Implementation Plan Purpose

On October 22, 2015, EPA published the final National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule (eReporting Rule). This regulation requires the electronic reporting and sharing of Clean Water Act NPDES program information instead of the current paper-based reporting of this information.

The NPDES eReporting Rule allows states to determine what electronic reporting tools and systems work best for them and whether they would like to be the initial recipient of NPDES compliance monitoring data. EPA does not dictate the electronic reporting tools that a state may use. Rather, EPA sets performance requirements for states that wish to build their own electronic reporting tools. States also have the option of using and, if desired, customizing electronic reporting tools developed and maintained by EPA.

As the initial recipient for the VPDES (NPDES) data group in Virginia, the Department of Environmental Quality (VADEQ) must submit an implementation plan to EPA for review to ensure that the authorized VPDES program will meet the Phase 2 electronic reporting deadline.

This plan provides program details on the tasks, milestones, roles and responsibilities, and necessary resources to successfully implement electronic reporting of Phase 2 data. This plan does not include electronic reporting of Discharge Monitoring Reports (DMRs).

In accordance with the final rule [40 CFR 127.26(h)], this Implementation Plan (IP) has been submitted to EPA by December 21, 2016. EPA will inform VADEQ if the implementation plan has enough detail to ensure successful implementation of electronic reporting for Phase 2 data.

1. **Overview/Executive Summary**

   Virginia has an authorized NPDES program known as the Virginia Pollution Discharge Elimination System or VPDES. VADEQ owns, operates, and maintains an agency Comprehensive Environmental Data System (CEDS) which recently underwent a major upgrade enabling it to more easily send and receive data both with EPA's Integrated Compliance Information System (ICIS)-NPDES system, as well as other Node or web-service based applications. CEDS now resides on a browser-based .NET architecture that meets the Commonwealth's statewide standards and better supports extracting and loading the required NPDES data elements to ICIS. VADEQ's CEDS has been serving as an enterprise system for the Commonwealth since 1999. Among other things, CEDS contains the data for the Individual Permits (IPs) and General Permits (GPs) under Virginia's VPDES Program. VADEQ's CEDS database currently batch loads all data for Major Individual permitted facilities to EPA's ICIS databases weekly and has started batch loading of all Non-Major Individual permitted facility data in December 2016. VADEQ also has electronic system for the transmittal of Discharge Monitoring Report known as eDMR that was developed and implemented in 2004-2005. The eDMR system initially serviced only the universe of individual permit holder but in 2013 it was expanded to include the agency's Nutrient Trading and Industrial Stormwater General Permit Programs. VADEQ's eDMR program achieved EPA's Cross-Media eReporting Rule (CROMERR) compliance in October 2015 and the system is being evaluated for expansion to include the remaining general permits.

   The agency's Division of Water Permits and Office of Information Services were tasked with developing the eReporting Rule Implementation Plan. The point of contact is VADEQ's Water Permit Program Division Director Melanie Davenport. The Water Division Director can be reached at 804-698-4000 or by e-mail at melanie.davenport@deq.virginia.gov.

2. Agency NPDES Universe

	Permit Type	As of 11/10/2016			
		Number of Active	Number of Administrative Continued	Number of Permits Not in ICIS-NPDES	DMR Electronic Reporting Participation Rate
1	Major Individual, including MS4 Phase 1	137	11	None	98/148 = 66%
2	Non-Major Individual	688	52	None	542/740 = 73%
3	Stormwater Industrial GP	1252	0	All	266/1252 = 21%
4	Nutrient Trading GP	142	0	All	79/142 = 56%
5	Seafood Processing GP	54	0	All	*NA
6	Domestic Sewage GP	2656	0	All	*NA
7	Concrete Products GP	224	0	All	*NA
8	Noncontact Cooling Water GP	31	0	All	*NA
9	Nonmetallic Mineral Mining GP	179	0	All	*NA
10	Petroleum and Hydrostatic Test GP	51	0	All	*NA
11	Vehicle Wash & Laundry GP	104	0	All	*NA
12	Potable Water GP	92	0	All	*NA
13	MS4 Phase 2 GP	105	0	All	*NA

*NA – Framework and infrastructure to be developed in the future

3. Current and/or Planned NPDES Data Systems and E-reporting Tools

VADEQ's Comprehensive Environmental Data System (CEDS) has been serving as an enterprise system for the Commonwealth since 1999. Among other things, CEDS contains the data for the Individual Permits (IPs) and General Permits (GPs) under Virginia's delegated Pollutant Discharge Elimination System (VPDES) Program.

The VPDES Permit Program has long-established requirements governing CEDS data capture for permittee sampling, analysis, and reporting of Discharge Monitoring Reports (DMRs) to ensure the quality of data collected as part a VPDES permit. In addition, DEQ's inspection and compliance auditing programs ensure the data quality objectives of the VPDES DMR data are met. DEQ has also established procedures to review data uploaded to ICIS to ensure this data conforms to the data entry requirements, as specified under the eReporting Rule Appendix A.

CEDS has recently undergone a major modernization, enabling it to more easily send and receive data both with EPA's ICIS-NPDES system, as well as other Node or web-service based applications. CEDS now resides on a browser-based .NET architecture that meets the Commonwealth's statewide standards and better supports extracting and loading the required NPDES data elements to ICIS.

VADEQ also has a system that allows for the transmittal of Discharge Monitoring Report information electronically for the universe of VPDES Individual Permits. Virginia's Electronic Discharge Monitoring Reporting (eDMR) system was developed in the 2004-2005 timeframe, and expanded in 2013 to include the Nutrient Trading and Industrial Stormwater General Permits. EPA approval of DEQ's eDMR system under the federal Cross-Media eReporting Rule (CROMERR) became effective on October 7, 2015. VADEQ's eDMR program does not currently include the remaining VPDES General Permits. The eDMR system is being evaluated to determine if the most efficient and cost effective course of action going forward is to expand on the current eDMR system or leverage the EPA's NetDMR application for these General Permit programs.

VADEQ has also implemented a portal for external entities to use to provide Stormwater Construction General Permit electronic data directly to VADEQ. The initial implementation of this E-Reporting system is based upon receipt of paper NOIs by localities, thus not requiring CROMERR certification.

VADEQ seeks to institute more effective methods to expand its electronic data collection capabilities to satisfy the requirements of the eReporting Rule. In order to meet the timelines and requirements of the eReporting Rule, VADEQ is undergoing a gap analysis and developing an implementation plan to include a schedule of critical milestones, including business process development / modification, regulated community outreach, and Information Technology (IT) development projects that must be accomplished to meet EPA's compliance schedule.

Given the current severe state budget constraints, limited staff resources, and other pressing agency priorities, support and implementation of the eReporting Rule effort described within plan will not be feasible in the prescribed timeframes without the provision of federal funding. An existing EPA Multi-Purpose Grant for Commonwealth of Virginia State-Identified Priorities (Grant Period: 9/30/2016 – 9/30/2017) has been obtained to evaluate current systems (including e-tools available through EPA) and implement electronic processes that will form the foundation for expansion of electronic data collection by VADEQ from regulated facilities in accordance with Phase 2 of the eReporting Rule. Current systems will be evaluated for scalability to accommodate all data types required by the eReporting Rule. Anticipated outcome from this analysis include a decision regarding whether to build upon existing VADEQ or EPA platforms to support eReporting Rule compliance. This outcome will provide a clear definition of the framework that will be needed in terms of technology platform(s) and approach. VADEQ has applied for an Exchange Network grant to begin with these design goals and implement the solution into production.

Options to be considered for this effort are EPA's NeT product and VADEQ's current external portal framework. Both are capable candidates for this application as EPA's NeT ensures compatibility with ICIS and VADEQ currently has multiple successful applications based on its external portal framework. Each has benefits and dependencies that will be evaluated and considered. In addition, other Shared Services currently available from the Exchange Network / e-Enterprise efforts including CDX functionality and CROMERR compliance will be evaluated for applicability and used if possible.

4. Key Tasks for Updating Agency Data Systems and Data Transmission Systems for Phase 2 Data Groups

The scope of work needed to update the current VADEQ VPDES data systems in order to manage and share the data in the Phase 2 Data Groups with EPA's ICIS-NPDES include the following steps to take the output of the analysis currently underway and move the concept into a production system:

- Evaluate current systems (including tools available through EPA) for suitability and scalability to accommodate all data groups or permit types. , Decide whether to build upon existing VADEQ or EPA platforms to support eReporting compliance
- Define the framework that will be needed in terms of technology platform(s) and approach
- Document the detailed requirements needed to complete the various components,
- Design the target system based upon those requirements,
- Develop the system components as designed, testing each during the iterative process,
- Obtain CROMERR certification for the Commonwealth of Virginia's solution,
- Partner with a pilot group of VPDES permit holders for end user feedback and flow validation,
- Put together a training and support plan for the broader regulated community,
- Provide training and outreach, and
- Deploy the completed set of components into production.
- Develop and update compliance tracking and monitoring strategy within DEQ and with EPA –

Whether the ultimate solution integrates EPA's NeT product with VADEQ's internal data systems and processes or builds upon VADEQ's own external portal framework, a fully compliant eReporting Rule solution must comprise the following five components (also pictured below):

1. A CROMERR-certified authentication service, anticipating that VADEQ can leverage EPA's shared service and the Central Data eXchange (CDX);
2. A set of user interfaces to capture the various program report data elements, incorporating context-sensitive validations and forms based on needed input;
3. A set of preparer, certifier, and State approval workflows to move the program reports from data capture to approved, public-ready data that has been assessed for compliance with Virginia's State and Federal Regulations;
4. For general permit processing, a means to obtain the application fee required by Virginia to issue general permit coverage; and
5. A data flow from one data repository to the other to ensure they are in sync.
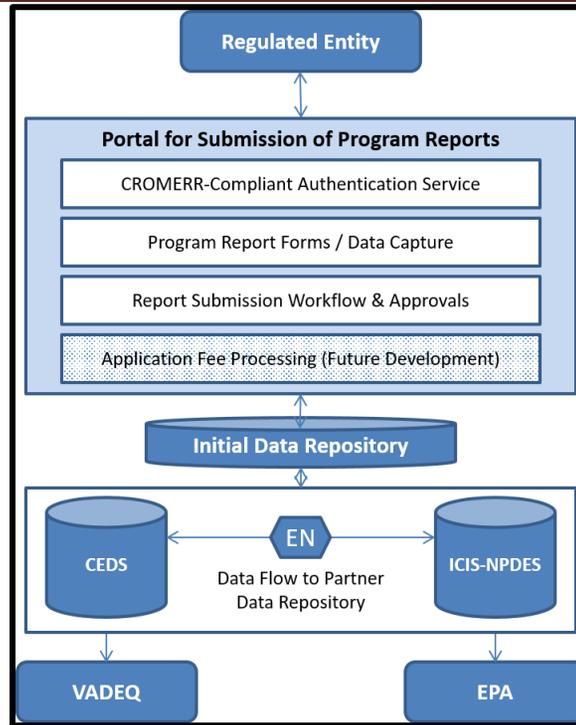
Figure 1: High-Level View of Necessary Components

VADEQ plans to initially design, develop, test, and deploy to production a comprehensive solution for the collection and electronic distribution to EPA of the following reports for VPDES Individual Permit (IP) holders, to include both Major and non-Major permits:

- Concentrated Animal Feeding Operation (CAFO) Annual Program Reports
- Municipal Separate Storm Sewer System (MS4) Program Reports – implementation dependent upon EPA updating the E-Reporting Rule as appropriate to address changes made in the MS4 remand rule
- Pretreatment Program Reports and Significant Industrial User Compliance Reports in Municipalities Without Approved Pretreatment Programs
- CWA Section 316(b) Annual Reports

To complete compliance with the eReporting Rule, Virginia has the following additional future development planned (not within the scope of the EN 2017 Grant proposal):

- Sewer Overflow/Bypass Event Reports
- General Permit Reports

The following table summarizes the key tasks, outputs, and timelines for the work involved.

Task & Outputs	Timeline
Gather requirements and analyze gap in current system capabilities to meet E-Reporting Rule requirements	
Design and develop additional strategies and processes to comply with the NPDES E-Reporting Rule which includes EPA receiving information (i.e., inspections, compliance determinations and enforcement actions) electronically from VADEQ. This will include analysis of the best electronic tools for VADEQ, whether VADEQ will be the initial recipient of the NPDES data, and an evaluation of the available EPA tools and database.	**November 2016 – January 2017** *USEPA Multi-Purpose Grant Deliverable 1*
Evaluate and recommend application platform to collect electronic data per E-Reporting Rule	
Evaluate current systems (including tools available through EPA) and implement electronic processes that will form the foundation for expansion of electronic data collection by VADEQ from regulated facilities in accordance with Phase 2 of the E-Reporting Rule. Current systems will be evaluated for scalability to accommodate all data types required by the E-Reporting Rule. Anticipated outcomes from this analysis include a decision on whether to leverage or augment existing systems to support E-Reporting compliance.	**February 2017 – April 2017** *USEPA Multi-Purpose Grant Deliverable 2*
Design and implement foundational processes and reusable components as identified in the evaluation.	**May 2017 – July 2017** *USEPA Multi-Purpose Grant Deliverable 3*
Prepare for integration project (planning, budgeting, staffing, contracting, etc.).	**August 2017 – September 2017**
Design a scalable solution for the VPDES regulated community to submit reports electronically	

1. Detailed requirements of components needed to bridge gap between selected toolset and desired end state by data group, including:
  • Integration of CROMERR-compliant authentication services
    • Account for steps needed to establish EPA's Central Data Exchange (CDX) process
  • Integration of Program Report-specific forms and data capture
    • Account for all Rule-required data elements
    • Account for VADEQ-required data elements not required in the Rule
  • Integration of VADEQ-specific workflows and approvals
    • Account for VADEQ Program Report review and approval processes and timing
	September 2017 – December 2017
	
	EN 2017 Grant (if awarded) Phase 1 Goal

- Account for any third-party review processes and timing
- Detail differences between Program Report and General Permit Registration workflows and approvals (although not to be implemented as part of this effort; for future development)
- Integration of Application Fee processing (although not to be implemented as part of this effort; for future development)
- Flow of data from initial data repository to other data repository

2. Detailed design and development plan for the following components based upon requirements produced:
   - Integration of CROMERR-compliant authentication services, program report-specific forms and data capture, VADEQ-specific workflows and approvals, and flow of data from initial data repository to other data repository

Develop a scalable solution for the VPDES IP regulated community to submit reports electronically	
1. CROMERR component developed to meet designs produced, tested, and validated 2. Program report components developed to meet designs produced, tested, and validated 3. Workflow and approval components developed to meet designs produced, tested, and validated 4. Data flow components developed to meet designs produced, tested, and validated 5. Application for CROMERR certification submitted	**January 2018 – March 2019** *EN 2017 Grant (if awarded)* *Phase 2 Goal*
Deploy to production a scalable solution for the VPDES IP regulated community to submit reports electronically to EPA and develop and execute a change management strategy to support adoption of the developed eReporting tools by the VPDES IP regulated community	
1. VPDES IP regulated community pilot group identified for feedback and testing 2. Training and support for regulated community planned, materials developed / tailored 3. Implementation / cutover plans developed and executed 4. Training sessions held for VPDES IP regulated community and materials made available 5. Solution deployed to production	**January 2019 – September 2019** *EN 2017 Grant (if awarded)* *Phase 3 Goal*
Develop and deploy a scalable solution for the VPDES GP regulated community to submit reports electronically to EPA and develop and execute a change management strategy to support adoption of the developed eReporting tools by the VPDES GP regulated community	
1. Gaps identified between VPDES IP solution and GP needs 2. Necessary components developed or enhanced to bridge identified gaps 3. VPDES GP regulated community pilot group identified for feedback and testing 4. Training and support for regulated community planned, materials developed / tailored 5. Implementation / cutover plans developed and executed	**September 2019 – December 2020** *No source of funding yet identified*

6. Training sessions held for VPDES GP regulated community and materials made available 7. Develop and update compliance tracking and monitoring strategy within DEQ and with EPA 8. Solution deployed to production	

Programmatic Involvement

The project team members representing the VPDES Program will be comprised of experts with extensive knowledge and multiple years of experience in managing VPDES permitting and compliance, CEDS data input and output, the data transfer process from CEDS to EPA's ICIS-NPDES, and the eReporting Rule requirements. The entire group of experts is highly dedicated to its assigned responsibilities and is well aware of the strategic plan of EPA and the policy and vision of VADEQ.

VADEQ's IT project processes delineate three major roles to be filled by knowledgeable and experienced business team members: (1) the Decision Maker, whose responsibilities are to be an advocate of the project/system, ensure staff has bandwidth to participate on the project, gather input and achieve consensus with their business unit, communicate anticipated business process changes to staff and regulated community, empower Subject Matter Experts (SMEs) to lead requirements definition, review and approve the definition of business requirements and processes, and provide feedback on designs; (2) the SMEs, whose responsibilities are to support the definition of business requirements and processes, define data to be included in the system, provide feedback on designs, perform user testing to validate that the product satisfies the requirements, and support rollout; and (3) the End User Liaison, whose responsibilities are to be an advocate for the new system, define and lead representative user workgroups, lead user testing to validate that the product satisfies the requirements, coordinate and lead user training, and provide support to users with the new system.

Technical Resources

The project team members from the technical side will be led by the application project manager of VADEQ's Office of Information System, who has more than 20 years of management experience in application development, ICIS-NPDES data projects, and collaboration with in-house and contractual technical staff. The in-house staff of database/Node administrators, software designers/developers, and system analysts has worked with VADEQ on various projects under very tight timelines for many years and is capable of meeting the demands of this effort. The qualifications and experiences sought for the contractual team will be based on past performances, proven end products, and work efficiency.

5. CROMERR Compliance Status for Agency Electronic Reporting Systems

	Program	Compliance Status	CROMERR Approval Date
A	General Permit Reports	*Not applied for to date	To be determined (TBD)
B	Concentrated Animal Feeding Operation (CAFO) Annual Program Reports	*Not applied for to date	TBD
C	Municipal Separate Storm Sewer System (MS4) Program Reports	*Not applied for to date	TBD
D	Pretreatment Program Reports & Significant Industrial User Compliance Reports in Municipalities Without Approved Pretreatment Programs	*Not applied for to date	TBD
F	Sewer Overflow/Bypass Event Reports	*Not applied for to date	TBD
G	CWA section 316(b) Annual Reports	*Not applied for to date	TBD

H	Sewage Sludge/Bio-solids Annual Program Reports	Program not delegated to VADEQ.

*VADEQ has not applied for CROMERR for these Phase 2 data groups because the systems are not in place yet.

6. **State Statutes, State Regulation/Administrative Rule, and NPDES Permit Update Estimated Completion Dates**

   Virginia has an authorized NPDES program known as the Virginia Pollution Discharge Elimination System or VPDES. Virginia's VPDES program is administered through the establishment of state regulations (9VAC25) by way of the Administrative Process Act (APA). Regulations must be approved by the State Water Control Board before finalized for implementation. The implementation of electronic reporting requirements consistent with the Federal eReporting Rule [40 CFR Part 127, 80 FR 64063] is being incorporated into the state regulation for presentation to the State Water Control Board in March 2017. Once approved the regulation would be affective in 30 days and where the infrastructure is in place to allow for electronic reporting permittees will be provided reasonable time, established by the agency to account for internal and external resources, to comply.

   As permits are renewed the language requiring mandatory electronic reporting will be included in the permits for those facilities except for those cases where Temporary or Permanent Waivers from electronic reporting have been approved by the agency. Permits are issued for 5 years and it is not feasible given our workload to modify permits to add conditions related to electronic reporting prior to renewal.

7. **Temporary and Permanent Waiver Approval Process (127.24c)**

   For Temporary or Permanent Waiver consideration the permittee will be required to petition the agency (requesting a waiver from the requirements of electronic reporting). Once the request for a waiver is received, Temporary or Permanent, by the agency with all necessary information to deem the request complete VADEQ will evaluate for approval or rejection with 120 days. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. VADEQ shall provide the facility with notice of the approval or rejection of their petition for a temporary or permanent. Each waiver petition must be signed by the authorized representative in accordance with Virginia Regulation (9VAC25-31-110) and contain the following to be deemed complete:

   - Facility Name,
   - VPDES Permit Number,
   - Facility Address,
   - Name, address and contact information of the owner, operator, or duly authorized facility representative,
   - Written statement regarding the need for the waiver, and
   - Any other information required by the agency.

   Temporary Waiver Approval will not extend beyond a 5 year period but is eligible for renewal if the facility re-applies for another Temporary Waiver and receives approval from the agency. Temporary Waivers are not transferable and VADEQ will not grant a temporary waiver without receiving a request. During the review period as well as after a waiver is approved, the facility must continue submitting a hard-copy of any reports required by their permit and the agency will electronically submit the facility information to EPA's ICIS database.

   Permanent Waiver Approval requires a one- time request to the agency if approved, once in five years does not apply to permanent waivers.   Permanent waivers will only apply to facilities owned or operated by members of religious communities that don't use modern technology as part of their everyday culture or way of life and approved permanent waivers are not transferrable. Facilities that receive approval for a permanent

waiver must submit a hard-copy of any reports required by their permit and the agency will electronically submit the facility information to EPA's ICIS database.

8. Outreach and Training

The agency has and continues to update key organizations (i.e., Virginia Association of Municipal Waste Water Agencies, Virginia Municipal Stormwater Association), that consist of and/or represent a large universe of permittees about the eReporting Rule, its requirements, the agency's role in its implementation along the status of the state's regulation, which is consistent with the federal rule. These outreach exercises occur in various medium such as quarterly meetings, scheduled events throughout the state, agency guidance, and upon request. Additionally, presentations are and will continue to be given to the regulated community, general public, stakeholders, special interest groups, etc. in forums across the state by agency staff on information regarding the requirements of the eReporting Rule and its implementation. The agency also conducts formal wastewater treatment operator training courses throughout the state and co-sponsors with Virginia Polytechnic Institute and State University's (Virginia Tech) School of Engineering an annual full week of training for wastewater treatment operators where instructors make operators and administrators of waste water treatment facilities aware of the eReporting Rule and its requirements. The Virginia Merchants Association is another key organization with constituency consisting primarily of industrial sector general permit holders that the agency will provide outreach to in an effort to ensure the entire permitted universe of the Commonwealth is aware through direct or indirect communication with agency staff or through organizations which they are members or involved with.

The agency will use its website [http://www.deq.virginia.gov] as a learning, update, and review tool for the public to learn more and promote its use at all events where the discussion of the eReporting Rule and its requirements are presented by staff. VADEQ will also look into the use of Webinars for training for permittees to assist with the transition from hardcopy to electronic submittal similar to how the agency work with the regulated community transitioning to electronic submittal of discharge monitoring reports.

9. Alternative Options

VADEQ currently owns, operates, and maintains the agency's Comprehensive Environmental Data System (CEDS) which recently underwent an extensive upgrade as indicated previously in this implementation plan (Section 3.-Current and/or Planned NPDES Data Systems and E-reporting Tools) CEDS is used to store and input and update data and CEDS communicates with EPA's ICIS through weekly electronic batch uploading electronically. The agency is in the process of expanding data exchange network to include non-Major permitted facilities with the expectations of being able to do the same for the General Permitted universe. Also discussed previously in the document is the potential exploration of utilizing EPA's Net services.

10. Obstacles to Rule Implementation

VADEQ has core responsibilities to protect the environment and health of the citizens of the Commonwealth while at the same time promoting and encourage economic growth and job creation. VADEQ issues responsible VPDES permits that meet state and federal requirements followed by a strong compliance program all while working with limited funding and agency resources. Information Technology (IT) infrastructure changes and additions will be necessary to comply with all phases of the eReporting Rule before December 21, 2020. The agency has to make decisions on whether to expand existing infrastructure, build another system from ground zero, or use the federal system to fully comply with the electronic reporting requirements as the initial data recipient within a few years as part rule implementation. Moreover, there is a data transfer component to the eReporting Rule requiring the direct transfer of certain data elements identified as mandatory from the state operated database to EPA's ICIS data system. The agency sends all Major facility data currently and is in the process of batching all non-Major individual permit facility data by the end of 2016. VADEQ will continue working toward sending the additional data required by the eReporting Rule but this requirement is a huge undertaking for the state.

Agency workloads, staffing, resources, training (internal and external), and funding to pay for this new federal requirements are all examples of potential obstacles that can't always be predicted or accounted for in the planning stages of this multi-phase major project. Actual implementation of this regulation will encounter challenges that could derail things along the way and impact scheduled events and deadlines. Additionally, EPA's timing for NeT GP reports, CROMERR approval process, and timing for getting data elements into ICIS will be impactful.   Please see other risks added below.

11. Implementation Plan Reassessment

VADEQ staff and EPA Region 3 representatives have been participating on monthly conference call to discuss the status of implementation relative to the electronic reporting and the regulation since the start of the calendar year 2016. This coordination will continue, (initially monthly) through completion of all areas and requirements of the federal and soon to be state regulation. The implementation plan is an outline and schedule of how the agency anticipates resources will be deployed. Based on a number of variables that may change over time, the implementation plan is seen by the agency and our counterparts at EPA Region 3 as a living document subject to revisions/changes. The implementation plan will be modified as often as needed to reflect the agency's current status relative to implementation and the revisions may be submitted as often as quarterly. If no changes are required during any quarterly period staff will inform EPA Region 3 during the scheduled conference call and capture comments in the minutes. Examples of circumstances that can cause reassessment of this implementation plan include, but are not limited to, the following:

- Development of necessary Information technology infrastructure (i.e., data transfer, electronic data submittal)
- Funding
- Resource constraints causing extension of schedule in the Implementation Plan to include staffing
- Cross-Media eReporting Rule (CROMERR) approval
- External Outreach & Training
- Program Remand or data field, batch schema changes initiated by EPA
- Other unforeseen events