

**Department of Environmental Quality  
Petroleum Technical Section  
SB9 and HB613/SJ26 Status Report  
September 12, 2012**

**Petroleum Mixing Zone Closures and Potential Cost Savings**

In its June report, the department stated that an estimated \$160,000 was expended in Fiscal Year (FY) 2012 at releases where the only required remedial action remaining is compliance monitoring. Questions from the committee arose regarding how the department calculated that number and how that number related to the current review of four petroleum releases proposed for closure with a petroleum mixing zone (PMZ). Clarification is provided below.

The estimated \$160,000 is the maximum value that DEQ estimates could be saved in a fiscal year in the Petroleum Tank Release Cleanup Fund (the Fund) expenditures. Reimbursement claims were submitted for 52 releases for compliance monitoring in FY 2012. All of the compliance monitoring was for “attenuation monitoring”; please refer to Figure 1, which is a graphical representation. Attenuation monitoring would be eliminated when a release is closed with a PMZ, making the maximum amount saved to the Fund \$160,000 annually.

We looked at the amount reimbursed from the Fund for all aspects of release cleanup for FY12. Approximately \$3,995,000 total was reimbursed for all work completed at over 230 releases. This analysis showed that if FY2012 were a representative year only \$160,000 would be reimbursed for monitoring where no other active cleanup is required. Compliance monitoring is the only type of cleanup expense that can be affected by PMZ closures; other cleanup costs for petroleum releases will remain unaffected.

To initiate a PMZ closure, an owner/operator would hire a qualified environmental consultant to prepare and submit a final summary report. The final report would document that all requirements for a PMZ had been met when proposing a PMZ for final resolution of the petroleum release. This report must show that:

- All source material has been removed to the maximum extent practicable;
- The extent of petroleum contamination has been defined;
- Natural breakdown or attenuation is occurring within the plume; and
- No further corrective action is reasonably required at the site.

Costs likely to be incurred when implementing a PMZ include those of preparing a work plan and report, of acquiring easements, of potential institutional controls, and/or preparing and placing deed restrictions on the affected property(ies). DEQ cannot accurately estimate costs for PMZ closures at this time because of unknown costs and the lack of real history for these activities.

DEQ is working with the PTRCB to refine estimates of actual cost savings as releases are resolved with PMZs. We will collaboratively track the itemized costs of each PMZ closure as

they are approved and we will report this information back to the council as it becomes available. We will record costs of implementing closures with PMZ work plans, as well as estimate the projected costs of groundwater monitoring that will no longer be required.

### **Petroleum Mixing Zone Closure Process**

Releases closed with a PMZ are initiated in two ways as depicted in Figure 2. An owner/operator or consultant can begin PMZ closure review by asking whether a release can be resolved (closed) with a PMZ, in accordance with the Administrative Rules of Montana, ARM 17.56.607. DEQ may also identify a release that may be a possible PMZ closure candidate. In this instance, DEQ would bring the situation to the owner's/operator's attention to determine their interest in proceeding with a PMZ closure. In the future, this option will be proactively offered as a part of the planning process for cleanup.

A petroleum mixing zone occupies a finite area of real-estate where residual soil and groundwater contamination remains above Montana standards, but an analysis of the situation shows no unacceptable risks to human health, safety, or the environment. The plume of groundwater contamination has been shown to be stable and shrinking and is being degraded by natural processes.

Following is the process used to close a release with a PMZ once the release has been identified as a possible candidate for closure. Please also refer to Figure 2, where the same numbering used below is shown to help correlate the text to the figure.

1. **Initial Evaluation:** An initial review is conducted by a professional environmental consultant hired by the owner/operator. DEQ typically works with an owner/operator through their consultant. For this discussion, the term "consultant" will be used on behalf of the owner/operator. The consultant and a DEQ project officer will confer to determine whether there are any obvious reasons why a PMZ might not be applicable, including an evaluation of whether a PMZ closure is the most cost-effective route to closure, any impacted third parties where an easement may be required, and/or any site controls that are anticipated.
2. **Work Plan Submittal:** Following this discussion, the consultant will prepare a site-specific work plan for writing a report and implementing a PMZ. The work plan will identify the activities necessary to complete the proposed PMZ closure request, give supporting rationale, estimate costs, identify all necessary easements, and call out any necessary site controls. A copy of the plan with a budget will be submitted to the Petroleum Tank Release Compensation Board (PTRCB).
3. **Work Plan Approval:** DEQ will approve the work plan, ensuring that all required information will be provided and submitted in a timely and accurate manner.

4. Work Plan Completion: When the work plan is approved, the consultant will:
  - a. prepare a final PMZ closure report that summarizes and documents that site cleanup conditions have fulfilled the PMZ closure requirements noted above and that a PMZ closure is cost effective; and
  - b. identify, document, and secure agreements for property conditions to be put in place to ensure the integrity of the closure. These conditions may include recording a deed notice, finalizing an easement when the plume crosses onto adjacent property, or completing other institutional controls to mitigate remaining human health and environmental risks from the residual contamination. The consultant will submit the proposed PMZ closure report, which has all the required release information and other actions summarized and documented.
5. Approval: The department will review the information to ensure there are no additional cleanup actions needed and to ensure risks from residual contamination have been adequately mitigated. The department will also make sure that all deed notices or restrictions have been recorded, including third party easements. Upon approval of the report, DEQ will issue a “no further action letter” and provide a copy to the PTRCB. The consultant will submit any outstanding claims to the PTRCB.

The department’s prepared guidance document addresses many questions that consultants may have or situations regarding closure that could arise when proposing a PMZ closure. This document is intended to assist in the interpretation and implementation of the statute and rules in actual and specific situations. As the department receives feedback and identifies areas for improvement through its experience, the guidance document will be updated.

### **Summary of Current PMZ Activities**

The department has not approved any closures with a PMZ. However, we have several potential PMZ closure candidates in the process. Since the July 2012 EQC meeting, the department has approved one work plan for a final PMZ closure report and necessary site controls (Release 3893, Former Bulk Plant in Carter). In addition, the department has denied two requests where the respective releases did not meet the criteria in law (see bullets on Page 1).

Also since the last meeting, DEQ has actively reviewed several releases as potential PMZ closure candidates. Following is a brief list of the additional releases and a short description of each releases evaluation.

DEQ-initiated PMZ closure review process:

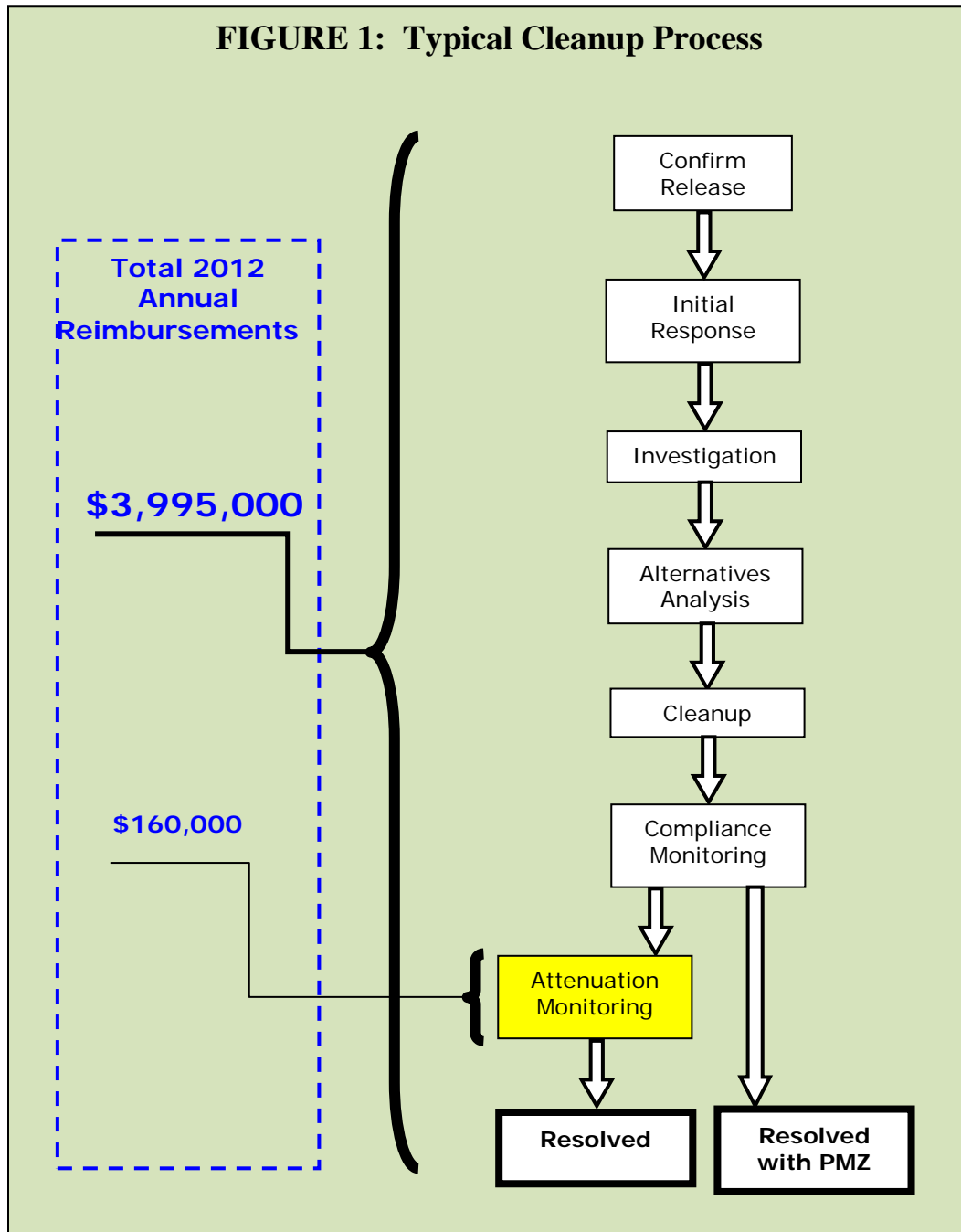
- Release 2797, Former Service Station, Butte: DEQ approached the owner/operator regarding potential closure with a PMZ. One well has high benzene and the data suggest that 13-20 years is necessary for the site to be cleaned up for a standard closure. DEQ has issued a formal letter giving the owner/operator the option to close with a PMZ; no response yet from the owner/operator. Tanks, piping and dispensers have been removed. This facility is a parking lot for a grocery store. The plume does not leave the property.

- Release 603, Commercial Facility, Dillon: DEQ approached the owner/operator during a July monitoring event. The owner/operator was interested in potentially pursuing the PMZ closure alternative after results from the July 2012 sampling have been received. Tanks, piping and dispensers have been removed. This facility is presently not used but has two buildings that still remain; the owner indicates potential redevelopment for this site as an agricultural facility (grain storage) or trying to sell the property. The plume does not leave the property.
- Release 1584, Bulk Plant, Drummond: DEQ found through initial evaluation that the release is not presently a PMZ closure candidate. The groundwater data does not show that the plume is stable and shrinking. The plume may go off the property and under the highway; an easement from MDT would likely be needed. DEQ will work with the owner/operator to develop a closure plan that might include closure with a PMZ. The facility is an active fueling facility.

#### Owner/Operator initiated PMZ closure review process

- Release 1479, Truck Stop, Glendive: This facility currently contains a hardware store and all known tanks, piping, and dispensers have been removed. Excavation was used to remove the source material. The groundwater plume does not leave the property and only one well exceeds water quality standards. DEQ is working with the owner/operator and consultant to establish a plan to get the release to closure.
- Release 857, Service Station, Twin Bridges: An initial evaluation of the groundwater data indicates the plume is not stable at this time. This facility is an active fueling station. The plume goes under Hwy 287, which would require an easement from MDT. DEQ is working with the owner/operator and consultant to address the source contamination to stabilize the plume. A PMZ closure may be appropriate for this site if plume control is achieved.
- Release 3632, Service Station, Great Falls: An initial evaluation of the release suggests the groundwater plume is not stable and appears to be increasing in contaminant concentration. This facility is an active fueling station. The plume goes off the property and underneath a city street. Closure with a PMZ would require an easement from the City of Great Falls. DEQ is working with the owner/operator and consultant to address the source contamination to stabilize the plume. A PMZ closure may be appropriate for this site if plume control is achieved.
- Release 4311, County Shop, Hardin: The facility is a storage yard with shops for vehicles and equipment. A tank and contaminated soils were removed. Soil investigations and groundwater monitoring results indicate the petroleum contamination is contained within the property boundary. DEQ is working the owner/operator and consultant to begin the initial evaluation to determine if a PMZ resolution is approvable.

- Release 2032, Shop, Big Sandy: An initial review of the release suggests a PMZ closure may be possible. The UST system was removed and replaced with two aboveground storage tanks. A small soil excavation removed the contaminated source material. The property is used as the Chouteau County road maintenance shop. Contaminant concentrations are decreasing in the groundwater and remaining contamination appears localized near the source and has not migrated. DEQ is working with the owner/operator and consultant to begin the initial evaluation to determine if a PMZ resolution is approvable.



**FIGURE 2: Petroleum Mixing Zone Implementation Process**

