DTE

EMERGENCY ACTION PLAN

FLY ASH BASIN FACILITY
MONROE POWER PLANT

Monroe, Michigan

Revision 3 | December 2024

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Emergency Action Plan
Management Approval

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1. PURPOSE, SCOPE, SITUATION OVERVIEW, AND ASSUMPTIONS

1.1. Emergency Action Plan Overview

DTE Electric Company (DTE) has prepared this Emergency Action Plan (EAP) for the Monroe Power Plant (MONPP) Fly Ash Basin (FAB). This EAP was prepared in accordance with the United States Department of Homeland Security Presidential Policy Directive 8, the National Incident Management System (NIMS), and the United States Environmental Protection Agency's (USEPA) final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule) §257.73 *Structural integrity criteria for existing CCR surface impoundments*.

The primary goals of this EAP are to safeguard lives and reduce the potential for damage to public resources and private property by mitigating potential or ongoing failure impacts and completing the actions necessary to efficiently transition from an emergency response to the post-response phase. This EAP will be revised periodically to incorporate updated or more detailed information and improvements based on lessons learned through the preparedness and exercise process.

Key communication resources for this EAP are as follows:

- Monroe Ash Basin EAP Notification/Communication Action Flowchart (**Figure 1**)
- Summary of Roles and Contact Information (**Table 1**)
- Emergency Response Contractor Organization/Communication Flowchart (**Figure 2**)
- Crisis Response Process Coal Ash Pond Failure Communication Plan and Q&A about Coal Combustion Residuals (**Appendix A**)

1.2. Purpose

The purpose of this EAP is to serve as a resource by defining emergency response steps and actions for a catastrophic perimeter dike failure event resulting in the sudden, rapid, and uncontrolled release to the environment of impounded ash/ash slurry CCR.

1.3. Scope

This EAP defines notification and communication procedures, responsibilities of key personnel, and procedures to identify unusual and unlikely conditions that may endanger the FAB embankment in time to take mitigative measures and/or corrective actions and to notify the Monroe County Emergency Management Division (MCEMD) of impending or actual failure of the FAB embankment.

1.3.1. Site Description

The FAB was constructed as a treatment and storage pond for the ash slurry generated at DTE's MONPP in Monroe, Michigan. The FAB is classified as a Significant Hazard dam because there are environmental concerns with the worst-case probable failure scenario but no expected loss of human life (**Appendix B**). This definition is consistent with the Federal Emergency Management Agency *Federal Guidelines for Dam Safety: Emergency Action Planning for Dams*. The FAB is a permitted Coal Ash Impoundment under the Part 115 rules of *Michigan Natural Resources and Environmental Protection Act 451*. Construction was completed in 1974 and ash slurry was first pumped to the FAB in January 1975. As of December 2023, receipt of all waste at the FAB, including CCR, has ceased.

Figure 3 depicts the location of the MONPP FAB. The FAB is located approximately one mile southwest of the MONPP and is bounded to the east by Lake Erie and the plant discharge canal, to the west by I-75, to the south by an agricultural field, and to the north by Dunbar Road, residential properties, and Plum Creek. The FAB covers approximately 410 acres.

The FAB embankment is approximately 3.5 miles in perimeter and 30 to 44 feet in height. The embankment was constructed with compacted clay from on-site soil that was excavated to approximately 10 feet below ground surface (bgs) over the footprint of the FAB, the clay extends to bedrock at a depth of approximately 35 feet bgs.

The top of the ash in the FAB has an elevation of 613 feet per the National Geodetic Vertical Datum of 1929 at its highest points. The crest of the FAB embankment has an elevation of 614.5 feet and the toe elevation generally ranges between elevations of 570 and 583 feet. The normal water level elevation in the FAB was a maximum of 609 feet but has been decreasing as the FAB undergoes dewatering. A continuous monitoring and alarm system installed at the FAB notifies operations personnel when the embankment moves to a significant degree that could be indicative of either a slope failure resulting in a breach and an ash release or a slope failure that will cause a release may be imminent. The locations of the instruments for the continuous monitoring system are provided on **Figure 4**.

1.4. Authority

As owners of the property and the CCR unit, DTE developed this EAP to serve as a resource by defining emergency response steps to initiate, conduct, and terminate an emergency response action.

It is imperative that each participant of the processes outlined in this EAP is provided a copy, and becomes familiar with the content of this EAP, including roles and responsibilities for themselves and other participants. Each participant must review the content of this EAP after it is issued and after each revision. To promote effectiveness of this EAP and remind the participants of their roles and responsibilities, training exercises are performed annually. The participants may include, but are not limited to, the following personnel:

- Observer
- Shift Supervisor (SS)
- Plant Director

- Plant Manager
- Vice President of Environmental Management and Safety (EM&S)
- Public Information Officer (PIO)
- Regional Relations Manager
- Legal Department Director
- Fuel Supply Manager
- Engineering Support Organization (ESO) Surveillance Monitoring Committee (SMC) Coordinator
- Geotechnical Engineer
- Environmental Compliance Supervisor
- Emergency Response Contractor
- Corporate Security Coordinator
- MCEMD
- Michigan Department of Transportation (MDOT)
- Michigan Department of Environment, Great Lakes, and Energy (EGLE)
- Michigan Department of Natural Resources (MI DNR)
- USEPA
- United States Coast Guard (USCG)

1.5. Hazards

Hazards associated with fly ash exposure are primarily physical in nature and are associated with inhalation and direct skin/eye contact. The most visible post-event public health and safety concern is fugitive dust control. Actions must be taken to reduce the potential for exposure to airborne dust, including keeping the released fly ash moist. A site-specific Health and Safety Plan (HASP) has been developed for the site and will be utilized in the event of an emergency response.

1.5.1. Potential Impact Areas

DTE constructed an emergency spillway on the eastern side of the FAB embankment in September 2016. The most likely failure mode would be overtopping over the emergency spillway which represents the “worst-case possible scenario of failure”, consistent with the Federal Emergency Management Agency *Federal Guidelines for Dam Safety: Emergency Action Planning for Dams*. The estimated extent of release resulting from this scenario is depicted in **Appendix B**. The extent of ash depicted in **Appendix B** is conceptual and not intended to be an exact estimate of a potential release.

Several other potential failure locations were also evaluated. Concerns associated with failure for each potential impact area are described below. These scenarios are provided for reference only and are not the most probable or worst-case point of failure.

- **Eastern Failure**. The concern of a failure along the east side of the FAB, at the emergency spillway location, is the impact it may create on Lake Erie. The eastern failure location was selected based on its proximity to Lake Erie and the proximity of open water in the FAB to the embankment. If a failure was to occur at this location, ash would slump and a mixture of water and ash would likely flow into Lake Erie.
- **Northern Failure**. The concern of a failure along the north side of the FAB is the impact it may create on the residential buildings and their occupants along Dunbar Road. If a failure was to occur on the northern side, it is likely that ash would flow towards the residential properties and cover surrounding areas. It is assumed that such failure would progress far enough to encompass homes near the failure. Should the failure be significant enough, water would drain from the FAB and inundate roads and impact residences.
- **Western Failure**. The concern of a failure along the west side of the FAB is the impact it may create on I-75, residential and commercial buildings across from the highway, and their occupants. At the location identified for potential failure, water is close to the embankment and may be released if the embankment fails. If a failure was to occur at this location along with uncontrolled release of water, ash would slump and may cover I-75. A mixture of water and ash released from the FAB under approximately 30 feet of initial water height would potentially result in the following:
    - Fill Navarre Drain along the west side and flow towards the north, south, and west. It would likely flow into Plum Creek at the downstream end of Navarre Drain.
    - Flow to the area across from I-75 through the culverts located at the upstream end of Navarre Drain. A mixture of water and ash in this area may cover the boundaries of surrounding roads and flow into Plum Creek at a low spot along Dunbar Road west of the highway overpass.
    - Flow south toward Davis Drain.
- **Southern Failure**. The concern of a failure along the south side of the FAB is the impact it may create in the adjacent farm field, La Plaisance Harbor, and Lake Erie. If a failure was to occur at this location, a mixture of water and ash would initially fill the toe ditch along the embankment toe, flow over the DTE Facility Perimeter Road, and flow across the farm field until likely reaching culverts that lead to La Plaisance Harbor and Lake Erie.

1.6. Risk, Hazard, and Threat Assessment

Preparedness actions must be taken to avoid uncontrolled release of water or slurry from the FAB or to help reduce the effects of such release and facilitate response in a timely manner. Preparedness actions must be taken before the development of an emergency condition.

DTE conducts two ongoing monitoring programs to detect conditions that may create a potential for embankment failure: routine monitoring of the FAB embankment and a long-term inspection, monitoring, and maintenance program. FAB Operations, MONPP EM&S, and DTE Surveyor personnel conduct routine monitoring, and the SMC conducts the long-term program. The SMC has the responsibility and authority for managing the inspection monitoring program and oversees evaluation of inspection, monitoring, and maintenance results. Furthermore, any construction, engineering, routine maintenance, inspection/monitoring, or operation decisions regarding the FAB embankment and facility are made after consulting the SMC. The SMC consists of qualified personnel from DTE's EM&S, ESO, and Plant Management. SMC members consist of at least:

- EM&S CCR SME and EM&S Matrix Engineer
- ESO Civil Engineer
- MONPP Staff Environmental Projects Manager

1.6.1. Routine Monitoring of the FAB Embankment

As the MONPP is a fully operational power plant, the MONPP is staffed 24 hours per day, 365 days per year, including all weekends and holidays. The purpose of routine monitoring includes verifying the FAB facility operates in accordance with operational guidelines and identifying items that may require maintenance, further investigation, or monitoring by the SMC.

The FAB is inspected 365 days per year by Plant Operations to detect any unusual conditions. Observations are recorded and reported to the Shift Supervisor for daily review. Weekly inspections are conducted by MONPP EM&S personnel to provide a detailed inspection that is intended to detect any unusual conditions. Weekly inspection report forms are included in Attachment 1 of **Appendix C.**

Biweekly monitoring is completed by DTE Surveyors on ten active settlement plates and six manual inclinometers to ensure that the vertical extension landfill within the FAB will not lead to a failure condition. The FAB also has eleven active piezometers within the FAB and ten inclinometers along the embankment that automatically collect data as part of the continuous monitoring system. The locations of the monitoring instruments are shown on **Figure 4**.

If slope movements or water levels measured by these instruments are outside established threshold values, an alarm is sent to Operations and members of the SMC. **Appendix D** describes the alarm levels and actions to take for each alarm level that can be generated by the continuous monitoring system.

1.6.2. Long-Term Inspection and Maintenance Program

The purpose of the long-term inspection, monitoring, and maintenance program is to detect conditions before they develop into a potential imminent failure condition for the FAB and take necessary actions in a timely manner. The program consists of visual inspection of the FAB embankment and facility by a qualified person from the SMC on a weekly basis as discussed above, annual inspection by a qualified licensed professional engineer retained and managed by the SMC, continuous monitoring around the perimeter of the FAB by automated inclinometers that measure lateral embankment movements, and continuous monitoring of the water levels within the FAB by vibrating wire piezometers. The automated inclinometers and piezometers measure and report data every six hours. The SMC Surveying Department calibrates all monitoring equipment at least once per year.

Data collected by the continuous monitoring system is transmitted to a server hosted by Geosyntec Consultants who uploads it to an online server hosted by eagle.io. Data on the server is processed for visualization and plotted in the workspace on eagle.io. The Geotechnical Engineer provides the SMC with monthly monitoring reports summarizing and interpreting the data collected by the monitoring instrumentation.

Detailed information about the long-term inspection, monitoring, and maintenance program is provided in **Appendix C**.

1.7. Staging and Strategic Intercept Areas

Trajectory modeling and High Consequence Area mapping information is utilized to evaluate projected downstream transport distances, identify potential intercept locations along watercourses to establish key staging and strategic intercept areas, and aid the selection of control point sites for tactical emergency response actions. The emergency spillway serves as the primary intercept area based on the modeling discussed in **Appendix B**. **Figure 5** designates drainage ditches to facilitate cleanup activities based on existing DTE maps and drawings, United States Geological Survey topographic maps, and USEPA maps. Potential staging areas are depicted on **Figure 3**.

1.8. Incident Alarms

DTE developed this EAP based on the existing incident level system, and accordingly has developed incident alarms based on the potential scenarios. These levels are triggered by a monitoring system that consists of inclinometers, data loggers, and an online server that stores data for interpretation. The data can be accessed using the MONPP workspace on eagle.io. The expected response to each incident alarm level is briefly described below. Detailed Standard Work Instructions regarding the four incident alarm levels and response protocols are included in **Appendix D**.

- **Gray Condition:** Latent Condition. This condition represents an issue in the communication within the continuous monitoring system where the data collected by the instruments are not being transmitted to the server hosted by Geosyntec Consultants. The latent condition triggers after 48 hours of data not being transmitted from the instrument. The Geotechnical Engineer will troubleshoot data collection and server connection.
- **Orange Alarm:** The ESO and Geotechnical Engineer will gather information on the alarm as soon as possible and inspect the embankment as necessary. The ESO, EM&S personnel, and Geotechnical Engineer will monitor data from the instrument of concern weekly for one month and assess whether mitigation is necessary. The ESO and Geotechnical Engineer will implement additional embankment inspections as necessary. The monitoring plan will be augmented as necessary, and if augmentation is not required or when it is no longer required, the alarm event will be cleared and regular monitoring will resume.
- **Yellow Alarm:** The ESO and Geotechnical Engineer will gather information about the alarm as soon as possible. Operations personnel will mobilize to the FAB to inspect the area of concern. The ESO, EM&S personnel, and Geotechnical Engineer will have a conference call or in-person meeting with the Control Room Operator and the Operations personnel to gather information and discuss visual observations within four hours of receiving the alarm. The monitoring plan will be augmented and implemented for at least the next two weeks, including daily inspections of the embankment. Mitigation measures will be performed as necessary. Subsequently, the alarm event will be cleared, and regular monitoring will resume.
- **Red Alarm:** The ESO and Geotechnical Engineer will gather information about the alarm and mobilize to the site, and then assist the EAP Director in implementing short-term mitigation measures immediately. The monitoring plan will be augmented within four hours and implemented for at least two weeks. Daily inspections of the embankment will be performed as part of the augmented monitoring plan. Long-term mitigation measures will be implemented as necessary. After the mitigation measures are implemented or at the end of

the augmented monitoring period, the alarm event will be cleared, and regular monitoring will resume.

1.9. Evaluation and Classification

Results from daily and long-term inspection, monitoring, and maintenance programs are evaluated and categorized under three classifications: Failure Condition, Potentially Imminent Failure Condition, or Non-Imminent Failure Condition.

- Failure Condition – Covers scenarios where the embankment failure has occurred or is imminent.
- Potentially Imminent Failure Condition – Covers the scenarios listed below, which can lead to embankment failure if not addressed within a matter of hours.
    - Overtopping of water at the storm water discharge point causing erosion of the embankment crest and/or slopes.
    - Seepage as demonstrated by boils and upwelling of groundwater causing erosion of the embankment slope.
    - Any slope failure that initiates in the crest of the embankment.
    - Any slope failure that encompasses at least 50 percent of the height of the slope.
- Non-Imminent Failure Condition – Covers the scenarios that a condition is not a concern for the immediate stability of embankment but may become a concern if not addressed in a reasonable timeframe.

2. EMERGENCY ACTION PLAN OWNERSHIP AND MAINTENANCE

2.1. Emergency Action Plan Owner

As the owner and sole operator of the MONPP, DTE is the EAP Owner and takes full responsibility for the execution of this EAP.

2.2. Emergency Action Plan Review and Revision

This EAP will be revised periodically to incorporate updated or more detailed information and improvements based on lessons learned from the face-to-face exercises. The key communication resources for this EAP are listed below and must be current to be effective.

- Monroe Ash Basin Emergency Action Plan Notification/Communication Action Flowchart (**Figure 1**)
- Summary of Roles and Contact Information (**Table 1**)
- Emergency Response Contractor Organization/Communication Flowchart (**Figure 2**)

2.3. Internal Review Process

This EAP will be reviewed annually. The review will consider personnel changes in positions established in this EAP and changes to communication systems such as telephone numbers or radio frequencies. The revised EAP will be updated with the revision date, even if there is no change to the existing EAP. This will notify other EAP participants that the existing EAP is up to date and has been reviewed considering current operational procedures. Additional revisions may be necessary as part of the outcomes and lessons learned from the tabletop exercises.

2.4. External Review Process

DTE is contracted with a Geotechnical Engineer for inspection, analysis, and certification of the long-term monitoring program. DTE has used the Geotechnical Engineer to review and certify this EAP. The Geotechnical Engineer's certification for this EAP is in **Appendix E**.

2.5. Revision Documentation

As part of the EAP annual review, DTE will document any revisions to this EAP with a Record of Revisions, **Appendix F**.

3. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

3.1. Emergency Action Plan Team

The EAP team is the core group of DTE personnel and their contractors who would respond to an emergency condition at the MONPP FAB. The communication flowchart for the EAP team is outlined in **Figure 1** and contact information (including alternates) is presented in **Table 1**. General roles and responsibilities for the EAP team are described below. It is expected that the roles of some of the team will require a "deputy" or an "alternate" to continue to fulfill the responsibilities in the event the primary person is not available or being provided a break.

Should an emergency condition arise, the SS and the Plant Director will initiate the NIMS Incident Command System (ICS) protocols and notify key members of the EAP team who will also serve as members of the incident command staff. The roles of the EAP team within the ICS and the responsibilities of those roles are presented in **Section 4**. The roles below are within the structure of the EAP team.

3.1.1. Observer

An Observer is anyone who notices an emergency condition or the potential for an emergency condition. An Observer must immediately inform the SS about the emergency condition, then continue to observe the emergency condition from a safe distance and report to the SS until instructed to stop by the SS.

3.1.2. Shift Supervisor

The SS is responsible for: (1) assessing conditions to determine whether a failure has occurred or is imminent, and (2) initiating emergency communication procedures with the Plant Director and the MCEMD.

The decision by the SS whether to call 911 should be made jointly with the Plant Director based on the severity of the situation. The severity of the situation will depend on several factors such as when the incident has occurred, when it is identified, and when the initial action items are taken. The action will be determined with guidance from the FAB Incident Alarm Level System (Section 1.8) and the Emergency Condition Response Coordination (Section 5).

In the event of a failure or imminent failure, the SS will notify the 911 Emergency Call and National Response Center and MCEMD Director. The 911 operator and MCEMD Director will have knowledge of this EAP and will immediately notify the designated responders. When contacting 911 and the MCEMD Director, the following pre-scripted message must be used, but may be modified by the SS based on observed conditions:

"This is (name) from the DTE Monroe Power Plant. I am calling to initiate the Monroe Fly Ash Basin Emergency Action Plan. An embankment failure has occurred/is imminent on the north/south/east/west (direction) side at approximately Station #_____. Please notify other Monroe County Emergency Management Division and local emergency officials."

3.1.3. Plant Director

The Plant Director is responsible for activating this EAP and ICS if notified by the SS that an emergency condition has occurred.

3.1.4. Plant Manager

The Plant Manager is responsible for working with the Plant Director to assist with EAP implementation.

3.1.5. Vice President of Environmental Management and Safety

The Vice President of EM&S is responsible for providing overall quality assurance and safety compliance with this EAP.

3.1.6. Public Information Officer

The PIO is the point of contact for the media.

3.1.7. Regional Relations Manager

The Regional Relations Manager is responsible for communications with local government officials and the public in coordination with the Plant Director. Duties include maintaining communication between assisting and cooperating agencies.

3.1.8. Legal Department Director

The Legal Department Director is responsible for assessing legal implications that may arise from failure of the FAB embankment and providing input to the Plant Director.

3.1.9. Fuel Supply Manager

The Fuel Supply Manager shall maintain on-site storage of key materials such as clay, aggregate, silt fence, etc. to assist with implementation of this EAP.

3.1.10. Engineering Support Organization Surveillance Monitoring Committee Coordinator

The SMC is comprised of the Fuel Supply Manager and appropriate subject matter experts (SMEs) from ESO, civil, legal, and environmental. The SMC is responsible for providing technical and operational oversight during implementation of this EAP. All construction, engineering, maintenance, inspection/monitoring, and operational decisions regarding the FAB embankment and facility must be made in consultation with SMC. The SMC Coordinator from the ESO is responsible for identifying and notifying the appropriate SMEs to include in the decision-making process.

3.1.11. Geotechnical Engineer

The Geotechnical Engineer is a technical resource to the EAP team and will understand the specific technical attributes of the FAB and its environs. The Geotechnical Engineer will assist the SMC Coordinator in evaluating and implementing short-term and long-term mitigation measures. They will be a qualified professional engineer licensed in Michigan to meet the requirements of 40CFR257.53.

3.1.12. Environmental Compliance Supervisor

The Environmental Compliance Supervisor is responsible for assessing the implications of a failure at the FAB, working with regulatory agencies on permit issues, and providing input to the Plant Director and Legal Department Director. The Environmental Compliance Supervisor will also assist the SMC Coordinator with guidance on environmental monitoring and sampling procedures. The Environmental Compliance Supervisor will serve as the main point of contact for EM&S and external emergency management agencies.

3.1.13. Emergency Response Contractor

The Emergency Response Contractor provides comprehensive emergency response capabilities necessary to support implementation of this EAP by maintaining subcontracts and vendor agreements to allow for rapid mobilization. The Emergency Response Contractor will assist the Environmental Compliance Supervisor.

3.1.14. Corporate Security Coordinator

The Corporate Security Coordinator is responsible for providing continuous security of the FAB.

4. INCIDENT COMMAND SYSTEM

An emergency condition is defined as any condition or situation considered to have an actual or potential effect on the safety of individuals, safe operation of the system, production, facilities, or customers' premises and which cannot be corrected by the resources immediately available. In the case that an emergency condition exists, and an emergency response is necessary, this EAP incorporates the NIMS ICS methods, structure, and titles. Per this approach, pre-identified individuals have been trained in specific ICS roles, the chain-of-command, the line-of-succession, and delegations of authority to respond in the event of an emergency condition associated with the FAB.

In utilizing the ICS, DTE grants decision-process and communication authority to the individuals identified in this EAP. Utilizing these pre-determined communication paths will facilitate effective implementation of this EAP, avoid possible omissions in communication, and provide a coordinated response to an emergency. It is imperative to follow the prioritized communication paths outlined on **Figure 6** and detailed in the EAP Notification/Communication Action Flowchart (**Figure 1**).

The most knowledgeable and qualified individual responding to the scene assumes the role of Incident Commander (IC). For an event regarding the MONPP FAB, the role of IC would be assumed by the SS, and if necessary, the Plant Director once they have arrived on site. All identified response personnel will support the IC in responding to the emergency condition at the MONPP FAB. The organization and responsibilities of the rest of the ICS team are presented in this section. Members of the EAP team presented in **Section 3** expected to assume a role within the ICS team are identified.

Throughout the response, the business units will routinely provide status updates to the senior leadership. If the size of the response exceeds the capability of available resources, the Executive Crisis Management Team (ECMT) will be activated to provide strategic direction, oversight, and coordination of the response Corporate Crisis. The ECMT will implement the ICS structure, appointing the business unit's Crisis Executive as the IC, and assist with response to the event accordingly. The members of this team are typically corporate executives selected by a Crisis Executive. The DTE Executive Committee may also serve as the ECMT, where not otherwise specified.

4.1. Incident Commander

Upon discovery that a failure has occurred or is imminent, and once the ICS has been enacted, the SS will assume the position of IC. The IC is technically not a part of either the General or Command Staff discussed below and is responsible for overall incident management, including:

- Immediately informing the EAP Coordinator about the emergency condition, following up with FAB Operations Personnel, and providing information back to the EAP Coordinator as appropriate.
- Calling the MCEMD and 911 to inform them of the emergency condition.
- Establishing immediate priorities for the incident (ICS Form 201, **Appendix G**).
- Ensuring incident safety.

- Establishing an Incident Command Post or Staging Area for incoming law enforcement.
- Determining incident goals and objectives (ICS Form 202, in **Appendix G**).
- Completing a damage assessment of the FAB when a failure has occurred.
- Establishing the level of organization needed, and continuously monitoring the operation and effectiveness of that organization.
- Obtaining a briefing from the prior IC and/or assessing the situation.
- Managing planning meetings as required.
- Approving and implementing the Incident Action Plan (IAP).
- Coordinating the activities of the Command and General Staff.
- Authorizing the release of information to the news media.
- Ordering demobilization of the incident when appropriate.
- Ensuring incident after-action reviews are conducted and complete.

If an ICS position is not activated, the IC will have the responsibility for that functional activity.

4.2. EAP Coordinator

The Plant Director is expected to assume the role of the EAP Coordinator within the ICS team. The EAP Coordinator is responsible for activating this EAP and ICS if notified by the SS that an emergency condition has occurred. The EAP Coordinator is a deputy IC and is also responsible for contacting the Incident Command Staff, the ECMT, and the regulatory agencies necessary to coordinate on-site and off-site mitigation activities. The EAP Coordinator will serve as the main point of contact for external emergency management agencies and is responsible for the following:

- Updating DTE personnel on the mitigation progress.
- Assisting the SS in preparing IAP status reports (ICS Form 201, **Appendix G**) for submittal to the appropriate authorities.
- Maintaining a list of assisting and cooperating agencies and agency representatives (ICS Form 205a, **Appendix G**).
- Coordinating inter-agency contacts.
- Monitoring incident operations to identify current or potential inter-organizational problems.
- Staffing and organizing his or her section, as appropriate, maintaining span of control (3-7 subordinates reporting to one supervisor).
    - Legal Department Director
    - Regional Relations Manager
    - Public Information Officer
- Participating in planning meetings, providing current resource status, including limitations and capabilities of agency resources. Meeting agendas for key ICS meetings are included in **Appendix H**.

- Facilitating EAP progress meetings as necessary to decide on the content of information that should be shared with the media. At a minimum, the following DTE personnel (as identified in **Section 4**) should attend the EAP progress meetings:
    - Plant Manager
    - Vice President of EM&S
    - Public Information Officer
    - Regional Relations Manager
    - Legal Department
    - Fuel Supply Manager
    - ESO SMC Coordinator
    - Geotechnical Engineer
    - Corporate Security Coordinator
    - Environmental Compliance Supervisor
    - Environmental Response Contractor (if utilized)
- Providing agency-specific demobilization information and requirements.

4.3. Regional EAP Director

The Vice President of EM&S is expected to assume the role of the Regional EAP Director within the ICS team. The Regional EAP Director must stay up to date on the situation through close coordination with the EAP Coordinator and is responsible for informing DTE senior leadership and the ECMT of conditions and expediting mitigation and cleanup activities, when necessary.

4.4. Incident Command Staff

The Incident Command Staff is assigned to carry out staff functions needed to support the IC. These functions include public information, interagency liaison, incident safety, and legal ramifications. In the context of large or complex incidents, Command Staff members may need one or more assistants to help manage their workloads. Each Command Staff member is responsible for managing their assistants for maximum efficiency. These Command Staff position responsibilities are summarized below.

4.4.1. Public Information Officer

The PIO will also serve as this role within the ICS team. The PIO is the point of contact for the media. Content that will be shared with the media must be reviewed and approved in advance by the IC and the EAP Coordinator as well as the Regional EAP Director. The PIO is responsible for preparing media content and facilitating the internal review and approval process, communicating with the media, and arranging the media response area and related logistics. The PIO is responsible for:

- Determining, according to the direction from the IC, any limits on information release.

- Developing accurate, accessible, and timely information for use in press/media briefings.
- Obtaining IC's approval of news releases.
- Conducting periodic media briefings.
- Arranging for tours and other interviews or briefings that may be required.
- Monitoring and forwarding media information that may be useful to incident planning.
- Maintaining current information, summaries, and/or displays on the incident.
- Making information about the incident available to incident personnel.
- Participating in the planning meeting.

4.4.2. Liaison Officer

The Regional Relations Manager is expected to serve as the Liaison Officer within the ICS team. The Liaison Officer is responsible for:

- Acting as a point of contact for agency representatives.
- Acting as a point of contact for local government officials.
- Maintaining a list of assisting and cooperating agencies and agency representatives.
- Assisting in setting up and coordinating interagency contacts.
- Monitoring incident operations to identify current or potential interorganizational problems.
- Participating in planning meetings, providing current resource status, including limitations and capabilities of agency resources.
- Providing agency-specific demobilization information and requirements.

4.4.3. Safety Officer

The Safety Officer is responsible for:

- Identifying and mitigating hazardous situations.
- Ensuring safety messages and briefings are made.
- Exercising emergency authority to stop and prevent unsafe acts.
- Reviewing the IAP for safety implications.
- Assigning assistants qualified to evaluate special hazards.
- Initiating preliminary investigation of accidents within the incident area.
- Reviewing and approving the Medical Plan.
- Participating in planning meetings.

4.4.4. Legal Officer/Legal Department Director

The Legal Department Director is expected to serve as the Legal Officer within the ICS team. The Legal Officer is responsible for assessing legal implications that occur from failure of the FAB and provide input to the EAP Coordinator. A legal access agreement to allow entry onto properties around the FAB to conduct emergency cleanup and maintain security is provided in **Appendix I**.

4.5. General Staff

The General Staff is responsible for the functional aspects of the incident command structure. Typically, the General Staff consists of Operations, Planning, Logistics, and Finance/ Administration Section Chiefs. General guidelines related to the General Staff positions include the following:

- Only one person will be designated to lead each General Staff position. Positions should not be combined.
- General Staff positions may be filled by a qualified person from any agency or organization.
- Members of the General Staff report directly to the IC. If a General Staff position is not activated, the IC will have the responsibility for that functional activity.
- Deputy positions may be established for each of the General Staff positions. Deputies are individuals fully qualified to fill the primary position.
- General Staff members may exchange information with any person within the organization. Direction takes place through the chain of command, which is an important concept in ICS.

4.5.1. Operations Section Chief

The MONPP Plant Operations Manager is expected to serve as the Operations Section Chief within the ICS team. The Operations Section Chief will manage all field operations, including oversight of all tactical resources and types of work being directed from the command post. They assist in developing the IAP by providing the strategies and tactics that the field would like to use to achieve the established incident objectives and oversee operational work and resources for the execution of the IAP. Specific responsibilities include:

- Participating in preplanning activities as requested by the IC.
- Obtaining briefings from Emergency Operations Center (EOC), IC, and/or from Planning Section Chief.
- Documenting incident status summary information and advising the IC and other staff of any significant changes in incident status or conditions.
- Staffing and organizing the Operations Section, as appropriate, maintaining span of control (3-7 subordinates reporting to one supervisor).
- Consulting with the IC regarding the length of the operational period and scheduling staffing for multiple operational periods, if necessary.
- Receiving an update on the staffed ICS positions within the response organization, an overview of the status of the incident, and prioritized incident objectives.

- Ensuring incident objectives are SMART (Specific, Measurable, Achievable/ Action Orientated, Realistic, and Time-Bound).
- Providing any additional information or concerns regarding operational resources and assigned work as appropriate.
- Briefing all assigned resources within the Operations Section on the objectives/tasks.

The Operations Section Chief will be responsible for coordination with the following positions.

Fuel Supply Manager

The Fuel Supply Manager is responsible for performing on-site mitigation and cleanup activities as directed by the IC. It is the responsibility of the Fuel Supply Manager to assess the scale of the mitigation and cleanup activities required and inform the IC whether the mitigation and cleanup activities can be performed in-house by DTE resources or if outside resources are needed from the Emergency Response Contractor and if cleanup is required on non-DTE property. The Fuel Supply Manager may provide lighting and power sources for activities on and off DTE property.

Surveillance Monitoring Committee Coordinator

The SMC Coordinator from the ESO will identify the SMEs necessary to provide the technical insight to the ICS Team. The SMC Coordinator is then responsible for contacting and coordinating with the SMEs. If necessary, the SMC Coordinator will engage the Geotechnical Engineer to include in the decision-making process with the SMEs.

Geotechnical Engineer

The Geotechnical Engineer will assist the SMC Coordinator in evaluating and implementing short-term and long-term mitigation measures.

Environmental Compliance Supervisor

The Environmental Compliance Supervisor will coordinate all water quality, hydraulic, and biological monitoring. The sampling will be conducted either by DTE personnel or their representative, as directed by the EAP Coordinator.

The Environmental Compliance Supervisor will also be responsible for contacting and coordinating with the Emergency Response Contractor.

Emergency Response Contractor

The Emergency Response Contractor is responsible for implementing mitigation and cleanup activities as directed by the EAP Coordinator/IC. The Emergency Response Contractor organizational chart including subcontractors and contact information is included in **Figure 2**. Emergency Response Contractor responsibilities include:

- Resource management;
- Twice daily check-ins;
- Review/projections of materials and equipment;
- Staffing resiliency;
- Subcontractor coordination;
- Daily/weekly/monthly reporting; and
- Data management.

4.5.2. Planning Section Chief

The MONPP Performance Manager is expected to serve as the Planning Section Chief and is responsible for providing planning services for the incident. Under the direction of the Planning Section Chief, the Planning Section collects situation and resource status information, evaluates it, and processes the information for use in developing the IAP. Dissemination of information can be in the form of the IAP, informal briefings, or through map and status board displays. Major responsibilities of the Planning Section Chief are:

- Collecting and managing all incident-relevant operational data.
- Supervising preparation of the IAP.
- Providing input to the IC and Operations Section Chief in preparing the IAP.
- Incorporating the Traffic, Medical, and Communications Plan and other supporting materials into the IAP.
- Conducting and facilitating planning meetings.
- Reassigning personnel within the ICS organization.
- Compiling and displaying incident status information.
- Establishing information requirements and reporting schedules for units (e.g., Resources, and Situation Units).
- Determining the need for specialized resources.
- Establishing specialized data collections systems as necessary (e.g., weather reports).
- Providing periodic predictions on incident potential.
- Reporting significant changes in incident status.
- Overseeing preparation of the Demobilization Plan.
- Completing a damage assessment with the IC.
- Coordinating unmanned aerial vehicle support if requested by the IC.

4.5.3. Logistics Section Chief

The MONPP Administration Leader is expected to serve as the Logistics Section Chief and provide all incident support needs. The Logistics Section is responsible for providing facilities, transportation, communications, supplies, equipment maintenance and fueling, food services, medical services for responders, and all off-incident resources. Major responsibilities of the Logistics Section Chief are:

- Coordinating with legal and local agencies as necessary to provide staging areas.
- Supplying facilities, transportation, communications, supplies, equipment maintenance and fueling, food services, medical services for responders, all off-incident resources, and hotel accommodations if necessary.
- Preparing financial and cost analysis information as requested.
- Ensuring compensation and claims functions are being addressed relative to the incident.

- Gathering pertinent information from briefings with responsible organizations/agencies.
- Developing an operating plan for the Finance/Administration Section and fill Section supply and support needs.
- Determining the need to set up and operate an incident commissary.
- Maintaining daily contact with headquarters on finance matters.
- Ensuring personnel time records are completed accurately.
- Providing input to the IAP.
- Coordinating with Emergency Response Contractor to handle waste.

The Logistics Section Chief will be responsible for coordination with the following positions.

Corporate Security Coordinator
The Corporate Security Coordinator is responsible for providing continuous security of DTE property, including but not limited to the FAB. DTE will coordinate with local and state police departments to provide continuous security for non-DTE property.

4.5.4. Finance Section Chief

The MONPP Plant Manager is expected to serve as the Finance/Administration Section Chief and is responsible for managing all financial aspects of an incident. Not all incidents will require a Finance/ Administration Section. Only when the involved agencies have a specific need for finance services will this Section be activated. Major responsibilities of the Finance Section Chief are:

- Creating work order and GLString number at start of event.
- Managing all financial aspects of an incident.
- Providing financial and cost analysis information as requested.
- Ensuring compensation and claims functions are being addressed relative to the incident.
- Gathering pertinent information from briefings with responsible agencies.
- Developing an operating plan for the Finance/Administration Section and fill Section supply and support needs.
- Determining the need to set up and operate an incident commissary.
- Meeting with assisting and cooperating agency representatives as needed.
- Maintaining daily contact with agency(s) headquarters on finance matters.
- Verifying personnel time records are completed accurately and transmitted to home agencies.
- Ensuring all obligation documents initiated at the incident are properly prepared and completed.
- Briefing agency administrative personnel on all incident-related financial issues needing attention or follow-up.

The Finance Section Chief will be responsible for coordination with the following positions.

Supply Chain Manager
The Supply Chain Manager will assist the Finance Section Chief during an emergency response.

5. EMERGENCY CONDITION RESPONSE COORDINATION

This section outlines emergency response and mitigation procedures to control the release of CCR from the FAB during and following an emergency condition. For this EAP, "embankment failure" is defined as a catastrophic failure characterized by sudden, rapid, and uncontrolled release of impounded ash/ash slurry. This definition is consistent with the Federal Emergency Management Agency *Federal Guidelines for Dam Safety: Emergency Action Planning for Dams*. Should inspection of the FAB embankment identify a potentially imminent failure condition or an actual failure, the emergency response measures described in this EAP will be implemented as appropriate. Emergency response measures will be implemented on weekends, holidays, and/or during periods of adverse weather to the extent practical and in accordance with safety protocols.

5.1. Incident Levels and Activation

The severity of the emergency condition will determine the level of the incident. The following sections provide an overview of the various incident levels (from 1 = least severe to 3 = most severe) as they relate to relevant response activities. After discovery that a FAB failure has occurred or is imminent, and once the ICS has been enacted, the IC and other ICS staff will determine the incident level and staffing requirements for the Emergency Response Contractor after assessing the conditions of the FAB.

5.1.1. Level 1

Upon notice of an emergency condition, the Emergency Response Contractor will initiate scalable resourcing followed by mobilization based on the initial assessment of the FAB. This Level 1 emergency response includes mobilization of pre-determined Emergency Response Contractor management personnel and specialized emergency response operations staff including various subcontractors (**Figure 2**) to support initial situation assessment, development of mitigation alternatives, and ICS activities as directed by the IC.

The Level 1 emergency response may include deployment of heavy equipment and/or marine resources and equipment operators, depending on the nature of the incident and extent of release as reported by the IC. The Level 1 emergency response team’s objectives include the following:

- Initial situation assessment.
- Identification of potential mitigation strategies.
- Supporting ICS team and public agency first responders in designating the incident perimeter.
- ICS networking and reporting

Should the response necessitate further resources, the response level will escalate to Level 2 and additional emergency response contractor personnel, subcontractors, and equipment will be mobilized.

5.1.2. Level 2

Based on the ICS team's assessment and recommendations from the Level 1 base response activities, additional emergency response teams (engineers, environmental scientists, mapping and information management specialists), equipment, and resources will be mobilized on an as-needed basis.

The Level 2 emergency response may include unmanned aerial vehicle support to provide surveillance of mitigation activities in the immediate vicinity of a "failure in progress". Emergency response services will be supported with continuous situation assessment and periodic reporting in accordance with protocols defined within this EAP.

After initial site reconnaissance, the Emergency Response Contractor management team will provide the IC with the team's assessment and recommendations regarding the Level 2 action plan and level of emergency response resources needed to address the situation. It is assumed the Emergency Response Contractor will be assigned many related tasks to facilitate the comprehensive incident response and resource mobilization planning. Continuous situational assessment and periodic reporting will continue in accordance with protocols defined within this EAP.

5.1.3. Level 3

The Emergency Response Contractor will mobilize additional resources approved by the IC team if a Level 2 response is escalated to a Level 3 response. Continuous situational assessment, periodic reporting, and initial emergency response activities will continue in accordance with protocols defined within this EAP. Mobilization of supplemental resources will proceed in accordance with the defined plan and DTE directives. Specific response activities for a Level 3 lakeside or landside FAB breach are discussed in Section 5.12.

5.2. Evacuation

It is integral to ensure the safety of all personnel at the MONPP and the surrounding community. Should an emergency condition arise, the area immediately surrounding the failure will be evacuated in accordance with procedures outlined in the MONPP Site Emergency Response Plan. If necessary, depending on the level of response required, the MONPP may also be evacuated in accordance with procedures outlined in Plant Order MS-105. If the emergency condition threatens areas outside the plant, evacuation will be coordinated with and led by the MCEMD.

5.3. Actions to Mitigate Breaches and Impede Flows

Based on initial reconnaissance and field conditions, the Emergency Response Contractor may implement rapid breach mitigation through placement of aggregate-filled nylon bags within the perimeter dike breach, including using industrial helicopters, if needed. This will mitigate the initial breach and reduce risks to personnel operating equipment within the immediate vicinity of a

failure in progress. There are no longer wet ash units in operation so water elevations within the FAB will continue to decrease as the basin undergoes dewatering.

Emergency response ash containment and recovery methods will vary significantly between land-based and water-based release scenarios (discussed below). Several advanced response mechanisms are available for reducing impacts on human health and the environment; however, the key to effectively responding to the dike failure is careful selection and proper use of the equipment and materials best suited to the conditions at the release site.

In the event of a Level 3 emergency response, with approval from the IC, the Emergency Response Contractor will develop situation-specific procedural refinements based on Standard Operating Procedures to execute operations. As the situation allows, the Emergency Response Contractor will provide strategic input from the field relevant to transitioning the situation from emergency response to the post-response phase.

5.4. Unified Command Center

The initial command center for the response will be at MONPP. It is up to the EAP Coordinator and IC to make the decision on moving the unified command center to the EOC at the Monroe County Emergency Management Office. The EOC is located at 987 S. Raisinville Road, Monroe, Michigan, 48161, and will remain the location of the Unified Command Center until the emergency condition is terminated. The EOC can accommodate more than 60 people and is equipped with a kitchen area and state-of-the-art communication tools.

5.5. Resource Management

In case of an emergency condition, if directed by the IC, the Emergency Response Contractor will act as the general contractor and will subcontract the individual components of the mitigation and clean-up activities, as necessary. The Emergency Response Contractor has established contracts with subcontractors and vendors to facilitate implementation of this EAP. Furthermore, the Emergency Response Contractor will identify resources that could be used during mitigation and clean-up activities.

To effectively work in an emergency response environment, response staff need to be alert and responsive during working hours. Emergency response operations may continue on a 24-hour per day cycle; therefore, a second and third shift may be required and will be implemented as necessary.

5.5.1. Alternate Ash Disposal Facility

An alternate ash disposal facility will be used to dispose of ash released because of a FAB embankment failure. DTE, specifically the IC, will determine this facility at the time of the incident.

5.5.2. Soil & Aggregate Resources

The Emergency Response Contractor will identify aggregate resources that should be stockpiled on site and identify sources for additional materials. Land-based containment will likely include the use of imported soils from adjacent DTE property and/or rock sourced from local quarries. Alternatively, DTE may choose to pre-stage rock stockpiles at the site.

5.5.3. Alternative Power Sources and Lighting

If needed, the Fuel Supply Department or a local rental vendor will supply portable/alternative lighting and power sources during periods of darkness, or other scenarios where such equipment is deemed necessary.

5.6. Site Access

Access to the site is available from gates on the north and south sides of the DTE property encompassing the FAB. Approximate addresses of the gates are:

South – 6723 Waters Edge Dr, Monroe, MI 48161

North – 8206 East Dunbar Rd, Monroe, MI 48161

A site layout with station numbers is provided on **Figure 3**.

The IC will work with Corporate Security to initiate the Security Contractor, who will provide 24-hour security of the emergency response and guard the perimeter to prevent the public from accessing the response area.

5.7. Staging Sites

The location of possible staging areas for contractor equipment and supplies will be based on the exact location of the failure and extent of the impacted areas. Potential locations for these staging areas are provided on **Figure 3**. The on-site staging areas can be adjusted by the Emergency Response Contractor based on the actual emergency condition after consulting the Logistics Section Chief. The off-site staging areas can be adjusted as the mitigation and clean-up activities progress but must be coordinated with the local agencies through the Logistics Section Chief.

5.8. Safety

Pursuant to requirements under the Michigan Occupational Safety and Health Administration (MIOSHA), a site-specific HASP addressing the potential hazards associated with fly ash exposure as well as other potential hazards (e.g., heavy equipment traffic) must be reviewed and acknowledged by the Emergency Response Contractor employees and any subcontractors who will work on site. Additionally, subcontractors of the Emergency Response Contractor will also prepare their own HASPs specific to their roles and responsibilities on site. Level D personal protective equipment (PPE) will be required for all response personnel and includes a hard hat, safety glasses, reflective vest/clothing, steel-toed boots, and hearing protection (if appropriate). Based on the task, additional PPE may be required such as dust masks and air purifying respirators equipped with High Efficiency Particulate Air filters to address potential inhalation exposures. Tyvek suits and gloves may also be necessary to reduce the potential for dermal contact with the fly ash. Per the MIOSHA R408.40636 construction safety standard and the OSHA (Occupational Safety and Health Administration) Safety and Health Regulations for Construction standard 1926.106, personal flotation devices will be required around water-based operations. The Emergency Response Contractor and subcontractors will be required to ensure their employees are fit to perform assigned activities.

Prior to initiating work, safety protocols (e.g., job hazard analyses, safe work practices, pre-job safety briefs) based on activity-specific elements will be reviewed by the Emergency Response Contractor and their subcontractors working on site. Job safety briefings will be completed daily, and additional safety briefings will be completed as necessary when conditions change or when new site personnel arrive.

5.9. Communications

The primary source of communication will be the existing local emergency radio system. This will be coordinated with the MCEMD. Radios will be maintained by the Fuel Supply Department. Secondary communication methods will be conducted with cell phones and email as appropriate. Virtual meeting platforms (e.g., MS Teams) may be used for coordination if on-site meetings are not feasible for safety reasons.

5.10. Incident Action Plans

IAPs provide appropriate oversight authorities with the status of emergency, mitigation, and clean-up activities. IAP status reports will be prepared by the Planning Section Chief and provided to the MCEMD and other local and state government officials, as necessary. Comments from applicable agencies regarding the IAP will be addressed and incorporated into the next status report. The frequency of status reports will be determined based on discussions with the MCEMD and regulatory timeframes. The ICS 201 form can serve as part of the initial IAP and is provided in **Appendix G**.

IAP status reports will provide information on the situation to allow DTE and the MCEMD and other emergency management officials to modify the course of action accordingly. The MCEMD and other applicable agencies along with the ICS team will determine when and how the emergency situation will be terminated at the impacted areas beyond the limits of the FAB. The IC will declare when and how the emergency situation will be terminated at the FAB with input from the EAP Team.

5.11. Incident Monitoring

To protect human health and the environment and support future environmental impact studies and mitigation planning, the Emergency Response Contractor will support environmental monitoring efforts, as necessary. Depending on the details of the emergency condition and at the direction of the IC or other applicable agency representatives, monitoring of surface water, drinking water, groundwater, storm water, or ambient air may be required. During an emergency response, fly ash particles can become airborne and respirable under certain conditions; this poses a concern for personnel health. A meteorological station capable of gauging wind speed and direction and ambient air temperature will be established to estimate transport paths. Depending on the estimated transport paths or for worker protection during the response, an air monitoring program may be necessary. The program would be implemented on an as-needed basis and may entail continuous monitoring of respirable particulate matter at the work zone and/or ambient air sampling at fixed locations.

In the event that a fly ash release is suspected to have impacted Plum Creek or Lake Erie, the Emergency Response Contractor will mobilize water quality monitoring efforts as needed. This could include turbidity monitoring, water column profiling, water sampling, or sediment core

sampling. The City of Monroe drinking water intake is located approximately seven miles northeast (upstream) from the plant; therefore, it is unlikely that a fly ash release will impact it. However, local downstream agencies will be notified so their intake water can be monitored if warranted.

The Emergency Response Contractor and DTE will collaborate to produce sampling and analysis plans specific to the emergency condition; the data yielded from these efforts will inform additional monitoring and cleanup activities.

5.12. Case-Based Response Scenarios

The following are a general description of both lakeside and landside response scenarios. The lakeside and landside scenarios were evaluated for the purpose of outlining general response activities; actual response measures will be scaled as appropriate to the actual emergency condition.

5.12.1. Lakeside Breach Scenario

Embankment failures along the east side of the FAB at the emergency spillway could impact Lake Erie directly, while failures along the north, west, and/or south side, although very unlikely due to the location of the emergency spillway on the lakeside, could impact Lake Erie indirectly via adjacent drains and/or Plum Creek. This scenario outlines potential measures that may be taken should a failure impact Lake Erie. Response to a breach of the FAB embankment displacing ash into Lake Erie and/or Plum Creek will initially focus on establishing water-based emergency response containment measures.

Publicly available bathymetry data on the adjacent waterways indicate water depths on the order of 20 feet or less within a 1-mile radius of the FAB. These conditions are conducive to conventional marine containment methods (e.g., check dams, silt curtains, containment booms). The containment geometry will focus on completely encompassing the established ash displacement zone. Barge-mounted hydraulic excavators with transport barges and conventional wet dredging to emergency decant ponds will be deployed to recover ash from the affected waters if needed.

A detailed response plan and core sequence of key, scalable emergency response contractor actions for one possible lakeside breach scenario are presented in **Appendix J**[1].

5.12.2. Landside Breach Scenario

The FAB is designed to fail to the east at the emergency spillway; therefore, a failure of wet ash on the north, west, and/or south sides would be very unlikely. However, a failure in those directions could inundate roads (including I-75), adjacent farm fields, and both residential and commercial areas. This will necessitate land-based emergency response measures over an area that could encompass approximately 1.5 square miles. This scenario, although highly unlikely, outlines potential measures that may be taken should a failure occur outside the emergency spillway.

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[1] **Key task sequence located in Table 2 of Lakeside Response Plan.**

Responders would first contain released ash and restore impacted critical infrastructure, and MDOT pre-qualified contractors will completely remove CCR from the I-75 right-of-way and restore impacted critical infrastructure. In the event of a spill impacting I-75, the EAP/ICS Team will work with MDOT to reopen I-75 within 48 hours of the incident.

Land-based containment will likely include the use of imported soils from adjacent DTE Electric property and/or rock sourced from local quarries. Alternatively, DTE may choose to pre-stage rock stockpiles at the site. For displaced ash on land, berms will be constructed to establish a contained perimeter prior to removing the ash. Recovery (i.e., removal of the ash) will include the use of conventional heavy construction methods and moisture-conditioning the ash prior to excavation and transport to a DTE-designated location(s).

A detailed response plan and core sequence of key, scalable emergency response contractor actions for one possible landside breach scenario is presented in **Appendix K**[2] and the Landside Breach Traffic Mitigation Plan is provided in **Appendix L**.

5.13. Damage Assessment

The Planning Section Chief will develop a damage assessment plan with the IC to identify the amount of debris and damage.

5.14. Restoration

DTE will take necessary measures to stop and mitigate the release of ash to the environment as quickly as possible. DTE will focus initial emergency response activities on critical infrastructure affected, off-site properties within the community, followed by remaining affected areas on site.

Background concentrations of environmental media near the MONPP will be used to establish baseline conditions that existed prior to a release, as well as the appropriate environmental regulatory cleanup standards after recovery. A benthic study for the MONPP conducted in October 2015 is included as **Appendix M**.

5.15. Demobilization

The IC will assess the progress of the emergency response and, in agreement with the Regional EAP Director and other applicable agencies, will initiate the demobilization of emergency response activities at which point the Emergency Response Contractor will assist with the transition from an emergency response to the post-response phase.

6. COMMUNICATIONS

Key communication resources for this EAP are as follows:

[2] **Key task sequence located in Table 1 of Landside Response Plan.**

- Monroe Ash Basin Emergency Action Plan Notification/Communication Action Flowchart (**Figure 1**)
- Summary of Roles and Contact Information (**Table 1**)
- Emergency Response Contractor Organization/Communication Flowchart (**Figure 2**)
- Crisis Response Process Coal Ash Pond Failure Communication Plan and Q&A (**Appendix A**)
- Crisis Response Plan – Public Information Plan, A.17 Environmental Release (**Appendix N)**

The Monroe Ash Basin EAP Notification/Communication Action Flowchart (**Figure 1**) outlines the communication procedures between DTE personnel, MCEMD, the EGLE Pollution Emergency Alerting System, applicable regulatory agencies, the public, and news media. The most current version of the EAP flowchart will be provided to the individuals identified on the flowchart and it is the responsibility of each individual to keep the EAP flowchart readily accessible. Contact information for the EAP team (including alternates) is provided in **Table 1**.

The Emergency Response Contractor organization/communication flowchart is provided as **Figure 2**. The environmental compliance supervisor or other IC representative will notify the Emergency Response Contractor's management team with a redundant phone call, text message, and email. The emergency response contractor will confirm receipt of the emergency response notification. Direct communication between the IC representative and Emergency Response Contractor will include a summary of initial conditions and agreed level of initial response. The IC and EAP Coordinator will designate DTE personnel to follow up with the EAP/ICS Team with a redundant phone call, text message, and email to verify that all required notifications were made and received. The designated DTE personnel will also be tasked with courtesy notifications of an abnormal condition to any EAP/ICS Team members not originally notified due to not being affected by the emergency response.

DTE, MCEMD, the PIO, and other regulatory agencies will coordinate press releases/conferences to the public. A draft internal and external media response/communication for likely or generic spill scenarios is provided in **Appendix A**, as well as a question-and-answer document developed and shared with the Monroe County Health Department with key health information regarding CCR.

DTE will keep stakeholders, including regulatory agencies, media, and local government, informed of the emergency response status and progress. Information will be provided in a stakeholder meeting and within IAP status reports. The occurrence of the stakeholder meeting will be determined based on the incident level. A media response facility is at the DTE Monroe Activity Center located at 2035 Fix Road, Monroe, Michigan. Corporate Communication, along with the PIO, will make arrangements for a press conference.

6.1. Notifications of Warning

If an emergency response event occurs, public notifications, weather monitoring, and other emergency messaging will be handled at the EOC. MCEMD utilizes the Monroe County Alert Notification System, which allows use of multiple means of communication for residents and emergency responders. Methods of communication include home phones, mobile phones, Voice Over Internet Protocol landlines, e-mail, and/or text messaging.

6.2. Environmental Management and Safety Communications

Regulatory submittals for emergency response, health and safety planning, ash management, and environmental monitoring activities are anticipated to be required. Guidance for the following documents is provided in **Appendix O**:

- Weekly status updates
- Ash removal work plan, includes:
  - Drainage control plan
  - Environmental sampling plan
  - River dredging plan
  - Ash processing area construction and operation plan
  - Storm water management plan
  - Dust control and air monitoring plan
  - Schedule for development of a structural integrity evaluation
  - Schedule for development of ash removal/excavation plan (including ash processing areas)
  - Offsite disposal options analysis
- HASP
- Engineering structural integrity report
  - Recommendations and maintenance plan for existing dikes/berms being used to contain spilled ash
- Financial expenditure report
- Information/data management plan
- Surface water monitoring plan
- Site removal assessment report
- Final report

7. REFERENCES

The following standards, regulations, articles, procedures and practices were used to develop the EAP and are listed here as resources for further information. Additionally, a list of acronyms and abbreviations is included in **Appendix P**.

Federal

American National Standards Institute, & American Society for Quality. (1995). *ANSI/ASQC E4-1994 Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (Tech.).

United States, Department of Homeland Security Presidential Policy Directive 8.

United States, Federal Emergency Management Agency. (2013, July 1). *Federal Guidelines for Dam Safety: Emergency Action Planning for Dams*.

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United States, Environmental Protection Agency. (2001, March). *EPA Requirements for Quality Management Plans, EPA QA/R-2*. Retrieved from https://www.epa.gov/sites/production/files/2016-06/documents/r2-final.pdf

United States, Environmental Protection Agency. (2015, July). 40 CFR, §257.73 *Structural integrity criteria for existing CCR surface impoundments.* Retrieved from https://www.gpo.gov/fdsys/pkg/CFR-2015-title40-vol25/xml/CFR-2015-title40-vol25-sec257-73.xml

State

Michigan, Act 451 of 1994. Natural Resources and Environmental Protection Act.

Figure 1. MONROE ASH BASIN EMERGENCY ACTION PLAN NOTIFICATION/COMMUNICATION ACTION FLOWCHART

A complete list of contact information for personnel and alternates is listed in Table 1.

Observer

Alert/Warning Conditions
- Immediately inform the Shift Supervisor about the abnormal condition.
- Continue to observe the abnormal condition from a safe distance and report to the Shift Supervisor until instructed to stop.

Shift Supervisor (SS)
734-384-2235

Alert/Warning Condition
- Immediately assess the abnormal condition and decide if it may cause failure or creates enhanced public awareness.
- Notify outside rounds person to visually inspect Fly Ash Basin

Failure Imminent?

NO

Failure Not Imminent

Alert/Warning Condition
- If failure is not imminent, conduct additional monitoring, inspections, and mitigation as necessary.
- For the Fly Ash Basin, follow the Inspection, Monitoring, and Maintenance Manual.

YES

Failure Imminent

Emergency Condition:
- If failure is imminent, or the abnormal condition creates enhanced public awareness, immediately notify 911, the Plant Director (Michael Twomley - 313-320-7096), and the Monroe County Emergency Management Division (MCEMD) Central Dispatch (John Conlin - 734-243-7070), of the potential for failure.
- Notify Operations Manager (Jim Feaganes - 734-777-3713).
- Use the following pre-scripted message when notifying 911: "*This is…(name) from DTE Monroe Power Plant. I am calling to initiate the Monroe Ash Basin Emergency Action Plan. An embankment failure has occurred/is imminent on the north/south/east/west…(direction) side at approximately Station ##. Please notify MCEMD and local emergency officials.*"
- Units 1, 2, 3, and 4 (dry ash units) will remain in operation.

Call 911
Immediately notify MCEMD (John Conlin - 734-243-7070) and local emergency management officials to initiate the offsite response.

Plant Director (EAP Coordinator)
Mike Twomley - 313-320-7096
- Contact Vice President of EM&S and Incident Command Staff (right).
- Assist Shift Supervisor with coordinating EAP activities.

Shift Supervisor (Incident Commander)
734-384-2235
- Monitor emergency condition.
- Immediately initiate mitigation and clean-up activities.
- Contact Plant Director (Michael Twomley above) and General Staff (right).
- Coordinate EAP activities with DTE.
- Coordinate off-site mitigation and clean-up activities with the MCEMD and other emergency management agencies.
- Be the main point of contact for the MCEMD and other emergency management agencies.
- Facilitate EAP progress meetings.
- Prepare status reports.

Monroe County Emergency Management Division (MCEMD) Director
John Conlin - 734-243-7070
- Immediately warn and evacuate local residents and land owners.
- Coordinate off-site mitigation and clean-up activities with the Plant Director.

Incident Command Staff

General Staff

Vice President of EM&S (Regional EAP Director)
Shawn Patterson - 313-819-2417
- Reports to senior management and provides overall quality assurance and safety compliance for EAP.
- Monitors emergency condition with assistance from Plant Director.
- Coordinates with DTE's Executive Crisis Management Team.

Public Information Officer (Public Information Officer)
Amanda Passage - 313-235-9207
- Conduct a joint press conference(s) with MCEMD as needed.
- Inform the media only after the content is reviewed and approved by the EAP Coordinator.
- Manage media hotline (313-235-5555)

Regional Relations Manager (Liaison Officer)
Molly Luempert-Coy - 313-820-3881
- Communicate with local government officials.
- Execute access agreements as needed for response activities.

Safety Officer (Safety Officer)
Crissy Calvin - 419-551-1712
- Safety Compliance for EAP.

Legal Department Director (Legal Officer)
Andrea Hayden - 734-546-0179
- Assess legal implications and provide input to the Plant Director.

Operations Manager (Operations Section Chief)
Jim Feaganes - 734-777-3713
- Manage all field operations, including oversight of all tactical resources and types of work being directed from the command post.
- Contact Fuel Supply Manager, ESO SMC Coordinator, and Environmental

MPP Performance Manager (Planning Section Chief)
Eric Burger - 734-735-8450
- Provide planning services for the response. The Planning Section collects situation and resource status information, evaluates it, and processes the information for use in developing incident action plans.

MPP Admin Leader (Logistics Section Chief)
Kelly Nowicki - 734-347-5031
- Provide facilities transportation, communications, supplies, equipment maintenance and fueling, food services, medical services for responders, and all off-emergency response resources.

Plant Manager (Finance Section Chief)
Dan Casey - 248-202-2524
- Manage all financial aspects of emergency response

Media

Public

Fuel Supply Manager
Tim Ellsworth - 734-776-3356
- Start short-term mitigation and clean-up activities if directed by the Plant Director.
- Assist Operations Section Chief with long-term mitigation measures.

ESO SMC Coordinator
Mark Green - 734-624-1088
- The SMC provides technical and operational oversight and guidance during implementation of the EAP. All construction, engineering, maintenance, inspection/monitoring, and operation decisions regarding Ash Basin embankment and facility is made after consulting with SMC.
- Notify and include appropriate SMEs from ESO, civil, legal, and EM&S in decision-making.

Geotechnical Engineer - Geosyntec
Clinton Carlson - 810-347-6375
- Assist Coordinator in evaluating and implementing short-term and long-term mitigation measures.
- Implement additional monitoring and inspections as necessary.

Environmental Compliance Supervisor
Chris Paquette - 810-728-5019

EM&S
Jason Logan - 248-201-9221
- Assess permit compliance and provide input to the Plant Director.
- Communicate with regulatory agencies on permit compliance issues.
- Provide assistance to SMC Coordinator with regard to environmental monitoring and sampling procedures.

Emergency Response Contractor – Arcadis
Andrea Krevinghaus – 810-841-1474
- Start mitigation and clean-up activities if directed by the Plant Director.
- Conduct appropriate environmental assessment.

Corporate Security Coordinator
Dan Torres - 734-771-7363
- Arrange corporate security to provide security at the ash basin and spill area during implementation of EAP.

Supply Chain Manager
Scott Darga - 586-943-3227
- Assist Finance Section Chief during emergency response.

LEGEND

- DTE Personnel
- Outside Party
- Alert/Warning Condition
- Emergency Condition

Title (ICS Team Role)

EAP = Emergency Action Plan
EM&S = Environmental Management and Safety
ENS = Energy Supply
ESO = Engineering Support Organization
ICS = Incident Command System
MPP = Monroe Power Plant
SMC = Surveillance Monitoring Committee
SME = Subject Matter Expert

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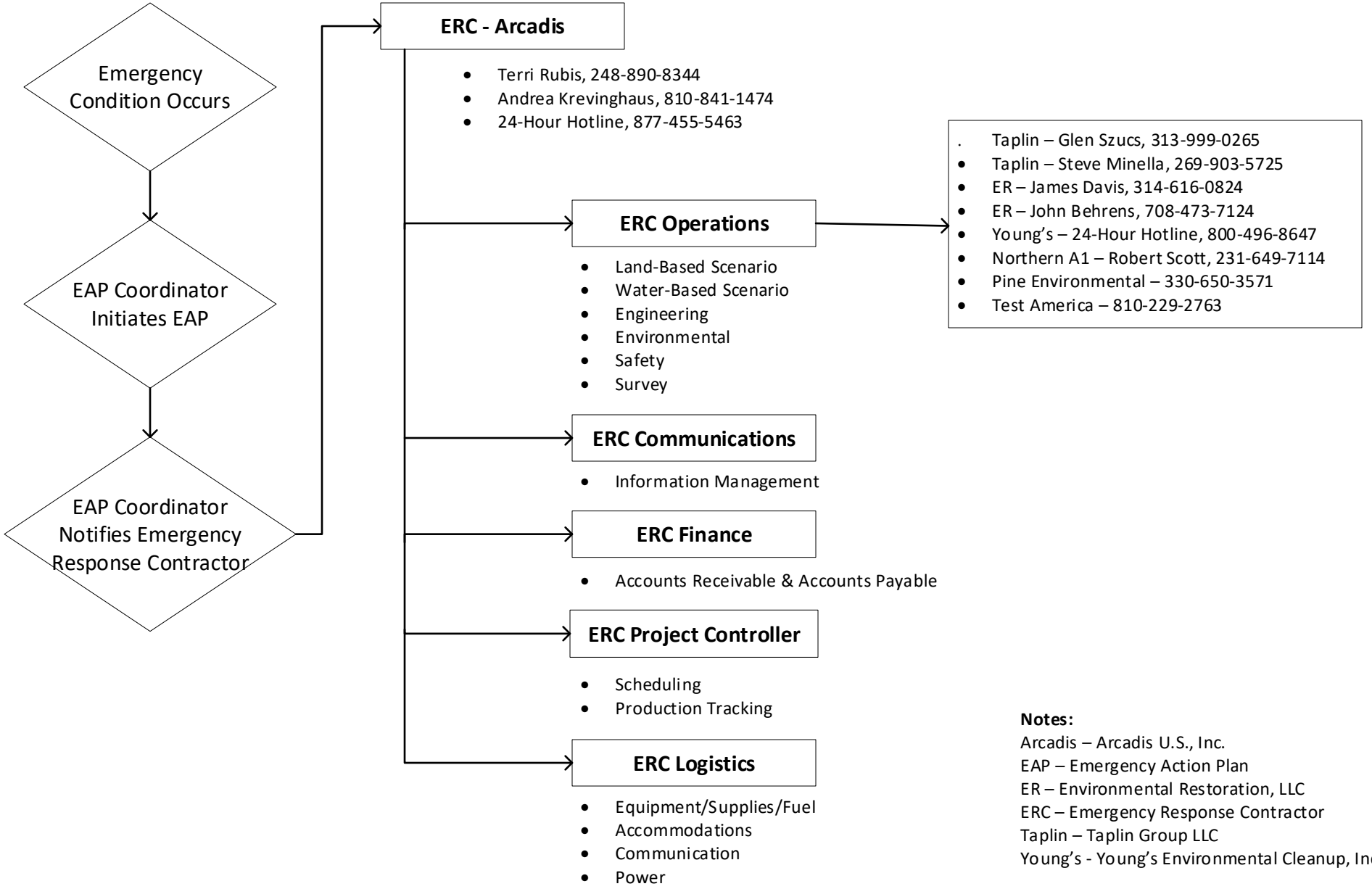
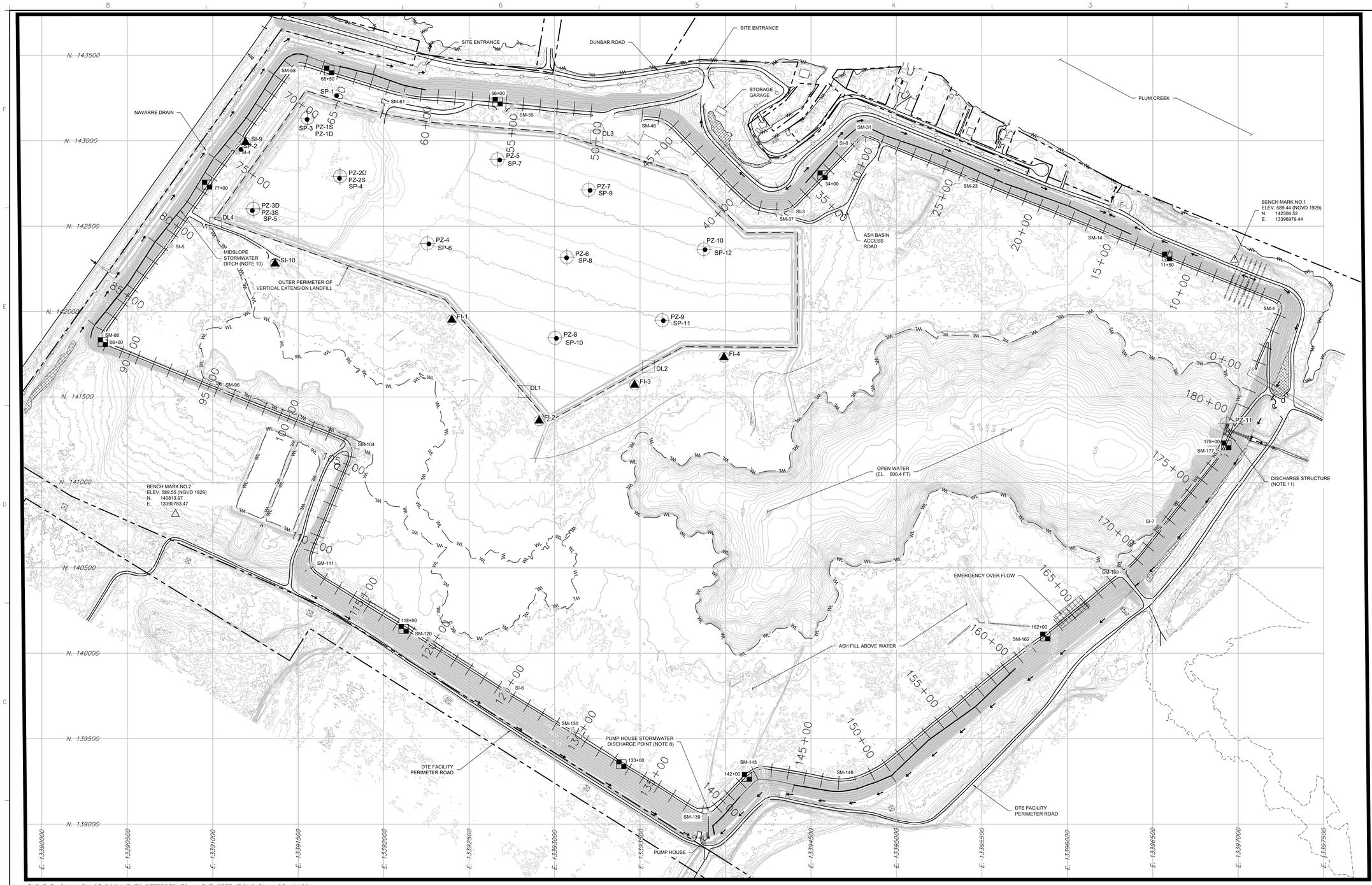
Figure 2 – Emergency Response Contractor Organization/Communication Flowchart



Notes:
Arcadis – Arcadis U.S., Inc.
EAP – Emergency Action Plan
ER – Environmental Restoration, LLC
ERC – Emergency Response Contractor
Taplin – Taplin Group LLC
Young's - Young's Environmental Cleanup, Inc.

FIGURE 3. AERIAL PHOTOGRAPH OF THE MONROE FLY ASH BASIN AND GENERAL VICINITY

FIGURE 4. LOCATIONS OF INSTRUMENTS FOR CONTINUOUS MONITORING SYSTEM



LEGEND

- PROPERTY BOUNDARY
- DRAINAGE DIRECTION
- CULVERT
- BENCHMARK LOCATION
- FENCE
- WATER LINE
- SM-4 — DECOMMISSIONED SURFACE MONUMENT - STATION #
- SI-5 — DECOMMISSIONED/INACTIVE SLOPE INCLINOMETER - # (NOTE 2)
- 56+00 — SAA SLOPE INCLINOMETER - # (NOTE 1)
- PZ-6 — VERTICAL EXTENSION LANDFILL PIEZOMETER - #
- DL1 — DATALOGGER FOR VERTICAL EXTENSION LANDFILL PIEZOMETERS - #
- SETTLEMENT PLATES - #
- INCLINOMETERS - #

NOTES:
1) INSPECT, MONITOR AND MAINTAIN THE ACTIVE SAA SLOPE INCLINOMETERS AND PIEZOMETERS. IN ACCORDANCE WITH DOCUMENT MONPP-1301-REV.D. CURRENTLY ACTIVE INSTRUMENTS ARE PART OF THE CONTINUOUS MONITORING SYSTEM. MONPP-1301-REV.D PROVIDES DETAILED INFORMATION ON THE CONTINUOUS MONITORING SYSTEM.
2) SURFACE MONUMENTS, SI-2 AND SI-3 HAVE BEEN DECOMMISSIONED. SI-2 IS NEXT TO SM - 31 AT STATION 31+00. SI-4 THROUGH SI-8 ARE INACTIVE. TABLE 8 PROVIDES TOP OF CASING AND GROUND ELEVATION FOR INACTIVE SLOPE INCLINOMETERS.
3) A 4-FT X 4-FT CONCRETE PAD WAS CONSTRUCTED OVER SI-7 AND SURFACE MONUMENTS LOCATED AT THE PERIMETER DIKE ROAD.
4) DTE SURVEYING SERVICES SHALL PROVIDE INSTRUCTIONS AND GUIDELINES TO THE CONTRACTOR FOR ANY CONSTRUCTION ACTIVITY THAT REQUIRES HANDLING OF THE INSTRUMENTS AND THAT IS PERFORMED IN THE IMMEDIATE VICINITY OF THE INSTRUMENTS.
5) THE PLANT IS RESPONSIBLE FOR MAINTAINING AND RUNNING THE INSPECTION, MONITORING AND MAINTENANCE PROGRAM. ESO IS RESPONSIBLE FOR ASSISTING THE PLANT AS NEEDED.
6) INSPECT, MONITOR AND MAINTAIN THE ASH BASIN STRUCTURES IN ACCORDANCE WITH DOCUMENT MONPP-1301-REV. D.
7) THE ASH BASIN STRUCTURES HAVE BEEN INSPECTED, MONITORED AND MAINTAINED QUARTERLY FROM 2009 TO 2014. ALL QUARTERLY INSPECTION REPORTS HAVE BEEN COMPILED IN ANNUAL INSPECTION REPORTS. THE LONG-TERM INSPECTION, MONITORING AND MAINTENANCE PROGRAM STARTED IN 2015.
8) THE STORMWATER DISCHARGE PIPE OUTLET AT STATION 139+00 SHALL BE INSPECTED AND MAINTAINED REGULARLY SO THAT THE DISCHARGED STORMWATER FLOWS FREELY INTO THE ASH BASIN OPEN WATER AREA AND DOES NOT LOCALLY CAUSE A BUILD UP OF THE WATER LEVEL THAT COULD LEAD TO OVERTOPPING THE EMBANKMENT.
9) THE SLURRY DISCHARGE POINT SHALL BE INSPECTED AND MAINTAINED REGULARLY SO THAT THE SLURRY DISCHARGE FLOWS FREELY INTO THE ASH BASIN OPEN WATER AREA.
10) MAINTAIN THE MIDSLOPE STORMWATER DITCH AS NECESSARY IN ACCORDANCE WITH MONPP-1304.
11) THERE IS A STAFF GAUGE AT THE DISCHARGE STRUCTURE (IN NGVD29 DATUM). THE READING CORRESPONDS TO THE PZ-11 READING CORRECTED FOR BAROMETRIC PRESSURE.

N

0 200' 400'
SCALE IN FEET

TABLE 7. SUMMARY OF DOCUMENTS REFERRED TO IN THE OPERATIONS PLAN DRAWINGS

REPORT CONTENT	DOCUMENT #
ASH BASIN EMBANKMENT ASSESSMENT REPORT	MONPP–0089–09
TECHNICAL REPORT – MONROE FLY ASH DISPOSAL BASIN	MONPP–0144–77
INSPECTION MONITORING AND MAINTENANCE MANUAL	MONPP–1301–REV. D
2009 CONSTRUCTION COMPLETION REPORT	MONPP–0134–9
2010 CONSTRUCTION COMPLETION REPORT	MONPP–0113–10
2011 CONSTRUCTION COMPLETION REPORT	MONPP–0132–11
2012 CONSTRUCTION COMPLETION REPORT	MONPP–0129–12
2013 CONSTRUCTION COMPLETION REPORT	MONPP–0147–13
2017 CONSTRUCTION COMPLETION REPORT	MONPP–PCR–0001–17
2019 DRAFT CONSTRUCTION COMPLETION REPORT	–
DECOMMISSIONED DISCHARGE PIPES INSPECTION REPORT	MONPP–0143–12
DECOMMISSIONED DISCHARGE PIPE ABANDONMENT PROCEDURE	MONPP–0146–12
FUNCTIONAL SYSTEM DESCRIPTION FOR THE CONTINUOUS MONITORING SYSTEM	MONPP–FSD–0131
2017 FILL PLAN	MONPP–0154–15
GLOBAL STABILITY OF THE EXISTING EMBANKMENT – REV1	MONPP–0118–11
FUGITIVE DUST CONTROL PLAN	–
GEOTECHNICAL SITE CHARACTERIZATION REPORT	MONPP–0135–10
RAPID DRAWDOWN ANALYSIS	MONPP–0153–13
MIDSLOPE STORMWATER DITCH REPAIR PLAN	MONPP–1304
HISTORY OF CONSTRUCTION	MONPP–0205–21
HAZARD POTENTIAL LETTER	MONPP–0207–21
HYDRAULIC CAPACITY ASSESSMENT	MONPP–0206–21
SAFETY FACTOR ASSESSMENT	MONPP–0203–21
STRUCTURAL STABILITY LETTER	MONPP–0204–21
CREST STABILITY MEMO – REV. 3	MONPP–0201–18
CREST STABILITY MEMO FOR OFF–ROAD TRUCKS	MONPP–0208–21
EMERGENCY ACTION PLAN – REV.2	MONPP–0202–20

TABLE 7 (CONTINUED). SUMMARY OF DRAWINGS REFERRED TO IN THE OPERATIONS PLAN DRAWINGS

DRAWING CONTENT	DOCUMENT #
PROPERTY BOUNDARY FOR THE GREATER MONROE ASH BASIN AREA	0695–3MS–D
PROPERTY BOUNDARY AND PROPERTY INFORMATION FOR THE MONROE ASH BASIN AREA	0695–3MS–B
ACTIVE DISCHARGE STRUCTURE STOPLOG DETAILS	0695–A02–0198
ACTIVE DISCHARGE STRUCTURE DETAILS	0695–C–W–0056
ACTIVE DISCHARGE STRUCTURE DETAILS	0695–C–W–0057
FINAL DISCHARGE STRUCTURE DRAWING	0695–C–W–0056–1
DISCHARGE CHANNEL DETAILS	0695–C–W–0050
DECOMMISSIONED DISCHARGE STRUCTURE DETAILS	0695–A–H–0007–H
DESIGN DETAIL FOR ASH BASIN ACCESS ROAD AT STATION 38+00	0695–C–H–0148
PUMP HOUSE AS–BUILT DETAILS	0695–C–H–0200

TABLE 8. SUMMARY OF MANUAL SLOPE INCLINOMETERS FOR THE ASH BASIN EMBANKMENT

SI-#	TOP OF CASING (FT)	GROUND ELEV. (FT)
SI–4	615.1	614.5
SI–5	616.1	614.5
SI–6	616.7	614.9
SI–7	613.8	615.0
SI–8	616.9	614.5

Geosyntec consultants
134 NORTH LASALLE STREET, SUITE 300
CHICAGO, IL 60602, USA
(312) 658–0500

	PROJ.ENG.	PROJ.MGR.	DATE
D	OB	JS	11/15/21

2021 UPDATE

DETROIT EDISON APPROVALS		DATE
FOS GEN TECH ORG	-	-
	-	-
FOS GEN PLANT ENG	-	-
	-	-
DIST OPR	-	-
	-	-
PROJECT ENG	-	-
ENG COMP	-	-

OTHER APPROVALS		DATE
VERIFYER	-	-
ARCH	-	-
CIVIL	-	-
MECH	-	-
	-	-
ELEC	-	-
	-	-
I&C	-	-

	DATE
DESIGNED BY OB	12/14/12
DRAWN BY OB	12/14/12
CHECKED BY BFT/JPS	1/20/13
APPROVED BY JPS	2/8/13
PROJECT ENGINEER	
PROJECT MANAGER	

MADE BY	DATE	I&C	ELECT.
-	-	-	-
CHK BY	DATE	MECH.	APPROVED BY
-	-	-	

SIGNATURE

DATE

Vendor: GEOSYNTEC CONSULTANTS-CHE8242H3OP

OPERATIONS PLAN

The Detroit Edison Co. — Engineering

TITLE

INSTRUMENTATION AND INSPECTION PLAN

LOCATION NAME: MONROE POWER PLANT	UNIT NUMBER:
ORIGINATING SOURCE: ENGINEERING SUPPORT ORGANIZATION	SCALE: USE DIMENSIONS DO NOT SCALE
DRAWING NUMBER: 0695-C-H-0243-003-REV.D	

D:\DWG\D\DTE\MONROE ASH BASIN\2021 OPERATION PLAN DRAWINGS\INSTRUMENTATION PLAN

FIGURE 5. APPROXIMATE ALIGNMENT OF EXISTING DITCHES AND FLOW DIRECTIONS IN THE FLY ASH BASIN AREA

NOTES

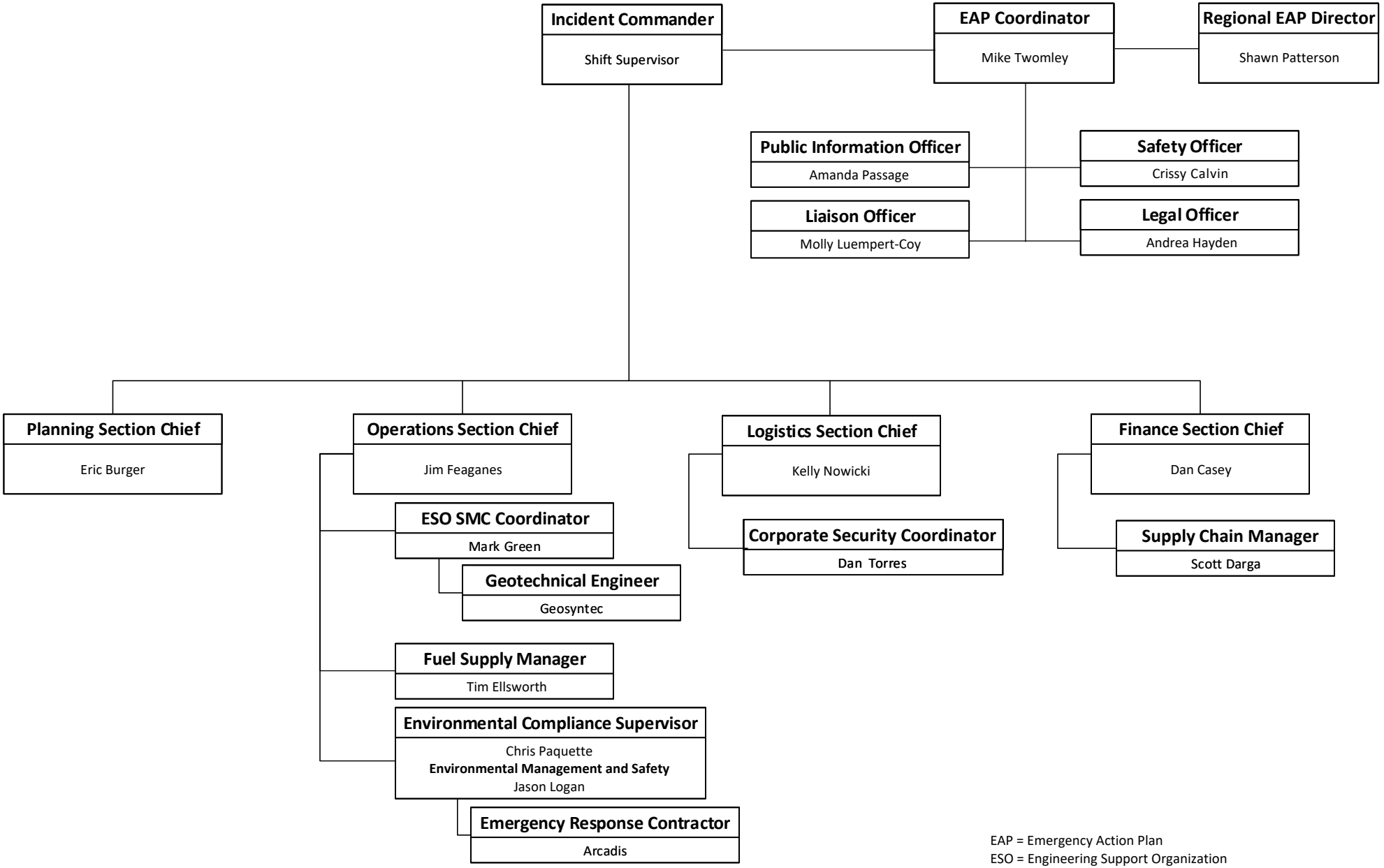
1) THE ALIGNMENT OF DITCHES PROVIDED IN THIS FIGURE WERE OBTAINED FROM THE SOURCES LISTED BELOW AND MAY NOT COVER ALL DITCHES THAT MAY EXIST IN THE AREA SURROUNDING THE ASH BASIN. DTE SHALL PERFORM A FURTHER STUDY TO CAPTURE ALL DRAINAGE STRUCTURES IN THE AREA. THE SOURCES THAT WERE USE TO CREATE THIS FIGURE ARE:

- MONPP #0695-C-H-0088
- MONPP #0695-C-H-0087
- U.S. GEOLOGICAL SURVEY 2011 TOPOGRAPHIC MAP

Figure 6. A.17 Environmental Release Crisis Event

ICS Organization Chart

A complete list of contact information is listed on Table 1.



EAP = Emergency Action Plan
ESO = Engineering Support Organization
ICS = Incident Command System
SMC = Surveillance Monitoring Committee

10/30/2024

Table 1. SUMMARY OF ROLES AND CONTACT INFORMATION												
	Main Contact							Alternate Contact				
Plant/Corporate Title	Person	EAP Title	ICS Title	Department	Office Phone Number	Cell Phone Number	Alternative Communication Method	Person	Department	Office Phone Number	Cell Phone Number	Alternative Communication Method
Plant Shift Supervisor	On-Duty Plant Shift Supervisor	Shift Supervisor	Incident Commander	MONPP Operations	734-384-2235	TBD	250 on plant phone - Emergency Line	Donald (Jim) Feaganes	MONPP Operations	734-384-2477	734-777-3713	donald.feaganes@dteenergy.com
MONPP Operations Manager	Donald (Jim) Feaganes	Operations Manager	Operations Section Chief	MONPP Operations	734-384-2477	734-777-3713	donald.feaganes@dteenergy.com	Dan Casey	MONPP Management	734-384-2207	248-202-2524	daniel.casey@dteenergy.com
Manager - MONPP Performance	Eric Burger	--	Planning Section Chief	MONPP Engineering	734-384-2135	734-735-8450	eric.burger@dteenergy.com	Joseph (Robby) Kuehnlein	MONPP Engineering Supervisor	734-384-2124	734-731-3113	joseph.r.kuehnlein@dteenergy.com
MONPP Admin Leader	Kelly Nowicki	--	Logistics Section Chief	MONPP Administration	734-384-2266	734-347-5031	kelly.nowicki@dteenergy.com	Susan Kozlowicz	MONPP Administration	734-384-2263	734-347-2689	susan.kozlowicz@dteenergy.com
Fuel Supply Manager	Tim Ellsworth	Fuel Supply Manager	Fuel Supply Manager	MONPP Fuel Supply	734-384-2219	734-776-3356	timothy.ellsworth@dteenergy.com	Dave Desbrough	MONPP Fuel Supply	734-384-2360	734-777-4822	david.desbrough@dteenergy.com
Safety Officer	Crissy Calvin	--	Safety Officer	MONPP Corp Safety	--	419-551-1712	cristen.calvin@dteenergy.com	Anthony Tarrance	MONPP Corp Safety	734-276-7990	734-276-7990	anthony.tarrance@dteenergy.com
MONPP Plant Manager	Dan Casey	Plant Manager	Finance Section Chief	MONPP Management	734-384-2207	248-202-2524	daniel.casey@dteenergy.com	Steve Stocker	ENS Controller Supervisor	313-235-5326	734-716-8131	steven.stocker@dteenergy.com
Corp Supply Chain Manager	Scott Darga	--	Supply Chain Manager	Corp Supply Chain	313-235-5787	586-943-3227	scott.darga@dteenergy.com	Jeffrey Conrad	Supply Chain	313-235-7432	313-549-8900	jeffery.conrad@dteenergy.com
Environmental Engineer	Jason Logan	EAP Coordinator Assistant	--	EM&S	313-897-0375	248-201-9921	jason.logan@dteenergy.com	Eric Molnar	EM&S	--	586-318-3814	eric.molnar@dteenergy.com
Environmental Technical Supervisor (Generation)	Chris Paquette	Environmental Compliance Supervisor	Environmental Compliance Supervisor	EM&S	--	810-728-5019	christopher.paquette@dteenergy.com	Jason Logan	EM&S	313-897-0375	248-201-9921	jason.logan@dteenergy.com
EM&S Matrix/Compliance Manager	Todd Baker	EAP Coordinator Assistant	--	EM&S	313-897-0714	734-545-4952	todd.baker@dteenergy.com	Chris Paquette	EM&S	--	810-728-5019	christopher.paquette@dteenergy.com
Arcadis	Andrea Krevinghaus	--	ERC	--	248-994-2282	810-841-1474	andrea.krevinghaus@arcadis.com	Terri Rubis	--	248-994-2242	248-890-8344	terri.rubis@arcadis.com
Taplin Group, LLC	Glen Szucs	--	ERC Operations	--	269-720-3424	313-999-0265	--	--	--	--	--	--
Environmental Restoration LLC	John Behrens	--	ERC Operations	--	708-473-7124	810-397-4823	--	--	--	--	--	--
Young's Environmental, Inc.	Donald Long	--	ERC Operations	--	800-496-8647	--	--	--	--	--	--	--
EM&S Remediation Manager	Rob Lee	SMC Member	--	EM&S	313-235-7815	248-225-7512	robert.lee@dteenergy.com	Chris Scieszka	EM&S CCR SME	313-235-0153	248-408-9855	christopher.scieszka@dteenergy.com
ESO Surveillance Monitoring Committee	Mark Green	ESO SMC Coordinator	ESO SMC Coordinator	ESO	313-484-0125	734-624-1088	mark.green@dteenergy.com	Nicholas Reidenbach	ESO	313-235-8829	734-249-3536	nicholas.reidenbach@dteenergy.com
Geosyntec Consultants	Clinton Carlson	Geotechnical Engineer	Geotechnical Engineer	--	313-209-5613	810-347-6375	ccarlson@geosyntec.com	John Seymour	--	312-416-3919	313-300-3245	jseymour@geosyntec.com
Plant Director	Mike Twomley	Plant Director	EAP Coordinator	MONPP Management	734-384-2203	313-320-7096	michael.twomley@dteenergy.com	Dan Casey	MONPP Management	734-384-2207	248-202-2524	daniel.casey@dteenergy.com
VP of ENS	Inderpal Deol	--	--	ENS/ESO Director	313-235-7802	313-655-8394	inderpal.deol@dteenergy.com	Mike Twomley	MONPP Management	734-384-2203	313-320-7096	michael.twomley@dteenergy.com
VP of EM&S	Shawn Patterson	VP of EM&S	Regional EAP Director	EM&S	313-235-7720	313-819-2417	shawn.patterson@dteenergy.com	Christy Clark	EM&S - Director	313-701-0623	313-701-0623	christy.clark@dteenergy.com
Legal Department	Andrea Hayden	Legal Department Director	Legal Officer	Legal	--	734-546-0179	andrea.hayden@dteenergy.com	--	--	--	--	--
Corporate Communication Manager	Amanda Passage	Public Information Officer	Public Information Officer	Corp Communication	313-235-9207	248-756-5608	amanda.passage@dteenergy.com	Chris Lamphear	Communications Manager	--	248-425-2331	christopher.lamphear@dteenergy.com
Regional Relations Manager - ENS/EM&S	Molly Luempert-Coy	Regional Relations Manager	Liaison Officer	Regional Relations	734-332-8155	313-820-3881	molly.luempert-coy@dteenergy.com	Barbara Rykwalder	Regional Affairs	734-397-4045	313-806-4586	barbara.rykwalder@dteenergy.com
Corporate Security	Dan Torres	--	Corp Security Coordinator	Security Operations	313-235-6736	734-771-7363	daniel.torres@dteenergy.com	Jeffery Robinson	Security Operations	734-384-2217	734-457-1303	jeffery.robinson@dteenergy.com

LOCAL AND STATE EMERGENCY AGENCIES												
	Main Contact							Alternate Contact				
Agency	Person	EAP Title	ICS Title	Department	Office Phone Number	Cell Phone Number	Alternative Communication Method	Person	Department	Office Phone Number	Cell Phone Number	Alternative Communication Method
Monroe County Emergency Management Division (MCEMD)	John Conlin	--	--	MCEMD	Emer. Phone Line 734-243-7070	--	--	--	--	--	--	--
Pollution Emergency Alerting System	--	--	--	--	800-292-4706	--	--	--	--	--	--	--
Monroe County Drain Commission (MCDC)	David Thompson	--	--	MCDC	734-240-3101	--	--	--	--	--	--	--
Michigan Environment, Great Lakes, and Energy (EGLE)	Elizabeth Brown	--	--	EGLE	517-284-6551	--	--	--	--	--	--	--
U.S. Army Corps of Engineers (USACE)	Shane McCoy	--	--	Regulatory	313-226-7732	--	--	Donald Reinke	Regulatory	313-226-6812	--	--
U.S. Environmental Protection Agency (EPA)	Jon Gulch	--	--	USEPA	734-214-4892	--	--	--	--	--	--	--
U.S. Coast Guard (USCG)	Herb Oertli	--	--	USCG	419-418-6048	--	--	USCG Detroit Sector	--	313-568-9560	--	--

CCR = Coal Combustion Residuals
EAP = Emergency Action Plan
EM&S = Environmental Management and Safety
ENS = Energy Supply
ERC = Emergency Response Contractor
ESO = Engineering Support Organization
ICS = Incident Command System
MONPP = Monroe Power Plant
SMC = Surveillance Monitoring Committee
SME = Subject Matter Expert

APPENDIX A

Crisis Response Process Coal Ash Pond Failure Communication Plan and Q&A

Crisis Response Process Coal Ash Pond Failure Communication Plan

General Information

Project Title	Crisis Response Process (CRP)- Coal Ash Pond Failure
Planner Name & Phone	Amanda Passage 248-756-5608 & Chris Lamphear 248-425-2331
Business Partner Name & Phone	Christy Clark – 313.701.0623
Business Partner Organization	Environmental Management and Safety

Background Summary

Project Summary	In preparation for each of the identified Crisis Response Processes (CRP), the lead director and the executive champion have agreed upon the details of a mock scenario that would test the readiness of each of the identified organizations within DTE that would have a role in addressing a crisis. This is one of the scenarios in which Corporate Communications would have a supporting role. This particular mock scenario suggests: • A catastrophic failure of the coal ash pond at the Monroe Power Plant.
Communication Objectives	• Provide information to protect the public • Provide accurate and relevant information about the company and/or the crisis event in order ensure proper context in any public or private discussions about DTE Energy • Control (to the extent possible) the dissemination of information about the scenario to the appropriate audiences identified by DTE Energy
Key Messages	• Safety is the number one priority for DTE; safety of our customers, our employees and the public. • We are investigating the circumstances that led to the event. • We are working with local and state authorities and first responders to secure the site, ensure the safety of everyone involved and mitigate any potential environmental impacts. • We will get to the bottom of this.
Measures	• Total number of favorable/neutral media inquiries within the first 24-48 hours of the event • Total number of favorable/neutral stories published over the life of the story/event • Total number of negative social media posts within the first 12-24 hours of the event • Number of media interviews granted

Risk Analysis	• Engage PR firm: If a designated Public Relations (w/ financial communications expertise) firm is not identified within 24 hours of an escalation of the event, there is a significant risk that DTE will lose initial "control" of the story and will likely be in a "defensive" posture. • Speaking for the company: There needs to be a determination within the process that determines who is authorized to speak to the public following an event like this. In this case, the Reputational Risk Process will account for the initial approach to responding to an event like this. The RRP will likely role up into a Crisis Management Process that will be directed by senior level executives of the company • Stock movement: Any significant injuries, loss of assets or deaths associated with the initial event could have an impact on the company's stock performance in the short term. There will need to be consideration of a stock or customized communication to identified stakeholders in response to the incident.

Q&A about Coal Combustion Residuals

What is coal ash?

-Coal ash is a produced from the burning of coal in coal-fired power plants. Coal ash produces a number of by-products from burning coal, including: Fly ash and bottom ash. Fly ash is a very fine powdery material, with a consistency similar to flour, composed mostly of silica, similar to sand. Bottom ash is a coarse, angular ash that forms in the bottom of the furnace. Other by-products of coal are: boiler slag, flue gas desulfurization material, fluidized bed combustion ash, cenospheres, and scrubber residues.(Environmental Protection Agency, 2015)

What do power plants do with coal ash?

-Coal ash can be recycled, disposed of or used in different ways depending on the type of by-product, the processes at the plant, and the regulations in place the power plant has to follow. The Monroe Power Plant stores its fly ash within its on-site Fly Ash Basin. (Environmental Protection Agency, 2015)

Why is coal ash reused?

-Reusing coal ash creates many different environmental, economic and product benefits. Environmental benefits include: reduced greenhouse gas emissions, reduces the need to dispose in landfills, and reduced use of other materials. Economic benefits include: reduced costs associated with coal ash disposal, increased revenue from the sale of coal ash, and savings from more cost efficient materials. Product benefits include: improved strength, workability, and durability of materials. (Environmental Protection Agency, 2015)

Is fly ash hazardous?

-Fly ash contains many inert substances and residual amounts of minerals that occur naturally in coal, such as arsenic, cadmium, lead, mercury, selenium. It is used in many building products like cement, mortar, stucco, and grout. Contact with wet coal fly ash does not present a serious health risk. Direct skin contact may cause localized irritation and breathing small amounts of fly ash for a short period of time is unlikely to be a health concern. Washing affected areas and removing and washing clothing are simple steps to take to remove the irritation. (Tennessee Valley Authority, 2013)

Are there hazards with skin contact with coal ash?

-Most people never touch coal ash. Skin contact is generally limited to power plant workers and those who produce cement, concrete, autoclaved aerated concrete or some other ash-based product. However, some highway departments use bottom ash for snow and ice control, leaving deposits on roads and in gutters where people or their pets might touch it or track it into their houses. Based on the experience of those who work closely with it, adverse health effects from skin contact with coal ash appear to be extremely unlikely. (American Coal Ash Association, 2014)

Is the air safe?

-Breathing airborne particulates including fly ash over long periods of time can irritate the respiratory system. People with existing lung diseases such as bronchitis, emphysema, and chronic obstructive pulmonary disease (COPD) should avoid breathing coal fly ash dust. (Tennessee Valley Authority, 2013)

What are the potential impacts to human health?

-As a precautionary measure, EPA recommends that people avoid direct contact with the coal ash, including contact with submerged or floating ash. If you make direct contact with coal ash, wash it off with soap and water. While coal ash in this situation is wet and unlikely to become airborne, in instances where coal ash is dry, it can become airborne and pose a potential health hazard if inhaled over a long period of time. (Environmental Protection Agency, 2015)

What are the potential impacts to wildlife?

-Fish, wildlife and other natural resources can be injured when hazardous substances enter the environment. A spill to a river ecosystem can impact aquatic life and animals in different ways. Coal ash can cover the habitat where animals live, or contaminants can potentially cause harm directly to aquatic life. (Environmental Protection Agency, 2015)

References

1) American Coal Ash Association, 2014 - *About Coal Ash, CCP FAQs*.

   Retrieved from http://www.acaa-usa.org/About-Coal-Ash/CCP-FAQs

2) Environmental Protection Agency, April 8, 2015 - *Frequently Asked Questions (FAQs) about the Duke Energy Coal Ash Spill in Eden, NC*.

   Retrieved from http://www2.epa.gov/dukeenergy-coalash/frequently-asked-questions-faqs-about-duke-energy-coal-ash-spill-eden-nc

3) Tennessee Valley Authority, December 5, 2013 - *Kingston Ash Release, Frequently Asked Questions*.

   Retrieved from http://www.tva.gov/kingston/faq.htm

APPENDIX B

Initial Hazard Potential Assessment

Geosyntec consultants

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FAX 312.658.0576
www.geosyntec.com

17 October 2016

Via Email

Mr. William Neal, P.E.
Technological Specialist
DTE Electric Company
One Energy Plaza
Detroit, MI 48226

Subject: Initial Hazard Potential Assessment
Monroe Power Plant Ash Basin Facility
Monroe, MI

Dear Mr. Neal:

This letter presents Geosyntec Consultants' (Geosyntec's) hazard potential assessment for DTE Electric Company's (DTE's) Monroe Power Plant Ash Basin (Ash Basin).

BACKGROUND

A hazard potential classification of the Ash Basin is required under the United States Environmental Protection Agency (USEPA) Coal Combustion Residual Rule (CCR Rule) published on 17 April 2015 40 CFR 257.73(a)(2). Under the CCR Rule, the Ash Basin is an "existing surface impoundment" and its hazard potential must be assessed and certified by a Qualified Professional Engineer.

The CCR Rule requires an owner to document the hazard potential of each CCR unit as either of the following:

- *High Hazard Potential—Dams assigned the high hazard potential classification are those where failure or mis-operation will probably cause loss of human life.*
- *Significant Hazard Potential—Dams assigned the significant hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environment damage, disruption of lifeline facilities, or impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas, but could be located in areas with population and significant infrastructure.*

- *Low Hazard Potential—Dams assigned the low hazard potential classification are those where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.*

The FEMA guidance document[1] that was used by USEPA further states the following:

- *"…The classification assigned should be based on the worst-case probable scenario of failure or mis-operation of the dam, i.e., the assigned classification should be based on failure consequences that will result in the assignment of the highest hazard potential classification of all probable failure and mis-operation scenarios…"*

This letter provides the hazard potential classification and the rationale behind the classification.

SITE CHARACTERISTICS

The Ash Basin is about 331 acres in plan area and is located in Section 16, Township 7 South, Range 9 East, of Monroe Township, Michigan shown on Figure 1. The containment embankment was constructed by excavation of native clay subsoils and placing the clay in controlled lifts and compacted to a standard specification. The native subsoils are consistent clay soils extending down 30 to 50 ft below ground surface. The embankment is 14 to 46 ft high with a consistent crest elevation of approximately 614.5 ft (National Vertical Geodetic Datum/NGVD, 1929). The outer slopes range from approximately 2 horizontal to 1 vertical (2H:1V) to 2.5H:1V. The inner slopes are approximately 2H:1V. In addition, there is a submerged center dike, approximately in the middle of the Ash Basin (see Figure 1), which has a crest elevation of approximately 592.4 ft.

The surface impoundment (Ash Basin), is licensed under Michigan Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 License No. 9393, issued on 12 June 2014. CCRs are placed in the Ash Basin by use of a "wet" (sluiced) disposal method. As the ash settles, the remaining sluice water is ultimately discharged under a National Pollutant Discharge Elimination System (NPDES) permit issued by the MDEQ (Permit No. MI0001848).

[1] FEMA (2004). "Federal Guidelines for Dam Safety – Hazard Potential Classification System for Dams", FEMA-333, Federal Emergency Management Agency (FEMA).

There are residents along the northern side of the facility and I-75 is located to the west as shown on Figure 1. To the south lies farm fields and Waters Edge Road, a paved road leading to a boat launch facility. To the south of Waters Edge Road is the Knabusch Mathematics & Science Center. To the east of the facility lies Lake Erie; there are no habitable structures and no public roads to the east and southeast.

FAILURE MECHANISM ASSESSMENT

DTE conducted a Potential Failure Mode Analysis (PFMA) in 2010 and 2011 to identify potential failure modes. Subsequently, mitigation of the potential failure modes was completed over the subsequent five years and the stability and operation of the embankment have been improved making it difficult to identify the potential failure mode for the hazard potential classification.

Regardless, determining the hazard potential classification is required. The "worst-case probable scenario of failure or mis-operation of the dam..."[2] was identified and a dam breach analysis was conducted to evaluate the hazard potential.

It is important to note that the hazard potential classification does not necessarily imply that the unit has inadequate structural integrity, or the potential for actual dam failure. The hazard potential assessment is performed to qualitatively classify the consequences of a dam failure, not the probability of that dam actually failing. No matter how failure resistant the dam is to misoperation or failure, the hazard potential assessment assumes that it will somehow fail.

The three potential failure modes that were considered are those caused either by "piping" (seepage through the embankment that causes internal erosion leading to collapse), slope stability failure of the embankment, and overtopping.

During construction that occurred from 2009 through 2013, the face of the embankment was exposed and inspected, and seepage was not detected. During subsequent inspections conducted from 2009 through the September 2016, seepage through the embankment was not detected. Therefore, failure due to seepage is not the "worst-case probable scenario" of failure.

[2] FEMA (2004). "Federal Guidelines for Dam Safety – Hazard Potential Classification System for Dams", FEMA-333, Federal Emergency Management Agency (FEMA).

The stability of the embankment has been studied extensively from 2009 through September 2016. The embankment meets all of the minimum factors of safety required by the CCR Rule. Therefore, failure due to slope stability is not the "worst-case probable scenario" of failure.

The potential for overtopping was evaluated. Based on hydraulic analysis conducted to assess the hydraulic capacity of the spillway, it was clear that normal (non-rainfall) operating conditions would not cause overtopping. Therefore, flood flow conditions were assessed.

Based on hydraulic analysis conducted to assess the hydraulic capacity of the spillway, only the probable maximum flood (PMF), defined as the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in a particular drainage area, could possibly cause overtopping and only if the spillway pipes were blocked and pump operations into the basin continued during the storm.

Therefore, it was concluded that the "worst-case probable scenario" of failure would occur as a result of a blockage of the spillway discharge pipes at the start of the PMF. It is recognized that DTE has modified the spillway structure and operation practices to maintain the maximum water level in the impoundment to alleviate even a complete blockage of the spillway. Therefore, even an overtopping incident would be unlikely.

The location of the overtopping and subsequent breach was assessed. The elevation of the crest of the embankment is relatively consistent around 614.5 ft with a low elevation of 613.0 ft along the eastern side at approximately Station 165 as shown on Figure 1. That area of the embankment is also one of the highest areas with a height of 45 ft above the toe. The low point at Station 165 was selected as the point of overtopping.

DAM BREACH ANALYSIS

A Dam Breach Analysis using HEC-RAS 2D (HEC-RAS 5.0.1, 2016) was conducted assuming an impounded water surface elevation of 613.0 ft as a result of the PMF storm and blockage of the spillway discharge pipes. The inundation analysis and mapping conservatively assumes the impounded fly ash will flow equally as the impounded water; as such, the full volume of fly ash and water above the toe of the embankment will be released within the area east of the center dike, while the fly ash and water west of the center dike will flow until it reaches to the top of center dike. The probable maximum flood (PMF) as defined by FEMA[3] was evaluated

[3] FEMA (2004). "Federal Guidelines for Dam Safety – Hazard Potential Classification System for Dams", FEMA-333, Federal Emergency Management Agency (FEMA).

using HEC-HMS to estimate the resulting water surface elevation from the PMF and the blockage of the spillway discharge pipes. Both HEC-RAS 2D and HEC-HMS are programs developed by the U.S. Army Corps of Engineers (USACE) and are accepted models for performing dam breach and inundation studies. The maximum depth of inundation and velocity of water from the embankment breach analysis are presented on Figures 2 and 3.

The areas that are shown to be inundated have no habitable structures and no public roads. The only possibility for the presence of people would be temporary workers at the facility and the occasional fisherman. FEMA does not take into account improbable (transient) loss of life, such as that of a recreational user, passer-by or occasional, non-overnight user of the downstream area (FEMA 2004). Consequently, there would not be probable loss of life due to the embankment breach.

Misoperation or failure at Monroe results in no probable loss of human life, but can cause economic loss, environment damage, disruption of lifeline facilities, or impact other concerns.

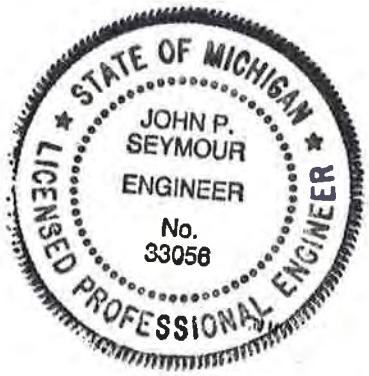
QUALIFICATIONS OF LICENSED PROFESSIONAL ENGINEER

John Seymour is a qualified licensed professional engineer with over 30 years of experience in civil and geotechnical engineering associated with dams.

CERTIFICATION

I, John Seymour, am a qualified licensed professional engineer in Michigan have evaluated the Ash Basin and conclude that the Ash Basin has a ***significant hazard potential*** rating because the worst-case probable failure scenario would probably cause significant environmental impacts but no loss of life. I certify that this hazard potential classification is provided in accordance with the requirements of 40 CFR 257.73(a)(2).

Certified by:



John Seymour Date 10/17/2016

John Seymour, P.E.
Michigan License Number 620103356
Senior Principal

Attachments: Figure 1 through 3

Copy to: Mark Green (DTE)

FIGURES

Monroe Ash Basin and Surrounding Features

Monroe Ash Basin Hazard Potential Classification October, 2016	Geosyntec consultants / DTE Energy	Figure 1

G:\CWP\CHE8242-Detroit Edison\500 - Technical\502 Ash Pond Stability\502-13 Structural Stability & Hydraulics Assessment\Reports Requested by DTE\Hazard Potential Letter

FIGURE 2: INNUNDATION MAP

DETROIT EDISON ASH BASIN DAM FAILURE

LOCATION MAP

LEGEND

Maximum Depth (feet)

< 0.5	4 - 5	12 - 13
0.5 - 1	5 - 6	13 - 14
1 - 2	6 - 7	14- 15
2 - 3	7- 10	15 - 16
3 - 4	10 - 12	> 16

- Ash Basin Embankment
- Limits of Analysis
- Access Roads
- 3.4 ft Local Depth Value

The method used to develop inundation zones are approximate. Actual areas inundated will depent on actual failure and pre-failure hydrologic conditions and may differ significantly from information shown on maps.

Geosyntec consultants

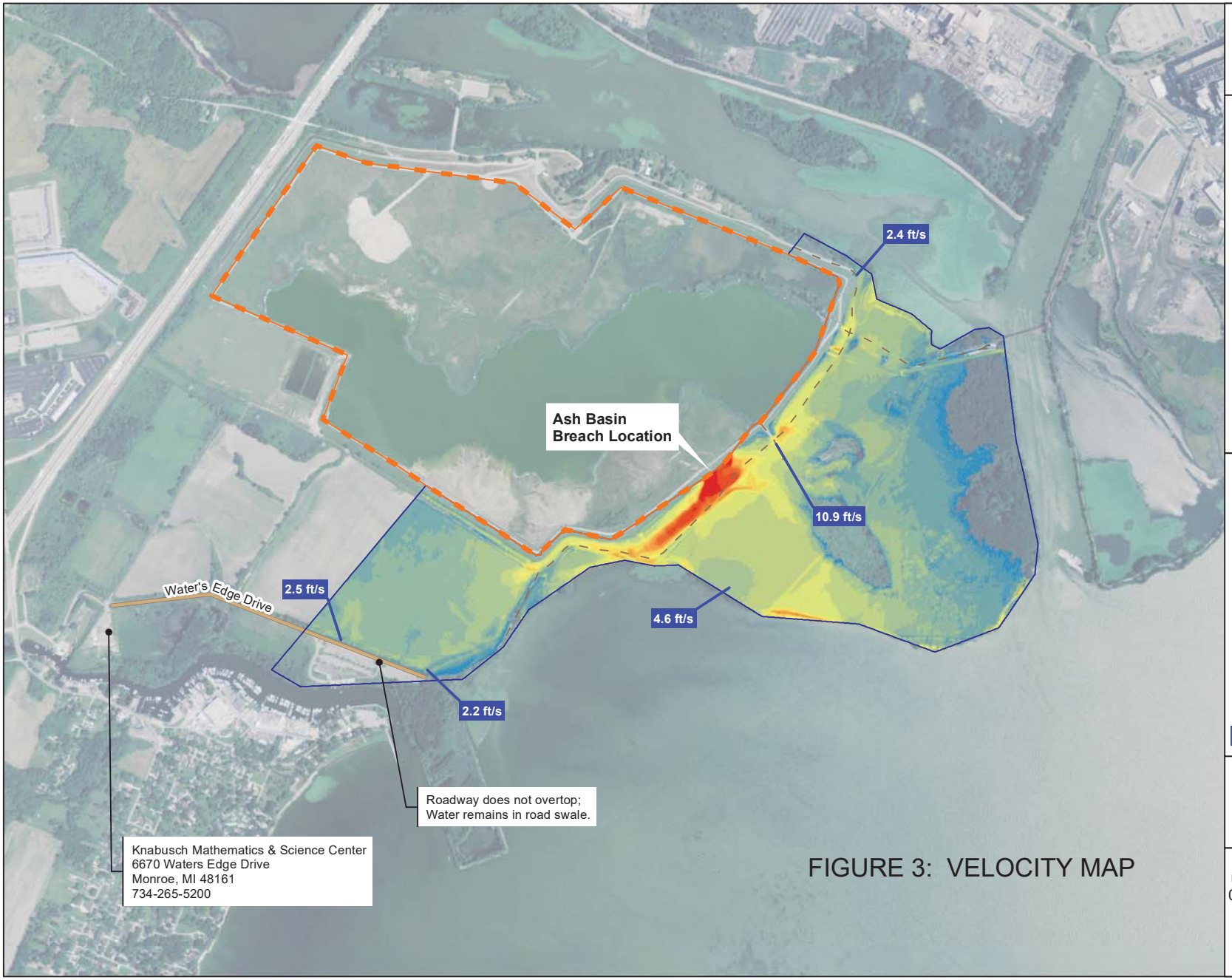
23-Sep-2016

Feet

0 500 1,000 2,000 3,000

Meters

0 100 200 400 600



DETROIT EDISON ASH BASIN DAM FAILURE

LOCATION MAP

LEGEND

Maximum Velocity (feet/second)

< 0.5	5 - 7	17 - 20
0.5 - 1	7 - 10	20 - 22
1 - 2	10 - 12	22 - 25
2 - 3	12 - 15	25 - 30
3 - 5	15 - 17	> 30

- Ash Basin Embankment
- Limits of Analysis
- Access Roads
- 3 ft/s Local Velocity Value

The method used to develop inundation zones are approximate. Actual areas inundated will depent on actual failure and pre-failure hydrologic conditions and may differ significantly from information shown on maps.

Geosyntec consultants

23-Sep-2016

Feet

0 500 1,000 2,000 3,000

Meters

0 100 200 400 600

FIGURE 3: VELOCITY MAP

APPENDIX C

Inspection, Maintenance and Monitoring Manual

Prepared for

DTE Electric Company
One Energy Plaza
Detroit, Michigan 48226

INSPECTION, MONITORING AND MAINTENANCE MANUAL

MONROE POWER PLANT

FLY ASH BASIN AND VERTICAL EXTENSION LANDFILL

Monroe, Michigan

Prepared by

Geosyntec consultants

Geosyntec Consultants of Michigan

3011 W Grand Blvd, Suite 2300
Detroit, Michigan 48202

CHE8242Y

REV. E – December 2024

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1. INTRODUCTION

1.1 Overview

This Inspection, Monitoring, and Maintenance Manual (IMMM or Manual) was prepared by Geosyntec Consultants of Michigan, Inc. (Geosyntec) for DTE Electric Company (DTE). The Manual provides the inspection, monitoring, and maintenance program details for the Monroe Power Plant (MONPP) Fly Ash Basin (FAB) and the Vertical Extension Landfill (VEL).

This Manual was prepared in accordance with DTE's operational procedures and the U.S. Environmental Protection Agency (USEPA) coal combustion residual (CCR) solid waste disposal rules (40 CFR §257) published on 17 April 2015, and as amended on 30 July 2018 (CCR Rule). The FAB is considered an "existing CCR surface impoundment" under the CCR Rule. The VEL is a dry landfill under the CCR Rule.

The FAB and VEL are considered separate CCR units; however, they are operated with the same Operating License No. 9579 under the Michigan Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994. The FAB is a CCR surface impoundment, and the VEL is a CCR landfill. The FAB and VEL are referenced together herein as the Facility. The Facility is approximately 410 acres, of which the FAB has a footprint of 331 acres and the VEL has a footprint of 79 acres. The Facility has gates on the north and south sides with approximate addresses:

South – 6723 Waters Edge Dr, Monroe, MI 48161

North – 8206 East Dunbar Rd, Monroe, MI 48161

This Manual should be used in conjunction with the Operations Plan Drawings 0695-C-H-0243-001 – Rev. E, 0695-C-H-0243-002 – Rev. E, 0695-C-H-0243-003 – Rev. E, 0695-C-H-0243-004 – Rev. E, and 0695-C-H-0243-005 – Rev. E. Further, this Manual references the documents that are pertinent to the FAB and the VEL by their number in DTE's Documentum system. These DTE documents are summarized in **Table 1-1**.

1.2 Background Information

1.2.1 Fly Ash Basin

The FAB was constructed in the early 1970s by first excavating the ground to approximately 10 feet below ground surface (ft bgs) over the current footprint of the FAB. The embankment along the perimeter of the FAB was constructed utilizing soil excavated from the footprint of the FAB. The embankment is 3.5 miles long with a height of 14 to 45 feet (ft). The original embankment was constructed with approximately two-horizontal-to-one-vertical (2H:1V) interior and exterior side slopes.

The embankment exhibited surface sloughing and erosion during its service life starting in 1976, and repairs were periodically completed. Document #MONPP-0089-09 provides more information on the timeline of surface sloughs, erosion features, and how they were evaluated and mitigated.

In 2005 the Michigan Department of Environmental Quality (MDEQ), now the Michigan Department of Environment, Great Lakes and Energy (EGLE), noted in their quarterly inspection reports that the sloughing on certain portions of the embankment needed to be repaired. DTE noted EGLE's observations and later retained a consulting firm to evaluate the sloughing problems.

In 2008, DTE received a letter from ELGE discussing the necessary repairs, and DTE replied to EGLE, indicating that DTE concurred with the necessity for the repairs and would begin a repair program in 2009.

In 2009, DTE retained Geosyntec to assess the embankment and design mitigation measures. Since 2009, DTE has mitigated the FAB embankments. Drawings 0695-C-H-0243-001 – Rev. E and 0695-C-H-0243-002 – Rev. E provide more information on the extent and the type of mitigation measures completed from 2009 through 2019.

DTE has performed short-term inspection, monitoring, and maintenance of the embankment on a quarterly basis pursuant to the monitoring and maintenance program submitted to EGLE in June 2009. Document #MONPP-0087-09 provides more information on DTE's commitment to the IMMM. DTE performed quarterly inspections for nine months after the end of the 2013 construction. Beginning in 2015, DTE began performing annual inspections based on the guidance provided in this Manual, which is based on the CCR Rule.

1.2.2 Vertical Extension Landfill

In 2015, DTE permitted the VEL to dispose of CCR on a liner system installed above the FAB. In 2015, DTE constructed an approximately 11-acre cell of the VEL, referred to as Phase 1, above the existing FAB. A completion report was submitted and approved by the MDEQ in 2015. The remaining 68 acres of the liner system, referred to as Phase 2, was substantially completed in October 2017, and the completion report was approved by the MDEQ in January 2018.

1.3 Purpose

The purpose of this Manual is to provide guidelines for the routine IMMM for the FAB and VEL. The objective of the routine IMMM is to detect conditions that may potentially cause the unsatisfactory performance of the Facility components (i.e., embankment, pump house, roads, discharge structure, etc.) and take the necessary actions in a reasonable period of time after they are noted so that these unsatisfactory conditions do not become a threat to the stability of the FAB embankment or VEL over time. This is accomplished based on performing and documenting periodic visual inspections of the Facility and monitoring of surface and subsurface instrumentation.

1.4 Report Organization

The remainder of this report is organized as follows:

- Section 2 provides information on the roles and responsibilities of specific parties for the routine IMMM.
- Section 3 provides general information on the inspection activities and lists detailed inspection activities.
- Section 4 provides general information on the instrumentation monitoring system, describes responsible personnel, action levels, and specific action items.

- Section 5 provides information on waste disposal volume tracking for the FAB and VEL and recommendations for further stability analysis if the FAB water level is drawn down below the normal pool elevation.
- Section 6 describes procedures for implementing typical maintenance activities, action level criteria, and material specifications.
- Section 7 describes procedures for documenting structural stability assessment of the FAB.
- Section 8 summarizes reporting and archiving responsibilities.

1.5 Terms of Reference

Revision E of this Manual was prepared by Clinton Carlson, Ph.D., P.E. of Geosyntec with contributions from DTE personnel. The review was completed by John Seymour, P.E. of Geosyntec.

2. ROLES AND RESPONSIBILITIES

2.1 Fuel Supply

The Fuel Supply organization is responsible for implementing the IMMM. It is the Fuel Supply organization's responsibility to assign appropriate organizations to inspect, monitor, and maintain the IMMM. Fuel Supply may subcontract with an Emergency Response Contractor to implement actions as described herein.

2.2 Surveillance Monitoring Committee (SMC)

The Surveillance Monitoring Committee (SMC) supports Fuel Supply in implementing the IMMM. The SMC is managed by the Engineering Support Organization (ESO) SMC Coordinator. The SMC is responsible for the preparation of the reports summarizing the results of the routine IMMM and archiving all related documents. Furthermore, all construction, engineering, maintenance, monitoring/inspection, and operation decisions regarding the FAB and VEL should be made after consulting with and upon approval of the SMC.

The following organizations are part of the SMC and provide assistance in implementing the IMMM.

- ESO – Fossil Generation
- Environmental Management and Safety (EM&S)
- MONPP Plant Operations
    - Includes Control Room Operator, Outside Rounds Operator, and Shift Supervisor (MONPP Job Instructional Training (JIT) B-18-012-Env and B-18-013-Env for roles and responsibilities)
- Civil Subject Matter Expert (SME)
- Geotechnical Engineer

3. VISUAL INSPECTION

Two types of visual inspection shall be performed for both the FAB and VEL per the CCR Rule: (i) weekly inspection by a qualified person[1] per §257.83(a); and (ii) annual inspection by a qualified professional engineer[2] per §257.83(a). In addition, daily inspections of the FAB should be performed by the Outside Rounds Operator in accordance with the National Pollution Discharge Elimination System (NPDES) Permit for the Facility.

3.1 Daily Inspection

Daily inspections of the FAB and VEL are performed by the Outside Rounds Operator. The inspection should be documented in NPDES form DE 963-4313 12-79CS. Inspection of the following items is required in accordance with JIT B-18-013-Env.

- Facility roadways
- Fugitive dust or windblown CCR
- FAB embankment (i.e., erosion/sloughing)
- Vacuum Breaker house
- Discharge structure (**Figure 3-1**) and water level. The water level in the FAB should be below elevation (El.) 609 ft [3], measured on the staff gauge at the discharge structure.
- Weir discharge into Plum Creek
- Final discharge point into Plant Discharge Canal, then to Lake Erie
- Pumphouse and pumps
- Perimeter fence and gates

If unsatisfactory conditions are observed, the Outside Rounds Operator must contact the Shift Supervisor.

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[1] A "qualified person" is defined in §257.53 as "…a person or persons trained to recognize specific appearances of structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit by visual observation and, if applicable, to monitor instruments."

[2] A "qualified professional engineer" is defined in §257.53 as "…an individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make specific technical certifications under this subpart. Professional Engineers making these certifications must be currently licensed in the state where the CCR unit(s) is located.".

[3] All elevations provided in this manual are in the National Geodetic Vertical Datum of 1929 (NGVD29).

3.2 Weekly and Annual Inspections

Weekly inspections shall be performed on a weekly basis and results recorded on the inspection forms provided in **Appendix A** and **Appendix B** for the FAB and VEL, respectively. Weekly inspections shall be performed by a qualified person. Geosyntec initially trained the inspectors, and records are maintained by DTE. As these inspectors change over time, it is DTE's responsibility to train the new inspectors either with the help of the incumbent DTE inspectors or by a professional engineering firm with experience with similar facilities. Weekly inspection shall also include precipitation measurements recorded from rain gauge located at the Facility entrance.

The annual inspection shall occur each year[4] and preferably in early spring. The inspection shall be performed after the snow has melted and when there is no standing rainwater or meltwater on the slopes, and prior to the development of grasses that could inhibit visual observation of the surface of the embankment. Visual inspection results shall be recorded on the inspection forms provided in **Appendix A** and **Appendix B** for the FAB and VEL, respectively. Photos from the annual inspections for each unit should be recorded in the photo log form in **Appendix C**.

At a minimum, the inspection activities should cover the items described in the following sections. Anything out of the ordinary that is observed shall be recorded and repaired, as appropriate. All items that require maintenance shall be flagged while the inspector is on site, and their exact locations shall be described in the inspection forms. In addition, the inspector shall prepare a work order and enter it into Maximo.

3.2.1 Fly Ash Basin

3.2.1.1 Embankment & Toe Ditch

The embankment and toe ditch shall be inspected for the items listed below.

- Erosion features such as rills and gullies. Record the size and extent of erosion features.
- Toe ditch for sediment buildup and general condition. The conditions of areas upstream/upslope of where sediment buildup is observed in the toe ditch should be carefully documented. Record the vegetation density, the extent, and turbidity of standing water because turbid water can be a sign of erosion occurring upstream. Record anomalous flowing water along sections of the toe ditch where the grade is near horizontal (e.g., between Stations 139+00 and 181+00).
- The condition of the toe drain. If sediment buildup is observed in the toe drain, carefully document the embankment conditions at that location.
- The condition and type of vegetation. Identify areas that have sparse or no vegetation and areas where undesirable vegetation exists. Desirable vegetation includes grass species such as annual

[4] An annual inspection by a qualified professional engineer is required by §257.83(b) of the CCR Rule. The date of completing the subsequent annual inspection reports is based on the date of completing the previous annual inspection report. Per §257.83(b)(4)(ii), if the annual inspection occurs in the same calendar year as the structural stability assessment is performed (see Section 6 of this report for more information on structural stability assessment) the annual inspection is not required.

rye, little bluestem, and side-oats gramma. Undesirable vegetation includes Canada Thistle, Teasel, Mullein, shrubs, and trees. **Appendix D** provides photographs of different types of vegetation.

- Animal burrows and trails. Record the extent of animal impacts.
- Possible seep areas on the embankment slope. Record any areas that are substantially wetter than the surrounding area.
- Sloughs. If observed, measure the extent and depth of the slough, and provide detailed information on the embankment condition. Record any nearby hummocks or valleys that would indicate the effects of the sloughs.
- Ground cracks. If observed, measure the extent and depth of the cracks and provide detailed information on the embankment condition and a photograph.
- Culverts. Check for sediment buildup and their general condition. Culvert locations are provided on Drawing 0695-C-H-0243-001 – Rev. E.
- Riprap stormwater downchutes for sediment buildup and their general condition. If pea gravel is observed in the downchutes, carefully document conditions of the mid-slope ditch that drains into that downchute. Document any loss of ground around or below the mid-slope ditch.

3.2.1.2 Mid-slope Stormwater Conveyance Structures (Mid-slope Ditch and Mid-slope Trench)

Inspect the mid-slope stormwater conveyance structures including discharge sections and riprap downchutes that convey stormwater to the toe ditch for the items listed below.

- Shifting of the mid-slope ditch sections such as uplift and rotation.
- Gaps between mid-slope ditch sections and adjacent soil.
- Mid-slope ditch anchor condition and report if they are loose.
- The integrity of aggregate in mid-slope trench.
- Sediment buildup.
- Conditions of lateral drains, vehicle crossings (mid-slope ditch crossings) and record any erosion features. Record the size and extent of the erosion features.
- Condition of culverts underneath the mid-slope ditch crossings.
- Condition of mid-slope trenches and if any of the buried pipes are exposed.

3.2.1.3 Roads

Inspect all roads, including the lower perimeter road, the upper perimeter road on the embankment crest, the asphalt haul road, and access ramps between the lower and upper perimeter roads for the items listed below.

- Erosion features such as rills or gullies. Record the size and extent of the erosion features.
- Localized low spots, settlement, tire ruts, and potholes on the upper perimeter road, the lower perimeter road, and access ramps that may cause concentrated surface water flow and or

saturation of the embankment slopes. Note that areas of settlement filled in repeatedly are likely indications of ongoing subsurface movement and should be further investigated.

- All tire ruts and potholes. Record the size and extent of tire ruts and potholes.
- Dust control. Monitor whether effective dust control is being used on Facility roads. Water or a dust suppression agent (e.g., Dustabate) may be used to control off-site migration of dust.
- Cracks. Record the size, alignment, and extent of cracks. If there is a crack in the upper perimeter road, carefully document the condition of the nearby embankment as cracks on the embankment crest may be a sign of slope instability.
- Traffic control. Controls (i.e., guard rails, Jersey barriers, etc.) are required along the top of the embankment, where there is constant truck traffic. Controls shall be located so that trucks are at least 4 ft away from the edge of the embankment. Inspect if controls are implemented along such routes and if they provide an adequate offset.

3.2.1.4 Discharge Structure and Discharge Channel

Inspect the discharge structure and discharge channel at Station 179+00 for the items listed below.

- Inlet trash screens for clogging and damage.
- Vegetation in the discharge structure.
- Alignment of stop logs and general condition of the materials.
- The water level in the discharge structure using the existing staff gauge.
- Components of stop log lifting equipment, including chains and pulley system. Verify that the stop logs can be lowered to cut off the flow.
- The general condition of concrete between stop logs.
- Sheetpile wall for deformation or corrosion.
- Steel supports of the discharge structure for deformation and corrosion and any separation/failure of welds.
- Stairway and walkway for accessibility.
- The general condition of the outlet structures in the discharge channel. Record weathering of the concrete.
- Vegetation in discharge channel (from the outlet structure to the downstream culvert, Drawing 0695-C-H-0243-001 – Rev. E).
- Discharge channel for erosion such as rills or gullies (from the outlet structure to culvert, Drawing 0695-C-H-0243-001 – Rev. E). Record the size and extent of erosion features.
- Check the condition of booms in the downstream discharge channel and record the extent of cenospheres if they are present.
- Check the general condition of the weir structure downstream of the discharge channel.
- Check the embankment for signs of discharge pipe leakage.

3.2.1.5 Pump House

Inspect the pump house by the embankment toe at Station 139+00 for the items listed below.

- Pump house screens for clogging or damage.
- Pumps and float switches to ensure they are in working condition by adjusting float switches momentarily to turn the pumps on and off.
- Light fixtures.
- The general condition of the pump house structure, stairs and access grating.
- Spinning air exhaust vent screen.
- Electrical conduit integrity.
- The general condition of the discharge pipe and pipe foundations. Record corrosion of the discharge pipe and foundations and concrete deterioration.
- Stormwater discharge point in the FAB for any obstruction that may cause discharged water to overtop the embankment crest.

3.2.1.6 Discharge Structure Pipes

Visual inspection of discharge pipes through the existing embankment shall be completed[5] annually using video camera.

3.2.1.7 Environmental (Climate) Monitoring

Monitor and record the amount of precipitation using the rain gauge located at the north gate. Record temperature and wind conditions on weekly inspection sheets.

3.2.2 Vertical Extension Landfill

3.2.2.1 Perimeter Berm and Swales

Inspect the perimeter berms and drainage swales around the VEL for the following items.

- Erosion features such as rills and gullies. Document the size and extent of erosion features.
- The condition and type of vegetation. Document areas that have sparse or no vegetation. Document areas, where woody vegetation exists.
- Animal burrows and trails. Document the extent of animal impacts.
- Possible seep areas on the berm slope. Document any areas that are substantially wetter than the surrounding area.
- Drainage of the perimeter swales and discharge pipes for the Porewater Relief Layer (PRL). Identify whether stormwater is contained within the swales and whether the PRL discharge pipe

[5] Per §257.83(b)(iii) of the CCR Rules.

outlets are above the water level in the swales. Monitor and document PRL discharge pipes for flow and sediment.

3.2.2.2 Fill Area

Document areas on the VEL surface, where stormwater collects and does not drain.

3.2.2.3 Dust Control

Visually inspect access roads and VEL for fugitive dust. Implement dust control measures as necessary in accordance with the approved Fugitive Dust Control Plan to control off-site migration of dust.

3.2.2.4 Environmental (Climate) Monitoring

Document results obtained through environmental monitoring conducted as part of Section 3.2.1.7.

4. INSTRUMENTATION MONITORING

Geotechnical instrumentation utilized for monitoring the Facility consists of inclinometers, piezometers, and settlement plates along with a climate monitoring station[6]. Some of these instruments are monitored manually, and some of them are monitored using a continuous monitoring system. Instrumentation data is compiled by Geotechnical Engineer and provided to other SMC members within the last week of each month. A conference call is held among SMC members bi-monthly.

Monitoring program details, alarm levels, notification procedures, and alarm response details are provided in this section.

4.1 Continuous Monitoring System

The continuous instrumentation monitoring system consists of geotechnical instrumentation, including Shape Accel Array (SAA) inclinometers and vibrating wire piezometers (piezometers). SAA inclinometers are located within the FAB embankment, and piezometers are located within the VEL footprint and at the discharge structure.

The instruments are connected to data loggers, which collect readings approximately every six hours and store the data for remote collection by an online server. On-site modems are used to transmit data through a cellular connection to the online server where the data is stored, processed, and visualized for interpretation by the SMC. The data is hosted on online servers by Geosyntec and processed by eagle.io[7]. The data can be viewed on the eagle.io website upon receiving access from Geotechnical Engineer. More information on the continuous instrumentation monitoring system (except the eagle.io platform) is provided in MONPP-FSD-0131.

4.1.1 SAA Inclinometers

SAA inclinometers are utilized for measuring lateral embankment movements. The SAA inclinometer casings extend vertically from the embankment crest to depths of up to 60 ft bgs. There are currently 10 SAA inclinometers around the FAB. The locations of the SAA inclinometers are provided in **Table 4-1** and Drawing 0695-C-H-0243-003 – Rev. E.

4.1.2 Piezometers

There are 14 piezometers installed at the VEL to measure water levels within the subgrade. These piezometers were installed in the ash subgrade under the footprint of the VEL between El. 579.3 ft and 600.9 ft. An additional piezometer, PZ-11, was installed in an open standpipe at the discharge structure to monitor the water level in the FAB. The piezometer at the discharge structure is located at approximately El. 605.5 ft. A barometer was installed on site near PZ-11 to obtain more accurate water

[6] Monthly monitoring of instrumentation is required by §257.83(a)(iii) of the CCR Rule.

[7] eagle.io is a standalone web platform. Geosyntec uses eagle.io to visualize and present data collected on their servers.

level measurements. The barometer is located in the data logger box at Station 178+00. The locations of the piezometers are provided in **Table 4-2** and Drawing 0695-C-H-0243-003 – Rev E.

4.1.3 Quality Control

The continuous instrumentation monitoring program process should be checked annually to verify that the connection between eagle.io and DTE's control room is active. To check the connection, a "test alarm" can be initiated in eagle.io and check if the alarm is initiated in the control room. Perform this work as part of the annual inspection. However, the result of this check does not have to be included in the annual inspection report. If miscommunication is identified, fix the issue as soon as possible.

4.2 Manual Settlement Plates

Settlement plates are installed at 12 locations within the VEL footprint to measure settlement of the liner system. Settlement plate locations are provided in **Table 4-3** and shown in Drawing 0695-C-H-0243-003 – Rev. E. Settlement measurements are obtained biweekly by the DTE Surveying Services, and results and survey accuracy are provided to the Geotechnical Engineer after the second survey of the month.

4.3 Manual Inclinometers

Six manual inclinometers are installed in the ash subgrade at the perimeter of the VEL to monitor for potential instabilities of the sluiced ash below the liner system. The manual inclinometers are located along the west and south sides of the VEL, as shown on Drawing 0695-C-H-0243-003 – Rev. E. Location coordinates are provided in **Table 4-4**. Manual inclinometer readings should be collected in accordance with ASTM D6230. Manual inclinometer measurements are obtained biweekly by the DTE Surveying Services, and results are provided to the Geotechnical Engineer after the second survey of the month.

4.4 Climate Monitoring Station

Precipitation is measured on site from the climate monitoring station during the daily inspections.

4.5 Alarm Levels

There are four alarm levels for the instrumentation monitoring. In order of urgency, these are Gray, Orange, Yellow, and Red Alarms, which correspond to Latent, Alert, Warning, and Emergency levels. A Gray Alarm applies only to the continuous monitoring system. A Gray Alarm is triggered if the data collected by the continuous monitoring system has not been uploaded to the Geosyntec server in the past 48 hours. Orange, Yellow, and Red Alarms apply to each instrument described above. Alarm level details for each instrument are provided in Sections 4.5.1 through 4.5.3.

4.5.1 SAA Inclinometers

Orange, Yellow, and Red alarm levels for the SAA inclinometers at the FAB embankment correspond to movement rates calculated based on cumulative displacement measurements at each inclinometer sensor (i.e., depth). The alarm levels for the SAA inclinometers are provided in **Table 4-1**.

An Orange Alarm corresponds to three different movement rates. Alert Level #1 is set to 0.2 inches (in.)/month (5 millimeters (mm)/month) using the 3D Difference Velocity measurement. The 3D Difference Velocity is calculated based on the last reading and the average of four readings from 30 days

prior to the most recent data. Alert Level #2 is 0.04 in./day (1 mm/day) of movement for the 3D Point Velocity measurement. The 3D Point Velocity is calculated based on the average of the most recent 12 data points. Alert Level #3 corresponds to a shear strain equal to or greater than one percent between two adjacent sensors. The magnitude of shear strain is calculated manually by the Geotechnical Engineer when a sensor reaches 1 in. cumulative movement.

A Yellow Alarm corresponds to two different movement rates. Warning Level #1 is set to 0.08 in./day (2 mm/day) of movement using the 3D Point Velocity measurement. Warning Level #2 corresponds to a shear strain equal to or greater than three percent between two adjacent sensors. The magnitude of shear strain is calculated manually by the Geotechnical Engineer when a sensor reaches 1 in. cumulative movement.

A Red Alarm corresponds to a movement rate of 1.0 in./day (25 mm/day) (i.e., Emergency Level #1) using the 3D Point Velocity measurement.

4.5.2 Piezometers

Orange, Yellow, and Red alarm levels for PZ-1 through PZ-10 within the VEL correspond to the water elevations at each piezometer location provided in **Table 4-2**. The alarm levels correspond to water elevations 0.5 ft above the bottom of the PRL, 0.5 ft below the top of the PRL (or 1.5 ft above the bottom of the PRL), and 1.5 ft above the top of the PRL, respectively.

Only the Yellow Alarm is used for the FAB water level measured by PZ-11. The Yellow Alarm level is set at El. 610 ft. The water level is also recorded daily based on readings at the staff gauge during the daily inspection (Section 3.1). The water level in the FAB was kept between El. 607.7 ft and 609 ft while CCR was being placed in the FAB.

4.5.3 Settlement Plates

Orange, Yellow, and Red alarm levels for the settlement plates at the VEL correspond to settlement rates calculated based on survey results. The alarm levels are summarized in **Table 4-3**.

An Orange Alarm corresponds to a settlement rate between 3 and 6 in. per quarter (i.e., 1 to 2 in./month). A Yellow Alarm corresponds to a settlement rate between 6 and 12 in. per quarter (i.e., 2 to 4 in./month). A Red Alarm corresponds to a settlement rate greater than 12 in. per quarter (i.e., greater than 4 in./month).

4.5.4 Manual Inclinometers

Orange, Yellow, and Red alarm levels for the manual inclinometers at the VEL are based on amount of cumulative displacements and the incremental displacements between two consecutive measurements. The alarm levels are summarized in **Table 4-4**.

An Orange Alarm corresponds to a cumulative displacement less than 3 in. or incremental displacement of 0.5 in. A Yellow Alarm corresponds to a cumulative displacement of 3 to 6 in. or incremental displacement of 0.5 to 2 in. A Red Alarm corresponds to a cumulative displacement greater than 12 in. or incremental displacement greater than 2 in.

4.5.5 Climate Monitoring Station

Orange, Yellow, and Red alarm levels for the climate monitoring station correspond to precipitation events over a 24-hour period. The alarm levels are provided in **Table 4-5**.

An Orange Alarm corresponds to a precipitation event greater than 1.5 in. in 24 hours. A Yellow Alarm corresponds to a precipitation event greater than 2.0 in. in 24 hours. A Red Alarm corresponds to precipitation events greater than either 2.5 in. in 24 hours or 3.0 in. in 40 hours.

4.6 Alarm Notification Procedures

Alarms notifications for the continuous monitoring system are carried out automatically through eagle.io. If an alarm level is reached, the platform sends a notification email to responsible personnel. In addition, if a Yellow or Red Alarm is reached, the continuous monitoring system will trigger a visual and audible alarm at the control room. **Table 4-6** summarizes different alarm levels and parties that receive the alarm. Note that the names of personnel that receive alarms are kept updated by the SMC and summarized in the monthly instrumentation reports.

Alarm notifications for the manual instruments are sent by the Geotechnical Engineer to the same personnel. The notifications are provided immediately after the Geotechnical Engineer interprets the data, and if any of the alarm levels are reached. Notifications are first provided verbally through a phone call, and followed up with emails sent by Geotechnical Engineer.

4.7 Alarm Response

Alarm response details provided in this section are for EM&S, ESO, and the Geotechnical Engineer. Alarm response details for the MONPP Plant Operations personnel are provided in JIT No. B-18-013-Env.

4.7.1 Responsible Personnel

The responsible organizations for alarm response are described in Section 2. The notified organizations for each type of alarm are shown in **Table 4-6**. Specific action items are described in Section 4.7.

4.7.2 Continuous Monitoring System Gray Alarm

The Geotechnical Engineer will conduct the following:

1. Identify the instrument(s) with an active Gray Alarm provided in the alarm notification email.
2. Launch Loggernet® software, manually connect to the instrument(s) and force data collection.

If the forced data collection does not resolve the Gray Alarm, the Geotechnical Engineer will work with EM&S to assess the condition of the instrument(s) within one week.

1. Geotechnical Engineer will work with EM&S during the weekly inspection to conduct a field assessment.
2. EM&S will perform field assessment using a step-by-step procedure outlined in **Appendix F**.
3. Geotechnical Engineer will provide live office support while EM&S personnel are in the field.

If there is no resolution following the system assessment, the Geotechnical Engineer will visit the site and perform maintenance on the system as soon as possible, following the steps below.

1. Arrange with plant EM&S to visit the site.
2. Assess and document the physical conditions of instruments.
3. Revise communication paths as necessary in the field and re-check the system.
4. Repair or replace instruments as necessary. Contact DTE's Project Manager if associated costs cannot be captured within the available budget,
5. Update MONPP-FSD-0131 – Continuous Monitoring System Functional System Description, as necessary to document changes.

4.7.3 Continuous Monitoring System Erroneous Alarms

1. Prior to performing the actions detailed below for the different alarm levels, Geotechnical Engineer will perform an initial review of the data to assess whether the alarm was triggered by erroneous measurements (e.g., faulty reading or sensor).
    a. If the alarm is clearly erroneous, Geotechnical Engineer will silence the alarm and email the SMC with a summary.
    b. If multiple erroneous alarms are triggered by the same instrument Geotechnical Engineer will perform on-site troubleshooting to identify the fault in the system.
    c. If the instrument sensor or below-ground wiring are identified to be faulty, Geotechnical Engineer will discuss next steps with the SMC. This could include replacing the instrument, decommissioning the instrument, or taking no action.

4.7.4 SAA Inclinometers

4.7.4.1 Orange Alarm

1. ESO, EM&S, and Geotechnical Engineer will gather more information about the alarm as soon as possible.
    a. Determine the instrument that sent out the alarm and the rate of movement using the step-by-step procedure in **Appendix F**.
    b. Geotechnical Engineer will silence the existing alarm, so a new alarm can be triggered if more urgent alarm levels are reached (i.e., Yellow or Red Alarm).
2. If requested by ESO, Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection as soon as possible. Alarm response details for the MONPP Plant Operations personnel are provided in JIT B-18-012-Env for Ash Basin Yellow Alarm.
3. ESO, EM&S, and Geotechnical Engineer will monitor the embankment weekly for at least one month and assess if mitigation is necessary. The following actions will be conducted.

a. Geotechnical Engineer will monitor instruments weekly and report to ESO and EM&S weekly.

b. EM&S and Outside Rounds Operator will perform an on-site inspection as necessary. At a minimum, EM&S will visually inspect the area during the next weekly inspection.

c. ESO and Geotechnical Engineer will assess if mitigation measures are necessary, weekly, and conduct a site visit as necessary.

4. ESO, EM&S, and Geotechnical Engineer will have discussions weekly and adjust the monitoring plan as necessary. The following actions will be conducted as soon as possible following the weekly discussions.

    a. Geotechnical Engineer will add additional alarm levels and increase the data collection interval if deemed necessary by the SMC.

    b. If an additional Orange Alarm is triggered, repeat Steps 1 through 3.

5. At the end of the minimum one month of increased monitoring frequency, ESO, EM&S, and Geotechnical Engineer will assess if the weekly monitoring should be extended.

6. Keep monitoring weekly until a decision is made by the SMC Coordinator to continue with the regular monitoring.

7. Once a decision is made to continue with the regular monitoring plan, Geotechnical Engineer will conduct the following items:

    a. Clear the Orange Alarm event and email an explanation to the SMC why the alarm is cleared.

    b. Deactivate the additional alarm levels and the increased data collection interval that was implemented as part of Step 4a

8. Continue with the regular monitoring plan.

4.7.4.2 Yellow Alarm

1. Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection as soon as possible. Alarm response details for the MONPP Plant Operations personnel are provided in JIT B-18-012-Env for Ash Basin Yellow Alarm.

2. ESO, EM&S, and Geotechnical Engineer will gather more information about the alarm as soon as possible.

    a. Determine the instrument that sent out the alarm and the rate of movement using the step-by-step procedure in **Appendix F**.

    b. Geotechnical Engineer will silence the existing alarm, so a new alarm can be triggered if a more urgent alarm level is reached (i.e., Red Alarm).

3. ESO, EM&S, and Geotechnical Engineer will have a conference call or in-person meeting with the Control Room Operator and the Outside Rounds Operator to gather more information and discuss visual observations. The meeting should be held within four hours of receiving the alarm.
4. ESO, EM&S, and Geotechnical Engineer will adjust the monitoring plan for the next two weeks and have daily update meetings.
    a. Geotechnical Engineer will add additional alarm levels and increase the data collection interval if deemed necessary by the SMC.
    b. If additional alarms are triggered, repeat Steps 1 through 3.
    c. Geotechnical Engineer will monitor instruments and report to ESO and EM&S daily.
5. EM&S and Outside Rounds Operator will perform an on-site inspection as necessary.
6. ESO, EM&S, and Geotechnical Engineer will assess the need for mitigation measures daily.
    a. If a mitigation measure is deemed necessary, ESO and Geotechnical Engineer will prepare a design within a week.
7. Fuel Supply will implement the mitigation measure within a timeframe decided by the SMC Coordinator and Fuel Supply Manager.
8. At the end of the increased monitoring period of two weeks, ESO, EM&S, and Geotechnical Engineer will assess if the daily monitoring should be extended.
9. Monitoring will continue daily until a decision is made by the SMC Coordinator to continue with the regular monitoring.
10. Once a decision is made to continue with the regular monitoring plan, Geotechnical Engineer will conduct the following items:
    a. Clear the Yellow Alarm event and email an explanation to the SMC why the alarm is cleared.
    b. Deactivate the additional alarm levels and the increased data collection interval that was implemented as part of Step 4a.
11. Continue with the regular monitoring plan.

4.7.4.3 Red Alarm

1. The Emergency Action Plan (EAP) for the FAB will have been activated by DTE's EAP Coordinator.
2. Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection as soon as possible as part of the EAP. Alarm response details for the MONPP Plant Operations personnel are provided in JIT B-18-012-Env for Ash Basin Red Alarm.
3. ESO, EM&S, and Geotechnical Engineer will gather more information about the alarm as soon as possible.

a. Determine the instrument that sent out the alarm and the rate of movement using the step-by-step procedure in **Appendix F**.

b. Geotechnical Engineer will silence the existing alarm, so no repeat alarm is triggered from the same sensor.

c. EM&S will contact the Control Room Operator to obtain inspection results collected by the Operator.

d. EM&S will contact the Shift Supervisor to coordinate ESO and Geotechnical Engineer efforts and work plan before mobilizing to the Site.

4. ESO, EM&S, and Geotechnical Engineer will mobilize to the Site to inspect and document the condition of the embankment.
5. ESO, EM&S, and Geotechnical Engineer will adjust the monitoring plan for the next two weeks.

    a. Geotechnical Engineer will add additional alarm levels and increase the data collection interval if deemed necessary by the SMC.

    b. If additional alarms are triggered, repeat Steps 2 through 4.

6. Geotechnical Engineer will monitor instruments and report to ESO and EM&S daily. Daily in-person or conference calls will be held until otherwise noted by the SMC Coordinator.
7. ESO and Geotechnical Engineer will assist the EAP Coordinator and immediately design a mitigation measure.
8. Fuel Supply or the Emergency Response Contractor will implement the mitigation measure immediately.
9. Monitoring will continue daily until a decision is made by the SMC Coordinator to continue with the regular monitoring.
10. Once a decision is made to continue with the regular monitoring plan, Geotechnical Engineer will conduct the following items:

    a. Clear the Red Alarm event and email an explanation to the SMC why the alarm is cleared.

    b. Deactivate the additional alarm levels and the increased data collection interval that was implemented as part of Step 5a.

11. Continue with the regular monitoring plan.

4.7.5 Piezometers

4.7.5.1 Orange Alarm

1. ESO, EM&S, and Geotechnical Engineer will gather more information about the alarm as soon as possible.

a. Determine the instrument that sent out the alarm and water level reading using the step-by-step procedure in **Appendix F**.

b. Geotechnical Engineer will silence the existing alarm, so a new alarm can be triggered if more urgent alarm levels are reached (i.e., Yellow or Red Alarm).

2. EM&S and Geotechnical Engineer will assess whether the water levels are likely the result of precipitation events or fluctuations in the FAB or VEL perimeter swale water levels.

3. If requested by ESO, Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection as soon as possible. Alarm response details for the MONPP Plant Operations personnel are provided in JIT B-18-012-Env for Ash Basin Yellow Alarm.

4. ESO, EM&S, and Geotechnical Engineer will monitor the piezometer bi-weekly for at least one month and assess if the current filling operations should be changed. The following actions will be conducted.

    a. Geotechnical Engineer will monitor instruments at least bi-weekly and report to ESO and EM&S bi-weekly.

    b. EM&S and Outside Rounds Operator will perform an on-site inspection as necessary. At a minimum, EM&S will visually inspect the area during the next weekly inspection.

    c. ESO, EM&S, and Geotechnical Engineer will assess if any other action items should be taken. Conduct this assessment bi-weekly.

5. ESO, EM&S, and Geotechnical Engineer will have discussions bi-weekly and adjust the monitoring plan as necessary. The following actions will be conducted as soon as possible following the bi-weekly discussions.

    a. Geotechnical Engineer will add additional alarm levels and increase the data collection interval if deemed necessary by the SMC.

    b. If an additional Orange Alarm is triggered, repeat Steps 1 through 4.

6. At the end of the one month of increased monitoring frequency, ESO, EM&S, and Geotechnical Engineer will assess if the bi-weekly monitoring should be extended and if any other action items shall be taken.

7. Monitoring will continue bi-weekly until a decision is made by the SMC Coordinator to continue with the regular monitoring.

8. Once a decision is made to continue with the regular monitoring plan, Geotechnical Engineer will conduct the following items:

    a. Clear the Orange Alarm event and email an explanation to the SMC why the alarm is cleared.

    b. Deactivate the additional alarm levels and the increased data collection interval that was implemented as part of Step 5a.

9. Continue with the regular monitoring plan.

4.7.5.2 Yellow Alarm

1. Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection as soon as possible. Alarm response details for the MONPP Plant Operations personnel are provided in JIT B-18-012-Env for Ash Basin Yellow Alarm.
2. ESO, EM&S, and Geotechnical Engineer will gather more information about the alarm as soon as possible.
    a. Determine the instrument that sent out the alarm and the water level using the step-by-step procedure in **Appendix F**.
    b. Geotechnical Engineer will silence the existing alarm, so a new alarm can be triggered if a more urgent alarm level is reached (i.e., Red Alarm).
3. ESO, EM&S, and Geotechnical Engineer will have a conference call or in-person meeting with the Control Room Operator and the Outside Rounds Operator to gather more information and discuss visual observations. Have the meeting within four hours of receiving the alarm.
4. EM&S and Geotechnical Engineer will assess whether the water levels are likely the result of precipitation events or fluctuations in the FAB or VEL perimeter swale water levels. Gather necessary information, conclude the assessment, and brief ESO within one business day upon receiving the alarm.
5. If it is deemed that the Yellow Alarm creates a concern for subgrade stability, develop a contingency plan and action items.
6. ESO, EM&S, and Geotechnical Engineer will adjust the monitoring plan for the next one month and have weekly update meetings.
    a. Geotechnical Engineer will add additional alarm levels and increase the data collection interval if deemed necessary by the SMC.
    b. If additional alarms are triggered, repeat Steps 1 through 5.
    c. Geotechnical Engineer will monitor instruments and report to ESO and EM&S at least weekly.
7. EM&S and Outside Rounds Operator will perform an on-site inspection as necessary.
8. At the end of the one month of increased monitoring frequency, ESO, EM&S, and Geotechnical Engineer will assess if the weekly monitoring should be extended and if any other action items shall be taken.
9. Monitoring will continue weekly until a decision is made by the SMC Coordinator to continue with the regular monitoring.

10. Once a decision is made to continue with the regular monitoring plan, Geotechnical Engineer will conduct the following items:

    a. Clear the Yellow Alarm event and email an explanation to the SMC why the alarm is cleared.

    b. Deactivate the additional alarm levels and the increased data collection interval that was implemented as part of Step 6a.

11. Continue with the regular monitoring plan.

4.7.5.3 Red Alarm

1. The EAP for the FAB will have been activated by DTE's EAP Coordinator.

2. Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection as soon as possible as part of the EAP. Alarm response details for the MONPP Plant Operations personnel are provided in JIT B-18-012-Env for Ash Basin Red Alarm.

3. ESO, EM&S, and Geotechnical Engineer will gather more information about the alarm as soon as possible.

    a. Determine the instrument that sent out the alarm and the water level using the step-by-step procedure in **Appendix F**.

    b. Geotechnical Engineer will silence the existing alarm, so no repeat alarm is triggered from the same sensor.

4. ESO, EM&S, and Geotechnical Engineer will have a conference call or in-person meeting with the Control Room Operator and the Outside Rounds Operator to gather more information and discuss visual observations. Have the meeting within four hours of receiving the alarm. Mobilize to the site if deemed necessary by the SMC Coordinator.

5. EM&S and Geotechnical Engineer will assess whether the water levels are likely the result of precipitation events or fluctuations in the FAB or VEL perimeter swale water levels. Gather necessary information, conclude the assessment, and brief ESO within one business day upon receiving the alarm.

6. If the EAP had been activated as part of the MONPP Plant Operations Personnel inspection, ESO and Geotechnical Engineer will assist the EAP Director, and develop a contingency plan and action items immediately.

7. If the emergency condition is confirmed (i.e., concern for subgrade stability), and the water level is still in a Yellow or Red Alarm, develop a contingency plan and action items.

8. Implement the contingency plan and action items within three days.

9. ESO, EM&S, and Geotechnical Engineer will adjust the monitoring plan for the next one month and have daily update meetings.

a. Geotechnical Engineer will add additional alarm levels and increase the data collection interval if deemed necessary by the SMC.

b. If additional alarms are triggered, repeat Steps 2 through 6.

c. Geotechnical Engineer will monitor instruments and report to ESO and EM&S daily.

10. EM&S and Outside Rounds Operator will perform an on-site inspection as necessary.
11. At the end of the one month of increased monitoring frequency, ESO, EM&S, and Geotechnical Engineer will assess if the daily monitoring should be extended, and any other action item shall be taken.
12. Monitoring will continue daily until a decision is made by the SMC Coordinator to continue with the regular monitoring.
13. Once a decision is made to continue with the regular monitoring plan, Geotechnical Engineer will conduct the following items:

    a. Clear the Red Alarm event and email an explanation to the SMC why the alarm is cleared.

    b. Deactivate the additional alarm levels and the increased data collection interval that was implemented as part of Step 8a.

14. Continue with the regular monitoring plan.

4.7.6 Settlement Plates and Manual Inclinometers

4.7.6.1 Orange Alarm

1. Geotechnical Engineer will immediately notify ESO and EM&S if an Orange Alarm is detected while interpreting the data and provide the alarm details. DTE Surveying Services personnel will be copied on the email.
2. DTE Surveying Services will repeat the survey within three days and provide the data back to Geotechnical Engineer immediately for confirmation of the alarm condition.
3. If requested by ESO, Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection. At a minimum, EM&S will visually inspect the area during the next weekly inspection.
4. ESO, EM&S, and Geotechnical Engineer will have bi-weekly meetings for a month.
5. DTE Surveying Services will continue with bi-weekly surveys and provide results to Geotechnical Engineer immediately.
6. Geotechnical Engineer will interpret the data and update ESO and EM&S during bi-weekly meetings.

7. At the end of the month of increased monitoring, ESO, EM&S, and Geotechnical Engineer will assess if the bi-weekly monitoring should be extended and if any other action items shall be taken.

8. Monitoring will continue bi-weekly until a decision is made by the SMC Coordinator to continue with the regular monitoring.

4.7.6.2 Yellow Alarm

1. Geotechnical Engineer will immediately notify ESO and EM&S if a Yellow Alarm is detected while interpreting the data and provide the alarm details. DTE Surveying Services personnel will be copied to the email.

2. ESO or EM&S will immediately notify the Shift Supervisor about the alarm details. Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection as soon as possible. Alarm response details for the MONPP Plant Operations personnel are provided in JIT B-18-012-Env for Ash Basin Yellow Alarm.

3. DTE Surveying Services will repeat the survey within three days and provide the data back to Geotechnical Engineer immediately for confirmation of the alarm condition. Notification for the repeat survey will be provided to DTE Surveying Services by EM&S.

4. ESO, EM&S, and Geotechnical Engineer will have a conference call or in-person meeting with the Control Room Operator and the Outside Rounds Operator to gather more information and discuss visual observations. Have the meeting within four hours of receiving the alarm.

5. EM&S and Geotechnical Engineer will assess the cause of Yellow Alarm and inform ESO within one business day upon receiving the alarm.

6. If it is deemed that the Yellow Alarm creates a concern for subgrade stability, develop a contingency plan and action items.

7. DTE Surveying Services will perform weekly surveys for a minimum of one month and provide results to Geotechnical Engineer immediately.

8. Geotechnical Engineer will interpret the data and update ESO and EM&S within the same day of receiving data from the DTE Surveying Services.

9. ESO, EM&S, and Geotechnical Engineer will have weekly meetings for a month. At the end of the month of increased monitoring, ESO, EM&S, and Geotechnical Engineer will assess if the weekly monitoring should be extended and if any other action items shall be taken.

10. Monitoring will continue weekly until a decision is made by the SMC Coordinator to continue with the regular monitoring.

4.7.6.3 Red Alarm

1. Geotechnical Engineer will immediately notify ESO and EM&S if a Red Alarm is detected while interpreting the data and provide the alarm details. DTE Surveying Services personnel will be copied on the email.
2. ESO or EM&S will immediately notify the Shift Supervisor about the alarm details to initiate the EAP. Control Room Operator will mobilize the Outside Rounds Operator for an on-site inspection as soon as possible. Alarm response details for the MONPP Plant Operations personnel are provided in JIT B-18-012-Env for Ash Basin Red Alarm.
3. DTE Surveying Services will repeat the survey within 24 hours and provide the data back to Geotechnical Engineer immediately for confirmation of the alarm condition.
4. ESO, EM&S, and Geotechnical Engineer will have a conference call or in-person meeting with the Control Room Operator and the Outside Rounds Operator to gather more information and discuss visual observations. The meeting will be held within four hours of receiving the alarm. Mobilize to the site if deemed necessary by the SMC Coordinator.
5. EM&S and Geotechnical Engineer will assess the cause of Red Alarm and inform ESO within one business day upon receiving the alarm.
6. If the EAP had been activated as part of the MONPP Plant Operations Personnel inspection, ESO and Geotechnical Engineer will assist the EAP Director, and develop a contingency plan and action items immediately.
7. If the emergency condition is confirmed (i.e., concern for subgrade stability), and the repeat survey indicates a Yellow or Red Alarm, develop a contingency plan and action items.
8. Implement the contingency plan and action items within three days. Assess if work can continue at the site.
9. DTE Surveying Services will perform daily surveys for a minimum of one month and provide results to Geotechnical Engineer immediately.
10. Geotechnical Engineer will interpret the data and update ESO and EM&S within the same day of receiving data from the DTE Surveying Services.
11. ESO, EM&S, and Geotechnical Engineer will have daily meetings for at least a month. At the end of the month of increased monitoring, ESO, EM&S, and Geotechnical Engineer will assess if the daily monitoring should be extended and if any other action items shall be taken.
12. Monitoring will continue daily until a decision is made by the SMC Coordinator to continue with the regular monitoring.

4.7.7 Climate Monitoring (Precipitation)

4.7.7.1 Orange Alarm

1. Shift Supervisor will immediately notify ESO, EM&S, and Geotechnical Engineer if an Orange Alarm precipitation event is detected during the daily on-site inspection. DTE Surveying Services personnel will be copied on the email.
2. The Geotechnical Engineer will review the SAA and piezometer data within 24 hours of the notification and will report any observed changes in the readings that may be the result of the precipitation event. Notification will be sent via email to ESO and EM&S.
3. DTE Surveying Services will repeat the settlement plate and inclinometer surveys at the VEL within three days and provide the data back to the Geotechnical Engineer immediately. Geotechnical Engineer will interpret the data and update ESO and EM&S via email.
4. If changes are observed in the instrument readings by the Geotechnical Engineer and as requested by ESO, Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection around any instruments with observed changes. At a minimum, EM&S will visually inspect the area during the next weekly inspection.
5. DTE Surveying Services will continue with bi-weekly surveys and provide results to Geotechnical Engineer immediately. Geotechnical Engineer will interpret the data and update ESO and EM&S via email.
6. ESO, EM&S, and Geotechnical Engineer will assess if any other action items should be taken.
7. At the end of the month of increased monitoring, ESO, EM&S, and Geotechnical Engineer will assess if the bi-weekly monitoring should be extended and if any other action items shall be taken.
8. Monitoring will continue bi-weekly until a decision is made by the SMC Coordinator to continue with the regular monitoring.

4.7.7.2 Yellow Alarm

1. The Shift Supervisor will immediately notify ESO, EM&S, and Geotechnical Engineer if a Yellow Alarm precipitation event is detected during the daily on-site inspection. DTE Surveying Services personnel will be copied on the email.
2. The Geotechnical Engineer will review the SAA and piezometer data within 24 hours of the notification and will report any observed changes in the readings that may be the result of the precipitation event. Notification will be sent via email to ESO and EM&S.
3. DTE Surveying Services will repeat the settlement plate and inclinometer surveys at the VEL within three days and provide the data back to the Geotechnical Engineer immediately. Geotechnical Engineer will interpret the data and update ESO and EM&S via email.

4. If changes are observed in the instrument readings by the Geotechnical Engineer and as requested by ESO, Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection around any instruments with observed changes. At a minimum, EM&S will visually inspect the area during the next weekly inspection.
5. DTE Surveying Services will perform weekly surveys for a minimum of one month and provide results to Geotechnical Engineer immediately. Geotechnical Engineer will interpret the data and update ESO and EM&S via email.
6. ESO, EM&S, and Geotechnical Engineer will assess if any other action items should be taken.
7. At the end of the month of increased monitoring, ESO, EM&S, and Geotechnical Engineer will assess if the weekly monitoring should be extended and if any other action items shall be taken.
8. Monitoring will continue weekly until a decision is made by the SMC Coordinator to continue with the regular monitoring.

4.7.7.3 Red Alarm

1. The Shift Supervisor will immediately notify ESO, EM&S, and Geotechnical Engineer if a Red Alarm precipitation event is detected during the daily on-site inspection. DTE Surveying Services personnel will be copied on the email.
2. The Geotechnical Engineer will review the SAA and piezometer data within 24 hours of the notification and will report any observed changes in the readings that may be the result of the precipitation event. Notification will be sent via email to ESO and EM&S.
3. DTE Surveying Services will repeat the settlement plate and inclinometer surveys at the VEL within three days and provide the data back to the Geotechnical Engineer immediately. Geotechnical Engineer will interpret the data and update ESO and EM&S via email.
4. If changes are observed in the instrument readings by the Geotechnical Engineer and as requested by ESO, Control Room Operator will mobilize the Outside Rounds Operator for on-site inspection around any instruments with observed changes. At a minimum, EM&S will visually inspect the area during the next weekly inspection.
5. If deemed necessary by the Geotechnical Engineer and/or ESO, the Geotechnical Engineer will mobilize to the Site for inspection.
6. DTE Surveying Services will perform daily surveys for a minimum of one month and provide results to Geotechnical Engineer immediately. Geotechnical Engineer will interpret the data and update ESO and EM&S via email.
7. ESO, EM&S, and Geotechnical Engineer will assess if any other action items should be taken.
8. At the end of the month of increased monitoring, ESO, EM&S, and Geotechnical Engineer will assess if the daily monitoring should be extended and if any other action items shall be taken.

9. Monitoring will continue daily until a decision is made by the SMC Coordinator to continue with the regular monitoring.

5. CCR DISPOSAL MONITORING AND RAPID DRAWDOWN

As of December 2023, filling operations at the FAB and VEL have stopped. This section is intended to document the disposal monitoring activities that were performed at the FAB and VEL while filling operations were active.

The potential for a rapid drawdown condition of the FAB perimeter embankments due to lowering the water level in the FAB as well as the recommended investigation and additional stability analyses to be performed prior to drawing down the water level are discussed in this section. A rapid drawdown condition could still occur during closure of the FAB as it is dewatered.

5.1 Fly Ash Basin

CCR disposal progress within the FAB was evaluated by comparing the results of the two most recent annual bathymetric surveys. It was the responsibility of DTE Surveying Services to conduct a bathymetric survey every year[8]. Surveying Services provided Geotechnical Engineer with survey data within two weeks of the survey being completed. Geotechnical Engineer performed the following steps.

i. Estimated the CCR fill progress by comparing the results of the consecutive surveys and provided storage capacity for the FAB.

ii. Provided the approximate volume of impounded water and CCR at the FAB.

iii. Provided approximate minimum, maximum, and present depth and elevations of the impounded water and CCR at the FAB.

iv. Revised the water line in the Operations Plan Drawings (0695-C-H-0243-001 – Rev. E through 0695-C-H-0243-004 – Rev. E) to depict the most recent CCR fill boundary within the FAB.

v. Provided results to the SMC along with the draft annual inspection report.

5.2 Vertical Extension Landfill

CCR disposal volumes in the VEL were tracked each day that waste was received and reported by the on-site Fuel Supply Representative. A disposal inventory report was distributed to the central reporting agency each month (i.e., Fuel Supply Representative responsible for waste data tracking). The report identified the source, type, and amount of waste landfilled at the VEL. This information was shared with EM&S landfill SME during annual inspections.

5.3 Rapid Drawdown

A “rapid drawdown” condition could result if the FAB water level is drawn down to the bottom of the basin over a relatively short time period. A rapid drawdown condition could result in slope instability on the inside face of the perimeter embankment. Rapid drawdown slope stability analyses have been completed (Document #MONPP-0153-13) and concluded that the calculated factor of safety is 1.3 for a

[8] Storage capacity and amount of stored water is required to be reported in an annual report per §257.83(b) of the CCR Rules.

drawdown from El. 607.7 ft to the bottom of the basin. This calculated factor of safety is acceptable per the U.S. Army Corps of Engineers (USACE, 2003). However, prior to initiating the drawdown, Geosyntec recommends that the bathymetry of the bottom of the pond be reviewed to verify that CCR is present at the toe of the interior embankment slope because it is the CCR that provides a buttress effect and results in the calculated factor of safety of 1.3. If CCR is not present, the calculated factor of safety may be less than the minimum recommended by the USACE and additional engineering/construction controls would be necessary, such as placement of the CCR material to buttress the embankment. The designer for the Fly Ash Basin Closure shall consider rapid drawdown in design, and in the construction drawings.

6. MAINTENANCE ACTIVITIES

The following sections provide procedures for implementing typical maintenance activities, action level criteria, and material specifications.

6.1 Activity Tracking

Maintenance activities shall be tracked through a work order in Maximo. Maintenance activities shall be performed as soon as possible for "Urgent" action items, within two years for "Moderate" action items, and within five years for "Not Urgent" action items as identified on the weekly inspection form. Maintenance activities shall be reported to the SMC within one week following completion.

6.2 Material Specifications

Clay Fill shall consist of relatively homogeneous, natural soils that are free of debris, foreign objects, and large rock fragments. No material with a maximum particle diameter larger than 3 in. shall be allowed. Clay Fill shall be classified as "SC", "CL" or "CH" in accordance with the ASTM D2487 (Unified Soil Classification System), shall have a plasticity index between 8 and 30 as measured in accordance with ASTM D4318 and shall not have less than 40 percent by dry weight passing through the standard U.S. # 200 sieve as measured in accordance with ASTM D6913. Clay Fill shall be compacted to a minimum 90 percent of the maximum dry density and to a moisture content that is within -2 percent to +3 percent of the optimum moisture content as identified in accordance with ASTM D1557 (modified "Proctor"). The compacted thickness of each Clay Fill lift shall be a maximum of 6 in.

Topsoil shall consist of relatively homogeneous, natural soils that are free of debris, foreign objects, and large rock fragments. No material with a maximum particle diameter larger than 3 in. shall be allowed. Topsoil shall be classified as "SM", "SC", "CL" or "OL" in accordance with ASTM D2487, shall have a minimum organic content of 3 percent as measured in accordance with ASTM D2974 and shall have a minimum fines content of 35 percent as measured in accordance with ASTM D6913. Soil nutrients information (phosphorous, potassium, nitrogen, and acidity) shall be provided to the seed supplier for a recommendation on fertilizer grade and application rate. Ernst Conservation Seeds, Inc. (tel. 800-873-3321) was the seed supplier for the 2009-2013 Mitigation Plan and 2019 embankment restorations. Michigan Wildflower Farm (tel. 517-647-6010) was the seed supplier for the 2017 embankment restorations.

Seed Mix information is provided in **Appendix G** for wetlands and other areas. Drawing #0695-C-H-0243-001 – Rev. E provides the locations of wetland areas at the Facility.

Mulch shall be used for covering Topsoil on areas where the grade is 4 percent or shallower. Mulch shall be comprised of un-weathered small grain straw or hay. Mulch shall be applied uniformly at a rate of 100 pounds per 1,000 square feet and crimped into the topsoil.

Erosion Control Blanket North American Green (NAG) SC150 or equivalent shall be installed on areas where the grade is between 4 percent and 2.3H:1V. If the area is steeper than 2.3H:1V, NAG C125 or equivalent shall be installed in accordance with the manufacturer's specifications**.**

Road Surface Course shall be MDOT 21AA aggregate and meet the requirements of Table 902-1 of MDOT Standard Specifications for Construction (2012) which is provided in **Appendix H**. Bottom ash shall not be

used in lieu of MDOT 21AA. Road Surface Course shall be placed in a maximum of 6-in.-thick, loose lifts and be compacted to 93 percent of the maximum dry density as measured in accordance with ASTM D1557. Road Surface Course shall be a minimum of 12 in. thick in areas where semi-trailer trucks operate and a minimum of 6 in. thick in all other areas. Road Surface Course should be used for mitigation of potholes, ruts, and localized low spots of the site roads.

Road Base Aggregate shall be used below Road Surface Course, as needed, and meet the requirements for Coarse Aggregate 3x1 in accordance with MDOT Standard Specifications for Construction (2012), Section 916, or equivalent. Road Base Aggregate shall be placed in 12-in.-thick, loose lifts and compacted with a minimum of 6 passes using a vibratory roller.

6.3 Erosion Repair

All erosion features that are a minimum of 6 in. deep (including animal trails), regardless of width or length, shall be maintained following the procedures described below.

For erosion on the embankment, toe ditch, and areas surrounding the toe ditch, perform the following.

1. Place Clay Fill up to 6 in. below final grade.
2. Place an approximately 6-in.-thick layer of Topsoil to the final grade, then place Seed Mix, fertilizer and rake the surface.
3. Cover the area with either Erosion Control Blanket or Mulch.

For erosion on roads, fill in voids and ruts with Road Surface Course up to road grade.

6.4 Ground Crack Repair

Ground cracks that are observed to have a width greater than 1 in. but less than 4 in. shall be maintained following the procedures described below. If the width of a ground disturbance is greater than 4 in., refer to Section 6.5 for surficial sloughs. For ground cracks perform the items described below.

1. Ground cracks that have not been filled should be observed during weekly inspections. Flag the extent of cracking and document the width, depth, length, and location of cracks and provide a photograph on the inspection form. Every 25 ft along the crack, install a pair of flags; one on the upslope side of the crack, and one on the downslope side. ID the flags and measure the distance between the two points where the flags are anchored into the ground.
2. The ground cracks should be filled with a dry mix of sand and bentonite with 85 percent sand and 15 percent granular bentonite, by dry weight. The sand portion of the mix should meet the requirements of MDOT Class IIIA sand except the percent passing the #200 sieve should be 5 to 15 percent as measured by ASTM D6913.
3. Thoroughly mix the sand and bentonite in the dry state in a 5-gallon bucket. Do not add water. A minimum of five 5-gallon buckets (sealed without exposure to moisture) should be available in the on-site storage garage near the Facility entrance.

4. Place the mix in the ground cracks and compact with a 1 in. nominal diameter rod as the mix is placed in the crack.
5. Once the cracks are filled, compact the mix at the surface with a hand-held tamper.
6. Place additional material and compact as necessary such that the sand-bentonite mix is level with the ground surface.
7. Inspect filled ground cracks during weekly inspections for a minimum of one month following filling. Document whether the cracks are filled up to the ground surface and provide a photograph on the inspection form.
8. Inspect crack filling locations during the next annual inspection and assess if additional mitigation measures are necessary. Report findings in the annual inspection report.

6.5 Surficial Slough Repair

To repair surface sloughs, submit a repair plan to the SMC's internal engineers for approval or contact an outside engineering firm to develop a repair plan. The proposed activities should be evaluated to verify that the proposed mitigation measures will not create additional instability during implementation.

No construction should start until the SMC approves the repair plan. The repair plan should identify the following activities at a minimum for the SMC's review.

1. Source of soil that will be used as Clay Fill to fix the surficial slough and a confirmation that the soil meets the Clay Fill material specifications as described in Section 5.2.
2. Maximum dry unit weight and optimum moisture content of the proposed Clay Fill in accordance with ASTM D1557.
3. The extent of the surficial slough that shall be repaired. Geosyntec recommends excavating soil to a depth of not more than 5 ft measured perpendicular to the embankment face, including the thickness of the surficial slough.
4. The competency criteria for the embankment subgrade, which is the section of the embankment that is exposed after removal of the surficial slough, shall exhibit a minimum pocket penetrometer reading of 1 ton per square foot (tsf).
5. If the minimum pocket penetrometer reading on the excavated subgrade is not achieved, a minimum 1-ft-thick aggregate layer shall be placed and compacted per the Road Surface Course specifications on the excavated subgrade to allow for draining of potential seepage water accumulation.
6. Clay Fill shall be placed in accordance with the specifications to achieve a grade that is 0.5 ft lower than the final grade.
7. Topsoil shall be placed in a 0.5-ft-thick lift and revegetated in accordance with the specifications.

6.6 Animal Control

All animal burrows identified on the embankment shall be maintained following the procedures described below.

1. Contact an animal control firm for the removal of the burrowing animals.
2. Upon removal of the animals from the burrows, fill in all burrows to the extent possible using Clay Fill and Topsoil and re-vegetate.

All animal trails that are 6 in. deep shall be repaired as described in Section 6.3.

6.7 Road Settlement and Tire Ruts

Sections of the roads that exhibit a noticeable amount of settlement, tire ruts, and any low spot on the road that may cause concentrated flow along the edges of the roads shall be maintained by filling these areas with Road Surface Course.

6.8 Mid-slope Ditch Maintenance and Repair

All mid-slope ditch sections, including outlet sections connecting to the riprap downchutes, shall be maintained following the procedures described in **Appendix I**.

All sediments and vegetation that accumulates 3 in. above the top of the mid-slope ditch grooves shall be removed and disposed of in the FAB.

Mid-slope ditch repair may be replaced with the construction of a mid-slope trench in its place, as determined by SMC on a case-by-case basis. The mid-slope trench shall be constructed in accordance with the 2017 Embankment Restoration Issued for Construction Drawing 0695-C-H-0290 and Specifications MONPP-ES-1252-17.

6.9 Vegetation Maintenance

Vegetation maintenance is required to deter the growth of undesirable vegetation on the embankment slopes of the FAB and VEL. Undesirable vegetation includes Canada thistle, teasel, mullein, shrubs, and trees. Desirable vegetation includes grass species native to Michigan such as Little Bluestem and Side-oats Gramma and fast-growing cover vegetation, such as annual ryegrass. Pictures of both desirable and undesirable vegetation are provided in **Appendix D**.

Maintenance procedures for the vegetation are broken into two phases: short- and long-term management.

- Short-term management, or establishment management, is only required for about one to three years after planting new vegetation. The short-term management period shall be the time required between seed planting and when areal coverage of the vegetation is at least 70 percent within any given area over the total area that was planted. The short-term management period shall not last more than three years. The grass should be mowed during this period and only in the areas that were recently planted. During the short-term management period, the grass should be mowed to a height of 6 to 8 in. whenever it reaches a height of 10 to 12 in. Mowing should not be performed immediately after a rain event to avoid slipping of the

mowing equipment and personnel. Spot-spraying with a glyphosate-based herbicide is also recommended within the planted area where undesirable vegetation is observed during the short-term maintenance period. Herbicide should be applied in accordance with the manufacturer's specifications.

- The long-term management period shall mainly consist of herbicide applications to reduce the extent of undesirable vegetation. Herbicides should be applied as needed in accordance with the manufacturer's specifications. The type of herbicide should be selected based on the species of undesirable vegetation present and current best management practices (BMPs) and only target the observed undesirable vegetation species. Mowing should continue to maintain the vegetation to a height at which the perimeter embankment can still be clearly inspected for cracks, seepage, etc. It is recommended mowing occurs when the vegetation reaches a height of approximately 12 in. The grass should not be cut shorter than 6 in. The vegetation specified in **Appendix G** have approximately 2- to 8-in.-deep root systems, and if the grass is repeatedly cut short the roots will not develop into a system.

Mowing of the embankments should be performed with one of the following:

- A slope mowing tractor with an approved slope operation rating of 33 to 50 percent grades and a cutting height of 6 to 8 in.
- A tractor-towed rotary cutter with a cutting height of 6 to 8 in. The requirements of the tractor towing the rotary cutter shall be as specified by the rotary cutter manufacturer and be capable of towing the rotary cutter on slope grades of 33 to 50 percent.
- Alternate equipment approved by the SMC.

There are wetlands along the sections of the embankment toe that should not be disturbed. They are depicted on Drawing 0695-C-H-0243-001 – Rev. E.

For the sections of the embankment where a mid-slope stormwater conveyance system was constructed, access to the areas downslope of the mid-slope structure is provided by vehicle crossings that are approximately 12 ft long (along the ditch alignment) and 4 ft wide. The vehicle crossing locations are provided in Drawing 0695-C-H-0243-001 – Rev. E.

6.10 Toe Ditch Repairs

Implement the following maintenance activities as necessary.

- Erosion Repair (described in Section 6.3).
- Animal Control (described in Section 6.6).
- Removal of Undesirable Vegetation (described in Section 6.9).

In addition, remove any sediment or debris (e.g., dead vegetation) that has accumulated in toe ditches and culverts that may interfere with the normal flow of stormwater. For the sections of the toe ditch that are converted to wetlands, perform the repair in a manner that does not interfere with the wetland

species. All sediment and dead vegetation removed from the toe ditches and culverts shall be disposed of in the FAB.

6.11 Possible Seep Locations

If a section of the embankment is observed to be substantially wetter than the surrounding area, this section of the embankment shall be monitored weekly and documented as described below until directed otherwise by the SMC.

1. Document the extent of the wet area. Use a photo log provided in **Appendix C** to provide detailed descriptions of the wet and surrounding area.
2. Obtain weather information and prepare a table summarizing the weather condition for the duration of the inspections.
3. Provide all documents to the SMC after one month of inspection.
4. The SMC shall review the data and decide whether to: (i) stop the increased monitoring frequency; (ii) keep the increased monitoring frequency; or (iii) initiate a seep investigation study.

If seepage increases in flow rate between inspections or is observed to be cloudy from the transport of sediment, the SMC shall be notified within 24 hours.

7. INITIAL AND PERIODIC HAZARD POTENTIAL CLASSIFICATION, STRUCTURAL STABILITY AND SAFETY FACTOR ASSESSMENTS

The CCR Rule requires: (i) a hazard potential classification assessment per §257.73(a)(2); (ii) a structural stability assessment per §257.73(d); and (iii) safety factor assessment per §257.73(e). These assessments were performed and documented (**Table 1**). These assessments shall be performed and documented every five years following the initial assessments. Initial assessments were documented in October 2016. The most recent periodic assessments were completed October 2021.

8. REPORTING

Inspection, monitoring and maintenance reports, and initial/periodic assessments should be archived as operating records[9]. The annual inspection report and periodic assessments should be uploaded to a website accessible to the public[10]. DTE shall notify EGLE once the files are placed in the operating records and uploaded to the public website.[11]

Inspection and monitoring results including visual inspections, instrumentation and water level monitoring, and bathymetric information shall be provided to the SMC at each bi-monthly SMC meeting. Maintenance activities, both recommended and completed, shall be summarized at each bi-monthly SMC meeting.

The SMC should prepare reports upon completion of all inspection, monitoring, and maintenance activities. The SMC is responsible for archiving all documents related to the IMMM. The table below summarizes the reports to be prepared for various inspection and monitoring events.

Inspection/Monitoring Type	**Report Format**
Weekly Inspections per the CCR Rule	Use the existing weekly inspection forms provided in **Appendices A and B**
Monthly Instrumentation Monitoring per the CCR Rule[12]	Use the October 2024 Monthly Instrumentation Monitoring Report as a template
Annual Inspections per the CCR Rule	Use the 2023 Annual Inspection Reports as a template

At the end of the year, the SMC Coordinator should issue a letter to MONPP Plant Management notifying them whether the IMMM was carried out in accordance with this document.

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[9] Inspection, monitoring and maintenance documents, and initial/periodic assessments shall be kept as operating records for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, record or study per §257.105 (b) of the CCR Rule.

[10]The owner or the operator of a CCR unit shall maintain a publicly accessible internet site that will contain "CCR Rule Compliance Data and Information" per §257.107(a) of the CCR Rule. Files shall be uploaded within 30 days of filing these documents in the operating records per §257.107(d).

[11] The owner or the operator of a CCR unit shall notify the "State Director" (EGLE) within 30 days of filing documents in operating record per §257.106 of the CCR Rule.

[12] Measurements from the geotechnical instrumentation are reviewed and placed in operating records each month. The monthly reports are prepared by the Geotechnical Engineer and provided to the SMC. SAA inclinometer and piezometer measurements from the continuous monitoring system are exported from eagle.io. Measurements for the manual settlement plates and inclinometers are surveyed every two weeks and reported to SMC and the Geotechnical Engineer by DTE Surveying Services.

9. REFERENCES

40 CFR Parts 257 and 261 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, 17 April 2015

ASTM D1557-12e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)), ASTM International, West Conshohocken, PA, 2012.

ASTM D2487-17e1, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System), ASTM International, West Conshohocken, PA, 2017.

ASTM D2974-20e1, Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils, ASTM International, West Conshohocken, PA, 2020.

ASTM D4318-17e1, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils, ASTM International, West Conshohocken, PA, 2017.

ASTM D6230-13, Standard Test Method for Monitoring Ground Movement Using Probe-Type Inclinometers, ASTM International, West Conshohocken, PA, 2013.

ASTM D6913-17, Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis, ASTM International, West Conshohocken, PA, 2017.

Michigan Department of Transportation (MDOT), (2015). “2012 Standard Specifications for Construction.”

USACE (2003), “Slope Stability”, US Army Corps of Engineers – EM #1110-2-1902.

Table 1-1. Summary of Document and Drawing Numbers Related to IMMM

DTE Documentum #	Report / Drawing Content
MONPP-0089-09	Ash Basin Embankment Assessment Report (May 2009)
MONPP-0087-09	Ash Basin Embankment Mitigation Report (June 2009)
MONPP-0153-13	Ash Basin Rapid Drawdown Analysis (February 2013)
MONPP-FSD-0131	Functional System Description for the Monroe Ash Basin Continuous Monitoring System (August 2018)
0695-C-H-0243-001 – Rev. E	Ash Basin Existing Condition Drawing – Operations Plan Drawings
0695-C-H-0243-002 – Rev. E	Ash Basin Design Criteria Summary – Operations Plan Drawings
0695-C-H-0243-003 – Rev. E	Ash Basin Instrumentation Locations – Operations Plan Drawings
0695-C-H-0243-004 – Rev. E	Ash Basin Responses for Non-imminent Failure Condition – Operations Plan Drawings
0695-C-H-0243-005 – Rev. E	Vertical Extension Landfill Operations and Instrumentation - Operations Plan Drawings
0695-C-H-0290	Sections and Restoration Details for the 2017 Construction
MONPP-0118-16	Hazard Potential Letter (October 2016)
MONPP-0120-16	Safety Factor Assessment (October 2016)
MONPP-0121-16	Structural Stability Letter (October 2016)
MONPP-ES-1252-17	Erection Specifications for 2017 Construction (April 2017)
N/A	Fugitive Dust Control Plan (November 2020)
MONPP-JIT-B-18-012-Env	Onsite Ash Basin Embankment Stability Alarm Response
MONPP-JIT-B-18-013-Env	On Site Inspection

Note:
1. This table summarizes the documents referenced in the IMMM. Additional documents related to the Fly Ash Basin and the Vertical Extension Landfill are provided in Operations Plan Drawing 0695-C-H-0243-003-REV. E.

Table 4-1. SAA Inclinometer Locations and Alarm Levels

SAA Inclinometer	Northing (ft NAD83) [1]	Easting (ft NAD83) [1]	Total Length (ft)	As-Built Elevation (ft NGVD29) [2]		Alarm Level Criteria					
						Orange			Yellow		Red
				Embankment Crest	Top SAA	Alert #1	Alert #2	Alert #3	Warning #1	Warning #2	Emergency #1
Station 11+50	142322	13396584	44.29	615	616.3	3D Difference Velocity [3] displacement rate of 0.2 inches/month or greater.	3D Point Velocity [4] displacement rate of 0.04 inches/day or greater.	1% shear strain [5]	3D Point Velocity [4] displacement rate of 0.08 inches/day or greater.	3% shear strain [5]	3D Point Velocity [3] displacement rate of 1 inches/day or greater.
Station 34+00	142798	13394568	47.57	615	617.6						
Station 56+00	143229	13392667	55.77	615	616.8						
Station 65+50	143429	13391590	55.77	615	616.8						
Station 77+00	142743	13390967	55.77	615	616.8						
Station 118+00	140143	13392117	54.13	615	617.1						
Station 133+00	139351	13393391	57.41	615	616.4						
Station 142+00	139277	13394125	62.33	615	617.3						
Station 162+50	140099	13395871	59.05	615	617.1						
Station 178+00	141217	13396930	54.13	615	617.1						

Notes:

[1] Coordinates are in NAD83 Michigan South State Plan system and are approximate.

[2] Elevations are in NGVD29 and are approximate.

[3] The 3D Difference Velocity data are calculated based on the last reading and the average of four readings from 30 days prior to the most recent data.

[4] The 3D Point Velocity data are calculated based on the most recent 12 data points.

[5] Shear strains calculated by the Geotechnical Engineer for comparison with the alarm levels when cumulative displacement first exceeds 1 inch at each Station.

Table 4-2. Vibrating Wire Piezometer Locations and Alarm Levels

Vibrating Wire Piezometer (VWP)	Northing (ft NAD83) [1]	Easting (ft NAD83) [1]	As-Built Ground Surface Elevation (ft NGVD29) [2]	As-Built Piezometer Elevation (ft NGVD29) [2]	Water Elevation (ft NGVD 29)					
					Orange Alert #1		Yellow Warning #1		Red Emergency #1	
					0.5 ft above bottom of PRL	Water elevation must be sustained above Orange level for more than 5 days or appear unrelated to precipitation event.	0.5 ft below top of PRL	Water elevation must be sustained above Yellow level for more than 3 days or appear unrelated to precipitation event.	1.5 ft above top of PRL	No duration requirement for Red level alarms.
PZ-1S	143132.58	13391553.77	614.7	599.7	613.2		614.2		616.2	
PZ-1D				579.7						
PZ-2S	142791.36	13391744.99	615.9	600.9	614.4		615.4		617.4	
PZ-2D				580.9						
PZ-3S	142601.23	13391236.06	614.3	599.3	612.8		613.8		615.8	
PZ-3D				579.3						
PZ-4	142399.11	13392255.75	614.7	594.7	613.9		614.9		616.9	
PZ-5	142891.20	13392666.26	614.3	594.3	613.3		614.3		616.3	
PZ-6	142317.97	13393071.44	615.5	595.5	614.8		615.8		617.8	
PZ-7	142712.44	13393198.77	614.1	594.1	613.4		614.4		616.4	
PZ-8	141845.96	13393003.18	613.2	593.2	612.4		613.4		615.4	
PZ-9	141949.20	13393629.57	614.8	594.8	613.9		614.9		616.9	
PZ-10	142364.59	13393873.25	614.8	594.8	614.0		615.0		617.0	
PZ-11	141288.34	13306912.13	N/A	605.5	N/A		610.0		N/A	

Notes:
[1] Coordinates are in NAD83 Michigan South State Plan system and are approximate.
[2] Elevations are in NGVD29 and are approximate.
N/A - Not Applicable

Table 4-3. Settlement Plate Locations and Alarm Levels

Settlement Plate		Northing (ft NAD83) [1]	Easting (ft NAD83) [1]	Baseline Elevation (ft NGVD29) [2]	Baseline Measurement Date	Alarm Level Criteria		
						Orange Alert #1	Yellow Warning #1	Red Emergency #1
SP-1	Top of Plate	143263.75	13391724.38	613.77	6/20/2016	Measured settlement between 3 and 6 inches per quarter (i.e., 1 to 2 inches/month).	Measured settlement between 6 and 12 inches per quarter (i.e., 2 to 4 inches/month).	Measured settlement 12 inches or greater per quarter (i.e., greater than 4 inches/month).
SP-2	Top of Plate	142948.78	13391164.48	610.94	2/15/2016			
SP-3	Top of Plate	143124.35	13391551.76	615.33	2/1/2016			
SP-4	Top of Plate	142779.81	13391741.28	616.34	3/14/2016			
SP-5	Top of Plate	142591.55	13391231.59	614.68	2/1/2016			
SP-6	Top of Plate	142395.73	13392264.52	615.39	10/23/2017			
SP-7	Top of Plate	142887.18	13392678.86	614.78	10/23/2017			
SP-8	Top of Plate	142314.67	13393070.28	616.21	9/24/2018			
SP-9	Top of Plate	142709.21	13393207.63	614.82	10/23/2017			
SP-10	Top of Plate	141843.27	13393010.62	613.8	5/26/2020			
SP-11	Top of Plate	141946.56	13393636.15	615.36	10/23/2017			
SP-12	Top of Plate	142362.33	13393880.27	615.53	10/23/2017			

Notes:
[1] Coordinates are in NAD83 Michigan South State Plan system and are approximate.
[2] Elevations are the baseline reading collected by DTE Surveying Services in NGVD29.
N/A - Not Applicable

Table 4-4. Manual Inclinometer Locations and Alarm Levels

Inclinometer ID	Northing (ft NAD83) [1]	Easting (ft NAD83) [1]	As-Built Elevation (ft NGVD29) [2]	Alarm Level Criteria		
				Orange Alert #1	Yellow Warning #1	Red Emergency #1
FI-1	141951.23	13392399.02	611.90	Cumulative displacement less than 3 inches or incremental displacement (compared to previous reading) of 0.5 inches.	Cumulative displacement of 3 to 6 inches or incremental displacement (compared to previous reading) of 0.5 to 2 inches.	Cumulative displacement exceeds 12 inches or incremental displacement (compared to previous reading) exceeds 2 inches.
FI-2	141360.68	13392909.31	612.05			
FI-3	141570.74	13393467.74	613.42			
FI-4	141732.21	13393991.01	611.64			
SI-10	142280.24	13391364.86	612.45			
SI-9	142989.72	13391192.71	611.28			

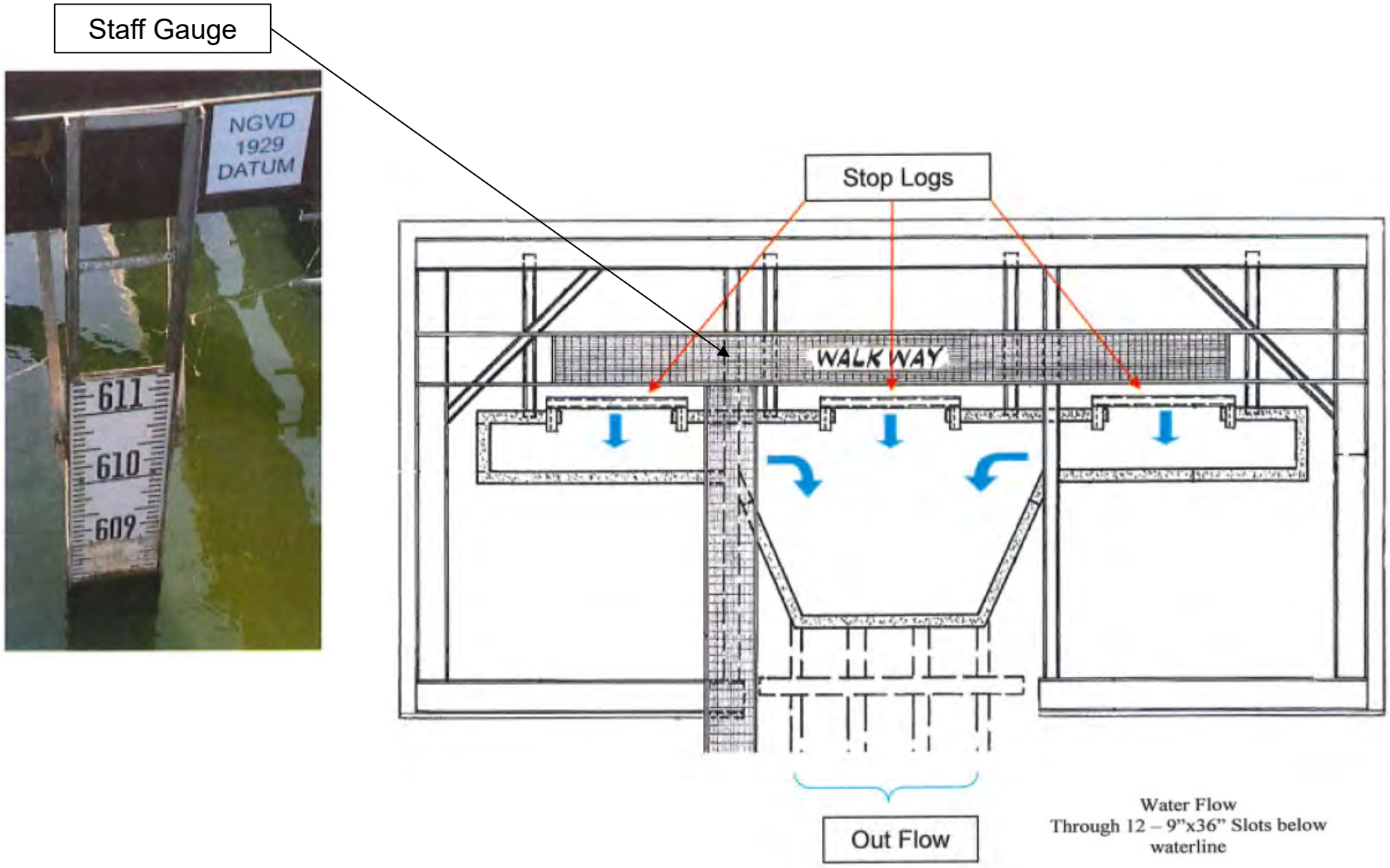
Notes:
[1] Coordinates are in NAD83 Michigan South State Plan system and are approximate.
[2] Elevations are in NGVD29 and are approximate.

Table 4-5. Climate Monitoring Station
Precipitation Alarm Levels

Alarm Level Criteria		
Orange Alert #1	**Yellow Warning #1**	**Red Emergency #1**
Precipitation event greater than 1.5 inches in 24 hours.	Precipitation event greater than 2.0 inches in 24 hours.	Precipitation event greater than either: (a) 2.5 inches in 24 hours; or (b) 3.0 inches in 40 hours

Table 4-6. Notified Parties for Alarm Response

Alarm Level	Alarm Code	Notified Party
Gray	Latent	Geotechnical Engineer
		ESO
		EM&S
Orange	Alert #1/#2	Geotechnical Engineer
		ESO
		Plant Operations
		EM&S
	Alert #3	Geotechnical Engineer
Yellow	Warning #1	Control Room
		Geotechnical Engineering
		ESO
		Plant Operations
		EM&S
	Warning #2	Geotechnical Engineer
Red	Emergency #1	Control Room
		Geotechnical Engineer
		ESO
		Plant Operations
		EM&S



Ash Basin Discharge Structure Layout

Inspection, Monitoring and Maintenance Manual (IMMM), Rev. E November 2024	Geosyntec consultants DTE	**Figure** **3-1**

APPENDIX A

FLY ASH BASIN INSPECTION FORM

CCR Surface Impoundment
Weekly Inspection Report

Name of Surface Impoundment: Monroe Power Plant Fly Ash Basin **Date:** _____ **Time:** _____

Qualified Person: _____ **Weather:** _____

Site Conditions: _____ **Precipitation (since last inspection):** ____ in.

_____

I. Crest

1. Are there any appearances of actual or potential structural weaknesses (ruts, holes, erosion, cracking, slides, depressions, undesired vegetation etc.)? Provide approximate size and location.)

2. Are there any significant changes since last inspection?

II. Embankment Slopes and adjacent to the Toe of Slope

1. Are there any appearances of actual or potential structural weaknesses (ruts, holes, erosion, cracking, sloughs, depressions, bulges, undesired vegetation etc.)? Provide approximate size and location/station.

2. Are there any visible wet areas on the downstream slope?

3. Are there any significant changes since the last inspection?

III. Surface Impoundment Conditions

1. What is the water level in the surface impoundment today?

Maximum Pool Level / Datum 609 ft / NGVD29 Pool Level is ____ ft. ____ in.

2. Is there excessive CCR build-up above the water surface that could lead to overtopping?

3. Are there any significant changes since the last inspection?

DTE Energy

CCR Surface Impoundment
Weekly Inspection Report

IV. Discharge Structure and Channel

1. Are there any cracks or breaks in concrete or steel parts of the discharge structure, or obstructions to water flow? *If 'Yes' report the location and severity.*

2. Are there signs of slope distress or seepage on the slope between the inlet and outlet structures or turbidity in the outflow? *If 'Yes' describe the issue.*

3. Is the weir at the downstream of discharge channel in working condition? *If 'No', describe the issue.*

4. Is 005A clear of vegetation and water is discharging freely?

VI. Repairs, Maintenance, Action Items

1. Has this inspection identified any need for repair or maintenance? _____ Yes _____ No

If 'Yes', describe and state the urgency of maintenance:
"Urgent" for maintenance that should be conducted as soon as possible
"Moderate" for maintenance that should be conducted within two years, or
Not Urgent for maintenance that can be conducted in five years.

VII. Photography

Photographs can be taken of notable features. List of photographs:

	Location	Direction of Photo	Description
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

APPENDIX B

VERTICAL EXTENSION LANDFILL

INSPECTION FORM

CCR Landfill
Weekly Inspection Report

Name of Landfill: Monroe Vertical Extension Landfill **Qualified Person:** _____
Surface Impoundment ID Number: _____ **Date:** _____ **Time:** _____
Owner: DTE Energy **Weather:** _____
Operator: _____ **Precipitation (since last inspection):** ___ in.
Site Conditions: _____

I. Landfill Condition

1. Describe operations in the landfill: Disposal of fly ash, bottom ash, economizer ash, FGD sludge
   Other: _____

2. Are any stormwater ditches obstructed? ___ Yes ___ No
   If 'Yes', describe (type of debris, reason for obstruction, etc.) _____

3. Are there indications of erosion on the landfill perimeter berm? ___ Yes ___ No
   If 'Yes', describe what type and its condition (rill, gully, dimensions, etc.) _____

4. Is runoff from the landfill surface contained by the perimeter ditch or Fly Ash Basin? ___ Yes ___ No
   If 'No', describe where runoff flow is not contained. _____

5. Is runon prevented from entering the landfill area? ___ Yes ___ No
   If 'No', describe where runoff flow is not contained. _____

6. Is the underdrain collection system draining? ___ Yes ___ No
   Describe flow conditions. _____

7. Is there any unusual settlement causing "birdbaths"? ___ Yes ___ No
   If 'Yes', describe. _____

8. Other observations around the landfill (changes since last inspection): ___ Yes ___ No
   If 'Yes', describe. _____

II. Repairs, Maintenance, Action Items

1. Has any routine maintenance been conducted since the last inspection? ___ Yes ___ No
   If 'Yes', describe. _____

2. Have any repairs been made since the last inspection? ___ Yes ___ No
   If 'Yes', describe. _____

3. Has this inspection identified any need for repair or maintenance? ___ Yes ___ No
   If 'Yes', describe and state the urgency of maintenance. "Urgent" for maintenance that should be conducted as soon as possible, "Moderate" for maintenance that should be conducted within two years, and "Not Urgent" for maintenance that can be conducted within five years. _____

4. Are the instrumentation intact and functioning? ___ Yes ___ No
   If 'No', describe conditions of instrumentation. _____

III. Photography

Photographs can be taken of notable features. List of photographs:

	Location	Direction of Photo	Description
i.			
ii.			
iii.			
iv.			
v.			
vi.			
vii.			
viii.			
ix.			
x.			

APPENDIX C

ANNUAL INSPECTION PHOTO LOG FORMS

DTE ELECTRIC COMPANY
Photographic Record

Client: DTE Electric Company | **Project Number:** CHE8242V

Site Name: Monroe Power Plant
Fly Ash Basin or Vertical Extension Landfill | **Site Location:** Monroe, MI

Photograph 1	
Date:	
Direction:	
Comments:	

Photograph 2	
Date:	
Direction:	
Comments:	

APPENDIX D

TYPES OF VEGETATION

DESIRABLE VEGETATION

http://turfid.ncsu.edu/csPagedPdField.aspx?PlantID=LOLMU

1a. Example of Annual Ryegrass Bush

http://purdueturftips.blogspot.com/2013/04/annual-ryegrass-showing-up-in-lawns.html

1b. Example of Annual Ryegrass Seedhead

http://extension.udel.edu/ornamentals/tag/ground-ivy/

1c. Example of Annual Ryegrass Seedhead

http://forages.oregonstate.edu/nfgc/images/annual_ryegrass

1d. Example of Annual Ryegrass Leaves

Figure 1. Examples of Annual Ryegrass

DESIRABLE VEGETATION

https://www.kshs.org/kansapedia/little-bluestem/17239

2a. Example of Little Bluestem Seedheads

https://www.gardeningknowhow.com/ornamental/foliage/little-bluestem-grass/little-bluestem-care.htm

2b. Example of Little Bluestem Bush

http://ecogardenok.com/ecolandscaping/schizachyrium-scoparium-little-bluestem/

2c. Example of Little Bluestem Seedheads

http://www.easywildflowers.com/quality/sch.scopa.htm

2d. Example of Little Bluestem Bush

Figure 2. Examples of Little Bluestem

DESIRABLE VEGETATION

https://www.bamertseed.com/product/sideoats-grama/

3a. Example of Sideoats Gramma Bush

https://www.pinterest.com/pin/358388082830762392/

3b. Example of Sideoats Gramma

http://grownative.org/native-plant-info/seedling-identification/sideoats-grama/

3c. Example of Sideoats Gramma Seedheads

http://www.illinoiswildflowers.info/grasses/plants/so_grama.htm

3d. Example of Sideoats Gramma Seeds

Figure 3. Examples of Sideoats Gramma

UNDESIRABLE VEGETATION

http://threatsummary.forestthreats.org/threats/threatSummaryViewer2.cfm?threatID=91

4a. Example of Canada Thistle Flowers

http://www.nps.gov/olym/naturescience/canada-thistle.htm

4b. Example of Canada Thistle Bush

http://extension.udel.edu/ornamentals/tag/ground-ivy/

4c. Example of Canada Thistle Leaves

http://www.sdstate.edu/ps/weed-mgmt/weed_description.cfm?weed=Canada%20thistle

4d. Example of Sideoats Gramma Seeds

Figure 4. Examples of Canada Thistle

UNDESIRABLE VEGETATION

http://aftermathblog.wordpress.com/2010/01/20/teasel/

5a. Example of Teasel Flower

http://commons.wikimedia.org/wiki/File:Wild_Teasel.jpg

5b. Example of Teasel Flowers

http://bluejaybarrens.blogspot.com/2012/07/teasel-nectar.html

5c. Example of Canada Teasel Bush

http://oregonstate.edu/dept/nursery-weeds/weedspeciespage/teasel/common_teasel_Dipsacus_sylvestris_page.html

5d. Example of Teasel Leaves

Figure 5. Examples of Teasel

UNDESIRABLE VEGETATION

http://malaria.ws/mullein/

6a. Example of Mullein Flowers

http://bearmedicineherbals.com/a-golden-torch-mullein%E2%80%99s-healing-light.html

6b. Example of Mullein Flowers

http://fieldguide.mt.gov/detail_PDSCR1Z080.aspx

6c. Example of Mullein Bush

http://en.wikipedia.org/wiki/File:Common_Mullein.jpg

6d. Example of Mullein Leaves

Figure 6. Examples of Mullein

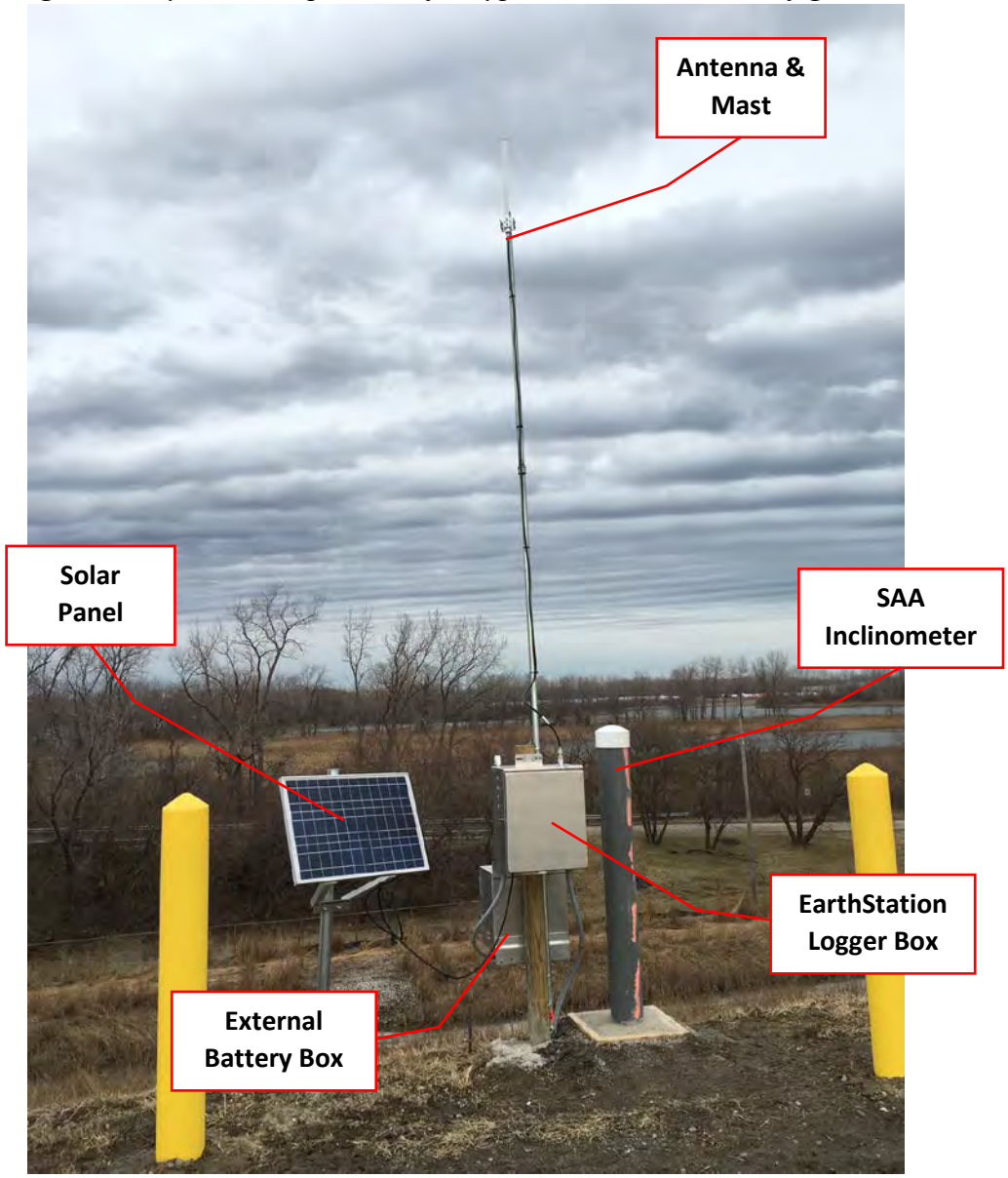
APPENDIX E

CONTINUOUS MONITORING SYSTEM OUTAGE ASSESSMENT AND RESET GUIDE

DTE-Monroe Fly Ash Basin
Inclinometer & Piezometer System Outage Assessment and Reset Guide

1) If an outage occurs, contact Geosyntec to determine which Station(s) is/are affected.
2) Once mobilized to the affected Station(s), begin with an assessment of the physical components of the system. **Figure 1** shows the physical components of a typical EarthStation configuration.

Figure 1. Physical Components of a Typical EarthStation Configuration



Physical Exterior Components

- Check all wires, cables, and connections of components entering and exiting the EarthStation.
- Check the alignment of the photovoltaic solar panel and ensure no obstructions are preventing charging.
- Check the elevated antennae and its cable entry into the EarthStation.

3) If all physical components are intact, open the EarthStation and inspect the interior electronic components. **Figures 2a** and **2b** show the interior electronic components of typical SAA Inclinometer and Vibrating Wire EarthStation configurations, respectively.

Figure 2a. Interior Components of a Typical SAA Inclinometer EarthStation Configuration

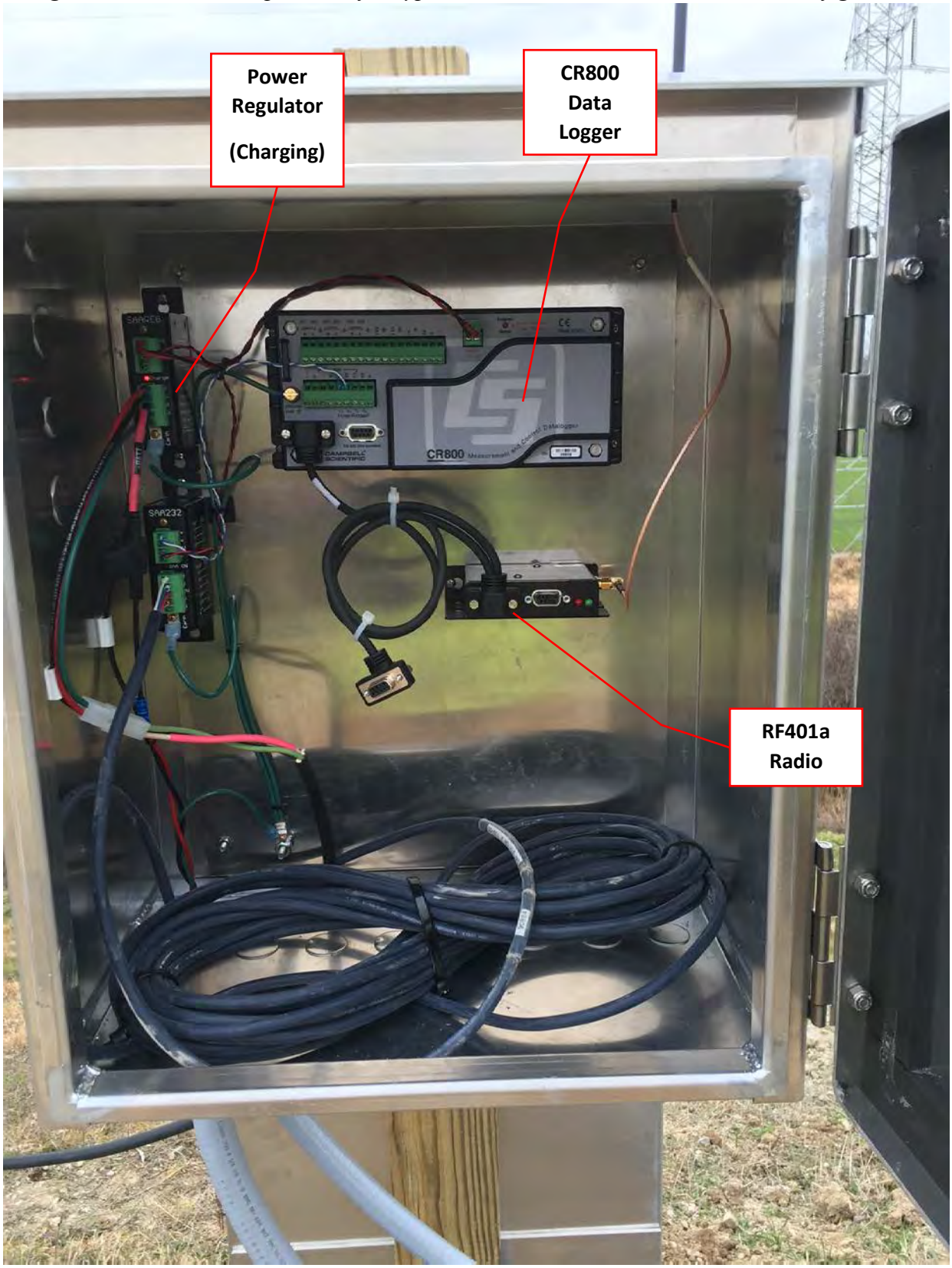
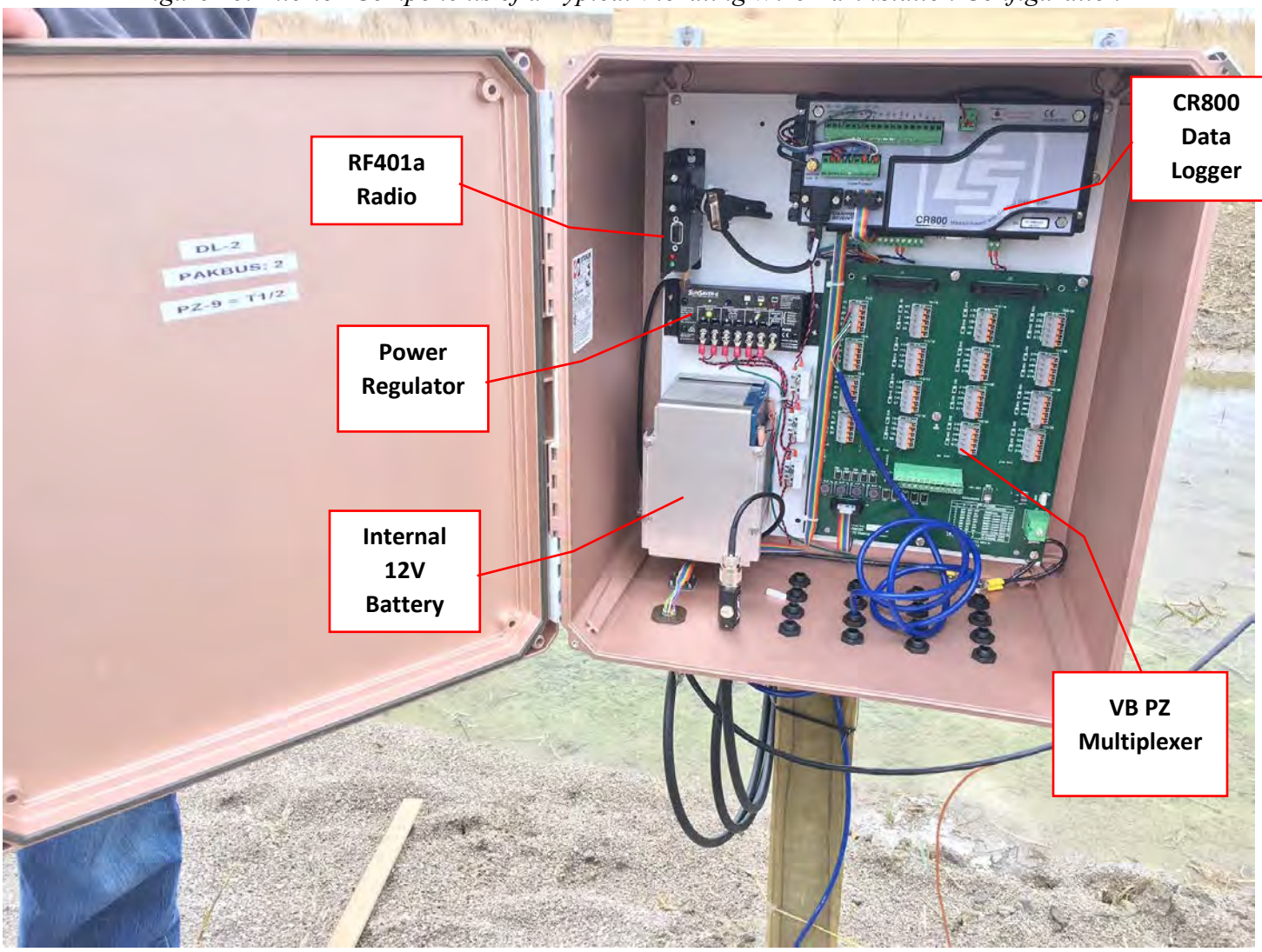


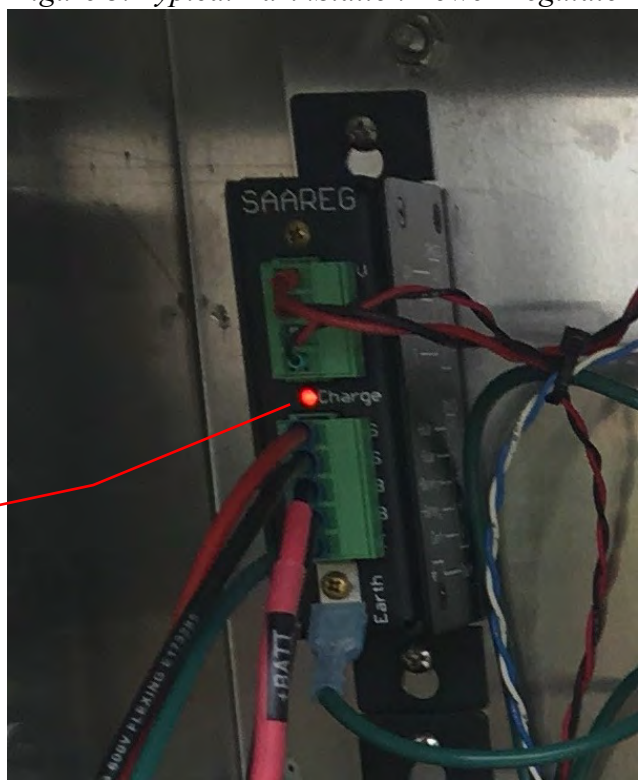
Figure 2b. Interior Components of a Typical Vibrating Wire EarthStation Configuration



Interior Electronic Components

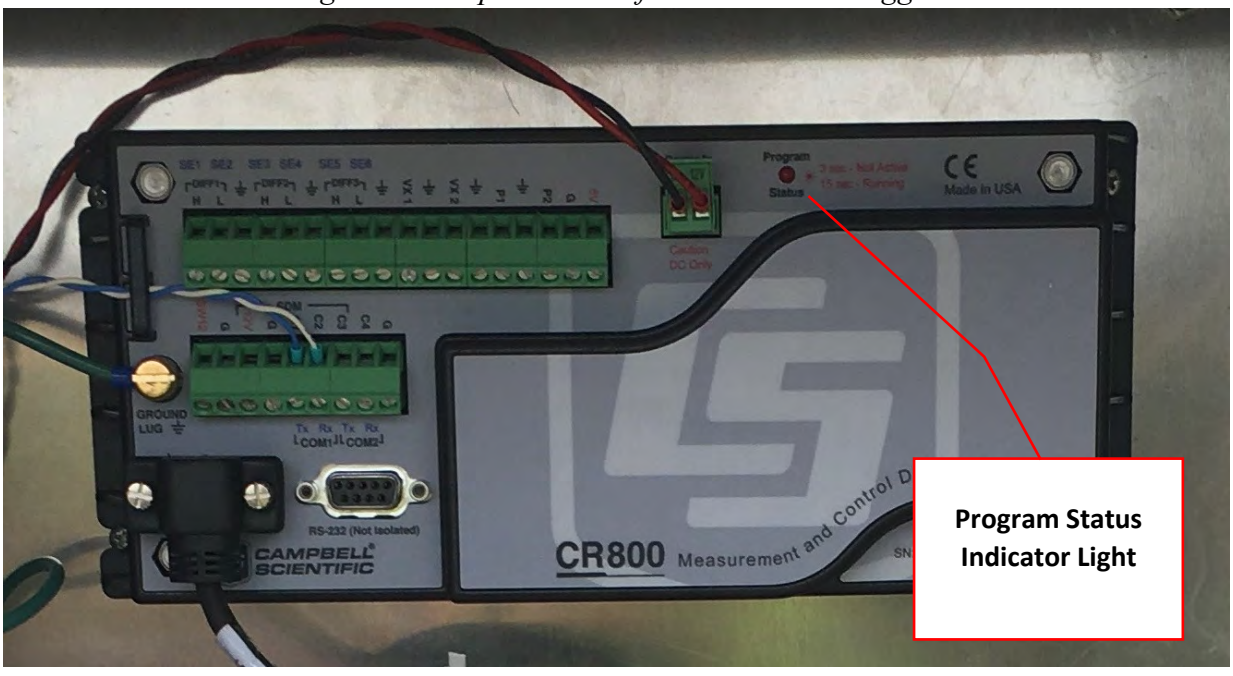
- Check all wires, cables, and connections of the electronics within the EarthStation.
- Check the EarthStation's power supply.
    - Find the Power Regulator within the EarthStation (**Figure 3**).
    - The "Charge" indicator light will show solid red if the solar panel is actively charging the 12V battery.
    - If the indicator light is not lit and other indicator lights are flashing and/or solid, the EarthStation is either drawing power from the 12V battery or directly from the solar panel itself.
    - If the indicator light is not lit and no other indicator lights are flashing and/or solid, use a volt meter to check the DC voltage of the built-in (Piezometers) or exterior (Inclinometers) battery.
    - If the DC voltage is less than 10V, **contact Geosyntec** as either the battery needs to be replaced, or additional testing of the solar panel and/or power regulator needs to be conducted.

Figure 3. Typical EarthStation Power Regulator



- Check the datalogger's status.
  - Find the CR800 Datalogger within the EarthStation (**Figure 4**).
  - Make a note of the "Program Status" indicator light.
  - If the light flashes red once every 15 seconds, the logger is actively collecting and logging data according to the installed program.
  - If the light flashes once every 3 seconds (or any other interval or frequency), **contact Geosyntec** as the logger is powered but not collecting or logging data.

Figure 4. Campbell Scientific CR800 Data Logger



4) If the interior electronic components are intact, the data logger is running, and the station is powered. Begin the system restart process.

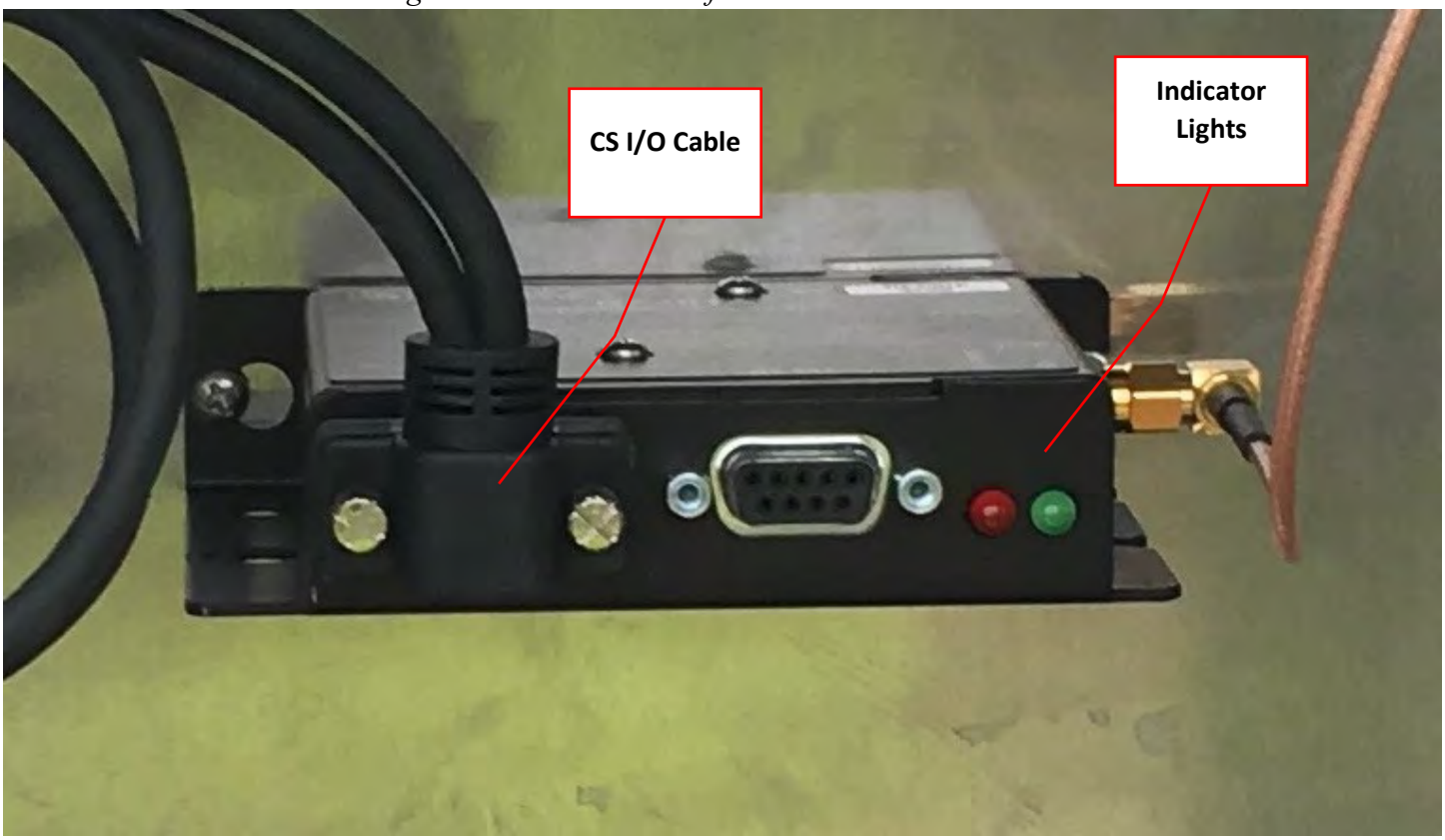
5) Restart the wireless radio(s).

- Check the radio's status.
  - Find the Campbell Scientifc RF-401A wireless radio (**Figure 5**)
  - Make a note of the indicator lights.
    - The red indicator light labeled "Pwr/TX" will be solid when the radio is powered and detects RF traffic. A pulsing light indicates that RF packets (data) are being actively transmitted.
    - The green indicator light labeled "RX" will show activity (flashing, but possibly fast enough to appear solid) when the radio is actively receiving RF packets.

- Power cycle the radio
  - Using a small flat-head screwdriver, loosen the thumb screws for the cable plugged into the "CS I/O" port and unplug the cable.
  - Wait 30 seconds.
  - Re-insert the cable and hand-tighten (do not over tighten) the thumb screws.
  - Once powered, the red indicator light will stay lit solid for 10 seconds. About 3 seconds after power-up, the green indicator light will flash for a second.
  - After approximately 10 minutes, **contact Geosyntec** to see if system communication has been restored.

- Repeat at other affected stations or at the direction of Geosyntec.

Figure 5. Cambell Scientific RF-401a Wireless Radio

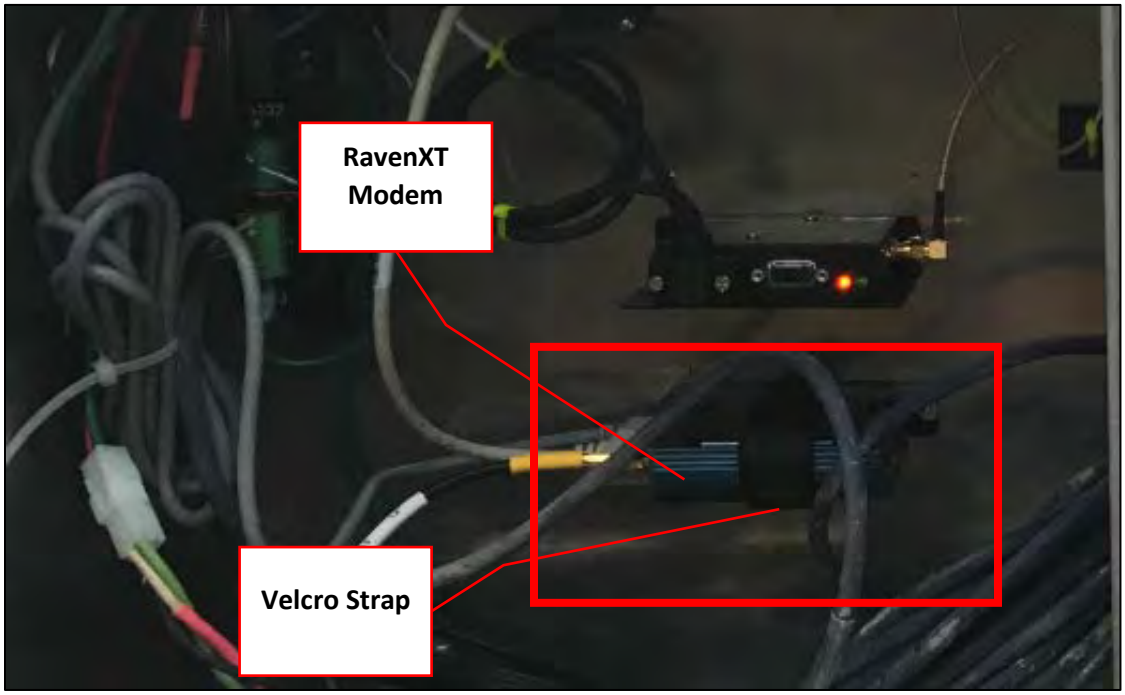


6) If communication has not been restored, restart the cellular modem.

- Mobilize to Station 65+00 (**Figure 6**)
- Identify RavenXT Sierra Wireless Cellular Modem (**Figure 7**).

Figure 6. Inclinometer SAA-65+50 EarthStation Interior

Figure 7. Location of RavenXT Cellular Modem in EarthStation



- Loosen the Velcro strap to access the modem.
- Make note of the indicator lights (**Figure 8**).

Figure 8. Raven XT Front Panel with Indicator Lights

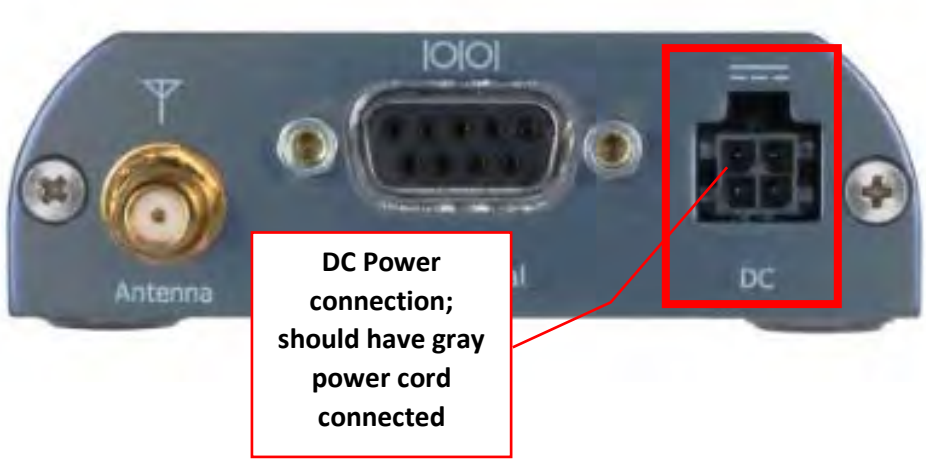
  - **Network**
    - Solid light indicates a successful connection to the cellular network with an IP address given and a channel acquired.
    - Flashing light indicates that the modem is attempting to authenticate on the network.
  - **Signal**
    - Indicates the strength of the signal and may be nearly solid (strong signal) or flashing (weaker signal). A slow flash indicates a very weak signal.
  - **Activity**
    - Indicates activity on the cellular network. Light will flash as data is transferred to and from the modem on the remote network.
  - **Power**
    - Indicates the power adapter is connected and there is power getting to the Raven XT.

- Locate the **Reset** button on the left side of the front panel.

- Attempt soft reset of the modem
  - Quickly (~ 1 – 2 seconds) press and release the **Reset** button.
  - The modem will power cycle the internal hardware.
  - **Contact Geosyntec** personnel to attempt to connect to the modem.
  - Make note of the indicator lights (may take up to 5 minutes to re-connect).

- If a soft reset does not restore communication, physically power cycle the modem.
  - Locate the “DC” power connection on the back panel (**Figure 9**)

Figure 9. Raven XT Back Panel



- Un-plug DC power cord; wait 30 seconds; re-connect DC power cord.
- Contact Geosyntec personnel to attempt to connect to the modem.
- Make note of the indicator lights (may take up to 5 minutes to re-connect).

- Replace modem in holder and tighten Velcro strap.
- **Contact Geosyntec** personnel to attempt to connect to the system.

7) If communication has still not been restored, **contact Geosyntec** as additional troubleshooting is required.

APPENDIX F

STEP-BY-STEP PROCEDURE

FOR CONTINUOUS MONITORING SYSTEM

LOGGING IN AND PROJECT SETUP

Steps:

1) Request access to site from Geosyntec. Include name, email address, and cell phone number.
    a. Clinton Carlson (ccarlson@geosyntec.com)
    b. Isaiah Vaught (ivaught@geosyntec.com)
    c. Bill Harris (bharris@geosyntec.com)
2) Geosyntec as the Geotechnical Engineer is responsible for providing access to users
3) Open preferred web browser
4) Navigate to the eagle.io website
    a. Email with link to site will be sent to the user once they are added to the site by the Geotechnical Engineer
    b. https://dtemonroe.eagle.io/
5) Login with the email address provided and set up a new password

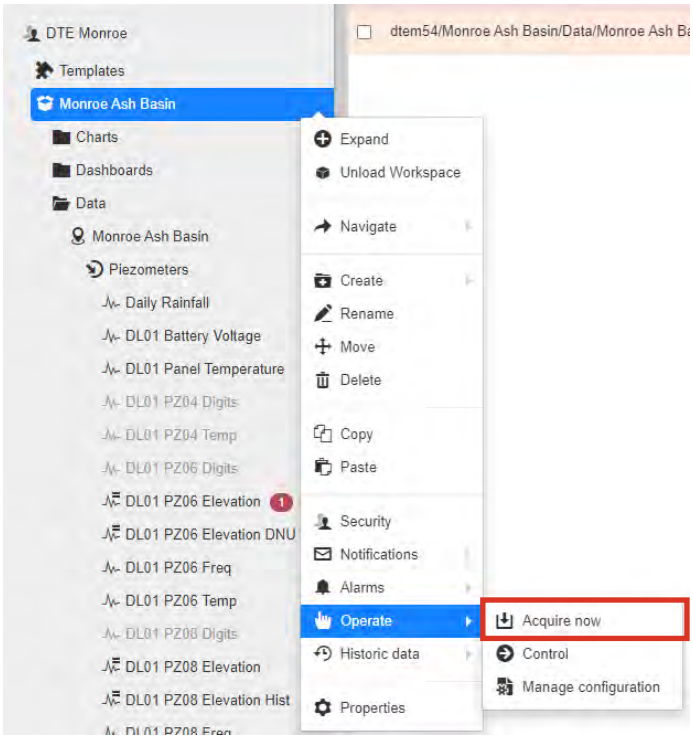
DATA COLLECTION

Data are automatically collected by the dataloggers, saved to Geosyntec's online server, and uploaded to the eagle.io site for processing and visualization. Data are collected approximately every six hours.

Steps to push collection of data by the continuous monitoring system :

1) Geotechnical Engineer will push collection of data by monitoring system to Geosyntec's server
2) Select the "Monroe Ash Basin" workspace on the left navigation bar
3) Select "Operate" → "Acquire now"

The Geotechnical Engineer will adjust frequency of data collection by dataloggers and eagle.io if necessary, after discussing with DTE.

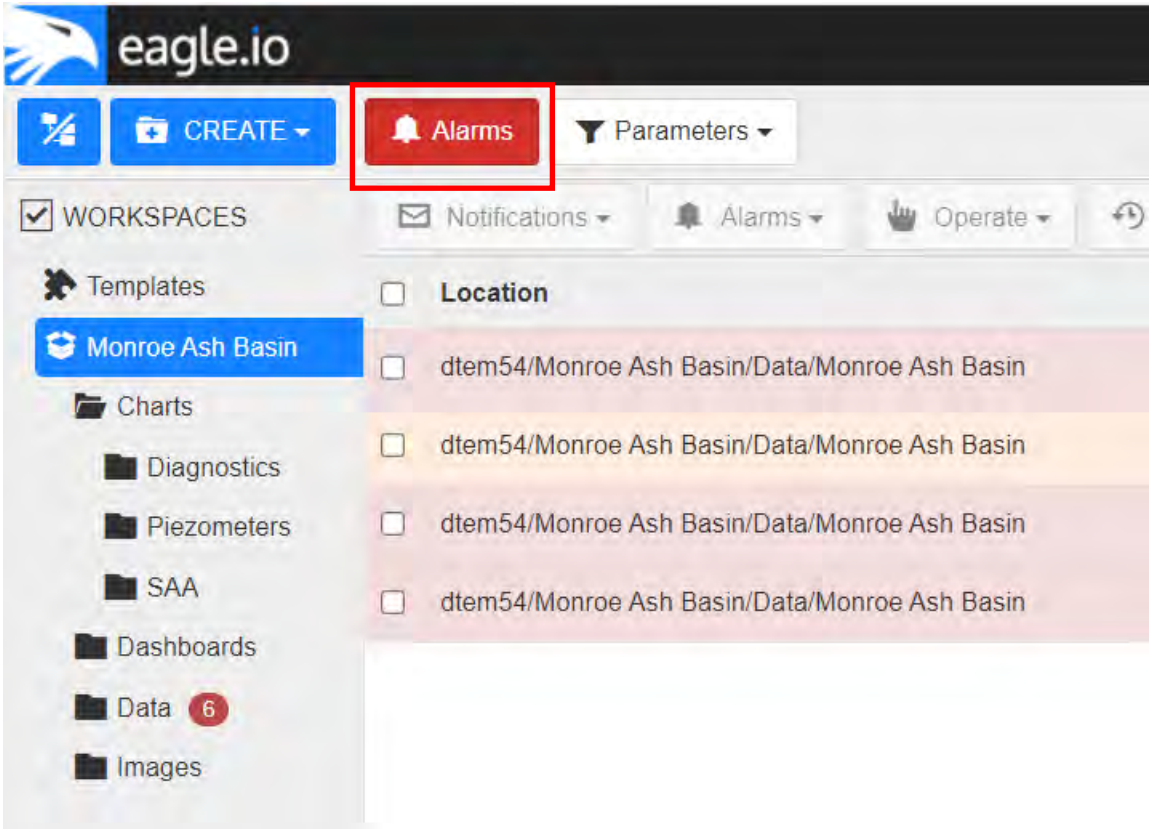


ALARMS

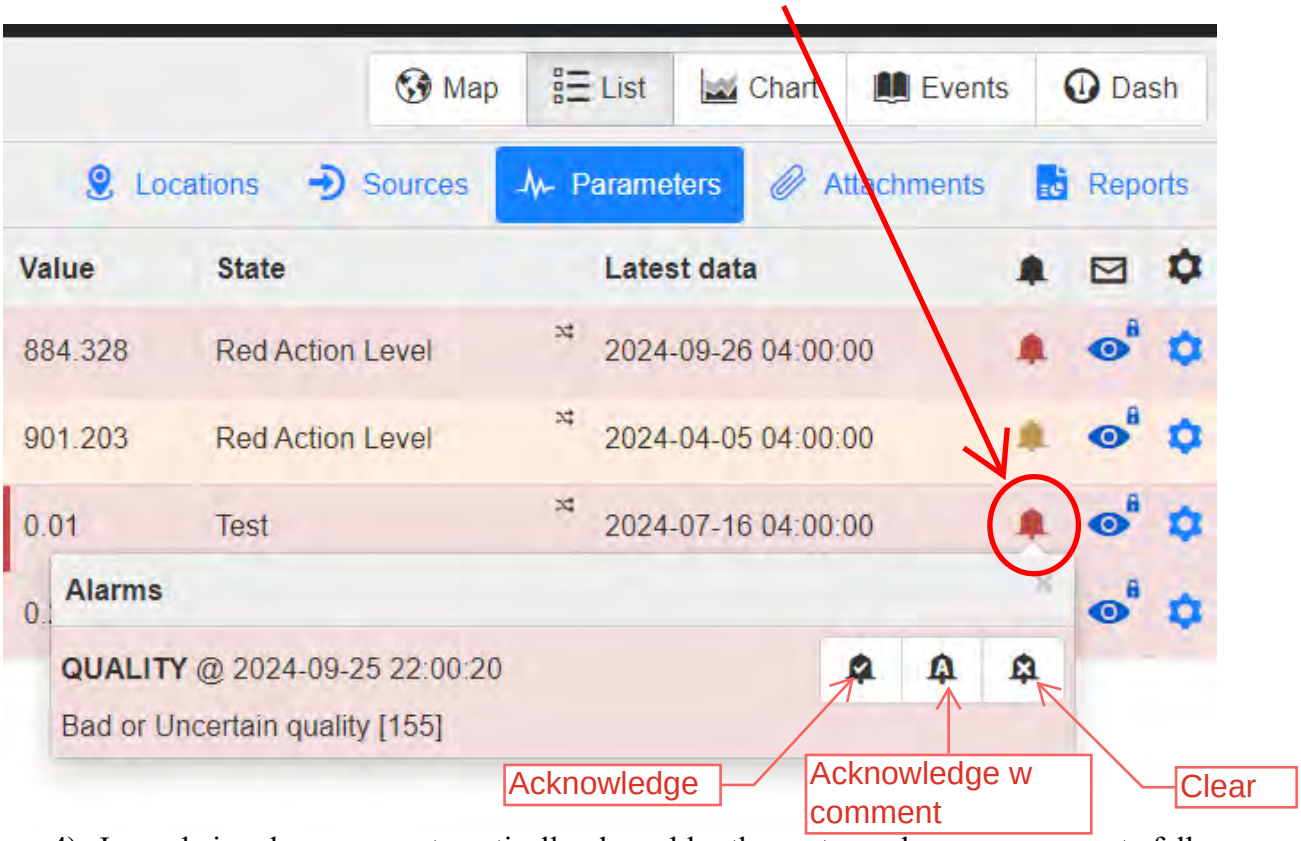
Viewing and Clearing Alarms

Steps:

1) Select "Monroe Ash Basin" workspace on the left navigation bar.
2) Click the red "Alarms" button to view current alarms
    a. Clicking the red "Alarms" button again will show all alarms



3) Click the bell icon to access viewing/clearing options
    a. The "check" bell silences the alarm by acknowledging the alarm
    b. The "A" bell silences the alarm by acknowledging the alarm and providing a comment
    c. The "X" bell clears the alarm from the alarm summary and resets the instrument



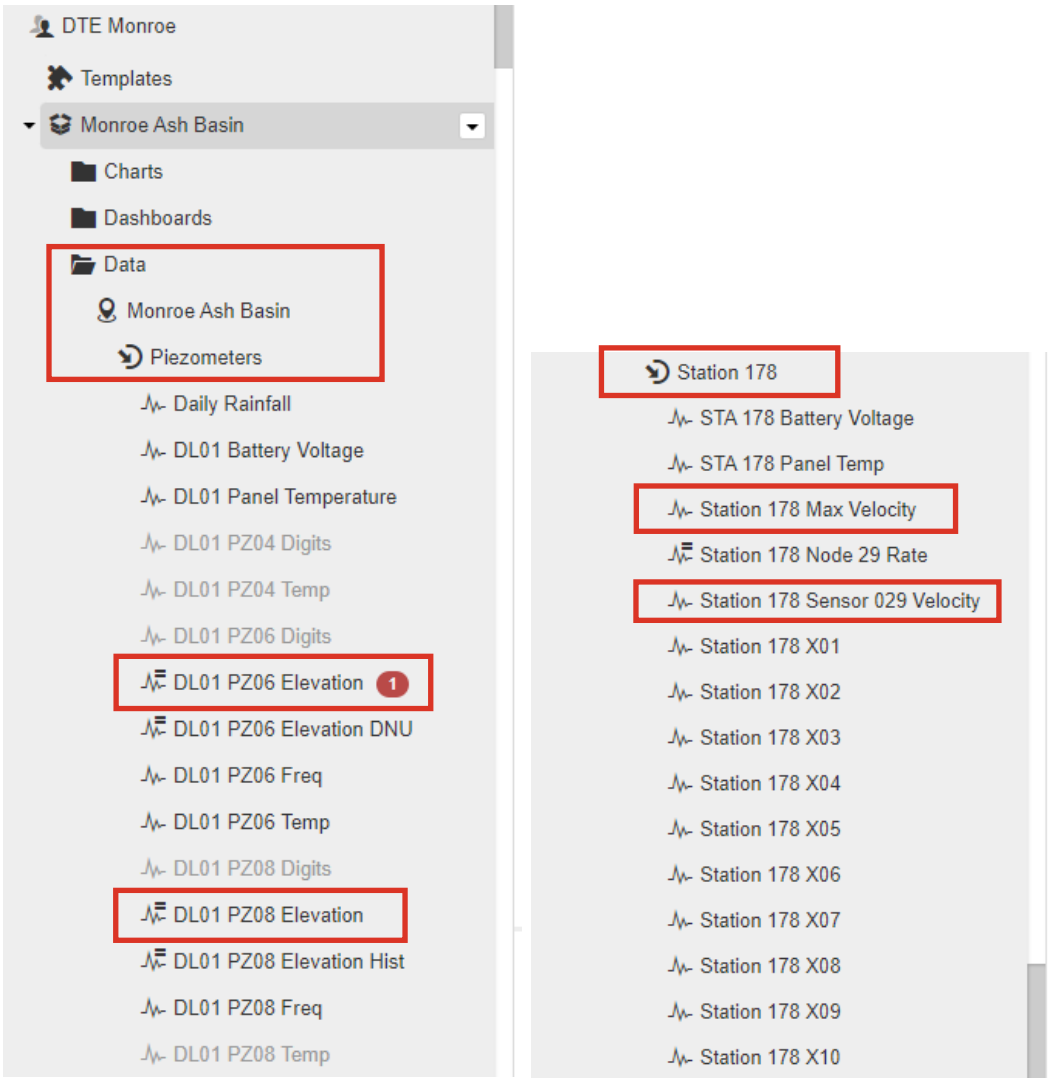
4) In eagle.io, alarms are automatically cleared by the system when measurements fall below the Alarm Levels or a higher Alarm Level is triggered
5) All historical alarms and changes between Alarm Levels can be viewed by clicking the "Events" tab in the header and can be filtered by instrument/sensor

Adding Alarms

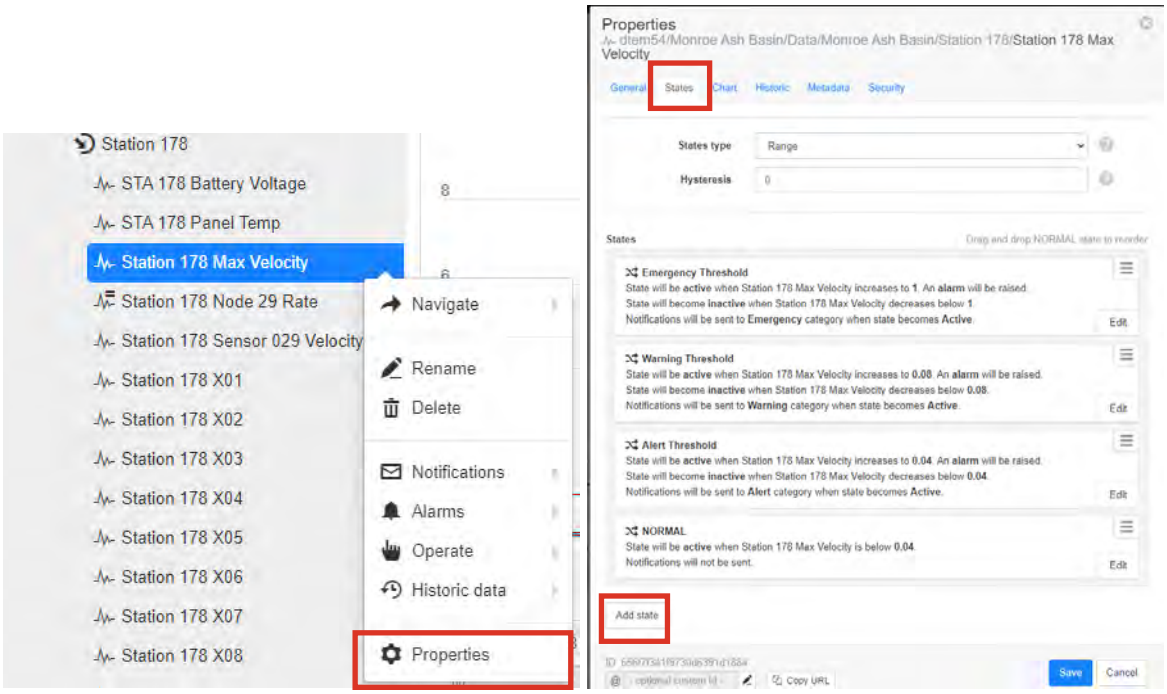
Steps:

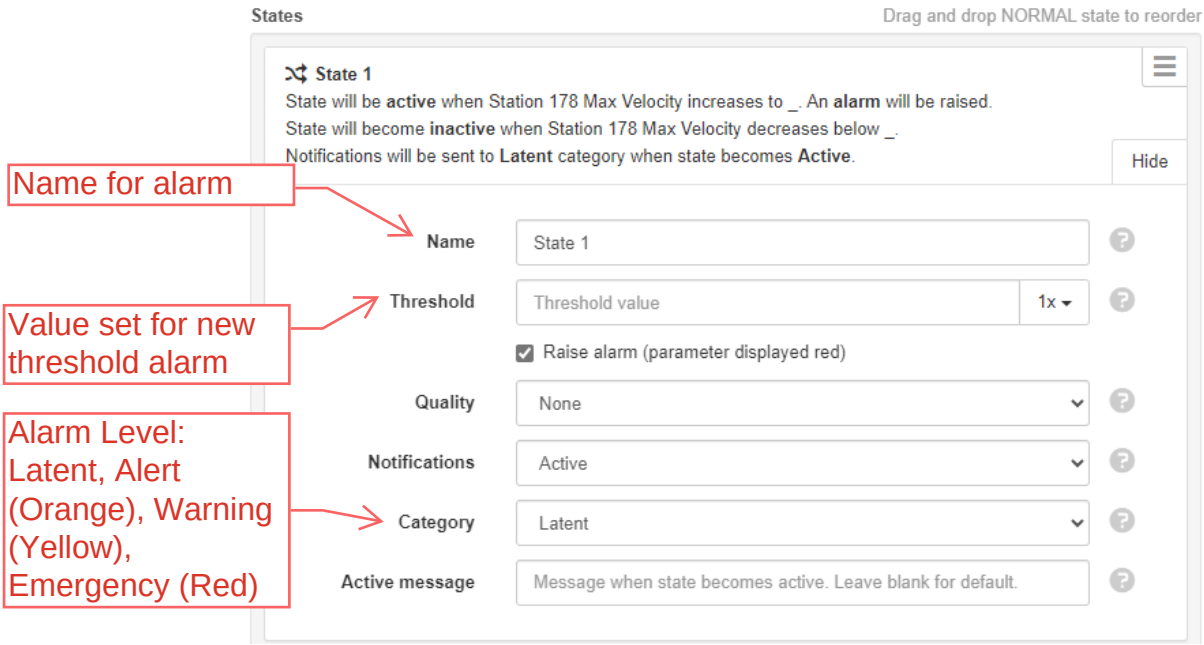
1) Select "Monroe Ash Basin" workspace on the left navigation bar
2) Navigate to "Data" → "Monroe Ash Basin" → target instrument
    a. All piezometers are under the "Piezometers" data.
        i. Naming convention is "DL0# PZ+ [Data Type]" where # is the datalogger to which piezometer + is connected and data type includes water level elevation and temperature.
        ii. Data for PZ11 at Station 178 is also included.
        iii. Only water level elevations have alarms.
        iv. Battery voltage and temperature for the dataloggers are included (no alarms).
        v. Daily rainfall is also under the "Piezometers" data (no alarms).
    b. Each SAA is under the "Station X" data for its corresponding station.
        i. Each inclinometer station includes data for battery voltage, temperature, maximum velocity over the entire inclinometer depth ("Max Velocity"), velocity at a specified sensor depth ("Station ## Sensor ## Velocity"), and displacements at each sensor depth (X = perpendicular to embankment and Y = parallel to embankment).

ii. Only maximum velocity and velocity and displacement at specified sensors have alarms.



3) Click on the measurement (e.g., Station X Max Velocity) for which you would like to set the new alarm.
4) Select "Properties".
5) Under the "States" tab, click the "Add state" box at the bottom of the dialogue box to add an alarm.
6) For the new alarm, specify:
    a. The "Name".
    b. A "Threshold" value.
    c. Associated Alarm Level (e.g., "Alert", "Warning", "Emergency") under "Type".





Removing Alarms

Steps:

1) Select "Monroe Ash Basin" workspace on the left navigation bar
2) Navigate to "Data" → "Monroe Ash Basin" → target instrument
3) Click on the measurement (e.g., Station X Max Velocity) for which you would like to set the new alarm.
4) Select "Properties".
5) Under the "States" tab, click the alarm to remove.
6) Click the options dropdown box and delete the alarm.

SLOPE INCLINOMETERS (SAA)

Viewing Charts

Steps:

1) Navigate to: Monroe Ash Basin → Charts → SAA
2) From here the following charts are accessible
    a. Delta Plots – Shows displacement (in either X or Y direction) for specific sensor depths at each Station
    b. Disp Charts – Shows displacement (in either X or Y direction) for the profile of the inclinometer
    c. Rate – Not used
    d. Reports – Not used
    e. Velocity – Shows the maximum velocity (displacement rate) for either:
        i. Max – over entire depth of inclinometer
        ii. Target node(s)

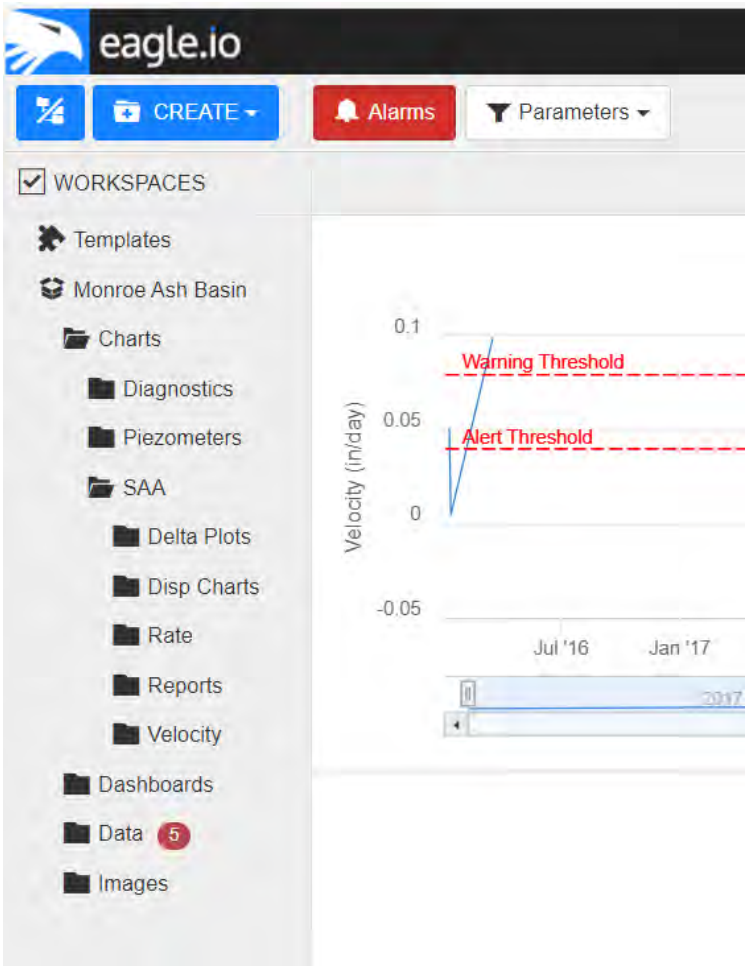


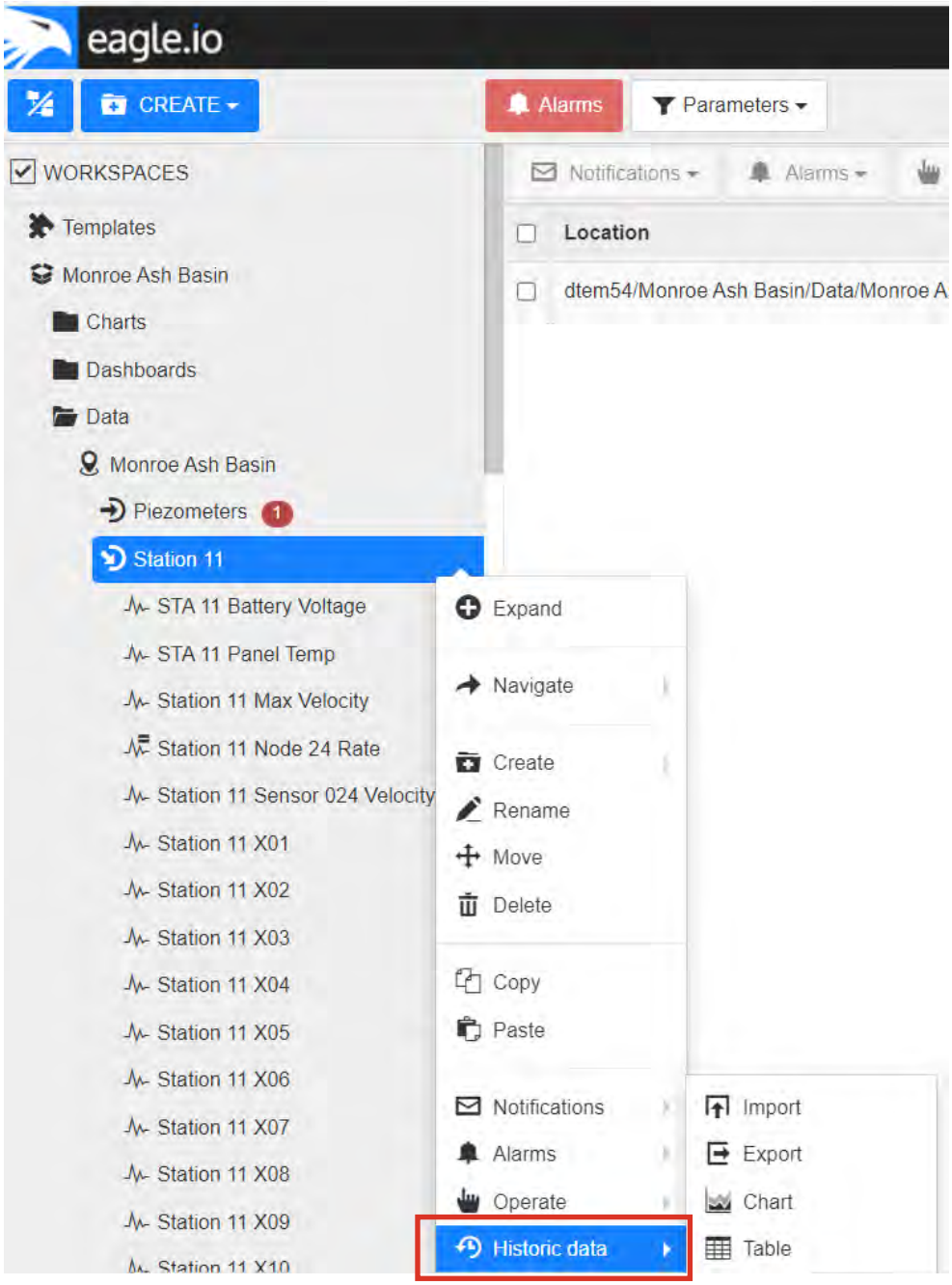
Chart Navigation

- Each Chart is interactive when toggling your cursor within the chart. X and Y axis values will be presented
- See figure below for specific navigation options

Viewing and Extracting Data

Steps:

1) Navigate to: Monroe Ash Basin → Data
2) From here navigate to a SAA station and sensor
3) From each respective sensor dropdown menu, the "Historic Data" option provides data viewing and extraction options



PIEZOMETERS

Viewing Charts

Steps:

1) Navigate to: Monroe Ash Basin → Charts → Piezometers
2) From here, charts for each respective piezometer are accessible

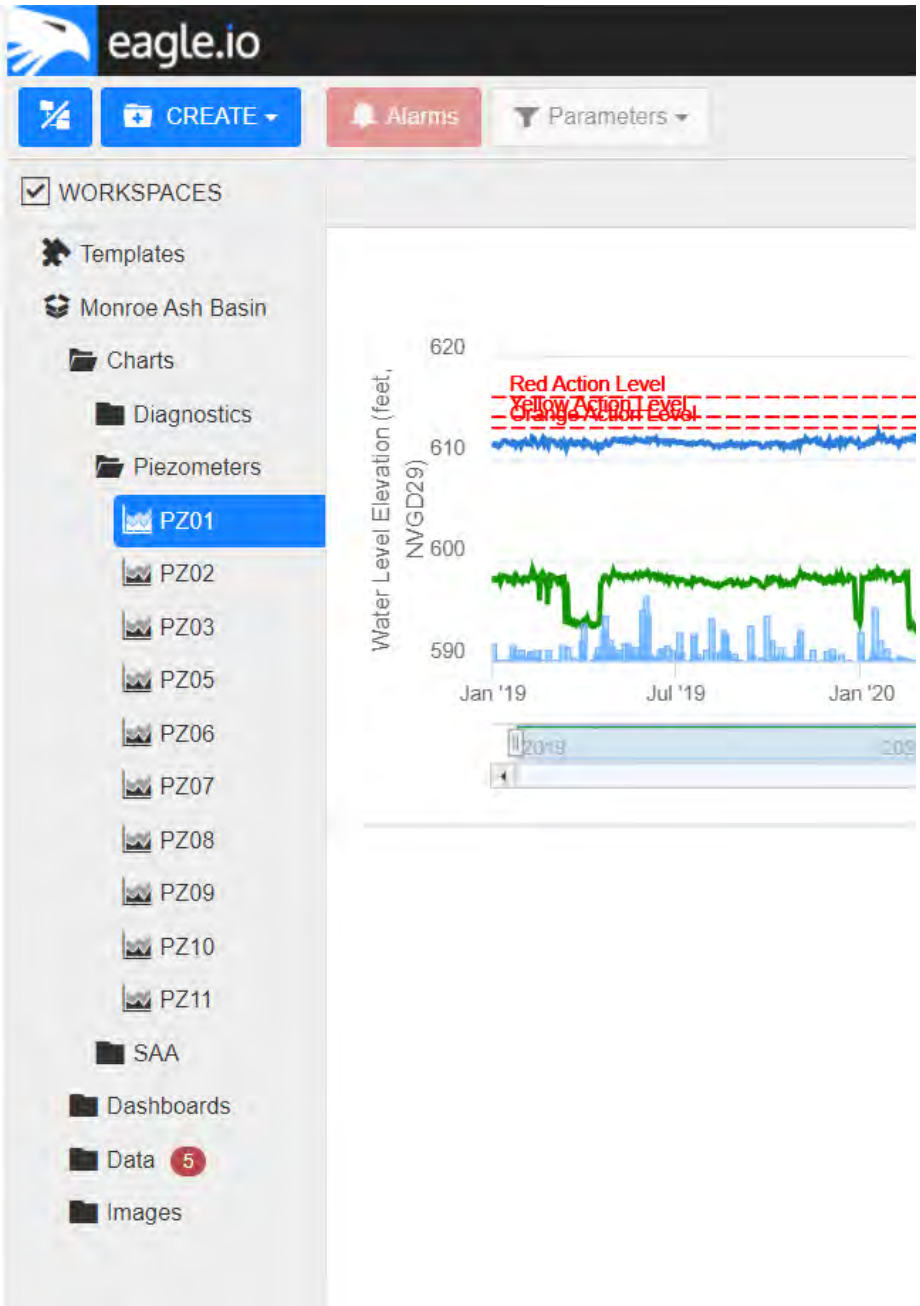
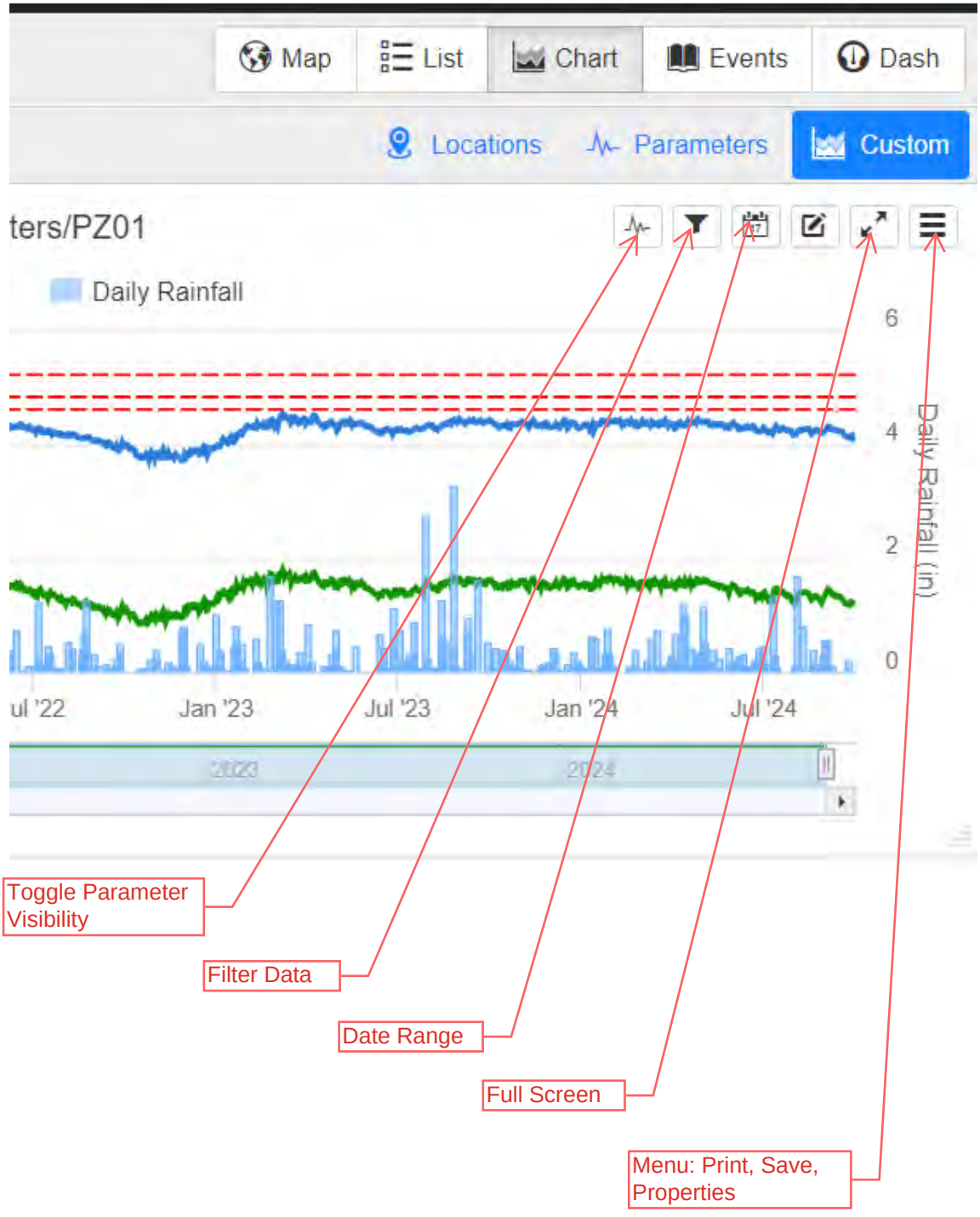


Chart Navigation

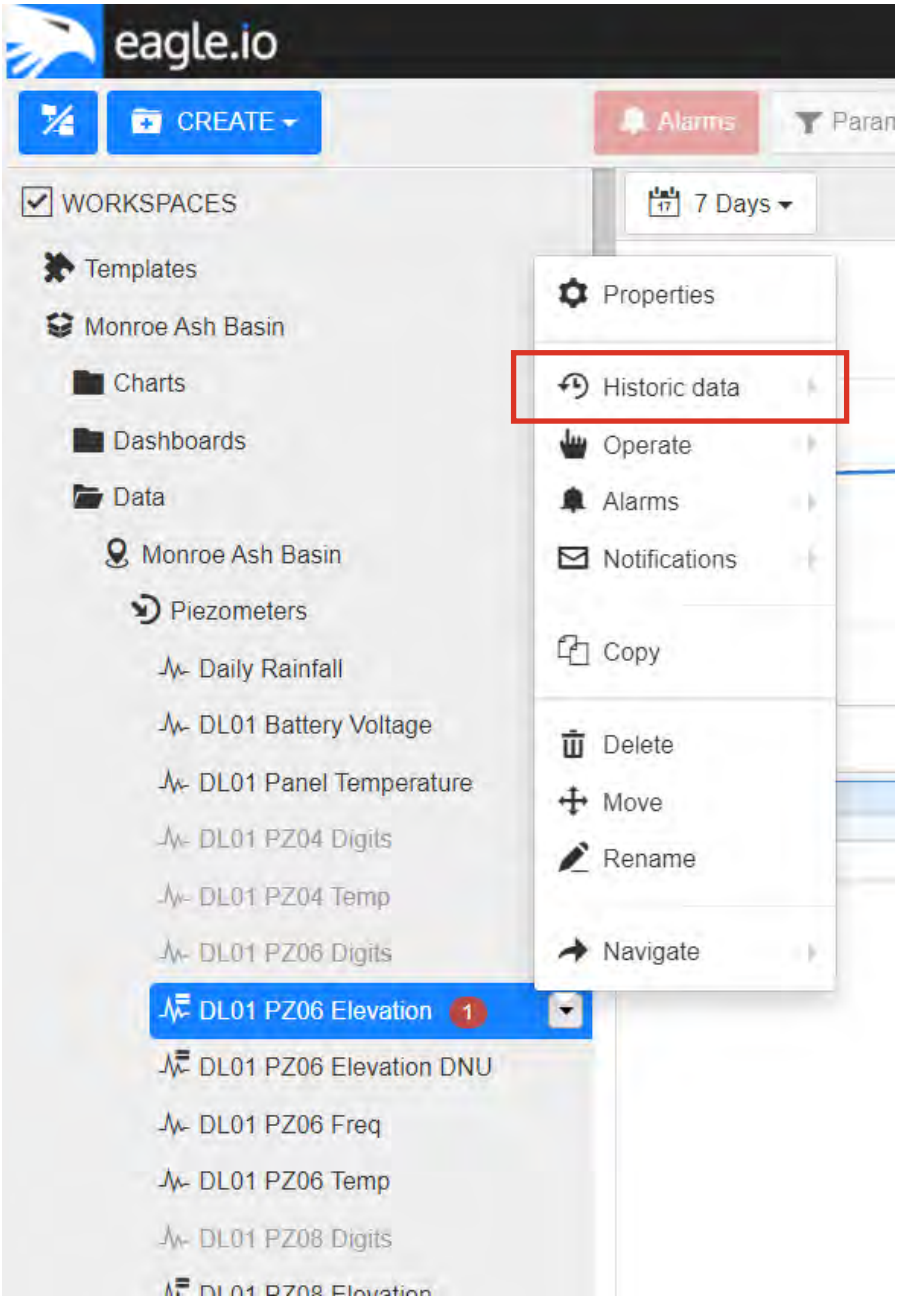
- Each Chart is interactive when toggling your cursor within the chart. X and Y axis values will be presented
- See figure below for specific navigation options:



Viewing and Extracting Data

Steps:

1) Navigate to: Monroe Ash Basin → Data → Piezometers
2) From here navigate to a Piezometer and parameter
    a. DL## PZ## Elevation
3) From each respective parameter dropdown menu, the "Historic Data" option provides data viewing and extraction options



APPENDIX G

SEED MIXES FOR EMBANKMENTS

2009 - 2013 ASH BASIN PERMANENT STABILIZATION SEED MIX

BOTANICAL NAME	COMMON NAME	PLS OUNCES/ACRE
PERMANENT GRASSES:		
ANDROPOGON GERARDII	BIG BLUESTEM	48.00
BOUTELOUA CURTIPENDULA	SIDE-OATS GRAMMA	16.00
CAREX SPP.	PRAIRIE SEDGE MIX	4.00
ELYMUS CANADENSIS	CANADA WILD RYE	32.00
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	24.00
PANICUM VIRGATUM	SWITCH GRASS	12.00
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	32.00
SORGHASTRUM NUTANS	INDIAN GRASS	32.00
		TOTAL 200.00
TEMPORARY COVER:		
AVENA SATIVA	COMMON OAT	512.00
LOLIUM MULTIFLORUM	ANNUAL RYE	222.00
		TOTAL 734.00

2017 - PRESENT ASH BASIN PERMANENT STABILIZATION SEED MIX

BOTANICAL NAME	COMMON NAME	LBS/ACRE
BOUTELOUA CURTIPENDULA	SIDE-OATS GRAMMA	6
SCHIZACHYRIUM SCOPARIOUS	LITTLE BLUESTEM	6
LOLIUM MULTIFLORUM	ANNUAL RYE	10
	TOTAL(PLS)	22

2009 - PRESENT ASH BASIN WETLAND (TOE DITCH) PERMANENT STABILIZATION SEED MIX

BOTANICAL NAME	COMMON NAME	PLS OUNCES/ACRE
PERMANENT GRASSES/SEDGES/RUSHES:		
CAREX CRISATELLA	CRESTED OVAL SEDGE	1.00
CAREX LURIDA	BOTTLEBRUSH SEDGE	2.00
CAREX VULPINOIDEA	BROWN FOX SEDGE	6.00
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	12.00
GLYCERIA STRIATA	FOWL MANNA GRASS	1.25
JUNCUS EFFUSUS	COMMON RUSH	1.00
JUNCUS TORREYI	TORREY'S RUSH	0.25
LEERSIA ORYZOIDES	RICE CUT GRASS	1.00
PANICUM VIRGATUM	SWITCH GRASS	8.00
SCIRPUS ATROVIRENS	DARK GREEN RUSH	1.00
SCIRPUS CYPERNUS	WOOL GRASS	0.50
SCIRPUS FLUVIATILIS	RIVER BULRUSH	0.25
SCIRPUS VALIDUS	GREAT BULRUSH	6.00
		TOTAL 40.25
TEMPORARY COVER:		
AVENA SATIVA	COMMON OAT	360.00
LOLIUM MULTIFLORUM	ANNUAL RYE	100.00
		TOTAL 460.00
FORBS & SHRUBS:		
ALISMA SPP.	WATER PLANTAIN (VARIOUS MIX)	4.25
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1.50
BIDENS SPP.	BIDENS (VARIOUS MIX)	2.00
HELENIUM AUTUMNALE	SNEEZEWEED	2.00
LYCOPUS AMERICANUS	COMMON WATER HOREHOUND	0.25
MIMULUS RINGENS	MONKEY FLOWER	1.00
PENTHORUM SEDOIDES	DITCH STONECROP	0.50
POLYGONUM PENSYLVANICUM	PINKWEED	4.00
RUDBECKIA SUBTOMENTOSA	SWEET BLACK-EYED SUSAN	1.00
SAGITTARIA LATIFOLIA	COMMON ARROWHEAD	1.00
SENNA HEBACARPA	WILD SENNA	1.00
THALICTRUM DASYCARPUM	PURPLE MEADOW RUE	2.00
		TOTAL 20.50

APPENDIX H

TABLE 902-1 OF MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION (2012)

Table 902-1
Grading Requirements for Coarse Aggregates, Dense-Graded Aggregates, and Open-Graded Aggregates

Material Type	Class	Item of Work by Section Number (Sequential)	Sieve Analysis (MTM 109) Total Percent Passing (a)										Loss by Washing (MTM 108) % Passing
			2½ in	2 in	1½ in	1 in	¾ in	½ in	⅜ in	No. 4	No. 8	No. 30	No. 200 (a)
Coarse Aggregates	4 AA (b)	602	100	90–100	40–60	—	0–12	—	—	—	—	—	≤2.0
	6 AAA (b)	602	—	—	100	90–100	60–85	30–60	—	0–8	—	—	≤1.0 (c)
	6 AA (b)	406, 601, 602, 706, 708, 806	—	—	100	95–100	—	30–60	—	0–8	—	—	≤1.0 (c)
	6 A	206 ~~205~~, 401, 402, 406, 601, 602, 603, 706, 806	—	—	100	95–100	—	30–60	—	0–8	—	—	≤1.0 (c)
	17 A	401, 406, 701, 706, 708		—	—	100	90–100	50–75	—	0–8	—	—	≤1.0 (c)
	25 A		—	—	—	—	100	95–100	60–90	5–30	0–12	—	≤3.0
	26 A	706, 712	—	—	—	—	100	95–100	60–90	5–30	0–12	—	≤3.0
	29 A		—	—	—	—	—	100	90–100	10–30	0–10	—	≤3.0
Dense-Graded Aggregates	21 AA	302, 304, 305, 306, 307	—	—	100	85–100	—	50–75	—	—	20–45	—	4–8 (d,e)
	21 A	302, 305, 306, 307	—	—	100	85–100	—	50–75	—	—	20–45	—	4–8 (d,e)
	22 A	302, 305, 306, 307	—	—	—	100	90–100	—	65–85	—	30–50	—	4–8 (d, e, f)
	23 A	306, 307	—	—	—	100	—	—	60–85	—	25–60	—	9–16 (e)
Open-Graded Aggregates	4 G (g)	303	—	—	—	—	—	—	—	—	—	—	—
	34 R	401, 404, 406	—	—	—	—	—	100	90–100	—	0–5	—	≤3.0
	34 G	404	—	—	—	—	—	100	95–100	—	0–5	—	≤3.0

a. Based on dry weights.
b. Class 6AAA will be used exclusively for all mainline and ramp concrete pavement when the directional commercial ADT is greater than or equal to 5,000 vehicles per day.
c. Loss by Washing will not exceed 2.0 percent for material produced entirely by crushing rock, boulders, cobbles, slag, or concrete.
d. When used for aggregate base courses, surface courses, shoulders and approaches and the material is produced entirely by crushing rock, boulders, cobbles, slag, or concrete, the maximum limit for Loss by Washing must not exceed 10 percent.
e. The limits for Loss by Washing of dense-graded aggregates are significant to the nearest whole percent.
f. For aggregates produced from sources located in Berrien County, the Loss by Washing must not exceed 8 percent and the sum of Loss by Washing and shale particles must not exceed 10 percent.
g. Reference contract documents.

SOURCE: MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION (2012) WITH ERRATA AS OF 08-01-2017

APPENDIX I

MID-SLOPE STORMWATER DITCH REPAIR PLAN

Geosyntec consultants

134 N. La Salle Street Suite 300
Chicago, Illinois 60202· USA

DESIGN CHANGE NOTICE

TO:	Ron Cieslak	**Date:** July 19, 2013	**Job No.:**CHE8242H4
ADDRESS:	DTE Energy	**Project Name:** Monroe Power Plant Ash Basin	
	3500 E. Front Street	North Embankment Slope Reconstruction	
	Monroe, MI 48161		
		Detroit Edison Contract No:	

Design Change Notice No.: 2013-03	**Revision No.:** 0	**Date Submitted:** July 19, 2013
Specification Section(s): N/A	**Drawings:** N/A	
Date of Design Change: July 19, 2013		
Subject: SmartDitch Retrofit/Repair Procedure		

This Design Change Notice (DCN) is a continuation of DCN #5 that was issued in 2011 and provides the procedures to finish the retrofit/repair of the stormwater drainage system (SmartDitch). However, it is a standalone document with the intention of being used for ongoing maintenance.

SmartDitch from Station 60+00 to 88+00

Figure 1 displays the general alignment of the final repaired/retrofitted SmartDitch sections along the slopes. The repair/retrofit procedures for the SmartDitch sections conveying stormwater along the slopes are as follows:

1. Re-align the SmartDitch to the extent possible such that the upslope and downslope edges of the SmartDitch are at the same elevation.

2. If necessary, add just enough Clay Fill or Topsoil to support the section to maintain its position after leveling but do not backfill to the final elevation. Tighten any loose cable locks after placement of leveling backfill. This work should proceed before final backfilling (see below) to be sure the SmartDitch is secure prior to final backfilling along the sides. To tighten the anchors, it will likely be necessary to either: (i) dismantle the existing cable lock which should then be slid down to rest against the SmartDitch and new cable locks should be installed on top of the existing cable locks, or (ii) install split bolts between the cable lock and the top of the SmartDitch. The new cable lock mechanism will be provided by the SmartDitch manufacturer. If the anchor is pulled out of ground during tightening, a new anchor shall be installed perpendicular to the slope and 30-in into the ground in accordance with the manufacturer's specifications. If a new anchor is installed, the anchor cable shall be sealed with granular bentonite and compacted around the cable.

3. Place final backfill around the SmartDitch. Backfill shall be Clay Fill or Topsoil per Specification Section 2200. Backfill shall be placed in maximum 4-in loose lifts, and compacted with hand-held compaction equipment up to 6-in below final grade.

4. Place Topsoil up to approximately 2-in above the SmartDitch flanges on upslope and downslope side and tamp it with hand-held compacting equipment. It is important that there shall be no gap between the Topsoil and SmartDitch flange.

5. If it is deemed necessary by the DTE Site Supervisor and the Engineer, place a rubber flap (45 mil EPDM geomembrane manufactured by Firestone or equivalent) along the upslope section of the SmartDitch

where the flange had been removed.

6. Re-check anchors for tightness; tighten as necessary.

7. Place seed and fertilizer in accordance with the 2013 Soil Erosion and Sediment Control Plans and cover it with erosion blanket (North American Green SC150).

8. Install two gravel-filled lateral drains, using MDOT 6AA aggregate, perpendicular to the SmartDitch at each drainage run. The lateral drain would be approximately one foot wide and drain out to the edge of the slope. The lateral drains (see Figure 2) should be placed at third points between the high point/apex and low point/discharge.

9. Stabilize any area that is disturbed during this procedure in accordance with the 2013 Soil Erosion and Sediment Control Plans.

It is estimated that approximately 80% of the upslope edges require addition of backfill and 95% of the downslope edges require addition of backfill.

<u>SmartDitch from Station 150+50 to 160+00 and Station 14+00 to 35+00</u>

Place 1x3 aggregate from the bottom of existing lateral drain to approximately 10 ft downslope (Figure 2) at the discretion of DTE Site Supervisor and the Engineer.

<u>Downslope Drain Retrofit/Repair Option 1 Procedure</u>

The Option 1 procedure on Figure 3 displays the final repaired/retrofitted downslope drains. This option shall be implemented where necessary at the discretion of the DTE Site Supervisor and the Engineer. The repair/retrofit procedures for Option 1 are as follows:

1. Remove SmartDitch sections downslope of the “T” and pea gravel. Inspect the subgrade condition under the “T” section for erosion and remove it if deemed necessary by DTE Site Supervisor and the Engineer. Place Clay Fill underneath the “T” section up to subgrade grade.

2. Replace exiting anchors with new anchors (if deemed necessary by the DTE Site Supervisor and the Engineer) and place two additional new anchors at equal distance from each other at the top of the downslope drain along the upslope section of the “T”, perpendicular to the slope and 30-in into ground. Seal all anchors with granular bentonite. Re-install the “T” section in place.

3. If it is deemed necessary by the DTE Site Supervisor and the Engineer, place a rubber flap (45 mil EPDM geomembrane manufactured by Firestone or equivalent) along the upslope section of the SmartDitch “T” as shown in Figure 3.

4. Backfill along the upslope section of the SmartDitch “T”. Place Clay Fill or Topsoil in maximum 4-in loose lifts and compact it with hand-held compaction equipment up to 6-in below final grade. Then, place Topsoil up to top of SmartDitch and tamp it with hand-help compacting equipment. It is important that there shall be no gap between the Topsoil and SmartDitch.

5. Construct a gravel lined ditch downslope of the “T” section as shown in Figure 3.

6. Place additional riprap to rock chutes at the bottom of downslope drains to bring the edge of rock chutes to the edge of downslope drains as necessary.

7. Stabilize any area that is disturbed during this procedure in accordance with the 2013 Soil Erosion and Sediment Control Plans.

Downslope Drain Retrofit/Repair Option 2 Procedure

The Option 2 procedure on Figure 4 displays the final repaired/retrofitted downslope drains. This option shall be implemented at the discretion of the DTE Site Supervisor and the Engineer. The repair/retrofit procedures for Option 2 are as follows:

1. Tighten any loose cable lock. This work should proceed before final backfilling (see below) to be sure the SmartDitch is secure prior to final backfilling along the sides. To tighten the anchors, it will likely be necessary to either: (i) dismantle the existing cable lock which should then be slid down to rest against the SmartDitch and new cable locks should be installed on top of the existing cable locks, or (ii) install split bolts between the cable lock and the top of the SmartDitch. The new cable lock mechanism will be provided by the SmartDitch manufacturer. If the anchor is pulled out of ground during tightening, a new anchor shall be installed perpendicular to the slope and 30-in into the ground in accordance with the manufacturer's specifications. If a new anchor is installed, the anchor cable shall be sealed with granular bentonite and compacted around the cable.

2. If it is deemed necessary by the DTE Site Supervisor and the Engineer, place a rubber flap (45 mil EPDM geomembrane manufactured by Firestone or equivalent) along the upslope section of the SmartDitch "T" as shown in Figure 4.

3. Only for the downslope drain at Station 69+50, place additional 1x3 aggregate underneath and around the SmartDitch at the bottom 2 ft of downslope drain.

4. Place additional riprap to rock chutes at the bottom of downslope drains to bring the edge of rock chutes to the edge of downslope drains as necessary.

5. Place two additional new anchors at equal distance from each other at the top of the downslope drain along the upslope section of the "T", perpendicular to the slope and 30-in into ground. Seal the anchors with granular bentonite.

6. Backfill along the upslope section of the SmartDitch "T". Place Clay Fill or Topsoil in maximum 4-in loose lifts and compact it with hand-held compaction equipment up to 6-in below final grade. Place Topsoil up to the top of SmartDitch and tamp it with hand-help compacting equipment. It is important that there shall be no gap between the Topsoil and SmartDitch.

7. Backfill along the sections where there is a gap larger than 2-in. between the flange of SmartDitch and the ground. Place Clay Fill or Topsoil in maximum 4-in loose lifts and compact it with hand-held compaction equipment up to 6-in below final grade.

8. Place Topsoil up to approximately 2-in above the SmartDitch flange and tamp it with hand-held compacting equipment. It is important that there shall be no gap between the Topsoil and SmartDitch flange (see Figure 4).

9. Re-check for any loose anchors and tighten them as necessary.

10. Place seed, fertilizer and erosion blanket in accordance with the 2013 Soil Erosion and Sediment Control Plans.

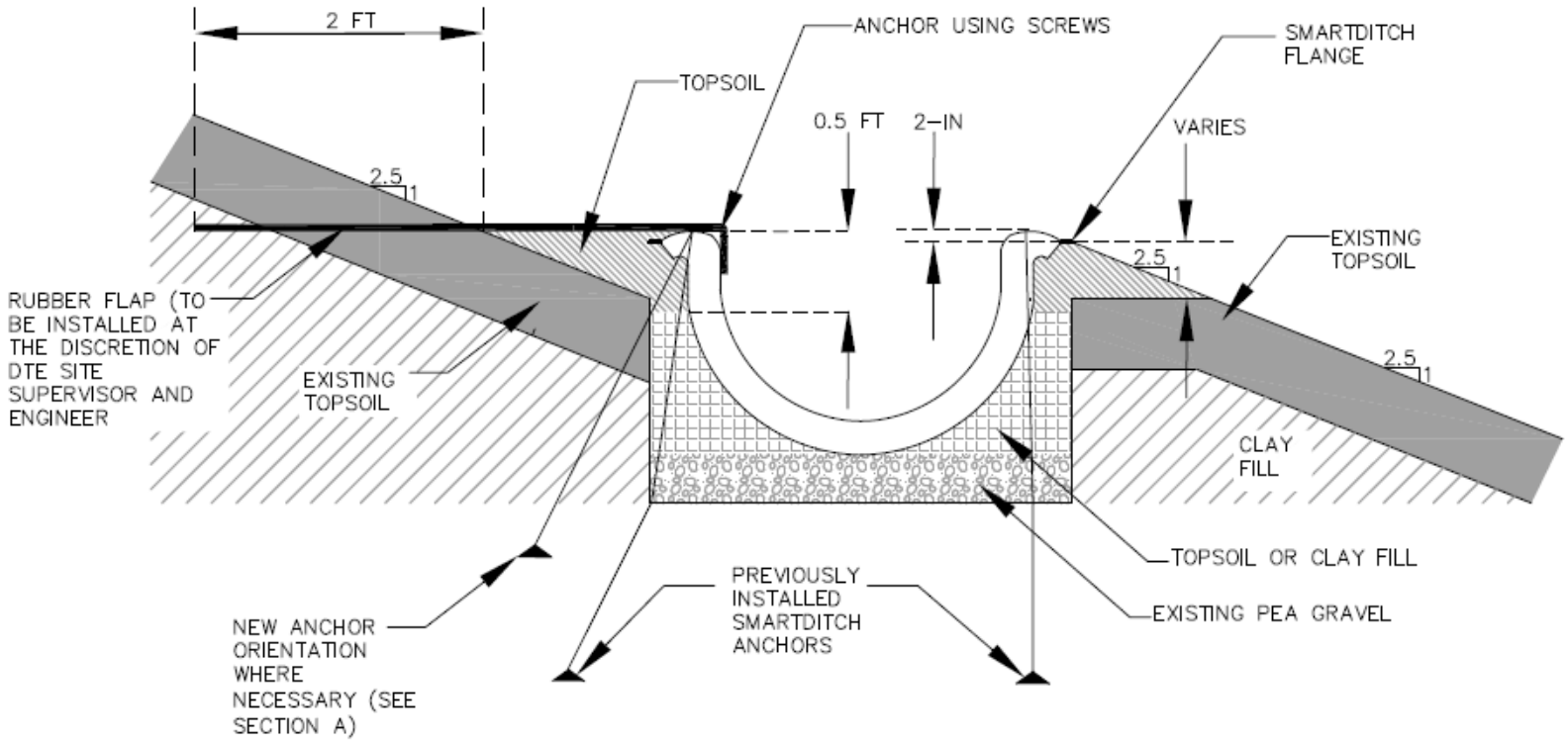
11. Stabilize any area that is disturbed during this procedure in accordance with the 2013 Soil Erosion and Sediment Control Plans.

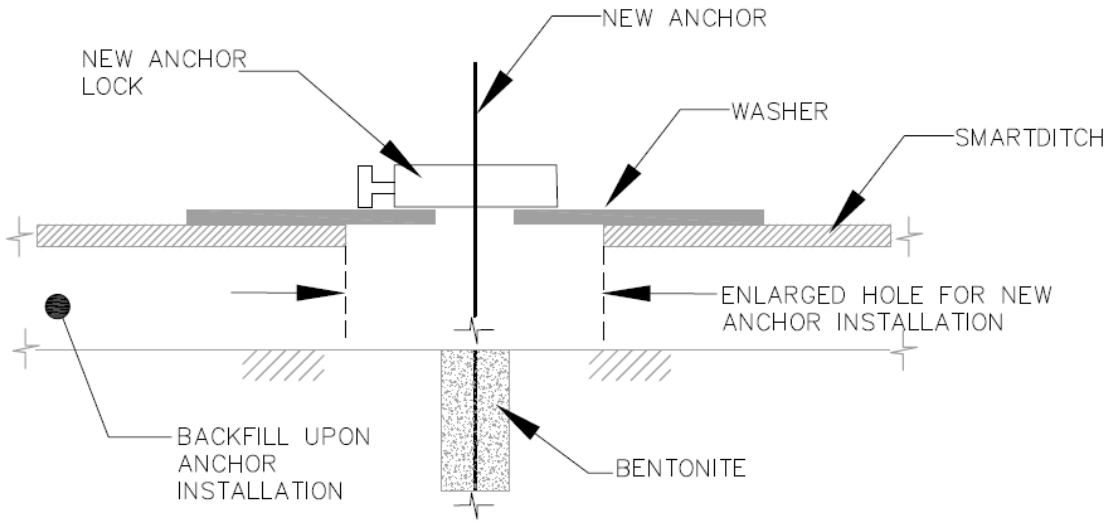
Note that Geosyntec recommends mowing the extent of slopes where SmartDitch will be retrofitted/repaired prior to initiation of the work.

Please let us know if you have any questions or comments regarding the procedures.

Omer Bozok	July 19, 2013	John Seymour, P.E.	July 19, 2013
Prepared by Print Name/Sign Name	**Date**	**Engineer-of-Record** Print Name/Sign Name	**Date**

Distribution:
- ☒ Mike Karmol, DTE
- ☒ William Neal, DTE
- ☐
- ☐





SECTION A

Smartditch Retrofit/Repair Detail

DCN – 2013 - 03

July 2013

Geosyntec consultants

DTE Energy

Figure 1

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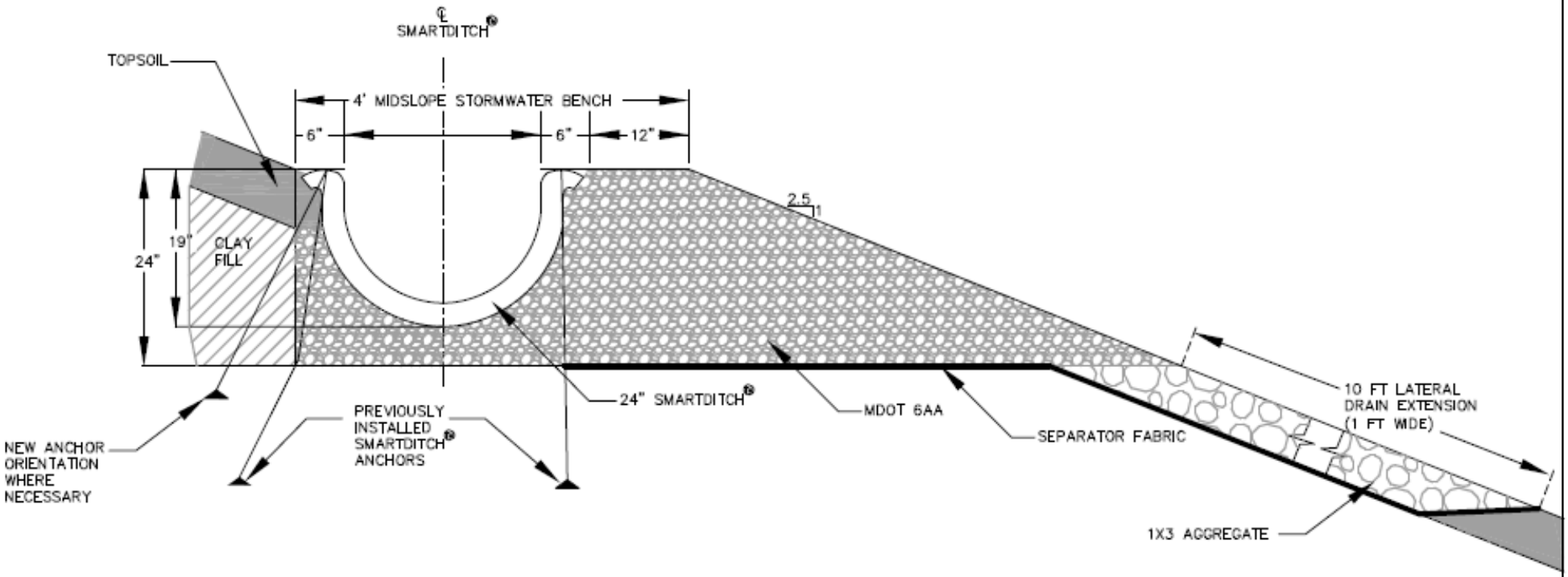
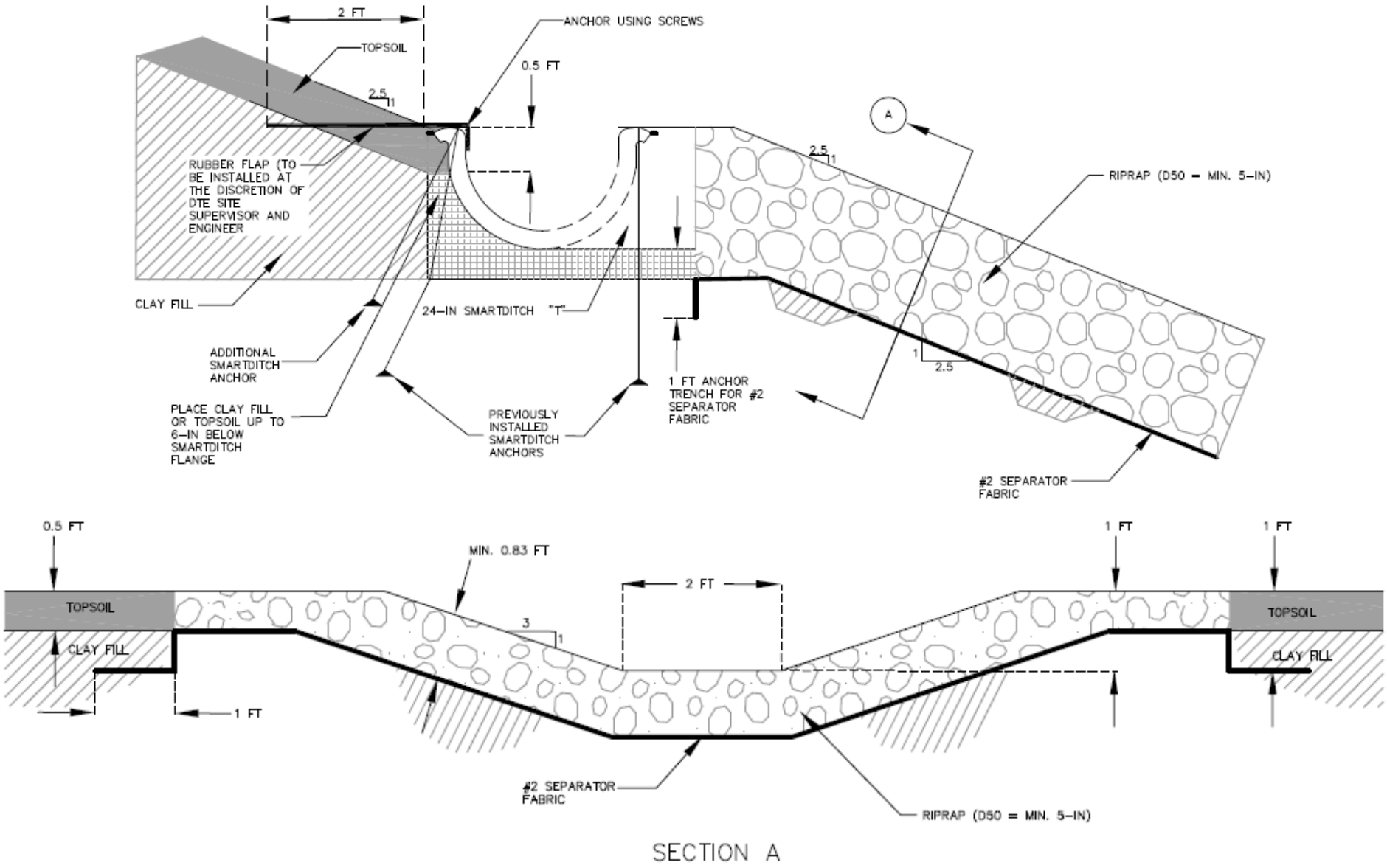


Note:

1. Do not install the 10 ft lateral drain extension from Station 60+00 88+00. The 10 ft lateral extension shall be installed for the existing lateral drains from Stations 150+50 to 160+00 and Station 14+00 to 35+00 at the discretion of the DTE Site Supervisor and Engineer. If needed, the lateral drain extension may be extended further or utilized at other lateral drain locations in the future as part of erosion mitigation measure.

Lateral Drain Detail		
DCN – 2013 - 03 July 2013	Geosyntec consultants DTE Energy	**Figure** **2**

G:\CWP\CHE8242-Detroit Edison\500 - Technical\502 Ash Pond Stability\502-01-Construction\2013\16. DCNs\DCN #3



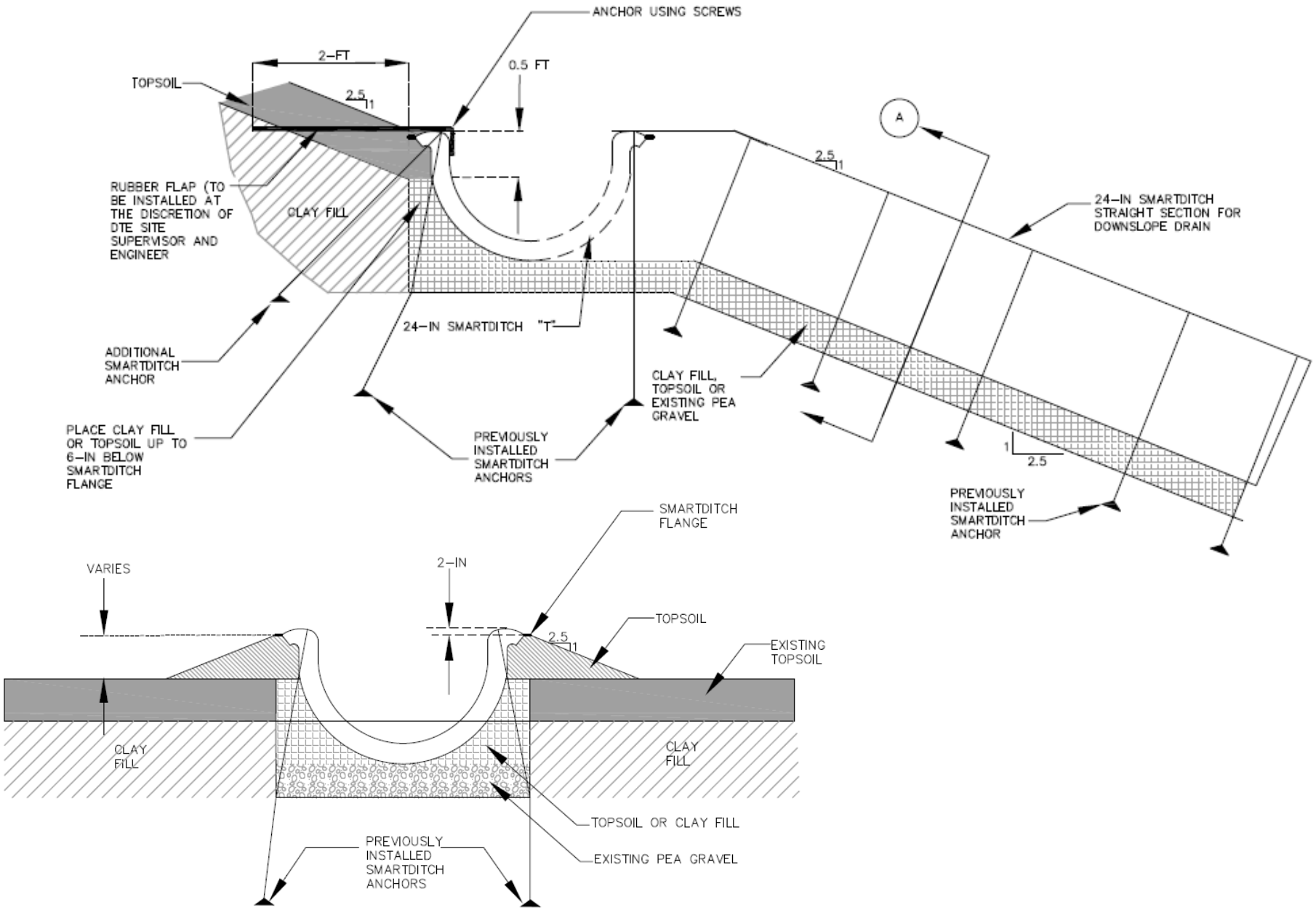
SECTION A

Notes:

1. The thickness of riprap may be greater than 0.83 ft depending on the subgrade elevation.
2. #2 Separator Fabric shall have a weight of minimum 12oz/yd^2, Apparent Opening Size (AOS) equivalent of US. Sieve #100 (or smaller opening) and puncture resistance of 850 lb.
3. #2 Separator Fabric shall have intimate contact with the ground.

Downslope Drain Retrofit/Repair Option 1		
DCN – 2013 - 03 July 2013	Geosyntec consultants DTE Energy	**Figure** **3**

G:\CWP\CHE8242-Detroit Edison\500 - Technical\502 Ash Pond Stability\502-01-Construction\2013\16. DCNs\DCN #3



SECTION A

Downslope Drain Retrofit/Repair Option 2

DCN – 2013 - 03 July 2013	Geosyntec consultants DTE Energy	**Figure** **4**

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APPENDIX D

Standard Work Instructions

1.0 PRELIMINARY INFORMATION

1.1 Description:

This Standard Work Instruction (SWI) provides guidance for safe operation practices at the Monroe Power Plant (MONPP) Fly Ash Basin (FAB) embankments.

A continuous monitoring system was installed for the FAB embankment in January 2016 and has been in operation since. The monitoring system consists of a series of inclinometers, piezometers, data loggers, and an online server where the data is stored, processed, and visualized for interpretation. The data are hosted on online servers by Geosyntec and processed using the standalone web platform eagle.io.

Inclinometers measure lateral embankment movements over the height of the embankment. The inclinometers are installed vertically from the embankment crest to depths of approximately 60 feet. There are currently 10 inclinometers along the FAB embankment. Piezometers measure pore pressure under the Vertical Extension Landfill within the FAB and water level at the discharge structure. There are four alarm levels; these are Gray, Orange, Yellow and Red Alarms, in the order of urgency. The purpose of these alarm levels is to notify the Surveillance Monitoring Committee (SMC) well in advance of a potential embankment failure so that mitigation measures can be implemented in a timely manner to avoid more serious consequences. More information on the continuous monitoring system (except the eagle.io platform) is provided in MONPP-FSD-0131.

This SWI was prepared to address non-imminent failure conditions summarized in 0695-C-H-0243-04-Rev. E, for alarms received through the continuous monitoring system. This SWI only details procedures to address alarms for the inclinometers along the FAB embankment and the action items that should be taken. Procedures to address alarms received for the piezometers are detailed in MONPP-1301-Rev. E.

1.2 Personal Protection Equipment:

None.

1.3 Special Tools Required:

eagle.io web platform

Loggernet (software) by Campbell Scientific

1.4 Special Parts Required:

None.

1.5 Prerequisites:

- Training on continuous monitoring system per MONPP Job Instructional Training (JIT) No. B-18-012-Env-Rev. 0;

- Training on Loggernet (for Geotechnical Engineer only); and
- Trained as Qualified Person as defined in MONPP-1301-Rev. E.

1.6 Job Aids:

None.

1.7 Cross References:

MONPP-FSD-0131 – Continuous Monitoring System Functional System Description

MONPP-1301-Rev. E – Inspection Monitoring and Maintenance Manual (IMMM)

0695-C-H-0243-004-Rev. E – Response for Non-imminent Failure Conditions

Emergency Action Plan – Fly Ash Basin Facility MONPP

1.8 Attachments:

Inclinometer and piezometer system outage assessment and reset guide and a step-by-step procedure for the eagle.io platform are included as appendices in the IMMM (Appendices E and F, respectively).

1.9 Definitions:

Gray Alarm – Latent alarm to notify that the monitoring system has not updated with new data in the last 48 hours.

Orange Alarm – Alert alarm; Alert Level #1 is set to 0.2 inches (in.)/month (5 millimeters (mm)/month) of movement with the 3D Difference Velocity measurement. The 3D Difference Velocity is calculated based on the last reading and the average of four readings from 30 days prior to the most recent data. Alert Level #2 is set to 0.04 in./day (1 mm/day) of movement with the 3D Point Velocity measurement. The 3D Point Velocity is calculated based on the average of the most recent 12 data points. Alert Level #3 corresponds to a shear strain equal to or greater than 1% between two adjacent sensors (i.e., depths along inclinometer). This will be calculated manually by the Geotechnical Engineer when a sensor reaches 1 in. of cumulative movement.

Yellow Alarm – Warning alarm; Warning Level #1 is set to 0.08 in./day (2 mm/day) of movement with the 3D Point Velocity measurement. Warning Level #2 corresponds to a shear strain equal to or greater than 3% between two adjacent sensors. This will be calculated manually by the Geotechnical Engineer when a sensor reaches 1 in. of cumulative movement.

Red Alarm – Emergency alarm; Emergency Level #1 is set to 1.0 in./day (25 mm/day) of movement with the 3D Point Velocity measurement.

1.10 Directional Symbols and Their Meaning:

One or more of the following symbols may be shown in the work instruction to identify the procedural steps that require special attention.

Direction Symbols are graphics that indicate safety issues (S) and mitigation plan, appendices (A), when applicable (W), error proof (EP), quality check (Q), and control points (CP) included on the appropriate step in the SWI.

The purpose of the symbols is to identify those items in the SWI that require special attention. The symbol is used to improve visualization, especially around quality and safety items. These symbols may be used throughout the SWI as determined by the Business Unit.

An explanation or rationale for the use of the symbol is required except when the W (When Applicable) symbol is used.

- **A** = Appendix: Lists the name and identifying features of the appendix and directs the employee to the appropriate appendix in the IMMM.
- **CP** = Control Point: Identifies where the control point audit is taking place. CPs are triggers to ensure that internal and external quality groups can monitor the performance of the SWI and key metrics with respect to the SWI. The SWI user is not expected to do anything with a Control Point. CPs will also be noted on Sarbanes-Oxley-related steps. In addition, CPs will address issues of confidentiality.
- **EP** = Error Proof: Proactively integrates changes into process, training, software, or material conditions that reduce or eliminate the possibility of making a mistake. Examples include:
  - Use of a peer review prior to performing an error-likely procedure step with serious consequences.
  - Adding a lanyard to tools used above working spaces.
  - Automatic date addition for submittal of corrective actions.
- **Q** = Quality: Used when the SWI user must perform a quality check or verify something as part of the SWI. The SWI must clearly define how to perform the Quality Check and the expected outcomes.
- **S** = Safety: Identifies a process step that has safety requirements associated with the completion of an SWI. This will include a description of the potential hazard and the required mitigation.
- **W** = When Applicable: Used when a decision point is identified; the step may or may not be performed, depending on the circumstance.

Note: When a symbol is used in a procedural step, the symbol follows the step and then the rationale for its use will follow the symbol.

2.0 WORK INSTRUCTION FOR GRAY ALARM

Major Task List

2.1 Geotechnical Engineer to force data collection.

Duration: within two business days of receiving the alarm.

2.2 Assess the condition of monitoring system if Major Task Item 2.1 fails.

Duration: within a week.

2.3 Geotechnical Engineer to implement necessary adjustments to the monitoring system as necessary.

Duration: as soon as possible.

Procedural Steps and Sub-Steps

2.1 Geotechnical Engineer to force data collection.

2.1.1 Identify the instrument that is not updating data. This information is provided in the alarm email.

2.1.2 Launch Loggernet and manually connect and force data collection from that instrument.

2.1.3 If manual collection does not work, continue with Major Task Item 2.2.

2.2 Assess the condition of monitoring system if Major Task Item 2.1 fails.

2.2.1 Geotechnical Engineer will work with DTE Environmental Management and Safety (EM&S) during weekly inspection and conduct assessment of the monitoring system.

2.2.2 EM&S to perform field assessment using step-by-step procedure outlined in Appendix E of the IMMM.

A Appendix E of IMMM: Continuous Monitoring System Outage Assessment and Reset Guide

2.2.3 Geotechnical Engineer to provide office support as outlined in Appendix E of the IMMM.

A Appendix E of IMMM: Continuous Monitoring System Outage Assessment and Reset Guide

2.3 Geotechnical Engineer to implement necessary adjustments to the monitoring system as necessary.

2.3.1 Visit the site if necessary, as arranged with EM&S.

2.3.2 Assess and document the physical conditions of instruments.

2.3.3 Revise communication paths as necessary in the field and re-check the system.

2.3.4 If assessment requires repair or replacement of instruments, contact DTE's Project Manager if associated costs cannot be captured within the available budget.

2.3.5 Perform repairs and/or replace instruments as necessary.

2.3.6 Update MONPP-FSD-0131 – Continuous Monitoring System Functional System Description, as necessary to document changes.

3.0 WORK INSTRUCTION FOR ORANGE ALARM FROM AN INCLINOMETER

Major Task List

3.1 Engineering Support Organization (ESO), EM&S, and Geotechnical Engineer to gather more information about the alarm.

Duration: as soon as possible.

3.2 If requested by ESO, Control Room Operator shall mobilize the Operator to inspect the embankment.

Duration: as soon as possible.

3.3 ESO, EM&S, and Geotechnical Engineer to monitor the embankment weekly for a month. Assess if mitigation is necessary.

Duration: minimum four weeks following Major Task 3.2.

3.4 ESO, EM&S, and Geotechnical Engineer to adjust the monitoring plan as necessary.

Duration: as soon as possible.

3.5 At the end of the month, ESO, EM&S, and Geotechnical Engineer to assess if the weekly monitoring should be extended.

Duration: to be determined.

3.6 Geotechnical Engineer to clear the alarm event and continue with the regular monitoring plan.

Duration: as soon as possible.

Procedural Steps and Sub-Steps

3.1 ESO, EM&S, and Geotechnical Engineer to gather more information about the alarm.

3.1.1 Determine the inclinometer and the sensor that caused the alarm.

A. Notification emails will include the inclinometer and sensor.

B. Log on to eagle.io site.

C. In the “Monroe Ash Basin” workspace, click the “Alarms” button in the header.

D. Red icons will show up next to the “Data” tab and instrument causing the alarm.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

3.1.2 Check the rate of movement.

A. Notification emails will include the calculated rate of movement.

B. Log on to eagle.io site.

C. The “Alarms” table will include the calculated rate of movement that triggered the alarm.

D. In the “Monroe Ash Basin” workspace, navigate to “Charts” → “SAA” to view data for inclinometer that triggered the alarm.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

3.2 If requested by ESO, Control Room Operator shall mobilize the Operator to inspect the embankment.

3.2.1 Collect visual observations from the embankment near the inclinometer location.

3.2.2 Document the condition of the embankment inspected by the Operator.

3.2.3 Document the extent and size of cracks, sloughs, and depression areas (if any).

3.2.4 Assess whether operational or construction activity might have caused the alarm.

3.2.5 File inspection form and photographic documentation.

3.3 ESO, EM&S, and Geotechnical Engineer to monitor the embankment weekly for a month. Assess if mitigation is necessary.

3.3.1 Geotechnical Engineer to silence the existing alarm upon receiving the alarm notification.

A. In the “Alarms” table, click the bell icon and select the check mark to acknowledge the alarm. The bell with the A can also be selected to acknowledge the alarm and leave a comment.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

3.3.2 Monitor instruments weekly.

A. Use eagle.io.

B. Navigate to “Charts” → “SAA” to view data for inclinometers.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

3.3.3 If additional alarms are triggered, follow steps 3.1.1 through 3.3.2.

3.3.4 Perform on-site inspection as necessary.

3.3.5 Assess if mitigation measures are necessary on a weekly basis.

3.4 ESO, EM&S, and Geotechnical Engineer to adjust the monitoring plan as necessary.

3.4.1 Geotechnical Engineer to add additional alarm levels as necessary.

A. Navigate to "Data" → "Monroe Ash Basin" → target instrument.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

3.4.2 Geotechnical Engineer to increase data collection intervals as necessary.

3.5 At the end of the month, ESO, EM&S, and Geotechnical Engineer to assess if the weekly monitoring should be extended.

3.6 Geotechnical Engineer to clear the alarm event and continue with the regular monitoring plan.

3.6.1 After Major Tasks 3.3 through 3.5 are completed, Geotechnical Engineer to clear the existing alarm and provide an explanation as to why the alarm is cleared.

A. In the "Monroe Ash Basin" workspace, click the "Alarms" button in the header.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

3.6.2 Deactivate the alarms that were created as part of Task 3.4.1.

A. Navigate to "Data" → "Monroe Ash Basin" → target instrument.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

3.6.3 Reset the data collection interval to every six hours.

A. Geotechnical Engineer to remotely reprogram the dataloggers.

3.6.4 Continue with the regular monitoring plan.

4.0 WORK INSTRUCTION FOR YELLOW ALARM FROM AN INCLINOMETER

Major Task List

4.1 Control Room Operator will mobilize Operator for on-site inspection.

Duration: as soon as possible.

4.2 ESO, EM&S, and Geotechnical Engineer to gather more information about the alarm.

Duration: as soon as possible.

4.3 ESO, EM&S, and Geotechnical Engineer to have a conference call or in-person meeting with the Control Room Operator and the Operator to gather more information and discuss visual observations.

Duration: within four hours of receiving the alarm.

4.4 ESO, EM&S, and Geotechnical Engineer to adjust the monitoring plan for the next two weeks.

Duration: within four hours from Major Task 4.3.

4.5 EM&S and Operator perform on-site inspections.

Duration: as necessary during Major Task 4.4.

4.6 ESO, EM&S, and Geotechnical Engineer to assess need for mitigation measures.

Duration: daily during Major Task 4.4.

4.7 At the end of the two weeks, ESO, EM&S, and Geotechnical Engineer to assess if the daily monitoring should be extended.

Duration: to be determined.

4.8 Geotechnical Engineer to clear the alarm event and continue with the regular monitoring plan.

Duration: within a week from Major Task 4.8.

Procedural Steps and Sub-Steps

4.1 Control Room Operator will mobilize Operator for on-site inspection.

4.1.1 Collect visual observations from the embankment near the inclinometer location.

4.1.2 Document the condition of the embankment inspected by the Operator.

4.1.3 Document the extent and size of cracks, sloughs, and depression area (if any).

4.1.4 Assess whether operational or construction activity might have caused the alarm.

4.1.5 File inspection form and photographic documentation.

4.2 ESO, EM&S, and Geotechnical Engineer to gather more information about the alarm.

4.2.1 Determine the inclinometer and the sensor that caused the alarm.

A. Notification emails will include the inclinometer and sensor.

B. Log on to eagle.io site.

C. In the “Monroe Ash Basin” workspace, click the “Alarms” button in the header.

D. Red icons will show up next to the “Data” tab and instrument causing the alarm.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

4.2.2 Check the rate of movement.

A. Notification emails will include the calculated rate of movement.

B. Log on to eagle.io site.

C. The “Alarms” table will include the calculated rate of movement that triggered the alarm.

D. In the “Monroe Ash Basin” workspace, navigate to “Charts” → “SAA” to view data for inclinometer that triggered the alarm.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

4.3 ESO, EM&S, and Geotechnical Engineer to have a conference call or in-person meeting with the Control Room Operator and the Operator to gather more information and discuss visual observations.

4.3.1 Discuss findings from Major Task 4.1.

4.4 ESO, EM&S, and Geotechnical Engineer to adjust the monitoring plan for the next two weeks.

4.4.1 Geotechnical Engineer to add additional alarm levels as necessary.

A. Navigate to “Data” → “Monroe Ash Basin” → target instrument.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

4.4.2 Geotechnical Engineer to increase data collection intervals to one-hour readings.

4.4.3 Geotechnical Engineer to silence the existing alarm.

A. In the "Monroe Ash Basin" workspace, click the "Alarms" button in the header.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

4.4.4 If additional alarms are triggered, repeat Major Tasks 4.1 through 4.3.

4.4.5 Geotechnical Engineer will monitor instruments and report to ESO and EM&S daily.

4.5 EM&S and Operator perform on-site inspections.

4.5.1 Inspections will be conducted as necessary to be determined by ESO and Geotechnical Engineer.

4.5.2 EM&S and Operator will summarize observations to ESO and Geotechnical Engineer.

4.6 ESO, EM&S, and Geotechnical Engineer to assess need for mitigation measures.

4.6.1 Discussions will be had daily.

4.6.2 If a mitigation measure is deemed necessary, ESO and Geotechnical Engineer will prepare a design within a week of the decision.

4.6.3 DTE will implement the mitigation measure within a timeframe decided by the Surveillance Monitoring Committee (SMC) Coordinator and Fuel Supply Manager.

4.7 At the end of the two weeks, ESO, EM&S, and Geotechnical Engineer to assess if the daily monitoring should be extended.

4.8 Geotechnical Engineer to clear the alarm event and continue with the regular monitoring plan.

4.8.1 After Major Tasks 4.4 through 4.7 are completed, Geotechnical Engineer to clear the existing alarm and provide an explanation as to why the alarm is cleared.

A. In the "Monroe Ash Basin" workspace, click the "Alarms" button in the header.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

4.8.2 Deactivate the alarms that were created as part of Task 4.4.1.

A. Navigate to "Data" → "Monroe Ash Basin" → target instrument.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

4.8.3 Reset the data collection interval to every six hours.

A. Geotechnical Engineer to remotely reprogram the dataloggers.

4.8.4 Continue with the regular monitoring plan.

5.0 WORK INSTRUCTION FOR RED ALARM FROM AN INCLINOMETER

Major Task List

5.1 Emergency Action Plan (EAP) initiated by DTE EAP Coordinator.

Duration: as soon as possible.

5.2 Control Room Operator will mobilize Operator for on-site inspection.

Duration: as soon as possible as part of EAP.

5.3 ESO, EM&S, and Geotechnical Engineer to gather more information about the alarm and mobilize to the site.

Duration: as soon as possible.

5.4 ESO and Geotechnical Engineer to assist the EAP Coordinator and immediately design both short- and long-term mitigation measures.

Duration: as soon as possible.

5.5 ESO, EM&S, and Geotechnical Engineer to adjust the monitoring plan for the next two weeks.

Duration: within four hours from Major Task 5.3.

5.6 At the end of the two weeks, ESO, EM&S, and Geotechnical Engineer to assess if the daily monitoring should be extended.

Duration: to be determined.

5.7 Geotechnical Engineer to clear the alarm event and continue with the regular monitoring plan.

Duration: within a week from Major Task 5.6.

Procedural Steps and Sub-Steps

5.1 EAP initiated by DTE EAP Coordinator.

5.1.1 Follow step-by-step procedure in EAP for the MONPP Fly Ash Basin Facility.

5.2 Control Room Operator will mobilize Operator for on-site inspection.

5.2.1 Collect visual observations from the embankment near the inclinometer location.

5.2.2 Document the condition of the embankment inspected by the Operator.

5.2.3 Document the extent and size of cracks, sloughs, and depression area (if any).

5.2.4 Assess whether operational or construction activity might have caused the alarm.

5.2.5 File inspection form and photographic documentation.

5.3 ESO, EM&S, and Geotechnical Engineer to gather more information about the alarm and mobilize to the site.

5.3.1 Determine the inclinometer and the sensor that caused the alarm.

A. Notification emails will include the inclinometer and sensor.

B. Log on to eagle.io site.

C. In the “Monroe Ash Basin” workspace, click the “Alarms” button in the header.

D. Red icons will show up next to the “Data” tab and instrument causing the alarm.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

5.3.2 Check the rate of movement.

A. Notification emails will include the calculated rate of movement.

B. Log on to eagle.io site.

C. The “Alarms” table will include the calculated rate of movement that triggered the alarm.

D. In the “Monroe Ash Basin” workspace, navigate to “Charts” → “SAA” to view data for inclinometer that triggered the alarm.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

5.3.3 Geotechnical Engineer to silence the existing alarm, so no repeat alarm is triggered from the same sensor.

A. In the “Monroe Ash Basin” workspace, click the “Alarms” button in the header.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

5.3.4 EM&S will contact Control Room Operator and obtain inspection results collected by the Operator.

5.3.5 EM&S will contact Shift Supervisor to coordinate ESO and Geotechnical Engineer efforts and work plan prior to mobilizing to the site.

5.3.6 Mobilize to the site, inspect and document the condition of the embankment

5.4 ESO and Geotechnical Engineer to assist the EAP Coordinator and immediately design both short- and long-term mitigation measures.

5.4.1 Assist EAP Coordinator with preparing a mitigation design as soon as possible.

5.4.2 Fuel Supply or the Emergency Response Contractor will implement the mitigation measure immediately.

5.5 ESO, EM&S, and Geotechnical Engineer to adjust the monitoring plan for the next two weeks.

5.5.1 Geotechnical Engineer to add additional alarm levels as necessary.

A. Navigate to "Data" → "Monroe Ash Basin" → target instrument.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

5.5.2 Geotechnical Engineer to increase data collection intervals to one-hour readings.

5.5.3 Geotechnical Engineer to silence the existing alarm.

A. In the "Monroe Ash Basin" workspace, click the "Alarms" button in the header.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

5.5.4 If additional alarms are triggered, repeat Major Tasks 5.2 through 5.4.

5.5.5 Perform on-site inspection as necessary.

5.5.6 Geotechnical Engineer will monitor instruments and report to ESO and EM&S daily via in-person or conference calls.

5.6 At the end of the two weeks, ESO, EM&S, and Geotechnical Engineer to assess if the daily monitoring should be extended.

5.7 Geotechnical Engineer to clear the alarm event and continue with the regular monitoring plan.

5.7.1 After Major Tasks 5.4 through 5.7 are completed, Geotechnical Engineer to clear the existing alarm and provide an explanation as to why the alarm is cleared.

A. In the "Monroe Ash Basin" workspace, click the "Alarms" button in the header.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

5.7.2 Deactivate the alarms that were created as part of Task 5.5.1.

A. Navigate to "Data" → "Monroe Ash Basin" →target instrument.

1. Use the step-by-step procedure.

A Appendix F of IMMM: Step-by-Step Procedure

5.7.3 Reset the data collection interval to every six hours.

A. Geotechnical engineer to remotely reprogram the data loggers.

5.7.4 Continue with the regular monitoring plan.

6.0 ADMINISTRATIVE INFORMATION

6.1 Procedure Number: MONPP-SWI-03-006-003-773

6.2 Title: MONPP Fly Ash Basin Continuous Monitoring Alarms Engineering Response

6.3 Revision Number: 1

6.4 Responsible Section Head: Manager – Engineering Support Organization (ESO)

6.5 DTE Energy Author: ESO, EM&S

6.6 Creator Name (Subject Matter Experts): ESO, EM&S, Geosyntec Consultants

6.7 Effective Date: December 3, 2024

6.8 Revision History (brief description of changes since last version): Refer to Documentum

6.9 Periodic Review Due: Annually

6.10 Impacted Business Units: Fuel Supply, EM&S

6.11 Retain Document Until: In accordance with Corporate Policy OP6

APPENDIX E

Professional Engineer Certification

Geosyntec consultants
Geosyntec Consultants of Michigan

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Detroit, MI 48202
www.geosyntec.com

December 16, 2024

Via Email

Mr. Jason Logan
Environmental Management & Safety
DTE Electric Company
One Energy Plaza
Detroit, MI 48226

Subject: Emergency Action Plan Certification
Monroe Power Plant Fly Ash Basin
Monroe, MI

Dear Mr. Logan:

This letter presents Geosyntec Consultants of Michigan's (Geosyntec's) certification for the Emergency Action Plan (EAP) for DTE Electric Company's (DTE's) Monroe Power Plant Fly Ash Basin.

BACKGROUND

A certification of the EAP for the Fly Ash Basin is required under the United States Environmental Protection Agency (USEPA) Coal Combustion Residual Rule (CCR Rule) 40 CFR 257.73(a)(3)(iv), published on 17 April 2015. Under the CCR Rule, the Fly Ash Basin is an "existing surface impoundment" and the EAP must be prepared for an existing surface impoundment that has been identified as either a High Hazard or Significant Hazard Potential under 40 CFR 257.73(a)(2). The EAP must be assessed and certified by a Qualified Professional Engineer in accordance with 40 CFR 257.73(a)(3)(iv).

In October 2016, Geosyntec and DTE identified that the Fly Ash Basin had a Significant Hazard Potential in accordance with 40 CFR 257.73(a)(2). Hazard potential certification was placed in the operating record and posted on a publicly accessible website in accordance with the CCR Rule.

The final EAP was prepared by Arcadis U.S., Inc. (Arcadis) and the preliminary EAP was prepared by Geosyntec. Updates to the EAP were made by Geosyntec in September to November 2024.

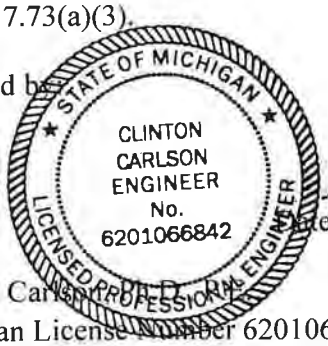
QUALIFICATIONS OF LICENSED PROFESSIONAL ENGINEER

Geosyntec as a company has provided engineering services for the DTE Monroe Power Plant since 2008 and has extensive knowledge of the history of the facility, its design, operational components, and the surrounding geographical, cultural, and environmental features. Clinton Carlson is a qualified licensed professional engineer in the State of Michigan with ten years of experience in civil and geotechnical engineering associated with dams and landfills. Clinton has provided engineering services for the DTE Monroe Power Plant since 2022 and, in addition to performing annual inspections for the Fly Ash Basin, has reviewed the historical documents for the site.

CERTIFICATION

I, Clinton Carlson, am a qualified licensed professional engineer in Michigan. I have evaluated the Fly Ash Basin EAP and I certify that the EAP is in accordance with the requirements of 40 CFR 257.73(a)(3).

Certified by:



Date: December 16, 2024

Clinton Carlson, P.E., P.Eng.
Michigan License Number 6201066842
Geotechnical Engineer

Copy to: Chris Paquette (DTE)
Chris Scieszka (DTE)
Mark Green (DTE)
Nick Reidenbach (DTE)

APPENDIX F

Record of Revisions

<u>This plan supersedes all previous plans.</u>

Record of Revisions

The following is a list of revisions made to the EAP. This chart tracks the date that changes were made, reason for the changes, updated pages, and who made the revision.

Date	Reason for Revision	Page Numbers	Revised By
8/7/19	Incorporation of NIMS ICS Protocols	All	DTE
8/4/20	Updated EM&R references to new Business Unit name: EM&S/Environmental Management & Safety. Updated contacts in Figure 1 and Table 1.	All	DTE
11/20/24	Updated for current operations of fly ash basin (i.e., no receipt of CCR). Changed NavStar/ GeoExplorer to eagle.io. Updated communication flowcharts and contact information.	All	DTE Geosyntec

APPENDIX G

Incident Briefing (ICS 201, 202, 205a)

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)**:**

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command)**:** Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 1 Date/Time: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

7. Current and Planned Objectives:

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:

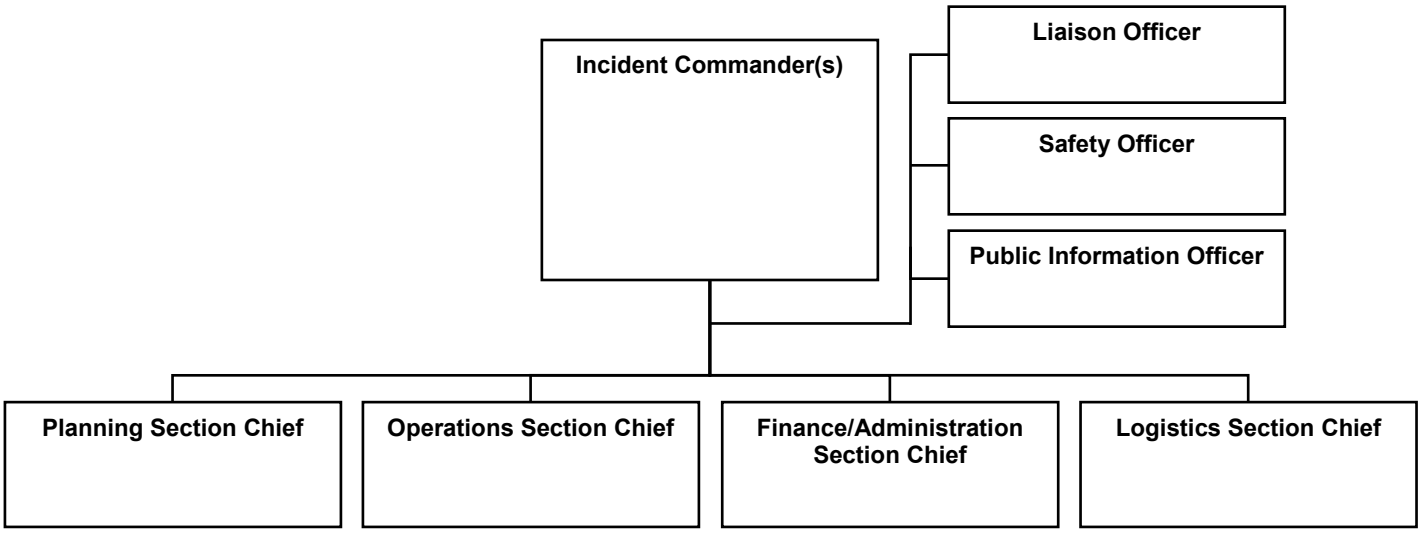
6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 2 Date/Time: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

9. Current Organization (fill in additional organization as appropriate)**:**



6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 3 Date/Time: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 4 Date/Time: _____

ICS 201
Incident Briefing

Purpose. The Incident Briefing (ICS 201) provides the Incident Commander (and the Command and General Staffs) with basic information regarding the incident situation and the resources allocated to the incident. In addition to a briefing document, the ICS 201 also serves as an initial action worksheet. It serves as a permanent record of the initial response to the incident.

Preparation. The briefing form is prepared by the Incident Commander for presentation to the incoming Incident Commander along with a more detailed oral briefing.

Distribution. Ideally, the ICS 201 is duplicated and distributed before the initial briefing of the Command and General Staffs or other responders as appropriate. The "Map/Sketch" and "Current and Planned Actions, Strategies, and Tactics" sections (pages 1–2) of the briefing form are given to the Situation Unit, while the "Current Organization" and "Resource Summary" sections (pages 3–4) are given to the Resources Unit.

Notes:

- The ICS 201 can serve as part of the initial Incident Action Plan (IAP).
- If additional pages are needed for any form page, use a blank ICS 201 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Initiated** • Date, Time	Enter date initiated (month/day/year) and time initiated (using the 24-hour clock).
4	**Map/Sketch** (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)	Show perimeter and other graphics depicting situational status, resource assignments, incident facilities, and other special information on a map/sketch or with attached maps. Utilize commonly accepted ICS map symbology. If specific geospatial reference points are needed about the incident's location or area outside the ICS organization at the incident, that information should be submitted on the Incident Status Summary (ICS 209). North should be at the top of page unless noted otherwise.
5	**Situation Summary and Health and Safety Briefing (**for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.	Self-explanatory.
6	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
7	**Current and Planned Objectives**	Enter the objectives used on the incident and note any specific problem areas.

Block Number	Block Title	Instructions
8	**Current and Planned Actions, Strategies, and Tactics** • Time • Actions	Enter the current and planned actions, strategies, and tactics and time they may or did occur to attain the objectives. If additional pages are needed, use a blank sheet or another ICS 201 (Page 2), and adjust page numbers accordingly.
9	**Current Organization** (fill in additional organization as appropriate) • Incident Commander(s) • Liaison Officer • Safety Officer • Public Information Officer • Planning Section Chief • Operations Section Chief • Finance/Administration Section Chief • Logistics Section Chief	• Enter on the organization chart the names of the individuals assigned to each position. • Modify the chart as necessary, and add any lines/spaces needed for Command Staff Assistants, Agency Representatives, and the organization of each of the General Staff Sections. • If Unified Command is being used, split the Incident Commander box. • Indicate agency for each of the Incident Commanders listed if Unified Command is being used.
10	**Resource Summary**	Enter the following information about the resources allocated to the incident. If additional pages are needed, use a blank sheet or another ICS 201 (Page 4), and adjust page numbers accordingly.
	• Resource	Enter the number and appropriate category, kind, or type of resource ordered.
	• Resource Identifier	Enter the relevant agency designator and/or resource designator (if any).
	• Date/Time Ordered	Enter the date (month/day/year) and time (24-hour clock) the resource was ordered.
	• ETA	Enter the estimated time of arrival (ETA) to the incident (use 24-hour clock).
	• Arrived	Enter an “X” or a checkmark upon arrival to the incident.
	• Notes (location/ assignment/status)	Enter notes such as the assigned location of the resource and/or the actual assignment and status.

INCIDENT OBJECTIVES (ICS 202)

1. In..... Name:	2. Operational Period: Date From: Date To: Time From: Time To:

3. Objective(s):

4. Operational Period Command Emphasis:

General Situational Awareness

5. Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) Located at:

6. Incident Action Plan (the items checked below are included in this Incident Action Plan)**:**

☐ ICS 203	☐ ICS 207	Other Attachments:
☐ ICS 204	☐ ICS 208	☐ _____
☐ ICS 205	☐ Map/Chart	☐ _____
☐ ICS 205A	☐ Weather Forecast/Tides/Currents	☐ _____
☐ ICS 206		☐ _____

7. Prepared by: Name: _____ Position/Title: _____ Signature: _____

8. Approved by Incident Commander: Name: _____ Signature: _____

ICS 202	IAP Page _____	Date/Time: _____

ICS 202
Incident Objectives

Purpose. The Incident Objectives (ICS 202) describes the basic incident strategy, incident objectives, command emphasis/priorities, and safety considerations for use during the next operational period.

Preparation. The ICS 202 is completed by the Planning Section following each Command and General Staff meeting conducted to prepare the Incident Action Plan (IAP). In case of a Unified Command, one Incident Commander (IC) may approve the ICS 202. If additional IC signatures are used, attach a blank page.

Distribution. The ICS 202 may be reproduced with the IAP and may be part of the IAP and given to all supervisory personnel at the Section, Branch, Division/Group, and Unit levels. All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 202 is part of the IAP and can be used as the opening or cover page.
- If additional pages are needed, use a blank ICS 202 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident. If needed, an incident number can be added.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Objective(s)**	Enter clear, concise statements of the objectives for managing the response. Ideally, these objectives will be listed in priority order. These objectives are for the incident response for this operational period as well as for the duration of the incident. Include alternative and/or specific tactical objectives as applicable. Objectives should follow the SMART model or a similar approach: **S**pecific – Is the wording precise and unambiguous? **M**easurable – How will achievements be measured? **A**ction-oriented – Is an action verb used to describe expected accomplishments? **R**ealistic – Is the outcome achievable with given available resources? **T**ime-sensitive – What is the timeframe?
4	**Operational Period Command Emphasis**	Enter command emphasis for the operational period, which may include tactical priorities or a general weather forecast for the operational period. It may be a sequence of events or order of events to address. This is not a narrative on the objectives, but a discussion about where to place emphasis if there are needs to prioritize based on the Incident Commander's or Unified Command's direction. Examples: Be aware of falling debris, secondary explosions, etc.
	General Situational Awareness	General situational awareness may include a weather forecast, incident conditions, and/or a general safety message. If a safety message is included here, it should be reviewed by the Safety Officer to ensure it is in alignment with the Safety Message/Plan (ICS 208).
5	**Site Safety Plan Required?** Yes ☐ No ☐	Safety Officer should check whether or not a site safety plan is required for this incident.
	Approved Site Safety Plan(s) Located At	Enter the location of the approved Site Safety Plan(s).

Block Number	Block Title	Instructions
6	**Incident Action Plan** (the items checked below are included in this Incident Action Plan): ☐ ICS 203 ☐ ICS 204 ☐ ICS 205 ☐ ICS 205A ☐ ICS 206 ☐ ICS 207 ☐ ICS 208 ☐ Map/Chart ☐ Weather Forecast/ Tides/Currents Other Attachments:	Check appropriate forms and list other relevant documents that are included in the IAP. ☐ ICS 203 – Organization Assignment List ☐ ICS 204 – Assignment List ☐ ICS 205 – Incident Radio Communications Plan ☐ ICS 205A – Communications List ☐ ICS 206 – Medical Plan ☐ ICS 207 – Incident Organization Chart ☐ ICS 208 – Safety Message/Plan
7	**Prepared by** • Name • Position/Title • Signature	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
8	**Approved by Incident Commander** • Name • Signature • Date/Time	In the case of a Unified Command, one IC may approve the ICS 202. If additional IC signatures are used, attach a blank page.

COMMUNICATIONS LIST (ICS 205A)

1. Incide. t Name:	2. Operational Period: Date F... : Date To: Time From: Time To:

3. Basic Local Communications Information:

Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)

4. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 205A | **IAP Page _____** | Date/Time: _____

ICS 205A
Communications List

Purpose. The Communications List (ICS 205A) records methods of contact for incident personnel. While the Incident Radio Communications Plan (ICS 205) is used to provide information on all radio frequencies down to the Division/Group level, the ICS 205A indicates all methods of contact for personnel assigned to the incident (radio frequencies, phone numbers, pager numbers, etc.), and functions as an incident directory.

Preparation. The ICS 205A can be filled out during check-in and is maintained and distributed by Communications Unit personnel. This form should be updated each operational period.

Distribution. The ICS 205A is distributed within the ICS organization by the Communications Unit, and posted as necessary. All completed original forms must be given to the Documentation Unit. If this form contains sensitive information such as cell phone numbers, it should be clearly marked in the header that it contains sensitive information and is not for public release.

Notes:

- The ICS 205A is an optional part of the Incident Action Plan (IAP).
- This optional form is used in conjunction with the ICS 205.
- If additional pages are needed, use a blank ICS 205A and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Basic Local Communications Information**	Enter the communications methods assigned and used for personnel by their assigned ICS position.
	• Incident Assigned Position	Enter the ICS organizational assignment.
	• Name	Enter the name of the assigned person.
	• Method(s) of Contact (phone, pager, cell, etc.)	For each assignment, enter the radio frequency and contact number(s) to include area code, etc. If applicable, include the vehicle license or ID number assigned to the vehicle for the incident (e.g., HAZMAT 1, etc.).
4	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

APPENDIX H

Meeting Agendas

Initial ICS Briefing Agenda

Facilitator of Discussion: Incident Commander
Purpose: Provide information regarding the current event, response concerns, and resources required.
Attendees: Command, General Staff, and those deemed essential by IC

#	Agenda item	Done √
Ground Rules & Introduction – 2 minutes		***Incident Commander***
1.	Cell phones and radios off/silent; no side conversation; stick to agenda	☐
2.	Meeting is 30 minutes	☐
3.	Introduce or identify Command and General staff	☐
4.	Communications plan (ICS 205a)	☐
Operations (Facts & Impacts) – 10 minutes		***Incident Commander***
5.	Current on-scene information (ICS 201) a. Current status incident facts b. Safety concerns c. Current response actions d. Resources required e. External agency engagement	☐
6.	Impacts a. Who b. How	☐
7.	Determine initial objectives, operational period length and start time	☐
8.	Consider resources needs to be requested through the Logistics Section Chief	☐
Communications – 5 minutes		***Public Information Officer***
9.	Update a. External (media, regulatory, and other stakeholders) b. Internal c. Social	☐
10.	Who do we need to communicate with? By when?	☐
11.	Do we need a Stakeholder Communication Call? (Yes or no)	☐
Next Steps – 5 minutes		***Incident Commander***
12.	Is the local incident commander or business unit requesting support from the corporate level? Do any other business units need to be involved?	☐
13.	Determine schedule for Incident Action Planning development	☐
14.	Confirm time and expectations for the next briefing	☐
15.	Final comments, critical questions, and adjourn meeting	☐

Position	Employee
Operations Section Chief	
Planning Section Chief	
Logistics Section Chief	
Finance/Admin Section Chief	
Public Information Officer	
Liaison Officer	
Legal Officer	

Outcome: Change of operational period or situational awareness update, transfer of information or duties, and execution of Incident Action Plan

Objectives Meeting Agenda

Facilitator of Discussion: Planning Section Chief
Purpose: Develop or update objectives for support of on-scene response and continued EOC support, if activated, for the next operational period.
Attendees: Section Chiefs

#	Agenda item	Done √
Ground Rules & Introduction – 2 minutes	***Planning Section Chief***	
1.	Cell phones and radios off/silent; no side conversation; stick to agenda	☐
2.	Meeting is 30 minutes	☐
Situational Awareness Overview – 5 minutes	***Planning Section Chief***	
3.	Conduct briefing on current situation a. Current conditions (weather, safety) b. Current response actions c. Incident projections	☐
Objectives – 5 minutes	***Planning Section Chief***	
5.	Review a. Review objectives for initial/previous operational period. b. Determine if they are still valid and should carry on to the next operational period c. Update/develop new objectives, if needed d. Assign objectives to appropriate sections to prepare tactics	☐
Resources – 5 minutes	***Logistics Section Chief***	
6.	Review current number of resources status, orders, and delivery timeframe	☐
7.	Review/update resource priorities, limitations and constraints	☐
Review – 2 minutes	***Command and General Staff***	
8.	Review and update key procedures, which may include a. Information flow b. Resource ordering process c. Cost sharing and cost accounting d. Security issues e. Public information	☐
Closing – 2 minutes	***Command and General Staff***	
9.	Review a. Develop (for initial operational period) or review/update assignment for section chiefs and staff to complete b. Review, document and/or resolve status of any open actions	☐
Next Steps – 5 minutes	***Planning Section Chief***	
10.	Confirm time and expectations for the Command and General Staff meeting	☐
11.	Final comments, critical questions, and adjourn meeting	☐

Outcome: Update current operational period objectives, draft objectives for the next operational period, procedures defined and tasks assigned for strategies meeting.

Command and General Staff Meeting Agenda

Facilitator of Discussion: Incident Commander
Purpose: Provide information regarding the current event, response concerns, and resources required.
Attendees: Command, General Staff, and those deemed essential by IC

#	Agenda item	Done √
Ground Rules & Introduction – 2 minutes		***Incident Commander***
1.	Cell phones and radios off/silent; no side conversation; stick to agenda	☐
2.	Meeting is 30 minutes	☐
3.	Command and General staff	☐
4.	Communications plan (ICS 205a)	☐
Operations (Facts & Impacts) – 10 minutes		***Operations Section***
5.	Current on-scene information (ICS 201) a. Current status incident facts b. Safety concerns c. Current response actions d. Resources required e. External agency engagement	☐
Objectives – 5 minutes		***Planning Section Chief***
6.	Approval of incident objectives	☐
Communications – 5 minutes		***Public Information Officer***
9.	Update a. External (media, regulatory, and other stakeholders) b. Internal c. Social	☐
11.	Do we need a Stakeholder Communication Call? (Yes or no)	☐
Next Steps – 5 minutes		***Incident Commander***
13.	Confirm time and expectations for the strategy/tactics meeting	☐
14.	Final comments, critical questions, and adjourn meeting	☐

Position	Employee
Operations Section Chief	
Planning Section Chief	
Logistics Section Chief	
Finance/Admin Section Chief	
Public Information Officer	
Liaison Officer	
Legal Officer	

Outcome: Situational awareness update for Command and General Staff to approve the incident objectives.

Strategies or Tactics Meeting Agenda

Facilitator of Discussion: Planning Section Chief
Purpose: Develop or update strategies or tactics to support planned objectives for the next operational period
Attendees: Command and General staff, and others as deemed necessary

#	Agenda item	Done √
Ground Rules & Introduction – 2 minutes	***Planning Section Chief***	
1.	Cell phones and radios off/silent; no side conversation; stick to agenda	☐
2.	Meeting is one (1) hour	☐
Event Overview – 5 minutes	***Planning Section Chief***	
5.	Conduct briefing on current situation (ICS 201) a. Current conditions (weather, safety) b. Current response actions	☐
Current Objectives – 5 minutes	***Operations Section Chief***	
6.	Review current operational period objectives and their status	☐
Development – 40 minutes (ICS 214)	***Command and General Staff***	
7.	Review coordination and support objectives for the next operational period and ensure accountability for each	☐
8.	Review draft strategies/tactics to support objectives	
9.	Discuss resource priorities and their status	
10.	Discuss financial and accounting process, as needed	
Next Steps – 5 minutes	***Planning Section Chief***	
12	Review assignments for completion of Incident Action Plan and deadlines	☐
13.	Confirm time and expectations for the Planning Meeting	☐
14.	Final comments, critical questions, and adjourn meeting	☐

Outcome: List of final objectives and supporting strategies/tactics to accomplish them for the next operational period; support for response defined; sections/staff will

Objectives =
What is to be done

Strategies/Tactics =
How it will be done

S – Specific

M – Measurable

A – Action-oriented

R – Realistic

T – Time-bound

Planning Meeting Agenda

Facilitator of Discussion: Planning Section Chief
Purpose: Develop or update EOC objectives for support of on-scene operations and continued EOC operations for the next operational period
Attendees: Command and General Staff, leadership as needed

#	Agenda item	Done √
Ground Rules & Introduction – 2 minutes	***Planning Section Chief***	
1.	Cell phones and radios off/silent; no side conversation; stick to agenda	☐
2.	Meeting is 30 minutes	☐
Welcome – 2 minutes	***Incident Commander***	
3.	Brief opening remarks	☐
4.	Incident safety update (Safety Officer)	☐
Event Overview – 5 minutes	***Planning Section Chief***	
5.	Conduct briefing on current situation (ICS 201) a. Current conditions (weather, safety) b. Current response actions	☐
6.	Review current coordination, support priorities, and objectives	☐
Situational Awareness Overview – 5 minutes	***Operations Section Chief***	
7.	Response Actions a. Progress of current actions	☐
Incident Action Plan Review – 5 minutes	***Planning Section Chief***	
8.	Review a. Proposed plan to ensure the priorities and objectives are met b. Validate responsibility for any open actions/tasks or objectives	☐
9.	Solicit final input and commitment to the proposed plan a. Transportation, communications, and supply updates b. Fiscal issues c. Public information (internal/external) d. Interagency issues/concerns	☐
10.	Request approval for plan as presented	☐
11.	Make assignments to appropriate Command and General Staff members for developing supporting documentation along with deadlines	☐
Closing – 2 minutes	***Incident Commander***	
12.	Final review and next steps	☐
Next Steps – 5 minutes	***Planning Section Chief***	
13.	Confirm time and expectations for the Operational Briefing	☐
14.	Final comments, critical questions, and adjourn briefing	☐

Outcome: Prepare IAP using the forms and format as determine during the planning meeting preparation phase. Sections should conduct breakout meetings to close information gaps. Incident Commander will approve final plan.

Operational Briefing Agenda

Facilitator of Discussion: Planning Section Chief
Purpose:

- Brief Incident Action Plan (IAP) at the beginning of an Operational period; or
- Provide a routine update throughout the Operational period

Attendees: Command, General Staff and those deemed essential by IC

#	Agenda item	Done √
Ground Rules & Introduction – 2 minutes	***Planning Section Chief***	
1.	Cell phones and radios off/silent; no side conversation; stick to agenda	☐
2.	Meeting is 30 minutes	☐
3.	Current Incident Action Plan objectives	☐
Welcome – 2 minutes	***Incident Commander***	
4.	Brief opening remarks	☐
5.	Incident safety update (Safety Officer)	☐
Situational Awareness Overview – 5 minutes	***Operations Section Chief***	
6.	Incident Overview (ICS 201)	☐
	a. Current conditions (weather, safety)	
	b. Current response actions	
7.	Review of tactical response for the next Operational period (ICS 214)	
Logistics – 5 minutes	***Logistics Section Chief***	
8.	Overview	☐
	a. Communications plan for tactical response (ICS 205)	
	b. Supply and transportation update	
	c. Issues or concerns	
Public Information – 5 minutes	***Public Information Officer***	
9.	Update	☐
	a. External (media, regulatory, and other stakeholders)	
	b. Internal	
	c. Social	
10.	Do we need a Stakeholder Communication Call? (yes or no)	☐
Interagency Coordination – 5 minutes	***Liaison***	
11.	Update	☐
	a. Corporate and Government Affairs	
	b. Regulatory Affairs	
	c. Public Affairs	
Finance – optional	***Finance and Admin Section Chief***	
12.	Issues or concerns	☐
Legal – optional	***Legal Officer***	
13.	Issues or concerns	☐
Next Steps – 5 minutes	***Planning Section Chief***	
14.	Do any other business units need to be involved?	☐
15.	Confirm time and expectations for the next Operational Briefing	☐
16.	Final comments, critical questions, and adjourn meeting	☐

Outcome: Change of operational period or situational awareness update, transfer of information or duties, and execution of Incident Action Plan

DTE ENERGY GENERAL COUNSEL ORGANIZATION
STAKEHOLDER COMMUNICATIONS CALL AGENDA

Meeting Chair: Business Unit Officer / Executive in Charge
Facilitator of Discussion: Legal Counsel
Purpose: Develop external and internal stakeholder message.

Call Kick-off – 2 minutes ***Lead: Legal Counsel or CEM***

1. Is everyone safe?
2. Roll call: Read off imperative business units (core group and others, as selected when scheduling the call) to ensure there is at least one rep from those; use pages 2-3 as checklist. Do not take total roll.
3. Read: "This is a two-part call: the first part will give an operational overview, and the second will focus on communications. We are not here for problem solving, but situational awareness only. For those that are involved in operations, we will dismiss you after update."
4. Read: "The lead individuals for the call are:"

Position	Employee
Incident Commander	
Public Information Officer	
Primary/backup spokesperson	
Liaison	

5. Read: "The Incident Commander will now take us through an operational update."

Operational Overview – 5 minutes ***Lead: Incident Commander or delegate***

6. Current status incident facts:
   a. When did the event occur?
   b. Who is impacted? How long could people be impacted by this crisis? What are we doing to help them?
   c. What/how did it happen?
   d. Current response actions, high-level
   e. External agency engagement
7. At this point: dismiss those that are working on the problem, turning over to the PIO for communications

Stakeholder Communications – 15 minutes ***Lead: Public Information Officer***

8. Are there any emergent media/social media issues we need to tend to address?
9. Which audiences do we need to communicate with at this time?
   a. What do they need to know?
   b. How are we going to communicate the message?
10. What is the plan for vetting any messaging?

Internal Customer	Audience	How?	Owner
Senior leadership	Senior leadership	Executive alert via Everbridge	BU Officer
Corporate Secretary	Board of Directors		PIO
Corporate Communications	Media		PIO
	Social Media Community		PIO
	Employees		PIO
	Customers		PIO
Customer Service			PIO
Human Resources	Labor Relations / Union Representatives		PIO
State & Government Affairs	State Legislators & Agencies (MAE)		Liaison
Regional Relations	Local Elected Officials (City, County)		Liaison
Regulatory Affairs	MPSC, FERC, NERC		Liaison
Public Affairs	Community		Liaison
Investor Relations	Investors		IR

** Owner is responsible for communicating agreed upon messaging to internal customers.*

Next Steps – 5 minutes ***Lead: Legal Counsel or CEM***

11. Read: "Next Operational Briefing will be held at XX:XX. During this meeting it will be determined if additional Stakeholder Communications Call need to be held."

APPENDIX I

Access Agreement

ACCESS AGREEMENT BETWEEN
THE DTE ELECTRIC COMPANY AND _____

THIS ACCESS AGREEMENT ("Agreement"), is entered into by and between the DTE Electric Company ("DTE Electric"), a Michigan corporation, with principle offices located at One Energy Plaza; Detroit, MI 48226, and _____, ("Landowner") whose address is _____, and is effective on the date it is executed by the latter of DTE Electric and Landowner.

W I T N E S S E T H

WHEREAS, owns certain real property located at _____ ("the Property"), more particularly described in Exhibit "A" hereto; and,

WHEREAS, DTE Electric desires to conduct, at DTE Electric's sole cost and expense, response activities necessary to address ash spills, which may include ash removal, soil excavation, soil sampling, groundwater sampling from temporary or permanently installed monitoring wells, and any other necessary activities to assist DTE Electric completing the necessary response activities at the Property (the "Work"), and

WHEREAS, DTE Electric desires to perform said activities utilizing both its employees and independent contractors, and

WHEREAS, Landowner agrees to permit DTE Electric to perform these activities with the personnel of their choice, including contractors, subcontractors, and invitees, subject to the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and with the intent to be legally bound, the parties do hereby covenant and agree as follows:

1. **Access.** Landowner hereby grants DTE Electric and its employees and contractors a license to enter the Property immediately upon request for the purpose of conducting the Work. DTE Electric shall have the right to ingress and egress over lands owned or controlled by the Landowner to facilitate this activity.

   Notwithstanding the access granted above, DTE Electric agrees that in no event shall any activity related to the Work, including, without limitation, any drilling, drilling equipment, excavation, or excavation equipment: (i) block the driveways or otherwise block or interfere with ingress or egress to or from the Property, or to or from the entranceways to any buildings located on the Property, or (ii) otherwise disrupt, in any material manner, Landowner's activities on the Property. Landowner will provide DTE Electric with all reasonably available information, including a detailed map, if available, about the location of all subsurface structures at the Property.

2. **Expectation of Care.** DTE Electric's Work shall be performed in a workman-like and professional manner, and at a time and in a manner so as to minimize the disturbance to Landowner or occupants of the Property. This duty of care shall also extend to the following additional activities, which DTE Electric hereby agrees and covenants to perform:

   a. Existing Structures. DTE Electric will coordinate the marking on the ground surface of the location of buried utilities (*e.g.*, electrical lines, telephone lines sewers, water mains, and natural gas pipes) in the area of the Work.

   b. Disposal of Wastes. DTE Electric shall handle and dispose of any soils and/or other by-products of the Work. as expeditiously as possible from the Property upon completion of the Work and following characterization and approval of disposal at a licensed landfill. DTE Electric shall further, consistent with its duty under Paragraph 6 hereto, dispose of all soil, groundwater and/or other by-products in compliance with industry standards and in accordance with all applicable laws and regulations applicable thereto.

   c. Restoration Upon Completion. Within a reasonable period of time at the end of the Work, DTE Electric shall restore any surface features such that all areas of Landowner property which were disturbed by any Work are returned to a condition at least as good as it was prior to the initiation of the Work. Determination of the adequacy of said restoration shall be upon Landowner's sole, reasonable discretion.

3. **Disclosure of Results.** DTE Electric shall, upon request from Landowner, promptly forward to the Landowner, the laboratory analytical results from soil and/or groundwater samples collected on Landowner's property as part of the Work.

4. **Responsibility for Activities.** All liability, expense, fees and cost of the Work shall be borne and paid by DTE Electric, and DTE Electric shall at all times keep the Property free and clear of all liens and encumbrances relating to the Work. DTE Electric shall be solely responsible for and shall indemnify, defend, and hold harmless against any and all loss, damage, fines, penalties or liabilities of any kind resulting from demands, claims, suits or actions of any character presented or brought for any claims or liability arising from or based on the violation of any law, order, or regulation, or for damages to property or injuries to persons (including death) in any way associated or connected with the performance of this Agreement by DTE Electric, its contractors, or anyone employed by any of them or anyone for whose acts anyone of them may be liable, in whatever manner the same may be caused.

5. **Duration of Agreement.** Landowner acknowledges that this Agreement is entered into incident to and in conjunction with DTE Electric's efforts to perform certain environmental work on Landowner's property, and it is the intention of the Parties that this Agreement shall remain in full force and effect until said work is completed. However, this intent shall not preclude Landowner, and Landowner has the express right to terminate this Agreement at will, upon which occurrence Landowner shall provide

reasonable notice to DTE Electric.

6. **Compliance with Laws.** DTE Electric agrees that it shall comply with all applicable federal, state, county and local laws, ordinances, regulations and codes in the performance of its obligations under this Agreement.

7. **Non-Assignment of Agreement.** This Agreement shall not be assigned by DTE Electric.

8. **Captions and Headings.** The captions and headings used in this Agreement are intended only for convenience and are not to be used in construing this Agreement.

9. **Notices.** All notices required or permitted under this Agreement shall be in writing and shall be deemed duly given upon actual delivery if delivery is by hand (against receipt) or on the third day following the date on which each such notice is deposited postage prepaid in the United States Mail, certified return receipt requested. All notices shall be directed to the other party at the address indicated below or to any other address as the party may designate by notice delivered pursuant to this provision.

If to DTE Electric:

DTE Electric Company
Environmental Management & Resources
One Energy Plaza – 655 GO
Detroit, MI 48226

Attn:

If to Landowner:

Attn:

10. **Non-Waiver.** No provision of this Agreement shall be deemed waived and no breach shall be deemed excused unless such waiver or consent shall be in writing and signed by a duly authorized representative of Landowner. No delay or omission by Landowner in exercising any right under this Agreement will operate as a waiver of that or any other right. No consent by Landowner to, or waiver of, a breach by DTE Electric, whether express or implied, shall constitute consent to, waiver of, or excuse for any other breach on any occasion.

11. **Force Majeure.** Neither party to this Agreement shall be liable to the other for any loss, cost, or damages, arising out of, or resulting from, any failure to perform in accordance with the terms of this Agreement where such failure shall be beyond the reasonable control of such party, which, as employed herein, shall be deemed to mean, but not be limited to, acts of God, strikes, lockouts, or other industrial disturbances, wars, whether declared or undeclared, blockades, insurrections, terrorist incidents, riots, governmental action, explosions, fire, floods, or any other cause not within the reasonable control of either party.

12. **Severability.** In the event that any one of the provisions contained in this Agreement should be found to be invalid, illegal or unenforceable in any respect by a court of competent jurisdiction, the validity, legality or enforceability of the remaining provisions contained in this Agreement shall not in any way be affected or impaired by such a finding.

13. **Governing Law and Jurisdiction.** This Agreement shall be governed by, subject to, and construed in all respects in accordance with the laws of the State of Michigan, without reference to its conflict of laws provisions.

14. **Duplicate Originals.** Two or more duplicate originals of this Agreement may be executed, each of which shall be deemed an original but which together shall constitute one instrument.

15. **Entire Agreement.** This Agreement sets forth the entire agreement and understanding between the parties and supersedes and merges all prior oral and written understandings, representations, and discussions between them respecting the subject matter of this Agreement. No rights, obligations or terms other than those expressly recited herein are to be implied from this Agreement. Both parties acknowledge that Agreement has been fully and fairly negotiated between the parties and thus the rule of construction that would allow ambiguities to be construed against the drafter shall not apply.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be signed in its name and on its behalf by its duly authorized representative.

DTE ELECTRIC COMPANY	**LANDOWNER**
	_____
By:_____	By:_____
Print Name: _____	Print Name:_____
Title: Director, EM&R_____	Title: _____
Date: _____	Date: _____

EXHIBIT "A"

Legal Description of Property

Property generally known as:

APPENDIX J

Lakeside Response Plan

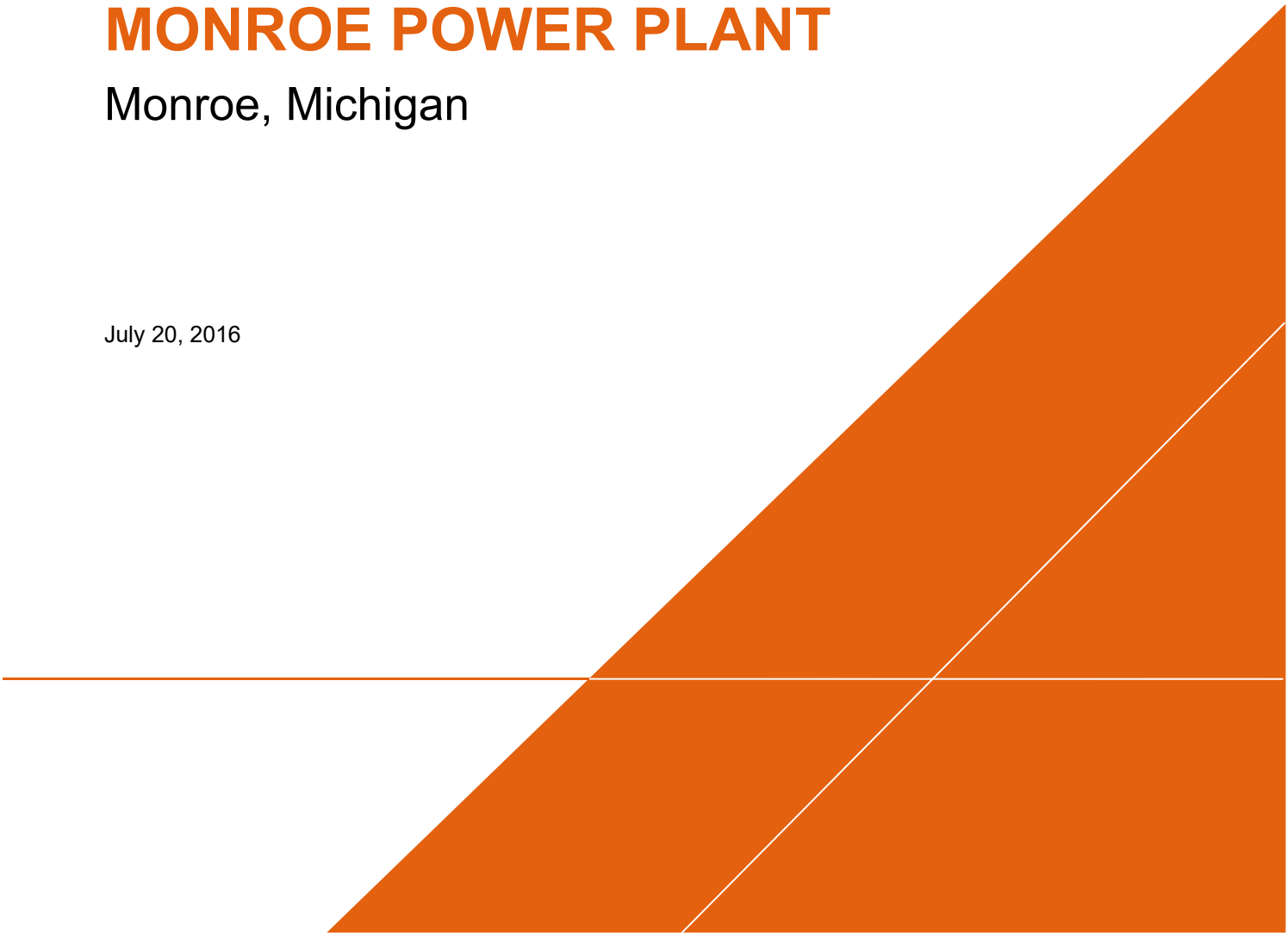
ARCADIS Design & Consultancy for natural and built assets

DTE Energy

LAKESIDE RESPONSE PLAN - MONROE POWER PLANT

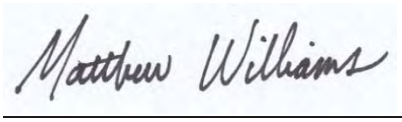
Monroe, Michigan

July 20, 2016

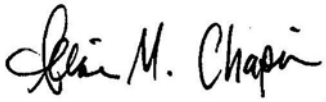


LAKESIDE RESPONSE PLAN - MONROE POWER PLANT

Monroe, Michigan



Matt Williams
Project Environmental Engineer



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Our Ref.:

DE000501.0000.00002

Date:

July 20, 2016

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APPENDICES

Appendix A Great Lakes Area Contingency Plan

http://rrt5.org/Portals/0/docs/GreatLakesAreaContingencyPlan4-13-2015-Signed.pdf

Appendix B EPA Region 5 Area Contingency Plan

https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations/area-contingency-planning

Appendix C Western Lake Erie Area Contingency Plan

http://www.rrt5.org/Portals/0/docs/2010_ACP_Combined_V1.pdf

Appendix D U.S. Coast Guard Incident Management Handbook

New Incident Management Handbook

Appendix E EPA Inland Response Tactics Manual

http://www.rrt5.org/RCPACPTools/TacticsManual.aspx

ATTACHMENTS

Attachment 1 Response Timeline for Lakeside Breach

Attachment 2 Ecological Receptors

ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
Arcadis	Arcadis of Michigan, LLC
EPA	Environmental Protection Agency
ERMA	Environmental Response Management Application
GIS	Geographic Information System
ISA	Inland Sensitivity Analysis
MDEQ	State of Michigan Department of Environmental Quality
NOAA	National Oceanic and Atmospheric Administration
USACE	United States Army Core of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Services

EXECUTIVE SUMMARY

The purpose of this plan is to outline the strategy and response process associated with a fly ash retention basin breach to a waterbody. This plan supplements the generalized emergency action plan and is intended to outline the critical factors in coordinating incident responses for a release to water. The most likely waterbodies that would be impacted by a release include Plum Creek and Lake Erie. Modeling results show primary impacts centered on La Plaisance Bay just south of the fly ash retention basin on Lake Erie.

This plan is focused on identifying potential receptors and sensitive areas that would require protection in order to guide containment equipment and emergency responders to the locations in most need of protection. Due to the shallow basin in the western half of Lake Erie, along with the fast-moving currents and discharges associated with rivers such as River Raisin and Plum Creek in the immediate vicinity of a release it is possible for fly ash impacts to spread quickly. For that reason, regional receptors and considerations are identified in this plan.

Many area contingency plans, guidance documents, and institutional emergency response tools are already in place and issued through various regulatory agencies including: the United States Coast Guard (USCG), Environmental Protection Agency (EPA), United States Army Core of Engineers (USACE), and State of Michigan Department of Environmental Quality (MDEQ). This plan identifies pre-existing plans and integrates their use as best as possible using the Incident Command System structure typical of most regulatory emergency plans. Attachment 1 provides a 48-hour timeline for initial emergency response.

Assumptions:

Lakeside breach scenarios were modeled to examine fate and transport of fly ash media into nearby waterbodies. The Arcadis of Michigan, LLC (Arcadis) CFD Modeling and Simulation Report separates water movement and fly ash mud separately due to the different material properties. It is important to note that the modeling results depict spatial distribution modeling in relatively short time periods after a breach scenario. For the purposes of response planning these areas are assumed to be the primary accumulation areas impacted from a release. Due to the variables outside the scope of the modeling report such as fly ash deposition rates in relation to velocity changes and lake circulation patterns and currents, the impact extents should be considered conservative. Extensive monitoring and control measures may be required further from the breach location within the western Lake Erie basin depending on negotiated turbidity requirements with regulatory agencies and lake currents at the time of release.

It should also be noted that a landside breach will incorporate waterway impacts based on the modeling results. The water bodies north of the fly ash basin where Plum Creek discharges to Lake Erie would be impacted by most landside breach scenarios and control measures in this plan can be generalized to apply for a release to those water bodies. Additional assumptions include:

- Per the Arcadis CFD Modeling and Simulation Report, the zone of influence of the fly ash mud is initially localized along the shoreline. The approximate length along the shoreline is 11,755 feet per the model. Width of area to be clear is 6,330 feet per the model. Due to the release being a fly ash

mud and water mixture, the thicknesses of mud layers that settle to the bottom floor will vary depending on densities.

- Water breached to Lake Erie would disperse within an area approximately 6,000 feet off the coastline along a 19,000 foot stretch of coastline extending from the Plum Creek discharge area to the south after 2 hours. It is assumed that water movement fate and movement would predominantly control lower density sediment spreading within the western Lake Erie basin.
- An estimated volume of slurry released into Lake Erie during a Lakeside breach event is approximately 2,575,450 cubic feet = 95,390 cubic yards.
- Removal of any ash slurry will be implemented after the strategies and operations have been organized.
- Operation of the power plant cooling water discharge will be immediately evaluated to determine if facility operations are exacerbating release issues via the discharge into Plum Creek. Shutdown procedures will be considered if determined to be in the best interest of public safety when balanced with the implications of limited facility operation.
- National Oceanic and Atmospheric Administration (NOAA) operates a number of monitoring stations in the western Lake Erie basin as part of the Great Lakes Observing System. Parameters at the time of a release should be immediately monitored for a determination of baseline parameters for comparison against any waterbody investigations. NOAA GLERL WE8 (http://habs.glos.us/stations/?id=glerlwe8) is the nearest monitoring station. The gauge station tracks parameters relevant to a fly ash release including turbidity, temperature, and dissolved oxygen.

Response Management Structure:

Water-based environmental incidents are typically the responsibility of the USCG while inland environmental incidents are typically handled by the EPA as lead agency. Area contingency plans all start with the National Response Framework and work their way down to Geographic Region Plans/Regional Contingency Plans and then Area Contingency Plans. For the area related to this plan, the USCG has developed the Great Lakes Area Contingency Plan (Appendix A) which serves as a base plan to all other supplemental plans. The EPA Region 5 Contingency Plan (Appendix B) serves as a regional base plan for inland incidents. Within the USCG and EPA, the Great Lakes Region is further broken down into smaller areas and the Western Lake Erie Area Contingency Plan (Appendix C) describes the outline for a coordinated response similar to the lakeside breach scenario. For that reason, it is assumed that the USCG Western Lake Erie Area Contingency Plan will serve as the primary regulatory document to support strategies and make decisions during emergency response planning related to an incident.

Additional supplemental management plans and handbooks that will be helpful for guiding response efforts include:

- CANUSLAK Great Lakes Operational Supplement to the Joint Marine Pollution Contingency Plan
- EPA Area Contingency Planning Handbook
- Monroe County Comprehensive Plan

- Monroe County Hazard Mitigation Plan
- Michigan State Police Michigan Emergency Management Plan
- Appendix D. USCG Incident Management Handbook
- EPA Incident Management Handbook Incident Command System
- Appendix E. EPA Inland Response Tactics Manual

Environmental plans that may serve as documentation of baseline conditions include:

- River Raisin Watershed Council Raisin River Watershed Management Plan
- MDEQ Stage 2 Remedial Action Plan River Raisin Area of Concern
- MDEQ Water Quality and Pollution Control in Michigan 2014 Sections 303(d), 305(b), and 314 Integrated Report

Emergency Response Websites and Tools:

- Region 5 Regional Response Team website. http://www.rrt5.org/
- NOAA Environmental Response Management Application (ERMA) Great Lakes. http://response.restoration.noaa.gov/erma
- EPA WATERS (Watershed Assessment, Tracking & Environmental Results System) website: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system

Sensitive Receptors:

The EPA Region 5, United States Geological Survey, Great Lakes Commission, and Western Lake Erie Committee publish an Inland Sensitivity Analysis (ISA) which identifies data about environmental, economic, cultural, and response resources pertinent to an emergency response. The ISA can be used in conjunction with the United States Fish and Wildlife Services (USFWS) Region 5 regional response team to identify potential environmental receptors and guide response strategies in the event of an emergency. At the time of the drafting of this plan, the ISA is not available online but agencies involved with a response should have access to the databases needed.

Water Intakes

Lake Erie and nearby surface water intakes within Michigan and Ohio have been outlined in the Western Lake Erie Area Contingency Plan (Appendix C, page 4000-5). Waterbodies, water use, and contact information for each intake is included. For reference, a map depicting the nearest public water supply intake has been included as Figure 1 for the Monroe County raw water pumping plant. This inlet is approximately 7.5 miles northeast of the fly ash retention basins (see Figure 1).

Marinas/Facilities/Obstructions

The area immediately adjacent to the modeled release site is primarily industrial due to the proximity to the DTE Energy Monroe Power Plant. A number of large power facilities are present on the shoreline of Lake Erie including Enrico Fermi Nuclear Generating Station, DTE Energy Monroe Power Plant, and J.R. Whiting Power Plant. The DTE Energy Monroe plant is the only location impacted based on the 2-hour water movement spatial extent modeling and additional facility notification would have to determined based on breach characteristics. The Ford Motor Company also owns a Comprehensive Environmental Response, Compensation, and Liability Act site located on the north side of River Raisin across from the DTE Energy Monroe power plant adjacent to Sterling State park. The water intake associated with this facility is abandoned.

Nearby marinas that may be impacted include: Trout's Yacht Basin, Monroe Boat Club, Harbor Marine, Rose Harbor Marina, and Otter Creek Marina. Residential communities in this area include: Bolles Harbor, Avalon Beach, Grand View, and North Shores. Environmental Sensitivity Index maps, (https://response.restoration.noaa.gov/maps-and-spatial-data/environmental-sensitivity-index-esi-maps.html), depict all of these locations in addition to shoreline receptors further north and south from the modeled release extents.

Shoreline landuse and material layers are depicted on ERMA web-based Geographic Information System (GIS) tool, (https://erma.noaa.gov/greatlakes/erma.html#/layers=1&x=-83.50771&y=42.03955&z=10&panel=layer). The shores in the area are predominantly classified as park land and moderate density residential consisting of sand artificial shoreline materials.

Environmental

Ecological receptors are identified and discussed in detail in Attachment 2.

According to the ERMA for the Great Lakes, the River Raisin Area of Concern (AOC) is located north of the fly ash basin due to historic polychlorinated biphenyl and dioxin contamination. Details related to the environmental response associated with this classification are further detailed in the River Raisin Watershed Council Raisin River Watershed Management Plan and MDEQ Stage 2 Remedial Action Plan River Raisin Area of Concern.

The AOC classification and historical industrial contamination from nearby facilities has led to extensive sampling within the area. Many of the sampling locations are depicted on ERMA maps for sediment, tissue sampling, toxicity, and water quality.

Environmental sampling locations will provide context for environmental conditions in the area prior to a release. If possible, containing ash outside the AOC will help alleviate cross contamination concerns with any cleanup efforts.

Federal Lands and State Parks

A number of federal land and state parks are present in the western Lake Erie basin. They are depicted on the ERMA GIS website. The nearest location that is most likely to be impacted is Sterling State Park

immediately north of the outlet of the River Raisin. Sterling State Park also has a recreational beach associated with it.

Navigational

Nautical navigational maps provide locations of important marine based features such as jurisdictional boundaries, lights, bouies, shipwrecks, disposal areas, dredged locations, and navigational pathways and information such as bathymetry. Nearby dredged areas include the outlet of the River Raisin and further away the outlet of the Maumee River in Toledo. Sediment accumulation at these locations may have to be evaluated to determine if there are any detrimental impacts to navigation through the maintained channels. The ERMA GIS website includes a layer depicting the navigational charts of the western Lake Erie basin.

Submerged piles in La Plaisance Bay approximately 0.68 mile offshore are the only submerged obstructions noted through the nautical maps identified via the ERMA. There are no known shipwrecks in the immediate area of the modeled release. The nearest shipwreck is approximately 2.2 miles south near the discharge of Otter Creek into Lake Erie. These locations can be identified on a GIS layer for the navigational charts on the ERMA GIS website.

Cultural and Historical

No cultural or human use resources were identified via the ERMA Great Lakes website. The National Register of Historic Places in Monroe County and List of National Historic Landmarks in Michigan does not list any locations that are likely to be impacted by a release. The state historic preservation offices can be utilized in the event of an emergency to develop updated sites that may be sensitive to a release.

Strategy:

Environmental response contractors directed by Arcadis on behalf of DTE Energy to contain, delineate, and mitigate slurry to Lake Erie and associated waterbodies will gain access when:

- Public safety of surrounding residents, citizens and response crews has been confirmed (evacuations, search and rescue, and the work area has been adequately assessed for safety concerns).
- Baseline conditions have been adequately assessed and documented to commence work. Initial personnel and equipment requirements will be scaled to match site conditions and requirements.
- Incident command has been set up at the DTE Energy Monroe Power Plant or Monroe Emergency Management Center and incident objectives, management responsibilities, resource availability and capabilities, command structure, and minimum work protocols for first responders have been established in the EPA. There are a number of marinas in the vicinity of the release area that could serve as an effective location for emergency responders staging equipment for water based investigations and cleanup.
- Unified command agrees that containing the slurry is the priority and operations can commence. Operations section chief directs work crews to begin work.

- Safe work practices have been established and communicated. Meeting locations for first responders, contractors, and material deliveries have been identified.
- Work zones and exclusion zones have been established.
- Communication requirements have been established.

Access to Lake Erie

Boats and necessary equipment may gain access to the zone of influence through nearby boat launches. Nearby boat launches include:

- DTE Energy Company boat launch
- Bolles Harbor Boat Launch
- Hellenberg Park
- Sterling State Park

An expanded list of regional boat launches, marinas, and staging areas with site specific information such as max boat size and staging area size is available as a GIS layer on the ERMA website and within the Western Lake Erie Area Contingency Plan (Appendix C).

Emergency Containment Logistics – quantities specified are estimated

Environmental response contractors directed by Arcadis on behalf of DTE Energy will install turbidity curtain systems to minimize ash transport as close to the release location as possible to limit bulk migration of fly ash sediment to Lake Erie.

- Approximately 2,200 feet of diversionary boomed turbidity curtains are installed across the outlet of Plum Creek or at the primary breach pathway to cut off the primary flow path to Lake Erie.
- A second boom will be deployed for redundancy as materials become available.
- Booms are deployed from one bank at an angle to the current anchored and to the opposite bank for diverting the ash film to a collection point on the shoreline.
- Reference the EPA Region 5 Inland Response Tactics Manual to determine angle of boom based on conditions of the current.

Vacuum trucks and pumps will be used to remove floating media and cenospheres accumulating at boom locations.

Resource lists for the area are detailed in the Western Lake Erie Area Contingency Plan (Appendix C, page 5000-2). Resource lists were developed for oil spill contingencies but there will be a lot of crossover contractors and resources which may be of use in identifying local resources at the beginning of a release.

Containment Preparation – Immediately after release to Lake Erie or waterbody

- Initiate emergency response phone tree. Mobilize personnel, contractors, and equipment to site.
- Order materials to begin containment construction, and berms for control and mitigating ash flow. Local material companies include:
    - Aggregate Industries: (734) 529-5876
    - Great Lake's Aggregates: (734) 783-7400
    - Stoneco: (734) 241-8966
    - Edard C. Levy Inc.: (313) 429-2200
    - Onsite Material – DeMaria (313) 870-2800
- Establish operations command center to organize resources equally into teams responsible for containment measures around the zone of influence.
- Review Emergency Action Plan and assign resources to address applicable sections of the incident action plan established by incident or unified command.
- Construct decontamination areas for equipment and personnel as necessary (operations areas, staging areas, marine equipment).
- Establish dust monitoring locations and deploy monitors to centralized and representative work zone and perimeter locations.
- Establish marine removal processes and material transport requirements based on removal equipment available (excavators, dredging, pumping) and breach extents. Marine equipment such as dredges will have procurement and mobilization timelines that extend beyond the scope of this plan. It is anticipated removal practices will be negotiated and determined in conjunction with regulatory agencies and responsible parties by unified command.
- Environmental response contractors directed by Arcadis on behalf of DTE Energy utilize access road(s) to mobilize to the location of the breach and construct temporary dam to contain any remaining ash (rock dam and/or bladder dam as needed).
- Most of the ash recovered will eventually be staged on land for drying. Construct temporary access roads to staging area(s) and truck turn arounds on land.
    - A primary staging area has been identified just south of the ash pond basin (DTE Energy owned property) and secondary backup staging areas will be identified depending on the location of the breach (2 dozers, 2 excavators, 2 dump trucks)
- Berm construction in staging area(s) perimeters to contain removed ash and allow ash to dry out (containment berms are not likely to be lined) (2 dozers, 1 excavator, 1 loader, 2 dump trucks).
- South field containment construction – Staging Area
    - Excavate down two to three feet pushing soil/clay to build three-foot berm to construct a 750 foot by 750 foot drying area to contain up to approximately 50 percent of the released ash.

- Assign resources to drying bed areas to direct trucks that are unloading to begin in the furthest corner of the containment area and unload material in straight even windrows, leaving accessibility for vehicles between rows.
- Evaluate the use of Geotube® products for filtration at staging areas and dewatering applications and in marine applications to control slurry migration, create diversion dikes to engineered locations, underwater structures. Water to be managed appropriately and in compliance with state regulations.

Marine Containment Logistics

Sediment migration control will be predominantly accomplished through the use of floating turbidity curtains deployed to protect sensitive receptors from fly ash turbidity and sediment deposition. Note that turbidity curtains are generally limited to locations with a water velocity less than 2.5 feet/second and are more effective in shallower waterbodies.

Reference the EPA Region 5 Inland Response Tactics Manual, USACE Silt Curtains as a Dredging Project Management Practice document, and USACE Technical Guidelines for Environmental Dredging of Contaminated Sediments for a detailed containment logistics approach and design recommendations. Resources for deployment will need to be defined based on the project control extents.

In general, marine containment will employ a variety of control measures including:

- Installation of rigid containment.
- Installation of containment curtains to surround the zone of influence of the fly ash mud.
    - Containment curtains will not stop bulk movement of fly ash mud but the curtain located around mud will be the first line of defense for mitigating associated sediment migration.
- Installation of containment curtains to surround the dispersion area.
    - Consider doubling curtain protections around sensitive receptors.
- Installation of pneumatic barrier (bubble curtain), particularly in areas which require sediment protection but must remain navigable for marine traffic.
- Installation of Geotube® marine controls to mitigate material movement as needed.
    - Geotubes® can be used to mitigate mud movement and can help limit bulk movement of sediments during dredging activities.

Dredging and Sediment Removal

Response needs for fly ash removal will have to be evaluated based on the size of release and fly ash related media accumulation areas. The DTE Energy CFD Model Report depicts bathymetric information for Plum Creek and the immediate vicinity of Lake Erie and outlines where material would be most likely to immediately settle out. Low area where ash related materials are likely to settle in the greatest thicknesses will be targeted for removal with dredging, excavation, or pumping. While fly ash is not considered a hazardous substance, regulatory agencies will most likely require an effort to remove bulk

quantities of released media along with mitigating any sediment sources contributing to detrimental conditions at any of the various receptors.

Due to the lead time associated with coordinating dredging equipment, unified command will evaluate dredging needs as early as possible to limit potential migration associated with adverse weather or changing conditions. Various guidance documents can be utilized to help plan and design dredging operations including:

- USACE Dredging and Dredged Material Management, EM 1110-2-5025
- USACE Technical Guidelines for Environmental Dredging of Contaminated Sediments ERDC/EL TR-08-29
- USACE Dredging Operations Technical Support Program, http://el.erdc.usace.army.mil/dots/

Environmental response dredging contractors directed by Arcadis on behalf of DTE will conduct dredging work in accordance with designs and plans drafted to fit the needs of the scope of the release. USACE, USCG, and EPA will be engaged with permitting, design approval, procedural documentation, and safe work practices associated with the coordination of dredging projects. If necessary, dredging would be conducted after the emergency response is complete and appropriate investigation and design is completed to safely commence dredging activities.

Initial Equipment/Personnel Totals

Equipment and labor needs have been estimated to respond to initial response efforts and include:

- 10 boats
- 10 boat operators
- 60 laborers (initial install)
- 10 laborers per shift x 2 shifts = 20 laborers
- 10 equipment operators (guzzler trucks) per shift x 2 shifts = 20 equipment operators
- 10 guzzler trucks
- 5 sludge pumps
- 5 tanker trucks

Totals do not include any contingency to account for downtime or mechanical failure. Backup equipment will be staged onsite and will include as many containment booms, boats, trucks, and pumps as can be made readily available and scaled for the needs of the response.

Regional and national resources for emergencies can also be found through USCG Response Resource Inventory System Oil Spill Removal Organizations site, https://cgrri.uscg.mil/UserReports/WebClassificationReport.aspx.

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TABLES

Table 1:
Federal Listed Species in Project Area
Monroe County, Michigan

Species Group	Common Name	Scientific Name	Status	Preferred Habitat
Bird	Red knot	*Calidris canutus rufa*	Threatened	Marine habitats, preferring sandy coastal habitats or near tidal inlets
Mammal	Indiana bat	*Myotis sodalis*	Endangered	Snag/cavity of mature trees in Southern hardwood swamps, floodplain forest, bur oak plains and oak opening. In Michigan: savannah habitats adjacent to riparian corridors preferring sun-exposed trees
Mammal	Northern long-eared bat	*Myotis septentrionalis*	Threatened	Snag/cavities or crevices of both live and dead trees, mines and caves
Mussel	Northern riffleshell	*Epioblasma torulosa rangiana*	Endangered	Fine to coarse gravel areas of swift current riffle and runs
Insect	Karner Blue Butterfly	*Lycaeides Melissa samuelis*	Endangered	Associated with wild lupine plant in pin and oak savannahs/barrens
Plant	Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Mesic prairie, wetlands including sedge meadows, marsh edges, and bogs.

Table 2
Emergency Response Key Task Sequence – Lakeside Scenario

Task	Description	Method	Materials	Equipment/Personnel
1	Impede/Mitigate Flow & Breach	Aerial support Lower pool elevation Stop MPP FAB inflows	Staged reverse filter materials Soil cement (e.g. Aqua Block)	Helicopter Crane Equipment Pumps/Syphons Vac Trucks
2	Implement Controls	Traffic Diversion Dust Suppression Site Access	Physical Barriers Water	Heavy Equipment Mist Trucks Security
3	Contain Ash & Slurry Water	Rock Check Dams Turbidity Curtains	Rip-Rap Filter Fabric Steel Piping Fasteners Booms	Backhoes Amphibious backhoes Loaders Dump trucks Vac & Water Trucks
4	Re-establish Critical Infrastructure & Resources – Primary flow paths & MPP Intake Channel	Establish impoundments Establish dredge cell/geo-tube farm Dredge Infrastructure	Booster Pumps Decanting Resources	Dredge Cat Amphibious Trackhoe Dipping Trackhoe Barge-mounted Hydraulic excavator
5	Ash Recovery	Excavation Disposal	N/A	Dredge Cat Amphibious Trackhoe Dipping Trackhoe Barge-mounted Hydraulic excavator

FIGURES

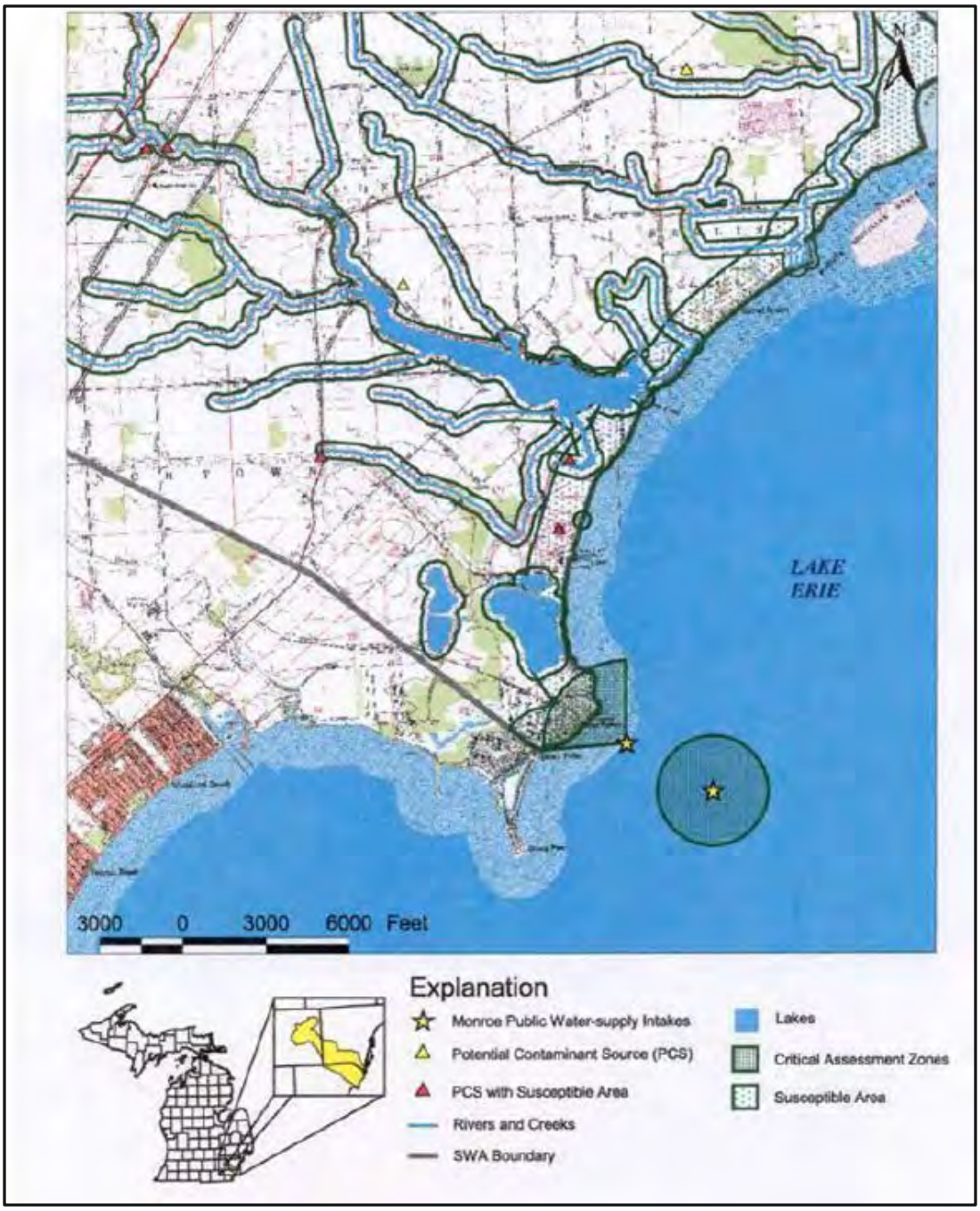

Figure 1. Michigan Association of Conservation Districts (www.macd.org)

ATTACHMENTS

ATTACHMENT 1

Response Timeline for Lakeside Breach

Attachment 1
Response Timeline for Lakeside Breach

Time (hours)	Items
0- 1	• Arcadis personnel is notified of breach; • Initiate response phone tree; • Contractor calls are made notifying them to begin mobilization to the Site.
1- 2	• Arcadis personnel begins mobilizing to Site; • Conduct job safety briefing (complete additional safety briefings as necessary when conditions change or when new site personnel arrive); • Begin addressing applicable sections of the Incident Action Plan; • Environmental response crews begin to arrive on Site; • Begin ordering necessary materials for berm construction, access paths, and containment; • Engage a meteorologist or NOAA to evaluate current and project lake currents.
2- 6	• Hour-2 status meeting; • Command Center(s) are established near work zones; • Begin constructing decontamination areas and staging areas; • Set up dust monitoring equipment; • Identify and prioritize sensitive receptors, deploy teams to protect locations with equipment and containment boom as applicable.
6- 12	• Hour-6 status meeting; • Equipment and materials begin arriving on Site; • Begin constructing temporary roads and truck turn arounds in staging areas; • Begin removal of material from the water surface.
12- 24	• Hour-12 status meeting; • All heavy equipment on Site; • Deploy containment booms surrounding immediate zone of influence; • Deploy containment booms surrounding extent of dispersion; • Begin removal of material from shoreline; • Begin material removal to staging areas.
24- 48	• Hour-24 status meeting; • Shift change between first responders and second shift; • Continue removal of material from the zone of influence; • Begin characterization of extend of impacts to properly scale response equipment needs.

ATTACHMENT 2

Ecological Receptors

Ecological

There is a fish consumption advisory in this area for carp (Cyprinus carpio), catfish (Ictalurus sp.), freshwater drum (Aplodinotus grunniens), largemouth bass (Micropterus salmoides), smallmouth bass (Micropterus dolomieu), white bass (Morone chrysops) and all other species (limited to 6 per year) due to polychlorinated biphenyls and dioxins (Michigan Department of Community Health [MDCH] 2015; National Oceanic and Atmospheric Administration [NOAA] 2016).

Potential Impacts on Wildlife

Fly ash release can smother bottom-dwelling animals (i.e., mussels, snails, insects, crayfish, bottom-feeding fish etc.) in areas where large amounts of ash deposits. At the immediate site of release, animals may be unlikely to escape the initial deposit of ash. In addition, other pelagic fish species may also be affected due to high levels of suspended solids in the water during and immediately after the release. As the ash moves downstream, it will dissipate and likely not have an effect on these species. Wetlands in the area could likely be filled following a release.

Waterfowl and other terrestrial wildlife in the area are not likely to be directly impacted, but could indirectly be impacted by displacement and temporary loss of habitat. A list of potential sensitive resources in this area are listed and described below.

State Listed Species

For the purposes of this report, special status species are considered those that are federally listed as threatened, endangered, proposed, or candidate by the United States Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA); birds protected under the Bald and Golden Eagle Protection Act (BGEPA); birds protected under the Migratory Bird Treaty Act (MBTA); and species listed as threatened, endangered, or special concern by Michigan Department of Natural Resources (MDNR).

MDNR: MDNR is the lead agency for the State in decisions involving fish and wildlife issues during a spill response working cooperatively with the MDEQ. The Michigan Natural Resources and Environmental Protection Act (M.C.L.A. 324.36501-07) prohibits the “take” of state listed threatened and endangered species, as well as federally listed wildlife and plants. The Act defines “take” to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct.” The Michigan list of threatened and endangered species, last updated in 2009, currently includes 138 endangered species and 258 threatened species (MDNR 2009).

The Michigan Natural Features Inventory (MNFI) was queried for known localities of rare species and unique natural features within Monroe County. The MNFI database holds records from qualified observers documenting significant plant and animal species and associated natural communities. There were 68 threatened or endangered species located in in Monroe County (MNFI 2007), this includes 30 plants, 17 mollusks, 8 fish, 6 birds, 4 invertebrates, 2 amphibians, and 1 reptile.

Eagles

Under authority of the BGEPA, 16 U.S.C. §§ 668–668d, bald eagles (Haliaeetus leucocephalus) and golden eagles (Aquila chrysaetos) are afforded additional legal protection. The BGEPA prohibits the take, sale, purchase, barter, offer of sale, purchase, or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof (16 U.S.C. § 668). The BGEPA also defines take to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb," 16 U.S.C. § 668c, and includes criminal and civil penalties for violating the statute. See 16 U.S.C. § 668. The term "disturb" is defined as agitating or bothering an eagle to a degree that causes, or is likely to cause, injury to an eagle, or either a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior (50 C.F.R. § 22.3).

Bald eagles are state species of special concern and are found in Michigan year-round. Nests are usually constructed in large trees near perennial water bodies, including lakes or large rivers, which support a robust fish or waterfowl population. Most eagle nests are located along the Lake Huron and Lake Eerie shorelines. Wintering bald eagles also are typically associated with large water bodies, though they may stray farther from these areas during the winter and feed on secondary food sources such as small mammals (up to rabbit-size) and carrion (including road kill) (MDNR 2015b). Golden eagles do not breed in Michigan, but are known to pass through the state during migration.

There is a potential for eagles to be present in the project area. Their nests would not be impacted by a fly ash release, but their food and water source could be temporarily impacted causing a short-term impact on these species.

Migratory Birds

The MBTA implements four treaties that provide for international protection of migratory birds. It is a strict liability statute, meaning that proof of intent, knowledge, or negligence is not an element of an MBTA violation. The statute's language is clear that actions resulting in a "taking" or possession (permanent or temporary) of a protected species, in the absence of a USFWS permit or regulatory authorization, are a violation of the Act. The MBTA states, "Unless and except as permitted by regulations . . . it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill . . . possess, offer for sale, sell . . . purchase . . . ship, export, import . . . transport or cause to be transported. . . any migratory bird, any part, nest, or eggs of any such bird . . . ." (16 U.S.C. § 703). The word "take" is defined by regulation as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect" (50 C.F.R. § 10.12). The USFWS maintains a list of all species protected by the MBTA at 50 C.F.R. § 10.13.This list includes 1,026 species of migratory birds, including eagles and other raptors, waterfowl, shorebirds, seabirds, wading birds, and passerines.

Waterfowl are at greatest risk of impact from a fly ash release. They could be present in the immediate area and covered in ash or will be deterred from their habitat, food, and water source during cleanup efforts.

Federally Listed Species

The ESA of 1973 (16 USC 1531 et seq) was established to protect and conserve threatened and endangered species and their habitats. ESA Section 7 requires that agencies ensure their actions are not likely to jeopardize listed species or destroy or adversely modify their designated critical habitat. During emergencies, such as disasters, casualties, national defense or security emergencies, and response to oil spills, the ESA allows for emergency consultation during the incident, with formal consultation occurring after the incident, if necessary.

Arcadis queried the Information, Planning, and Conservation System (IPaC) of the USFWS (2015) and USFWS online threatened and endangered species profiles to determine federally listed species that are known to occur in Monroe County, Michigan and may therefore potentially occur in the Project Area. The results of these queries and a brief habitat summary (NatureServe 2015) are summarized in Table 1.

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APPENDIX K

Landside Response Plan

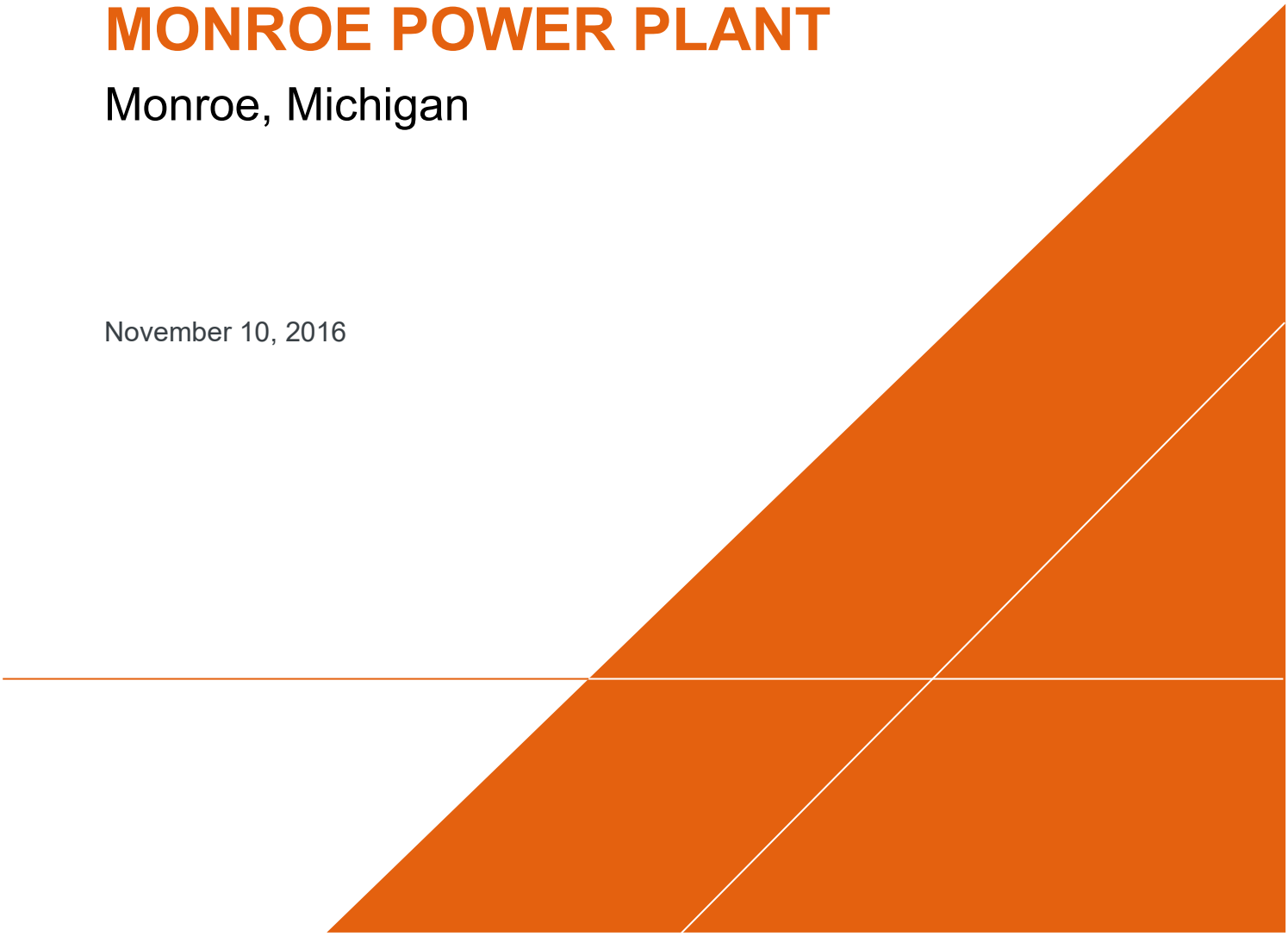
ARCADIS Design & Consultancy for natural and built assets

DTE Energy

LANDSIDE RESPONSE PLAN - MONROE POWER PLANT

Monroe, Michigan

November 10, 2016



LANDSIDE RESPONSE PLAN - MONROE POWER PLANT

Monroe, Michigan

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Our Ref.:

DE000501.0000.00002

Date:

November 10, 2016

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ACRONYMS AND ABBREVIATIONS

cyds	cubic yards

Assumptions

- Average maximum depth for slurry on highway is 5.6 feet. Length to be cleared is 1,817 feet per the model. Width of highway to be cleared is 115 feet per the model plus 50 feet on each side of highway to allow for room for travel besides highway, work crews, and to maintain an offset to keep material from moving back to the highway.
- Volume of slurry covering the highway (including the 50-foot buffer zones) is approximately 2,190,000 cubic feet = 81,200 cubic yards (cyds).
- Removal operations start 12 hours after breach occurs and operate for 24 hours per day as needed.
- Based on topography relative to highway, the majority of the ash slurry can be dozed (pushed) off the western bank of the freeway onto surrounding land. Material will naturally fill the drainage ditches beside the highway due to the elevation difference on both sides.
- Ash slurry remaining on I-75 can be dozed off the highway, excavated into trucks, or moved via guzzler truck depending on viscosity.
- The plan below assumes 50 percent of the ash remaining on I-75 is semi-solid and can be dozed off the highway, 25 percent of the ash is solid enough to be excavated into trucks and transported to the staging area(s), and 25 percent is too wet for either and is moved via guzzler truck to the staging area(s) or accumulated in engineered low spots hydraulically.
- Ash will be transported from staging areas after drying as necessary.
- No major structural damage to I-75 occurs from the breach, equipment and trucks are able to drive on roadway.
- Track mounted equipment will be functional and acceptable for use during the response.
- 48-hour timetable in provided in Attachment 1.
- Cold weather response should account for the health and safety and resource considerations. In general, labor and equipment needs will be scaled up based on the time increases related to cold weather in order to meet the 48-hour cleanup requirement.

Strategy

I-75 Access

Environmental response crews to clear I-75 crews will gain access when:

- Public safety of surrounding residents, citizens, and response crews has been confirmed (evacuations, search and rescue, and the work area has been adequately assessed for safety concerns).
- Injuries and fatalities have been addressed by non-environmental emergency response crew. All available resources will be initially dedicated to clearing paths to vehicles, residential homes, commercial businesses, critical infrastructure repair/assessment locations, and potential hazardous material spills.
- Any biohazards resulting from potential fatalities have been cleared by non-environmental emergency crews.
- Any spilled Hazardous Material (i.e., tanker trucks) has been cleaned up and/or contained.

- Wrecked vehicles removed from the highway.
- Baseline conditions have been adequately assessed and documented to commence work. Initial personnel and equipment requirements will be scaled to match site conditions and requirements.
- Conduct initial Job Safety briefing meeting with appropriate personnel and complete additional safety meetings as personnel arrive.
- Incident command has been set up at the DTE Monroe Power Plant or Monroe Emergency Management Center and incident objectives, management responsibilities, resource availability and capabilities, command structure, and minimum work protocols for first responders have been established. Note that there is a highway rest station just south of the modeled release area that could serve as an effective location for the incident command post.
- Unified command agrees that road clearing is the priority and operations can commence. Operations section chief directs work crews to begin work.
- Safe work practices have been established and communicated. Meeting locations for first responders, contractors, and material deliveries have been identified.
- Work zones and exclusion zones have been established.
- Communication requirements have been established.
- Removal Prep – First 12 hours after release.
- Initiate emergency response phone tree. Mobilize personnel, contractors, and equipment to site.
- Order materials to begin containment construction, gravel access paths, and berms for control and mitigating ash flow. Local material companies include:
  - Aggregate Industries: (734) 529-5876
  - Great Lake's Aggregates: (734) 783-7400
  - Stoneco: (734) 241-8966
  - Edward C. Levy Inc.: (313) 429-2200
- Establish operations command center(s) near work zones to split resources equally into teams responsible for either the NW, NE, SW, or SE quadrants for highway clearing.
- Review Emergency Action Plan and assign resources to address applicable sections of the incident action plan established by incident or unified command.
- Construct decontamination areas for equipment and personnel at as necessary (operations areas, staging areas, etc.).
- Establish dust monitoring locations and deploy monitors to centralized and representative work zone and perimeter locations.
- Construct temporary access road(s) to the location of the breach (2 dozers, 2 excavators, 2 loaders, 4 dump trucks)
  - This work crew will also begin construction of temporary stormwater diversion ditches around the perimeter of the primary ash impacts to avoid surface runoff precipitating additional mobilization in the event of a heavy rain event.
- Construct temporary dam at breach location to contain any remaining fly ash once surrounding material is excavated/moved (rock dam and/or bladder dam as needed).
- Berm construction, as needed, on west and east sides of the highway between the highway shoulder and adjacent ditches or low-lying areas to prevent "back flow" as material on and directly adjacent to the highway is removed (2 dozers, 2 excavators, 2 loaders, 4 dump trucks).

- Berm construction will also be conducted in areas adjacent to the highway immediately after they are cleared of significant ash with dozers.
- Construct temporary access roads to staging area(s) and truck turn arounds
  - A primary staging area has been identified (Staging A) just south of the ash pond basin (DTE Energy owned property) and secondary backup staging areas are available to the north (Staging Area B) and south (Staging Area C) directly adjacent to I-75 (privately owned farm land), see Attachment 2 (2 dozers, 2 excavators, 2 dump trucks).
- Berm construction in staging area(s) perimeters to contain removed ash and allow ash to dry out (containment berms are not likely to be lined) (2 dozers, 1 excavator, 1 loader, 2 dump trucks).
- South field containment construction – Staging Area A (contingency plan will be to use Staging Areas B and/or C)
  - Excavate down two to three feet pushing soil/clay to build three-foot berm to construct a 750 foot by 750 foot drying area to contain up to approximately 50 percent of the released fly ash.
- Establish gravel access pathways between the highway and agricultural field to accommodate easy access.
  - Resource requirements:
    - 20 equipment operators
    - 12 truck drivers
    - 10 laborers
    - 8 dozers
    - 5 loaders
    - 7 excavators
    - 12 dump trucks
    - 10 truckloads of rock
    - 1 bladder dam.

Removal Logistics – quantities specified will complete removal activities within 36 hours

- Assign resources to drying bed areas to direct trucks that are unloading to begin in the furthest corner of the containment area and unload material in straight even windrows, leaving accessibility for vehicles between rows.
- Doze material to each side of I-75 (50 percent or 40,600 cyds)
  - Dozers move from center of highway and push towards shoulder, with an offset distance approximately ¾ of a shovel width for each swath.
  - 12 work crews staged on quadrants of incident located on I-75.
  - Each work crew will include two dozers to push ash off the highway.
  - Removal of 40,600 cyds of ash will require each crew to move 10,200 cyds at a rate of 150 cyds per hour.
  - Resource requirements:
    - 12 equipment operators
    - 12 laborers
    - 12 dozers.
- Excavate and truck to staging area (25 percent or 20,300 cyds).

  - 4 work crews, 1 on each corner of the highway, begin removing the more solid ash and transporting to staging areas if drying is not immediately necessary. Crews focus on a central location as the dozers move material to them.
  - Each work crew will include 1 dozer move ash to the truck loading area, 1 excavator and 1 loader to load ash into trucks, and 2 laborers as needed.
  - Truck travel time is estimated to be 40 minutes to staging area(s) (loading, dumping, and travel).
  - Trucks will not be lined for transport to staging area.
  - Removal of 20,300 cyds will require approximately 580 truckloads, 145 loads per crew (assuming gravel trains with a 35 cyds capacity).
  - 4 trucks will be assigned to each work crew at all times.
  - Resource requirements:
    - 12 equipment operators
    - 16 truck drivers
    - 8 laborers
    - 4 dozers
    - 4 excavators
    - 4 loaders
    - 16 dump trucks.
- Remove via guzzler truck to staging area (25 percent or 4,100,000 gallons).
  - 38 work crews staged as needed on I-75.
  - Each work crew will include one 3,000-gallon guzzler truck, one operator and one laborer.
  - Removal of 4,100,000 gallons of ash will require 1,365 loads, 36 loads per truck (total per truck within the 36-hour operating period).
  - Truck travel time is estimated to be 1 hour (loading, dumping, and travel).
  - Sludge pumps can supplement guzzler trucks to move liquids off highway to surrounding low-lying areas.
  - Resource requirements:
    - 38 equipment operators
    - 50 laborers
    - 38 guzzler trucks, hydraulic excavators, applicable vacuum trucks or equivalent
    - 12 sludge pumps.
- Decontamination of I-75 as ash is removed.
  - Utilize water tanker trucks, pressure washers, and street sweepers to clean residual ash off concreate.
  - Water trucks and pressure washers will also be utilized for dust mitigation throughout cleanup as needed. Spray trucks or firefighting trucks can potentially be utilized for these purposes as available.
  - Assumes I-75 is in good condition post breach and does not need any structural repairs.
  - Resource requirements:
    - 10 equipment operators
    - 5 street sweepers
    - 5 tanker trucks (600,000 gallon)
    - 5 laborers
    - 5 pressure washing units.

Equipment/Personnel Totals

- 52 equipment operators per shift x 2 shifts = 104 equipment operators
- 38 equipment operators (guzzler trucks) per shift x 2 shifts = 76 equipment operators
- 85 laborers per shift x 2 shifts = 170
- 28 truck drivers per shift x 2 shifts = 56
- 24 dozers
- 11 excavators
- 9 loaders
- 24 dump trucks (gravel trains)
- 38 guzzler trucks
- 12 sludge pumps
- 5 tanker trucks
- 5 street sweepers
- 5 pressure washer units
- 1 bladder dam
- 200 (35 cyds) truckloads of rock (rip rap or 3-inch x1- inch stone).

Totals do not include any contingency to account for downtime or mechanical failure. Backup equipment will be staged onsite and will include 6 dozers, 3 excavators, 2 loaders, 6 gravel trains, and 6 guzzler trucks.

ATTACHMENT 1

48-Hour Response Timeline

Time (hours)	Items
0- 1	• Arcadis personnel is notified of breach; • Initiate response phone tree; • Contractor calls are made notifying them to begin mobilization to the Site.
1- 2	• Arcadis personnel begins mobilizing to Site; • Conduct job safety briefing (complete additional safety briefings as necessary when conditions change or when new site personnel arrive); • Begin addressing applicable sections of the IAP; • Environmental response crews begin to arrive on Site; • Begin ordering necessary materials for berm construction, access paths, and containment.
2- 6	• Hour-2 status meeting • Command Center(s) are established near work zones; • Begin constructing decontamination areas and staging areas; • Set up dust monitoring equipment; • Deploy bladder dam
6- 12	• Hour-6 status meeting • Equipment and materials begin arriving on Site; • Begin constructing temporary roads and truck turn arounds in staging areas; and berms to prevent material backflow; • Begin dewatering operations; • Begin removal of material from the highway.
12- 24	• Hour-12 status meeting • All heavy equipment on Site; • Continue removal of material from the highway; • Continue dewatering operations • Begin material removal to staging areas
24- 46	• Hour-24 status meeting • Shift change between first responders and second shift; • Continue dewatering operations • Continue removal of material from the highway
46- 48	• Demob equipment from freeway and continue working on removal of material on E and W sides of I-75 • Reopen lanes on N and S-bound side of freeway for free flow of traffic

ATTACHMENT 2

Staging Area Map

DTE 48-Hour Response Plan
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APPENDIX L

Landside Breach Traffic Mitigation Plan

Landside Breach – Traffic Mitigation Plan

PUBLIC TRAFFIC REROUTING

From the North	From the South
• Exit I-75 North at E 1st St • Head west on E 1st St • Turn left on S Monroe St/S Dixie Hwy • Turn left on S Otter Creek Rd • Re-enter I-75 North	• Exit I-75 South at S Otter Creek Rd • Head west on S Otter Creek Rd • Turn right on S Monroe St/S Dixie Hwy • Turn right on E 1st St • Re-enter I-75 South

RESPONSE PERSONNEL ACCESS

From the North	From the South
• Exit I-75 North at E 1st St • Head west on E 1st St • Turn left on S Monroe St/S Dixie Hwy • Turn left on S Laplaisance Rd • Follow S Laplaisance Rd to the response staging/access area in the farmland located south of the DTE Energy Monroe Ash Basin	• Continue on I-75 South past S Otter Creek Rd • Exit I-75 South at E Albain Rd • Continue straight from the exit onto S Laplaisance Rd • Follow S Laplaisance Rd to the response staging/access area in the farmland located south of the DTE Energy Monroe Ash Basin

APPENDIX M

Monroe Benthic Baseline Study

DTE Energy

Monroe Benthic Baseline Study

Monroe Power Plant

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2/22/2016

Introduction

In October, 2015 Environmental Management & Resources- Ecological Field Services (EFS) group was tasked with conducting a baseline benthic survey of La Plaisance Bay (Map 1). The purpose of this survey was to determine the makeup and distribution of benthic macro-invertebrate communities within the area of influence of Monroe Power Plant's fly-ash handling basin. In the event of a fly ash release, this study provides benthic community data to aid ecological remediation of impacted sites.

The benthic communities of Lake Erie have experienced significant changes in community structure and species distribution as a result of anthropogenic activities and invasion by exotic species during the last century. Heavy eutrophication of Lake Erie, beginning in the early 20th century, caused many changes to Lake Erie's temperature, water chemistry, and fauna (Carr, 1965). Phosphorus abatement programs of the 1970's improved conditions within Lake Erie and may have allowed incremental recovery of lake fauna (Makarewicz et al. 1991, Krieger et al. 1996, Schloesser et al. 2001). However, the invasion of *Dreissenid* mussels during the 1990's once again greatly altered the structure of benthic communities (Stewart et al. 1998, Howell et al. 1996, Ricciardi et al. 1997).

As a result, we expected to find relatively low diversity within the benthic communities of La Plaisance Bay, dominated by *Dreissenid* mussels.

Methods

Our baseline benthic survey consisted of taking 18 sediment samples along six transects arranged throughout La Plaisance Bay and Plum Creek. Transects were 150ft. in length and contained three sample locations at 50ft. intervals. Transects were arranged in order to sample areas that would be within the area of influence of Monroe PP fly-ash basin due to direct or floating discharge of fly-ash (Map 1).

Sampling was conducted using a petite PONAR dredge with a 0.25 ft.^{3} capacity. Samples were placed within plastic one gallon sample buckets. Samples were preserved with a buffered 70% isopropyl solution and placed in a cooler for transport.

Benthic macro invertebrates were then sorted, counted, and identified to lowest possible taxa by Great Lakes Environmental Center (GLEC) technicians. GLEC technicians performed Shannon Diversity Index calculations for each sample location. GLEC provided a completed

spreadsheet to EFS which contained Taxa identification, counts, and Shannon H values demarcated by sample location.

EFS personnel converted all Shannon values to Effective Number of Species (ENS) for more direct comparison.

Results

Calculated Shannon H values ranged from: 0.59962-1.16559 (Table 1). Transect 6 had the lowest calculated average Shannon H value, and Transect 5 had the highest. ENS values ranged from: 1.821421-3.211822 (Table1). Transect 6 had the lowest ENS value, and Transect 5 had the highest.

Transect	T1	T2	T3	T4	T5	T6
Shannon-H Avg.	1.02802	0.99571	0.78240	1.16559	1.16684	0.59962
ENS	2.795534	2.706634	2.186718	3.20781	3.211822	1.821421

Table 1: Average Shannon H and ENS by transect.

Total organisms collected per transect ranged from: 226-1675 individuals (Table 2). Transect 3 had the lowest number of individuals collected, and Transect 1 had the highest. In total, 5575 organisms were collected among all samples within this survey.

Transect	T1	T2	T3	T4	T5	T6
Organism Count	1675	1116	226	985	1299	274

Table 2: Organism count by transect.

Dreissenid mussels and *Chironomids* (Figure 1+2) were the dominant Taxa observed; collectively accounting for 89.01% of individuals collected (Table 3). Only Five Taxa out of 27 total Taxa identified, accounted for greater than 1.00% of total individuals collected. Organism count and percentage by sample location are included in the appendix to this report.

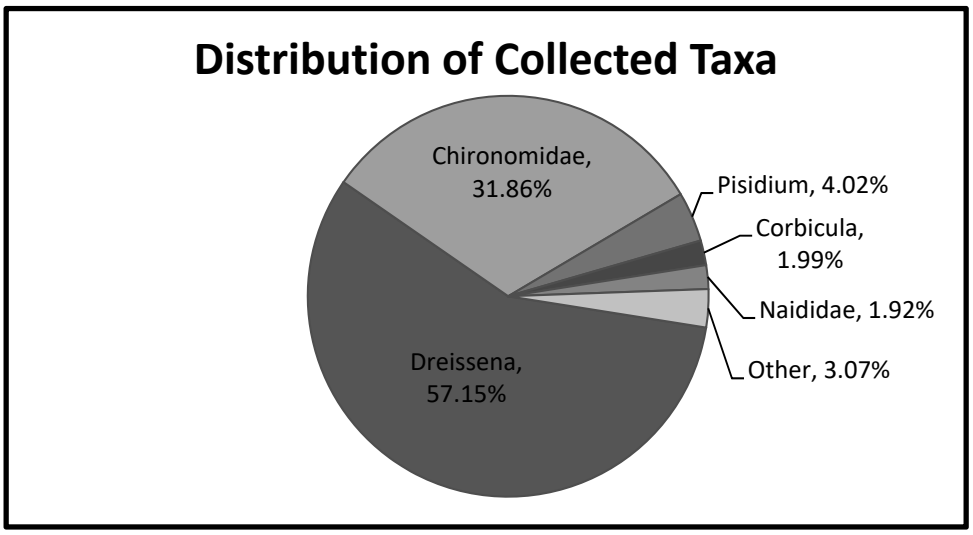

Table 3: Taxa distribution by count.

Figure 1: Dreissenid mussels.

Figure 2: Chironomid larvae, photo by Steve Hopkin.

Discussion

Our benthic baseline study indicated that benthic communities surrounding the Monroe fly-ash handling basin contain low species diversity and are dominated primarily by *Dreissenids* and *Chironomids*.

Theoretical Shannon Index values range from 0 to log S, which quantifies the uncertainty of any two randomly sampled organisms being the same. Generally, in situ Shannon values fall between 1.5 and 3.5, with 1.5 indicating relatively low species diversity and 3.5 indicating relatively high species diversity (Magurran, 2004). In our study, average calculated Shannon values ranged from 0.6 to 1.17 which suggests communities of relatively low diversity (Table 1).

However, Shannon indices are measures of entropy within a data set, not true diversities. For this reason EFS chose to convert all Shannon H values to ENS. This conversion linearizes Shannon values and provides a measure of diversity comparable between multiple indices. ENS values indicate that the observed community has a true diversity proportionate to that of a community with *x* evenly distributed species (Jost, 2006).

In our study ENS values ranged from 1.82 to 3.21 (Table 1). This means that our minimum species diversity observed was analogous to a community that contains 1.82 evenly distributed species. Our maximum species diversity observed was analogous to a community containing 3.21 evenly distributed species. These values make it more intuitive to determine the diversity observed within our samples, and supports our prediction that observed benthic communities within our sample area contain low diversity.

Additionally, only five Taxa out of 27 Taxa identified, accounted for more than 1.00% of total organism count. The two largest Taxa accounted for approximately 90% of total individuals collected within our samples (Table 3).

In 2013 Burlakova (et al, 2013) observed similar results when sampling benthic communities within Lake Erie. Burlakova determined lake wide percentages of density and biomass were dominated by *Dreissenids*, *Chironimids*, and *Oligochaetes.* Within the western basin, Burlakova found benthic communities to consist of 67% *Dreissenids,* 10% *Chironomids,* and 7% *Oligochaetes* by density.

In conclusion, this study was conducted in order to establish baseline criteria for benthic community composition within the area of influence of the Monroe Power Plant's fly-ash handling basin. We concluded that these benthic communities contain relatively low biologic

diversity and are dominated by *Dreissenids* and *Chironomids.* We have included Taxa distribution and counts for each sampling location within the appendix of this paper which serve to document pre-site conditions in the event of a fly-ash release and may aid in remediation activities.

References

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Appendix

Map 1: Baseline survey design and transect location.

Transect 1

Taxa	Species	Count	Percent
Ceratopogon	sp.	4	0.82%
Chironomidae	sp.	88	17.96%
Dero	sp.	1	0.20%
Dreissena	bugensis	182	37.14%
Dreissena	polymorpha	182	37.14%
Gammarus	sp.	1	0.20%
Hexagenia	limbata	1	0.20%
Lebertia	sp.	1	0.20%
Naididae	sp.	18	3.67%
Nemata	sp.	1	0.20%
Pisidium	supinum	11	2.24%
Total		490	100.00%

Taxa	Species	Count	Percent
Caenis	sp.	1	0.17%
Ceratopogon	sp.	3	0.52%
Chironomidae	sp.	57	9.88%
Corbicula	fluminea	2	0.35%
Dreissena	bugensis	254	44.02%
Dreissena	polymorpha	254	44.02%
Limnaesia	sp.	1	0.17%
Naididae	sp.	1	0.17%
Nemata	sp.	2	0.35%
Pleurocera	sp.	2	0.35%
Total		577	100.00%

Taxa	Species	Count	Percent
Chironomidae	sp.	20	3.29%
Corbicula	fluminea	2	0.33%
Dreissena	bugensis	286	47.04%
Dreissena	polymorpha	286	47.04%
Gammarus	sp.	3	0.49%
Lumbriculidae	sp.	1	0.16%
Naididae	sp.	5	0.82%
Nemata	sp.	1	0.16%
Pleurocera	sp.	2	0.33%
Probezzia	sp.	2	0.33%
Total		608	100.00%

Transect 2

Taxa	Species	Count	Percent
Chironomidae	sp.	81	15.88%
Dreissena	bugensis	211	41.37%
Dreissena	polymorpha	211	41.37%
Gammarus	fasciatus	1	0.20%
Naididae	sp.	5	0.98%
Pleurocera	sp.	1	0.20%
Total		510	100.00%

Taxa	Species	Count	Percent
Ceratopogon	sp.	1	0.35%
Chironomidae	sp.	37	12.80%
Corbicula	fluminea	13	4.50%
Dreissena	polymorpha	221	76.47%
Lebertia	sp.	1	0.35%
Naididae	sp.	14	4.84%
Oecetis	sp.	1	0.35%
Pleurocera	sp.	1	0.35%
Total		289	100.00%

Taxa	Species	Count	Percent
Ceratopogon	sp.	4	1.26%
Chironomidae	sp.	59	18.61%
Corbicula	fluminea	6	1.89%
Dreissena	bugensis	114	35.96%
Dreissena	polymorpha	114	35.96%
Echinogammar	ischus	1	0.32%
Gammarus	sp.	5	1.58%
Naididae	sp.	12	3.79%
Nemata	sp.	1	0.32%
Oecetis	sp.	1	0.32%
Total		317	100.00%

Transect 3

Taxa	Species	Count	Percent
Chironomidae	sp.	18	12.95%
Corbicula	fluminea	4	2.88%
Dreissena	bugensis	111	79.86%
Naididae	sp.	6	4.32%
Total		139	100.00%

Taxa	Species	Count	Percent
Chironomidae	sp.	33	48.53%
Corbicula	fluminea	33	48.53%
Dreissena	polymorpha	1	1.47%
Nemata	sp.	1	1.47%
Total		68	100.00%

Taxa	Species	Count	Percent
Chironomidae	sp.	7	36.84%
Corbicula	fluminea	11	57.89%
Naididae	sp.	1	5.26%
Total		19	100.00%

Transect 4

Taxa	Species	Count	Percent
Amnicola	sp.	1	0.36%
Chironomidae	sp.	91	32.62%
Corbicula	fluminea	18	6.45%
Dreissena	polymorpha	56	20.07%
Helobdella	stagnalis	1	0.36%
Lumbriculidae	sp.	1	0.36%
Naididae	sp.	18	6.45%
Nemata	sp.	8	2.87%
Pisidiidae	sp.	6	2.15%
Pisidium	henslowanum	38	13.62%
Pisidium	supinum	38	13.62%
Probezzia	sp.	1	0.36%
Sperchon	sp.	2	0.72%
Total		**279**	**100.00%**

Taxa	Species	Count	Percent
Bactracobdella	picata	5	1.34%
Chironomidae	sp.	236	63.10%
Corbicula	fluminea	16	4.28%
Dreissena	bugensis	22	5.88%
Dreissena	polymorpha	22	5.88%
Hexagenia	sp.	1	0.27%
Naididae	sp.	1	0.27%
Oecetis	sp.	1	0.27%
Pisidium	dubium	34	9.09%
Pisidium	henslowanum	34	9.09%
Sperchon	sp.	2	0.53%
Total		**374**	**100.00%**

Taxa	Species	Count	Percent
Chironomidae	sp.	263	79.22%
Corbicula	fluminea	2	0.60%
Dreissena	polymorpha	19	5.72%
Helobdella	stagnalis	1	0.30%
Limnesia	sp.	1	0.30%
Naididae	sp.	20	6.02%
Nemata	sp.	1	0.30%
Oecetis	sp.	1	0.30%
Pisidium	henslowanum	12	3.61%
Pisidium	supinum	12	3.61%
Total		**332**	**100.00%**

Transect 5

Taxa	Species	Count	Percent
Chironomidae	sp.	245	58.19%
Corbicula	fluminea	0	0.00%
Dreissena	bugensis	78	18.53%
Dreissena	polymorpha	78	18.53%
Hexagenia	sp.	3	0.71%
Nemata	sp.	2	0.48%
Oecetis	sp.	2	0.48%
Pisidium	dubium	4	0.95%
Pisidium	sp.	4	0.95%
Sperchon	sp.	5	1.19%
Total		**421**	**100.00%**

Taxa	Species	Count	Percent
Amnicola	sp.	1	0.23%
Ceratopogon	sp.	1	0.23%
Chironomidae	sp.	130	29.89%
Dreissena	bugensis	133	30.57%
Dreissena	polymorpha	133	30.57%
Gammarus	fasciatus	5	1.15%
Mooreobdella	bucera	1	0.23%
Naididae	sp.	1	0.23%
Nemata	sp.	4	0.92%
Oecetis	sp.	1	0.23%
Pisidium	dubium	10	2.30%
Pisidium	henslowanum	10	2.30%
Sperchon	sp.	4	0.92%
Valvata	winnebagoensis	1	0.23%
Total		**435**	**100.00%**

Taxa	Species	Count	Percent
Amnicola	sp.	1	0.23%
Ceratopogon	sp.	2	0.45%
Chironomidae	sp.	186	41.99%
Corbicula	fluminea	1	0.23%
Dreissena	bugensis	109	24.60%
Dreissena	polymorpha	109	24.60%
Gammarus	fasciatus	17	3.84%
Mooreobdella	bucera	2	0.45%
Myzobdella	lugubris	1	0.23%
Nemata	sp.	1	0.23%
Pisidium	henslowanum	7	1.58%
Pisidium	sp.	7	1.58%
Total		**443**	**100.00%**

Transect 6

Taxa	Species	Count	Percent
Chironomidae	sp.	83	70.34%
Corbicula	fluminea	2	1.69%
Dero	sp.	2	1.69%
Naididae	sp.	2	1.69%
Nemata	sp.	28	23.73%
Polychaeta	sp.	1	0.85%
Total		**118**	**100.00%**

Taxa	Species	Count	Percent
Chironomidae	sp.	50	86.21%
Naididae	sp.	3	5.17%
Nemata	sp.	3	5.17%
Pisidium	sp.	1	1.72%
Sperchon	sp.	1	1.72%
Total		**58**	**100.00%**

Taxa	Species	Count	Percent
Chironomidae	sp.	92	93.88%
Corbicula	fluminea	1	1.02%
Lumbriculidae	sp.	1	1.02%
Nemata	sp.	2	2.04%
Pisidium	sp.	2	2.04%
Total		**98**	**100.00%**

APPENDIX N

Crisis Response Plan - Public Information Plan, A.17 Environmental Release

Crisis Response Plan - Public Information Plan

A.17 Environmental Release

Corp Comm contact name & phone	Paula Silver, Sr. VP, Communications & Public Affairs, 248-820-7976 Amanda Passage, Manager, Corporate Communications, 248-756-5608 Chris Lamphear, Manager, Corporate Communications, 248-425-2331
Business partner name & phone	Shawn Patterson, VP - EM&S, 313-819-2417 Christy Clark, Director - EM&S, 313-701-0623
Business partner organization	Environmental Management and Safety Energy Supply

Background Summary

Project Summary	A breach occurs at the coal ash pond located at DTE's Monroe power plant, spilling ash into Lake Erie and/or land. The spill results in the closure of Interstate 75 and/or impacts the Lake Erie shoreline. Possible public health safety issues, deaths or injuries, major road closures and disruption to transportation. Potential ecological impacts on wildlife, migratory birds, waterfowl and to food and water source for eagles and waterfowl.
Public Information Objectives	• Provide accurate, relevant and timely information about the company and/or the crisis in all contexts • Demonstrate command of the situation through active communication, ensuring business continuity • Maintain consistency, continuity of messages to all key stakeholders • Protect DTE Energy's brand, reputation and valuation
What do we need to know?	• When, where and how did the event occur? • What is the scope of the event? • Are there injuries or deaths? • Are there immediate or long-term public health concerns? • Are there immediate or long-term wildlife/Lake Erie concerns? • Will I-75 closure cause delays of goods and services to Detroit • How much does the media/public know? • Is the issue being discussed on social media? • What is the potential liability for the company? • What impact will this have on DTE's ability to do business? • Impact on regulators? • Impact on employees, customers?

Potential Audiences/ Stakeholders – external *(rank in order of importance)*	NOTE: These stakeholders would be engaged at the appropriate time, based on the escalation of the situation and when there may be an impact. • Media • Public • Government Officials (local, state and federal) • Employees • BOD • Shareholders • Regulators (state and federal) • Customers • Retirees • Community Leaders • Other utility companies/energy companies
What **Information** to provide to theses Audiences/ Stakeholders – **external**	• Scope of event – who, what where, when, why and how of event • Impacts to public health • Impacts to wildlife and water • Impacts to transportation/goods and services • Impacts to the stock price • Impacts to employees • Impacts to communities • Impacts to business • Customer impacts • Estimated time of impact • Geographical region of event, geographical impact of event • Next time for an update, based on scenario and series of events
What **Channels** to utilize for theses Audiences/ Stakeholders – **external**	NOTE: These channels would be used at the appropriate time during the situation, depending on the escalation of the situation and desire to broadly inform internal stakeholders. These may be repeated based on escalating events News media – issuing statement/response when called • Media calls and press conferences • Social media (blog, Facebook and Twitter updates mirror media updates) • DTE Website • E-blast (customers – if rises to a level where service is impacted) • Email • In-person meetings (where/when necessary) • Investor and Retiree communication re: impact to stock prices • Government officials and Community Leaders (meetings, calls and emails)

Potential Audiences/ Stakeholders – internal *(rank in order of importance)*	• Legal • Senior leaders • Corporate and Government Affairs • Investor Relations • Regulatory • Employees • Corporate Secretary • Corporate Finance • Corporate Strategy
What **Information** to provide to theses Audiences/ Stakeholders – **internal**	• Scope of event – who, what where, when, why and how of event • Impact to public health (deaths, injuries, air quality, water quality) • Impact to the environment (wildlife migration, fish, etc.) • Impact to businesses (fishing, marinas, etc.) • Impact to government officials (local, state and federal levels) • Impact to employees • Impact to customers • Impact to regulators • Impact to investors and wall street • Impact to our ability to do business • Immediate action steps as to what the company is doing to resolve issue • Timeline on recovery • Communication timeline for updates on situation
What **Channels** to utilize for theses Audiences/ Stakeholders – **internal**	NOTE: These channels would be used at the appropriate time during the situation, depending on the escalation of the situation and desire to broadly inform internal stakeholders. These may be repeated based on escalating events • Implement Stakeholders Communication Process • DTE Now (immediate message to employees) • Leader Notes (with FAQ for staff) • Quest top story • DTE News updates • Talking points – used with all levels of employees • Face to face leader meetings • Phone update from CEO

APPENDIX O

Spill and Release Reporting

Spill and Release Reporting

Environmental Contact: Marcela Orlandea, orlandeam@dteenergy.com

1.0 Applicability

This Environmental Program applies to any DTE Energy organization in Michigan that has the capability of spilling or releasing oil, hazardous materials or polluting materials into the environment.

This program **DOES NOT** apply to the control and cleanup of specific facility spills/releases. Refer to organization/facility specific plans.

This program **DOES NOT** apply to spills of Polychlorinated Biphenyls (PCBs) 50 ppm or greater. Environmental Program 9, *PCB Management*, should be referenced for PCB spills.

This program **DOES NOT** address EPCRA's Continuous Release Reporting requirements due to excess air emissions above a stated air permit limit. Contact the EM&R Emission Quality Group for further guidance if excess air emission above the air permit limit exceeds the 24-hour RQ.

This program **DOES NOT** apply to release reporting of Ozone Depleting Substances. Refer to EP-11, Ozone Depleting Substances, for record keeping requirements for leaks. Release reporting is not required.

This program DOES NOT apply to facilities and projects outside of Michigan; these must have specific spill release and reporting programs and procedures of their own.

2.0 Purpose

This Environmental Program sets policy and provides regulatory compliance guidance and instruction for spill or release reporting within DTE Energy.

3.0 Definitions

3.1 **Corporate** – For the purpose of reporting under this Environmental Program, Corporate means DTE Energy's Corporate Communications or Regional Relations.

3.1 **Environment** – For notification purposes, the environment impacted by a spill or release means one or more of the following:

3.1.1 Soil, grass or gravel.

3.1.2 Navigable water, shoreline, surface water, groundwater or storm sewers connected to waters of the State, or sanitary sewer systems.

3.1.3 Ambient air through volatilization (primarily chlorine or ammonia).

Note: *"Soil, grass or gravel" are synonymous with the terms "ground surface" and "land" for the purposes of this environmental program.*

3.2 **Facility Specific Plans** – Emergency Response plans, as required by regulation. Facilities are

required to comply with facility-specific Emergency Response plans. Plans cover the prevention and control of releases of oil, hazardous materials, polluting materials and regulated storm water.

3.3 **Hazardous Substance** – Any material listed on the CERCLA Hazardous Substance List, 40 CFR 302.4.

3.4 **Hazardous Waste** – A waste regulated under RCRA and NREPA Part 111.

3.5 **Immediate** – Immediate actions include, but are not limited to stopping the spill or release if it can be done safely, enforcing safety and security measures, containing the spill or release if it can be done safely and making notifications.

3.6 **Liquid Industrial Waste** – A waste regulated under NREPA Part 121.

3.7 **Oil** – Oil of any kind or in any form, including any of the following; petroleum, gasoline, fuel oil, grease, oily sludge, oil refuse, oil mixed with waste.

3.8 **Polluting Material** – Oil, salt or any material listed on the Michigan Part 5 list of polluting materials (R324.2009, Table 1).

3.9 **Release** – A spill, leak, discharge, emission, or leaching of a polluting material or hazardous substance, or abandonment of drums of a hazardous substance, into the environment that is equal to or greater than its reportable quantity within a 24 hour period.

Note: *If a spill, leak or discharge has the potential to become a release, it should be reported as if it was an actual release.*

3.10 **Salt** – Sodium chloride, potassium chloride, calcium chloride, magnesium chloride and solutions or mixtures of these compounds in solid or liquid form.

3.11 **Spill -** A discharge of a substance that contacts the environment.

3.12 **Suspected Release (Underground Storage Tanks)** – Is defined as:

3.12.1 Interstitial alarm (double-walled tanks and/or piping).

3.12.2 Inventory reconciliation out of tolerance for two consecutive months (single-walled tanks).

3.12.3 Unexplained water in tank (single-walled tanks).

3.12.4 Unexplained failure of monthly leak test (single-walled tanks).

3.12.5 Unexplained presence of a regulated substance in underground structures (e.g., conduit, basements) at or near the location of an underground storage tank.

3.12.6 Unusual operating conditions, such as erratic behavior of product dispensing equipment or the sudden loss of product from the tank, unless the system equipment is found to be defective but not leaking and is immediately repaired or replaced.

3.12.7 Visual or olfactory evidence of a release.

4.0 Requirements

CAUTION: **REGARDLESS OF THE NOTIFICATION REQUIREMENTS BELOW, CLEAN UP SPILL IN ACCORDANCE WITH EXISTING EMERGENCY PLANS AND PROCEDURES.**

4.1 Notification Exemptions

4.1.1 General exemptions from notifications are:

A. Leaks from personal vehicles.
B. Spills on asphalt, concrete, or any impervious surface.
C. Spills of demineralized water.
D. Lawn watering.
E. Fire header flushing and testing.
F. Building washing – using no detergents, soaps or other additives.

Note: *Michigan's Part 5 Rules allow for certain exemptions from spill reporting requirements. If a Michigan Part 5 Rules polluting material is released in quantities under the Threshold Reporting Quantity (TRQ), within a 24 hour period, no reporting is required. Begin notifications immediately if release of a TRQ cannot be immediately determined.*

4.1.2 Specific reporting exemptions for Michigan Part 5 Rules include:

A. Spilling, leaking or discharging less than 1,000 gallons of a polluting material into a secondary containment structure that complies with the Part 5 Rules, if recovery of the material is initiated within 24 hours of detection, is completed as soon as practicable, but not more than 72 hours after detection and if no polluting materials are released directly or indirectly to any public sewer system or to the surface waters or groundwater of the state.
B. Spilling, leaking or discharging less than 55 gallons of oil to the ground surface, if the spill, leak or discharge is detected and the oil recovered within 24 hours of the spill, leak, or discharge, and if oil is not released directly or indirectly to a public sewer system or to the surface waters or groundwater's of the state.
C. Spills or leaks from installed electrical equipment. Examples of electrical equipment include transformers, capacitors, reclosures, voltage regulators, rectifiers, circuit breakers, and bushings.

Note: Spills or leaks from installed electrical equipment are NOT exempt from internal reporting within the Company, and MUST be reported to the on-call DO contact at (313) 235-8122.

D. A permitted release in compliance with an applicable, legally enforceable permit issued under state law.
E. A lawful and authorized discharge into a permitted waste treatment facility.
F. A federally permitted release as defined by CERCLA.

4.2 Spill Notifications

4.2.1 If a spill reaches the environment and is not exempt from notification, use the *SPILL NOTIFICATION FLOWCHART* (Attachment 1) to determine required external notifications.

CAUTION: IF SPILL ENTERS AN NPDES OR SANITARY SEWER SYSTEM (E.G., DETROIT WATER AND SEWERAGE DEPARTMENT, OR DWSD), FOLLOW SPECIFIC PERMIT NOTIFICATION REQUIREMENTS.

4.2.2 Perform external notifications, in accordance with Attachment 1 immediately.

4.2.3 If Attachment 1 indicates that notification is not required, disregard remainder of section 4 and arrange for cleanup.

CAUTION: IMMEDIATELY NOTIFY THE NATIONAL RESPONSE CENTER (NRC) AND/OR LOCAL EMERGENCY PLANNING COMMITTEE (LEPC).

A. Provide the Michigan Department of Environmental Quality (MDEQ) and the NRC and/or LEPC (if required) the following information:

1. Released material,
2. Discovery date and time,
3. Location of the release (NRC requires specific information),
4. Estimated amount of release,
5. Waterway contacted, if any,
6. Description of the source of the release (e.g., transformer, tank),
7. Description of any spill mitigation/cleanup that has been started.

B. Obtain name or operator number of agency representative responding to your call.

C. For NRC notifications, obtain case number for tracking purposes.

D. MDEQ Underground Storage Tanks (UST) notifications:

1. Written/verbal notification is required within 24 hours of suspected or confirmed releases.
2. Contact EM&R to complete this notification.
3. The MDEQ's Release Report (EQP 3826) must be completed. This form is also available on the EM&R Master Forms list.

CAUTION: IF UNTREATED OR PARTIALLY TREATED SEWAGE IS DISCHARGED ONTO LAND OR INTO WATERS OF THE STATE, THE FOLLOWING NOTIFICATIONS SHALL BE MADE WITHIN 24 HOURS:

- **MDEQ,**
- **Local Health Department, and**
- **A daily newspaper of general circulation in the county in which discharge occurred or is occurring. Note: This notification is made by Corporate Communications.**

REFER TO SECTION 6.0 (REFERENCES) OF THIS EP FOR DETAILS.

4.2.4 The facility EM&R or Environmental Affairs representative shall contact the appropriate corporate EM&R SME no later than one calendar day following the spill or release and follow the corrective action requirements below:

A. The facility EM&R or Environmental Affairs representative shall enter the date, location, polluting material released and estimated amount released into Maximo as a Corrective Action within one calendar day following the spill or release. Enter "CENREL" in the classification section of the Corrective Action.

B. Determine who should be lead for the Corrective Action, and request that the Corrective Action be assigned to the appropriate person. This person may be a facility employee, the facility EM&R or Environmental Affairs representative, or the applicable EM&R SME. In all cases, the facility EM&R or Environmental Affairs representative, and/or applicable EM&R SME will be a team member if not the Corrective Action lead.

C. At a minimum, create one activity in the Activities/Action Plan tab for submitting the applicable follow up report by the required date; see Section 4.3 for specific requirements. Assign this activity to the EM&R employee; in most cases this will be the applicable EM&R SME. Additional activities, if known, may be entered at this stage of the corrective action. Work with the Corrective Action lead to ensure that the proper activities are developed as information becomes available regarding the spill or release.

4.2.5 For spills or releases having a potential for significant environmental effect or which may result in media attention, contact Corporate Communications 24-hour media line at 313-235-5555 and Regional Relations at 313-235-3522**.**

4.2.6 Document the notification.

A. Use the ***SPILL OR RELEASE REPORT and NOTIFICATION FORM*** (Example 1). A blank form is available on the EM&R Master Forms list and as a Company eForm.

B. **If the spill is reported under OPA**, follow spill reporting requirements identified in the facility-specific OPA Facility Response Plan.

C. Forward documentation to EM&R within 3 calendar days.

4.2.7 In accordance with agreements between the International Transmission Company (ITC) and the DTE Energy Company, the following oil spill reporting steps shall take place when a spill occurs on the mats at Fossil Generation sites:

Note: *In the interest of environmental protection, DTE Energy may lend assistance in mitigating an ITC spill from reaching navigable waters until adequate resources are available through ITC; however it is not DTE Energy's obligation to clean up and dispose of the material contaminated by the spill.*

A. If a DTE Energy employee (e.g., operator) observes an oil spill from an ITC-owned piece of equipment, they shall report the spill to the Shift Supervisor.

B. The Shift Supervisor will report the spill to the Central System Supervisor.

C. The Central System Supervisor will report the incident to ITC's Operation Resource Control center in Novi.

D. It is ITC's responsibility to report the spill to any regulatory authorities (if applicable) and to respond and clean up the oil spill.

4.2.8 Specific to Distribution Operations spill reporting, when an operator observes an oil spill from an ITC-owned piece of equipment or when a spill from DTE Energy equipment will impact ITC property or equipment, the following actions will take place:

A. The Distribution Operations operator shall report the spill to the DTE Energy Oil Spill Hotline at (313) 235-8122.

B. The Oil Spill Hotline environmental professional will report the incident to ITC's Operation Resource Control center in Novi.

C. It is ITC's responsibility to report the spill to any regulatory authorities (if applicable) and to respond and clean up the oil spill.

4.2.9 Courtesy Notifications to Regulatory Agencies:

A. There are occasions when a spill does not require notification to a regulatory agency, yet the Company may decide to make a notification to one or more agencies as a courtesy to inform the agency of the spill.

B. Notifications, and follow up reports (if applicable), will be made on a case-by-case basis between EM&R and the applicable business unit.

C. The SPILL OR RELEASE REPORT and NOTIFICATION FORM (Example 1) is recommended to be used to document the spill and notifications.

D. Examples of events where courtesy notifications may be appropriate include but are not limited to:

1. Spills of fly ash or other coal combustion residuals on a roadway;

2. Spills of soil and debris on a roadway that were removed in conjunction with a pipeline replacement project.

3. Spills of chemicals that are below the TRQ, but may be in environmentally sensitive areas.

4. Spills to secondary containment that are below the TRQ but have the potential to escalate or draw regulatory attention if not addressed expeditiously.

4.3 Follow-up Reports

4.3.1 EM&R shall submit a follow-up report to regulatory agencies. The Maximo Corrective Action/Activity will be closed when the follow up report is submitted. Closure comments will include pertinent information.

4.3.2 Follow-up reports will be provided to regulatory agencies using the following timeframes:

Agency Notified	Follow-up Report Due
MDEQ – MI Part 5 Report	10 days
NRC	None
(Hazardous Substances and Extremely Hazardous Substances) SERC (through PEAS) and the applicable LEPC	7 days (report must also be submitted to the State Emergency Response Committee (the Michigan SARA Title III program accepts on behalf of the SERC), the applicable LEPC and DTE Energy Legal).
LEPC	7 days (report must also be submitted to the State Emergency Response Committee and DTE Energy Legal).
EPA Region 5 Administrator	60 days after oil release to water from a facility (one spill of 1,000 gallons or more, or two spills of more than 42 gallons from same facility within any 12 month period).
(Hazardous Waste) MDEQ – RMD LEPC and SERC	15 days for Large Quantity Generators and TSDFs if the contingency plan had to be implemented. As soon as practicable (7 days) if the RQ of the waste code has been exceeded and the waste has gone offsite
(UST) MDEQ – RMD	14 working days for either confirmed or retracting a suspected UST release.
County Health Department	10 days, concurrent with MI Part 5 Rules report
MDEQ RMD	30 day report, if requested, for LIW releases.
ITC	5 days
DWSD	5 days
(Sanitary Sewage) MDEQ – RMD County Health Department and Local LEPC and SERC	24 hours (see sections 6.11 and 6.12 for details)

4.3.3 Forward any external spill correspondence received to EM&R.

4.4 Training

4.4.1 Only trained personnel will initiate response to the spill and clean up.

4.4.2 Personnel, who could potentially encounter a spill, should have a general understanding of what they are required to do.

A. DTE Energy, Fossil Generation personnel are required to successfully complete an Environmental Awareness computer-based training module at least once. Fossil Generation personnel who may encounter a spill or release must successfully complete this computer-based or instructor-led training module annually.

5.0 Responsibilities

5.1 **Organization Management** is responsible for:

5.1.1 Ensuring spill or release notifications are made in accordance with this environmental program.

5.1.2 Ensuring organization-specific notification procedures and facility-specific response plans are maintained, as applicable.

5.1.3 Contacting EM&R immediately, if there are reporting or notification questions.

5.2 **Corporate Environmental Management & Resources** is responsible for:

5.2.1 Periodically reviewing and revising this environmental program, as necessary

5.2.2 Submitting follow-up reports as needed.

6.0 References

6.1 40 CFR 302.4, "Designation of Hazardous Substances".

6.2 40 CFR 112, "Oil Pollution Prevention".

6.3 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities", Subpart C and D, or 40 CFR 262.34, "Accumulation Time".

6.4 Michigan Part 5 list of polluting materials (R 324.2009 Table 1).

6.5 Facility-specific National Pollutant Discharge Elimination System (NPDES) Permits.

6.6 Section 3111b of Part 31, Water Resources Protection (911 and Local Health Department Notification)

6.7 Michigan Department of Environmental Quality, Water Resources Division, Part 5 Rules, "Spillage of Oil and Polluting Materials".

6.8 Part 5 Rules Operational Guidance (POG #3) for Installations of Oil Containing Electrical Equipment.

6.9 Facility-specific POTW Permits.

6.10 Section 324.12111 of Michigan Part 121 of 1994 Public Act (P.A). 451, as amended; Liquid Industrial Wastes.

6.11 Section 324.3112a of Michigan Part 31 of 1994 P.A. 451, as amended; Discharge of untreated sewage from sewer system et al.

6.12 MDEQ, Water Resources Division – Report of Discharge, form EQP 5857.

7.0 Implementation Plan

This Program revision is effective when approved. Organizations should review and revise any procedures to implement this Program, as applicable. There is nothing in this Program that precludes organizations from identifying additional organizational requirements or expectations.

Environmental Program approval will be communicated to all organizations by Corporate Communications.

8.1 Attachments (all forms are electronically available through the EM&R forms list)

8.2 Attachment 1, Spill Notification Flowchart

- 8.2.1 Attachment 1(a), Polluting Material Spill
- 8.2.2 Attachment 1(b), Hazardous Substance Spill
- 8.2.3 Attachment 1(c), Oil Spill
- 8.2.4 Attachment 1(d), Underground Storage Tank Release
- 8.2.5 Attachment 1(e), Sanitary Sewage Discharge
- 8.2.6 Attachment 1(f), Liquid Industrial Waste

8.3 Attachment 2, Hazardous Substance Reporting guidance

8.4 Attachment 3, Acronym List

8.5 Example 1, Spill or Release Report and Notification Form

9.0 Revision History (maintain 3 year revision history, minimally)

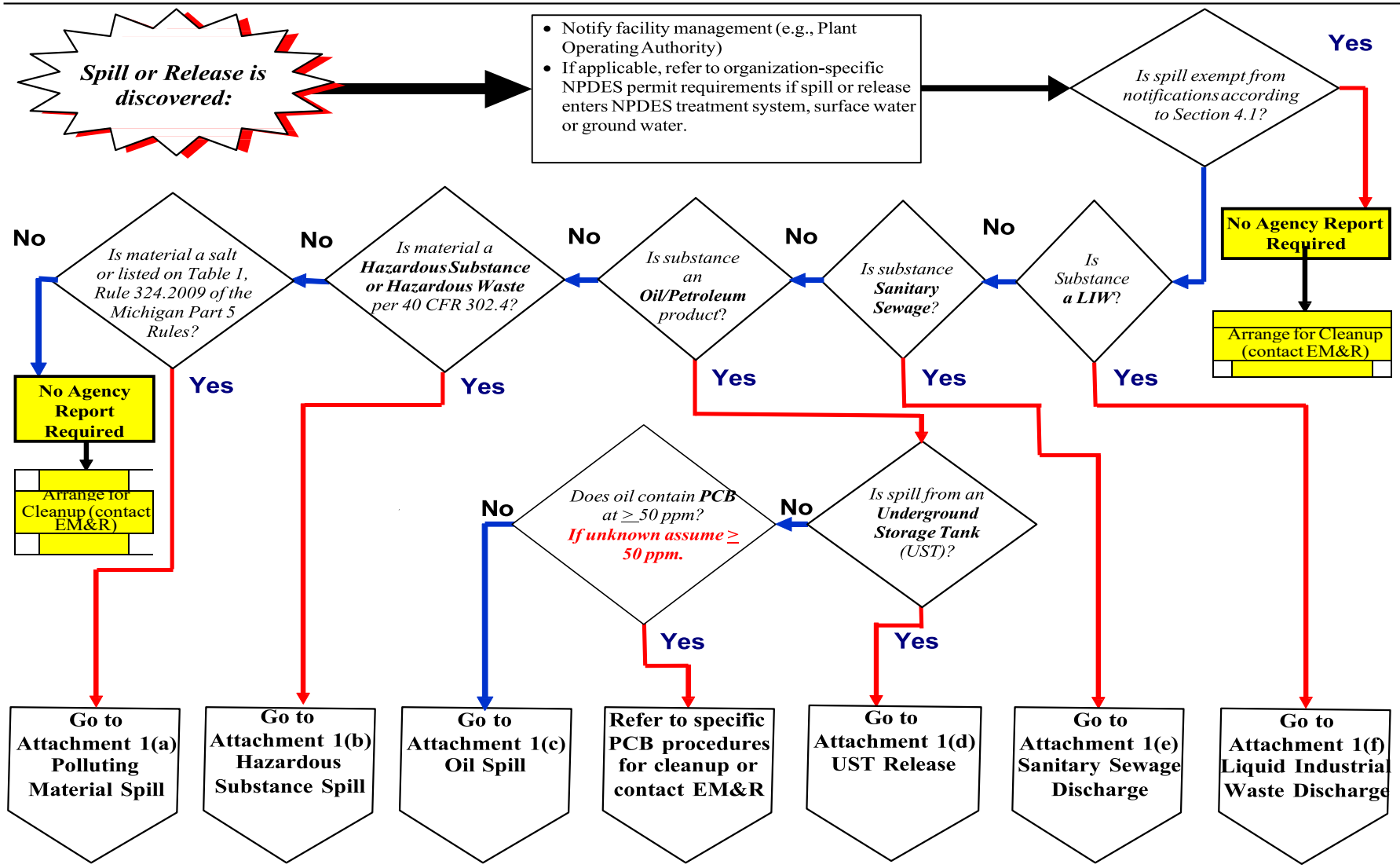
Revision No.	Changes	Author	Date
0	New Environmental Program	Mary Hana	9/28/11
1	Changed Environmental Contact from Mary Hana to Nicholas Chuey at the beginning of this EP. Added CAUTION note to section 4.2.3 regarding discharge of untreated sewage or partially treated sewage. Changed Detroit Edison to DTE Energy throughout the document. Added a line on the table in section 4.3.2, and references in section 6.0 for sanitary sewage discharges. Revised Attachment 1, and added Attachment 1e, to include sanitary sewage discharges.	N. Chuey	3/14/14
2	Clarified the term "Environment" in section 3.1. Modify the exemption description in 4.1.2.B to match Part 5 language. Added note in 4.2.3 and Attachment 1(e) to clarify notifications in the event of a sewage discharge. Expanded and clarified section 4.2.4 to include all DTE business units that are covered by this environmental program. Revised Attachments 1(a) and 1(c) to clarify the steps for spills to containment.	N. Chuey	10/6/14
3	Revised the title and Section 1.0 to describe the applicability more clearly. Modified subsection 3.1.3 to include the word "Ambient". Added subsection 4.2.9 to describe the guidance for making courtesy notifications to regulatory agencies. Added the terms "environment" or "surface" on Attachments 1(b), 1(c) and 1(d), and added an explanatory note to Attachment 1(b). Removed reference to Marysville Power Plant from Attachment 1(c). Replaced the definition of the Resource Management Division with the Office of Waste Management and Radiological Protection, and added the Water Resources Division on Attachment 3. Updated the phone and fax numbers for the Saginaw Bay District office of the MDEQ on Example 1.	N. Chuey	7/8/16

Skiles W. Boyd /s/ 7/8/2016

Approved For Use: **Date**

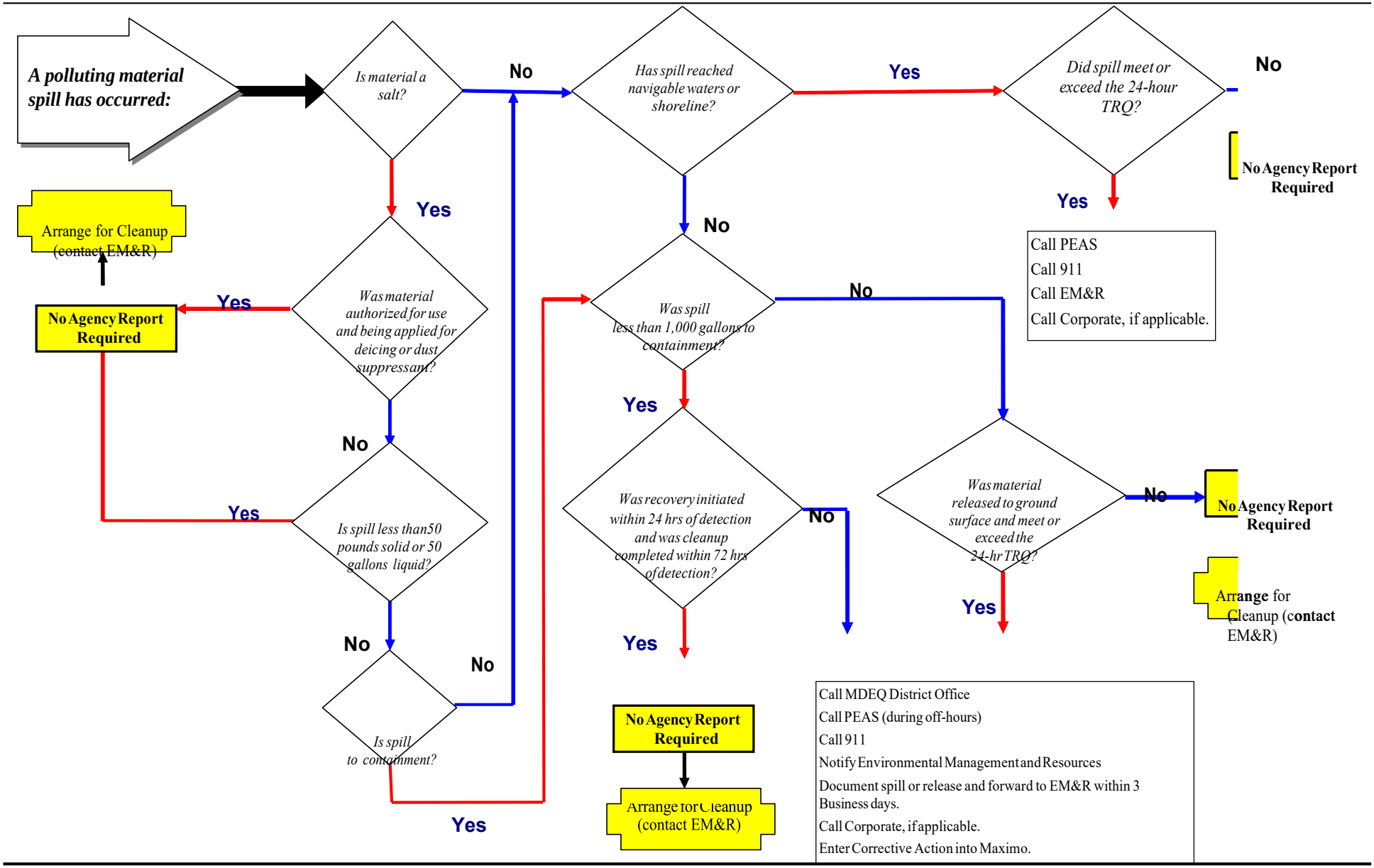
Skiles W. Boyd
Vice President, Environmental Management & Resources
DTE Energy Corporate Services, LLC

Attachment 1
SPILL NOTIFICATION FLOWCHART

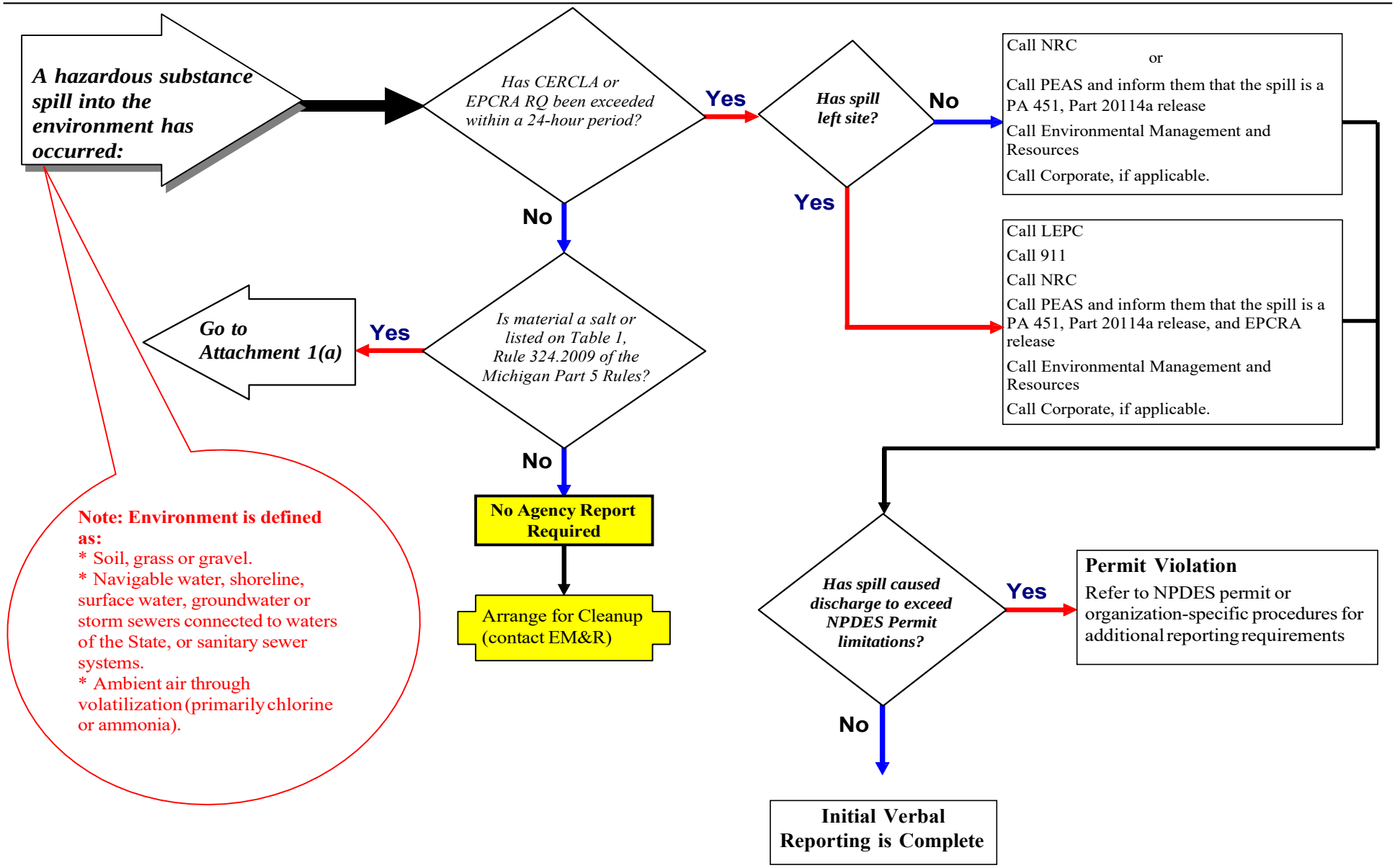


Attachment 1(a)

SPILL NOTIFICATION FLOWCHART

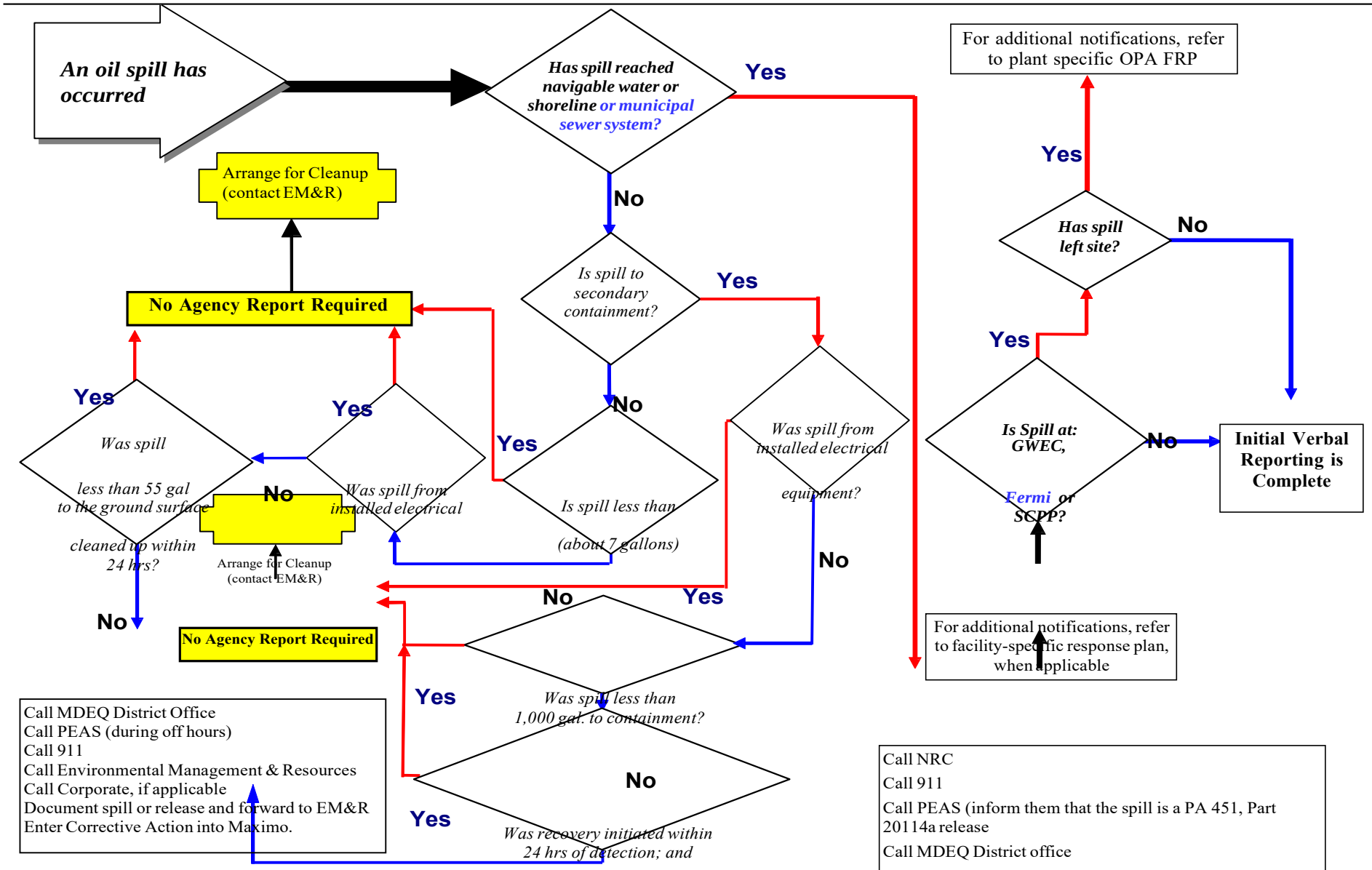


Attachment 1(b)
SPILL NOTIFICATION FLOWCHART



Attachment 1(c)

SPILL NOTIFICATION FLOWCHART



Attachment 1(c)

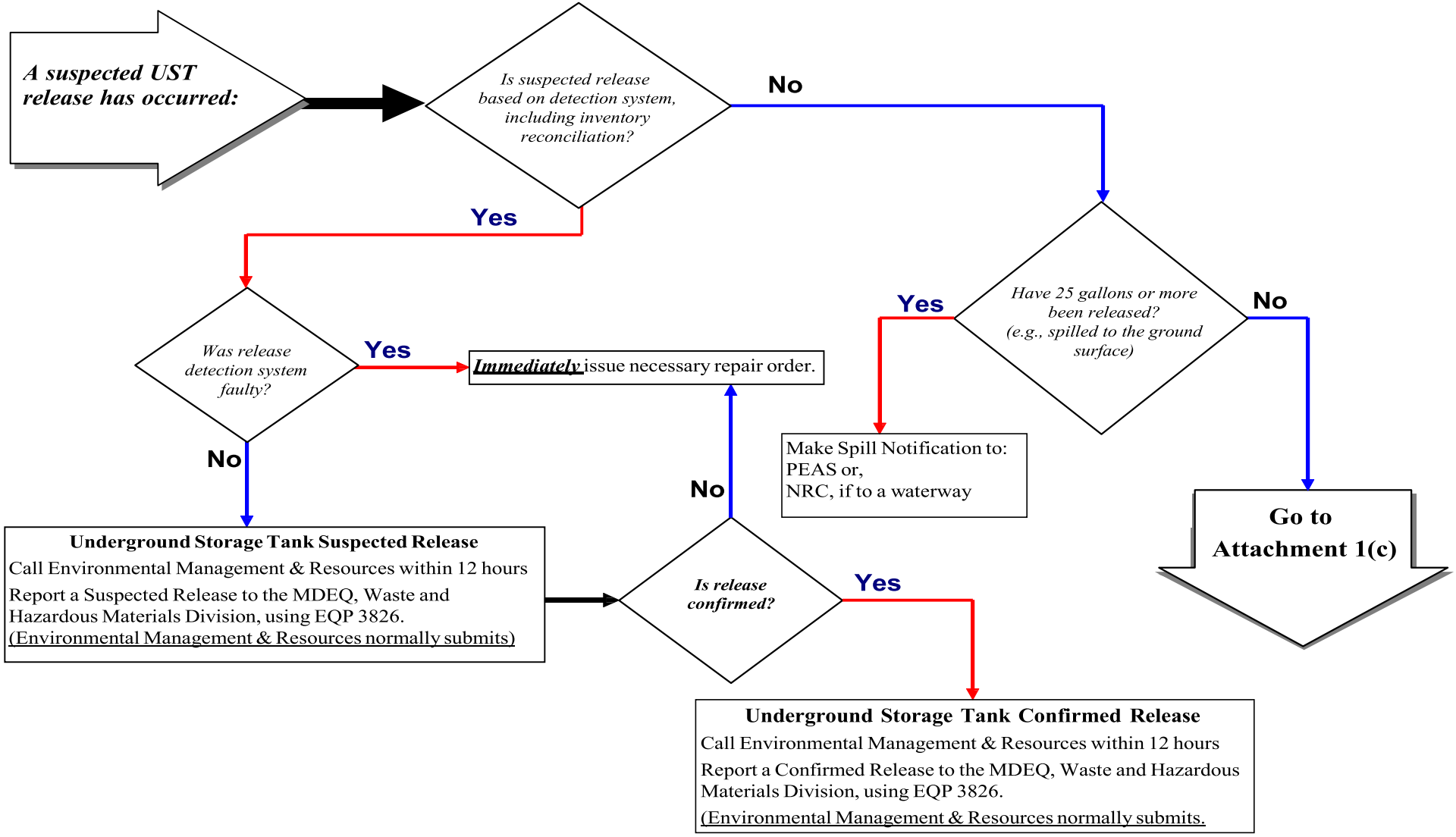
SPILL NOTIFICATION FLOWCHART

cleanup completed within 72 hrs of detection?

No

Attachment 1(d)

SPILL NOTIFICATION FLOWCHART

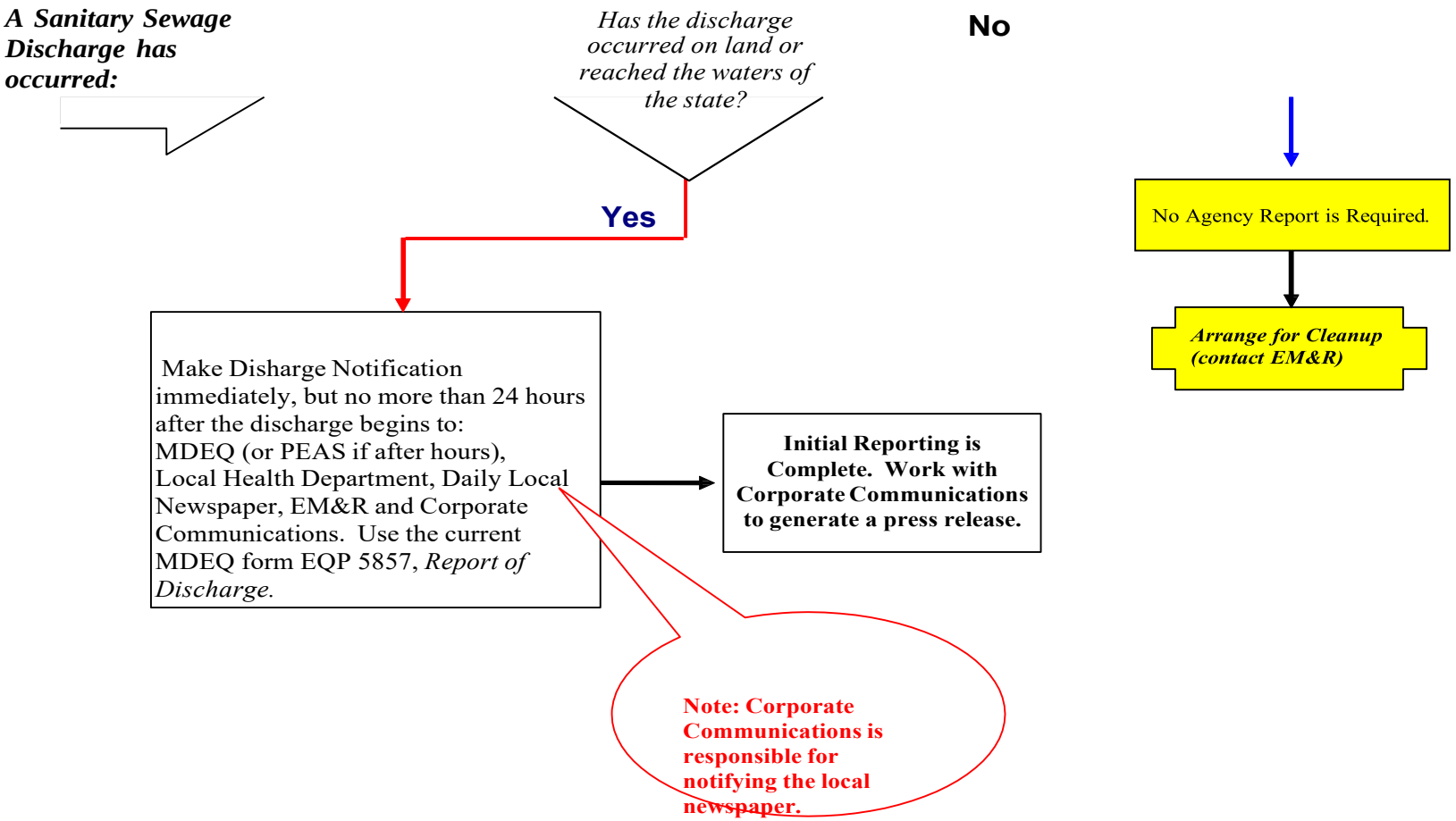


Attachment 1(d)

SPILL NOTIFICATION FLOWCHART

Attachment 1(e)

SPILL NOTIFICATION FLOWCHART

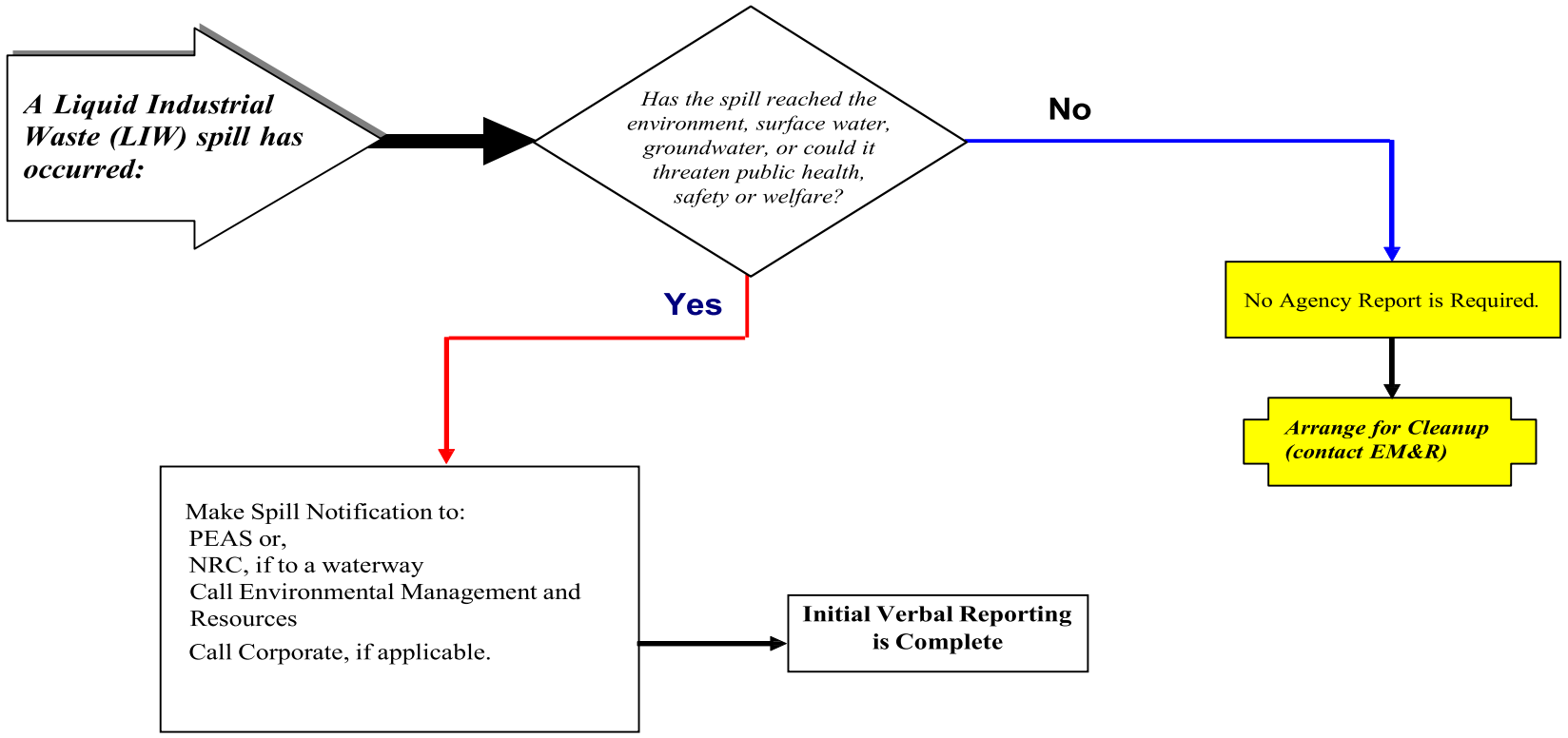


Attachment 1(e)

SPILL NOTIFICATION FLOWCHART

Attachment 1(f)

SPILL NOTIFICATION FLOWCHART



Attachment 2

Hazardous Substance Reporting Guide (not all-inclusive)

Hazardous Substance	MI Part 5 Reportable Quantity (pounds)	Spillage to reach State RQ (in gallons or as indicated)	CERCLA RQ (pounds)	Offsite Spillage to reach Federal RQ (in gallons or as indicated)
Asbestos	1	Accident-related release to air from any suspect Asbestos containing source	1	Accident-related release to air from any suspect Asbestos containing source
Aluminum Sulfate 50%	500	100	5,000	1,035
Ammonium Hydroxide 30%	100	43	1,000	430
Anhydrous Ammonia	10	Any release to air	100	Any release to air
Aqueous Ammonia 20 % or greater	10	6.5	1,000	650
Ethylene Glycol 50%	500	113	5,000	1,136
Ferric Chloride 45%	100	19.5	1,000	195
Hydrazine 5%	1	2.5	1	3
Hydrazine 35%	1	2.5 pints	1	2.5 pints
Mercury	1	1.1 fluid ounce	1	1.1 fluid ounce
Oxides of Nitrogen (NOx)	NA	NA	10	10 pounds of excess emission above air permit limitation
PCB Askarel (Pure PCB)	1	0.5 pint	1	0.5 pint
PCBs between 50 and 499 PPM	1	270	1	270
Sodium Bisulfite 42%	500	114.5	5,000	1,145
Sodium Hydroxide 20%	100	39	1,000	390
Sodium Hydroxide 50%	100	15	1,000	150
Sulfuric Acid 93%	100	7	1,000	70
Sodium Hypochlorite 15%	10	6.5	100	650

Attachment 3
Acronym List

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – Was created to protect the environment from heavily contaminated toxic waste sites that have been abandoned and provides broad federal authority to clean up releases or threatened releases of hazardous substances that may endanger public health or the environment.

Detroit Water and Sewage Division (DWSD) – A local authority having jurisdiction to permit point source discharges of pollutants to wastewater system.

Emergency Planning and Community Right–to- Know Act (EPCRA) – was enacted by Congress as the national legislation on community safety shortly after the Bhopal India incident which released methyl isocyanate and killed nearly 3,800 residents. This law is designed to help local communities protect public health, safety and the environment from chemical hazards. Each state appoints a State Emergency Response Commission (SERC). The SERC, in turn, divides the states into meaningful emergency planning districts and names a Local Emergency Planning Committee (LEPC). EPCRA also defines Extremely Hazardous Substances along with a reportable quantity for offsite releases.

Liquid Industrial Waste (LIW) - Any brine, by-product, industrial wastewater, leachate, off-specification commercial chemical product, sludge, sanitary sewer clean-out residue, storm sewer clean-out residue, grease trap clean-out residue, spill residue, used oil, or other liquid waste that is produced by, is incident to, or results from industrial, commercial, or governmental activity or any other activity or enterprise determined to be liquid by method 9095 (paint filter liquids test) as described in "Test methods for evaluating solid wastes, physical/chemical methods," United States environmental protection agency publication no. SW-846, and which is discarded.

Local Emergency Planning Committee (LEPC) - Provides a forum for emergency management agencies, responders, industry and the public to work together to evaluate, understand and communicate chemical hazards in the community and develop emergency plans in case of accidental release of these chemicals. Local industries must provide information to the LEPC's about chemical hazards.

Michigan Department of Environmental Quality (MDEQ) – an agency of the state government charged with ensuring compliance with State environmental regulations.

National Pollutant Discharge Elimination System (NPDES) - a point source that is permitted to discharge pollutants to surface waters. This system is managed by the United States Environmental Protection Agency (EPA) in partnership with state environmental agencies. The MDEQ has been delegated authority for permitting in the state of Michigan.

National Response Center (NRC) - the sole federal point of contact for reporting oil and chemical spills. The NRC operates 24 hours a day, 7 days a week, 365 days a year.

Office of Waste Management and Radiological Protection – A office of the MDEQ that is responsible for program areas that deal with solid, liquid, biosolids, medical and hazardous waste; hazardous products; radioactive materials; and recycling programs.

Attachment 3 (continued)
Acronym List

Oil Pollution Act (OPA) – Federal regulations that establish and expand the federal government's ability, and provide the money and resources necessary, to respond to oil spills. The OPA provided new requirements for contingency planning both by government and industry. Owners or operators of certain facilities that pose a serious threat to the environment must prepare Facility Response Plans.

Pollution Emergency Alerting System Information (PEAS) – A State (Michigan) environmental emergency hotline used to report environmental pollution emergencies such as tanker accidents, pipeline breaks, and releases of reportable quantities of hazardous substances as required.

Polychlorinated biphenyls (PCBs) - A class of organic compounds. The chemical formula for all PCBs is $\mathbf{C_{12}H_{10-x}Cl_x}$. PCBs were used as coolants and insulating fluids for transformers and capacitors, stabilizing additives in flexible PVC coatings of electrical wiring and electronic components, pesticide extenders, cutting oils, flame retardants, hydraulic fluids, sealants (used in caulking, etc.), adhesives, wood floor finishes, paints, de-dusting agents, and in carbonless copy paper.

Publicly owned treatment works (POTW) - "Publicly owned treatment works" means a treatment works that is owned by a municipality and includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. The term also includes sewers, pipes, and other conveyances if they convey wastewater to a publicly owned treatment works. The term also means the municipality that has jurisdiction over the indirect discharges to, and the discharges from, a treatment works.

State Emergency Response Committee (SERC) – A State (Michigan) commission tasked with facilitating the preparation and implementation of LEPC emergency response plans, management of LEPCs and for receiving and responding to requests from the public regarding emergency response plans, Material Safety Data Sheets (MSDS), inventory and toxic chemical release forms and emergency release notices.

Threshold Reporting Quantity (TRQ) - An amount of a hazardous chemical or polluting material equal to or greater than specifically identified threshold limits established by the EPA and MDEQ.

Treatment, Storage and Disposal Facility (TSDF) - Facilities engaged in the treatment, storage, or disposal of hazardous waste. These facilities are the last link in the cradle-to-grave hazardous waste management system.

U.S. Environmental Protection Agency (EPA or USEPA) - an agency of the federal government of the United States charged with protecting human health and with safeguarding the natural environment: air, water, and land.

Water Resources Division (WRD) – A division of the MDEQ this is responsible for protecting and monitoring Michigan's waters by establishing water quality standards, assessing the health of aquatic communities, issuing permits to regulate wastewater discharges, and overseeing aquatic invasive species concerns and significant water withdrawals.

Example 1
SPILL OR RELEASE REPORT and NOTIFICATION FORM (front)

NAME OF PERSON REPORTING SPILL		TELEPHONE NUMBER (*provide area code*)
STREET ADDRESS	NAME OF FACILITY	SPILL LOCATION (*Be specific*)
CITY	STATE: ***MI*** / ZIP CODE	REPORT No.

☐

RELEASE DATA. *Complete all applicable categories. **Check all the boxes** that apply to the release. Provide the best available information regarding the release and its impacts. Attach additional pages if necessary.*

Date & Time of Release (*if known*)	**Date & Time of Discovery**	**Duration of Release** (*if known*)	**TYPE OF INCIDENT**
HOURS	HOURS	Days hours minutes	☐ Explosion ☐ Fire ☐ Leaking container Loading/unloading ☐ Pipe/valve leak or rupture ☐ Vehicle accident Other (*explain*):

Material Release (***Chemical or trade name***)	**CAS # (if known)**	**RQ exceeded within 24- hours?**	**Estimated Quantity Released** (***indicate unit, e.g. lbs, gals, cu.ft. or yds.***)	**Physical State Release** (***indicate if solid, liquid, or gas***)
		☐ Yes ☐ No		
		☐ Yes ☐ No		
		☐ Yes ☐ No		
		Yes No		

Factors Contributing to Release:

☐ Equipment failure
☐ Operator error
☐ Faulty process design
☐ Training
☐ Weather conditions
☐ Other (*explain*):

Source of Loss:

☐ Container
☐ Equipment
☐ Pipeline
☐ Ship
☐ Tank
☐ Tanker
☐ Truck/Van
☐ Other (*explain*):

Type of Material released:

☐ Oil
☐ Flammable or Combustible
☐ Waste/Solvent

Material Listed on:

☐ CERCLA list (*40 CFR 302.4*)
☐ Extremely Hazardous Substance-EPCRA Section 302 list (*40 CFR 355*)

Immediate Actions Taken:

☐ Containment
☐ Dilution
☐ System shut down
☐ Diversion of release to treatment
☐ Decontamination of persons or equipment

☐ Polluting Material
☐ Hazardous substance
☐ Other (*explain*):
Table 1, R 324.2009, Mi Part 5 Rules
RCRA listed hazardous waste
Other list (*explain*):
Evacuation
Hazard removal
Neutralization
Monitoring
Other (*explain*):

SPILL/RELEASE REACHED:

☐ Surface waters (*include name of river, lake, drain, etc involved*):
Distance from spill location to surface water, in feet :

☐ Drain connected to offsite sanitary sewer (*include name of wastewater treatment plant and/or street drain, if known*):

☐ Drain connected to storm sewer (*include name of drain or waterbody it discharges into, if known*) :

☐ ~~Groundwater (*include name of aquifer, if known*):~~

Soils (*include type e.g. clay, sand, loam, etc. if known*):

Air

Other (*explain*):

A computer-generated copy of this form is available on the Environmental Management & Resources Master Forms List, http://quest.dteco.com/emr/pdfs/referenceMaterial/emrFormsList.pdf and as an eForm, http://quest.dteco.com/eforms/

SPILL OR RELEASE REPORT and NOTIFICATION FORM (back)

EXTENT OF INJURIES, IF ANY:	**WAS ANYONE HOSPITALIZED?** ☐ Yes, Number Hospitalized: ☐ No

Describe the incident, the type of equipment involved in the release, how the volume of loss was determined, along with any resulting environmental damage caused by the release. Identify who immediately responded to the incident and who did further cleanup activities (Company employees or contractors - include cleanup company name, contact person, and telephone number),

Estimated quantity of any recovered materials and description of how those materials were managed (include disposal method if applicable):

Associated Health Risks and Precautions:

REGULATORY AGENCY/COMPANY NOTIFICATIONS Refer to Spill Notification Flowchart (Attachment 1) for whom, specifically, to notify.	Time Contacted	Date Contacted	Person Contacted	By Whom
☐ **National Response Center (NRC)** (800) 424-8802 Case No.:				
☐ **PEAS**: (800) 292-4706 Operator Number Assigned:				
DEQ District Office or Division (0900-1700 hrs.) *(Voicemail not acceptable, call PEAS)*				
☐ **Jackson** Ph: (517) 780-7690, Fax: (517) 780-7855				
☐ **Saginaw Bay** Ph:(989) 894-6200, Fax: (989) 891-9237				
☐ **Southeast Michigan (Warren)** Ph: (586) 753-3700, Fax: (586) 751-4690				
☐ **Underground Storage Tank** Ph: (517) 335-7279, FAX: (517) 335-2245				
☐ **Local Emergency Planning Committee (LEPC)** **(See phone numbers below)**				
☐ **Wastewater Treatment Plant Authority**				
☐ **Company Approved Pollution Control Firms** _____ (Company Name) _____ (Company Name)				
☐ **Environmental Management & Resources** Call 313-268-1191 if after hours emergency (4pm – 7am weekdays; 24 hours weekends)				
DTE Energy Corporate Contacts: ☐ **Communications** (24-hour line) (313)-235-5555 ☐ **Regional Relations** (313) 235-3522				
☐ **Other (i.e., 911, etc.)**				

Contacts are conducted by telephone only

_____
Signature of Person Reporting Spill

☐ (Print Name) Check and Print Name if submitted Electronically

LEPCs: St. Clair County LEPC **(810) 989-6327** Wayne County LEPC**(734) 942 - 5289** Monroe County LEPC **(734) 240 – 3135**
Huron County LEPC **(989) 269 – 6421** City of Detroit LEPC **(313) 596 – 5562**

Current LEPC Mailing Addresses Can Be Found At: http://www.michigan.gov/documents/deq/deq-ess-sara-lepcroster_269474_7.pdf

APPENDIX P

Acronyms and Abbreviations

ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
DTE	DTE Electric Company
EAP	Emergency Action Plan
ECMT	Executive Crisis Management Team
EGLE	Michigan Department of Environment, Great Lakes & Energy
EOC	Emergency Operations Center
EM&S	Environmental Management and Safety
ERC	Emergency Response Contractor
ESO	Engineering Support Organization
FAB	Fly Ash Basin
HASP	Health & Safety Plan
IAP	Incident Action Plan
IC	Incident Commander
ICS	Incident Command System
MCEMD	Monroe County Emergency Management Division
MDOT	Michigan Department of Transportation
MI DNR	Michigan Department of Natural Resources
MONPP	Monroe Power Plant
NIMS	National Incident Management System
PIO	Public Information Officer
RCRA	Resource Conservation and Recovery Act
SMC	Surveillance Monitoring Committee
SS	Shift Supervisor
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency