

DRAFT

QUALITY ASSURANCE PROJECT PLAN

CHESAPEAKE BAY POINT-SOURCE DATA COLLECTION

Prepared for:

United States Environmental Protection Agency
Chesapeake Bay Program Office
410 Severn Avenue – Suite 112
Annapolis, MD 21403

Contract/WA/Grant No./Project Identifier: CB-97393901

Prepared by:

West Virginia Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

April 22, 2016

SECTION A – PROJECT MANAGEMENT

A.1 Title of Plan and Approval

Quality Assurance Project Plan Chesapeake Bay Point- Source Data Collection

**Prepared by:
WVDEP**

Jennifer Pauer, WVDEP - DWWM Project Manager

Date: _____

Scott Mandirola, Director, WVDEP – DWWM

Date: _____

Lucinda Power, US EPA CB Project Manager

Date: _____

Rich Batiuk, US EPA CBPO QA Officer

Date: _____

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Attachment 2: Chesapeake Bay Program Wastewater Facility and Nonpoint Source Data Submission Specifications and Requirements

Attachment 3: West Virginia Plan for Verification and Validation of Nutrient Reduction Strategies

Attachment 4: WVDEP Reporting Reference Manual

Attachment 5: WVDEP Water Compliance Inspection Report

A.3 Distribution List

This document and all supporting materials will be submitted to the following individuals.
Distribution format will be electronic copies.

Lucinda Power, US EPA Project Manager
Chesapeake Bay Program Office
power.lucinda@epa.gov

Ning Zhou, Point Source Data Manager
Chesapeake Bay Program Office
zhou.ning@epa.gov

Jennifer Pauer, Watershed Basin Coordinator
WVDEP
jennifer.paeur@wv.gov

Terrie Sangid, Assistant Director – DWWM
WVDEP
terrie.l.sangid@wv.gov

A.4 Project/Task Organization

Table A.1 Roles & Responsibilities

Individual(s) Assigned	Responsible for:	Authorized to:
Program Support – Environmental Resources Specialist	<ul style="list-style-type: none"> Compiles statewide DMR data for significant facilities into Excel report format QA of the DMR data, calculates nitrogen speciation based on CB guidance Updates facility information Ensures appropriate defaults for non-significant facilities Obtains CSO information and adds to report Submission of final report Reviews DMR QA work of team members 	<ul style="list-style-type: none"> Submit final point-source data report
Watershed Assessment Branch – Technical Analyst	<ul style="list-style-type: none"> QA report before final submission, including a review of significant DMR data, non-significant defaults, and CSO data Provides updated facility information 	<ul style="list-style-type: none"> Submit final point-source data report, if needed
Program Support – MicroComputer System Support Specialist	<ul style="list-style-type: none"> Assists with QA of DMR data and facility research Contacts facilities to obtain additional/corrected DMRs 	<ul style="list-style-type: none"> Submit final point-source data report, if needed
DWWM EE Inspectors	<ul style="list-style-type: none"> Inspects facilities to ensure correct sampling and reporting Initiates Enforcement Actions to obtain compliance, if necessary 	<ul style="list-style-type: none"> Issue Enforcement Actions
US EPA – Chesapeake Bay Program Office	<ul style="list-style-type: none"> Reviews final report and works with WVDEP staff to resolve any issues 	<ul style="list-style-type: none"> Approve final submission

Figure 1: Program Support Organization Chart

Program Support Group

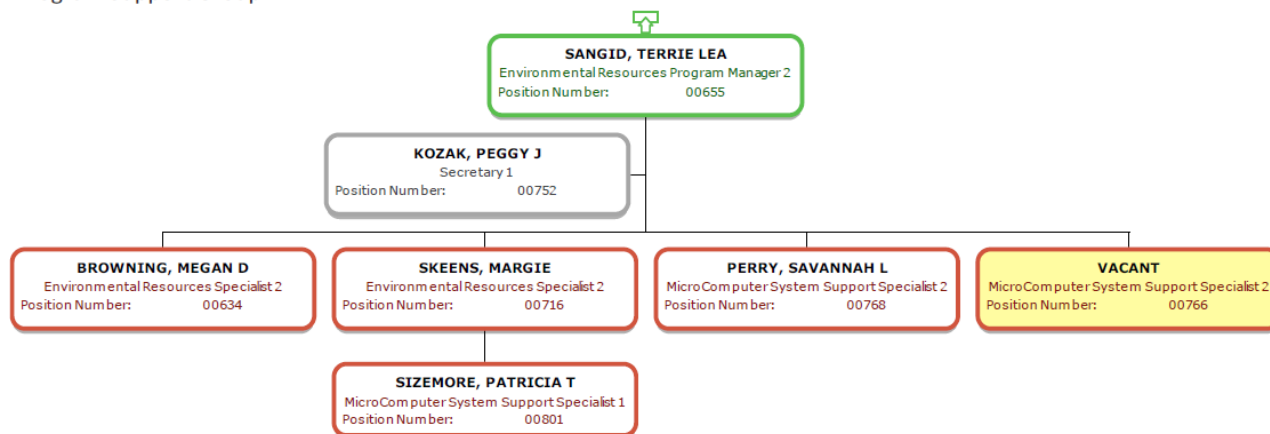


Figure 2: Watershed Assessment Branch Organization Chart

Watershed Assessment Branch/Total Maximum Daily Load Section

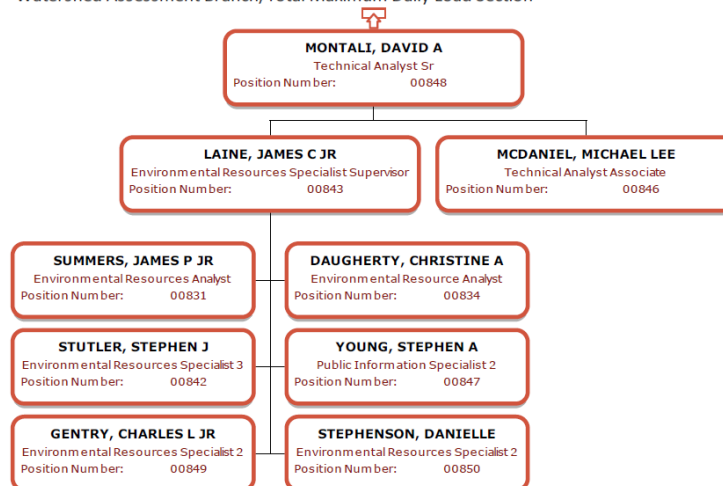
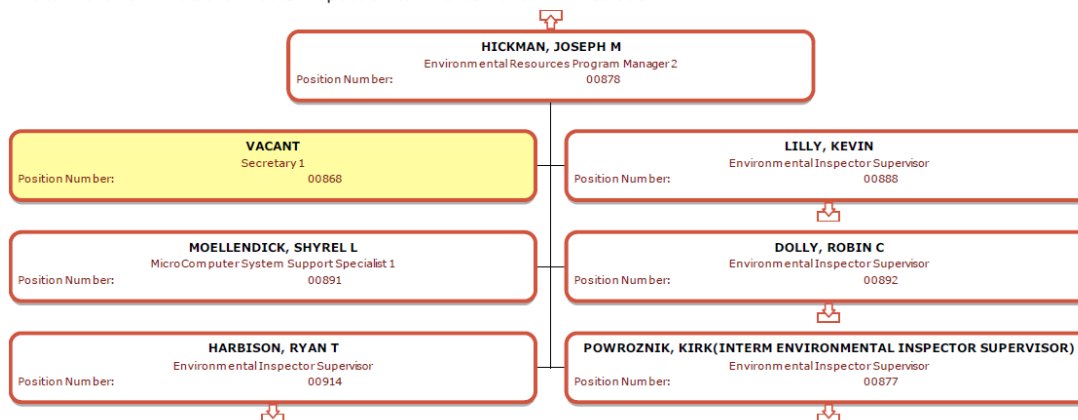


Figure 3: Water Pollution Environmental Enforcement Organization Chart - Supervisors

Water Pollution And Solid Waste Inspection & Enforcement Administration



A.5 Problem Definition/Background

West Virginia's point-source data collection focuses on collecting data from permitted industrial and municipal facilities along the Chesapeake Bay watershed. The data is collected through each facility's submission of Discharge Monitoring Reports as required by their permit. Discharge Monitoring Reports (DMRs) are reports that provide analytical results of chemicals and nutrients being discharged by NPDES permitted facilities (point sources) into the waterways of West Virginia. The data undergoes rigorous quality assurance checks before being uploaded into WVDEP's Environmental Resources Information System (ERIS) and uploaded into US EPA's Integrated Compliance Information System (ICIS).

Additionally, Combined Sewer Overflows (CSOs) are present in the collection systems of four West Virginia Publicly Owned Treatment Works in the Potomac Basin and represented in the Chesapeake Bay Watershed Model. The Chesapeake Bay TMDL provides individual CSO wasteload allocations based upon 85% reduction of the loads represented in the Phase 5.3.2 model 2010NoAction scenario. Because of the episodic nature of overflows and lack of flow monitoring capability, measurement of actual CSO loadings is not practical. Under national and state CSO control policies, facilities are implementing long-term plans to ensure that CSOs do not cause or contribute to any violation of water quality standards. Interim goals of 85% CSO reduction and/or controls that result in less than six overflows per year are being pursued.

Annually, the data is compiled into a report to be used by the US EPA's Chesapeake Bay Program Office in Chesapeake Bay Watershed Model to assess reductions in nitrogen, phosphorous and sediment loadings to Chesapeake Bay and its tidal tributaries. Since the nature of this project relies on data collected and reported from outside sources, there are unique challenges to ensuring complete and accurate data. A quality assurance project plan to address the procedure for obtaining thorough, correct data was needed to ensure consistency from year to year.

A.6 Project/Task Description

Discharge samples are collected and analyzed by the permitted facilities or authorized contracted laboratories which are certified pursuant to 47 CSR 32, Environmental Laboratories Certification and Standard of Performance. The results are reported on Discharge Monitoring Reports to WVDEP utilizing the procedures outlined in WVDEP's Electronic Discharge Monitoring Reporting (eDMR) User's Guide (see Attachment 1).

The data is then compiled for the annual point-source data report in accordance with the Chesapeake Bay Program Wastewater Facility and Nonpoint Source Data Submission Specifications and Requirements (Attachment 2) guidelines. This includes various nitrogen and phosphorous species, as well as total suspended solids and dissolved oxygen. The data collected for this project is from significant facilities with a design flow of 0.4 mgd or greater in the Chesapeake Bay watershed, and each annual report covers discharges occurring between the previous July through June period. The data from the DMRs is verified by WVDEP Program Support staff who contacts the facility if necessary to correct erroneous data.

The draft report is also reviewed by a WVDEP Watershed Assessment Branch staff member who also helps provide default values for non-significant facilities in the watershed using procedures outlined in section 6B of the WV Watershed Implementation Plan (WIP). No wasteload allocations are provided for new or expanded discharges from sewage treatment facilities of any

size. All such discharges must offset 100% of new loadings and WV/NPDES permits must include enforceable provisions to implement offsets. Nonsignificant municipal facilities may secure offsets by improved treatment of existing discharges and/or by assimilation of existing onsite systems and other existing wastewater treatment systems for which wasteload allocations have been provided. New or expanded municipal discharges of any size will require regulation under an individual WV/NPDES permit to implement offset provisions. Data tracking and verification protocols for expanded nonsignificant facilities will be identical to those described for existing significant facilities i.e. expanded non-significant facilities will be required to self-monitor nutrient concentrations and measure flow and report on Discharge Monitoring Reports.

When all quality checks are complete, the data is formatted and submitted to US EPA's Chesapeake Bay Program Office by the deadline specified in the Chesapeake Bay Regulatory and Accountability Grant (typically November 30th). Refer to the West Virginia Plan for Verification and Validation of Nutrient Reduction Strategies (Attachment 3) for more information.

A.7 Quality Objectives & Criteria

1) Accuracy Objectives (Qualitative)

- a. Compare expected numbers vs. actual counts using prior years' numbers
- b. Ensure there is no double counting of discharge data (ex. internal outlets or facility counted as a significant & non-significant)
- c. Ensure facility online/offline statuses are updated on the report

2) Completeness Objectives

- a. Ensure all DMRs for the annual reporting period are sent to WVDEP by July 20th
- b. Ensure all CSO reports for the annual reporting period are sent to WVDEP by July 20th
- c. Contact facility to obtain missing DMR data and have it sent in no later than September 30th

A.8 Special Training/Certification

n/a

A.9 Documents and Records

This QAPP is saved in a shared network folder and accessible by all WVDEP staff that work on the annual point-source progress report. It is updated as programmatic requirements or process changes occur.

The annual progress report is also saved on a shared network folder available to WVDEP Program Support staff since they are responsible for its creation and completion. The data is exported from ERIS into an Excel worksheet which is saved in the folder. The data is then imported into an Access database and is queried and cross-tabbed, then only the relevant information is exported to a new Excel worksheet. The worksheet format is what is ultimately submitted to the Chesapeake Bay Program Office and it automatically makes a backup of each version as it is modified, with a date included in the file name to easily keep track.

All of the versions for a report year are kept in a folder with the year number. The yearly folders are kept in one overall Chesapeake Bay Point Source folder, along with reference information including the Chesapeake Bay Program Wastewater Facility and Nonpoint Source Data Submission Specifications and Requirements (Attachment 2). The data will be kept indefinitely.

SECTION B – DATA GENERATION & ACQUISITION

B.1 Sampling Process Design (Experimental Design)

n/a

B.2 Sampling Methods

n/a

B.3 Sampling Handling & Custody

n/a

B.4 Analytical Methods

n/a

B.5 Quality Control

n/a

B.6 Instrument/Equipment Testing, Inspection, and Maintenance

n/a

B.7 Instrument/Equipment Calibration and Frequency

n/a

B.8 Inspection/Acceptance of Supplies & Consumables

n/a

B.9 Data Acquisition Requirements for Non-Direct Measurements

Point-source data is obtained through the compilation of electronic DMRs submitted to WVDEP through the Electronic Submission System. The data must undergo electronic validations in order to be deemed acceptable, where it is then scrutinized by WVDEP staff. Limitations of the data include human error by the facility when entering the data that may not be caught during review if it still falls within the expected values. Additionally, sampling errors could occur that result in inaccurate measurements.

B.10 Data Management

DMR data is required to be kept on file by the facility for at least three years following the date of the report. However, WVDEP's Electronic Submission System keeps electronic DMRs in the system indefinitely that can be retrieved anytime for verification purposes.

The ERIS database is used to house the DMR data at the state level, and Microsoft Access and Excel are required to select the appropriate data and create the report in its final format to be used by US EPA as outlined in the Chesapeake Bay Program Wastewater Facility and Nonpoint Source Data Submission Specifications and Requirements (Attachment 2).

SECTION C – ASSESSMENT AND OVERSIGHT

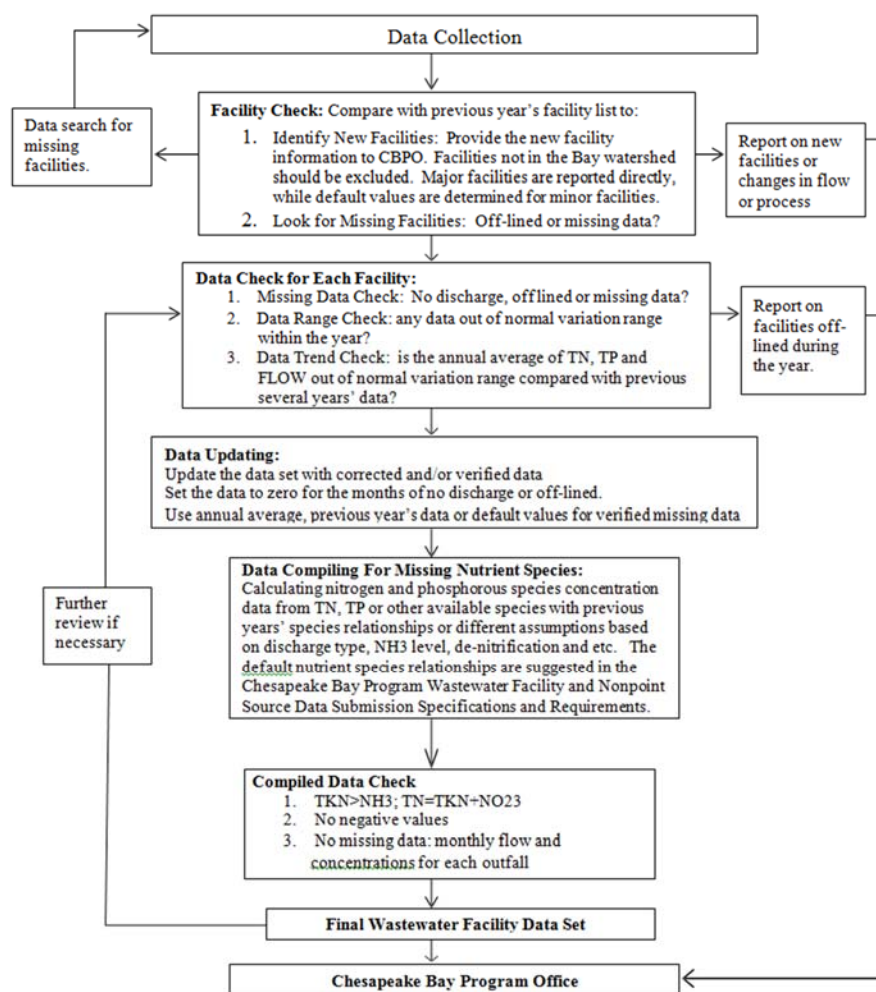
C.1 Assessments and Response Actions

1. Perform routine surveillance of DMR data completeness through monthly Entry Rate reports to ensure data is obtained and downloaded in a timely manner. A success is considered a 95% or greater Entry Rate in the month following the DMR due date, with missing DMRs obtained afterwards through facility contact. Serious cases will be referred to enforcement staff to take appropriate enforcement actions to obtain compliance, if necessary.
2. Perform annual review of submitted CSO data to ensure completeness, with missing reports obtained afterwards through facility contact. Serious cases will be referred to enforcement staff to take appropriate enforcement actions to obtain compliance, if necessary.
3. WVDEP participates in Chesapeake Bay meetings and conferences to discuss data collection efforts as they occur. Any data issues that arise are discussed until a solution is determined. If programmatic changes occur that impact data collection or verification, WVDEP will adjust data management and analysis methods as appropriate to meet Chesapeake Bay Program Office requirements. This QAPP will be revised to reflect any changes that occur.
4. WVDEP Program Support staff creates a draft annual report in August and analyzes and evaluates data for accuracy and completeness as outlined by the Chesapeake Bay Phase 5 Community Watershed Model, the WVDEP Reporting Reference Manual (see Attachment 4), and in the Chesapeake Bay Program Wastewater Facility and Nonpoint Source Data Submission Specifications and Requirements (Attachment 2). First, the data is reviewed to determine if there is missing information from their DMRs. If so, the facility is contacted in order to obtain the information. If no analytical data is available for Nitrogen and Phosphorous derivatives, values are calculated using formulas specified in the guidance documents or by

averaging the values reported in other months. The data is scrutinized by multiple staff members to ensure nothing is missed, and is considered a success if all fields have been verified and have a value for the model. The data is then scrutinized to look for anomalies by comparing each reported value for the month to each other. Next, DEP staff calculates annual pounds from the monthly concentrations and compares the value to past years' values to observe any trends and ensure the value is within reason. Significant facilities are required to report annual loadings for Nitrogen and Phosphorous each year. Although WV/NPDES permit reporting time frames are not generally consistent with CBP Progress periods, Reported annual loads are used for comparison purposes as another form of data verification. For new facilities, additional information has to be reported including latitude and longitude and the date the facility began discharging. Once submitted, US EPA staff will notify WVDEP if data needs adjusted, and WVDEP will submit a corrected report if required.

5. WVDEP Laboratory Certification staff performs assessments of laboratories that collect and/or test water samples reported on DMRs. This is done through Technical Systems Audits that assess sampling and analytical quality control procedures, and can include onsite evaluations, equipment calibration, personnel qualification reviews, recordkeeping reviews, data validations and management reviews, and reviews of field and laboratory activity reports. See the WVDEP Quality Management Plan for additional information.

Figure 4: Wastewater Facility Nutrient Data Processing Diagram



C.2 Reports to Management

No standardized reports are sent to management during the process, but management often checks on the status of the project informally and problems are addressed or followed up on as needed.

SECTION D – DATA VALIDATION AND USABILITY

D.1 Data Review, Verification, and Validation

DMR data can be rejected in ESS, ERIS or ICIS if it does not pass automated validations put in place to ensure accurate and complete data. Data is then reviewed by DEP staff members following instructions outlined in the Chesapeake Bay Program Wastewater Facility and Nonpoint Source Data Submission Specifications and Requirements (Attachment 2) including ways to calculate data not required by the DMRs. WVDEP looks for outlying values by comparing monthly data values, as well as compares the annual loads of nitrogen and phosphorous to the loads of previous years to ensure the variations are within reason. Any suspicious values are identified and the facility is contacted in order to verify, obtaining laboratory reports when possible.

D.2 Verification and Validation Methods

One of the primary mechanisms for verifying compliance is the self-monitoring requirements included in the NPDES permits issued to significant facilities. Permits require regular and frequent submission of effluent analytical data to WVDEP to verify compliance with effluent limitations via monthly Discharge Monitoring Reports (DMRs). Permits also contain procedures for facilities to calculate monthly loads by averaging nutrient results and coupling those with measured total monthly flow. Generally, 1/week nitrogen and phosphorus composite sampling and continuous flow measurement are required. These self-reported data are maintained in a database by WVDEP staff and are the intended basis for annual progress reporting. The eDMR system has numerous data validations built directly into the interface that prevent facilities from submitting certain types of erroneous data, such as detecting improper units or reporting frequencies. Facilities cannot submit their eDMR until the errors have been addressed, thus all data received should have a very high standard of completeness and accuracy prior to review by WVDEP Program Support staff.

Trained WVDEP Division of Water and Waste staff performs regular assessments of the data received from the facilities. During these reviews WVDEP staff looks for and attempts to rectify any anomalies in the data (ex. incorrect reporting units, incorrect load calculations, etc.). Prior to submitting the annual point-source progress report, WVDEP staff performs a QA/QC review in accordance with the recommended methods described in the Chesapeake Bay Program Wastewater Facility and Nonpoint Source Data Submission Specifications and Requirements guidance document (Attachment 2), and will contact facility to rectify any issues.

Another quality assurance measure performed by WVDEP staff occurs when data is translated from the state database (ERIS) to US EPA's Integrated Compliance Information System (ICIS) in batch, using the Central Data Exchange. Batch Transaction Summary Reports from ICIS are ran and checked by Program Support staff members to rectify any errors that occurred during translation. Additionally, Program Support staff completes the ICIS Quarterly Non-Compliance Reports (QNCRs). The QNCRs show DMR data that violates the permit limits and conditions as

well as any facilities that failed to submit a scheduled eDMR during the quarter. Staff assesses the validity of the violations by comparing the DMR data provided by the facility against the data in ICIS and the requirements of their permit, and contacts the facility to obtain corrected reports as needed.

Discharge Monitoring Report data is not tracked or reported for non-significant facilities. The self-monitoring required of non-significant facilities often includes infrequent instantaneous measurements without flow measurement and is insufficient to characterize annual loads. Because pollutant reductions are not expected from the non-significant facilities that existed when the TMDL was developed, verification is not directly applicable. In the TMDL, aggregate wasteload allocations were prescribed at the county level and were calculated by summing individual facility loads derived from default concentrations and design flow. West Virginia's inventory of nonsignificant facilities is well documented and includes even the smallest permitted facilities such as home aeration units. West Virginia's focus lies in tracking the universe of active non-significant dischargers and annually reporting loads from active facilities that are derived from the same default concentrations and design flows used to develop the wasteload allocations.

For CSO data, the West Virginia Watershed Implementation Plan (WIP) prescribes a simple approach to tracking and reporting progress with CSO wasteload allocations that recognizes CSO control policy protocols as well as the impracticalities of CSO load monitoring. Reporting is based upon an assumption that control achieving six or less overflow events per year is commensurate with an 85% reduction of CSO load. Facilities that report six or less overflows per year are reported at the facility's wasteload allocation, zero loads are reported if a facility reports zero overflows, and 2010NoAction loads are reported if more than six overflows are reported. West Virginia tracks CSO events reported in the quarterly and annual reports required by NPDES permits. Reporting is aligned with CBP progress reporting periods and adheres to the protocol prescribed in the WIP.

In addition to the self-monitoring and reporting mechanisms, WVDEP independently assesses/compels compliance with permits through inspections and the use of enforcement actions in response to noncompliance. The number, type, and frequency of inspections performed conform to the guidance provided by the USEPA's Compliance Monitoring Strategy (CMS). For Major facilities covered in this point-source data report, the inspection frequency is at least one comprehensive inspection every two years, or once every three years if using the Inspection Targeting Model and the facility is in compliance. Systematic escalation of enforcement is pursued to resolve noncompliant facilities in the shortest time possible. Each inspection covers numerous topics that directly impact the quality of DMR data received by WVDEP including permit reporting requirements (including DMRs), flow measurements, laboratory certification, and sampling practices (see Attachment 5).

For CSOs and traditional municipal and industrial wastewater treatment works, many controls have already been put in place. For future constructions, the Clean Water State Revolving Fund ensures proper design and installation of new and upgraded systems as required by state auditing procedures in accordance with 40 CFR 35.31. See the table below for a schedule of completed and planned treatment upgrades for significant facilities. For CSOs, a Long Term Control Plan is developed as a requirement of their NPDES permit that ensures post-construction self-monitoring. Inspections are completed by the WVDEP Environmental Enforcement branch as described above.

Table 1. Significant Facility Upgrade Status (updated 4/20/2016)

Significant Facilities Upgrade Status			
WV/NPDES	Permittee	Upgrade "Substantially Complete" Status/Schedule Date	Comment
Permit No.			
WV0106038	MOOREFIELD-HARDY COUNTY WASTEWATER AUTHORITY	complete	consolidates and treats previous Town of Moorefield WV0020150 and two significant industrial facilities
WV0020699	ROMNEY	complete	
WV0021792	PETERSBURG	10/31/17	compliant in 2015 progress, upgrade planned for future growth
WV0022349	CHARLES TOWN	complete	
WV0023167	MARTINSBURG	3/31/16	
WV0024392	KEYSER	10/31/16	
WV0024775	SHEPHERDSTOWN	complete	
WV0027707	WARM SPRINGS PSD - BS	compliant in 2015 progress	no near term upgrade planned
WV0105988	FRANKFORT PSD	complete	previously Fort Ashby WV0041521
WV0082759	BCPSSD - O/H	6/15/16	
WV0082759	BCPSSD - Inwood	5/17/16	
WV0082759	BCPSSD - Baker Heights	6/11/16	
WV0082759	BCPSSD - North End	7/17/16	
WV0005495	PILGRIM'S PRIDE CORPORATION	complete	Included in Moorefield-Hardy County Wastewater Authority
WV0047236	PILGRIM'S PRIDE CORPORATION	complete	Included in Moorefield-Hardy County Wastewater Authority
WV0005649	USDOI - Leetown	compliant in 2015 progress	no near term upgrade planned
WV0111821	WVDNR - Reeds Creek	compliant in 2015 progress	no near term upgrade planned
WV0112500	WVDNR- Spring Run	compliant in 2015 progress	no near term upgrade planned
WV0116149	CONSERVATION FUND	compliant in 2015 progress	no near term upgrade planned

With respect to on-site systems, BMP tracking for non-point sources is covered under the WV QAPP for BMP Collection.

Table 2. Wastewater sector verification strategy from the West Virginia Plan for Verification and Validation of Nutrient Reduction Strategies

Program Component	Program Elements	Wastewater treatment plant data verification
i. BMP Verification	1. What was the driver for BMP installation?	Permit
	2. How many BMPs will be inspected?	For all significant facilities, DMR self-monitoring submissions are reviewed and field inspections are performed
	3. How is inspection frequency and location determined?	DMRs and CSO reports are reviewed upon receipt and comprehensively at annual progress submission intervals; Inspection frequency in accordance with USEPA Compliance Monitoring Strategy
	4. How often are BMPs/groups of BMPs inspected?	Inspection frequency in accordance with USEPA Compliance Monitoring Strategy
	5. What is the method of inspection?	DMR review, database review and field inspections
	6. Who will conduct the inspection and is he/she certified/trained?	WVDEP trained permit and enforcement staff
	7. What needs to be recorded for each inspection?	See attached inspection form (Attachment 5)
	8. Is execution of the inspection process documented in and checked against an updated quality assurance (QA) plan?	Yes.
	9. How is collected data recorded?	DMR data is submitted through an online form and maintained in a database. Online form guidance is included in Attachment 1. Permittees currently submit hard copy CSO reports.
	10. At what resolution are results reported to EPA and/or the public?	Site-level
ii. BMP Validation	11. What is the QA/QC process to prevent double-counting or counting of BMPs no longer in place?	Only active facilities are reported; permit database allows activity tracking
	12. What is the method used to validate state's ability to collect and report correct data?	Annual review of data collected for all facilities.
	13. If data is provided by external independent party or industry, what method is used to provide adequate QA for acceptance by the Chesapeake Bay Program?	All DMR data is submitted by the permittee under a statement certifying that the data is true and accurate. Analytical laboratories must also be certified to perform permit self-monitoring analyses
	14. Who conducts data validation?	WVDEP
iii. BMP Performance	15. What is the process to collect data to assess BMP performance and confirm consistency with the Chesapeake Bay Program's approved BMP efficiencies?	Effluent limitations, self-monitoring and reporting under NPDES permit requirements that are consistent with the TMDL wasteload allocations.
	16. Who collects BMP effectiveness data?	WVDEP

D.3 Reconciliation with User Requirements

The final report should always be submitted in such a way to be completely in line with User Requirements since it is formatted, compiled, analyzed and calculated as outlined by the Chesapeake Bay Program Wastewater Facility and Nonpoint Source Data Submission Specifications and Requirements (Attachment 2).

Electronic Discharge Monitoring Reporting (eDMR)

User's Guide

Revised March 22, 2013

Contents

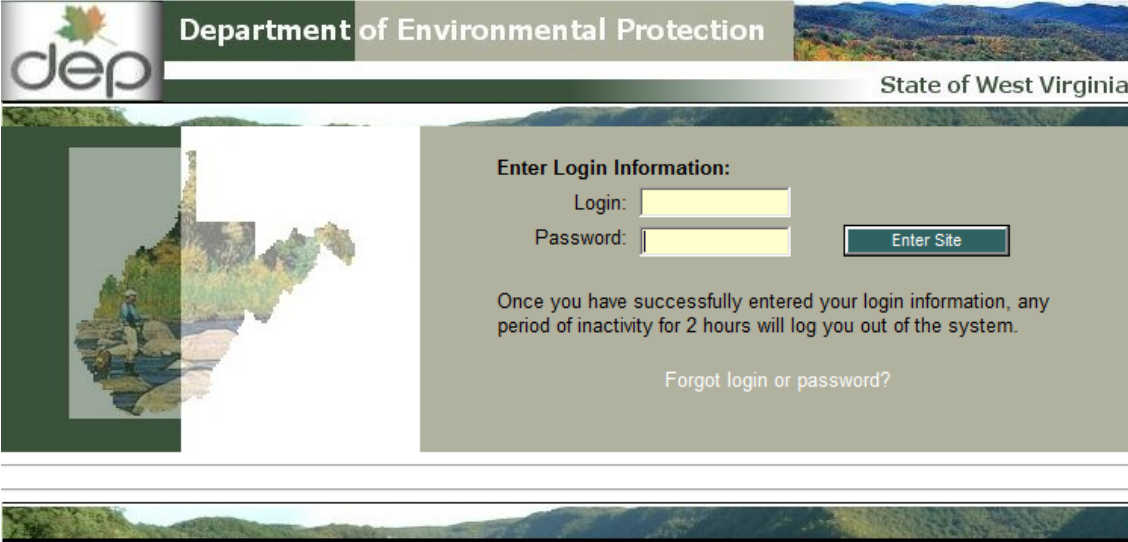
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Logging into the System

Website address for electronic discharge monitoring reporting (eDMR):

<https://apps.dep.wv.gov/eplogin.cfm>

Before you can log into the system, you need to register for a username and password. If you do not have an account, please refer to the “How to Sign Up for an eDMR/ePermitting Login ID and Password” document. If you have a login for ePermitting, you do not need to request a separate production login for eDMR.



The screenshot shows the login interface for the Department of Environmental Protection (dep) of the State of West Virginia. The header includes the 'dep' logo and the text 'Department of Environmental Protection' and 'State of West Virginia'. The main content area features a map of West Virginia on the left and a login form on the right. The login form is titled 'Enter Login Information:' and contains two input fields: 'Login:' and 'Password:'. A green 'Enter Site' button is positioned to the right of the password field. Below the input fields, a message states: 'Once you have successfully entered your login information, any period of inactivity for 2 hours will log you out of the system.' A link for 'Forgot login or password?' is located at the bottom of the login form. The footer of the page shows a scenic landscape image.

NOTE: Once you have successfully entered your login information, any period of inactivity for two hours will log you out of the system.

Creating a New eDMR

After logging in, you will be presented with the **Selection Process** screen. This screen is considered the eDMR **Home** screen and is where you will start to create, continue, or review eDMRs.

Anytime you need to switch to a different eDMR (e.g. a different month for the same facility or an entirely different facility), you can click the **“Return Home”** button at the left to get back to the **Selection Process Home** screen.

west virginia
dep **electronic submission system**
selection process

Welcome MCINTOSH, TINA

Process:

My Account
Return Home
Log Out

You will continue to receive choices as you make each selection.

Once your choice is selected, you will receive another response box to make your next selection.

Once all your selections are made, you will be able to begin your application.

Last 30 days work-in-progress

OWR	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	1001 (09/24/2008)	75% completed
OWR	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	001 (07/30/2008)	0% completed
HPU	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	12 (08/28/2008)	67% completed

"Promoting a healthy environment."
Please use Microsoft Internet Explorer 6.0 or up

Several options are available under the **Process** field:

- **New:** create a new eDMR
- **Continue:** work on a previously created eDMR
- **Review:** bring up a read-only version of a previously submitted eDMR
- **Security:** change your account preferences

You will select the **Office** you intend to create the eDMR for. The common choices will be **Hydrologic Protection Unit (HPU)** or **Water and Waste Management (OWR)**.

west virginia
dep **electronic submission system**
selection process

Welcome MCINTOSH, TINA

Process: New

Office:

Log out

Last 30 days work-in-progress					
OWR	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	1001 (09/24/2008)	75% completed	
OWR	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	001 (07/30/2008)	0% completed	
HPU	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	12 (08/28/2008)	67% completed	

"Promoting a healthy environment."
Please use Microsoft Internet Explorer 6.0 or up

On the **Applicant** field, select the company or facility that you intend to create the eDMR for. You will only see companies or facilities you have access to.

west virginia
dep **electronic submission system**
selection process

Welcome MCINTOSH, TINA

Process: New

Office: Water and Waste Management (OWR)

Applicant:

Log out

Last 30 days work-in-progress					
OWR	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	1001 (09/24/2008)	75% completed	
OWR	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	001 (07/30/2008)	0% completed	
HPU	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	12 (08/28/2008)	67% completed	

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On the **Type** field, select “**Electronic DMR – eDMR.**”

NOTE: You might see other options here if you have the security rights to create a permit (e.g. ePermitting).

west virginia
dep
electronic submission system
selection process

Welcome MCINTOSH, TINA

Process:

Office:

Applicant:

Type:

Last 30 days work-in-progress

OWR	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	1001 (09/24/2008)	75% completed
OWR	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	001 (07/30/2008)	0% completed
HPU	BAYER CROPSCIENCE INSTITUTE SITE	EDMR	12 (08/28/2008)	67% completed

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My Account
Return Home
Log Out

You will continue to receive choices as you make each selection.


Once your choice is selected, you will receive another response box to make your next selection.

Once all your selections are made, you will be able to begin your application.

On the **Reference ID** field, please include your permit number and/or general permit registration number as applicable, sample period and year. Examples: WV0023205 August 2012, WVG550987 3rd Qtr 2012, WVG610897 Semi-Annual August 2012.

This will help you easily bring up and review previously submitted eDMRs when needed.

NOTE: If you have more than one NPDES permit ID number and/or general permit registration number, a separate Reference ID should be created for each.



west virginia

electronic submission system

selection process

[My Account](#)

[Return Home](#)

[Log Out](#)

Welcome LAYTON, MAVIS L

Process: New

Office: Water and Waste Management (OWR)

Applicant: PETERSBURG, CITY OF

Type: Electronic DMR - EDMR (OWR) [Help](#)

Ref. ID: WV0023205 August 2012

Please assure your reference id includes your permit number and/or general permit registration number as applicable, sample period and year (Examples: WV0023205 August 2012, WVG550987 3rd Qtr 2012, WVG610897 Semi-Annual August 2012).

[Create New](#)
[Log out](#)


You will continue to receive choices as you make each selection.

Once your choice is selected, you will receive another response box to make your next selection.

Once all your selections are made, you will be able to begin your application.

Last 60 days work-in-progress						
Office	Applicant	App Type	ID	Application Name (Ref. ID)	Progress	Submitted
OWR	PINE GROVE TOWN OF	NPD-S		wla for Pine Grove (08/30/2012)	0% completed	
OWR	PINE GROVE TOWN OF	NPM	WV0084433	WV0084433 mod test (09/12/2012)	25% completed	
OWR	MYERS SEPTIC TANK SERVICE	NPR-S	WVSG20006	WVSG20006 Reissuance 072312 (07/23/2012)	0% completed	
OWR	BEDDOW, FLOYD	NPR-S	WVSG10019	WVSG10019 Reissuance Testing (02/24/2012)	0% completed	
OWR	PARKS, TERRY	NPR-S	WVSG10053	WVSG10053 (08/12/2010)	0% completed	
OWR	PARKS, TERRY	NPR-S	WVSG10053	BC Testing (08/13/2010)	0% completed	
OWR	MYERS SEPTIC TANK SERVICE	NPR-S	WVSG20006	WVSG20006 Sewage (09/05/2012)	0% completed	
OWR	HUFFMAN, DANNY C	EDMR		WVG55 Huffman's MHP (09/05/2012)	0% completed	
OWR	HUFFMAN, DANNY C	EDMR		WVG551310 Huffman MHP September 2012 (08/02/2012)	Submitted	08/02/2012

Hit the “Create New” button to create the eDMR.



west virginia electronic submission system

selection process

Welcome LAYTON, MAVIS L

[My Account](#)
[Return Home](#)
[Log Out](#)

You will continue to receive choices as you make each selection.

Once your choice is selected, you will receive another response box to make your next selection.

Once all your selections are made, you will be able to begin your application.

Process:


Office:

Applicant:

Type:

Ref. ID:

[Help](#)



[Create New](#)
[Log out](#)

Last 60 days work-in-progress

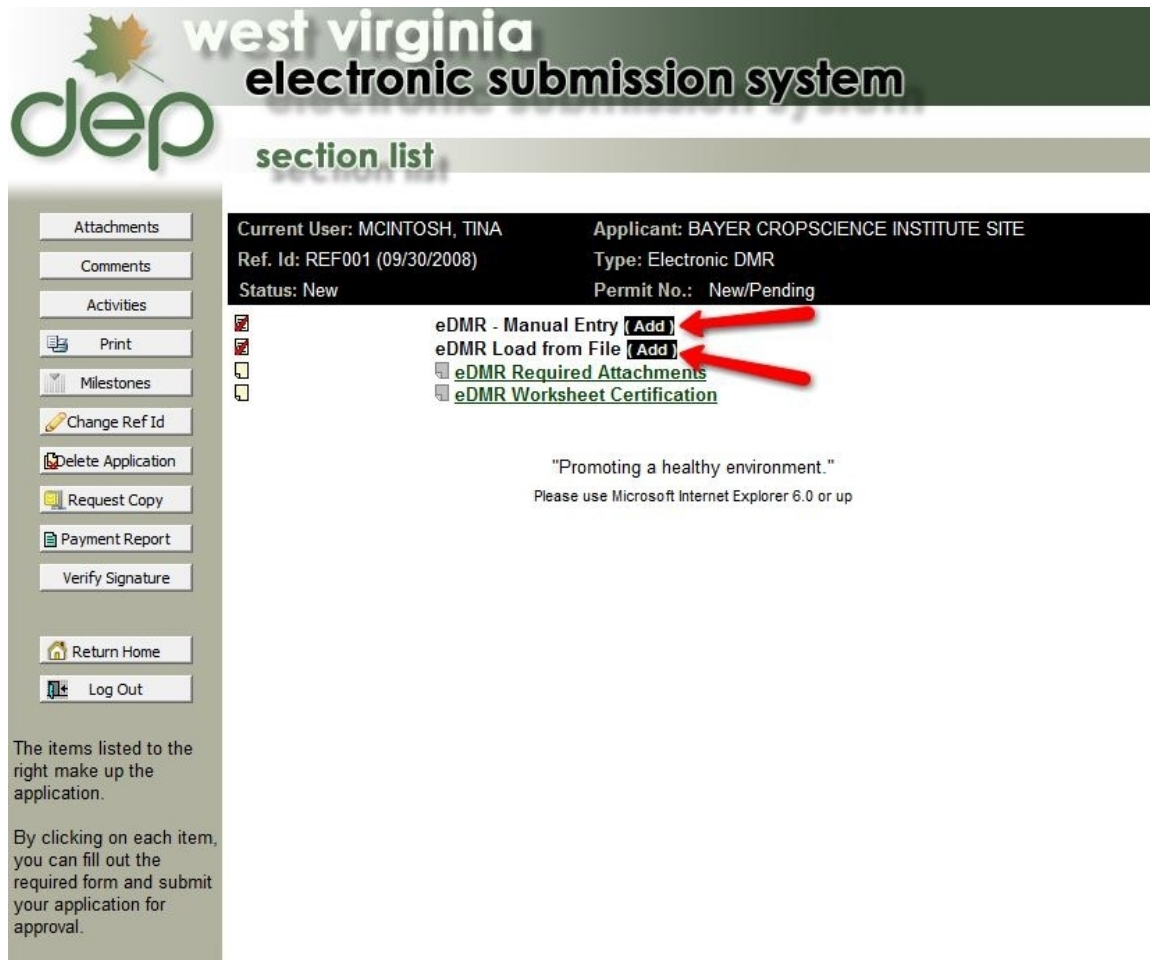
OWR	BERKELEY COUNTY PSSD	NPR-S	WV0082759	WV0082759 Reissuance (05/07/2010)	0% completed
OWR	PETERSBURG, CITY OF	EDMR		petersburg test cel (02/11/2011)	0% completed
OWR	NEWCHEM INC	NPD-I		Vehicle Wash Truck Ent (02/18/2011)	0% completed
OWR	GODFREY, JOHN KEITH	NPD-I		Truck Enterprises (02/18/2011)	0% completed
OWR	PARKERSBURG UTILITY BD	EDMR		Parkersburg Testing 7 Day Avg Stat Base (02/17/2011)	0% completed
OWR	BERKELEY COUNTY PSSD	EDMR		WVG55 (02/17/2011)	100% completed
OWR	BERKELEY COUNTY PSSD	NPR-S	WVG551078	WVG551078 testing online cc payment (02/15/2011)	0% completed
OWR	WV DISTRICT CHURCH OF NAZARENE	EDMR		WVG55 (02/17/2011)	0% completed

Entering DMR Information

Below are two options for submitting an eDMR.

- Manual Entry- to enter DMR information manually
- Load from File – to upload a file that conforms to the DEP DMR file structure, visit <http://www.dep.wv.gov/WWE/permit/npdes/Documents/FileStructure2.pdf>.

NOTE: Choose only ONE method for each eDMR.



west virginia
dep **electronic submission system**

section list

Attachments
Comments
Activities
Print
Milestones
Change Ref Id
Delete Application
Request Copy
Payment Report
Verify Signature
Return Home
Log Out

The items listed to the right make up the application.
By clicking on each item, you can fill out the required form and submit your application for approval.

Current User: MCINTOSH, TINA
Ref. Id: REF001 (09/30/2008)
Status: New

Applicant: BAYER CROPSOURCE INSTITUTE SITE
Type: Electronic DMR
Permit No.: New/Pending

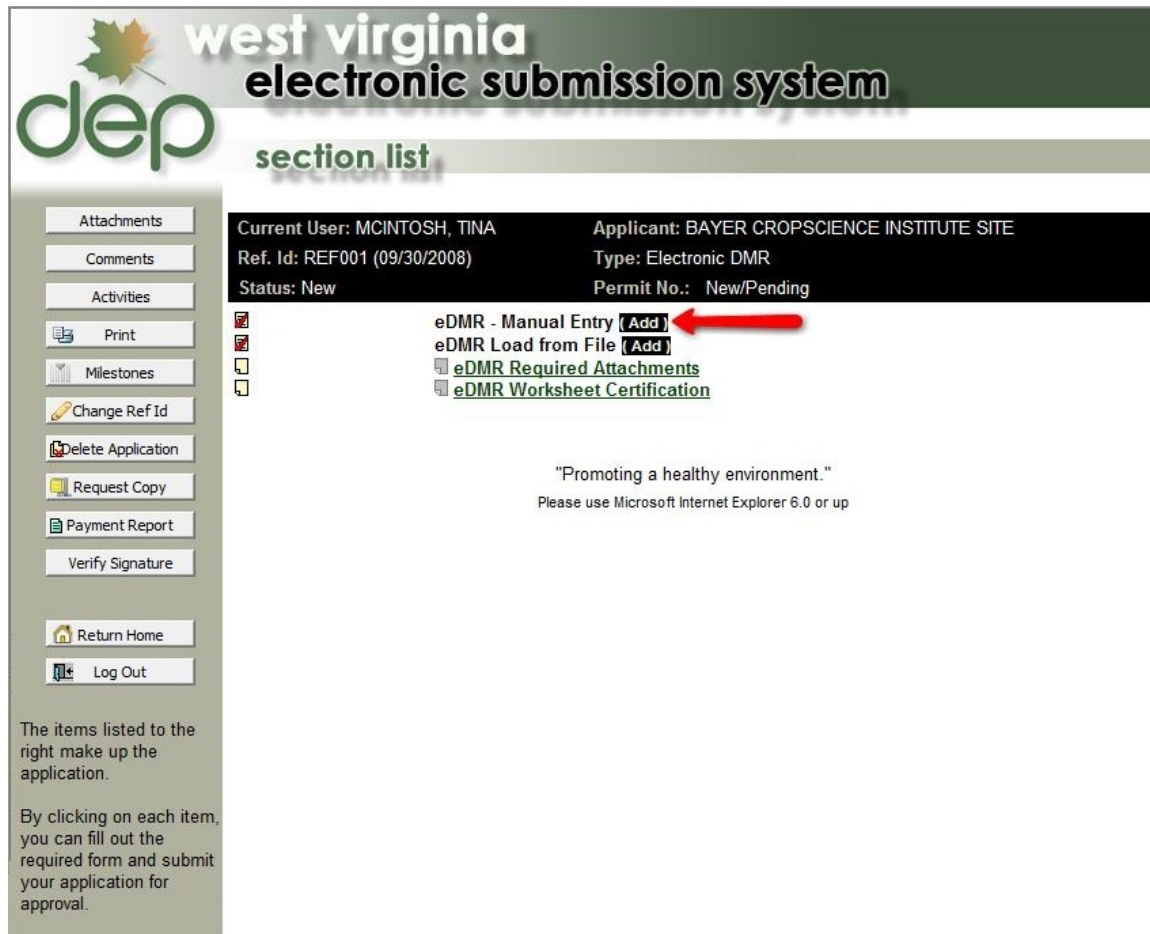
☒ eDMR - Manual Entry **Add**
☒ eDMR Load from File **Add**
☐ eDMR Required Attachments
☐ eDMR Worksheet Certification

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Please use Microsoft Internet Explorer 6.0 or up

Manual Entry

Click on “Add” beside “Manual Entry” to create a new eDMR Worksheet in the **Section List** screen.

NOTE: You need to create a new eDMR Worksheet for each Permit / Outlet combination.



west virginia
dep **electronic submission system**

section list

Attachments
Comments
Activities
Print
Milestones
Change Ref Id
Delete Application
Request Copy
Payment Report
Verify Signature
Return Home
Log Out

The items listed to the right make up the application.
By clicking on each item, you can fill out the required form and submit your application for approval.

Current User: MCINTOSH, TINA
Ref. Id: REF001 (09/30/2008)
Status: New

Applicant: BAYER CROPSOURCE INSTITUTE SITE
Type: Electronic DMR
Permit No.: New/Pending

eDMR - Manual Entry **Add**
eDMR Load from File **Add**
[eDMR Required Attachments](#)
[eDMR Worksheet Certification](#)

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To start entering information, click on the green “eDMR Worksheet” link.

west virginia dep
electronic submission system

section list

Attachments
Comments
Activities
Print
Milestones
Change Ref Id
Delete Application
Request Copy
Payment Report
Verify Signature
Return Home
Log Out


The items listed to the right make up the application.
By clicking on each item, you can fill out the required form and submit your application for approval.

Current User: MCINTOSH, TINA Applicant: BAYER CROPSOURCE INSTITUTE SITE
Ref. Id: REF001 (09/30/2008) Type: Electronic DMR
Status: New Permit No.: New/Pending

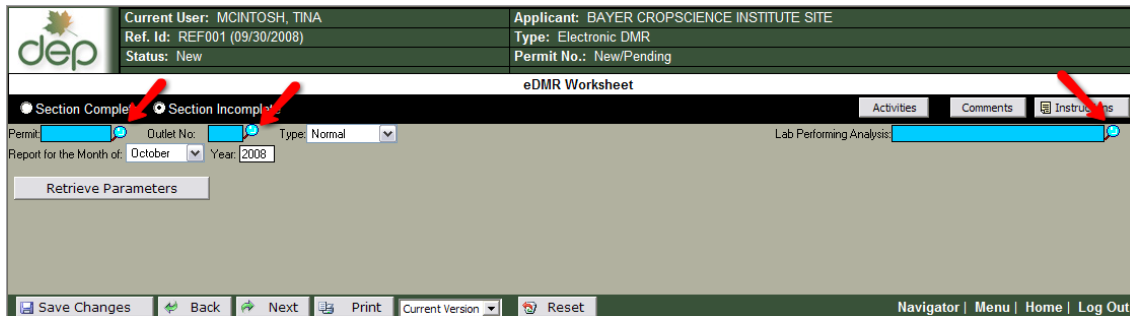
[eDMR - Manual Entry \(Add\)](#)
[eDMR Worksheet \(Remove\)](#)
[eDMR Load from File \(Add\)](#)
[eDMR Required Attachments](#)
[eDMR Worksheet Certification](#)

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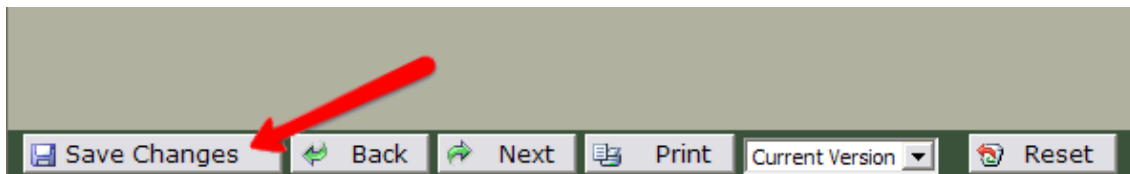
NOTE: You can delete unwanted worksheets by clicking on “**Remove**” beside the worksheet link.


You are required to provide information for blue highlighted fields. Any field with a magnifying glass  beside it, is a drop-down field, which means if you click on the field, you will be able to choose from a list of options.

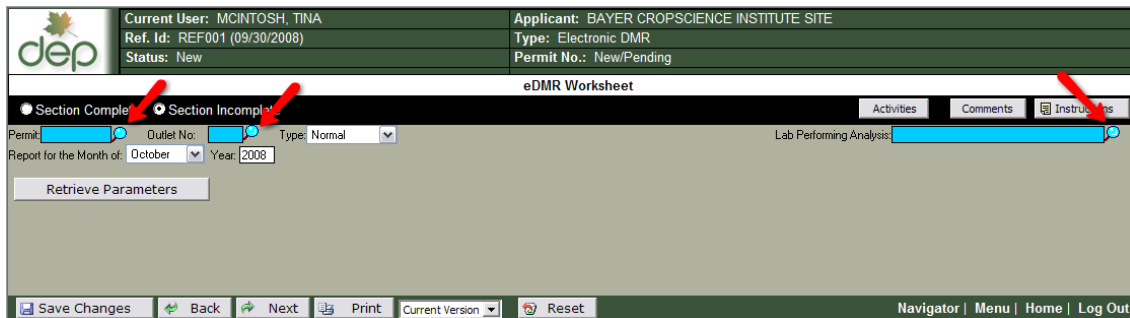
Specify the Permit Number, Outlet Number, Type, and the Lab that has performed the analysis for this eDMR. If the Permit Number and/or Outlet Number box doesn't show up, minimize your screen, it's probably setting behind the screen in another window. See page 13 for additional information about entering the laboratory identification.



In order to save data that has been entered, you must click the “**Save Changes**” button **at least every two hours**.



Below are examples of the choices available in the drop-down fields :



Permit – choose the permit you intend to enter information for.

Select a Permit:

- [WV0021792](#)
- [WVR100098](#)
- [WVR100384](#)

Outlet - choose the outlet you intend to enter information for.

NOTE: These outlets are filtered based on the permit you have selected.

ID	Name	Pipe Status
002	EFFLUENT BOD5 SAMPLES SHALL BE COLLECTED AT A LOCA...	Reactivated - 12/27/2005
IU01	ALLEGHENY WOOD PRODUCTS, INC. - REFER TO SECTIONS F....	
IU02	PETERSBURG WTP - REFER TO SECTIONS F.2.A.2 AND F.2.B.2 ...	
IU03	GRANT COUNTY LANDFILL - REFER TO SECTIONS F.2.A.3 AN...	
IU04	REGION VIII SWA - REFER TO SECTIONS F.2.A.4 AND F.2.B.4 F...	
IU05	ADELL POLYMERS - REFER TO SECTIONS F.2.A.5 AND F.2.B.5 ...	Reactivated - 01/09/2006
IU06	HESS OIL COMPANY (FORT HILL EXXON) - REFER TO SECTION...	
IU07	REACTIVATE PIPE AND USE THIS OUTFALL FOR NEXT INDUST...	Inactive - 01/17/2006
S01	SLUDGE	

Lab Performing Analysis – Only certified labs will be available in the drop-down field. Choose the lab that has performed the majority of the analysis. If a different lab has performed analysis for a specific parameter, you will have the opportunity to change the lab information at the parameter level.

Lab ID	Lab Name
313	A & L EASTERN AGRICULTURAL LABORATORIES INC
010	AC & S LABORATORIES
279	ACCULAB II INC
062	ACCULAB INC
329	ACCUTEST LABORATORIES
304	ACCUTEST LABS, SE
280	ADVANCED ANALYTICS LABORATORIES INC
351	ADVENT-ENVIRON

Select **No Flow**, **Not Analyzed**, **Conditional Monitoring**–Not required this period, **Not Quantifiable** or **Other** on the **Type** field. **NOTE:** You also can do this for individual parameters.

- Use **Conditional Monitoring** when you are required to submit an annual certification form and/or at parameter level when monitoring has been waived.
- When choosing **No Flow**, **Not Analyzed**, **Conditional Monitoring**–Not required this period, or **Other** select 000 – under **Lab Performing Analysis**.
- You are required to enter a reason if you have selected **Not Analyzed** or **Other**. (Examples: Lab Accident, Flow meter out of service, etc.)
- For facilities registered under the Sewage General Permit less than 50,000 GPD (WVG55 prefix), use **Not Quantifiable** at the parameter level for Total Residual Chlorine in the test flag field *if you have ultraviolet disinfection (uv)*.

The screenshot displays the 'eDMR Worksheet' interface. At the top, a header bar contains user and permit information: 'Current User: MCINTOSH, TINA', 'Ref. Id: REF001 (09/30/2008)', 'Status: New', 'Applicant: BAYER CROPSOURCE INSTITUTE SITE', 'Type: Electronic DMR', and 'Permit No.: New/Pending'. Below this, a navigation bar includes 'Section Complete', 'Section Incomplete', 'Activities', 'Comments', and 'Instructions'. The main form area shows 'Permit: WVG0000086', 'Outlet No.: 001', 'Type: Not Analyzed', and a 'Reason' field highlighted with a red box. The 'Report for the Month of' is set to 'October' and the 'Year' is '2008'. At the bottom, there are buttons for 'Save Changes', 'Back', 'Next', 'Print', 'Current Version', and 'Reset', along with a 'Navigator | Menu | Home | Log Out' link.

Enter the appropriate month in the **Report for the Month of** field and the appropriate year.

The following information is provided to assist you in determining what month you are reporting.

For permitted facilities that are required to submit a discharge monitoring report on a quarterly, semi-annual, or annual basis, the eDMR system will only allow you to submit the data in the month that it is required. Examples:

- **If your permit was effective prior to July 1, 2011 the following will apply:**
 - A quarterly reporting requirement is based on the calendar quarters; therefore, the quarterly discharge monitoring data can only be entered and submitted in eDMR in March, June, September and December.
 - If a permit requires semi-annual or annual reporting of DMR data based on **the effective date of the permit** (Individual Industrial and Municipal permits) the reporting month is as follows:
 - **Effective date** of the permit is prior to the 15th day of a month, the reporting month is determined by counting from the first day of that month forward six months (e.g., if effective date is February 11th, the reporting month is July).
 - **Effective date** of the permit is the 15th day of a month or after, the reporting month is determined by counting from the first day of the following month forward six months (e.g. if effective date is February 17th, the reporting month is August).
 - If a permit requires semi-annual or annual reporting of DMR data based on **the issued (or reissued) date of the permit** (General Permits), the reporting month is as follows:
 - **Issued (or reissued) date** of the permit is prior to the 15th day of a month, the reporting month is determined by counting from the first day of that month forward six months (e.g., if issued or reissued date is February 11th, the reporting month is July).
 - **Issued (or reissued) date** of the permit is the 15th day of a month or after, the reporting month is determined by counting from the first day of the following month forward six months (e.g. if issued or reissued date is February 17th, the reporting month is August).

- **If your permit was effective after July 1, 2011 the following will apply:**
 - A quarterly reporting requirement is based on the calendar quarters; therefore, the quarterly discharge monitoring data can only be entered and submitted in eDMR in March, June, September and December.
 - **For Individual Permits** - If a permit requires semi-annual or annual reporting of DMR data the reporting month is six or twelve months forward from the effective date of the permit (e.g., if the effective date is February 1st, the reporting month is July).
 - **For General Permits** - If a permit registration approval requires semi-annual or annual reporting of DMR data the reporting month is determined by counting from the first day of the following month past the issuance date of the permit (e.g., if the issuance date is February 17th, start your limit report period on March 1st and count forward six months, making the reporting month August).

Please refer to your permit to determine your reporting frequency of sampling analysis data.

Permittees are required to submit their eDMR 20 days following the end of the reporting period. In other words, if your reporting month is August, you have until September 20th to submit your eDMR.

Specify the reporting month and year, and hit the “**Retrieve Parameters**” button.

This will bring up all the parameters that need reporting for the month and year you have specified.

The screenshot displays the 'eDMR Worksheet' interface. At the top, a header bar shows user information: 'Current User: MCINTOSH, TINA', 'Ref. Id: REF001 (09/30/2008)', 'Status: New', 'Applicant: BAYER CROPS SCIENCE INSTITUTE SITE', 'Type: Electronic DMR', and 'Permit No.: New/Pending'. Below this, a navigation bar includes 'Section Complete', 'Section Incomplete', 'Activities', 'Comments', and 'Instructions'. The main form area contains a 'Permit' dropdown set to 'wV0000086', an 'Outlet' dropdown set to '001', and a 'Type' dropdown set to 'Normal'. Below these, there are 'Report for the Month of:' and 'Year:' dropdowns, both set to 'September' and '2008' respectively. A red arrow points to the 'Retrieve Parameters' button located below the month and year dropdowns. At the bottom of the interface, there is a footer bar with buttons for 'Save Changes', 'Back', 'Next', 'Print', 'Current Version', and 'Reset', along with a 'Navigator | Menu | Home | Log Out' link.

Blue fields indicate the data that **MUST** be entered for the period you have specified.

When entering your parameter data, if you have a lab that has completed analysis on a single parameter than what you entered at the outlet level, you can change the lab on that single parameter (see diagram below).

- You can mark a parameter as a **No Flow**, **Not Tested**, or **Other**.
- You are required to enter a reason if you have selected **Not Analyzed** or **Other**. (Examples: Lab Accident, Flow meter out of service, etc.)
- You are required to enter a reason if you change the **Measurement Frequency**.

The screenshot shows the 'Section Complete' / 'Section Incomplete' toggle at the top. Below it are fields for Permit (wv0004740), Outlet No (001), Type (Normal), and Report for the Month of (June) Year (2008). A 'Retrieve Parameters' button is present. The main table lists parameters with columns for Quantity (Avg, Max, Units, Number Exceed), Other Units (Min, Avg, Max, CEL*, Units, Number Exceed), Measurement Frequency, Sample Type, and Lab (Test Flag). Red arrows point to specific cells: the 'Test Flag' for '50050 (ML-1) RFA' (329), the 'Test Flag' for '00310 (ML-1) RF-B' (313), the 'Test Flag' for '00530 (ML-1) RF-B' (313), and the 'Test Flag' for '00530 (ML-1) RF-B' (Other).

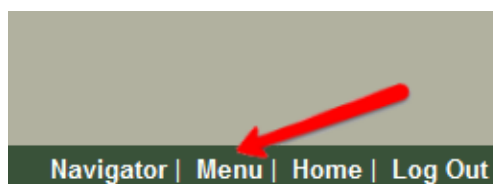
Parameter		Quantity				Other Units						Measurement Frequency	Sample Type	Lab Test Flag
		Avg	Max	Units	Number Exceed	Min	Avg	Max	CEL*	Units	Number Exceed			
50050 (ML-1) RFA Flow In Conduit Or Treatment Year Round	Reported	N/A	N/A			N/A	Rpt Only	Rpt Only		mgd		1/month	measured	329
	Permit Limits											1/month		
00310 (ML-1) RF-B Bod Year Round	Reported	Rpt Only	Rpt Only	Lbs/Day		N/A	Rpt Only	Rpt Only		mg/l		1/quarter	24 hr Composite	313
	Permit Limits											1/quarter		Not Analyzed
00530 (ML-1) RF-B Suspended Solids, Total Year Round	Reported	Rpt Only	Rpt Only	Lbs/Day		N/A	Rpt Only	Rpt Only		mg/l		1/quarter	24 hr Composite	313
	Permit Limits											1/quarter		Other

When all the required fields (in blue) are completed, you must mark the **Section Complete**.

All sections of your eDMR need to be marked as **Section Complete** before it can be submitted to DEP.

The screenshot shows the 'Section Complete' / 'Section Incomplete' toggle at the top. Below it are fields for Permit (wv0004740), Outlet No (001), Type (Normal), and Report for the Month of (June) Year (2008). A 'Retrieve Parameters' button is present. A red arrow points to the 'Section Complete' toggle.

Click on **“Menu”** to return to the **Section List** screen.



Load from File

Click on “Add” to create a new eDMR Load File Worksheet in the **Section List** screen.

west virginia
dep **electronic submission system**

section list

Current User: MCINTOSH, TINA Applicant: BAYER CROPSOURCE INSTITUTE SITE
Ref. Id: REF001 (09/30/2008) Type: Electronic DMR
Status: New Permit No.: New/Pending

- ☒ eDMR - Manual Entry (**Add**)
- ☒ eDMR Load from File (**Add**)
- ☐ [eDMR Required Attachments](#)
- ☐ [eDMR Worksheet Certification](#)

"Promoting a healthy environment."
Please use Microsoft Internet Explorer 6.0 or up

The items listed to the right make up the application.

By clicking on each item, you can fill out the required form and submit your application for approval.

Return Home Log Out

Then, click on the “eDMR Load File Worksheet” link.

NOTE: The eDMR Load File Worksheet function can only accept data in a comma-separated values (CSV) format that conforms to DEP's DMR file structure. The specific requirements for the CSV file can be found at <http://www.dep.wv.gov/WWE/permit/npdes/Documents/FileStructure2.pdf>.


The screenshot shows the 'west virginia electronic submission system' interface. On the left is a sidebar with navigation links: Attachments, Comments, Activities, Print, Milestones, Change Ref Id, Delete Application, Request Copy, Payment Report, Verify Signature, Return Home, and Log Out. The main content area displays user and application information: Current User: MCINTOSH, TINA; Applicant: BAYER CROPSOURCE INSTITUTE SITE; Ref. Id: REF001 (09/30/2008); Type: Electronic DMR; Status: New; Permit No.: New/Pending. Below this is a 'section list' with links: eDMR - Manual Entry (Add), eDMR Load from File (Add), eDMR Load File Worksheet (Remove) (highlighted with a red arrow), eDMR Required Attachments, and eDMR Worksheet Certification. At the bottom, it says 'Promoting a healthy environment.' and 'Please use Microsoft Internet Explorer 6.0 or up'.

Click on the “Attach/View Files” button to upload a file.

The screenshot shows the 'eDMR Load File Worksheet' page. At the top, it displays user and application information: Current User: MCINTOSH, TINA; Applicant: CHEMTURA CORPORATION; Ref. Id: REF002 (09/30/2008); Type: Electronic DMR; Status: New; Permit No.: New/Pending. Below this is a navigation bar with buttons: Section Complete, Section Incomplete, Activities, Attach/View Files (highlighted with a red arrow), Comments, and Instructions. The main content area has a table header with columns: #, File Name, and Validated. At the bottom, there is a footer with buttons: Save Changes, Back, Next, Print, Current Version, Reset, and links: Navigator | Menu | Home | Log Out.

On the **Attach/View Files** pop-up window, “**Browse**” for the file you want to upload, select the file and hit the “**Upload**” button.

Hit the “**Close**” button to close the pop-up window.

 **Applicant:** CHEMTURA CORPORATION
Facility: REF002 (09/30/2008) **Type:** Electronic DMR
Status: New **Permit:** New/Pending

NOTE: When revising an existing attachment with an updated version, DO NOT add the file in a new row. Select the "Browse" button, beside the file being replaced, and choose the updated attachment. The new file name will now show in the "File Name/Upload Date" column and a "Files" icon will appear in the far left column. The "Files" icon indicates that there is one or more previous versions of the attachment. Click on the "Files" icon to see the previous versions.

Additional Documents you want to attach

Action	Description	Select file to Upload	File Name/ Upload Date	Version
	EDMR CSV File (Change description if necessary)	<input type="text"/> <input data-bbox="998 709 1079 735" type="button" value="Browse..."/>		0

Additional Documents you want to attach

The file you have uploaded should now be displayed on the section form.

Click “View” to look at and verify the contents of the file. While viewing, you can filter by permit, outlet and sampling date.

Current User: SUPLIDO, REGGIE
Ref. Id: 004 (10/27/2008)
Status: New

Applicant: PETERSBURG, CITY OF
Type: Electronic DMR
Permit No.: New/Pending

eDMR Load File Worksheet

Section Complete
Section Incomplete

Activities
Attachments
Comments
Instructions

#	File Name	Validated
1	southnov.csv	
2	test1_B.csv	
3	test1_A.csv	Validate

Filter Parameters:
Permit: WV0095869 Outlet: All Go

Permit: WV0095869 Outlet: 001 Sampling Date: 11/30/2006

Line #	Parameter	Reported	Permit Limits	Quantity			Units	Number Exceed	Other Units			Units	Number Exceed	Measurement Frequency	Sample Type
				Min	Avg	Max			Min	Avg	Max				
1	1105 Aluminum, Total (As Al)	Reported	Permit Limits	N/A	N/A	N/A		0	0.04	0.04	0.04	MG/L	0	Semi-monthly	Grab
2	1045 Iron, Total (As Fe)	Reported	Permit Limits	N/A	N/A	N/A		0	0.07	0.105	0.14	MG/L	0	Semi-monthly	Grab
3	1055 Manganese, Total	Reported	Permit Limits	N/A	N/A	N/A		0	0.02	0.03	0.04	MG/L	0	Semi-monthly	Grab
4	3654400	Reported	Permit Limits					0	8.06	8.08	8.1		0		
5	530 Suspended Solids, Total	Reported	Permit Limits	N/A	N/A	N/A		0	< 1	< 1	< 1	MG/L	0	Semi-monthly	Grab
6	58 Flow	Reported	Permit Limits	30	30	30	GPM	0	N/A	N/A	N/A		0	Semi-monthly	Estimated

Permit: WV0095869 Outlet: 010 Sampling Date: 11/30/2006

Line #	Parameter	Reported	Permit Limits	Quantity			Units	Number Exceed	Other Units			Units	Number Exceed	Measurement Frequency	Sample Type
				Min	Avg	Max			Min	Avg	Max				
7	1105 Aluminum, Total (As Al)	Reported	Permit Limits	N/A	N/A	N/A		0	0.04	0.05	0.06	MG/L	0	Semi-monthly	Grab
8	1045 Iron, Total (As Fe)	Reported	Permit Limits	N/A	N/A	N/A		0	0.04	0.045	0.05	MG/L	0	Semi-monthly	Grab
9	1055 Manganese, Total	Reported	Permit Limits	N/A	N/A	N/A		0	0.01	0.01	0.01	MG/L	0	Semi-monthly	Grab
10	400 Ph	Reported	Permit Limits	N/A	N/A	N/A		0	7.72	7.975	8.23	Std Units	0	Semi-monthly	Grab
11	530 Suspended Solids, Total	Reported	Permit Limits	N/A	N/A	N/A		0	< 1	< 1	< 1	MG/L	0	Semi-monthly	Grab
12	58 Flow	Reported	Permit Limits	5	7.5	10	GPM	0	N/A	N/A	N/A		0	Semi-monthly	Estimated

Permit: WV0095869 Outlet: 014 Sampling Date: 11/30/2006

Line #	Parameter	Reported	Permit Limits	Quantity			Units	Number Exceed	Other Units			Units	Number Exceed	Measurement Frequency	Sample Type
				Min	Avg	Max			Min	Avg	Max				
13	No Flow														

Permit: WV0095869 Outlet: 003 Sampling Date: 11/30/2006

Line #	Parameter	Reported	Permit Limits	Quantity			Units	Number Exceed	Other Units			Units	Number Exceed	Measurement Frequency	Sample Type
				Min	Avg	Max			Min	Avg	Max				
14	No Flow														

Permit: WV0095869 Outlet: 004 Sampling Date: 11/30/2006

Line #	Parameter	Reported	Permit Limits	Quantity			Units	Number Exceed	Other Units			Units	Number Exceed	Measurement Frequency	Sample Type
				Min	Avg	Max			Min	Avg	Max				
15	No Flow														

Permit: WV0095869 Outlet: 006 Sampling Date: 11/30/2006

Line #	Parameter	Reported	Permit Limits	Quantity			Units	Number Exceed	Other Units			Units	Number Exceed	Measurement Frequency	Sample Type
				Min	Avg	Max			Min	Avg	Max				
16	No Flow														

Permit: WV0095869 Outlet: DAC Sampling Date: 11/30/2006

Line #	Parameter	Reported	Permit Limits	Quantity			Units	Number Exceed	Other Units			Units	Number Exceed	Measurement Frequency	Sample Type
				Min	Avg	Max			Min	Avg	Max				
17	1105 Aluminum, Total (As Al)	Reported	Permit Limits	N/A	N/A	N/A		0	0.15	0.15	0.17	MG/L	0	Semi-monthly	Grab

Save Changes Back Next Print Current Version Reset

Navigator Menu Index Home Log Out



This is how the work-in-progress File Upload Viewer will look like.

Legend:



1. Select All or specific Permit – Outlet – Sampling Date combination
2. Viewer will group report by Permit – Outlet – Sampling Date
3. The actual permit limits of each chemical will be shown, along with the limits being reported
4. Chemicals being reported that are not part of the permit will be highlighted in pink.
5. Outlets declared as a “No Flow” will be highlighted in pink.

Click on “**Validate**” to check the file for accuracy.

Depending on the size of the file, validation can take between a few seconds to a few minutes.

#	File Name	Validated
1	southnov.csv View	 Validate
2	test1.csv View	

A properly validated file will show a green circle with a check on the **Validated** field. Files that did not pass validation will show a red icon. You can click on the “**View Validation Report**” to display the problems encountered in the file.

#	File Name	Validated
1	southnov.csv View	 Validate View Validation Report
2	test1.csv View	

A sample **Validation Report** is shown below.

Rows that have passed will have a green “**Pass**” beside them.

Rows that were rejected will have details of the problem(s). You will need to correct these rows, then re-upload and re-verify your file.

Records Found: 19

Row: 1 **Pass**
Row: 2 **Fail**

'Quantity Average' must be a numeric value, and can not equal zero. If below detectable level, please use '<' (less than) sign for 'Quantity Average Flag' column.

Row #	Sampler ID	Outlet	Sampling Date	Qty Code	Qty Min Flag	Qty Avg Flag	Qty Max Flag	Conc Code	Conc Min Flag	Conc Avg Flag	Conc Max Flag	Sample Freq	Qty Exceed	Rainfall Inch	Frozen Cond	Discharge Flag
	NPDES No	Quality	Mon Loc		Qty Min	Qty Avg	Qty Max		Conc Min	Conc Avg	Conc Max	Sample Type	Conc Exceed	Rainfall Date	Report Freq	
2	060	001	06/30/2008	26		<	<	19		<	<	01/90				
	WV0004740	00310	1			0	4			2	2	24				

Row: 3 **Fail**

'Quantity Maximum' must be a numeric value, and can not equal zero. If below detectable level, please use '<' (less than) sign for 'Quantity Maximum Flag' column.

Row #	Sampler ID	Outlet	Sampling Date	Qty Code	Qty Min Flag	Qty Avg Flag	Qty Max Flag	Conc Code	Conc Min Flag	Conc Avg Flag	Conc Max Flag	Sample Freq	Qty Exceed	Rainfall Inch	Frozen Cond	Discharge Flag
	NPDES No	Quality	Mon Loc		Qty Min	Qty Avg	Qty Max		Conc Min	Conc Avg	Conc Max	Sample Type	Conc Exceed	Rainfall Date	Report Freq	
3	060	001	06/30/2008	26				19				01/90				
	WV0004740	00340	1			166	0			82	82	24				

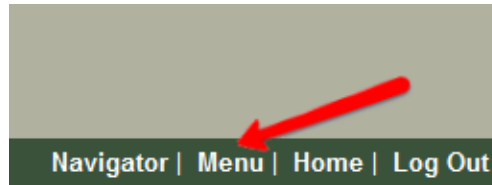
Row: 4 **Pass**
Row: 5 **Pass**
Row: 6 **Pass**
Row: 7 **Pass**
Row: 8 **Pass**
Row: 9 **Pass**

Once all the files have passed validation, you must mark the “**Section Complete.**”

NOTE: All the sections need to be marked as complete before they can be submitted to DEP.



Click on “**Menu**” to return to the **Section List** screen.



If you need to replace a file that you have uploaded, please see page 27 for instructions.

Required Attachments

The **eDMR Required Attachments** section is where you upload other documents that need to be submitted.

Municipal facilities may be required to submit a **Sludge Management Report and/or ES-59 Summary of Wastewater Treatment Plant Operations**. Please refer to your permit to determine what you are required to submit by attachment.

Annual certification form, laboratory results, etc. may also be attached.

west virginia
dep **electronic submission system**

section list

Attachments
Comments
Activities
Print
Milestones
Change Ref Id
Delete Application
Request Copy
Payment Report
Verify Signature
Return Home
Log Out

The items listed to the right make up the application.
By clicking on each item, you can fill out the required form and submit your application for approval.

Current User: MCINTOSH, TINA Applicant: BAYER CROPSOURCE INSTITUTE SITE
Ref. Id: REF001 (09/30/2008) Type: Electronic DMR
Status: New Permit No.: New/Pending

☐ eDMR - Manual Entry **[Add]**
☐ eDMR Load from File **[Add]**
☐ **eDMR Required Attachments**
☐ eDMR Worksheet Certification

"Promoting a healthy environment."
Please use Microsoft Internet Explorer 6.0 or up

To upload files, click on the “**Attachments**” button.

Current User: LAYTON, MAVIS L
Ref. Id: 0316-00-055 Annual Report 2012 (03/09/2012)
Status: New

Applicant: RIDGE CARE LLC
Type: Electronic DMR
Permit No.: New/Pending

eDMR Required Attachments

Section Complete Section Incomplete

Activities Attachments Comments Instructions

For municipal facilities, please provide the following attachments:

- Sludge Management Report (If required)
- Laboratory Results (Optional)
- Cover Letter (Optional)
- ES-59 (Health Dept. requirement - they will view thru our webportal)

For industrial facilities, please provide the following attachments:

- Laboratory Results (Optional)
- Cover Letter (Optional)

NOTE: To upload files or view previously uploaded files, click on the 'Attach/View Files' button at the upper right of the screen.

On the **Attachments** pop-up window, click “**Browse**” to find the files from your computer that you want to upload. Select the file and hit the “**Upload**” button. Hit the “**Close**” button to close the pop-up window.

Applicant: ACME CORPORATION
Facility: test (03/03/2009)
Status: New

Type: Electronic DMR
Permit: New/Pending

Additional Documents you want to attach


Help Upload Comments Close

Action	Description	Select file to upload	File name/ Upload date	Version
	Sludge Management Report (Change description if necessary)	<input type="text"/> Browse...		0
	ES-59 (Change description if necessary)	<input type="text"/> Browse...		0
	Laboratory Results (Change description if necessary)	<input type="text"/> Browse...		0
	Cover Letter (Change description if necessary)	<input type="text"/> Browse...		0


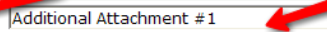




Additional Documents you want to attach

Help Upload Comments Close

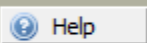
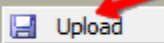

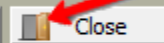
If you need to attach additional files, you may do so by selecting the number of additional files you want to attach to the eDMR.

Additional Documents you want to attach 

An additional set of rows will then appear at the bottom of the window to let you attach the additional files. Select the **Type** of file you are uploading and enter a short description of the file. Hit **“Browse”** to locate the file you want to upload.

Type	Description	Select File to Upload
Other 	Additional Attachment #1 	
Other 	Additional Attachment #2 	

Once all the files have been added, select the **“Upload”** button and hit the **“Close”** button to close the pop-up window.

After closing the **Additional Attachments** screen, you must mark **“Section Complete”** on the **Required Attachments** screen. If you are not required to attach any documents, and have not uploaded any documents on the **eDMR Required Attachments** screen, you still must mark **“Section Complete.”** All sections must be marked as complete, before they can be submitted to DEP.

☒ Section Complete ☐ Section Incomplete

Click on **“Menu”** to return to the **Section List** screen.

Navigator | **Menu** | Home | Log Out

Replacing Attachments

To replace a file attachment, go to the **Section List** screen and click on “eDMR Load File Worksheet” or “eDMR Required Attachments.”

west virginia
dep **electronic submission system**

section list

Current User: CARR, JAMES B
Ref. Id: WV0005339 April (05/24/2012)
Status: ERIS - Admin. Carr Intermission Begin

Applicant: ALLEGHENY ENERGY SUPPLY COMPANY, LLC
Type: Electronic DMR # 9726
Permit No.: EDMR

eDMR - Manual Entry
eDMR Load from File
 eDMR Load File Worksheet
 eDMR Required Attachments
 eDMR Worksheet Certification

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On the next screen, click on “Attachments.”

Applicant: ALLEGHENY ENERGY SUPPLY COMPANY, LLC
Type: Electronic DMR #9726
Permit No.: EDMR

eDMR Load File Worksheet

Activities Attachments Comments Instructions

On the screen that appears, click on the **red lock** under **Action**.

Applicant: ALLEGHENY ENERGY SUPPLY COMPANY, LLC
Facility: WV0005339 April 2012 (05/24/2012)
Status: ERIS - Admin. Corr Intermission Begin

Type: Electronic DMR #9726
Permit: EDMR

Additional Documents you want to attach [dropdown] [Help] [Upload] [Comments] [Close]

Action	Description	Select file to upload	File name/ Upload date	Version	CBI?
	EDMR CSV File		WV0005339 4_2012.csv 05/24/2012	0	

Additional Documents you want to attach [dropdown] [Help] [Upload] [Comments] [Close]

A small blue box appears for you to type a reason. Then click on the “Ok” button.

Applicant: ALLEGHENY ENERGY SUPPLY COMPANY, LLC
Facility: WV0005339 April 2012 (05/24/2012)
Status: ERS - Admin. Corr Intermission Begin

Type: Electronic DMR #9726
Permit: EDMR

Additional Documents you want to attach

Help Upload Comments Close

Action	Description	File name/	Version	CBI?
	EDMR CSV File	WV0005339 4_2012.csv	0	

This File is locked

Additional Documents you

Unlock Attachment

Please enter a comment to unlock the attachment:

OK Cancel

Click on “Replace this file.”

Applicant: ALLEGHENY ENERGY SUPPLY COMPANY, LLC
Facility: WV0005339 April 2012 (05/24/2012)
Status: ERS - Admin. Corr Intermission Begin

Type: Electronic DMR #9726
Permit: EDMR

Additional Documents you want to attach

Help Upload Comments Close

Action	Description	Select file to upload	File name/ Upload date	Version	CBI?
	EDMR CSV File	Replace this file	WV0005339 4_2012.csv 05/24/2012	0	

Additional Documents you want to attach

Help Upload Comments Close

Click on the **“Browse”** button to find the replacement file.

The screenshot shows the DEP system interface. At the top, the header includes the DEP logo and application details: Applicant: ALLEGHENY ENERGY SUPPLY COMPANY, LLC; Facility: WV0005339 April 2012 (05/24/2012); Status: ERS - Admin. Corr Intermission Begin; Type: Electronic DMR #9726; Permit: EDMR. Below the header, there are buttons for 'Help', 'Upload', 'Comments', and 'Close'. A table with the following columns: Action, Description, Select file to upload, File name/ Upload date, Version, and CBI? is displayed. The table contains one row for 'EDMR CSV File'. In the 'Select file to upload' column, there is a text input field containing 'EDMR CSV File' and a 'Browse...' button. A red arrow points to the 'Browse...' button. Below the table, there is a red text warning: 'Don't forget to click the Upload button before closing the window'.

Action	Description	Select file to upload	File name/ Upload date	Version	CBI?
	EDMR CSV File	EDMR CSV File Browse...	WV0005339 4_2012.csv 05/24/2012	0	

After you select the file, you must click on the **“Upload”** button.

The screenshot shows the DEP system interface after a file has been selected. The table now shows the file 'WV0005339 4_2012.csv' with an upload date of '10/16/2012' and version '1'. The 'Select file to upload' column now says 'Replace this file'. A red arrow points to the 'Upload' button.

Action	Description	Select file to upload	File name/ Upload date	Version	CBI?
	EDMR CSV File	Replace this file	WV0005339 4_2012.csv 10/16/2012	1	

At this point click on the **“Close”** button.

The screenshot shows the DEP system interface with the 'Close' button highlighted by a red arrow. The table and other elements are the same as in the previous screenshot.

Action	Description	Select file to upload	File name/ Upload date	Version	CBI?
	EDMR CSV File	Replace this file	WV0005339 4_2012.csv 10/16/2012	1	

Worksheet Certification

The **eDMR Worksheet Certification** screen is also known as the **Signature** page.

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section list

Attachments
Comments
Activities
Print
Milestones
Change Ref Id
Delete Application
Request Copy
Payment Report
Verify Signature
Return Home
Log Out

The items listed to the right make up the application.

By clicking on each item, you can fill out the required form and submit your application for approval.

Current User: MCINTOSH, TINA
Ref. Id: REF001 (09/30/2008)
Status: New

Applicant: BAYER CROPSOURCE INSTITUTE SITE
Type: Electronic DMR
Permit No.: New/Pending

☒ eDMR - Manual Entry **(Add)**
☒ eDMR Load from File **(Add)**
☐ eDMR Required Attachments
☐ eDMR Worksheet Certification

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The **Principal Executive Officer** of the facility must complete this section.

The screenshot shows the DEP eDMR Worksheet Certification form. At the top left is the DEP logo. To its right is a header table with the following information:

Current User: MCINTOSH, TINA	Applicant: ACME CORPORATION
Ref. Id: ACME Test 001 (02/05/2009)	Type: Electronic DMR
Status: New	Permit No.: New/Pending

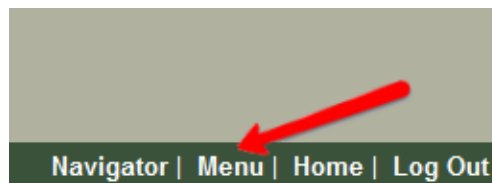
Below the header is a section titled "eDMR Worksheet Certification" with two radio buttons: "Section Complete" (selected) and "Section Incomplete". To the right of these buttons are links for "Activities", "Attachments", "Comments", and "Instructions". Below the radio buttons is a certification statement: "I certify under penalty of law that this document and all attachments were prepared under the 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 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 a fine and imprisonment for knowing violations." Below the statement are fields for "Name of Signee:" (with a blue box), "Title:" (with a blue box containing "Principal Executive Officer"), and "Date:" (with a blue box containing "10/10/2009"). At the bottom of the form is a navigation bar with buttons for "Save Changes", "Back", "Next", "Print", "Current Version", "Reset", and a "Navigator" link followed by "Menu", "Index", "Home", and "Log Out".

Once all the information has been entered, you must mark the “**Section Complete.**”

NOTE: All sections must be marked as complete, before they can be submitted to DEP.



Click on “**Menu**” to return to the **Section List** screen.



Submitting the eDMR to DEP

After marking all sections complete, a “**Submit Application**” button will appear on the **Section List** screen (see diagram below).

NOTE: Only the users who have security rights to submit applications to DEP will see this button.

west virginia
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section list

Attachments
Comments
Activities
Print
Milestones
Change Ref Id
Delete Application
Request Copy
Payment Report
Verify Signature
Return Home
Log Out

The items listed to the right make up the application.
By clicking on each item, you can fill out the required form and submit your application for approval.


Current User: MCINTOSH, TINA	Applicant: CHEMTURA CORPORATION
Ref. Id: REF002 (09/30/2008)	Type: Electronic DMR
Status: New	Permit No.: New/Pending

eDMR - Manual Entry **(Add)**
eDMR Worksheet **(Remove)**
eDMR Load from File **(Add)**
eDMR Required Attachments
eDMR Worksheet Certification

SUBMIT APPLICATION

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Clicking the “**Submit Application**” button requires the user to answer a security question in order to submit the eDMR.



west virginia electronic submission system

section list

Attachments

Comments

Activities

Print

Milestones

Change Ref Id

Delete Application

Request Copy

Payment Report

Verify Signature

Return Home

Log Out

The items listed to the right make up the application.

By clicking on each item, you can fill out the required form and submit your application for approval.

Current User: PHILLIPS, TANYA


Applicant: ACME CORPORATION

Ref. Id: jj (01/22/2009)

Type: Electronic DMR

Status: New

Permit No.: New/Pending



SUBMIT

http://epermit.wvdep.org/webapp/_dep/securearea/application/submit.cfm - W...

Notice

- This Electronic DMR may be submitted now pending DEP review.
- In accordance to the US EPA Cross-Media Electronic Reporting Regulation (CROMERR), electronic submittals must be provided with the same level of legal dependability as the corresponding paper submittals.
- By submitting this electronic report, you are acknowledging that you have thoroughly reviewed its contents and you have the authority to submit electronic reports to DEP.
- To verify your identity, you need to answer the following question:

Who was your childhood best friend?

Submit

Cancel

esday March 03, 2009

Submitting the eDMR will automatically lock the sections from being changed; however, viewing the sections will still be possible.

The screenshot shows the 'west virginia electronic submission system' interface. The header features the DEP logo and the system name. Below the header is a 'section list' bar. The main content area displays application details for 'SUPLIDO, REGGIE' and 'PETERSBURG, CITY OF'. It includes fields for 'Ref. Id: s007 (01/10/2009)', 'Type: Electronic DMR #14', 'Status: ERIS - Pending', and 'Permit No.: EDMR'. A red padlock icon indicates the application is locked. A message states: 'This Application was submitted on 01/13/2009 13:37:48 and changes are not allowed currently.' Below this, there are links for 'eDMR - Manual Entry', 'eDMR Worksheet -- WV0021792 - 001', 'eDMR Load from File', 'eDMR Required Attachments', and 'eDMR Worksheet Certification'. A sidebar on the left contains buttons for 'Attachments', 'Comments', 'Activities', 'Print', 'Milestones', 'Change Ref Id', 'Delete Application', 'Request Copy', 'Payment Report', 'Verify Signature', 'Return Home', and 'Log Out'. At the bottom, there is a footer with the date 'Thursday February 05, 2009' and the slogan 'Promoting a healthy environment.' with a note to use Microsoft Internet Explorer 6.0 or up.

west virginia
dep electronic submission system

section list

Current User: SUPLIDO, REGGIE Applicant: PETERSBURG, CITY OF
Ref. Id: s007 (01/10/2009) Type: Electronic DMR #14
Status: ERIS - Pending Permit No.: EDMR

This Application was submitted on 01/13/2009 13:37:48 and changes are not allowed currently.

eDMR - Manual Entry
eDMR Worksheet -- WV0021792 - 001
eDMR Load from File
eDMR Required Attachments
eDMR Worksheet Certification

Thursday February 05, 2009


"Promoting a healthy environment."
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Attachments
Comments
Activities
Print
Milestones
Change Ref Id
Delete Application
Request Copy
Payment Report
Verify Signature
Return Home
Log Out

The items listed to the right make up the application.
By clicking on each item, you can fill out the required form and submit your application for approval.

Once the eDMR is submitted, DEP and facility personnel involved with processing the eDMR will be notified via e-mail. Any status change on the submitted eDMR will also trigger an e-mail notification.

If you receive an e-mail requesting a correction or clarification of your submitted eDMR, you will have to log into eDMR. On the **Selection Process** screen, choose **Continue** in the drop-down menu, and then select the **Office**, **Applicant** and **Type**. A **Ref. ID** section will appear. Click on the eDMR that needs correction. This will bring you to the **Section List** screen where you will select a worksheet to modify.



west virginia electronic submission system

selection process

Welcome MCINTOSH, TINA

[My Account](#)
[Return Home](#)
[Log Out](#)

You will continue to receive choices as you make each selection.

Once your choice is selected, you will receive another response box to make your next selection.

Once all your selections are made, you will be able to begin your application.

Process: Continue

Office: Water and Waste Management (OWR)

Applicant: BAYER CROPSOURCE INSTITUTE SITE

Type: Electronic DMR - EDMR (OWR) [Help](#)

Ref. ID:

Status: ☒ Open ☐ Closed 1 found

Ref. ID
REF001 (9/20/2008)

[Log out](#)

Deleting eDMRs Created in Error

An eDMR application that has been created in error can only be deleted by the person who is listed as the Applicant Security for the electronic submission of the eDMR.

View: Active 3 users

Login id	User Name	Application Security	Master Consultant	Submit
CleveR82	CLEVENGEREXT, RENEE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Yes
LaytoM86	LAYTON, MAVIS L	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Yes
PhillT82	PHILLIPS, TONYA R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Yes

The person(s) with these rights can delete an eDMR by bringing up the eDMR on the **Section List** screen. From there, click on the **Delete Application** button on the left side of the screen (shown below).

The screenshot shows the 'West Virginia electronic submission system' interface. The left sidebar contains a list of buttons: Attachments, Comments, Activities, Print, Milestones, Change Ref Id, **Delete Application** (highlighted with a red arrow), Request Copy, Payment Report, Verify Signature, Return Home, and Log Out. The main content area displays user information: Current User: SUPLIDO, REGGIE, Ref. Id: 1 (02/14/2012), Status: New, Applicant: [blank], Type: Elec, Permit No.: [blank]. Below this, there are links for eDMR - Manual Entry (Add), eDMR Load from File (Add), eDMR Load File Worksheet (Remove), eDMR Required Attachments, and eDMR Worksheet Certification. A footer message reads: "Promoting a healthy Please use Microsoft Intern".

A pop-up warning will appear. You must complete the information requested on the pop-up and click **Delete**.

WARNING:

You are about to delete this application. Before finalizing the delete, please be advised that once the application is deleted, the consequences are irreversible. WVDEP cannot in any way recover the data once the delete has been completed. Please be for certain that you no longer and will never need to further pursue this application and will never need to add or make changes to it.

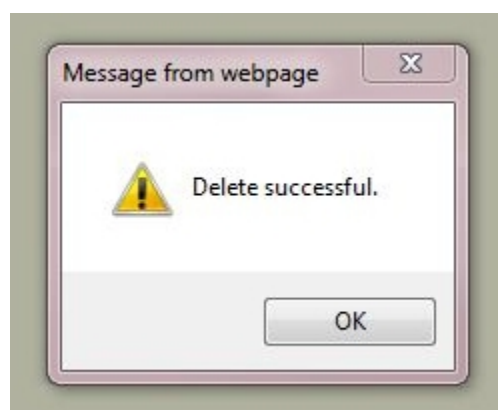
To confirm that you are certain that you desire to delete this application, and that you understand the finality of this action, please type "YES" in response to the question below, then type your name to verify that you are the person who is deleting the application along with a reason for deletion.

By typing "YES" in the space adjacent, I affirm the above admonition and accept any responsibilities thereof.

I, , do hereby acknowledge that I do wish to delete application **WV0001279 (03/21/2012)**, and that once this delete is completed, the entire contents of it are extinct and completely unrecoverable, and that any consequences of deletion, along with any re-entry and reconstruction of the data within is the sole responsibility of the responsible party for this application which I represent.

Please give a reason for or other comments about deletion.

A message will then confirm that you have successfully deleted your application.



Contact Information

For individual eDMRs:

Tonya Phillips (304) 926-0499 Ext. 1010 or by e-mail at Tonya.R.Phillips@wv.gov

Megan Smith (304) 926-0499 Ext. 1281 or by e-mail at Megan.D.Smith@wv.gov

For Stormwater eDMRs (WVG61s):

Patrick Burch (304) 926-0499 Ext. 1067 or by e-mail at Patrick.D.Burch@wv.gov

For UIC eDMRs:

Michelle Finney (304) 926-0499 Ext. 1047 or by e-mail at Michelle.L.Finney@wv.gov

For Mining and Reclamation eDMRs:

Angela Dorsey (304) 926-0499 Ext. 1513 or by e-mail Angela.H.Dorsey@wv.gov

Vicki Lucas (304) 926-0499 Ext. 1514 or by e-mail Vicki.E.Lucas@wv.gov

For all other General Permit eDMRs:

Thomas Sowers (304) 926-0499 Ext. 1012 or by e-mail at Thomas.J.Sowers@wv.gov

Backup for all of the above with the exception of mining related eDMRs and current contact for any type not listed above:

Mavis Layton (304) 926-0499 Ext. 1025 or by e-mail at Mavis.L.Layton@wv.gov

**Updated December 2010
Chesapeake Bay Program
Wastewater Facility and Nonpoint Source
Data Submission Specifications and Requirements**

The Watershed Technical and Wastewater Treatment Workgroups of the Water Quality Goal Implementation Team coordinate with the Chesapeake Bay Program's Technical Support and Services team and the Management Board to establish data submission requirements that meet the communications and management needs of the Chesapeake Bay Program. Implementation Grant or Work Plan deliverables must include schedules for submission of point source and nonpoint source nutrient reduction activities for use in Chesapeake Bay Watershed Model annual assessment scenarios. The following point source and nonpoint source data submission requirements were developed by the Water Quality Goal Implementation Team's Wastewater Treatment and Watershed Technical workgroups, respectively, to meet Chesapeake Bay Program watershed model requirements. With the exception of the EPA required dates for reporting stated on page 3 of this Attachment, the following information reflects both workgroups' latest agreements and minimum data requirements.

Jurisdictions are required to submit quality assured data by the established due dates. If necessary, base implementation grant funds should be used by the jurisdiction to ensure compliance with the due dates and data quality requirements. Recipients are to follow the output requirements stated in the General Guidance portion of this document.

WASTEWATER FACILITY DATA SUBMISSION

Facility Requirements:

Jurisdictions will submit wastewater facility data for all significant dischargers within their portions of the Chesapeake Bay watershed. A significant discharger is a facility that meets one of the following criteria:

- In West Virginia, Delaware and New York - Facility treating domestic wastewater and the design flow is greater than or equal to 0.4 million gallons per day (MGD).
- In Pennsylvania - Facility treating domestic wastewater and discharging greater than or equal to 0.4 MGD.
- In Maryland - Facility treating domestic wastewater and the design flow is greater than or equal to 0.5 MGD.
In Virginia - Facility treating domestic wastewater and the existing design flow is greater than or equal to 0.5 MGD west of the fall line or 0.1 MGD east of the fall line **as well as** all new facilities greater than 40,000 gallons per day (GPD) or facilities expanding by greater than 40,000 GPD as significant.
- Industrial facilities with a nutrient load equivalent to 3,800 total phosphorus (TP) lbs/year or 27,000 total nitrogen (TN) lbs/year.
- Any other municipal and industrial wastewater facilities identified within a jurisdictional tributary strategy.

Jurisdictions are encouraged, but not required, to track "non-significant" facilities not meeting the above definition and provide their flow and concentration data on an annual basis to EPA Chesapeake Bay Program Office (CBPO). For the purpose of consistency, jurisdictions are strongly encouraged to include flow and concentrations for all facilities with a design flow greater than 0.40 MGD.

Data Requirements:

Jurisdictions are required to submit monthly concentration and flow data for all parameters listed below for each significant discharger facilities within their portion of the Chesapeake Bay watershed. The QAQC procedures listed in Figure 1 should be performed prior to data submission.

At Facility Level: Data must be provided for those municipal, industrial, and federal facilities as defined above as "significant dischargers" of total nitrogen and total phosphorus to the Bay watershed. The jurisdictions must annually update their list of significant dischargers with additional facilities that meet one of the criteria of the significant facility definition. The location (county, latitude/longitude) of each facility's discharge point must be reported.

At the Monthly Level: concentration and flow data for the 10 identified parameters must be provided for each outfall. Jurisdictions will submit all parameters in each month's data record for each facility. Data for the following parameters will be submitted: average monthly flows and average monthly concentrations of NH₃, TKN, NO₂ (or NO₂+NO₃), TN, PO₄, TP, CBOD (preferable) or BOD, DO and TSS. All nitrogen species need to be reported as nitrogen; all phosphorus species need to be reported as phosphorus.

In the absence of monthly monitored concentration data for one or more of the above listed 10 parameters for a facility, the jurisdiction will submit the **CBP Water Quality Goal Implementation Team's** Wastewater Treatment Workgroup agreed to default concentration data or calculated data based on the species relationship listed in Table 1. All default or calculated data must be flagged with an appropriate description such as:

- Average of reported monthly data;
- Default value agreed by the workgroup;
- Default value based on state specific information;
- Default value based on SIS database;
- Calculated as 67% of TP by CBP species ratio;
- Calculated as NO₂=TN-TKN; and
- Net Value (the influent concentration or load is subtracted).

Industrial facility data should be reported as average monthly flow and net concentrations for that respective month, as quantified.

Each jurisdiction **MUST** review all wastewater facility data for accuracy and outliers prior to submission to EPA CBPO. The required quality assurance and quality control procedures are listed in Figure 1.

NONPOINT SOURCE DATA SUBMISSION

Nonpoint source BMP information is used to create annual progress scenarios using the CBP Watershed Model (WSM) and measures of restoration efforts. Beginning October 2010, data **must** be submitted via the National Environmental Information Exchange Network (NEIEN) using the nonpoint source BMP schema. Starting in the 2011 Grant Guidance, EPA CBPO will not accept Microsoft Excel, Access, or ASCII for nonpoint source data submissions.

The NEIEN BMP data exchange is capable of accepting current and historical BMP data submissions. At a minimum, recipients must submit BMP data for the period of July 1, 2010- June 30, 2011. Data outside this temporal range will be accepted, processed through NEIEN and used by the Chesapeake Bay Program based on the guidance of Chesapeake Bay Program subject matter experts and the Watershed Technical Workgroup.

Nutrient **and sediment** reduction activities that are new to reporting or not currently modeled will not be credited in the model until the BMPs, their definitions and pollutant removal efficiencies have been approved using the **Water Quality Goal Implementation Team's "Protocol for the Development, Review and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model."**¹

WASTEWATER FACILITY AND NONPOINT SOURCE REPORTING FREQUENCY

Progress reports are an output of the grant. Each jurisdiction must check all data for accuracy and outliers prior to submission to the Chesapeake Bay Program Office. Grant recipients must provide progress data for significant point sources and nonpoint source BMPs according to the following schedule:

Submission or data call: December 31, 2011

Period data covers: July 1, 2010 June 30, 2011

This schedule may not apply to the Commonwealth of Virginia which may submit its data in accordance with the Nutrient Allocation Compliance and Reporting requirements under Section 62.1-44.19:18 of the Virginia Code.

¹ The Protocol is located on the web at: http://archive.chesapeakebay.net/pubs/Nutrient-Sediment_Control_Review_Protocol.pdf

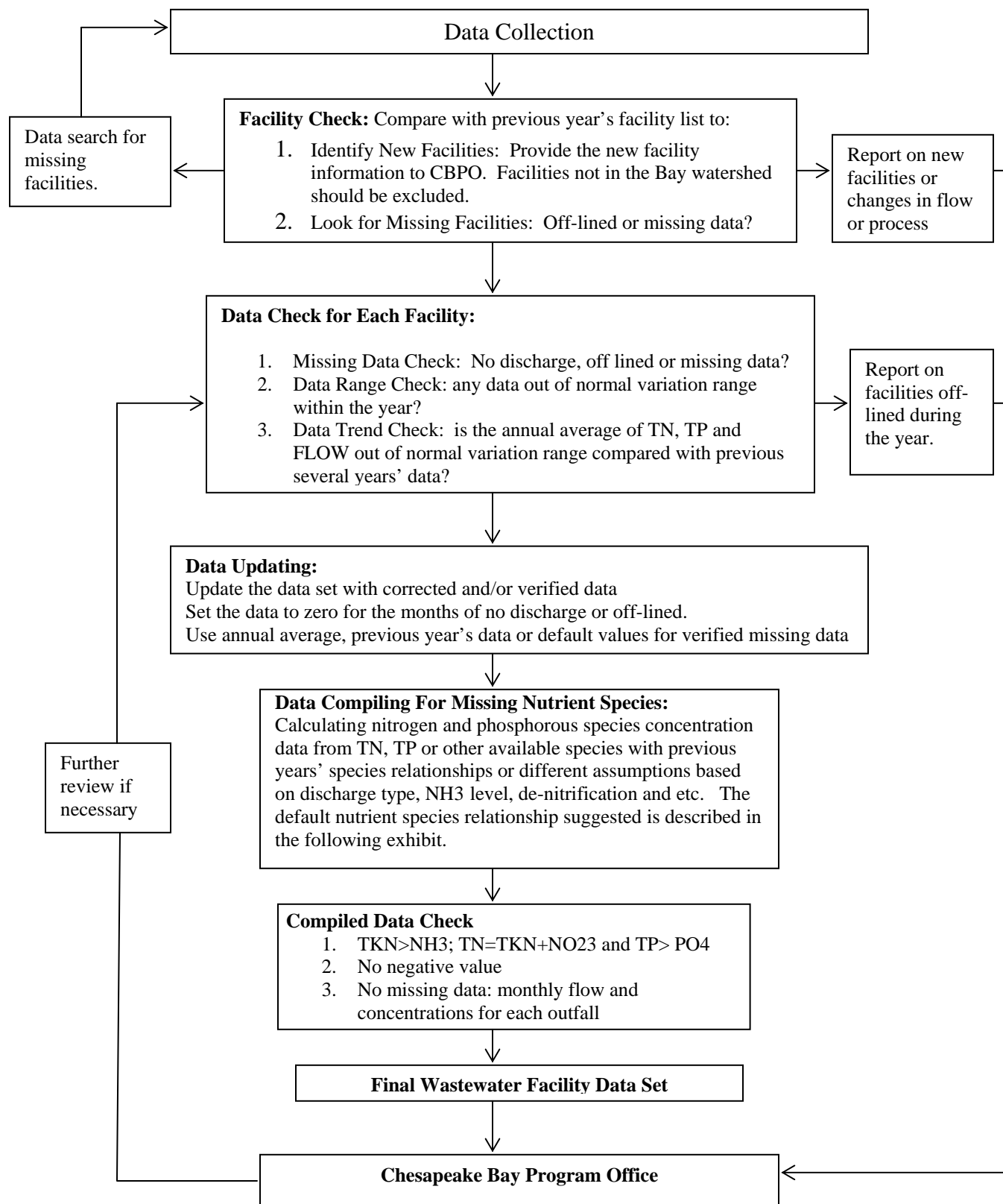
Figure 1: Wastewater Facility Nutrient Data Processing Flow Diagram

Table 1: Species Relationship

Type of Facility		NH ₃ /NO ₂₃ /TON (w/o Nitrification)	NH ₃ /NO ₂₃ /TON (w/ Nitrification)++	NH ₃ /NO ₂₃ /TON (w/Denitrification)
Municipalities (phase IV)		80/5/15 ⁽¹⁾	7/85/8	12/73/15
Municipalities (phase V)		80/3/17**	7/80/13**	12/73/15 ⁽²⁾
Industries	Chemical	7/85/8+		
	Pulp & Paper	1/0/99**		
	Poultry Facilities w/BNR			8/75/17**
	Nonchemical (includes seafood, poultry, & food processors w/out BNR)	80/3/17**	7/85/8+	8/75/17**

(1) Stearns and Wheler recommended 80/0/20; however, the PSWG felt that there would often be minimal (5%) NOx present.

(2) Unchanged from the ratio recommended by Stearns and Wheler in Phase IV.

++Apply this relationship wherever NH3 limits apply

+Assumed by performing an analysis of MD chemical industry wastewater effluents which showed it is very close to the relationship for nitrifying sewage. This would apply to all chemical discharges and assumes that wastewaters are treated chemically and thus would not vary as for sewage relationships

** Updated, as based on an analysis of actual data from plants operating in Virginia.

Type of Facility	Facilities w/out TP Control PO ₄ /TOP ratio	Facilities With TP Control PO ₄ /TOP Ratio
All	71/29 ^a	67/33 ^a

^a determined by averaging the actual data from MD and VA plants (including Blue Plains for “with TP Reduction”.

Facility with TP Control is defined as a facility having a permit limit for total phosphorus.

Period	TSS Default (All jurisdictions)	TSS Default w/out NRT	TSS Default w/ NRT
1985-1990 ^b	45		
1990-2000	25		
2000-2010		15	8

Type of Facility	DO concentration 1985-1990	DO Concentration 1990-2010
All	4.5 mg/l ^(b)	5.0 mg/l

(b) takes into account a number of NMP facilities operating across the watershed.

West Virginia Plan for Verification and Validation of Nutrient Reduction Strategies

Chesapeake Bay Program

Compiled by:
Meghan Betcher
Annie Stroud
Evan Hansen

Downstream Strategies

On behalf of:
**West Virginia Department
of Environmental
Protection**

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1. INTRODUCTION

Nutrient and sediment pollution from states surrounding the Chesapeake Bay have had a substantial impact on water quality in the Bay. These states—one of which is West Virginia—have joined together to develop strategies to reduce the nutrient and sediment loading each contributes to the Bay watershed. Previously, each state developed a strategy, known as a Watershed Implementation Plan (WIP) to reduce the flow of pollutants to the Chesapeake Bay waters. Many of the nutrient reduction strategies outlined for West Virginia are in place and data is routinely collected and submitted to the Chesapeake Bay Program. To ensure that the state is meeting its nutrient reduction requirements, all data used to assess load reductions must undergo verification and validation.

This document describes the strategies utilized by West Virginia agencies to verify that practices that are reported to the Chesapeake Bay Program are in place and functioning as intended. It also describes how the agencies ensure the accuracy of data collection and reporting methods used to measure the efficiency of nutrient attenuation practices implemented in the state. Strategies for the following six sectors are described in subsequent chapters:

1. Agriculture
2. Forestry
3. Stormwater
4. Stream restoration
5. Wastewater
6. Wetland restoration

2. AGRICULTURE

Currently, NRCS cost-share programs have been the major driver of agriculture projects in the Chesapeake Bay watershed of West Virginia.

Verification for Cost Shared Practices

- Annual data collection occurs approximately July through November each year (due on December 1), gathering data about implementation that occurred the previous (July through June) year. WVDA will request annual USDA NRCS & FSA data to be submitted by November 1 each year.
- Verification for other practices is ongoing throughout the year

Annually, West Virginia will continue to submit data from all available sources including Federal and State Agencies. All BMPs submitted annually will comply with current Federal Program Standards except for programs which do not currently have Federal Standards such as manure transport. All BMPs in Table 1, except nutrient management and a portion of manure transport, are cost shared practices as well. NRCS standards and specifications are described in Appendices B & H.

West Virginia will rely solely on Federal Verification Programs already in place until each BMP has reached the end of its lifespan, see Table 1. After each BMP's lifespan has expired, State Agencies and NGOs will be 100% responsible for ongoing verification of the following practices each year until the practices can no longer be credited. For more detail see the Standard Operating Procedures for Tracking, Reporting, and Verification of Agricultural BMPs (also known as the Quality Assurance Project Plan or QAPP) in Attachment A. QAPP Appendices are included as attachments B through H in this document.

BMPs that have been approved by the Chesapeake Bay Program for modeled credit are listed in the table below (Table 1).

Table 1: West Virginia Agriculture BMPs for Priority Verification

WIP Priority	BMP Name / Grouping	BMP Type	Method	Lifespan
High	Pasture Fencing	Structural	Visual	20
High	Forest Buffer	Structural / Agronomic	Visual	15
High	Grass Buffer	Structural / Agronomic	Visual	5
High	AWMS	Structural	Visual	15
High	Barnyard Runoff Control	Structural	Visual	15
High	Composters	Structural	Visual	15
High	Nutrient Management	Management	Paperwork Review	1 Year NRCS, 3 Year State
High	Conservation Till	Annual	Visual	1
High	Cover Crops	Annual	Visual	1
Medium	Manure Transport	Annual	Paperwork Review	1
Medium	Precision Rotational Grazing/Prescribed Grazing	Management	Paperwork Review	1 (Most are for 3 Years)
Medium	Tree Planting	Structural / Agronomic	Visual	15
Medium	Pasture Alternative Watering/Watering Facility	Structural	Visual	20
High	Stream Restoration	Structural	Visual	20
Medium	Wetland Restoration	Structural	Visual	15

West Virginia is also planning to collect Resource Improvement (RI) BMP data and begin working with Chesapeake Bay Program staff to get model credit for these practices. For more information on the R.I. Protocol, see section IV of the QAPP. (Attachments A and H)

While all BMP data will be collected at the site specific scale including latitude and longitude, West Virginia will only be reporting information to the Bay Program at the county level.

- Changes in management actions include: implementation of a new BMP; maintenance of an existing BMP (not to be reported as a new practice); or renewed practices such as nutrient management plans.
- Changes in management actions do not include the reporting existing practices in a new year under a new BMP name.
- BMPs units will be tracked directly. Units should not be calculated by estimating a percentage of total acres available.

2.1.1 Federal Agency Verification Protocol (USDA, NRCS, & FSA)

Upon installation of new Best Management Practices, Federal Agencies verify that every practice was installed according to existing standards. After installation, NRCS maintains a 5% check on each practice (5% of fence, 5% of structures, etc.). For more information on Conservation Technical Assistance (CTA), (see

Appendix C of the QAPP in Attachment D to this document). If an inspection reveals that an installed BMP does not meet its relevant standard, the producer will bring it up to standard. This would trigger a re-check.

Practices implemented as NRCS Conservation Technical Assistance (CTA) projects did not receive cost-share from USDA. CTA project data generally receive a lower level of QA/QC than data for other practices. CTA practices are included in conservation plans, but have not previously been reported by most states.

Initial inspections of Conservation Reserve Program/Conservation Reserve Enhancement Program (CRP/CREP) projects are mostly visual field inspections completed by the agency, however, landowners are given the option of self-reporting. Next, a two year status report is completed and then projects are spot checked according to an established protocol, which is described in Appendix D of the QAPP (Attachment E of this document). There are no other requirements for annual reporting. When participants re-enlist in CREP, this prompts a new inspection. For more information on CRP Compliance see Appendix D of the QAPP in Attachment E of this document.

WV USDA NRCS has agreed to share with the West Virginia Department of Agriculture (WVDA) (under a 1619 Agreement) all agricultural data from their Performance Results System (PRS System) back to 2004. This includes latitudes and longitudes of practices which will greatly assist other agencies with future verification as practice lifespans expire. USDA data prior to 2004 will be very difficult to collect. This will have to be done manually with staff visiting county field offices to verify data by hard copy.

2.1.2 State Agency / Non-Governmental Organizations Protocol

After Practices expire and are no longer being reviewed by Federal Agencies, State Agencies will take over and follow the same protocol as Federal Agencies employing a 5% verification rate for the following High and Medium Priority Best Management Practices after their lifespan expires. (For acronyms, refer to guide immediately below this list.)

- Pasture Fencing (FI)
- Forest Buffer (FI & RS)
- Grass Buffer (FI)
- AWMS (FI & RS)
- Barnyard Runoff Control (FI)
- Composters (FI & RS)
- Nutrient Management (FR)
- Conservation Till (FR, TS, AS)
- Cover Crops (FR, TS, AS)
- Manure Transport (FR)
- Precision Rotational Grazing/Prescribed Grazing (FR & AS)
- Tree Planting (FI)
- Pasture Alternative Watering/Watering Facility (FI & RS)
- Stream Restoration (FI)
- Wetland Restoration (FI)

Farm Inventory (FI)

A survey or listing of physical BMPs completed by certified, trained technical staff, or by the producer. The survey or listing is based on physical inspection. The reliability of the information and the level of verification depends upon the intensity and frequency of the survey, the training of the person completing the survey, and whether the person completing the survey must certify to its accuracy with penalties for false

information. Producer completed inventories without third-party verification are not considered an adequate method for verification.

Office/farm Records (FR)

An evaluation of paperwork on record at the conservation district office or the farm operation itself rather than an on-site inspection of physical BMPs. Records alone are not considered an adequate method for verification, but can be a critical compliment to other methods, especially when associated with non-visual assessment BMPs.

Transect Survey (TS)

An inspection of a statistical-based sampling of BMPs. A transect survey is appropriate for a single year visual assessment of practices such as tillage management. The reliability of this method is based on the sampling and inspection methods and the training and independence of the inspectors. Transect surveys as a visual verification method are not considered an adequate method for verifying non-visual BMPs, or multi-year visual BMPs which require direct inspection, office/farm records, or certified training and engineering.

Agency-sponsored Surveys (AS)

A survey of a statistical sampling of farms. Limitations on the reliability of data are similar to those for farm inventory and office/farm records. Periodic surveys and associated reports published by the National Agricultural Statistics Service (NASS), Conservation Effects Assessment Program (CEAP) and Natural Resources Inventory (NRI) are examples of this type of survey.

Remote Sensing (RS)

A science-based review of images or photographic signatures verified through aerial photography, satellite imagery, or similar methods to identify physical practices on the landscape. This method may involve site-by-site imaging or statistical sampling. Implementing a sufficient land-based sampling validation protocol is necessary for ensuring the analysis of the remote images or photographic signatures are calibrated to actual conditions.

Data to be collected during inspections:

- Organization who collected data
- Farm/Site Name
- County
- BMP Name
- BMP Details (varies by BMP, i.e. Cover Crop Type, Planting Date, Number of Animals etc.)
- Lat/Long
- Units
- Farm/Tract/Field
- Progress Year
- BMP Status
- Date of Collection
- Date of Implementation
- BMP Lifespan
- Adjusted Lifespan (for future verification)
- Prior Land Use
- Post Land Use
- Cost Shared (yes/no)

- Meets NRCS Standards (yes/no)
- Photos or other documents to attach (optional)

After original practice lifespans have expired, any practice must be verified to be credited, and will then have adjusted lifespans applied to each practice based on the type of practice (i.e. structural, etc.).

2.1.3 **ADJUSTED LIFESPANS (to be reviewed by agencies before distribution)**

10 YEARS

- AWMS
- Composters
- Pasture Alternative Watering/Watering Facility
- Stream Restoration*
- Wetland Restoration*

**BMPs covered under Section 5 Stream Restoration and Section 7 Wetland Restoration*

5 YEARS

- Pasture Fencing
- Barnyard Runoff Control
- Tree Planting**

***BMPs covered under Section 3 Forestry*

3 YEARS

- Forest Buffer**
- Grass Buffer

***BMPs covered under Section 3 Forestry*

1 YEAR

- Nutrient Management
- Conservation Till
- Cover Crops
- Manure Transport
- Precision Rotational Grazing/Prescribed Grazing

2.1.4 **Programmatic Constraint**

West Virginia's Verification Program is based on voluntary principles and will work to verify agricultural practices on farms whose owners are willing to share information with Federal and State Agencies and Non-Governmental Organizations.

The program goal is to verify 100% of practices on the landscape, but this will take several years. West Virginia proposes to only sunset practices that are no longer on the ground or functioning properly. Currently, the WV program is not planning to extrapolate across the entire universe of practices.

At this time West Virginia has no plans to assess BMP performance. This may be something that could be explored down the road.

2.1.5 *Verification Methods and Procedures (for R.I. Practices)*

Resource Improvement practices information will be collected during farm visits for future inclusion in the Bay model. See Attachment H for more information.

2.1.6 *Verification Training Program*

Upon approval of West Virginia's Verification Program, West Virginia will begin to assemble and train the "West Virginia Agriculture Verification Program Implementation Team". These individuals, who are already professionals in the conservation field, will lead the State effort in tracking, reporting, and verification of agricultural BMPs. These individuals will be required to participate in a training session to become fully certified in West Virginia to verify and report agricultural BMPs.

These individuals will be required to:

Attend a one day training course which will be sponsored by the West Virginia Conservation Agency (WVCA), the West Virginia Department of Agriculture (WVDA), the USDA Natural Resources Conservation Service (NRCS), and Farm Service Agency (FSA). This one day training session will provide all attendees the knowledge to determine NRCS and FSA practice names, and specifications. During this training, a professional previously trained in NRCS Best Management Practices, will review attendees work after they have documented a pre-determined number of practices. West Virginia is considering holding this one day training session at the WVU Reymann Memorial Farm in Wardensville, WV, where several Best Management Practices have been implemented.

A future training program for non-professionals (those who are not well versed in conservation programs) will be developed over the next two years. It is anticipated that non-professionals will be able to assist in verifying a subset of the priority practices, for which data are simpler to collect, such as animal waste structures and composters.

2.1.7 *Verification Pilot Project*

West Virginia will begin a verification pilot project shortly after the Verification Program has been approved by EPA. This pilot project will include three certified individuals representing the West Virginia Department of Agriculture, West Virginia Conservation Agency, and a Conservation District. This team will be tasked with collecting detailed information on a minimum of three BMPs. These three individuals will then log in to the Agriculture Database and enter required information.

The three test BMPS will utilize the following verification techniques (one each):

- Visual Assessment
- Remote Sensing
- Review of Farm Records

State and Federal Agency personnel will then review data collected and entered into the database for accuracy. If the review shows that there are any shortcomings in data collected, then retraining by Federal and State agency staff will commence. This pilot project will be completed by December 31, 2015.

2.1.8 *BMP Grouping*

The agriculture workgroup BMPs are organized into four separate BMP categories, and each is described in the following sections.

- Structural
- Structural/Agronomic

- Management
- Annual

Note: Stream restoration and wetland restoration are not covered by the agriculture workgroup and are included in Sections 5 and 7.

2.2 Structural BMPs

Structural BMPs include:

- 1) **Pasture Fencing:** Stream access control with fencing involves excluding a strip of land with fencing along the stream corridor to provide protection from livestock. The fenced areas may be planted with trees or grass, or left to natural plant succession, and can be of various widths. (SB 8.4.27) This BMP excludes animals from streams. It incorporates both alternative watering and installation of fencing that eliminates livestock access to narrow strips of land along stream. (MAWP 414)
- 2) **Alternative Waste Management Systems:** Practices designed for proper handling, storage, and utilization of wastes generated from confined animal operations. (SB 8.4.1)
- 3) **Barnyard Runoff Containment:** Includes the installation of practices to control runoff from barnyard areas. This includes practices such as roof runoff control, diversion of clean water from entering the barnyard and control of runoff from barnyard areas. (SB 8.4.2)
- 4) **Composters: (has not been reported through 2012):** *A physical structure and process for disposing of dead poultry. Composted material is combined with poultry litter and land applied using nutrient management plan recommendations. (SB 8.4.6) Mortality composters involve composting routine mortality in a designed, on-farm facility, with subsequent land application of the compost. This prevents the necessity to bury dead animals that could result in nutrient leachate, or rendering of dead animals for processing into animal feeds or incineration. Mortality composting can be, and is applied, to various species including poultry, swine and dairy calves (p. 395 MAWP).*
- 5) **Pasture Alternative Watering/Watering Facility:** Alternative watering facilities typically involves the use of permanent or portable livestock water troughs placed away from the stream corridor. The source of water supplied to the facilities can be from any source including pipelines, spring developments, water wells, and ponds. In-stream watering facilities such as stream crossings or access points are not considered in this definition (Scenario Builder documentation 8.4.26). This BMP requires the use of alternative drinking water sources away from streams to reduce the time livestock spends near and in streams and streambanks reducing direct manure deposition to streambeds and banks and also reducing erosion and nutrient deposition to riparian areas. (MAWP p. 414)

2.2.1 BMP verification

West Virginia's structural BMPs are driven by cost-share and non-cost-share programs. Five percent (5%) of structural BMPs will be inspected, based upon current NRCS protocols. 1-5 above, each will be inspected one time post construction. If not up to standard, the producer is required to bring the practice up to standard and NRCS conducts a follow up inspection. If cost shared under West Virginia's Section 319 program, structural practices will be inspected once per year for 5 years. The inspection method will be visual and will be conducted by the funder, which could be NRCS, WVDA, or WVCA. These staff members will be trained as outlined in **Error! Reference source not found..** The staff members will ensure that each structural BMP meets the Federal standards. Information will be recorded in WVDA's database, spreadsheets, and written files.

The inspection process will be documented in and checked against the QAPP (Attachment A). Results will be reported to USEPA and/or the public by county.

2.2.2 **BMP validation**

The WVDA will prevent double-counting by performing a database/paper check of an adequate statistical sample.

2.2.3 **BMP performance**

Agriculture group indicated that this is not applicable

2.3 **Structural/Agronomic**

This grouping of BMPs includes:

- **Forest Buffer:** Agricultural riparian forest buffers are linear wooded areas along rivers, stream and shorelines. Forest buffers help filter nutrients, sediments, and other pollutants from runoff as well as remove nutrients from groundwater. The recommended buffer width for agricultural riparian forest buffers is 100 feet, with a 35 feet minimum width required. min width = 35', recommended 100' ... defined as having a vegetative cover of 60% or greater (SB 8.4.9).
- **Grass Buffers:** Grass buffers are grass plantings between fields and rivers and streams. They are linear strips of vegetation along rivers and streams, helping to filter nutrients, sediment, and other pollutants carried in runoff. Min width = 35', recommended 100' (SB 8.4.10).
- **Tree Planting:** (Row Crop): Any tree plantings on any site except those along rivers and streams. Tree plantings do not include reforestation. Targets land that is highly erodible or identified as a critical resource area. Density should be sufficient to produce forest-like cover over time. CRP planting given as an example (SB 8.4.4).

2.3.1 **BMP verification**

West Virginia's Structural/Agronomic BMPs are driven by cost-share and non-cost-share programs. Five percent (5%) of Structural/Agronomic BMPs will be inspected through aerial coverage and will all be reviewed annually. The verification is decided by CREP, WVCA, WVDOP, and NGO protocols. The Structural/Agronomic BMPs described above will be inspected according to the protocols listed below. Details on verification strategy for each agency are included in Section 2.1.1.

- Forest Buffer - CREP, WVCA, WVDOP and NGO protocols
- Grass Buffer - CREP, WVDOP protocols
- Tree Planting - Once post practice

The inspection method will be visual and will be conducted by NRCS, WVCA, WVDOP, NGO depending on the BMP and/or funder. These staff members will be trained as outlined in Section 2.1.6. The staff members will ensure that each structural BMP meets the Federal standards. Information will be recorded in written notes and an electronic form. The inspection process will be documented in and checked against the Agricultural Workgroup QAPP, Attachment A. Results will be reported to USEPA and/or public by county.

2.3.2 **BMP validation**

The WVDA will prevent double-counting by performing a database/paper check of an adequate statistical sample. Additional checks for accuracy are defined by BMP in Section II. of the QAPP, Attachment A.

2.3.3 *BMP performance*

Agriculture group indicated that this is not applicable

2.4 Management

- **Precision Rotational Grazing:** This practice utilizes a range of pasture management and grazing techniques to improve the quality and quantity of the forages grown on pastures and reduce the impact of animal travel lanes, animal concentration areas or other degraded areas (SB 8.4.29); part of proposed Pasture Management BMP in MAWP p. 746.
- **Nutrient Management:** Application of nutrients to croplands [although WVDA also keeps track of nutrient management plans' pasture and hay acreage, as well, so these can be reported separately]. Details type, rate, timing, and placement of nutrients for each crop. Soil, plant tissue, manure and/or sludge tests used to assure optimal application. Revised every 2-3 years (SB 8.4.8).
Note: short-term expert panel recommendations were approved October 2013.

2.4.1 *BMP verification*

Management BMPs are driven by cost-share and non-cost-share programs. These BMPs are inspected through paperwork reviews. The Management BMPs will be inspected as follows:

- One hundred percent (100%) of the Nutrient Management BMPs will be inspected by NRCS annually, and by the state one time every 3 years.
- Five percent (5%) of the Precision Rotational Grazing BMPs will be inspected once a year for 3 years.

The inspection method will be paperwork-based and will be conducted by the funder, which could be NRCS, WVDA, NGO, or WVCA. These staff members will be trained as outlined in 5.1.6. The staff members will ensure that each structural BMP meets the Federal and/or State standards. Information will be recorded in written notes and electronic files. The inspection process will be documented in and checked against the Agricultural Workgroup QAPP, Attachment A. Results will be reported to USEPA and/or public by county.

2.4.2 *BMP validation*

The WVDA will prevent double-counting by performing a database/paper check of an adequate statistical sample.

2.4.3 *BMP performance*

Agriculture group indicated that this is not applicable

2.5 Annual

- **Manure Transport:** Participation in a litter transfer program, also voluntary broker participation.
- **Cover Crops:** Planting and growing of cereal crops (non-harvested) with minimal disturbance of the surface soil. The crop is seeded directly into vegetative cover or crop residue with little disturbance of the surface soil (8.4.19). Non-harvested winter cereal cover crops, including wheat, rye and barley, designed for nutrient removal (MAWP p. 99). *Note: short-term expert panel recommendations were approved October 2013.*
- **Conservation Till:** Conservation tillage involves planting and growing crops with minimal disturbance of the surface soil. Conservation tillage requires two components, (a) a minimum 30% residue coverage at the time of planting and (b) a non-inversion tillage method (SB 8.4.12) *Note: short-term expert panel recommendations were approved October 2013*

2.5.1 **BMP verification**

BMPs in the annual category are driven by cost-share and non-cost-share programs. Annual BMPs are inspected through visual reviews except for manure transport, which is inspected through a paperwork review. All Annual BMPs are inspected one time after the practice occurs. The inspection method will be visual and will be conducted by the funder, which could be NRCS, WVDA, or WVCA according to the funder's protocol (See Section 2.1.1). These staff members will be trained as outlined in 2.1.6. The staff members will ensure that each structural BMP meets the federal, state, or individual standards. Information will be recorded in written notes and electronic files. The inspection process will be documented in and checked against the QAPP, Attachment A. Results will be reported to USEPA and/or the public by county.

2.5.2 **BMP validation**

The WVDA will prevent double-counting by performing a database/paper check of an adequate statistical sample.

2.5.3 **BMP performance**

Agriculture group indicated that this is not applicable.

Table 2: Summary of Agricultural BMP verification program

A. Program Component	B. Program Elements	C.1 Structural BMPs Verification Program	C.2 Structural/ Agronomic BMPs Verification Program	C.3 Management BMPs Verification Program	C.4 Annual BMPs Verification Program
i. BMP Verification	1. What was the driver for BMP installation?	Cost-share and Non-Cost-Share	Cost-share and Non-Cost-Share	Cost-share and Non-Cost-Share	Cost-share and Non-Cost-Share
	2. How many BMPs will be inspected?	Percentage - 5%	Percentage - 5%	100% Nutrient Management, 5% Precision Rotational	N/A
	3. How is inspection frequency and location determined?	Based upon current protocols	Based upon current protocols	Based upon current protocols	Based upon current protocols
	4. How often are BMPs/groups of BMPs inspected?	1 time post construction and as needed (EXCEPT FOR Pasture Alternative Water - 1 time post construction and as needed (319 once per year for 5 years) ; Stream Restoration - WVCA once during build, then annually 5 years, NRCS 1 time post construction (CORPS requirement also) ; Wetland Restoration - 1 time post construction (easements every year) WVCA annually for life of contract)	Forest Buffer - CREP, WVCA, WVDOF and NGO protocols (DEFINE); Grass Buffer - CREP, WVDOF protocols(DEFINE) ; Tree Planting - Once post practice)	Nutrient management - NRCS every year, State 1 time every 3 years ; Precision Rotational Grazing- Once per year for three years	Once post practice
	5. What is the method of inspection?	Visual	Visual	Paperwork Review	Visual and Paperwork Review for Manure Transport

	6. Who will conduct the inspection and is he/she certified/trained?	NRCS, WVCA, WVDA	NRCS, WVCA, WVDA, WVDOC, WVCA, NGO, depending on BMP	NRCS, WVDA WVCA NGO et.al.	NRCS, WVDA WVCA NGO et.al.
	7. What needs to be recorded for each inspection?	If it meets Federal Standards	If meets federal standards	If it meets Federal/State standards	If meeting Federal/State/Individual Producer standards
	8. Is execution of the inspection process documented in and checked against an updated quality assurance (QA) plan?	Yes	Yes	Yes	Yes
	9. How is collected data recorded?	Written Notes and Electronic Files	Written Notes and Electronic Files	Written notes and electronic files	Written notes and electronic files
	10. At what resolution are results reported to EPA and/or the public?	By County	By County	By County	By County
ii. BMP Data Validation	11. What is the QA/QC process to prevent double-counting or counting of BMPs no longer in place?	Database/paper check of adequate statistical sample	Database/paper check of adequate statistical sample	Database/paper check of adequate statistical sample	Database/paper check of adequate statistical sample
	12. What is the method used to validate state's ability to collect and report correct data?	Database/paper check of adequate statistical sample	Database/paper check of adequate statistical sample	Database/paper check of adequate statistical sample	Database/paper check of adequate statistical sample

	13. If data is provided by external independent party or industry, what method is used to provide adequate QA for acceptance by the Chesapeake Bay Program?	Database/paper check of adequate statistical sample	Database/paper check of adequate statistical sample	Database/paper check of adequate statistical sample	Database/paper check of adequate statistical sample
	14. Who conducts data validation?	WVDA	WVDA	WVDA	WVDA
iii. BMP Performance	15. What is the process to collect data to assess BMP performance and confirm consistency with the Chesapeake Bay Program's approved BMP efficiencies?	N/A	N/A	N/A	N/A
	16. Who collects BMP effectiveness data?	N/A	N/A	N/A	N/A

3. FORESTRY

Forests cover the majority of the landscape in each Bay state. Protection of forested lands and restoration of trees in priority areas, such as riparian forest buffers (RFBs) along streams and shorelines, are vital for Bay watershed water quality and ecological health. The CBP Executive Council adopted an ambitious, science-based RFB goal in 2007 as part of the Forest Conservation Directive. Riparian forest buffers planted on agricultural land are one of the BMPs on which the states are most relying to achieve Bay water quality goals in their Phase II Watershed Implementation Plans. In addition to RFBs, other forestry BMPs play an increasingly important role, especially in the urban sector (see Section VI.).

Forests are not generally pollution sources. Instead, they absorb and use nutrients (greatly reducing nutrients from airborne sources, for example) and retain and use sediment, thus aiding pollution prevention. Four of the five Forestry BMPs covered by this guidance are types of tree planting designed to improve environmental and water quality conditions in currently nonforested areas, including tree planting in riparian areas. These tree planting practices apply to agricultural and urban landscapes. The forest harvesting BMPs are the only BMPs applied specifically to current forest landscapes at this time.

Generally speaking, forest planting BMPs (riparian forest buffers and tree planting) are intended to last for a very long time. After verifying that buffer and tree planting projects have been installed and surviving according to plans, and after performing site inspection and maintenance during the initial growth period or until considered established), forest BMPs will become easier to verify by aerial photography and inexpensive to maintain over the long term compared with other types of BMPs. Once the tree planting is established, the principal remaining concern is whether effectiveness of buffers will be undermined by concentrated flow or channelization circumventing the benefits of the buffer.

The five forestry BMPs for which verification guidance is presented are: a) agricultural riparian forest buffers; b) agricultural tree planting; c) expanded tree canopy; d) urban riparian forest buffers; and e) forest harvesting BMPs. Because of similarities in how the two agricultural BMPs are implemented, and how the urban forestry BMPs are implemented, they are grouped accordingly. This guidance is for use by the Chesapeake Bay states and, in general applies to federal installations as well, so they may use it to write Protocols for verification. The Forestry Workgroup is mindful of the extensive resources needed to support BMP verification, and fully supports the "verification intensity" concept recommended by the CBPVRP (2013). The intensity of verification efforts should be in direct proportion to contribution that a BMP makes to overall TMDL pollutant reduction in a state's Watershed Implementation Plan. The basic notion is to prioritize local and state verification resources on the BMPs that produce the greatest modeled load reduction in each state as reported in their annual progress runs to CBP. The converse also applies: less verification resources should be devoted to BMPs that make minor contributions to overall load reductions.

Riparian Forest Buffers and Tree Planting BMPs are verified and counted by the Agriculture BMPs and practices are discussed in Section 2.3.

3.1 Forest Harvesting BMPs

Forest Harvest BMPs Description: Forest harvesting practices are a suite of BMPs that minimize the environmental impacts of logging, including road building and site preparation. These practices can greatly reduce the suspended sediments and other pollutants that can enter waterways as a result of timber operations. The CB model currently assumes an average of 1% of forest is harvested in any given year, unless more accurate data are supplied by the state. The modeled pollution load from forest harvesting is reduced based on the annual number of acres of forest harvesting BMPs reported.

Current procedure: All States have adopted recommended BMPs for timber harvesting and forest management activities (also called Silvicultural BMPs) that have the potential to impact water quality. These water quality BMPs have common elements although they may vary from state-to-state and their use is site dependent. For the purposes of monitoring, BMPs are grouped by area of concern such as:

- Roads and timber loading areas
- Stream crossings
- Stream Management Zones or Riparian areas
- Wetlands
- Use of chemicals

3.1.1 *Forest Harvesting BMP verification*

WV's Logging and Sediment Control Act (LSCA) (WV Code 19-1B-12) requires all timber harvest operations to notify the WV Division of Forestry (WVDOF). Additionally, timber operators must complete an initial BMP course and refresher courses every 3 years.

All BMPs associated with registered timber harvest operations on public and private land will be inspected at least three times according to IAW DOF policy. WV law mandates only a final inspection for reclamation. It depends upon whether all LSCA positions are filled, whether additional inspections are completed.

Trained WVDOF LSCA Foresters will conduct inspections. Timber operators also receive training on BMPs, and must refer to the BMP manual. WVDOF LSCA Foresters will record whether BMPs are in place, meet prescribed standards, and are functioning as designed. If any of these are lacking, it will be recorded.

Table 3: Prescribed standards by Forest Harvesting BMP type

General Forest Harvesting BMPs	Haul/skid Roads and timber loading areas	Streamside Management Zones (wetlands managed same way)	Stream Crossings
Reclamation on all areas after harvest is complete.	Road surface and grades, proximity to streams, good drainage practices including culvert size/waterbars. Landings, location and water control structures.	Landing and roads offsets. No equipment allowed except for crossing at 90 degrees with water structures. Seeding and mulching after construction	Water structures standardized, Seeding and mulching after construction

There is no QA plan in place to check against.

The collected data is recorded in the LONIE (Logging Operation Notification, Investigation and Enforcement) database. The following information is digitally entered in the LONIE database: First visit: "Notification Form;" Second and subsequent visits: "Investigation Form;" Final visit: "Final Inspection Form." If problems are found with the BMPs during the process, "Compliance Orders" and hard-copy "Tickets" are issued, and "Suspensions" and "Suspension Releases" are used as needed.

The acres of forest registered as timber operations are aggregated by county and entered into the NEIEN (National Environmental Information Exchange Network) for annual progress reporting.

3.1.2 *Forest Harvesting BMP validation*

By law, all timber harvest operations are required to notify the WVDOF prior to beginning operations. The notifications include, among other items, acreage to be harvested, what type of harvest, location, and time

period. Data from the notifications are entered into the LONIE system. The system was developed by the Appalachian Hardwood Center at West Virginia University.

The procedure used to compile data is the LONIE system, which can be queried to report on a number of different requests and compile them as an Excel spreadsheet. For acreage reporting, we use job start dates only to avoid double counting. WVDOP reports acres to WVDEP staff.

Ninety eight percent (98%) of the registered acres with BMPs applied are reported. The rationale for this is that occasionally, we do have illegal logging activity that is discovered after the fact and does not get reported. We do not track these because there are others that we never discover. 2% is an estimate of unknown illegal activity that may or may not have BMP's applied. Therefore, the WVDOP adds this 2% to the total number of known harvest acreage.

The process to prevent double counting is basic. First, we are certain of not double-counting because only unique close-out dates are queried. Second, there is a database check of the query to ensure that the same tract of harvested timber was not reported by two or more harvest companies.

WVDOP is the regulatory agency that will conduct the data validation. They employ three LSCA foresters. Staff includes supervisor of LSCA foresters and the Assistant State Forester. These positions are fully staffed.

3.1.3 Forest Harvesting BMP performance

Assessment of BMP performance and consistency with the Chesapeake Bay Program's approved BMP efficiency will be conducted by the Region 1 LSCA Specialist.

The BMP manual is revised at least every 5 years by a committee including university researchers, WVDEP, and industry representatives. Also, Federal (USFS) Fernow Research Forest provides recent information through committee networks. WVDOP staff participate in Chesapeake Bay Program Office (CBPO) Forestry Workgroup.

The WVDOP will collect BMP effectiveness data.

3.2 Forest Conservation BMPs

There are currently many agencies coordinating land conservation in the West Virginia Potomac drain counties. The WVDOP works with the Forest Legacy Program. Other NGO's involved include: Potomac Conservancy, Cacapon & Lost River Land Trust, Land Trust of the Eastern Panhandle, Nature Conservancy, and Conservation Fund. Also each county has a Farmland Protection Board. In addition, other land is protected through programs such as the American Battlefield Protection Plan and The Outdoor Heritage Conservation Fund.

3.2.1 Forest Conservation BMP verification

The 2007 Forest Conservation directive is the driver for BMP installation. Inspections will be completed by the managing organization. Inspections will occur one time after conservation, and additional inspections will vary depending on the agency. The number of acres of forestland conserved will be inspected. The first inspection will be completed through aerial coverage and the method of subsequent year inspections will be determined by the controlling agency.

WVDOP staff contacts the region's land trusts and other local organizations involved in conserving land, e.g. county farmland protection agencies, to determine the number of acres conserved in each county. WVDOP attempts to track location of acres reported, or a property name, so they will not be double counted in the future. WVDOP staff will also conduct aerial coverage analyses.

Data will be maintained by the managing organization. Information recorded describing each conservation project and QA varies by managing organization.

The collected data, acres of forestland conserved, is recorded by county in an excel spreadsheet by WVDOF. This information is currently reported annually by the WVDOF to the US Forest Service.

Forest Conservation acreage is expected in perpetuity.

3.2.2 Forest Conservation BMP validation

The WVDOF staff will contact the region's land trusts and other local organization to verify.

The location of acres reported, and/or property names are recorded so that acres will not be double counted. The region is small therefore, if an unreasonably large number of acres in any of those categories are reported by agencies, the locations could be questioned.

3.2.3 Forest Conservation BMP performance

WVDOF staff will collect the data to assess the BMP performance and confirm consistency with the Chesapeake Bay Program approved BMP efficiencies by contacting the region's land trusts and other local organizations involved in conserving land, e.g. county farmland protection agencies, to determine acreages to report in this category.

3.3 Expanded Tree Canopy

Expanding tree canopy involves increasing the overall percent of tree cover in a geographically defined locality on developed land. Credit is applied according to the number of new acres (net gain) of tree cover, i.e., amount of canopy expansion. If trees are not planted in a contiguous area, such as for street trees, then number of trees can be converted to acres using the following conversion factor: 100 trees = 1 acre of new tree cover. All tree planting data is aggregated and submitted to the state by a locality for further aggregation to the CB model per land-river segment.

3.3.1 Expanded Tree Canopy BMP verification

BMP installation was/is driven by the Forest Restoration Strategy.

All tree canopy expansion areas will be inspected. Every 5 years, a locality should re-assess the tree canopy in its defined boundaries to show that there has not been a decrease in overall canopy.

Cacapon Institute, in cooperation with the WV Chesapeake Bay Forester and WV Urban & Community Forestry Council, will determine frequency and locations to be inspected. WV Bay Program aggregates all BMP reporting through the WVDEP. Any Tree Canopy Expansion will be evaluated for each municipality reporting tree plantings. (Note: The CBP Forestry Workgroup is working on an Urban Tree Canopy landcover map for the entire Bay Watershed that could be completed as early as 2018. Thereafter, every five years, a new UTC landcover map will be produced. The verification method discussed here and in the riparian forest section are intended to be stop-gap measures to ensure verification interim, prior to the improved verification anticipated under the Forestry Work Groups plan.)

This is important especially since tree canopy losses may occur despite good policies and practices for urban forestry. Ongoing problems for tree canopy are the expansion of invasive pests such as emerald ash borer, required tree trimming for electrical reliability standards, and natural aging of trees.

Tree canopy will be assessed every two years by Cacapon Institute using iTree Canopy or similar human-eye interpretation of aerial imagery. iTree Canopy produces a statistical assessment of landcover and can be

used to evaluate aerial imagery. Similar tools are available in Arc GIS. Statistical assessment does NOT map tree canopy, it projects the likelihood of landcover change over time. Expanded Tree Canopy will cover only developed lands, not forest, agriculture, or riparian areas. “Developed lands” are determined by the Chesapeake Bay Program and the GIS shapefiles are available from CBP. Riparian areas will be clipped, or removed, from the study area using CBP shapefiles for HUD stream data sets by setting 35’ riparian buffers aside. (These will be assessed separately – see Urban Riparian Forest Buffers below).

The method of inspection is as follows. iTree Canopy type surveys utilize NAIP (National Agriculture Inventory Program) <2 meter resolution natural color aerial imagery for human-eye landcover interpretation. Landcover will be assessed using the USDA Forest Service-University of Vermont 7-landcover sets: canopy, green space, bare soil, water, building, road/railroad, and transportation-other (impervious). From this classification of points, a statistical estimate of the amount or percent cover in each cover class can be calculated along with an estimate of uncertainty of the estimate (standard error (SE)). iTree explains this as follows:

“To illustrate how this is done, let us assume 1,000 points have been interpreted and classified within a city as either “tree” or “non-tree” as a means to ascertain the tree cover within that city, and 330 points were classified as “tree”. To calculate the percent tree cover and SE, let:

N = total number of sampled points (i.e., 1,000)
 n = total number of points classified as tree (i.e., 330), and
 $p = n/N$ (i.e., $330/1,000 = 0.33$)
 $q = 1 - p$ (i.e., $1 - 0.33 = 0.67$)”

To ensure a rigorous assessment/analysis a Standard Error (SE) of >90 (i.e. +/- 5%) is desirable.

Standard Error (SE) = $\sqrt{pq/N}$ (i.e., $\sqrt{0.33 \times 0.67 / 1,000} = 0.0149$)

Using iTree Canopy in the most recent NAIP a set of data points will be established. These can be compared to NAIP imagery from six years prior (NAIP is collected on odd-numbered years). The analysis will show, statistically speaking, if Tree Canopy is expanding or declining.

Cacapon Institute has been conducting iTree Canopy inventories since 2006. iTree Canopy is provided by the USDA Forest Service. WVU and Shepherd University graduate and undergraduate students, and WVDEP or WVDOP personnel, even volunteers may assist in the analysis but the iTree Canopy report will be managed and produced by Cacapon Institute for the WVDOP and WVDEP. Cacapon Institute is the WV DEP Bay Program partner endorsed to represent WV urban forestry issues to the CBP Forestry Work Group. WVDEP and WVDOP will have oversight.

In addition to two-year iTree Canopy statistical analysis there will be annual inspection of new plantings. Since the Expanded Tree Canopy goal, ultimately, is measured by iTree Canopy type statistical analysis, the annual tree inspections are not a final conclusion. However, annual, on-the-ground, inspections are crucial to detecting early problems with tree establishment or mortality. The iTree statistical analysis is not intended as a management tool and does not provide insight into site-specific challenges. Therefore, annual inspection is required. As the number of tree planting sites increases a random sampling regiment will be required. Annual inspection of every site newer than three years is required. Once a sites has been in place for four or more years it should be moved into an inspection routine of random sites (i.e., only 20% of sites >4 years old are physically inspected).

Table 4: Data to record for expanded tree canopy projects

New plantings	Natural Regeneration Areas	Voluntary Acres
<p>For new plantings, the following information should be collected:</p> <ol style="list-style-type: none"> 1. Date of planting 2. Location 3. Number of trees by: <ol style="list-style-type: none"> a. Species b. Stock size (i.e., tree size at time of planting) <p>Anticipated management regime (e.g., care will be weekly watering and care , monthly, annually, or “plant-and-forget”)</p> <p>Urban tree canopy plantings can be credited once planting is confirmed. Plantings that fail must be replanted (no additional credit) or removed from the NEIEN database.</p>	<p>Natural regeneration will show in the iTree Canopy assessment. On the ground verification is not required.</p> <p>However, if areas are delineated and intentionally set aside for natural regeneration they should be inspected annually and the regeneration documented with photographs.</p>	<p>Like natural regeneration, voluntary planting on private land will present increased tree canopy in the iTree Canopy assessment.</p> <p>Volunteers should be encouraged to report private land plantings. WV is adopting a SMART Tool type of online volunteer reporting mechanism.</p> <p>Volunteer, self-reported, plantings should be inspected on a random basis based on resources available. A rate of 20% inspections of self-reported volunteer plantings is a minimum if credit is claimed.</p>

The Expanded Tree Canopy data for urban and developed lands, will be collected by Cacapon Institute in partnership with the WVDOP and reported to the WVDEP who will, in turn, report the information to the EPA Chesapeake Bay Program.

3.3.2 *Expanded Tree Canopy BMP validation*

To provide accountability, state forestry agencies regularly spot-check a subset of a locality/urban forest partner BMP project files and/or 5-year assessments of net gain for accuracy and thoroughness.

This may also entail site visits to tree planting sites on record.

The state oversight process needs to be transparent and publicly accessible so that NGOs, watershed groups and other stakeholders can be confident that BMP implementation is real. Improvements on reporting are suggested. The state forestry agency should coordinate with the state MS4 oversight program, where local partners are implementing tree planting BMPs regulated by that program.

Cacapon Institute’s work will be validated by the WV Urban & Community Forestry Council; the WV State Urban Forester, and WV Chesapeake Bay Forester. Cacapon Institute will maintain a public and accessible program under oversight from WVDOP, WVDEP, and the Bay Forestry Workgroup.

3.3.3 *Expanded Tree Canopy BMP performance*

Cacapon Institute, with WVDOP and WV DEP Bay Program Partners will collect data and assess BMP performance. WVDEP, as state lead in BMP reporting, will inspect and verify the BMP inspection process to ensure it conforms to, and is consistent with, the Chesapeake Bay Program’s approved BMP efficiencies.

3.4 Urban Riparian Forest Buffers

Urban forest buffers are described as an area of trees at least 35 feet wide on one side of a stream, usually accompanied by trees, shrubs and other vegetation that is adjacent to a body of water. An urban riparian forest buffer is any riparian buffer not in an agriculture or forest setting—it is on developed land.

3.4.1 *Urban Riparian Forest Buffer BMP verification*

Assessment of total urban forest buffer cover in a locality will be completed every 5 years to ascertain that there is not a net loss of urban buffer. iTree Canopy will be used to assess the urban riparian forest buffers (see Expanded Tree Canopy verification method above).

The inspection will be completed by an urban forest partner. The partner would be endorsed by WVDOF, which provides oversight and support with training, tools, etc. In turn, urban forest partners can provide outreach and technical assistance on urban tree planting, tree care, and other issues that arise.

The urban forest partner should maintain information at a local level of each new urban riparian forest buffer.

- For new plantings, data to be recorded should include:
 - location (lat/long) and name of property
 - acres planted (if appropriate) and width,
 - and date(s) planted.
- For natural regeneration acres, data to be recorded should include:
 - location,
 - acres of treatment,
 - width, and
 - date started.

Naturally regenerating urban buffers are reported after 4 years of establishment if there are 100 or more live native trees per acre. For this practice, iTree Canopy data points would be located in the riparian area of a given locality. Other software may be equally useful in demonstrating there has not been a loss of buffer. If a loss of urban buffer in a locality is detected, the credits received over that 5-year period will be deducted by the same amount.

3.4.2 *Urban Riparian Forest Buffer BMP validation*

To provide accountability, state forestry agencies will regularly spot-check a locality/urban forest partner BMP project files on urban forest buffer establishment and/or 5-year assessments of net gain in for accuracy and thoroughness. This may also entail site visits to buffer sites on record.

The state oversight process needs to be transparent and publicly accessible so that NGOs, watershed groups and other stakeholders can be confident that BMP implementation is real. An oversight report should be communicated with the locality/urban forest partner to underscore what is being done well and what needs improvement.

3.4.3 *BMP performance*

<No data provided>

Table 5: Verification strategies for forestry sector BMPs

A. Program Component	B. Program Elements	Forest harvesting BMPs	Forest conservation	Expanded tree canopy	Urban riparian forest buffers
i. BMP Verification	1. What was the driver for BMP installation?	Regulation	Forest Conservation directive	Forest Restoration Strategy	
	2. How many BMPs will be inspected?	All registered timber harvest operations will be inspected	All	All	All
	3. How is inspection frequency and location determined?	All are inspected at least once due to law. If all inspector positions are filled, additional inspections will be completed.	All are inspected at the time it enters a conservation agreement. Depending on the managing agency's capacity and policies, some are inspected on additional occasions.	Determined by Cacapon Institute in collaboration with the WV Chesapeake Bay Forester and WV Urban & Community Forestry Council, will follow Forestry Workgroup guidance when it is completed	All assessments are completed every 5 years. Naturally regenerating buffers are reported after 4 years of establishment
	4. How often are BMPs/groups of BMPs inspected?	At least once following reclamation, and possibly up to 3 times during the duration of harvest operations.	At least once at the time the conservation agreement begins. Additional inspections vary in frequency.	Localities re-assess their tree canopy cover every 5 years, All new plantings are inspected annually, Cacapon Institute performs an aerial imagery review every 2 years	All assessments are completed every 5 years
	5. What is the method of inspection?	Field visual	Aerial coverage review, some field inspections by managing organizations	Field inspection of new plantings, iTree Canopy statistical assessment by Cacapon Institute	iTree Canopy. See Section 3.3.1 above.

	6. Who will conduct the inspection and is he/she certified/trained?	WV Division of Forestry LCSA Foresters	Managing organization staff and/or WVD OF staff WVD OF staff are trained	Cacapon Institute staff with assistance from WVU and Shepherd University graduate and undergraduate students. They are all trained.	Urban Forest Partners, who would be endorsed and trained by WVD OF
	7. What needs to be recorded for each inspection?	Whether BMPs are in place, meet standards, and are functioning as designed	Acres and location or property name	iTree Canopy reports include a statistical estimate of the amount or percent of cover in a variety of land cover categories (See Section 3.3.1 above) For new plantings date, location, and number of trees by species and stock are reported.	New plantings: location, property name, acres planted, width of buffer, date planted Natural regeneration: location, acres of treatment, width, date started
	8. Is execution of the inspection process documented in and checked against an updated quality assurance (QA) plan?	No, but the inspecting agency does have a BMP manual	No	No	No
	9. How is collected data recorded?	Logging Operation Notification, Investigation, and Enforcement (LONIE) database	WVD OF staff collect acreages in conservation from all managing organizations	Database and spreadsheets	iTree Canopy
	10. At what resolution are results reported to EPA and/or the public?	County	County		

ii. BMP Data Validation	11. What is the QA/QC process to prevent double-counting or counting of BMPs no longer in place?	Database query	Acreages are reported for a specific location or property name. Only one acreage value will be counted per location.	WVDOF staff spot-check of partner agency project files	WVDOF staff spot-check of partner agency project files
	12. What is the method used to validate state's ability to collect and report correct data?	Database query	Data review	Data review	Data review
	13. If data is provided by external independent party or industry, what method is used to provide adequate QA for acceptance by the Chesapeake Bay Program?	NA	Data review	Cacapon Institute will maintain and collect all data, and WVDOF and WVDEP will provide oversight and will review data submitted	WVDOF staff spot-check of partner agency project files
	14. Who conducts data validation?	WV Department of Forestry	WV Department of Forestry with support from managing organizations	WV Department of Forestry, WV Department of Environmental Protection, the Bay Forestry Workgroup	WV Department of Forestry
iii. BMP Performance	15. What is the process to collect data to assess BMP performance and confirm consistency with the Chesapeake Bay Program's approved BMP efficiencies?	WV Department of Forestry staff inspectors will collect data during field inspections at the outset of reclamation	WV Department of Forestry staff will perform a data review and seek confirmation of accuracy of conservation easements in place from managing organizations	Cacapon Institute, with oversight from WVDOF and WVDEP, will collect data and assess performance	
	16. Who collects BMP effectiveness data?	WV Department of Forestry staff	WV Department of Forestry staff	Cacapon Institute	

4. STORMWATER

Stormwater runoff is one of the most significant contributors of sediment and nutrients to waterways in developed areas. Stormwater best management practices (BMPs) are implemented to promote reuse, evapotranspiration, infiltration, and/or intercept, filter, and treat surface runoff prior to discharging the runoff at a controlled rate to reduce environmental impacts on receiving waters. Stormwater managed by strategies covered in this chapter includes runoff from developed land uses identified in the Chesapeake Bay Watershed Model (CBWM). For the Phase 6 CBWM, this includes impervious surfaces, such as parking lots, rooftops, or roads; pervious surfaces, such as turf, tree canopy, or open space; and construction areas. A wide variety of BMPs are applied in stormwater management. Some examples include urban filter strips, rain gardens, bioswales, vegetated roofs, and permeable pavement.

The WV BMP Verification Guidance document follows closely the recommendations provided by the Urban Stormwater Workgroup (USWG) and the Chesapeake Bay Program (CBP). To enable consistency across the Bay watershed, definitions, wording, and procedures were, by reference or verbatim, developed through the Chesapeake Bay Program efforts. For example, modified excerpts from the CBP Urban Stormwater Workgroup's BMP Verification Guidance identify the needs, goals, and methods of urban BMP verification in West Virginia quite well.

Definitions of stormwater BMPs as described in the CBP Urban Stormwater Workgroup's BMP Verification Guidance document are listed below.

Urban BMPs: In this context, they are defined as stormwater practices for which definitions and removal rates have been developed and approved through the Bay Program BMP review protocol (WQGIT, 2010). These urban BMPs fall into four broad categories:

1. *Traditional stormwater BMPs* that were historically installed through a local stormwater plan review process in response to state stormwater requirements (primarily stormwater treatment (ST) practices as defined by Stormwater Performance Standards Expert Panel report (SPSEP, 2012).
2. *New runoff reduction BMPs* that will be implemented in the future to meet new state stormwater performance standards that typically go through a local stormwater review process (primarily runoff reduction (RR) practices as defined by SPSEP, 2012).
3. *Non-structural or operational BMPs* that are typically applied by a municipal agency (e.g., street sweeping, urban nutrient management, illicit discharge elimination).
4. *Restoration BMPs* installed by localities to treat existing impervious cover (e.g., stormwater retrofits and stream restoration).

Stormwater BMPs have been grouped into the following four categories for the development of verification strategies:

- Regulated (MS4 Communities) BMPs,
- Semi-Regulated BMPs,
- Non-regulated BMPs, and
- Legacy BMPs.

Currently, inspections of stormwater management projects are completed by state agency, trained third parties, and/or inspectors from MS4 municipalities. However, a consistent training program is currently being developed which will provide a population of qualified inspectors who can relieve the burden of inspection from public agencies. WV partners are working together with Blue Ridge Community and Technical College on developing certificate/certification programs that include inspection and verification aspects of

Stormwater Management. Our goal is to have a certification program approved by EPA/CBP that is accepted not only in WV, but also surrounding states.

4.1 Regulated BMPs (MS4s)

Regulated BMPs include any BMP that is installed in a jurisdiction that has a Phase 2 (also Phase 1 if ever applicable in WV) Municipal Separate Storm Sewer System (MS4) permit. These permits establish a requirement that a locality have a BMP maintenance program and the capacity to inspect all of their BMPs within two permit cycles (typically 10 years). In addition, MS4 communities have an annual BMP reporting requirement, and provide aggregate information to the WV DEP on the number and type of BMPs that are installed during the reporting period.

4.1.1 BMP verification

BMPs constructed within MS4 communities as part of an ordinance or permit requirement will be validated according to the existing MS4 inspection and maintenance framework. Protocols specific to each BMP will vary somewhat, but in general a designated inspector from the MS4 permitted community will review engineering documents prior to construction and will inspect each BMP within the permittee's jurisdictional boundary upon its completion to ensure that it is fully functional. Follow-up inspections will be completed for each BMP every other permit cycle (five year permit cycles) following its installation to ensure that it has been properly maintained and is still operational. Visual inspections will be used to confirm that the BMP still exists, is adequately maintained, and is operating as designed. The framework developed by the Chesapeake Stormwater Network will be utilized to guide inspections (CSN, 2013). Maintenance will be completed in accordance with CBP recommendations and current research findings and performance will be verified every ten years.

MS4 permittees are responsible for adequate training of inspectors. Taking advantage of training opportunities provided by third parties approved by WVDEP and the CBP is encouraged. It is anticipated that educational institutions such as the Blue Ridge Community and Technical College will provide certificate/certification programs in the near future. In the meantime, training opportunities provided by WVDEP are available to MS4s upon request covering various aspects of meeting MS4 permit requirements, including a three-hour training session for inspectors.

The initial verification inspection should confirm feasibility that reported BMP parameters (impervious/pervious acres treated) are accurate.

Complete inspection reports shall include:

1. Facility type,
2. Inspection date,
3. Name and signature of inspector,
4. GIS location and nearest street address,
5. Management practice ownership information (name, address, phone number, fax, and email),
6. A description of the stormwater BMP condition including the quality of: vegetation and soils; inlet and outlet channels and structures; embankments, slopes, and safety benches; spillways, weirs, and other control structures; and sediment and debris accumulation in storage and forebay areas as well as in and around inlet and outlet structures,
7. Photographic documentation of all critical stormwater BMP components, and
8. Specific maintenance items or violations that need to be corrected by the owner/operator along with deadlines and re-inspection dates.

BMP data reported to WVDEP is listed in the CBP WV Tracking spreadsheet and includes:

1. Responsible Party
2. Project/site name
3. BMP type/names (bioretention, permeable pavement, etc.)
4. Project type (new/re development, retrofit, new, converted, enhanced, restored)
5. Units (dependent on BMP, usually acres)
6. Total units treated
7. Location (lat/long)
8. Location type (BMP center, inlet, outlet; project center)
9. Date installed and date inspected
10. Performance standard/Runoff depth managed (usually 1 inch capture)
11. Predominant method for managing runoff (stormwater treatment or runoff reduction)
12. Runoff storage volume
13. Impervious acres treated
14. Pervious acres treated
15. Turf
16. Tree canopy
17. Open space
18. Other acres treated (forest, crop, hay, etc. if applicable)
19. Practice duration/lifetime (if different from standard listed in QAPP)

All MS4 communities provide reports describing BMP inspections in their jurisdictions to the WVDEP on an annual basis. WVDEP has a quality assurance plan (Standard Operating Procedures for Managing Nonpoint Source BMP Data) in place, which is assessed regularly for compliance with the CBP requirements and amended as needed. All data reported to WVDEP is listed in the CBP WV Tracking spreadsheet, which is maintained in a database and GIS platform at WVDEP. Structural BMP data is submitted to USEPA at a site specific resolution. Non-structural BMP data is summarized and reported at the County level.

4.1.2 BMP validation

Data for reported regulated BMPs is validated by the WVDEP staff stormwater BMP database administrator. Because all BMPs are field verified upon installation, quality assurance and quality control is limited to an annual database review of 10% of new BMPs. If discrepancies are found for greater than 10% of entries, data will be reviewed for all entries. Additionally, BMPs located within 200 feet of each other will be reviewed to avoid double counting.

Data collected by a third party and submitted to WVDEP are also spot checked in-field. To meet CPB quality assurance requirements data are spot checked by WVDEP staff and data are compared to data from similar communities. If discrepancies are identified, 10% of all submitted records will be reviewed and field verified. Should there be an error rate greater than 10% of those records reviewed, a thorough review of the data collection process and all records will be completed.

4.1.3 BMP performance

WVDEP staff and/or trained third party partners will assess BMP performance through visual field assessments and review of calculated efficiency data for 10% of all BMPs. MS4 permittees are also required to conduct performance verification for all BMPs every 10 years.

4.2 Semi-regulated BMPs

The semi-regulated category includes any BMP that is installed locally under a state construction general permit (CGP) or local ordinance outside of a MS4 community. CGP Erosion and Sediment Control (ESC) BMPs are inspected at least once during the construction phase by WVDEP Environmental Enforcement (EE) staff

through field verification. CGP post-construction BMPs in the Chesapeake Bay watershed are currently verified by WVDEP Watershed Improvement Branch (formerly NPS) staff after EE approves the Notice of Termination for CGP projects.

Adoption of stormwater ordinances by local governments outside MS4 areas increases BMP implementation. While permit applicant must sign an agreement that they will maintain the BMP, some non-MS4 communities do not have an inspection program to enforce BMP implementation and maintenance. These communities rely on WV DEP or third parties to complete inspections.

4.2.1 **BMP verification**

Currently, all semi-regulated post-construction BMPs identified on state CGPs CB Addendum (see WVDEP, 2015a) are inspected by WVDEP staff by field visual inspection. In the future, this task may be designated to a third party or local government. Semi-regulated BMPs located in MS4s are also regulated BMPs and should be included in the MS4 reporting requirements. Post-construction BMPs inspected by WV DEP inside MS4 boundaries are carefully checked against MS4 reports to avoid double counting. It is anticipated that MS4s will eventually perform all post-construction BMP inspections inside their jurisdiction, at which point WV DEP will discontinue post-construction BMP inspections in such areas. All CGP reported post-construction BMPs are inspected upon completion of installation, and it is recommended that all BMPs are re-verified either by WVDEP, local government, or designated third parties at least toward the end of the prescribed credit duration of the BMP (usually 10 years). The party responsible for verification of semi-regulated BMPs may elect to reduce the scope of their visual inspections by sub-sampling a representative fraction of their local BMPs and applying the results to their entire population of BMPs that are credited in the CBWM. The sub-sampling method must be designed to have at least an 80% confidence level that the BMPs are reported accurately. The party responsible may choose from several well accepted approaches to determining the sample size. These include using a census for a small population of BMPs, imitating a sample size of similar studies, using published tables, and/or applying formulas to calculate a sample size. The Statistical Sampling Approach for Initial and Follow Up Verification (Attachment J) and the Sample Size Estimation for BMP Verification (Appendix K) can be used as guides.

Information that should be documented during inspections and reported to WVDEP is listed in Section 4.1.1. Data can be reported to WVDEP using the CB WV Tracking spreadsheet. At a minimum, data reported must include the following items:

1. Project type/category (new/re development, retrofit (new, converted, enhanced, restored))
2. BMP name(s)
3. Predominant method for managing runoff (stormwater treatment or runoff reduction)
4. Volume of water treated at a site
5. Impervious acres treated by the practice(s)
6. Total site acres treated by the practice(s)
7. Location (lat/long)
8. Date installed
9. Date inspected
10. Practice duration (if different from QAPP, 10 years for most urban BMPs)

WVDEP has a quality assurance plan in place, which is assessed regularly for compliance with the CBP requirements and amended as needed. All data reported to WVDEP is listed in the CBP WV Tracking spreadsheet, which is maintained in a database and GIS platform at WVDEP. Data is submitted to USEPA at a site specific resolution for structural BMPs, and at a county level for non-structural BMPs.

In the future, for BMPs in rural counties (population <30,000 outside MS4 communities), WV DEP/third party may conduct a sub-sample statistical analysis to verify BMPs reported within several non-MS4 communities, and apply the results to reported BMP data in other comparable non-MS4s.

If a local government or third party fails to perform verification inspections, it will receive a gradual downgrade in BMP performance over time. Full performance credit will be given for the first 5 years, followed by a 20% downgrade each year over the next five years, such that entire BMP credits expire after 10 years.

WVDEP Standard Post Construction Stormwater BMP Evaluation and Extended Post Construction BMP Evaluation forms are included in attachments L and M.

4.2.2 BMP validation

Data for semi-regulated BMPs is validated by the WVDEP staff stormwater BMP database administrator. Because all BMPs are field verified upon installation, quality assurance and quality control is limited to database review of 10% of new BMPs. If discrepancies are found for greater than 10% of entries, data will be reviewed for all entries. Additionally, all BMPs located within 200 feet of each other will be review to avoid double counting.

Data collected by a third party and submitted to WVDEP is also spot checked in-field. To meet CPB quality assurance requirements data are spot checked by WVDEP staff and data are compared to data from similar communities. If discrepancies are identified, 10% of all submitted records will be reviewed and field verified. Should there be an error rate greater than 10% in those records reviewed, a thorough review of the data collection process and all records will be completed.

4.2.3 BMP performance

WVDEP staff and trained third party partners will assess BMP performance through visual field assessments and review of calculated efficiency data for 10% of all BMPs.

4.3 Non-regulatory BMPs

Non-regulatory BMPs are those that are voluntarily installed in a community that were not triggered by an explicit MS4 requirement or stormwater regulation. Examples might include rain gardens built by homeowners or demonstration BMPs constructed through grants. The credit duration for homeowner BMPs is 5 years. The credit can be renewed based on verification that the practice still exists and is working. The basic premise is to simplify the landowner BMP reporting process while still retaining a high degree of verification rigor through the process described below.

4.3.1 Verification

Non-regulated BMPs are installed voluntarily usually by private landowners. The actual installation of each homeowner BMP should be field-verified by the local government or designated third party at the time of construction, and homeowner submitted BMP data will require validation by spot checking it against typical default values for the practice. If an appropriately trained individual is not available during all stages of the construction process, pictures of the various construction stages should be provided by the installer or homeowner.

For re-verification after 5 year, local governments or designated third parties may opt to use the sub-sampling approach outlined above (Section 4.1.1). Alternatively, they may request homeowners to submit digital photos to confirm their practices, with the final decision on BMP condition made by the locality.

Information that should be documented during inspections is listed in Section 4.1.1.

Localities or third party inspectors can aggregate individual homeowner BMP data into a single practice at the county level, which is then reported to the state without any specific geographic location data (apart from the river-basin segment in which it occurred). To receive credit, local governments or a designated third party must maintain records for each individual homeowner BMP, including contact information and geographic information (lat/long or street address). Usage of the SMART tool is encouraged to identify voluntary BMPs. Data can be reported to WVDEP using the CB WV Tracking spreadsheet. At a minimum, data reported must include

1. Project type/category (new/re development, retrofit (new, converted, enhanced, restored))
2. BMP name(s)
3. Predominant method for managing runoff (stormwater treatment or runoff reduction)
4. Performance standard (1 inch capture preferred)
5. Volume of water treated at a site
6. Impervious acres treated by the practice(s)
7. Total site acres treated by the practice(s)
8. Location (lat/long)
9. Date installed
10. Date inspected
11. Practice duration (5 years for most voluntary structural BMPs)

4.3.2 **BMP validation**

Data for non-regulatory BMPs is validated by the WVDEP staff stormwater BMP database administrator. Because all BMPs are field verified upon installation, quality assurance and quality control is limited to database review of 10% of new BMPs. If discrepancies are found for greater than 10% of entries, data will be reviewed for all entries. Additionally, all BMPs located within 200 feet of each other will be review to avoid double counting.

Data collected by a third party and submitted to WVDEP is also spot checked in-field. To meet CPB quality assurance requirements data are spot checked by WVDEP staff in accordance with CBP recommendations. If discrepancies are identified, 10% of all submitted records will be reviewed and field verified. Should there be an error rate greater than 10% in those records reviewed, a review of the data collection process and records will be completed.

4.3.3 **BMP performance**

WVDEP staff and trained third party partners will assess BMP performance through visual field assessments and review of calculated efficiency data for 10% of all BMPs.

4.4 **Legacy BMPs**

The legacy BMPs category includes the population of urban BMPs in a community that the state has reported to EPA for inclusion into any past version of the CBWM for sediment or nutrient reduction credit within the previous two decades. Legacy BMPs fall into three categories:

1. *Actual BMPs with a geographic address*
2. *Actual BMPs that lack a specific geographic address*
3. *Estimated BMPs that were projected based on some assumed level of development activity and compliance with state stormwater regulations.*

WVDEP's long term goal is to clean up local and/or state BMP databases so that all entries are actual BMPs with a geographic address that can be subject to inspection verification. Assembling an actual BMP inventory from historical data is a major task, and may take several years in some communities. Localities may benefit when they clean up their BMP inventory because it is likely they will discover BMPs that were installed in the past but were never reported to the state for credit in the CBWM. They may also find cost-effective retrofit opportunities involving BMP conversion, enhancement or restoration.

MS4 communities should seek to assess their entire BMP population within two MS4 permit cycles using the methods outlined in the Stormwater Performance Standards Expert Panel report (SPSEP, 2012). The burden of assessing legacy BMPs could be sharply reduced if the most problematic older BMPs were targeted first.

An example of a strategy that could be followed by an MS4 community to assess its functional BMP population is as follows:

- Assess all pre-2000 BMPs during the first permit cycle, and focus on pre-1990 BMPs in the first two years of that cycle.
- Initially sub-sample their population of BMPs by type and year installed to look for problematic BMP types and design eras, and then focus inspection efforts on the problem BMPs in future years.
- Focus initial efforts to confirm whether estimated BMPs actually exist, and what their current condition is.

Table 6: Stormwater sector verification strategy

Program Component	Program Elements	Regulated BMPs	Semi-regulated BMPs	Non-regulated BMPs
i. BMP Verification	1. What was the driver for BMP installation?	Regulations, permit requirements, and WIP	Regulations, permit requirements, and WIP	Voluntary
	2. How many BMPs will be inspected?	<p>Inspection of all BMPs is strongly encouraged. All regulated BMPs are inspected in accordance with the MS4 permit requirements. Currently, this means that all BMPs are inspected.</p> <p>For CBP reporting purposes, a jurisdiction/designated third party may develop a sub sampling protocol for semi- and non- regulated BMPs in accordance with current CBP recommendations if a statistical analysis seems applicable. Any such sub sampling protocol must be approved by WV DEP prior to implementation. Sub sampling results must have an 80% confidence level. This does not relieve the permittee of any MS4 requirements.</p>	<p>Inspection of all BMPs is strongly encouraged.</p> <p>A jurisdiction/designated third party may develop a sub sampling protocol for semi regulated BMPs in accordance with current CBP recommendations if a statistical analysis seems applicable. Any such sub sampling protocol must be approved by WV DEP prior to implementation. Sub sampling results must have an 80% confidence level.</p>	<p>Inspection of all BMPs is strongly encouraged.</p> <p>A jurisdiction/designated third party may develop a sub sampling protocol for non-regulated BMPs in accordance with current CBP recommendations if a statistical analysis seems applicable. Any such sub sampling protocol must be approved by WV DEP prior to implementation. Sub sampling results must have an 80% confidence level.</p>
	3. How is inspection frequency and location determined?	MS4 permit requirements, CBP USWG guidance, expert panel reports, and peer reviewed research findings. Current MS4s are required to inspect every BMP at least once every ten years (two permit cycles)	CBP USWG guidance, expert panel reports, and peer reviewed research findings. Currently all BMPs are inspected at least once every ten years.	<p>CBP USWG guidance, expert panel reports, and peer reviewed research findings.</p> <p>All non-regulated BMPs are inspected at least once every five years.</p>
	4. How often are BMPs/groups of BMPs inspected?	Inspections occur at the completion of construction and again within 10 years	Inspections occur at the completion of construction and again within 10 years	Within 5 years
	5. What is the method of inspection?	Field visual.	Field visual.	Field visual.

	6. Who will conduct the inspection and is he/she certified/trained?	<p>MS4 permittees/designated third parties inspect regulated BMPs installed within their jurisdictional boundaries that are part of permit/ordinance requirements. MS4s may also assign the initial verification inspection responsibility to the BMP designer.</p> <p>WV DEP provides trainings that serve as a temporary certification using training materials that are in line with CBP recommendations. Certification/certificate program development through Community College education is currently in progress.</p>	<p>WV DEP conducts inspections on semi-regulated post-construction BMPs identified on NPDES stormwater construction permits in the CB watershed that are not located within MS4 boundaries (for CB watershed all but Berkeley County). Until MS4s inspect and report BMPs adequately, WV DEP performs inspections inside MS4 boundaries as well. WV DEP may designate trained third parties to perform inspections.</p> <p>CGP ESCs are inspected by WV DEP EE at least once during the construction phase.</p> <p>WV DEP provides trainings that serve as a temporary certification using training materials that are in line with CBP recommendations. Certification/certificate program development through Community College education is currently in progress.</p>	<p>In collaboration with the local authority, trained third parties, local governments, and WV DEP will conduct inspections of non-regulated BMPs not being captured through permitting/ordinance processes.</p> <p>WV DEP provides trainings that serve as a temporary certification using training materials that are in line with CBP recommendations. Certification/certificate program development through Community College education is currently in progress.</p>
	7. What needs to be recorded for each inspection?	<p>An appropriate inspection form, which varies for different BMPs, is used.</p> <p>Information that should be documented during inspections and reported to WVDEP is listed in Section 4.1.1.</p>	<p>An appropriate inspection form, which varies for different BMPs, is used.</p> <p>Information that should be documented during inspections and reported to WVDEP is listed in Section 4.1.1.</p>	<p>An appropriate inspection form, which varies for different BMPs, is used.</p> <p>Information that should be documented during inspections and reported to WVDEP is listed in Section 4.1.1.</p>
	8. Is execution of the inspection process documented in and checked against an updated quality assurance (QA) plan?	<p>QA plan in place, program checked and amended to ensure compliance</p> <p>The QA is described in the Standard Operating Procedures for Managing Nonpoint Source BMP Data document.</p>	<p>QA plan in place, program checked and amended to ensure compliance</p>	<p>QA plan in place, program checked and amended to ensure compliance</p>
	9. How is collected data recorded?	<p>Spreadsheet, database, and GIS platform maintained by WVDEP for inspections performed by WV DEP. MS4s maintain their own records through the use of spreadsheets, database, and/or GIS.</p>	<p>Spreadsheet, database, and GIS platform maintained by WVDEP. Potential third party spreadsheet/database/GIS maintenance in accordance with CBP recommendations.</p>	<p>Spreadsheet, database, and GIS platform maintained by WVDEP, local government, and/or third party.</p> <p>WVDEP only maintains limited data. Detailed information for each individual BMP is maintained on the local level by the</p>

				county or a third party.
	10. At what resolution are results reported to EPA and/or the public?	Site specific (GPS) for structural BMPs. County for non-structural BMPs	Site specific (GPS) for structural BMPs. County for non-structural BMPs	County at minimum. Site specific when possible.
ii. BMP Validation	11. What is the QA/QC process to prevent double-counting or counting of BMPs no longer in place?	Considering all BMPs should have been field verified in the first place, the QA/QC is limited to a database review of 10% of new BMPs. If discrepancies exceed 10%, all data will be reviewed. The stormwater BMP data base administrator will also review entries within 200 feet of each other to prevent double counting.	Considering all BMPs should have been field verified in the first place, the QA/QC is limited to a database review of 10% of new BMPs. If discrepancies exceed 10%, all data will be reviewed. The stormwater BMP data base administrator will also review entries within 200 feet of each other to prevent double counting.	Considering all BMPs should have been field verified in the first place, the QA/QC is limited to a database review of 10% of new BMPs. If discrepancies exceed 5%, all data will be reviewed. For BMPs reported with lat/long, the stormwater BMP data base administrator or designated third party will also review entries within 200 feet of each other to prevent double counting.
	12. What is the method used to validate state's ability to collect and report correct data?	Database review of 10% of new BMPs. See Standard Operating Procedures for Managing Nonpoint Source BMP Data (QAPP) for details.	Database review of 10% of new BMPs. See QAPP for details.	Database review of 10% of new BMPs. See QAPP for details.
	13. If data is provided by external independent party or industry, what method is used to provide adequate QA for acceptance by the Chesapeake Bay Program?	Review of data collection procedures. Comparison to data from similar jurisdictions/communities. Spot check by WV DEP and/or trained partners. If discrepancies are identified, review and field verify 10% of submitted records. Error >10% during that review triggers thorough review of data and process.	Review of data collection procedures. Comparison to data from similar jurisdictions/communities. Spot check by WV DEP and/or trained partners. If discrepancies are identified, review and field verify 10% of submitted records. Error >10% during that review triggers thorough review of data and process.	Review of data collection procedures. Comparison to data from similar jurisdictions/communities. Spot check by WV DEP and/or trained partners. If discrepancies are identified, review and field verify 10% of submitted records. Error >10% during that review triggers thorough review of data and process.
	14. Who conducts data validation?	WVDEP	WVDEP	WVDEP
iii. BMP Performance	15. What is the process to collect data to assess BMP performance and confirm consistency	Visual field assessment and review of specs of 10% of BMPs.	Visual field assessment and review of specs of 10% of BMPs.	Visual field assessment and review of specs of 10% of BMPs.

	with the Chesapeake Bay Program's approved BMP efficiencies?			
	16. Who collects BMP effectiveness data?	WVDEP and trained partners.	WVDEP and trained partners.	WVDEP and trained partners.

Legacy BMPs are not included in this table because at this time a verification strategy is not in place. Recommendations for accounting for these BMPs in the future are discussed in Section 4.4.

5. STREAM RESTORATION

Erosion of streambanks contributes excess nutrients and sediment to surface waters; therefore, returning stream reaches with erosion problems to more natural conditions through stream restoration projects alleviates the contribution of these pollutants to surface waters by eroding streambanks. Stream restoration projects are implemented in both urban and rural, undeveloped areas and are a component of West Virginia's strategy for meeting nutrient reduction goals in the Chesapeake Bay watershed. Verification of these projects is necessary to confirm that each project is functional and working to remove sediment and nutrients from waterways in which they are constructed.

Stream restoration projects are regulated by a suite of permits, including National Pollutant Discharge Elimination System (NPDES) Construction Stormwater permits, U.S. Army Corps of Engineers (USACE) permits, and West Virginia Department of Natural Resources permits. These permits have requirements for field monitoring and reporting. These inspections focus on ensuring that the restoration projects were installed properly and on their long-term integrity and functionality.

5.1 BMP verification

USACE permits require that all stream restoration projects be inspected during the first five years following completion of construction. Inspections are carried out by West Virginia Conservation Agency (WVCA) or NRCS staff, depending upon how the project is funded. Each restoration project may have different specific monitoring requirements; however, there are consistencies that are useful for verification. These consistencies are listed below:

- All permits require as-built drawings of the completed project, with structures, cross-sections, and photo points labeled.
- Permanent cross-sections to be utilized during field inspections, must be installed at a frequency of two cross-sections per 1,000 linear feet and should consist of approximately 50% riffle and 50% pools.
- Longitudinal profiles should be surveyed through cross-sectional reaches, and should include a complete riffle-pool sequence upstream and downstream of the cross-section.
- All reports should include information regarding the stability of stream banks and structures. Some projects require simple water quality information, EPA habitat assessments and vegetative sampling results to be included in reports.

For state funded projects, to comply with these permit conditions, WVCA staff install permanent cross-sections with capped rebar located at the beginning and end of each cross-section. Staff also install a capped rebar to represent the "0" station for every longitudinal profile required, this keeps the starting point consistent year to year. Information regarding the stability of structures is obtained from a simple visual inspection to look for any deficiencies or evidence of erosion or piping. The stability of banks will come from the cross-sections, photo points and Bank Erosion Hazard Index (BEHI) surveys to estimate sediment loss. Some permits, mainly those related to mitigation projects, require more information: bank height ratios, depositional patterns, and information gathered through detailed surveys.

For NRCS funded projects, the site is inspected once following construction and as USACE permits require. The sites then fall into the 5% inspection protocol established for cost shared programs.

All of the above information is collected and reported for the required five years set forth by the USACE. When the five year period is over, and the project has met the intended goals, there is no other work required. The responsible Corp district will either release the permittee or require corrective measures and additional monitoring until the project is stable.

Once a project has gone through the monitoring cycle with no major failures, it is likely that it will be successful over a long period of time. WV plans to adopt a follow up strategy that includes:

- Reporting of site conditions with attention paid to stability of stream banks, in-stream structures and project specific goals. (This could be satisfied with a visual inspection, simple surveying or a combination of the two.)
- If the project appears to be unstable, or there is an area of concern, an appropriate survey should be conducted to determine the site functionality. (This would be accomplished through BEHI or re-survey of cross-sections and longitudinal profile.)
- If the project is found to be deficient, corrective measures should be recommended that will allow any credit to be retained.

5.2 BMP validation

Data describing wetland restoration projects is reviewed by the WVDEP staff state data contact as it is received from each reporting agency. The total number of projects is small enough that the data contact is easily able to review all data received to detect any instances of misinformation reporting or project double counting. WVDEP staff run annual progress reports and compare the results to reports from previous years. If any anomalies are noticed, the state data contact will investigate the source of the issue. Additionally, Trout Unlimited is in the process of developing a database that will document the specific funding source for each project entered. This system will help identify any instances of double counting.

5.3 BMP performance

None at this time.

Table 7: Stream restoration sector verification strategy

Program Component	Program Elements	WV's strategy
i. BMP Verification	1. What was the driver for BMP installation?	Permit
	2. How many BMPs will be inspected?	All state and NRCS funded projects
	3. How is inspection frequency and location determined?	All are inspected during the first five years following installation, as required by USACE permits
	4. How often are BMPs/groups of BMPs inspected?	Annually during the first five years following installation, as required by USACE permits For state funded projects – once every five years following closure of the permit.
	5. What is the method of inspection?	Field visual
	6. Who will conduct the inspection and is he/she certified/trained?	West Virginia Conservation Agency staff if state funded. NRCS staff if federally funded.
	7. What needs to be recorded for each inspection?	Information describing the stability of stream banks and structures for all. Some require simple water quality information, EPA habitat assessments, and vegetative sampling. Some permits, usually related to mitigation projects, require bank height ratios, depositional patterns, and detailed survey data are reported.
	8. Is execution of the inspection process documented in and checked against an updated quality assurance (QA) plan?	No
	9. How is collected data recorded?	WVDA database if federally funded on agriculture land. Excel spreadsheet and written report for state funded projects
	10. At what resolution are results reported to EPA and/or the public?	Site specific for state funded. County level for federally funded cost shared practice.
ii. BMP Validation	11. What is the QA/QC process to prevent double-counting or counting of BMPs no longer in place?	The number of projects is relatively small. All are inspected during the first five years following installation. None are double counted and should a project become dysfunctional, it will be discovered during the inspection and documented on the report.
	12. What is the method used to validate state's ability to collect and report correct data?	The state data contact (WVDEP staff) reviews all data upon submission. The total number of projects is small enough that the data contact would notice incorrect information. WVDEP runs reports for annual progress and compares them to reports from previous years. Any anomalies are investigated.
	13. If data is provided by external independent party or industry, what method is used to provide adequate QA for acceptance by the Chesapeake Bay Program?	See above.
	14. Who conducts data validation?	WVDEP, non-regulatory state agency
iii. BMP Performance	15. What is the process to collect data to assess BMP performance and confirm consistency with the Chesapeake Bay Program's approved BMP efficiencies?	
	16. Who collects BMP effectiveness data?	

6. WASTEWATER

The TMDL provides individual wasteload allocations for significant facilities. Significant facilities include publicly and privately owned sewage treatment facilities with design flows greater than 400,000 gallons per day and select industrial wastewater treatment facilities for which discharges of nitrogen and phosphorus are appreciable. West Virginia's strategy to reduce the nutrient loading from these facilities involved the incorporation of enforceable discharge limits on the amount of total nitrogen and total phosphorus in National Pollutant Discharge Elimination System (NPDES) permits for significant facilities. In many instances, the limitations require installation and operation of additional treatment technologies to reduce nitrogen and phosphorus. Certain facilities are already compliant and others have projects underway such that compliance is expected in the near future. WVDEP's implementation strategy is to ensure installation of necessary nutrient reduction treatment technology at significant facilities by December 31, 2015, and all are anticipated to be compliant by the end date of the period for the 2017 progress assessment (6/30/2017).

Pollutant reductions by non-significant facilities are not prescribed in the West Virginia Watershed Implementation Plan. In the TMDL, authority to discharge was provided by grouped wasteload allocations in which individual facility components were calculated based upon facility design flow and default nutrient concentrations (18 mg N/L, 3 mg P/L). "BMP" tracking/verification is not directly applicable to this source category and permits generally do not require nutrient self-monitoring and reporting. However, WVDEP tracks NPDES permits for nonsignificant facilities and annually reports loads equal to wasteload allocation components for all active facilities.

Compliance verification/data validation

The primary mechanisms for verifying compliance are the self-monitoring requirements included in the NPDES permits issued to significant facilities. Permits require regular and frequent submission of effluent analytical data to WVDEP to verify compliance with effluent limitations via monthly Discharge Monitoring Reports (DMRs). Permits also contain procedures for facilities to calculate monthly loads by averaging nutrient results and coupling those with measured total monthly flow. Generally, 1/week nitrogen and phosphorus composite sampling and continuous flow measurement are required. These self-reported data are maintained in a database by WVDEP staff and are the intended basis for annual progress reporting.

Trained WVDEP Division of Water and Waste staff performs regular assessments of the data received from the facilities. During these reviews WVDEP staff looks for and attempts to rectify any anomalies in the data (ex. incorrect reporting units, incorrect load calculations, etc.) This process is completed in accordance with an updated quality assurance plan (Attachment N). Prior to submitting data to the CBP, WVDEP staff performs QA/QC review in accordance with the recommended methods described in the *CBP Wastewater Facility and Nonpoint Source Data Submission Specifications and Requirements* guidance document (Attachment O).

In addition to the self-monitoring and reporting mechanisms, WVDEP independently assesses/compels compliance with permits through inspections and the use of enforcement actions in response to noncompliance. The number, type and frequency of inspections performed conform to the guidance provided by the USEPA's Compliance Monitoring Strategy (CMS). Systematic escalation of enforcement is pursued to resolve noncompliant facilities in the shortest time possible.

6.1 BMP verification

The primary mechanisms for verifying compliance are the self-monitoring requirements included in the NPDES permits issued to significant facilities. Permits require regular and frequent submission of effluent analytical data to WVDEP to verify compliance with effluent limitations via monthly Discharge Monitoring Reports (DMRs). Permits also contain procedures for facilities to calculate monthly loads by averaging nutrient results and coupling those with measured total monthly flow. Generally, 1/week nitrogen and phosphorus composite sampling and continuous flow measurement are required. These self-reported data are maintained in a database by WVDEP staff and are the intended basis for annual progress reporting.

6.2 BMP validation

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6.3 BMP performance

The WVDEP database of DMR data is primarily utilized to assess compliance with TMDL wasteload allocations.

Table 8: Wastewater sector verification strategy

Program Component	Program Elements	Wastewater treatment plant data verification
i. BMP Verification	1. What was the driver for BMP installation?	Permit
	2. How many BMPs will be inspected?	For all significant facilities, DMR self-monitoring submissions are reviewed and field inspections are performed
	3. How is inspection frequency and location determined?	DMRs are reviewed upon receipt and comprehensively at annual progress submission intervals; Inspection frequency in accordance with USEPA Compliance Monitoring Strategy
	4. How often are BMPs/groups of BMPs inspected?	Inspection frequency in accordance with USEPA Compliance Monitoring Strategy
	5. What is the method of inspection?	DMR review, database review and field inspections
	6. Who will conduct the inspection and is he/she certified/trained?	WVDEP trained permit and enforcement staff
	7. What needs to be recorded for each inspection?	See attached inspection form (Attachment P)
	8. Is execution of the inspection process documented in and checked against an updated quality assurance (QA) plan?	Yes. See Attachment N.
	9. How is collected data recorded?	DMR data is submitted through an online form and maintained in a database. Online form guidance is included in Attachment Q.
	10. At what resolution are results reported to EPA and/or the public?	Site-level
ii. BMP Validation	11. What is the QA/QC process to prevent double-counting or counting of BMPs no longer in place?	Only active facilities are reported; permit database allows activity tracking
	12. What is the method used to validate state's ability to collect and report correct data?	Annual review of data collected for all facilities.
	13. If data is provided by external independent party or industry, what method is used to provide adequate QA for acceptance by the Chesapeake Bay Program?	All DMR data is submitted by the permittee under a statement certifying that the data is true and accurate. Analytical laboratories must also be certified to perform permit self-monitoring analyses
	14. Who conducts data validation?	WVDEP
iii. BMP Performance	15. What is the process to collect data to assess BMP performance and confirm consistency with the Chesapeake Bay Program's approved BMP efficiencies?	Effluent limitations, self-monitoring and reporting under NPDES permit requirements that are consistent with the TMDL wasteload allocations.
	16. Who collects BMP effectiveness data?	WVDEP

7. WETLAND RESTORATION

Excess nutrients are held in place by vegetation in functional wetlands, thus attenuating the flow of sediments and nutrients to downstream waterways. Wetland restoration projects re-establish the natural hydraulic condition in a field that existed prior to the installation of subsurface or surface drainage. Projects may include restoration, creation and enhancement acreage. Restored wetlands may be any wetland classification including forested, scrub-shrub or emergent marsh (SB 8.4.11). Currently, all wetland restoration projects in West Virginia's Chesapeake Bay watershed are implemented by Trout Unlimited (TU) and Natural Resources Conservation Service (NRCS) through NRCS cost-share programs. These agencies submit BMP documentation data to the data manager at WVDEP.

Any wetland restoration projects designed to address stormwater in MS4 communities are not included in this section, but would fall under the Regulated BMPs category discussed in the Stormwater Chapter. See Section 4 for more information. West Virginia has only non-tidal wetlands.

7.1 BMP verification

Currently, NRCS cost-share programs have been the major driver of wetland restoration projects in the Chesapeake Bay watershed of West Virginia. All projects are field inspected at the time of project completion. In addition, Trout Unlimited provides landowners the opportunity to have wetland restoration projects inspected periodically to ensure that they are still functional. A few wetland restoration projects have been completed as part of a conservation easement held by the Potomac Conservancy; these wetlands are required to be inspected annually.

Trout Unlimited, NRCS, and Partners for Fish and Wildlife provide staff who has completed wetlands courses or other training courses offered by the US Forest Service to complete inspections of wetlands restoration projects. Inspectors record at least the acreage, location, and functionality of each restoration site and in some cases additional information such as hydrology, presence of wetlands plant species, and soil type is documented. Currently, there is not a quality assurance plan followed by all data collection agencies, however, the NRCS does have an established protocol for documentation of wetlands restoration projects.

NRCS reports acres of restored wetland by county to the state data contact (WVDEP staff) using Toolkit. Toolkit is the primary conservation planning tool used by NRCS and affiliates and is used for conservation planning and design, layout, and evaluation of approved conservation practices. Trout Unlimited staff enter information for individual practices into an electronic database and submit data at the county level to the state data contact.

7.2 BMP validation

Data describing wetland restoration projects is reviewed by the WVDEP staff state data contact as it is received from each reporting agency. The total number of projects is small enough that the data contact is easily able to review all data received to detect any instances of misinformation reporting or project double counting. WVDEP staff run annual progress reports and compare the results to reports from previous years. If any anomalies are noticed, the state data contact will investigate the source of the issue. Additionally, Trout Unlimited is in the process of developing a database that will document the specific funding source for each project entered. This system will help identify any instances of double counting.

7.3 BMP performance

State agency staff routinely participate in CBP Wetland Working Group meetings and will follow their guidance to assess wetland restoration project performance and efficiencies.

Table 9: Wetland restoration sector verification strategy

Program Component	Program Elements	WV's strategy
i. BMP Verification	1. What was the driver for BMP installation?	Cost-share
	2. How many BMPs will be inspected?	All are inspected at the time of project completion. Some are inspected in the following years.
	3. How is inspection frequency and location determined?	Projects inspected on more occasions than at the time of completion are chosen due to landowner willingness and enrollment in a conservation easement program, which requires annual inspections.
	4. How often are BMPs/groups of BMPs inspected?	All are inspected when project construction is completed. Willing landowners participating in Trout Unlimited restoration projects are inspected one or more times following completion and projects that are part of Potomac Conservancy conservation easements are inspected annually.
	5. What is the method of inspection?	Field visual
	6. Who will conduct the inspection and is he/she certified/trained?	Trout Unlimited, NRCS, or Partners for Fish and Wildlife staff perform inspections. All have completed wetlands training courses or other trainings offered by the US Forest Service.
	7. What needs to be recorded for each inspection?	At a minimum functionality, acreage, and location are documented. In some cases hydrology, presence of wetlands plant species, and soil type are recorded.
	8. Is execution of the inspection process documented in and checked against an updated quality assurance (QA) plan?	No universal plan for inspectors from all agencies. NRCS inspectors follow a plan developed by that agency.
	9. How is collected data recorded?	Toolkit for NRCS data. Electronic database for Trout Unlimited
	10. At what resolution are results reported to EPA and/or the public?	NRCS: Acres of restored wetland operations are requested by/reported to state data contact <u>by county</u> and entered into NEIEN for annual progress reporting. Trout Unlimited: Individual practices are entered but only <u>county</u> (not lat/long) is known by the state data contact.
ii. BMP Validation	11. What is the QA/QC process to prevent double-counting or counting of BMPs no longer in place?	State data contact reviews all data as it is submitted, and due to the low number of total projects will be able to notice any double counting. TU is developing a database that will list funding source and assist in identification of double-counted projects.
	12. What is the method used to validate state's ability to collect and report correct data?	The state data contact (WVDEP staff) reviews all data upon submission. The total number of projects is small enough that the data contact would notice incorrect information. WVDEP runs reports for annual progress and compares them to reports from previous years. Any anomalies are investigated.
	13. If data is provided by external independent party or industry, what method is used to provide adequate QA for acceptance by the Chesapeake Bay Program?	See above.
	14. Who conducts data validation?	WVDEP, non-regulatory state agency

iii. BMP Performance	15. What is the process to collect data to assess BMP performance and confirm consistency with the Chesapeake Bay Program's approved BMP efficiencies?	State agency staff participate in the CBP Wetland Workgroup and will follow their guidance.
	16. Who collects BMP effectiveness data?	None at this time. (Assuming on-site analytical data collection)

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**ATTACHMENT A: STANDARD OPERATING PROCEDURES FOR TRACKING,
REPORTING, AND VERIFICATION OF AGRICULTURAL BEST
MANAGEMENT PRACTICES**

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ATTACHMENT B: APPENDIX A OF SOP: AGRICULTURE VERIFICATION PROGRAM DESIGN

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ATTACHMENT C: APPENDIX B OF SOP: NRCS NPPH EDITION 1

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ATTACHMENT D: APPENDIX C OF SOP: CTA INFORMATION

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ATTACHMENT E: APPENDIX D OF SOP: FSA COMPLIANCE REVIEW AND SPOT CHECK

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ATTACHMENT F: APPENDIX E OF SOP: CREDIT DURATION BMPS

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ATTACHMENT G: APPENDIX F OF SOP: WV AGRICULTURE BMP USER GUIDE

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ATTACHMENT H: APPENDIX G OF SOP: RI GUIDANCE DOCUMENT

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ATTACHMENT I: WVDA FIELD REFERENCE MANUAL

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ATTACHMENT J: STATISTICAL SAMPLING APPROACH FOR INITIAL AND FOLLOW-UP BMP VERIFICATION

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ATTACHMENT K: SAMPLE SIZE ESTIMATION FOR BMP VERIFICATION

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**ATTACHMENT L: WVDEP STANDARD POST CONSTRUCTION
STORMWATER BMP EVALUATION FORM**

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**ATTACHMENT M: WVDEP EXTENDED POST CONSTRUCTION BMP
EVALUATION FORM**

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**ATTACHMENT N: WVDEP QUALITY ASSURANCE PROJECT PLAN FOR
CHESAPEAKE BAY POINT-SOURCE DATA COLLECTION**

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**ATTACHMENT O: WVDEP CHESAPEAKE BAY PROGRAM WASTEWATER
FACILITY AND NONPOINT SOURCE DATA SUBMISSION SPECIFICATIONS
AND REQUIREMENTS**

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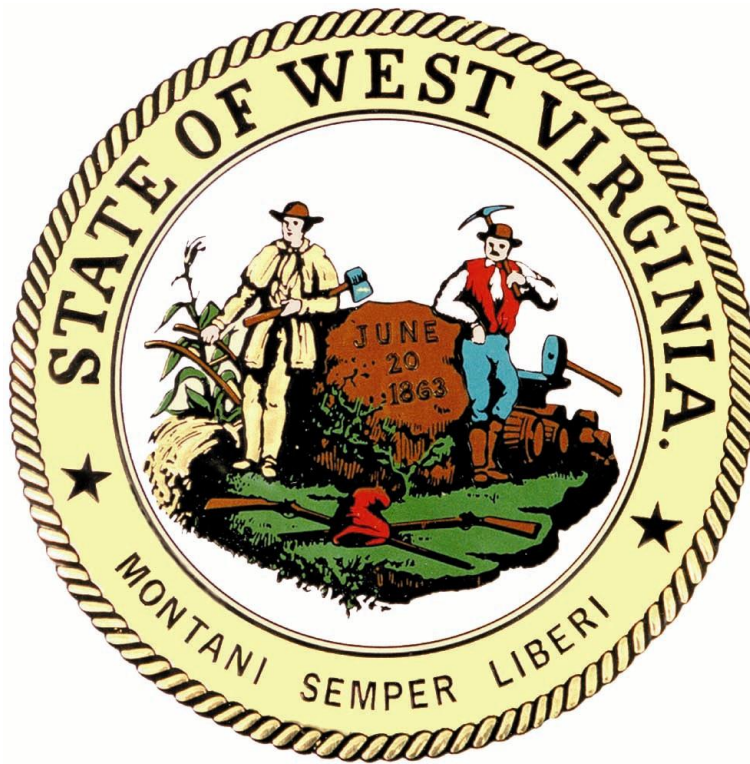
ATTACHMENT P: WVDEP WATER COMPLIANCE INSPECTION REPORT

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ATTACHMENT Q: WVDEP ELECTRONIC DISCHARGE MONITORING REPORTING USER'S GUIDE

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Environmental Enforcement



WEST VIRGINIA NPDES REPORTING REFERENCE MANUAL

REVISED February 2014

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INTRODUCTION

Compliance Monitoring personnel of the Department of Environmental Protection have noted that a number of NPDES facilities have misunderstood several permit requirements. It is hoped that this manual will provide information to the permit holders and plant operators in order to clarify common misconceptions and errors. Included are instructions providing assistance in the completion of the WV/NPDES Discharge Monitoring Reports (DMR) required by your WV/NPDES permit.

THIS MANUAL IS NOT A SUBSTITUTE FOR HAVING A THOROUGH KNOWLEDGE OF ALL THE REQUIREMENTS OF YOUR NPDES PERMIT. YOU MUST THOROUGHLY READ YOUR PERMIT AND ADHERE TO ALL REQUIREMENTS. IT IS THE PERMITTEE'S RESPONSIBILITY TO ENSURE DMR'S ARE PROPERLY COMPLETED AND RECORDS MAINTAINED, AND THAT ALL PERMIT REQUIREMENTS ARE UPHELD.

It is the permit holder's legal responsibility to provide accurate monitoring information and maintain records as required. Failure to uphold this responsibility is subject, but not limited, to the following liabilities, as noted in Section C.14 (or Appendix AI.14 in newer permits) of all WV/NPDES permits:

- a) Any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing sections 301, 302, 306, 307, 308 of the Clean Water Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both.
- b) Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- c) Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- d) Nothing in C.14 (or Appendix A.I.14) a), b) and c) shall be construed to limit or prohibit any other authority the Director may have under the State Water Pollution Control Act, Chapter 22, Article 11.

INSTRUCTIONS FOR COMPLETING WEST VIRGINIA NPDES DISCHARGE MONITORING REPORT (DMR) FORMS

GENERAL INSTRUCTIONS

1. The West Virginia Department of Environmental Protection (DEP) is moving to require all permittees to submit their NPDES Discharge Monitoring Reports (DMRs) using an electronic DMR (eDMR). The eDMR is a web-based application that permitted facilities may use to electronically enter, sign and then submit their DMRs to the DEP. The use of the eDMR system offers an alternative for records submittal and retention. More information can be found on DEP's website at: <https://apps.dep.wv.gov/eplogin.cfm>.
2. DMRs must be completed for each month, or less frequently in accordance with your permit, on each discharge that has specific effluent limitations or monitoring requirements. If during this month, an outlet (such as cooling tower blow down) has not discharged **AT ALL ON ANY DAY**, then this information should be submitted on the appropriate DMR. Write "No discharge" across the front of the DMR. When submitting electronically, "No Flow" is selected from the appropriate drop down box on the eDMR. You cannot claim "No Discharge" or "No Flow" if there was any discharge at any time during the reporting period. (Example: If you looked at an outlet 10 different times over the reporting period and there was nothing discharging during those times, but there is evidence that the outlet did discharge while not present, you must account for the entire period, observed or not.) For storm water only discharges, whether or not someone at the facility is physically present at the site to get the sample does not matter. (Example: If there was at least 0.1 inches of rain during a six month period and discharged [whether you were there to get the sample or not], you cannot claim "No Discharge" on your DMR, because it did discharge and meet the requirements for obtaining a sample.) Also, please note that permits require that the facility should take samples within the first 30 minutes, or as soon thereafter as practicable. (Example: A facility cannot claim "No Discharge" if 45 minutes has already passed when someone gets there to take a sample and the discharge is occurring. A sample may be taken at that time if a discharge is present.)
3. DMRs must be submitted no later than the 20th day following the end of the reporting period, unless otherwise stated in your permit.
4. Data must be collected in accordance with permit conditions. Carefully read and follow requirements of the permit that specifically address Monitoring and Reporting. Many permits, especially individual permits, contain specific laboratory methods and additional sampling that is not contained in Section A of the WV/NPDES Permit. Note that deficiencies in regard to this section of the permit account for many unsatisfactory ratings given during our inspections.
5. The maximum daily concentration on the reporting forms refers to the highest allowable "daily discharge" concentration reported for the month.

6. The average monthly discharge limitation means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
7. For permits (POTWs) which have seven (7) consecutive day average limits, the arithmetic average may be reported as average for the first 7-day periods (1st to 7th of the month, 8th to 14th, 15th to 21st, and 22nd to 28th). Some permits may have 7 consecutive day average limitations as a permit condition, but no reporting requirements. Nevertheless, records should be kept of 7-day averages and excursions reported to the permitting agency within five (5) days. A violation by the permittee (POTW) of this 7-day average or for any other stipulated permit condition shall be considered an excursion.
8. Instantaneous maximum limitation means the highest allowable concentration of pollutant in the discharge at any given time. Determination of this concentration may be based on a grab sample analysis.
9. Semi-annual and annual monitoring periods are determined based on the effective date of the permit. The effective date of the permit can be found on the cover page along with the facility's description. For example, a permit issued April 1st, 2010 will have an effective date of May 1st, 2010. The semi-annual monitoring periods would be May 1 – Oct 31 and Nov 1 – Apr 30. Annual monitoring periods would be May 1 – Apr 30.
10. Quarterly monitoring periods require a result for the appropriate parameters to be submitted during the following timeframes regardless of the date when the permit was issued, Jan 1 – Mar 31, Apr 1 – Jun 30, Jul 1 – Sep 30, Oct 1 – Dec 31.
11. Care should be taken when multiple samples are taken during a reporting period that is longer than a month (annual, semi-annual, quarterly, etc.). These reporting periods may require a monthly average result. Remember that an average monthly result is an average over a calendar month. Only samples taken in the same month may be averaged together for an average monthly result. For example, in a quarterly reporting period, even though the permit may only require sampling once per quarter, a facility might collect 2 samples in January, 3 samples in February, and 1 sample in March. They are not to average all of these results together and report that value as the monthly average. They would have 3 separate monthly average results for the quarter in this case (1 calendar month average for January, 1 calendar month average for February, 1 calendar month average for March). They would have to report the highest of these three separate monthly average results on the DMR for the monthly average for that quarter.
12. If additional samples are taken over the permit minimum, all results using EPA (40 CFR Part 136) approved methods must be included in the calculations for the report.
13. Fecal Coliform averaging must always be calculated using a geometric mean and not an arithmetic average.
14. Convert all concentrations reported in ug/l to mg/l before using the formula to calculate loadings.

15. To calculate loadings, use the flow on the date that the sample was taken. Never use the average monthly flow to calculate the average monthly loading.
16. An exceedance is a violation of permitted effluent limits. The Number of Exceedances (N.E.) is to be listed on the DMR. Even though only one value is reported on the DMR, every time a sample result violates a permit limit, an exceedance is counted and included on the DMR. Certain individual permits grant allowances for Fecal Coliform exceedances. The details and instructions for such allowances can be found in Section C of the WV/NPDES permit.
17. Round results to same significant figures as your permit limits.
18. The DMR must be signed by the “Responsible Official” unless a letter is sent to Division of Water and Waste Management designating another person as the “Authorized Agent”.
19. Printed DMR forms are not supplied by the State for each reporting period. Therefore, copy sufficient quantities of the DMR form attached to the permit for five years of reporting if needed.
20. Major facilities are required to submit a copy of their DMR's to EPA Region III.
21. Your permit may have winter and summer limitations. Your permit and/or administrative order may also have interim and final limitations. If your permit has such limitations, the corresponding DMR should be used. DMR changes often occur when permits are reissued and/or modified. Reading your permit carefully can help avoid numerous mistakes.
22. Attach additional permit requested information directly to your DMR according to permit requirements, as all permit requirements are not necessarily indicated on the DMR. These include, but are not limited to, CSO information, I/I reports, Industrial storm water data, Bioassay reports. Report this information as required in the permit.
23. Some records are required to be kept by the permittee but are not routinely required to be submitted with the DMR. These include, but are not limited to Chain of Custody forms and calibration records for flow meters and laboratory meters (pH, Dissolved Oxygen, Total Residual Chlorine, etc.). Below is an example of one way to check the accuracy of a flow meter's totalizer:

Flow Measurement Check

If a staff gauge is installed, make sure it is accurate, level, and located in the proper place.

At totalizer, start timing when the number changes.

Write totalizer reading down.

Immediately record the staff gauge reading.

Record the staff gauge reading around every 30 seconds.

Read staff gauge for 10 – 15 minutes.

After the time is up, wait until the totalizer clicks over to a new number.

When the totalizer clicks over, record the staff reading, record the totalizer reading, and note the time elapsed.

Reference the ISCO Flow Book to get GPM results for all staff readings.

Add the readings together and divide by the total number of readings to get average.

Multiply this by the number of minutes elapsed.

Compare this to the totalizer flow for the elapsed time period. Consider the calibration of the totalizer satisfactory if the two flows are within 10 percent of each other, when the actual measure flow (staff gauge average) is used as the known value, or divisor, in the percent calculation.

SPECIFIC INSTRUCTIONS

1. Make copy of blank DMR (example included), which is attached to your WV/NPDES permit. Ensure this is your proper DMR (Interim, Final, Summer, Winter, etc.)
2. Fill in month and year at the top left-hand corner of the form and complete the certified laboratory name, address, and individual(s) performing analyses.
3. Reporting Values: You should use space provided for reporting values for each parameter on the DMR.

Fecal Coliform averaging must always be calculated using a geometric mean and not an arithmetic average. See "Specific Instructions" number six (6).

$$\text{Arithmetic Mean (Average)} = \frac{N1 + N2 + N3 + N_{th}}{th}$$

Example for arithmetic calculations/reporting.

	<u>Measured Values</u>
1 st week	19, 29
2 nd week	34, 28
3 rd week	40, 26
4 th week	26, 20

Average Monthly or 30 Consecutive Day Average

$$\frac{19 + 29 + 34 + 28 + 40 + 26 + 26 + 20}{8} = \frac{222}{8} = 27.75$$

$$\text{Maximum Daily} = 40$$

The reporting form would be completed as follows:

	<u>Minimum*</u>	<u>Average Monthly</u>	<u>Maximum Daily</u>
Reported	19	27.75	40

* Only if required by the permit.

Example for seven (7) Consecutive Day Averages

	<u>Measured Values</u>	<u>7-Day Averages</u>
1 st week	19, 29	24
2 nd week	34, 28	31
3 rd week	34, 28	33
4 th week	26, 20	23

Should your permit require reporting a 7-day average, you should pick the maximum 7-day average to report. The 7-day average for this example would be 33.

4. Calculating loadings (DMR “Quantity”) in pounds per day (Lbs/Day)

Data Needed: Pollutant concentration in mg/l (Care should be taken to convert any data reported in ug/l to mg/l before beginning the calculation)

Flow for the sample period in MGD

Calculation: $\text{Lbs/Day} = \text{mg/l} \times \text{MGD} \times 8.34 \text{ Lbs/Gallon (Weight of gallon of water)}$

Since the loading is expressed in unit mass per day, the flow rate should be representative of the 24-hour day in which the sample(s) were taken. Accurate 24-hour totalizer readings are the ideal source of this information. If flow recordings or totalizer is not available, instantaneous flow rate measurements made at the time samples were taken may be used to calculate an average flow rate for the sample period. **In all cases, the flow measurement period must bracket the sampling period.** An instantaneous flow cannot be used for calculating loadings for a composite sample. It should be noted, that all composites must be on a flow proportioned basis (see pages 15 and 16 for some recommended procedures).

Calculate the loading using the above formula for each day during the month the samples were taken. Select the highest daily calculated value for each parameter and record this on the DMR for the daily maximum value. Next, determine the arithmetic average of all daily loadings for each parameter during the month and record this on the DMR for the average monthly value.

Basically stated, use a flow that brackets the sampling period along with the sample results to calculate daily loading values. Then average the daily loadings to arrive at the monthly average. Never use the maximum daily flow for the month to calculate the maximum daily loading (unless the flow occurred on the sampling day). **Never use the monthly average flow to calculate the average monthly loadings.**

Example

1st Sample: $2.0 \text{ MGD} \times 20 \text{ mg/l} \times 8.34 = 333.6 \text{ Lbs/Day}$

2nd Sample: $1.5 \text{ MGD} \times 18 \text{ mg/l} \times 8.34 = 225.2 \text{ Lbs/Day}$

3rd Sample: $2.1 \text{ MGD} \times 13 \text{ mg/l} \times 8.34 = 227.7 \text{ Lbs/Day}$

4th Sample: $1.8 \text{ MGD} \times 10 \text{ mg/l} \times 8.34 = 150.1 \text{ Lbs/Day}$

$$\frac{333.6 + 225.2 + 227.7 + 150.1}{4} = \frac{936.1}{4} = 234.2$$

Daily maximum loading = 333.6 Lbs/Day

Average monthly loading = 234.2 Lbs/Day

Calculation Procedures for Reporting Monthly Averages When <MDL Values Are Considered.

Case 1

When averaging values of analytical results *for DMR reporting purposes*, the permittee *should* use actual analytical results when these results are greater than or equal to the MDL and *should use zero (0)* when these results are less than the MDL.

Example (Concentration):

Three tests yield the following results for TKN. (<1 mg/l, 20 mg/l, 75 mg/l).

$0 \text{ mg/l} + 20 \text{ mg/l} + 75 \text{ mg/l} = 95 \text{ mg/l}$, $95 \text{ mg/l} / 3 = 32 \text{ mg/l}$

The permittee would report 32 mg/l for their average monthly DMR result.

Example (Mass):

Three tests yield the following results for TKN. (<3.8 lbs/day, 100 lbs/day, 312 lbs/day).

$0 \text{ lbs/day} + 100 \text{ lbs/day} + 312 \text{ lbs/day} = 412 \text{ lbs/day}$, $412 \text{ lbs/day} / 3 = 137 \text{ lbs/day}$

The permittee would report 137 lbs/day for their average monthly DMR result.

Case 2

If all analytical results are non-detect at the MDL (<MDL), then the permittee should use the actual MDL in the calculation for averaging and report the result as less than the average calculation.

Example (Concentration):

+Three tests yield the following results for TKN. (<1 mg/l, <1 mg/l, <1 mg/l).

$1 \text{ mg/l} + 1 \text{ mg/l} + 1 \text{ mg/l} = 3 \text{ mg/l}$, $3 \text{ mg/l} / 3 = <1 \text{ mg/l}$

The permittee would report <1 mg/l for their average monthly DMR result.

Example (Mass):

Three tests yield the following results for TKN. (<3.8 lbs/day, <5 lbs/day, <4.2 lbs/day).

$3.8 \text{ lbs/day} + 5 \text{ lbs/day} + 4.2 \text{ lbs/day} = 13 \text{ lbs/day}$, $13 \text{ lbs/day} / 3 = <4.3 \text{ lbs/day}$

The permittee would report <4.3 lbs/day for their average monthly DMR result.

5. Total Nitrogen: The Division recognizes there is not an EPA approved method to directly test for Total Nitrogen. The Total Nitrogen value to be reported on the permittee's DMRs shall be the sum of the following parameters; Total Kjeldahl Nitrogen, Nitrate and Nitrite.

Case 1

If all three constituents of Total Nitrogen are not detected at their method detection limit (MDL), the permittee shall add the actual MDLs for each constituent and report the result as less than the calculation.

Case 2

When calculating the sum of the constituents for Total Nitrogen, the permittee shall use actual analytical results when these results are greater than or equal to the MDL for a particular constituent and should use zero (0) for a constituent if one or two of the constituents are less than the MDL.

Some permittees also have to report the total monthly mass results (Lbs./Day) for total nitrogen and total phosphorous on their DMR. The method to calculate this result is slightly different from other mass requirements. The total monthly flow (not the average) shall be used in conjunction with the average monthly total nitrogen and total phosphorous concentration results in order to determine the total monthly mass results for reporting purposes.

6. Fecal Coliform: Fecal Coliform averaging must always be calculated using a geometric mean and not an arithmetic average. From all sample results during the month, select the highest daily value and record this as the daily maximum. Do not record "too numerous to count" (TNTC). This is not a valid result and when it occurs additional samples should be run with adequate dilutions. In the event a laboratory reports TNTC, do not record this on the DMR, but contact the laboratory to obtain a valid numerical result.

If more than one Fecal Coliform result is obtained during a reporting period, a geometric mean of those results must be reported. The geometric mean may be calculated either by the root extraction method or by use of logarithmic tables. An example of each is given below.

$$\text{Root extraction} = \sqrt[n]{N1 \times N2 \times N3 \times \dots \times Nth} = \text{Geometric mean (GM)}$$

A scientific calculator is very handy for this. Check your calculator's instructions on how to do this. This will probably involve the " $\sqrt[x]{y}$ " key or the " y^x " key and an inverse or " 2^{nd} " key.

Given Fecal Coliform test results, once per week sampling:

1 st week	20	Col/100 ml
2 nd week	50	Col/100 ml
3 rd week	30	Col/100 ml
4 th week	800	Col/100 ml

$$GM = \sqrt[n]{N1 \times N2 \times Nth}$$

$$GM = \sqrt[4]{20 \times 50 \times 30 \times 800}$$

$$GM = \sqrt[4]{24,000,000}$$

$$GM = 70 \text{ Col/100 ml}$$

Logarithmic Method

How to use logarithm (or logs) and find the geometric mean (GM) of n Fecal Coliform measurements, where the analytical results (n) is greater than or equal to one.

Let the first Fecal Coliform measurement = N1

Let the second Fecal Coliform measurement = N2

Etc.

Let the last Fecal Coliform measurement = Nn

Let n equal the total number of such Fecal Coliform measurements or sample size. The formula for the GM when using logs is:

$$\text{GM (of } N_1, N_2, \text{ etc., } N_n) = \text{Anti-log } \frac{\log N_1 + \log N_2 + \dots \text{Log } N_n}{N}$$

In order to complete the calculations on the right-hand side of the equation, four operations are necessary.

- A. Determine the log for each of the n Fecal Coliform measurements
- B. Add or sum the log values
- C. Divide the sum by sample size (n)
- D. Find the anti-log of the answer to step C

An example of the calculations is as follows:

$$\text{GM of 159 and 120} = \text{Anti-log } \frac{(\log 159 + \log 120)}{2}$$

$$\text{GM} = \text{Anti-log } \frac{(2.20140 + 2.07918)}{2}$$

$$\text{GM} = \text{Anti-log } 2.14029$$

$$\text{GM} = 138$$

Some checks for gross errors:

- GM lies between the largest and smallest value. For the problem above, the GM of 159 and 120 = 138. Since 138 lies between these two, there is no gross error.
- GM is less than the Arithmetic mean (AM). This is true unless all of the Fecal Coliform counts are equal, then GM = AM.

$$\text{AM (of 159 and 120)} = \frac{159 + 120}{2} = 140$$

Since the GM of 138 is less than the AM of 140, there is no gross error.

NOTE: Some pointers to keep in mind when calculating the geometric mean for Fecal Coliform when values are "greater than" or "less than".

- Do not carry "greater than" or "less than" signs through the geometric mean calculation.
 - Use the numerical value attached to the sign in the calculation, e.g. <5 becomes 5 (not 0, 1, or 2.5).
 - Greater than values should be flagged on the DMR and an explanation provided. The explanation should provide details on the analysis, such as dilutions used, actual counts obtained, and plans to keep the problem from occurring in the future.
 - Use "greater than" and "less than" signs on the maximum daily values reported on the DMR.
 - Use "greater than" and "less than" signs on all other averages (arithmetic means) on the DMR except for Fecal Coliform.
7. "N.E." (i.e., number exceeding) Under this heading, the number of excursions for each parameter should be listed. An excursion is a result that exceeded permit limits. This includes excursions of maximum, minimum and/or average permit limits.
8. "Measurement Frequency" boxes should represent the frequency of sampling and analysis for the reporting period. If you are sampling less or more frequently than required, be sure to note the actual frequency.
9. "Sample Type" boxes should reflect the actual type of sample being collected for that reporting period. Specify "grab", "8 HC" for 8 hour composite, "24 HC" for 24 hour composite or "Batch" for Sequential Batch Reactors (SBR).
10. Percent removal of BOD-5 and TSS may be calculated in the following manner:

$$\% \text{ Removal} = \frac{\text{Concentration In (30 Day Avg.)} - \text{Concentration Out (30 Day Avg.)}}{\text{Concentration In (30Day Avg.)}} \times 100$$

Although every permit may not require reporting of this percentage, a record may need to be kept to satisfy the permit requirement listed under "other requirements" which requires that the arithmetic means of effluent values not exceed 15 percent of arithmetic means of influent values. However, as permits are reissued, reporting of percent removal will be required. Concentration In is defined as the 30-day average values of the raw wastewater influent pollutant concentration to the facility. Concentration Out is defined as the 30-day average values of the effluent pollutant concentrations. **Note that only influent and effluent samples taken concurrently shall be used for reporting. There may be additional requirements, especially for wet weather/ dry weather events contained in the permit.**

11. The reporting of "ND" as "none detected" for a parameter is not a legitimate means of reporting. The proper way to report a value when it is below the detection limit is to report the result as less than (<) the method detection limit for that particular parameter. For example, if the method detection limit for TKN were 1 mg/l, the proper reporting for TKN would be <1 mg/l when the result is below detection limits. This "less than" concentration should also be carried through while doing loading calculations, so the final loadings should read accordingly.

Example: 5 MGD x <5 mg/l x 8.34 = <208.5 Lbs/Day

It should be noted that from time to time a permittee will report "ND" for "not determined" (not analyzed). In this case, the explanation of the "ND" should be footnoted at the bottom of the particular page where it is listed.

There are permits that allow Net Limits to be reported. These results are calculated by subtracting an Intake sample result from an Effluent sample result. In these cases, if the Intake sample result is larger or the same as the Effluent sample result, "zero" is reported on the DMR. If both results are less than the minimum detection limits (<MDL), then subtract one from the other and report "zero". If the Intake is <MDL and the Effluent is a valid result (For example: Intake = <5 mg/l, Effluent = 6 mg/l), Report the Effluent result as less than the result (In this example, Effluent is reported as <6 mg/l). There is no written EPA policy on this matter, so until something concrete is created, this will suffice as a guidance. This calculation is less likely to result as a violation on the QNCR list as other calculation methods.

12. Compliance Evaluation Levels (CEL)

CEL can be defined as the minimum level (ML). The ML is the level at which the entire analytical system gives recognizable signal and acceptable calibration point. This level corresponds to the lowest point at which the calibration curve is determined based on analyses for the pollutant of concern in reagent water. The ML, which is not equivalent to the MDL, is determined from the analysis of a sample in a given matrix containing the analyte. At this time, the CEL is an interim limit and may be revised when the EPA finalizes their "National Guidance for the Permitting, Monitoring, and Enforcement of WQBEL Set Below Analytical Detection/Quantification Levels." For DMR reporting purposes, if a result is above the permit limits but below the CEL, the result will be considered in compliance and no excursion will be reported in the N.E. column.

13. Toxicity Reporting

Some WV/NPDES permits require toxicity (bioassay) testing and subsequent reporting. The reporting for these tests are recorded in toxic units (TU) or more specifically as TUa or TUC as defined below.

- A. Toxic Units (TU) are a measure of toxicity in an effluent as determined by the acute toxicity or chronic toxicity units measured.
- B. Toxic Unit acute (TUa) is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end of the acute exposure period (48 hrs.).

$$TUa = 100 \div LC_{50}$$

- C. Toxic Unit chronic (TUC) is the reciprocal of the effluent concentration that causes no observable effect on the test organism by the end of the chronic exposure period (up to 7 days or longer).

$$TUC = 100 \div NOEC \text{ (No Observable Effect Concentration)}$$

The number of toxic units in an effluent is defined as 100 divided by the EC_{50} (Effective Concentration) or LC_{50} (Lethal Concentration) measured:

For example, an effluent with an acute toxicity of an LC_{50} in 5 percent effluent is an effluent containing 20 TUa.

- 14. Complete the bottom of the DMR with the typed or printed name of the principal Executive Officer, title and date of completion. Affix the authorized signature, then mail to the address given in the permit.
- 15. An example of a detailed, step-by-step process for completing a DMR for a typical sewage treatment plant may be referenced beginning on page 18. If you have any questions regarding records or DMR calculations, call the Department of Environmental Protection's Compliance Monitoring personnel at (304) 757-1693.

Flow Proportioning

Composite sample is defined as a combination of individual samples obtained at regular intervals over a time period; either the volume of each individual sample is proportional to flow rates or the sampling interval. **In order to meet the definition of composite sample, flow proportioning must be used. Guidelines set by EPA state that flow proportional samples must be obtained if the flow varies more than 10% from the average flow rate during the sampling interval.**

From the definition of composite sample two methods of flow proportioning are acceptable – constant sample intervals with sample volume proportioned to flow, or constant sample volume with the sample interval proportioned to flow. Generally, the latter method is used only with automatic composite samplers that are integrated with a flow meter. Following are three examples of how to flow proportion. The first uses an average flow rate for the facility, the second uses a totalizer based method for calculating the flow rate, and the third uses a flow measurement as a percent of maximum.

First Example:

- a) Determine the number of samples to be taken in the composite period.
- b) Determine the minimum sample volume needed.
- c) Determine the average sample volume by dividing the minimum volume by the number of samples.
- d) Determine the average dry weather flow for your facility.
- e) Divide the average sample volume by the dry weather flow to determine the multiplier factor.
- f) When sampling, multiply the instantaneous flow value by the multiplier factor to determining the sample volume.
(You may also develop a table of flows and sample volumes to simplify things on sampling day.)

- Example:
- a) Eight hour composite with eight individual samples.
 - b) Minimum sample volume needed is 3200 ml.
 - c) $3200 / 8 \text{ samples} = 400 \text{ ml/sample}$.
 - d) Average dry weather flow at the plant is 800,000 GPD.
 - e) $400 \text{ ml} / 0.8 \text{ MGD} = 500 \text{ ml/MGD}$.
 - f) Sampling day flow at 9:00 AM is 0.9 MGD

$$0.9 \text{ MGD} \times 500 \text{ ml/MGD} = 450 \text{ ml for the 9:00 AM sample}$$

Second Example:

If the metered flow rate fluctuates with pump operation, an instantaneous flow reading may not be representative for flow proportioning. This is especially true when the flow meter is placed on a pump dependent influent line and the effluent remains steady. In these cases, the aforementioned method would not be representative of the monitored activity. The permittee may have to utilize a different method to flow proportion the composite sample. If this is suspected, a totalizer based method for calculating flow rate may be used. By recording totalizer volumes at sampling intervals, an average flow rate can be generated which will level out the characteristic spikes and dips generated by pump cycling. An inherent problem with this method is that a totalizer reading is needed before or after sample collection begins. Below is an example of this method:

Example:

- Determine the sample interval (typically: 1 sampler per hour).
- Record totalizer volume when monitored period begins (i.e. 7:00).
- Record totalizer volume at time of sample collection.
- Subtract the previous totalizer reading from current totalizer reading, the difference is the interval volume.
- Convert the interval volume into a usable flow rate (Interval volume / Interval time).
- Use the calculated flow rate to flow proportion your sample as described in previous examples of this section.
- Repeat steps C. through F. until sampling is complete. Maintain these records with sampling documentation.

Totalizer Based Flow Reading for Composite Sampling

Sample #	Time	Totalizer Reading (Gallons)	Previous Totalizer Reading (Gallons)	Interval Volume (Gallons)	Flow Rate (MGD*)
	0700	56894625			
1	0800	56928357	56894625	33732	0.81
2	0900	56958691	56928357	30334	0.73
3	1000	56994718	56958691	36027	0.86
4	1100	57032705	56994718	37987	0.91
5	1200	57070204	57032705	37499	0.90
6	1300	57103796	57070204	33592	0.81
7	1400	57137858	57103796	34062	0.82
8	1500	57166037	57137858	28179	0.68

*In this example, interval volume was multiplied by 0.000024 to convert to MGD.
(1 hour interval volume in gallons * 24 hours / 1,000,000 gallons)

Third Example:

Manual Compositing Method
(Flow Recorded as % of Maximum)

Bottle Number	Sample Collection Time	% Flow	Sample Size, ml/l (% Flow x 11.3)
1	0800	39	441
2	0900	42	475
3	1000	48	542
4	1100	33	373
5	1200	28	316
6	1300	20	226
7	1400	22	249
8	1500	27	305
9	1600	33	373
10	1700	42	475
11	1800	33	373
12	1900	30	339
13	2000	40	452
14	2100	38	429
15	2200	30	339
16	2300	20	226
17	2400	14	158
18	0100	14	158
19	0200	8	90
20	0300	25	271
21	0400	40	452
22	0500	30	339
23	0600	20	226
24	0700	33	373
Total		709	8000

$$\text{Avg. Daily Flow} = \frac{\text{Sum of \% Flow}}{24 \text{ Hours}} = \frac{709}{24} = 29.5\% \text{ Avg. Flow of 1.014 Max. Flow}$$

Approximate Total Sample Required (ml) = 8000

$$\frac{\text{Sample Required}}{\text{Sum of \% Flows}} = \text{Factor} \quad \frac{8000}{709} = 11.3$$

$$\text{Factor} \times \text{Hourly \% Flow} = \text{Hourly Sample Size}$$

A format for a flow proportioning sample sheet is below.

FLOW PROPORTIONED SAMPLING LOG

Sampler: _____ 24 Hour Flow: _____

Sample Refrigeration Temperature: _____

Adjusted: YES NO

Composite Sample

Parameters: _____

Date: _____

Time: _____

Location: _____

Grab Sample

Parameters: _____

Time: _____

Date: _____

Location: _____

#	Time	Flow	Multiplier	Sample Volume
1				
2				
3				
4				
5				
6				
7				
8				

Step-by-step Process for Completing NPDES DMR for Typical STP

1. Print or type month and year of report.
2. For the average monthly flow monitoring requirement, total daily flows and divide by days in the month.
3. For the daily maximum flow monitoring requirement, enter the highest daily flow measured that month.
4. Did flow exceed average monthly or maximum daily limits on DMR? Total the number of exceedances (N.E.) and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits.
5. Type in flow measurement frequency, (continuous if a meter is used) and sample type (measured, estimate, or recorded if a chart is used).
6. Add the BOD₅ daily or weekly test results and divide the number of sample days in month to obtain monthly average. If one test was performed that month, enter result under "Other Units."
7. Enter the highest BOD₅ daily test result for your reported daily maximum. If one test was performed that month, enter the same result as the average.
8. Did BOD₅ exceed average monthly or maximum daily limits on DMR? Total the number of exceedances and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits.
9. Enter measurement frequency and type of sample taken.
10. Convert BOD₅ mg/l to pounds per day.

.381	x	8.34	x	26.7	=	84.8 Lbs
.561	x	8.34	x	21.6	=	101.1 Lbs
1.66	x	8.34	x	20.5	=	283.8 Lbs
.455	x	8.34	x	9.3	=	<u>+35.3 Lbs</u>
						505 ÷ 4 = 126.25 Average Lbs
11. Select highest BOD-5 pounds and enter. 283.8 Lbs
12. Did BOD₅ exceed average monthly or maximum daily limits on DMR? Total the number of exceedances and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits.
13. Add the TSS daily or weekly tests results and divide by the number of sample days in the month to obtain the monthly average. If one test was performed that month, enter result.
14. Enter the highest TSS daily test result for your reported daily maximum. If one test was performed that month, enter the same result as the average TSS.
15. Did TSS exceed average monthly or maximum daily limits on DMR? Total the number of exceedances and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits.
9. Enter measurement frequency and type of sample taken.

16. Convert TSS mg/l to pounds per day.
- $$\begin{array}{rclclcl} .381 & \times & 8.34 & \times & 12.3 & = & 39.1 \text{ Lbs} \\ .561 & \times & 8.34 & \times & 8.3 & = & 38.8 \text{ Lbs} \\ 1.66 & \times & 8.34 & \times & 61 & = & 844.5 \text{ Lbs} \\ .455 & \times & 8.34 & \times & 15.3 & = & \underline{+15.3 \text{ Lbs}} \\ & & & & 980.5 & \div & 4 = 245.1 \text{ Lbs Average Lbs} \end{array}$$
17. Select highest TSS pounds and enter. 844.5 Lbs
18. Did TSS exceed average monthly or maximum daily limits on DMR? Total the number of exceedances and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits.
19. Add TKN daily or weekly test results and divide by the number of sample days in the month to obtain the monthly average. If one test was performed that month, enter result.
20. Enter the highest TKN daily test result for your reported daily maximum. If one test was performed that month, enter the same result as the average TKN.
21. Did TKN exceed average monthly or maximum daily limits on DMR? Total the number of exceedances and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits.
9. Enter measurement frequency and type of sample taken.
22. Convert TKN mg/l to pounds per day.
- $$\begin{array}{rclclcl} .381 & \times & 8.34 & \times & 8.7 & = & 27.6 \text{ Lbs} \\ .561 & \times & 8.34 & \times & 16 & = & 74.9 \text{ Lbs} \\ 1.66 & \times & 8.34 & \times & 14.6 & = & 202.1 \text{ Lbs} \\ .455 & \times & 8.34 & \times & 16.9 & = & \underline{+64.1 \text{ Lbs}} \\ & & & & 368.7 & \div & 4 = 92.2 \text{ Average Lbs} \end{array}$$
23. Select highest TKN pounds and enter. 202.1 Lbs
24. Did TKN exceed average monthly or maximum daily limits on DMR? Total the number of exceedances and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits.
25. Enter lowest pH value on monthly DMR.
26. Enter highest pH value on monthly DMR.
27. If lowest pH was higher than minimum permitted value, enter "0" under the N.E. (number of exceedances) column. Did pH exceed the minimum or maximum limits on DMR? Total the number of exceedances and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits.
9. Enter measurement frequency and type of sample taken.
28. Circle test procedure used for Fecal Coliform test.
29. Procedure for calculating geometric mean for Fecal Coliform.
- $$32 \times 110 \times 410 \times 120 = 173,184,000$$
- $$\sqrt[4]{173,184,000} = 114.7 \text{ Col/100 ml}$$
30. Select highest Fecal Coliform test result for the month, which is 410 colonies/100 ml, and enter under maximum daily.

31. Did the geometric mean exceed average monthly or maximum daily limits on DMR? Total the number of exceedances and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits. Did Fecal Coliform exceed maximum daily limits on DMR? Total the number of exceedances and report on the DMR under the N.E. column. Enter "0" if the values are equal or less than the permitted limits.
32. Enter measurement frequency and type of sample taken.
33. Type or print name of mayor, chairman, or owner.
34. Title of principal (mayor, chairman, owner).
35. Date of report completed.
36. Name of authorized person filling out report and signature.
37. Title of authorized person filling out report.

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
DISCHARGE MONITORING REPORT

Final Limitations
Year Round

FACILITY NAME: Acme Sewage Treatment Plant
LOCATION OF FACILITY: Somewhere, WV
PERMIT NO.: WV0999999 OUTLET NO.: 001
WASTELOAD FOR THE MONTH OF: March, 2003 **01**

CERTIFIED LABORATORY NAME: Universal Laboratory
CERTIFIED LABORATORY ADDRESS: 601 Cubitainer St. Manhole, WV
INDIVIDUAL PERFORMING ANALYSIS: John Smith

Parameter		Quantity			N.E.	Other Units			CEL*	Units	N.E.	Measurement Frequency	Sample Type
		Avg Monthly	Max Daily	Units		Minimum	Avg Monthly	Max Daily					
Flow	N/A	N/A	N/A			N/A	0.562 02	1.66 03				Continuous	Measured 05
	N/A	N/A	N/A			N/A	0.800	N/A	N/A	MGD	0	Continuous	Measured
BOD, 5-Day (20 Deg C)	N/A	126.25 10	283.8 11		12	N/A	20 06	27 07				1/week 09	8 Hr Comp 09
	N/A	347.8	695.6	Lbs/Day	0	N/A	30	60	N/A	mg/l	0	1/week	8 Hr Comp
Solids, Total Suspended	N/A	245.1 16	844.5 17		18	N/A	24 13	61 14				1/week 09	8 Hr Comp 09
	N/A	347.8	695.6	Lbs/Day	1	N/A	30	60	N/A	mg/l	1	1/week	8 Hr Comp
Nitrogen, Total Kheldahl (As N)	N/A	92.2 22	202.1 23		24	N/A	14 19	17 20				1/week 09	8 Hr Comp 09
	N/A	208.7	416.4	Lbs/Day	0	N/A	18	36	N/A	mg/l	0	1/week	8 Hr Comp
Coliform, Fecal General	MF 28		MPN			N/A	115 29	410 30				1/week 09	Grab 09
	Circle Method Used					N/A	200	400	N/A	Cts/ 100 ml	1	1/week	Grab
pH						6.6 25	N/A	7.4 26				Daily 09	Grab 09
						6.0	N/A	9.0	N/A		0	Daily	Grab

* CEL = Compliance Evaluation Level

Name of Principal Executive Officer John Doe 32	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 a fine and imprisonment for knowing violations.	Date Completed April 10, 2003 34
Title of Officer City Manager 33		Signature of Principal Executive Officer or Authorized Agent <div style="border: 1px solid black; width: 100px; height: 30px; margin: 0 auto;"></div> 35 36

Instructions for completing the Sludge Management Report

This report is required to be completed and submitted by all facilities generating or disposing sewage sludge. The report is to be completed monthly and must be submitted by the twentieth day of the month following the report period, e.g., March's report must be submitted by April 20th.

If the design flow of the wastewater plant is over 50,000 gpd, the Sludge Management Report must be submitted each month, even if no sludge was generated or disposed. If the design flow of the treatment plant is less than 50,000 gpd, it is not necessary to submit a report for a month when no sludge is generated or disposed during that month.

The Sludge Management Report should not be stapled to the Discharge Monitoring Report if the two reports are mailed together.

Step-by-Step Instructions

1. Confirm facility name as it appears on the NPDES permit.
2. Confirm the design flow for the treatment plant. This is listed in the permit as the "Average Monthly Flow Limit."
3. Confirm the permit number for the NPDES discharge permit.
4. Confirm mailing address.
5. Confirm the calendar year of the month for which the report is being generated.
6. Major Facilities (Design flow >1 MGD) "quarterly", other enter "semi-annual."
7. Confirm the city for the mailing address.
8. Enter the zip code.
9. Enter the month for which the report is being generated.
10. Enter the month and year of the last sample taken for heavy metals.
11. Enter amount (dry tons) of sludge generated by the treatment plant during this month. "Generated" means sludge that has completed all treatment processes and is ready for storage, disposal, or reuse. Dry tons may be calculated by multiplying the actual tons of sludge by the percent solids.
12. Enter the amount (dry tons) of sludge generated so far this calendar year.
13. Enter the total gallons of septage received at the treatment plant during this month.
14. List the primary disposal method used for the month: "Land Application," "Landfill," "Incineration," "Septic Hauler," other treatment plant (specify), or "Compost Facility." If sludge was stored only during the report period and not disposed, enter "None."
15. If a secondary method of sludge disposal was used during the month, write it in here.
16. Enter the amount disposed by the method listed in space #14. Enter the amount in dry tons. If all the sludge was stored, enter a "0" or "None Disposed" in this blank.
17. Enter the amount disposed by the method listed in space #15. Enter the amount in dry tons.
18. Enter the name of the landfill or compost facility if these were used for disposal.
19. Average the percent solids sample results taken during the month and enter the value in this blank. At least one sample should be collected each month, provided that sludge is disposed during that month.

20. Enter the number of percent solids samples taken during the month.
21. Enter the number of loads of sewage sludge containing less than 20% solids which was disposed in a landfill.
22. The “Pathogen Reduction” section applies only to land application of sewage sludge. Mark this statement if no sludge was land applied, and then skip to space #29.
23. Mark this statement if the pathogen reduction requirement was met by monitoring the Fecal Coliform level in the sewage sludge.
 - 23A. Enter the geometric mean of the last seven samples taken for Fecal Coliform.
 - 23B. Enter the value of the Fecal Coliform sample collected during this month.
 - 23C. Major sewage treatment plants using this method must sample twice per month. If you sampled twice during the month, enter the second value in this blank. If only one sample was taken, enter a “N/A.”
24. Mark this statement if the pathogen reduction requirement was met by lime addition.
 - 24A. For the samples taken two hours after the addition of the lime, enter the range of pH values (i.e., minimum and maximum).
25. Mark this statement if the pathogen reduction requirement was met by anaerobic digestion.
 - 25A. Enter the average detention time measured in days in the digester for this month. This may be calculated by dividing the average daily sludge flow (gpd) out of the digester by the working volume of the digester.
 - 25B. Enter the average digester temperature for this month.
 - 25C. Enter the range of temperatures recorded for the digester during this month.
26. Mark this statement if the pathogen reduction requirement was met by aerobic digestion.
 - 26A. Enter the average detention time measured in days in the digester for this month. This may be calculated by dividing the average daily sludge flow (gpd) out of the digester by the working volume of the digester.
 - 26B. Enter the average digester temperature for this month.
 - 26C. Enter the range of temperatures recorded for the digester during this month.
27. Mark this statement if the pathogen reduction requirement was met by a method not listed above. Provide a detailed explanation of the procedure used to meet the requirement.
28. Enter the number of loads of sewage sludge land applied during the month that did not first fully meet the pathogen reduction requirements. For example, one load of limed sludge may have had a pH of 11.8 after two hours but was land applied anyway. Enter “0” if all sludge land applied during this month met the pathogen reduction requirements of 40 CFR Part 503.
29. The “Vector Attraction Reduction” section applies only to land application of sewage sludge. Mark this statement if no sludge was land applied.
30. Mark this statement if the vector attraction reduction requirement was met by reducing the volatile solids content in the sewage sludge by at least 38%.
 - 30A. Enter the month that the volatile solids samples were taken. Note that if the samples were not taken during this month, you must maintain records at the plant that demonstrate “similar or better operating conditions” were maintained in the plant’s sludge disposal units for the months when no samples were taken. You must verify volatile solids reduction in the sludge by sampling the volatile solids content in the sludge at least once per six months (quarterly for major facilities).

- 30B. Enter the measured volatile solids reduction for the month entered in #30A.
31. Mark this statement if the vector attraction reduction requirement was met by sampling the specific oxygen uptake rate (SOUR) in the sludge.
- 31A. Enter the month that the SOUR samples were taken. Note that if the samples were not taken during this month, you must maintain records at the plant that demonstrate “similar or better operating conditions” were maintained in the plant’s sludge disposal units for the months when no samples were taken. You must verify SOUR results in the sludge by sampling the sludge at least once per six months (quarterly for major facilities).
- 31B. Enter the average measured SOUR value for the month entered in #31A.
32. Mark this statement if the vector attraction reduction requirement was met by lime addition.
- 32A. Enter the range of pH values (i.e., minimum and maximum) for the samples taken two hours after the addition of the lime.
- 32B. Enter the range of pH values (i.e., minimum and maximum) for the samples taken twenty-four hours after the addition of the lime.
33. Mark this statement if the vector attraction reduction requirement was met by a method not listed above. Provide a detailed explanation of the procedure used to meet the requirement.
34. Enter the number of loads of sewage sludge land applied during the month that did not first fully meet the vector attraction reduction requirements. For example, one load of limed sludge may have had a pH of 11.3 after twenty-four hours but was land applied anyway. Enter “0” if all sludge land applied during this month met the pathogen reduction requirements of 40 CFR Part 503.
- 35-38. Enter the name, title, and signature of the responsible official, or the authorized agent.
39. Provide any additional comments or explanations that may be relevant to this month’s report.

SEWAGE SLUDGE MANAGEMENT REPORT

FACILITY NAME: 1 DESIGN FLOW: 2 PERMIT NUMBER: 3
 ADDRESS: 4 YEAR: 5 MONITORING REQUENCY: 6
 CITY: 7 ZIP: 8 MONTH: 9 LAST SAMPLE DATE: 10
 Total Sludge Generated this Report Period: (Dry Tons) 11 Disposal Method: 14 15
 Sludge Generated this Year to Date: (Dry Tons) 12 Amount Disposed: (Dry Tons) 16 17
 Amount of Domestic Septage Received: (Gallons) 13 Name of Landfill or Compost Facility: 18
 Percent Solids: Average: 19 Measurement Frequency: 20 Number of Loads Landfilled With Less Than 20 % Solids: 21

Pathogen Reduction Method: 22 ☐ Not Applicable. No land application of sewage sludge.

23 ☐ Fecal Coliform Monitoring: Geometric mean of last seven samples is 23A col/dry gram.
24 ☐ Sample results for this report period were 23B col/dry gram and 23C col/dry gram.
25 ☐ Lime Addition: pH of sample two hours after lime addition: 24A Range 24B 25A 25B (syad) :doirep troper siht rof emit noitneted egarevA :noitseidA reanA 25C
26 ☐ Aerobic Digestion: Average detention time for this report period: (days) 26A Range 26B 26C
27 ☐ Other: (Provide Description) 26B 26C

NE: Number of loads land applied which did not fully meet pathogen reduction requirements: 28

Vector Attraction Reduction Method: 29 ☐ Not Applicable. No land application of sewage sludge.

30 ☐ 38 % Volatile Solids Reduction: Average volatile solids reduction for the month of 30A was 30B percent.
31 ☐ SOUR: The average Specific Oxygen Uptake rate for the month of 31A was 31B mg O₂/hour/dry gram.
32 ☐ Lime Addition: pH of sample two hours after lime addition: 32A Range 32B
33 ☐ Other (Provide description) 32B

NE: Number of loads land applied which did not fully meet vector attraction requirements: 34

I certify under penalty of law that the management practices, vector attraction reduction requirements, and the pathogen reduction requirements of Federal Regulation 40 CFR Part 503 and State Regulation Title 33, Series 2 have been met for all sewage sludge land applied during this reporting period. This determination has been made under my supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate information used to determine these requirements have been met. I also certify that this document and all the attachments were prepared under my direct supervision, and that the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are penalties for false certification including the possibility of fine an imprisonment.

Official: 35 Title: 37
 Signature: 36 Date: 38

Additional Comments or Explanations: 39

Sewage Sludge Monitoring Report

For

MAJOR FACILITIES (1⁺ MGD)

Which

LAND APPLY

Sewage Sludge

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01 _____
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units				CEL*	Units	N.E.	Measurement Frequency	Sample Type
				Units	N.E.									
74055 (ML-+) RF-B	Reported													
Coliform, Fecal	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	col/gr		1/quarter	Grab
00400 (ML-+) RF-B	Reported													
pH	Permit Limits	N/A	N/A			Rpt Only Min.	N/A	Rpt Only Max.		N/A	S.U.		1/quarter	Grab
61521 (ML-+) RF-B	Reported													
Arsenic, Sludge Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	20 Max.		N/A	mg/kg		1/quarter	1/wk Comp
78476 (ML-+) RF-B	Reported													
Cadmium, Sludge, Tot Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	39 Max.		N/A	mg/kg		1/quarter	1/wk Comp
78473 (ML-+) RF-B	Reported													
Chromium, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	1000 Max.		N/A	mg/kg		1/quarter	1/wk Comp
78475 (ML-+) RF-B	Reported													
Copper, Sludge, Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	1500 Max.		N/A	mg/kg		1/quarter	1/wk Comp
78468 (ML-+) RF-B	Reported													
Lead, Dry. Wt.	Permit Limits	N/A	N/A			N/A	N/A	250 Max.		N/A	mg/kg		1/quarter	1/wk Comp
78471 (ML-+) RF-B	Reported													
Mercury, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	10 Max.		N/A	mg/kg		1/quarter	1/wk Comp

* CEL = Compliance Evaluation Level

Name of Principal Executive Officer 	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 a fine and imprisonment for knowing violations.	Date Completed <input type="text"/>
		Signature of Principal Executive Officer or Authorized Agent
Title of Officer 		

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01 _____
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units						Measurement Frequency	Sample Type
				Units	N.E.				CEL*	Units	N.E.		
78465 (ML+) RF-B	Reported												
Molybdenum, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	18 Max.	N/A	mg/kg		1/quarter	1/wk Comp
78469 (ML+) RF-B	Reported												
Nickel, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	200 Max.	N/A	mg/kg		1/quarter	1/wk Comp
49031 (ML+) RF-B	Reported												
Selenium, Sludge, Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	36 Max.	N/A	mg/kg		1/quarter	1/wk Comp
78467 (ML+) RF-B	Reported												
Zinc, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	2800 Max.	N/A	mg/kg		1/quarter	1/wk Comp
00916 (ML+) RF-B	Reported												
Calcium, Total (as Ca)	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/quarter	1/wk Comp
61553 (ML+) RF-B	Reported												
Solids, Total Sludge Percent	Permit Limits	N/A	N/A			Rpt Only Min.	Rpt Only Avg.	Rpt Only Max.	N/A	Percent		1/quarter	1/wk Comp
78472 (ML+) RF-B	Reported												
Potassium, Sludge Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/quarter	1/wk Comp
78478 (ML+) RF-B	Reported												
Phosphorus, Sludge, Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/quarter	1/wk Comp

* CEL = Compliance Evaluation Level

Name of Principal Executive Officer	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 a fine and imprisonment for knowing violations.	Date Completed	
Title of Officer		Signature of Principal Executive Officer or Authorized Agent	

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units				CEL*	Units	N.E.	Measurement Frequency	Sample Type
				Units	N.E.									
82294 (ML+) RF-B	Reported													
Nitrogen, Ammonia Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
78470 (ML+) RF-B	Reported													
Nitrogen, Sludge Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
51020 (ML+) RF-B	Reported													
Organic Nitrogen	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
00927 (ML+) RF-B	Reported													
Magnesium, Tot (as Mg)	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
										N/A				
										N/A				
										N/A				
										N/A				

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Name of Principal Executive Officer 	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 a fine and imprisonment for knowing violations.	Date Completed
		Signature of Principal Executive Officer or Authorized Agent
Title of Officer 		

Sewage Sludge Monitoring Report

For

MINOR FACILITIES (<1 MGD)

Which

LAND APPLY

Sewage Sludge

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units						Measurement Frequency	Sample Type
				Units	N.E.				CEL*	Units	N.E.		
74055 (ML+) RF-C	Reported												
Coliform, Fecal	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	col/gr		1/6 months	Grab
00400 (ML+) RF-C	Reported												
pH	Permit Limits	N/A	N/A			Rpt Only Min.	N/A	Rpt Only Max.	N/A	S.U.		1/6 months	Grab
61521 (ML+) RF-C	Reported												
Arsenic, Sludge Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	20 Max.	N/A	mg/kg		1/6 months	1/wk Comp
78476 (ML+) RF-C	Reported												
Cadmium, Sludge, Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	39 Max.	N/A	mg/kg		1/6 months	1/wk Comp
78473 (ML+) RF-C	Reported												
Chromium, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	1000 Max.	N/A	mg/kg		1/6 months	1/wk Comp
78475 (ML+) RF-C	Reported												
Copper, Sludge, Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	1500 Max.	N/A	mg/kg		1/6 months	1/wk Comp
78468 (ML+) RF-C	Reported												
Lead, Dry. Wt.	Permit Limits	N/A	N/A			N/A	N/A	250 Max.	N/A	mg/kg		1/6 months	1/wk Comp
78471 (ML+) RF-C	Reported												
Mercury, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	10 Max.	N/A	mg/kg		1/6 months	1/wk Comp

* CEL = Compliance Evaluation Level

Name of Principal Executive Officer	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 a fine and imprisonment for knowing violations.	Date Completed	
Title of Officer		Signature of Principal Executive Officer or Authorized Agent	

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units				CEL*	Units	N.E.	Measurement Frequency	Sample Type
				Units	N.E.									
78465 (ML+) RF-C	Reported													
Molybdenum, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	18 Max.		N/A	mg/kg		1/6 months	1/wk Comp
78469 (ML+) RF-C	Reported													
Nickel, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	200 Max.		N/A	mg/kg		1/6 months	1/wk Comp
49031 (ML+) RF-C	Reported													
Selenium, Sludge, Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	36 Max.		N/A	mg/kg		1/6 months	1/wk Comp
78467 (ML+) RF-C	Reported													
Zinc, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	2800 Max.		N/A	mg/kg		1/6 months	1/wk Comp
61553 (ML+) RF-C	Reported													
Solids, Total Sludge Percent	Permit Limits	N/A	N/A			Rpt Only Min.	Rpt Only Avg.	Rpt Only Max.		N/A	Percent		1/6 months	1/wk Comp
00924 (ML+) RF-C	Reported													
Magnesium, Total	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/6 months	1/wk Comp
78472 (ML+) RF-C	Reported													
Potassium, Sludge Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/6 months	1/wk Comp
78478 (ML+) RF-C	Reported													
Phosphorus, Sludge, Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/6 months	1/wk Comp

* CEL = Compliance Evaluation Level

Name of Principal Executive Officer	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 a fine and imprisonment for knowing violations.	Date Completed	
Title of Officer		Signature of Principal Executive Officer or Authorized Agent	

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

RESULTS FOR THE MONTH OF:													
Parameter		Quantity				Other Units				Measurement Frequency	Sample Type		
				Units	N.E.				CEL*			Units	N.E.
00917 (ML+) RF-C	Reported												
Calcium	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/6 months	1/wk Comp
Year Round													
82294 (ML+) RF-C	Reported												
Nitrogen, Ammonia Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/6 months	1/wk Comp
Year Round													
78470 (ML+) RF-C	Reported												
Nitrogen, Sludge Tot. Dry Wt	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/6 months	1/wk Comp
Year Round													
51020 (ML+) RF-C	Reported												
Organic Nitrogen	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/6 months	1/wk Comp
Year Round													
									N/A				
									N/A				
									N/A				
									N/A				
									N/A				

* CEL = Compliance Evaluation Level

Name of Principal Executive Officer	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 a fine and imprisonment for knowing violations.	Date Completed	
Title of Officer		Signature of Principal Executive Officer or Authorized Agent	

Sewage Sludge Monitoring Report

For

MAJOR FACILITIES (1⁺ MGD)

Which

LANDFILL

Sewage Sludge

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

Final Limitations
Year Round

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
PERMIT NO.: _____ OUTLET NO.: S01
RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units				CEL*	Units	N.E.	Measurement Frequency	Sample Type
				Units	N.E.									
00400 (ML+) RF-B	Reported													
pH	Permit Limits	N/A	N/A			Rpt Only Min.	N/A	Rpt Only Max.		N/A	S.U.		1/quarter	Grab
61521 (ML+) RF-B	Reported													
Arsenic, Sludge Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
78476 (ML+) RF-B	Reported													
Cadmium, Sludge, Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
78473 (ML+) RF-B	Reported													
Chromium, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
78475 (ML+) RF-B	Reported													
Copper, Sludge, Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
78468 (ML+) RF-B	Reported													
Lead, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
78471 (ML+) RF-B	Reported													
Mercury, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
78465 (ML+) RF-B	Reported													
Molybdenum, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp

* CEL = Compliance Evaluation Level

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Title of Officer		Signature of Principal Executive Officer or Authorized Agent

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

Final Limitations
Year Round

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01 _____
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units				CEL*	Units	N.E.	Measurement Frequency	Sample Type
				Units	N.E.									
78469 (ML+) RF-B Nickel, Dry Wt. Year Round	Reported													
	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
49031 (ML+) RF-B Selenium, Sludge, Tot. Dry Wt. Year Round	Reported													
	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
78467 (ML+) RF-B Zinc, Dry Wt. Year Round	Reported													
	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
00916 (ML+) RF-B Calcium, Total (as Ca) Year Round	Reported													
	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
61553 (ML+) RF-B Solids, Total Sludge Percent Year Round	Reported													
	Permit Limits	N/A	N/A			Rpt Only Min.	Rpt Only Avg.	Rpt Only Max.		N/A	Percent		1/quarter	1/wk Comp
78472 (ML+) RF-B Potassium, Sludge Tot. Dry Wt. Year Round	Reported													
	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
78478 (ML+) RF-B Phosphorus, Sludge, Tot. Dry Wt. Year Round	Reported													
	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
82294 (ML+) RF-B Nitrogen, Ammonia Tot. Dry Wt. Year Round	Reported													
	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp

* CEL = Compliance Evaluation Level

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Title of Officer		Signature of Principal Executive Officer or Authorized Agent	

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

Final Limitations
Year Round

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units				CEL*	Units	N.E.	Measurement Frequency	Sample Type
				Units	N.E.									
78470 (ML+) RF-B	Reported													
Nitrogen, Sludge Tot Dry Wt	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
Year Round														
51020 (ML+) RF-B	Reported													
Organic Nitrogen	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
Year Round														
00927 (ML+) RF-B	Reported													
Magnesium Tot (as Mg)	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.		N/A	mg/kg		1/quarter	1/wk Comp
Year Round														
										N/A				
										N/A				
										N/A				
										N/A				
										N/A				
										N/A				

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		Signature of Principal Executive Officer or Authorized Agent
Title of Officer 		

Sewage Sludge Monitoring Report

For

MINOR FACILITIES (<1 MGD)

Which

LANDFILL

Sewage Sludge

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01 _____
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units						Measurement Frequency	Sample Type
				Units	N.E.				CEL*	Units	N.E.		
00400 (ML-+) RF-C	Reported								N/A	S.U.			
pH	Permit Limits	N/A	N/A			Rpt Only Min.	N/A	Rpt Only Max.				1/6 months	Grab
Year Round													
61521 (ML-+) RF-C	Reported								N/A	mg/kg			
Arsenic, Sludge Tot. Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	1/wk Comp
Year Round													
78476 (ML-+) RF-C	Reported								N/A	mg/kg			
Cadmium,Sludge,Tot Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	1/wk Comp
Year Round													
78473 (ML-+) RF-C	Reported								N/A	mg/kg			
Chromium, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	1/wk Comp
Year Round													
78475 (ML-+) RF-C	Reported								N/A	mg/kg			
Copper,Sludge,Tot,Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	1/wk Comp
Year Round													
78468 (ML-+) RF-C	Reported								N/A	mg/kg			
Lead, Dry. Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	1/wk Comp
Year Round													
78471 (ML-+) RF-C	Reported								N/A	mg/kg			
Mercury, Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	1/wk Comp
Year Round													
78465 (ML-+) RF-C	Reported								N/A	mg/kg			
Molybdenum,Dry Wt.	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	1/wk Comp
Year Round													

* CEL = Compliance Evaluation Level

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Title of Officer		Signature of Principal Executive Officer or Authorized Agent	

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units						Measurement Frequency	Sample Type
				Units	N.E.				CEL*	Units	N.E.		
78469 (ML-+) RF-C	Reported								N/A	mg/kg			1/wk Comp
Nickel, Dry Wt. Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	
49031 (ML-+) RF-C	Reported								N/A	mg/kg			1/wk Comp
Selenium,Sludge,Tot. Dry Wt. Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	
78467 (ML-+) RF-C	Reported								N/A	mg/kg			1/wk Comp
Zinc, Dry Wt. Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	
00916 (ML-+) RF-C	Reported								N/A	mg/kg			1/wk Comp
Calcium, Total (as Ca) Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	
61553 (ML-+) RF-C	Reported								N/A	Percent			1/wk Comp
Solids, Total Sludge Percent Year Round	Permit Limits	N/A	N/A			Rpt Only Min.	Rpt Only Avg.	Rpt Only Max.				1/6 months	
78472 (ML-+) RF-C	Reported								N/A	mg/kg			1/wk Comp
Potassium, Sludge Tot. Dry Wt. Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	
78478 (ML-+) RF-C	Reported								N/A	mg/kg			1/wk Comp
Phosphorus,Sludge,Tot,Dry Wt. Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	
82294 (ML-+) RF-C	Reported								N/A	mg/kg			1/wk Comp
Nitrogen, Ammonia Tot. Dry Wt. Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.				1/6 months	

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		Signature of Principal Executive Officer or Authorized Agent
Title of Officer 		

STATE OF WEST VIRGINIA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SEWAGE SLUDGE MONITORING REPORT

FACILITY NAME: _____ CERTIFIED LABORATORY NAME: _____
 LOCATION OF FACILITY: _____ CERTIFIED LABORATORY ADDRESS: _____
 PERMIT NO.: _____ OUTLET NO.: S01 _____
 RESULTS FOR THE MONTH OF: _____ INDIVIDUAL PERFORMING ANALYSIS: _____

Parameter		Quantity				Other Units						Measurement Frequency	Sample Type
				Units	N.E.				CEL*	Units	N.E.		
78470 (ML-+) RF-C	Reported												
Nitrogen, Sludge Tot. Dry Wt Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/6 months	1/wk Comp
51020 (ML-+) RF-C	Reported												
Organic Nitrogen Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/6 months	1/wk Comp
00927 (ML-+) RF-C	Reported												
Magnesium,Tot (as Mg) Year Round	Permit Limits	N/A	N/A			N/A	N/A	Rpt Only Max.	N/A	mg/kg		1/6 months	1/wk Comp
									N/A				
									N/A				
									N/A				
									N/A				
									N/A				
									N/A				

* CEL = Compliance Evaluation Level

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Title of Officer		Signature of Principal Executive Officer or Authorized Agent	

REPORTING REQUIREMENTS

The permittee shall report any noncompliance which may endanger health or the environment immediately after becoming aware of the circumstances by using the Agency's designated spill alert telephone number. A written submission shall be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

The following shall also be reported immediately:

1. Any unanticipated bypass which exceeds any effluent limitation in the permit;
2. Any upset which exceeds any effluent limitation in the permit; and
3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported immediately. This list shall include any toxic pollutant or hazardous substance, or any pollutant specifically identified as the method to control a toxic pollutant or hazardous substance.

The Director may waive the written report on a case-by-case basis if the oral report has been received in accordance with above.

Compliance with the above reporting requirements shall not relieve a person of compliance with Title 47, Series 11, Section 2.

Following is a copy of the West Virginia Spill Alert System for use in complying with Title 47, Series 11, Section 2 of the Legislative rules as they pertain to the reporting of spills and accidental discharges.

EMERGENCY RESPONSE SPILL ALERT SYSTEM WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

REQUIREMENTS:

Title 47, Series 11, Section 2 of the West Virginia Legislative Rules, Environmental Protection, Water Resources – Waste Management, Effective July 1, 1994.

RESPONSIBILITY FOR REPORTING:

Each and every person who may cause or be responsible for any spill or accidental discharge of pollutants into the waters of the State shall give immediate notification to the Office of Water Resources' Emergency Notification Number, **1-800-642-3074**. Such notification shall set forth insofar as possible and as soon thereafter as practical the time and place of such spill or discharge, type or types and quantity or quantities of the material or materials therein, action or actions taken to stop such spill or discharge and minimize the pollution effect thereof, the measure or measures taken or to be taken in order to prevent a recurrence of any such spill or

discharge and such additional information as may be requested by the Office of Water Resources. This also applies to spills to the waters of the State resulting from accidents to common carriers by highway, rail and water.

It shall be the responsibility of each industrial establishment or other entity discharging directly to a stream to have available the following information pertaining to those substances that are employed or handled in its operation in sufficiently large amounts as to constitute a hazard in case of an accidental spill or discharge into a public stream.

- 1) Potential toxicity in water to man, animals and aquatic life;
- 2) Details on analytical procedures for the quantitative estimation of such substances in water and
- 3) Suggestion on safeguards or other precautionary measures to nullify the toxic effects of a substance once it has gotten into a stream.

Failure to furnish such information as required by Section 14, Article 11, Chapter 22, Code of West Virginia may be punishable under Section 24, Article 11, Chapter 22, and/or Section 22, Article 11, Chapter 22, Code of West Virginia.

It shall be the responsibility of any person who causes or contributes in any way to the spill or accidental discharge of any pollutant or pollutants into State waters to immediately take any and all measures necessary to contain such spill or discharge. It shall further be the responsibility of such person to take any and all measures necessary to clean-up, remove and otherwise render such spill or discharge harmless to the waters of the State.

When the Director determines it necessary for the effective containment and abatement of spills and accidental discharges, the Director may require the person or persons responsible for such spill or discharge to monitor affected waters in a manner prescribed by the Director until the possibility of any adverse effect on the waters of the State no longer exists.

VOLUNTARY REPORTING BY LAW OFFICERS, U. S. COASTGUARD, LOCK MASTERS AND OTHERS:

In cases involving river and highway accidents where the responsible party may or may not be available to report the incident, law officers, U. S. Coast Guard, Lock Masters and other interested person(s) should make the report.

WHO TO CONTACT:

Notify the following number: **1-800-642-3074**

INFORMATION NEEDED:

- | | |
|--|---------------------------------------|
| • Source of spill or discharge | • Personnel at the scene |
| • Location of incident | • Actions initiated |
| • Time of incident | • Shipper/Manufacturer identification |
| • Material spilled or discharged | • Railcar/Truck identification number |
| • Amount spilled or discharged | • Container type |
| • Toxicity of material spilled or discharged | |

STATEMENT OF POLICY REGARDING OPPORTUNITY TO USE AND PARTICIPATE IN PROGRAMS

It is the policy of the Department of Environmental Protection to provide its facilities, accommodations, services and program to all persons without regard to sex, race, color, age, religion, national origin, or handicap. Proper licenses/registration and compliance with official rules and regulations are the only sources of restrictions for facility use or program participation. Complaints should be directed to: Department of Environmental Protection, 601 57th Street SE, Charleston, WV 25304.

The Department of Environmental Protection is an equal opportunity employer.

EPA Water Compliance Inspection Report

Section A: National Data System Coding (ie PCS)

Transaction N	Code 5	NPDES	Mo/Day/Yr	Inspection Type	Inspector S	Facility Type
Remarks:						
Inspection Work Days		Facility Self-Monitoring Evaluation Rating		B1	QA	Reserved
					N	

Section B: Facility Data

Name and Location of Facility Inspected:	_____	Entry Time:	Permit Effective Date:
Name(s) of On-Site Representatives(s) Titles/Phone and Fax Numbers:	_____ _____ _____	Exit Time/Date:	Permit Expiration Date:
Name, Address of Responsible Official/Title/Phone/Fax:	_____	Contacted: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Other Facility Data:

Section C: Areas Evaluated During Inspection

M - Marginal; N - No; N/A - Not Applicable; N/E - Not Evaluated; S - Satisfactory; U - Unsatisfactory; Y - Yes

	Permit		Flow Measurement		Sampling		Operations & Maintenance
	Records/Reports		Laboratory		Compliance Schedule		Sludge Disposal
	Fac Site Review		Eff / Rec. Waters		Self-Monitoring		Pollution Prevention
	Pretreatment		Stormwater		CSO/SSO		Multimedia
	Groundwater Data		Unpermitted Bypass				

Section D: Summary of Findings / Comments (attach additional sheets if necessary):

Compliance Assistance (check all that apply): Troubleshooting ☒ Records/Reports ☒ Sampling ☒

Name/Signature(s) of Inspectors(s)	Agency/Office/Telephone/Fax Dept. of Environmental Protection P. O. Box 662, Teays, WV 25569 (304) 757-1693	Date
Signature of Management QA Reviewer	Agency/Office/Phone/Fax Dept. of Environmental Protection P. O. Box 662, Teays, WV 25569 (304) 757-1693	Date

Revised: October 2003

Effluent Characteristics, A Table of Results

<i>Parameter</i>	Discharge Limitations, 001		<i>DEP</i>	<i>Permittee</i>
	<i>Avg. Monthly</i> Report Only	<i>Max. Daily</i> Report Only		

①

②

**M-Marginal; N-No; N/A-Not Applicable; N/E-Not Evaluated;
N/O-Not Observed; S-Satisfactory; U-Unsatisfactory; Y-Yes**

PERMIT VERIFICATION

Overall Rating Select one

	1. Current copy of permit is onsite.
	2. Name and mailing address of permittee are correct.
	3. Facility is as described in permit.
	4. Permit modification(s) issued.
	5. Timely permit renewal application submitted (≤ 180 days remain to expiration)
	6. Notification was given to EPA/State of new, different, or increased discharges.
	7. Number and location of discharge points are as described in permit.
	8. Permit accurately identifies name and location of receiving waters.
	9. All discharges are permitted.
Comments:	

RECORDKEEPING AND REPORTING EVALUATION

Overall Rating Select one

	1. Maintain records and reports as required by permit.
	2. All required information is available, complete, and current.
	3. Information is maintained for 3 years (or 5 years for sewage sludge).
	4. If facility monitors more frequently than required by permit (Using approved methods), a. Are these results reported? b. Is the increased monitoring frequency indicated on the DMR(s)?
	5. Analytical results are consistent with data reported on DMRs. a. The data moves accurately from the bench sheets to the DMRs. b. The calculations are performed properly (including loading, averages, etc.)
	6. Sampling and analyses data are adequate and include: a. Dates, times, and location of sampling. b. Name of individual performing sampling c. Analytical methods and techniques d. Results of analyses and calibration e. Dates of analyses f. Times of analyses (where needed to determine if analyses met holding times) g. Name of person performing analyses h. Flow for samples obtained.
	7. Monitoring records are adequate and include: a. Flow, pH, DO, etc., as required by permit b. Monitoring charts kept for 3 years (or 5 years for sewage sludge) c. Flow meter calibration records kept. d. Locational data (latitude and longitude of each outfall)

**M-Marginal; N-No; N/A-Not Applicable; N/E-Not Evaluated;
N/O-Not Observed; S-Satisfactory; U-Unsatisfactory; Y-Yes**

	8. Laboratory equipment calibration and maintenance records are adequate.
	9. Plant records are adequate and include: <ul style="list-style-type: none"> a. O & M Manual b. Daily plant operational records or log book c. Equipment maintenance records and schedules d. CSO/lift station check records or log books e. Schedules and dates of equipment maintenance repairs
	10. Pretreatment records are adequate and contain inventory of industrial waste contributors, including. <ul style="list-style-type: none"> a. Monitoring data b. Inspection reports c. Compliance status records d. Enforcement actions.
Comments:	

FACILITY SITE REVIEW

Overall Rating Select one

	1. Oil/chemical storage tanks have adequate secondary containment
	2. Secondary containment drains closed when not in use.
	3. Procedures for removing accumulated water from secondary containment.
	4. Facility schedules/performs routine and preventive maintenance on time.
	5. Plant has general safety structures such as rails around or covers over tanks, pits, or wells.
	6. Emergency phone numbers are listed, including EPA, State, and Spill Hotline.
	7. No cross connections exist between a potable water supply and nonpotable source.
	8. Chlorine safety precautions are followed: <ul style="list-style-type: none"> a. NIOSH-approved 30-minute air pack. b. All standing chlorine cylinders chained in place. c. All personnel trained in the use of chlorine d. Chlorine repair kit available. e. Chlorine leak detector tied into plant alarm system. f. Chlorine cylinders stored in adequately ventilated areas? g. Ventilation fan with an outside switch h. Posted safety precautions i. Existing emergency SOP and/or RMP or SPCC?
	9. Trash Disposal
	10. Oil Disposal
	11. Surface H2O Diversion
	12. Dike Condition
	13. Fencing
	14. All permitted outlets properly located and marked.

**M-Marginal; N-No; N/A-Not Applicable; N/E-Not Evaluated;
N/O-Not Observed; S-Satisfactory; U-Unsatisfactory; Y-Yes**

	15. Auxiliary Power
	16. Open dumps on property
	17. Spill Detection and Alert
	a. Adequate lighting provided.
	b. Adequate monitoring to detect spills.
	c. Adequate alarm or other systems to alert personnel in a timely manner.
Comments:	

PRETREATMENT

Overall Rating Select one

	THE FACILITY IS SUBJECT TO PRETREATMENT REQUIREMENTS
	1. All required industrial users are identified in the permit
	2. Required pretreatment ordinances, regulations, etc. established
	3. Required analyses being performed on industrial users waters.
	4. Adequate inspection and enforcement program for industrial users and, if applicable, their pretreatment facilities.
Comments:	

GROUNDWATER DATA

Overall Rating Select one

Comments:

FLOW MEASUREMENT

Overall Rating Select one

	1. Flow measurement frequency and type meets permit requirements.
	2. Type of primary flow measuring device.
	3. Type of secondary flow measuring device.
	4. Other type of flow measuring device.
	5. Flow measurement equipment adequate to handle expected ranges of flow rates.
	6. Actual discharged flow measured.
	7. Secondary instruments (totalizers, recorders, etc.) properly operated and maintained.
	8. Effluent flow measured after all return lines.
	9. Date of last flow meter calibration. Performed by:
	10. Frequency of flow meter calibration:
	11. Flow totalizer properly calibrated.
	12. Calibration frequency adequate.

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	13. Spare parts stocked.
	14. Effluent loadings calculated using effluent flow.
	15. Flumes
	16. Weirs
Comments:	

FLUMES

	1. Flow entering flume reasonably well-distributed across the channel and free of turbulence, boils, or other disturbances.
	2. Cross-sectional velocities at entrance relatively uniform.
	3. Flume clean and free of debris and deposits.
	4. All dimensions of flume accurate and level.
	5. Side walls of flume vertical and smooth.
	6. Sides of flume throat vertical and parallel.
	7. Flume head being measured at proper location.
	8. Flume head properly measured
	9. Flume properly sized to measure range of existing flow.
	10. Flume operating under free-flow conditions over existing range of flows.
	11. Flume submerged under certain flow conditions.
Comments:	

WEIRS

	1. What type of and size weir does the facility use?
	2. Weir exactly level.
	3. Upstream face both smooth and perpendicular to axis of channel both horizontally and vertically.
	4. Downstream edge of weir is chamfered at 45° if over ¼" thick.
	5. Free access for air below the nappe of the weir.
	6. Distance from sides of weir to side of channel at least 2H (for all except suppressed weir).
	7. Head measurements properly made by facility personnel.
	8. Leakage does not occur around weir.
	9. Use of proper flow tables by facility personnel.
	10. Height from bottom of channel to weir crest never less than 1' and at least 2H.
Comments:	

OTHER FLOW DEVICES

	1. Type of flow meter used:
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**M-Marginal; N-No; N/A-Not Applicable; N/E-Not Evaluated;
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2.	What are the most common problems that the operator has had with the flow meter?
a.	Is there a straight length of pipe or channel before and after the flow meter of at least 5 to 20 diameters?
b.	If a magnetic flow meter is used, are there sources of electric noise in the near vicinity?
c.	Is the magnetic flow meter properly grounded?
d.	Is the full pipe requirement met?
3.	Measured wastewater flow: mgd; Recorded flow: ; Error %
Comments:	

LABORATORY
Overall Rating Select one

1.	Onsite Lab DEP certified. Certification #
2.	Onsite lab analyst is certified.
3.	Parameters analyzed onsite.
4.	Adequate equipment and procedures used for non-certified labs performing analyses onsite.
5.	EPA approved analytical procedures are used.
6.	Appropriate laboratory methods used as specified by permit.
7.	State certified contract laboratory being used. Lab name: Address: Contact: Phone #: Certification #:
8.	Holding times being met by laboratory.
9.	Satisfactory refrigeration in use.
10.	Transfer of samples fully documented.
Comments:	

EFFLUENT/RECEIVING WATERS
Overall Rating Select one

1.	Recent History (last months reviewed)
	a. Violation of discharge limits
	b. Spills/bypasses
	c. Fish Kills
2.	Latest bioassay results.
3.	Appearance of effluent during inspection.

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	a. Color
	b. Clarity
	c. Foam, scum, or sheens present
	d. Excessive solids
	e. odor
	4. Appearance of receiving stream during inspection
	a. Distinctly visible foam or sheen on stream
	b. Sludge beds or deposits of solids below discharge point
	c. Distinctly visible plume from discharge to stream
	d. Discharge creates objectionable odor at or near the stream
Comments:	

STORMWATER
Overall Rating Select one

Comments:

UNPERMITTED BYPASS
Overall Rating Select one

Comments:

SAMPLING
Overall Rating Select one

	1. Samples are representative of the monitored activity.
	2. Take samples at sites specified in permit.
	3. Locations adequate for representative samples.
	4. Flow proportioned samples obtained when required by permit.
	5. Complete sampling and analysis on parameters specified by permit.
	6. Conduct sampling and analysis in frequency specified by permit.
	7. Permittee uses method of sample collection required by permit.
	8. Sample collection procedures adequate:
	a. Samples refrigerated during compositing.
	b. Proper preservation techniques used.
	c. Containers are appropriate for samples collected.

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	d. Sample holding times conform to current 40CFR 136.3
	e. Fecal coliform sample taken directly into sterilized container.
	f. BOD samples are reseeded after disinfection.
	9. Automatic samplers and other sampling equipment are properly cleaned.
	10. Chain of custody is maintained and documented
	11. Samples collected from industrial users in pretreatment program.
Comments:	

AUTOMATIC SAMPLER PROCEDURES AND OBSERVATIONS

	1. Sample intake tubing placed in a well-mixed, representative location (0.4 to 0.6 depth).
	2. Proper sample tubing (Teflon for organics, otherwise tygon).
	3. Proper composite sample container (glass for organics, otherwise plastic).
	4. Proper refrigeration with required documentation.
Comments:	

COMPLIANCE SCHEDULE

Overall Rating Select one

	1. Items in the compliance schedule, which are currently due, have been completed. (includes both the permit and orders)
	2. Permittee has a plan to comply with items in the compliance schedule coming due in the future. (includes both the permit and orders)
	3. Written notification to OWR of compliance with scheduled items as required by the permit.
Comments:	

SELF MONITORING

Overall Rating Select one

Comments:

CSO/SSO

Overall Rating Select one

Comments:

**M-Marginal; N-No; N/A-Not Applicable; N/E-Not Evaluated;
N/O-Not Observed; S-Satisfactory; U-Unsatisfactory; Y-Yes**

OPERATION AND MAINTENANCE EVALUATION

Overall Rating Select one

	1. Facility properly operates and maintains treatment units
	a. Collection system
	b. Pump Stations
	c. Trash Trap
	d. Grease Trap
	e. Bar Screen
	f. Comminutor
	g. EQ Basin
	h. Holding Tank (s)
	i. Primary Clarifier (s)
	j. Grit removal
	k. Pond-Stabilization
	l. Pond-Polishing
	m. Pond-Lagoon
	n. Aeration
	o. Secondary Clarifier (s)
	p. Scum Removal
	q. Chemical Feeders
	r. Filtration
	s. Chlorination
	t. Contact Chamber
	u. Post Aeration
	v. Dechlorination
	w. UV
	x. SBR (s)
	y. Trickling Filter
	z. Dosing device
	aa. Sludge Dewatering
	bb. Digester
	cc. Process Controls
	dd. MLSS
	2. All treatment units, other than backup units, are in service.
	3. Adequate alarm system for power or equipment failures is available.
	4. Facility follows procedures for facility operation and maintenance.
	5. Facility has standby power or other equivalent provision.

**M-Marginal; N-No; N/A-Not Applicable; N/E-Not Evaluated;
N/O-Not Observed; S-Satisfactory; U-Unsatisfactory; Y-Yes**

- | | |
|----|--|
| 6. | <ul style="list-style-type: none"> a. Hydraulic overflows and/or organic overloads are experienced. b. Untreated bypass discharge occurs during power failure. c. Untreated overflows occurred since last inspection. Reason: d. Flows were observed in overflow or bypass channels. e. Checking for overflows is performed routinely. f. Overflows are reported to EPA or to the appropriate State agency as specified in the permit. |
|----|--|

Comments:

SLUDGE DISPOSAL

Overall Rating Select one

	1. Sludge disposal/reuse method. and location in accordance with permit
	2. Sludge use and disposal practice(s): a. Land Application b. Landfilled location at least 20% solids --- c. Pumped and Hauled certified hauler d. Other: (list)
	3. Notification is given to EPA/State of new or different sludge disposal method?
	4. Number and location of disposal sites/activities are as described in the permit or fact sheet or land application plan
	5. Sludge stored at facility: a. Adequately sized for periods of inclement weather. b. Controls leachate, runoff and public access.
Comments:	

POLLUTION PREVENTION

Overall Rating Select one

Comments:

MULTIMEDIA

Overall Rating Select one

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**M-Marginal; N-No; N/A-Not Applicable; N/E-Not Evaluated;
N/O-Not Observed; S-Satisfactory; U-Unsatisfactory; Y-Yes**

SUMMARY

1. Samples

**M-Marginal; N-No; N/A-Not Applicable; N/E-Not Evaluated;
N/O-Not Observed; S-Satisfactory; U-Unsatisfactory; Y-Yes**

PHOTO LOG	
Photo #	Comments
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