

Assessing Petroleum Tank Releases for Closure

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Petroleum Tank Cleanup Section

Montana DEQ

Overview

- Rule for Closure Determination
- Closure Guidance Document and Checklist
- Closure Report
- What DEQ Looks For
- Questions





Administrative Rules of Montana 17.56.607 Release Categorization

Releases may be resolved when

- Cleanup requirements are met
- Site conditions protect human health
- Site conditions protect the environment



Release Categorization

Resolving Petroleum Tank Releases

Requirements in ARM 17.56.607(4):

- Investigations identify extent of contamination
- Site evaluation via RBCA indicates no substantial risks



Release Categorization

Resolving Petroleum Tank Releases

Requirements in ARM 17.56.607(4):

- Corrective actions are completed
- Free product removed to maximum extent practicable
- Applicable environmental laws are met



REMEDIATION DIVISION
Petroleum Cleanup Section

Petroleum Release Closure Categorization – ARM 17.56.607

Categorizing Petroleum Releases as Resolved or Resolved with a Petroleum Mixing Zone
Technical Guidance Document

Appendix A

DEQ Petroleum Release Closure Checklist

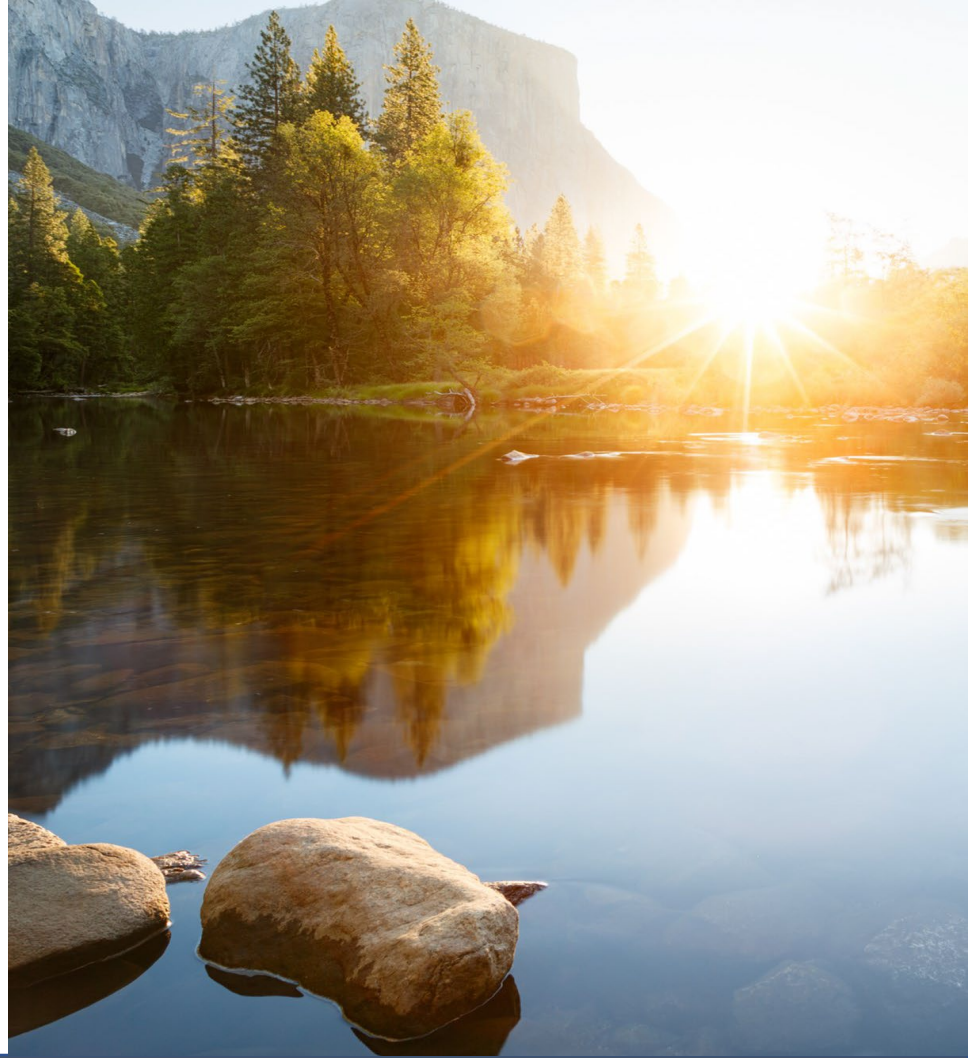
Primary Requirements:

- Protection of Public Health and Environment
- Environmental Laws and Regulations
- Adequate Environmental Investigation



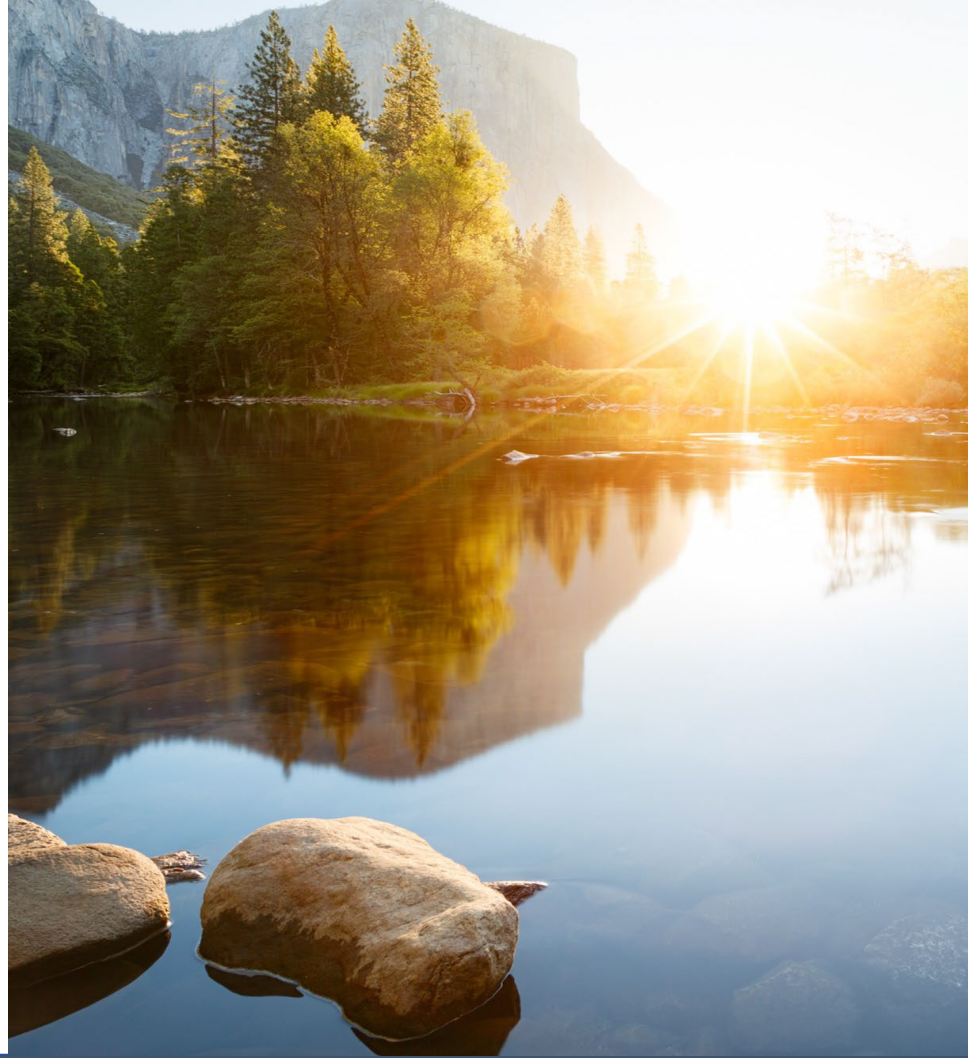
Closure Checklist: 8 Sections

- General (Site History, Initial Investigation, Evaluation, etc.)
- Analytical
- Soil
- Ex-situ Contaminant Treatment or Disposal



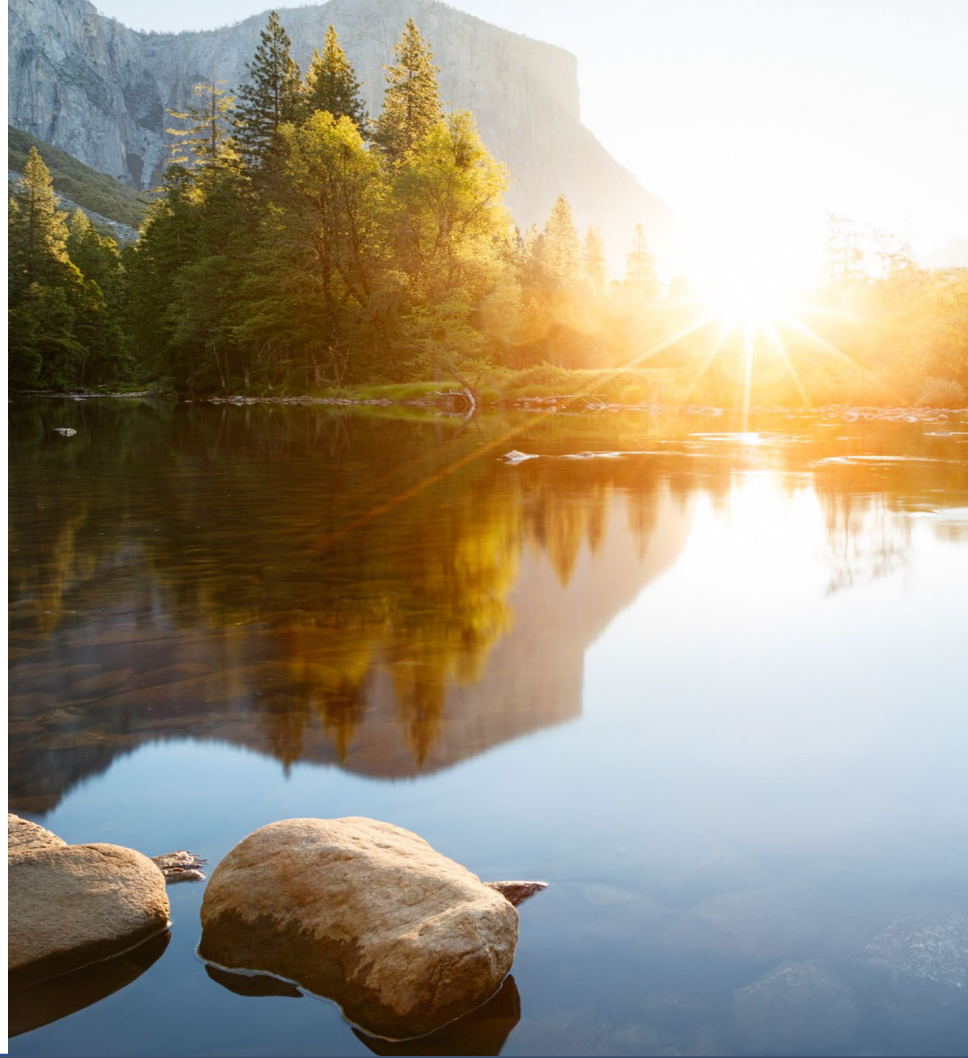
Closure Checklist: 8 Sections

- Groundwater Monitoring
- Utility Corridors, Water Wells, and Other Receptors
- Petroleum Vapor Intrusion
- Petroleum Mixing Zone



Closure Checklist: 4 Main Issues

- Soil
- Groundwater Monitoring
- Utility Corridors, Water Wells,
and Other Receptors
- Petroleum Vapor Intrusion



Closure Report for Petroleum Tank Releases

Soil Sections

Soil Profile Summary

Depth, feet, bgs	Interval	Interval Bottom	Soil / Sediment Type and Interval Description
	Top		

Closure Report for Petroleum Tank Releases

Soil Sections

Soil Contamination – Investigation and Pathway Elimination	
Tier 1 RBSLs ever exceeded (Y/N)?	
Tier 1 RBSLs extent defined (Y/N)?	
Initial Contaminated-Soil Media: (check all that apply)	
Surficial Soil (<2')	
Subsurface Soil	
Not Applicable	
Soil Pathway eliminated (Y/N)?	
Soil Exposure Pathway eliminated by: (check all that apply)	
Lab data; Analytes < site-specific Tier 1 RBSLs	
Remediated (in-situ)	
Excavation (confirmation sampling)	
Specify other method(s) & describe/explain below	

Closure Report for Petroleum Tank Releases

Soil Sections

Alternative Soil Exposure Pathway Elimination – Direct Contact Exceedances

RBCA Guidance Section 5.2; Tier-2 Adjustment to RBSLs on Table 4 (Tier 2 Master Table)

Site-Specific Soil Exposure Methods (check all that apply):	Analyte Exceedances of RBCA Appendix-C Tier-1 RBSLs		Analyte Exceedances of Tier-2 Adjusted RBSLs	
	Number of Carcinogens	Number of Non-Carcinogens	Number of Carcinogens	Number of Non-Carcinogens
Direct Contact, Residential (0 – 2 ft, bgs)				
Direct Contact, Commercial (0 – 2 ft, bgs)				
Direct Contact, Excavation (>2 ft, bgs)				

Closure Report for Petroleum Tank Releases









Soil Sections

Compliance Monitoring -- Soil

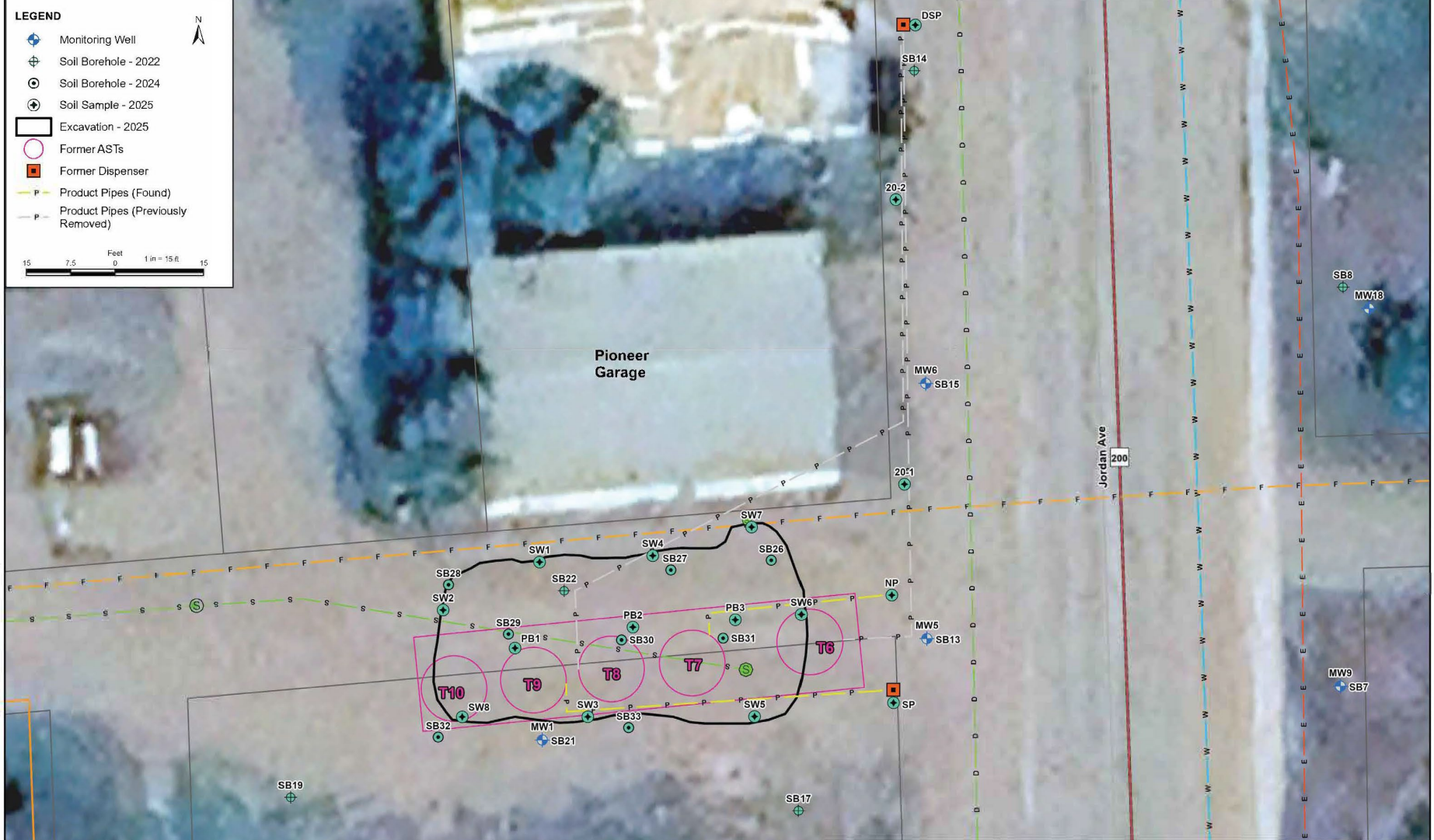
Summary of Soil Monitoring Points, Number, Locations, Time Interval (Years) of Monitoring:

Summary of Trend(s) in Soil Attenuation and Quality:

LEGEND

-  Monitoring Well
-  Soil Borehole - 2022
-  Soil Borehole - 2024
-  Soil Sample - 2025
-  Excavation - 2025
-  Former ASTs
-  Former Dispenser
-  Product Pipes (Found)
-  Product Pipes (Previously Removed)

15 7.5 Feet 0 1 in = 15 ft 15



Excavation Details		
		FIGURE 4

Closure Report for Petroleum Tank Releases

Groundwater Sections

Groundwater (GW) Contamination – Investigation and Pathway Elimination

Was GW encountered at the facility (Y/N)?

Depth to GW (feet below ground surface)

General GW flow direction

Tier 1 RBSLs extent defined (Y/N)?

GW Pathway eliminated (Y/N)?

GW Exposure Pathway eliminated by: (check all that apply)

Lab data: Analytes < RBSL and WQ Standards

Specify other method(s) & describe/explain below

Closure Report for Petroleum Tank Releases

Groundwater Sections

Compliance Monitoring -- Groundwater

Summary of Monitoring Wells, Number, Locations, Time Interval (Years) of Monitoring:

Summary of Trend(s) in Groundwater Attenuation and Quality:

Closure Report for Petroleum Tank Releases

Utility Corridor, Water Wells, and Receptors Sections

Points of Exposure & Receptors	Describe with respect to Source Area distance, depth, direction (N, S, E, W), SWL, up-gradient, down-gradient, etc.	Initial or pre-Remediation			Current	
		Threatened Y/N	Contaminated Y/N	Investigated Y/N	Threatened Y/N	Contaminated Y/N
Surficial Soil (<2 ft depth)						
Subsurface Soil (>2 ft depth)						
Surface Water						
Groundwater						
Water-Supply Wells (domestic)						
Wells (irrigation, stock, industrial)						
Basements and Crawlspace						
Utility Corridors						
Property Boundaries						
Structures						
Other Sensitive Environments (specify & describe)						



LEGEND			
	SANITARY SEWER		CONCRETE
	WATER		ASPHALT
	OVERHEAD POWER		GRAVEL
	UNDERGROUND TELEPHONE		CONTROL POINT
	STORM SEWER		AIR SPARGE WELL
	AIR SPARGE WELL		SVE WELL
	2015 MONITORING WELL		2018 MONITORING WELL
	2018 MONITORING WELL		TREE
	LIGHT POLE		POWER POLE
	STORM DRAIN MANHOLE		WATER VALVE



DISPLAYED AS:	
COORD SYS/ZONE:	NAD83, NAVD88
DATUM:	MSP
UNITS:	INT. FT.
SOURCE:	GOOGLE EARTH
DATE:	10/2024
SCALE IN FEET	
0 15 30	

Closure Report for Petroleum Tank Releases

Petroleum Vapor Intrusion Sections

Petroleum-Vapor Intrusion (PVI) Assessment	
PVI assessed for this Release (Y/N)?	
If No, explain why PVI is not a threat to receptors:	
PVI contamination related to this Release (Y/N)?	
Explain results of PVI assessment, sample points, laboratory data, threats to receptors, mitigation, etc.:	

Compliance Monitoring – PVI
Summary of PVI Monitoring Points, Number, Locations, Time Interval (Years) of Monitoring:
Summary of Trend(s) in PVI Attenuation and Quality:

Petroleum Mixing Zone Closures

- Montana Code Annotated 75-11-508
- PMZ Closure Checklist
- PMZ Corrective Action Plan Report





Questions?

Thank you for listening