PSI}$$

$$\pi = 3.14$$

##### Formulas:

1. Area of a Rectangle (square units)

$$\text{Length} \times \text{Width} = \text{Area}$$

2. Area of a circle (square units)

$$\pi \times \text{radius}^2 = \text{Area} \quad \text{or} \quad .785 \times \text{Diameter}^2 = \text{Area}$$

3. Volume of rectangular or circular container (clarifier, pond, pipe, etc.)

$$\text{Surface Area} \times \text{Depth} = \text{Volume (cu. units)}$$

4. Volume in Gallons

$$\text{Volume in cu. ft.} \times 7.48 = \text{gallons}$$

5. Detention Time

$$\frac{\text{Volume (gallons)}}{\text{Flow (gpm)}} = \text{Detention Time (in minutes)}$$

**NOTE: If flow is in gpd, detention time is in days.**

6. Circumference of a Circle

$$\pi \times \text{Diameter} = \text{Circumference}$$

7. BOD (mg/l)

$$\frac{[(\text{Initial D.O.} - (\text{Seed Correction} + \text{Final D.O.})) \times 100]}{\% \text{ Dilution}} = \text{BOD (mg/l)}$$

**-OR -**

$$[(\text{Initial D.O.} - (\text{Seed Correction} + \text{Final D.O.})) \times \text{Dilution Factor}] = \text{BOD}$$

$$\text{Dilution Factor} = \frac{\text{TOTAL VOLUME}}{\text{SAMPLE VOLUME}}$$

Seed Correction = 5-day D.O. depletion of seed sample/ ml seed

8. Suspended Solids (mg/l)

$$\frac{\text{Weight2(mg)} - \text{Weight1(mg)}}{\text{ml of Sample Filtered}} \times 1000$$

9. Pounds of BOD, Solids, Chemicals

$$\text{Concentration (mg/l)} \times \text{Quantity (million gals.)} \times 8.34 = \text{lbs.}$$

NOTE: Quantity, Volume or Flow must be in million gals.

10. Weir Overflow Rate

$$\frac{\text{GPD}}{\text{Length of Weir}} = \text{gal./ft./day}$$

11. Surface Loading Rate

$$\frac{\text{GPD}}{\text{Surface Area}} = \text{gal./sq.ft./day}$$



## METRIC SYSTEM

<u>Prefix</u>	<u>Value</u>	<u>Example</u>		
Kilo	1000	1 Kilogram	=	1000 Grams
Hecto	100	1 Hectogram	=	100 Grams
Deka	10	1 Deckagram	=	10 Grams
Unit	1	1 Gram	=	1 Gram
Deci	0.1	1 Decigram	=	0.1 Gram
Centi	0.01	1 Centigram	=	0.01 Gram
Mili	0.001	1 Miligram	=	0.001 Gram
Micro Gram	0.000001	1 Microgram	=	0.000001

## METRIC SYSTEM CONVERSION FACTORS

1 pound	=	454 grams
1 ounce	=	28 grams
1 gallon	=	3.785 liters
1 quart	=	0.946 liter
1 inch	=	25.4 millimeters
1 foot	=	0.305 meters
1 mile	=	1.609 kilometers

**TABLE 2****FREQUENCY OF ANALYSIS ABBREVIATIONS**

<b><u>FREQUENCY</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>FREQUENCY</u></b>	<b><u>DESCRIPTION</u></b>
N/A	NOT APPLIC	01/5Y	ONCE/5 YEARS
N/R	NOT REPORTD	01/60	ONCE/2 MONTHS
N/V	NOT VALID	01/7M	ONCE/7 MONTHS
CL/OC	CHLRNTN/OCCURS	01/90	QUARTERLY
DL/DS	DLY WHNDISCHRG	01/99	INSTNT
REPR	REPORT	02/BA	TWICE/BATCH
WH/DS	WHEN DISCHRG	02/DS	TWICE/DISCH
WH/MN	MEASRD WHN MON	02/DW	TWICE/DSCHWK
01/BA	ONCE/BATCH	02/SH	TWICE/SHIFT
01/DD	ONCE/DSCHDY	02/YR	SEMI-ANNUAL
01/DM	ONCE/DSCHMN	02/01	TWICE/DAY
01/DQ	ONCE/DSCHQTR	02/07	TWICE/WEEK
01/DS	ONCE/DISCHG	02/12	TWICE/12 DAYS
01/DW	ONCE/DSCHWK	02/30	TWICE/MONTH
01/RN	ONCE/RN EVNT	02/90	TWICE/QTRLY
01/SH	ONCE/SHIFT	02/99	SEE PERMIT
01/SN	ONCE/SEASON	03/BA	THREE/BATCH
01/YR	ANNUAL	03/DS	THREE/DISCHG
01/01	DAILY	03/DW	3 DAYS/WEEK
01/02	ONCE/2 DAYS	03/YR	THREE/YEAR
01/03	ONCE/3 DAYS	03/01	THREE/DAY
01/04	ONCE/4 DAYS	03/05	THREE/5 DAYS
01/05	ONCE/5 DAYS	03/07	THREE/WEEK
01/06	ONCE/6 DAYS	03/08	THREE/8 DAYS
01/07	WEEKLY	03/30	THREE/MONTH
01/08	ONCE/8 DAYS	03/5Y	THREE/5 YEARS
01/09	ONCE/9 DAYS	03/99	SEE PERMIT
01/10	ONCE/10 DAYS	04/BA	FOUR/BATCH
01/11	ONCE/11 DAYS	04/01	FOUR/DAY
01/12	ONCE/12 DAYS	04/07	FOUR/WEEK
01/13	ONCE/13 DAYS	04/30	FOUR/MONTH
01/14	ONCE/2 WEEKS	04/99	SEE PERMIT
01/21	ONCE/3 WEEKS	05/BA	FIVE/BATCH
01/28	ONCE/4 WEEKS	05/DW	5 DAYS/WEEK
01/30	ONCE/MONTH	05/WK	5 TIMES/WEEK
01/4M	ONCE/4 MONTHS	05/01	5 TIMES/DAY
01/5M	ONCE/5 MONTHS	05/07	WEEK-DAYS

<u>FREQUENCY</u>	<u>DESCRIPTION</u>	<u>FREQUENCY</u>	<u>DESCRIPTION</u>
05/08	FIVE/8 DAYS	09/99	SEE PERMIT
05/30	5 TIMES/MONTH	10/30	TEN/MONTH
05/90	FIVE/QRTLY	10/99	SEE PERMIT
05/99	SEE PERMIT	12/01	TWELVE/DAY
06/SH	SIX/OPRSHIFT	12/30	12 PER MONTH
06/01	SIX/DAY	15/30	FIFTEEN/MONTH
6/07	SIX/WEEK	16/01	SIXTEEN/DAY
06/30	6 TIMES/MONTH	16/30	SIXTEEN/MONTH
06/99	SEE PERMIT	18/01	EIGHTEEN/DAY
07/30	7 TIMES/MONTH	18/30	EIGHTEEN/MONTH
07/99	SEE PERMIT	24/01	HOURLY
08/BA	EIGHT/BATCH	48/01	EVERY ½ HR
08/01	EIGHT/DAY	66/66	WPC PLAN
08/30	EIGHT/MONTH	77/77	CONTIN-GENT
08/99	SEE PERMIT	88/88	CLEANING
09/01	NINE/DAY	99/99	CONTINUOUS
09/30	NINE/MONTH		

**TABLE 3****SAMPLE TYPE ABBREVIATIONS**

<b><u>SAMPLE</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>SAMPLE</u></b>	<b><u>DESCRIPTION</u></b>
CA	CALCTD	RF	RCDFLO
CN	CONTIN	RG	RANG-C
CP	COMPOS	RP	REPRES
CR	CK REQ	RT	RCOTOT
CS	CORSAM	R4	RNG-4A
CT	CERTIF	SR	SGLRDG
CU	CURVE	SS	STAT-SH
DA	DAILAV	ST	STATIC
DS	DISCRT	TI	TIMEMT
ES	ESTIMA	TM	TOTALZ
FI	FLOIND	VI	VISUAL
GH	5GR24H	01	COMP-1
GM	GRAB10	02	COMP-2
GR	GRAB	03	COMP-3
G2	GRAB-2	04	COMP-4
G3	GRAB-3	05	COMP-5
G4	GRAB-4	06	COMP-6
G5	GRAB-5	08	COMP-8
G6	GRAB-6	1H	AVG-1H
G7	GRAB-7	10	COMP10
G8	GRAB-8	12	COMP12
G9	GRAB-9	16	COMP16
IM	IMERSN	2H	AVG-2H
IN	INSTAN	20	COMP20
IS	INSITU	22	BATCH
IT	IMRSTB	24	COMP24
MC	MATHCL	28	COMP28
MP	MATHCP	3G	3GR/HR
MS	MEASRD	4C	4DA24C
MT	METER	4H	AVG-4H
NA	NOT AP	5G	5GR45M
NR	NOTRPT	72	COMP72
OC	OCCURS	96	COMP96
PC	PMPCR V	SB	SEQBAR
PL	PMPLOG		
RC	RCORDR		
RD	RNG-DA		

#### APPENDIX

The following forms are attached to the appendix:

- A. Instructions from the back of the DMR Form.
- B. Signatory Delegation Form with instructions.
- C. Blank NCR Form.
- D. Sanitary Sewer Overflow Report Form.

# DMR Instructions

## PAPER WORK REDUCTION ACT NOTICE

Public reporting burden for this collection of information is estimated to vary from a range of 10 hours as an average per response for some minor facilities, to 110 hours as an average per response for some major facilities, with a weighted average for major and minor facilities of 18 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

( from back of DMR)

## GENERAL INSTRUCTIONS

1. If form has been partially completed by preprinting, disregard instructions directed at entry of that information already pre-printed.
2. Enter "Permittee Name/Mailing Address (and facility name/ location, if different)," "Permit Number," and "Discharge" where indicated. (A separate form is required for each discharge.)
3. Enter dates beginning and ending "Monitoring Period" covered form where indicated.
4. Enter each "Parameter" as specified in monitoring requirements of permit.
5. Enter "Sample Measurement" data for each parameter under "Quantity" and "Quality" in units specified in permit. "Average" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during "Monitoring Period"; "Maximum" and "Minimum" are normally extreme high and low measurements obtained during "Monitoring Period". (Note to municipals and secondary treatment requirement: Enter 30-day average of sample measurements under "Average", and enter maximum 7-day average of sample measurements obtained during monitoring period under "Maximum.")
6. Enter "Permit Requirement" for each parameter under "Quantity" and "Quality" as specified in permit.
7. Under "No Ex" enter number of sample measurements during monitoring period that exceeded maximum (and/or minimum or 7-day average as appropriate) permit requirement for each parameter. If none, enter "0".
8. Enter "Frequency of Analysis" both as "Sample Measurement" (actual frequency of sampling and analysis used during monitoring period) and as "Permit Requirement" specified in permit.

(e.g. Enter "Cont," for continuous monitoring, "1/7" for one day per week, "1/30" for one day per month, "1/90" for one day per quarter, etc.)

9. Enter "Sample Type" both as "Sample Measurement" (actual sample type used during monitoring period) and as "Permit Requirement", (e.g. Enter "Grab" for individual sample, "24HC" for 24-hour composite, "CONT" for continuous monitoring, etc.)
10. Where violations of permit requirements are reported, attach a brief explanation to describe cause and corrective actions taken, and reference each violation by date.
11. If "No Discharge" occurs during monitoring period, check the box for "No Discharge".
12. Enter "Name/Title of Principal Executive Officer" with "Signature of Principal Executive Officer or Authorized Agent", "Telephone Number", and "Date" at bottom of form.
13. Mail signed Report to Office(s) by date(s) specified in permit. Retain copy for your records.
14. More detailed instructions for use of this Discharge Monitoring Report (DMR) form may be obtained from Office(s) specified in permit.

REQUEST FOR CHANGE OF AUTHORIZATION  
(CERTIFICATION AND SIGNATORY REQUIREMENTS)

NPDES Permit Number: \_\_\_\_\_ Facility Name: \_\_\_\_\_

Type of Change: \_\_\_\_\_ New Cognizant Official (or duly authorized representative) ( sections 1 and 2)  
(check one) \_\_\_\_\_ New Ranking Official (complete section 2 only)  
\_\_\_\_\_ Both (sections 1 and 2)

1. **NEW COGNIZANT OFFICIAL** (or duly authorized representative) (See 122.22(b); the individual, authorized by the ranking official in writing, as **having responsibility for the overall operation** of the regulated facility or activity responsibility, or having overall responsibility for environmental matters for the company.)

The ranking official hereby designates the following **individual** as the cognizant official, (duly authorized representative), for signing the permit required reports, etc., including Discharge Monitoring Reports (DMR) required by the permit, and other information requested by the Director:

\_\_\_\_\_  
*Signature of the Cognizant Official (Duly Authorized Representative)*

\_\_\_\_\_  
*Name (first name, mi, last name) Typed or Printed*

\_\_\_\_\_  
*Mailing Address*

\_\_\_\_\_  
*City, State and ZIP*

\_\_\_\_\_  
*Title*

( )  
*A/C*

\_\_\_\_\_  
*Phone*

\_\_\_\_\_  
*FAX*

By signature below, the ranking official certifies that the above named **individual** is qualified to act as the duly authorized representative under the provisions of 40 CFR 122.22(b).

2. **RANKING OFFICIAL** (**Note:** *The ranking official is the person authorized to sign the permit application i/a/w 40CFR 122.22(a)*. For a *Corporation*: it is the responsible corporate officer. *Partnership or sole proprietorship*: the general partner or proprietor. *Municipality, State, Federal or other public agency*: the principal executive officer or ranking elected official.)

\_\_\_\_\_  
*Signature of the Ranking Official*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Name (first name, mi, last) Typed or Printed*

\_\_\_\_\_  
*Mailing Address*

\_\_\_\_\_  
*City, State and ZIP*

\_\_\_\_\_  
*Title*

( )  
*A/C*

\_\_\_\_\_  
*Phone*

\_\_\_\_\_  
*FAX*

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

Will Ranking Official also be the person signing submittals? (Check one) \_\_\_ YES \_\_\_ NO



### SAMPLE NON-COMPLIANCE REPORT

Permit Number: \_\_\_\_\_

Facility Name: \_\_\_\_\_

Month/Year: \_\_\_\_\_

Authorized Signature/Date: \_\_\_\_\_

Type of Violation (Avg/Max., Bypass Overflow, Etc.)	Permit Limit	Date of Violation	Duration of Viol.	Cause of Violation	Corrective Action or Other Narrative
<p>I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C 1001 AND 33 U.S.C. 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)</p>					

# Sanitary Sewer Overflow Monthly Report

Facility Name: \_\_\_\_\_ Permit Number: \_\_\_\_\_ Reporting Period(Month/Year): \_\_\_\_\_

No Sanitary Sewer Overflows This Monitoring Period

### Summary Report Code Descriptions

Cause(s) of SSO		SSO Impact	Action(s) Taken	Ultimate Discharge Location
CO-Construction	D-Debris	NEAH-No Evidence of Adverse Health or Environmental Impact	WO-Work Order	CR-Creek/Stream/River (please specify)
E-Equipment Failure	G-Grease	OEHC-Observed or Evidence of Human Contact	EC-Environmental Cleanup	DI-Ditch
HC-Hydro Clean	LF-Line Failure/Break	EFK-Evidence of Fish Kill	HC-Hydro Cleaned	DR-Drop Inlet
R-Rainfall	RG-Roots & Grease		HR-Hand Rodded	GR-Ground Surface
RO-Roots	V-Vandalism		EN-Referred to Engineering	PA-Paved Area
			PN-Public Notification	CB-Contained in Building

Location	Manhole #	Start Date of SSO	End Date of SSO	Estimated Volume (in gallons)	Cause of SSO	Environmental Impact	Action (s) Taken to Address SSO	Ultimate Discharge Location

---

Signature of Cognizant or Ranking Official \_\_\_\_\_ Date \_\_\_\_\_

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.