

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
INDUSTRIAL AND ENERGY MINERALS BUREAU
COAL PROGRAM**

**GUIDELINE FOR DETERMINING COMPLIANCE WITH THE
APPROVED POSTMINE TOPOGRAPHY PLAN**

I. Introduction

Pursuant to ARM 17.24.313(3)(d), a permittee must submit a postmining topography (PMT) map and a demonstration that the proposed PMT can be achieved. ARM 17.24.313(3)(e) requires a proposal for remediation of “grading problems” which result in final graded topography “not consistent” with the approved PMT map. At a minimum, this proposal must contain “measures to remedy the problem” or inconsistency between the PMT map and the final graded topography. There is no allowance for inconsistency without notification and a remedy. Notification must occur, in writing, within 10 working days after detection.

The Department of Environmental Quality (the Department) recognizes that strict adherence to the PMT map is not always operationally feasible, can be problematic, and in some cases, is not preferred. This point does not negate ARM 17.24.313(3)(d) and (e) as permit application requirements. These requirements secure a commitment to performance standards associated with approximate original contour [ARM 17.24.501A(1)(a)]. The intent of this guideline is to give further enlightenment as to whether an inconsistency with an approved PMT requires a revision to the permit (ARM 17.24.415) or a less extensive form of Departmental notification and consultation.

The following guidelines apply to standard (nonalternate) reclamation with a postmine land use of grazing and wildlife habitat. These guidelines are developed around the establishment of like-function, primary and tributary drainage basins. Please note, the guideline addresses drainage basins as they relate to the PMT plan: drainage channels, pursuant to ARM 17.24.634, are not addressed in these guidelines.

- Primary drainage basins include, but are not limited to, those drainage basins which outlet outside the area disturbed by mining, named drainages, and large drainages as determined by the Department. The primary drainage basin has a defined size and a defined area, depicted on the PMT map, where flows would concentrate. This area of concentration must flow in the same general direction and have a similar grade and bearing as that depicted on the PMT map. The drainage must connect upgradient (when applicable) and outlet in the location depicted on the PMT map.
- Tributary drainage basins are those drainage basins which outlet within the primary drainage. The term tributary drainage basins, as defined in these guidelines, include only those areas where surface water could concentrate and flow. These drainage basins do not need to be established in the exact locations depicted on the PMT map; however, there must be approximately the same cumulative length of tributary drainage (longitudinal profile) as that depicted on the PMT map. The cumulative length will be

evaluated within the basis of the primary drainage basin.

-There is a relationship between valley¹ width, depth, length, and aspect and hydrologic/ecologic function. The side slopes of primary and tributary drainage basins must be geomorphically similar, in size and function, to that depicted on the PMT map. The intent of emphasizing similar drainage basin topography is to assure the re-establishment of the hydrologic and ecologic functions provided by the valley floor and side slopes.

II. Determining the Need for a Revision to the Permit

A. Primary Drainage Basins

(1) Landforms which create a drainage divide (ridges or hills) for a primary drainage basin shall be re-established in the general location of that shown on the approved PMT map. A drainage divide is considered to be in the general location of that shown on the approved PMT map if its location does not change the size of any primary drainage basin by more than 10% or any greater amount as determined in consultation with the Department (no minor revision required). Calculation of the percent change includes only that part of the drainage basin disturbed by mining.

(a) Reclaimed upland landforms must provide a similar amount of like-function topography as that approved on the PMT map and must complement the postmine drainage plan.

(b) Reclaimed upland landforms do not have to be constructed to the exact elevation depicted on the approved PMT map [ARM 17.24.501A(1)(a)] but must conform with the requirements and intent of these guidelines.

(2) To be considered consistent with the PMT map (no minor revision required), the area of concentrated flow depicted must:

(a) provide flow in the same general direction and along the same general bearing as that depicted on the PMT map;

(b) outlet at the approved location;

(c) contain similar lengths (longitudinal profile) of similar gradients to that approved and exhibit an overall concave longitudinal profile;

(d) when applicable, connect, upgradient, to a native drainage; and

(e) provide a smooth transition between graded and native areas and between graded areas with different completion dates [ARM 17.24.501A(2)].

B. Tributary Drainage Basins

(1) The operator must establish, within each individual primary drainage basin area, at least as many tributary drainage basins as committed to on the approved PMT map.

(2) Within the primary drainage basin, the cumulative length of the tributary drainages must be at least 90% of that committed to on the PMT map or as otherwise determined in consultation with the Department.

(3) Each tributary drainage basin must be restored to the geomorphic characteristic of

that shown on the PMT map.

(4) The area of concentrated flow, depicted on the PMT map, must exhibit an overall concave longitudinal profile and provide a smooth transition into native and between graded areas with different completion dates [ARM 17.24.501A(2)].

C. Operators may deviate from the approved PMT map, and A and B above, if the alteration more closely resembles the premining topography and does not adversely affect the approved postmine land use, primary drainage size or point of discharge from that approved in the permit. Following consultation with the Department, the PMT map may need to be updated. The need for an update will depend on the magnitude of the deviation. An updated PMT map, in this instance, will not initiate the minor revision process unless the spoil mass balance is changed.

D. All upland topography must have a smooth transition into native and between graded areas with different completion dates [ARM 17.24.501A(2)].

E. Final graded slopes may not be steeper than that allowed by ARM 17.24.501A(1)(a) and 515(1) unless the slope can be shown to exhibit a long-term static factor of safety equal to 1.3 and is approved by the Department. Final graded slopes need not be uniform, ARM 17.24.501A(1)(c).

F. Increased topographic diversity should result in better standard (nonalternate) reclamation. The creation of additional features not depicted on the PMT map is encouraged (no minor revision required) within the guidelines of A and B above, if these features do not adversely affect the approved postmine land use or revegetation and wildlife enhancement plans. These features include, but are not limited to, upland tributaries, cairns, knobs, hills capped with rock, and small depressions. Small depressions must comply with ARM 17.24.503.

III. Notification

A. A deviation from the approved PMT map that is not consistent with item II above requires the submittal and approval of a revision to the permit, ARM 17.24.415(1)(a).

(1) The revision to the permit must be approved prior to soil laydown, ARM 17.24.415(2).

(2) Departmental review of the revision application will be directed in accordance with 82-4-221(3), MCA and ARM 17.24.415 (major and minor revisions).

B. A deviation from the approved PMT map that is consistent with item II above does not require submittal and approval of a revision to the permit; however, consultation with the Department is required.

(1) Consultation can take place during mine inspection or through phone conversations,

if applicable.

(2) Written documentation is required. Written documentation can be made in the Department's mine inspection report or by the permittee, whichever is applicable. At a minimum, written documentation will include:

- (a) a description of the final graded topography or additional feature alteration;
- (b) justification/reasoning of why the alteration conforms with II above.

(3) Consultation with the Department and written documentation are crucial to the successful implementation of these guidelines. If, after consultation, it is determined that a divergence from the approved PMT plan is not consistent with II above, the permittee will be notified that a revision to the permit is necessary prior to proceeding with reclamation.

C. All features not consistent with the approved PMT plan must be highlighted in the Annual Report [ARM 17.24.1129(2)(g) and (j)]. This includes features approved through the revision process and through consultation with the Department.

D. Opportunistic practices, within the above constraints and in consultation with the Department, are encouraged.

¹ The term valley, as used in this guideline, includes any "elongate depression" (Webster's Third New International Dictionary) in the topography from large named drainages to draws, ravines, or dry washes. The term valley floor, as used in this guideline, should not be confused with alluvial valley floor.