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(4) The regulatory authority may specify design criteria for diversions to meet the requirements of this section.

(b) *Diversion of perennial and intermittent streams.* (1) Diversion of perennial and intermittent streams within the permit area may be approved by the regulatory authority after making the finding relating to stream buffer zones that the diversion will not adversely affect the water quantity and quality and related environmental resources of the stream.

(2) The design capacity of channels for temporary and permanent stream channel diversions shall be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion.

(3) The requirements of paragraph (a)(2)(ii) of this section shall be met when the temporary and permanent diversions for perennial and intermittent streams are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion.

(4) The design and construction of all stream channel diversions of perennial and intermittent streams shall be certified by a qualified registered professional engineer as meeting the performance standards of this part and any design criteria set by the regulatory authority.

(c) *Diversion of miscellaneous flows.* (1) Miscellaneous flows, which consist of all flows except for perennial and intermittent streams, may be diverted away from disturbed areas if required or approved by the regulatory authority. Miscellaneous flows shall include ground-water discharges and ephemeral streams.

(2) The design, location, construction, maintenance, and removal of diversions of miscellaneous flows shall meet all of the performance standards set forth in paragraph (a) of this section:

(3) The requirements of paragraph (a)(2)(ii) of this section shall be met when the temporary and permanent diversions for miscellaneous flows are designed so that the combination of

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channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 2-year, 6-hour precipitation event for a temporary diversion and a 10-year, 6-hour precipitation event for a permanent diversion.

[48 FR 43991, Sept. 26, 1983]

§ 816.45 Hydrologic balance: Sediment control measures.

(a) Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to:

(1) Prevent, to the extent possible, additional contributions of sediment to streamflow or to runoff outside the permit area,

(2) Meet the more stringent of applicable State or Federal effluent limitations,

(3) Minimize erosion to the extent possible.

(b) Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed area shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include but are not limited to—

(1) Disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation as required in § 816.111(b);

(2) Stabilizing the backfill material to promote a reduction in the rate and volume of runoff, in accordance with the requirements of § 816.102;

(3) Retaining sediment within disturbed areas;

(4) Diverting runoff away from disturbed areas;

(5) Diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion;

(6) Using straw dikes, riprap, check dams, mulches, vegetative sediment

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filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment; and

(7) Treating with chemicals.

[44 FR 15395, Mar. 13, 1979, as amended at 48 FR 44780, Sept. 30, 1983]

§ 816.46 Hydrologic balance: Siltation structures.

(a) For the purpose of this section only, *disturbed areas* shall not include those areas—

(1) In which the only surface mining activities include diversion ditches, siltation structures, or roads that are designed constructed and maintained in accordance with this part; and

(2) For which the upstream area is not otherwise disturbed by the operator.

(b) *General requirements.* (1) Additional contributions of suspended solids sediment to streamflow or runoff outside the permit area shall be prevented to the extent possible using the best technology currently available.

(2) All surface drainage from the disturbed area shall be passed through a siltation structure before leaving the permit area, except as provided in paragraph (b)(5) or (e) of this section.

(3) Siltation structures for an area shall be constructed before beginning any surface mining activities in that area, and upon construction shall be certified by a qualified registered professional engineer, or in any State which authorizes land surveyors to prepare and certify plans in accordance with § 780.25(a) of this chapter a qualified registered professional land surveyor, to be constructed as designed and as approved in the reclamation plan.

(4) Any siltation structure which impounds water shall be designed, constructed and maintained in accordance with § 816.49 of this chapter.

(5) Siltation structures shall be maintained until removal is authorized by the regulatory authority and the disturbed area has been stabilized and revegetated. In no case shall the structure be removed sooner than 2 years after the last augmented seeding.

(6) When siltation structure is removed, the land on which the siltation structure was located shall be regraded

and revegetated in accordance with the reclamation plan and §§ 816.111 through 816.116 of this chapter. Sedimentation ponds approved by the regulatory authority for retention as permanent impoundments may be exempted from this requirement.

(c) *Sedimentation ponds.* (1) When used, sedimentation ponds shall—

(i) Be used individually or in series;

(ii) Be located as near as possible to the disturbed area and out of perennial streams unless approved by the regulatory authority, and

(iii) Be designed, constructed, and maintained to—

(A) Provide adequate sediment storage volume;

(B) Provide adequate detention time to allow the effluent from the ponds to meet State and Federal effluent limitations;

(C) Contain or treat the 10-year, 24-hour precipitation event (“design event”) unless a lesser design event is approved by the regulatory authority based on terrain, climate, other site-specific conditions and on a demonstration by the operator that the effluent limitations of § 816.42 will be met;

(D) Provide a nonclogging dewatering device adequate to maintain the detention time required under paragraph (c)(1)(iii)(B) of this section;

(E) Minimize, to the extent possible, short circuiting;

(F) Provide periodic sediment removal sufficient to maintain adequate volume for the design event;

(G) Ensure against excessive settlement;

(H) Be free of sod, large roots, frozen soil, and acid- or toxic-forming coal-processing waste; and

(I) Be compacted properly.

(2) *Spillways.* A sedimentation pond shall include either a combination of principal and emergency spillways or single spillway configured as specified in § 816.49(a)(9).

(d) *Other treatment facilities.* (1) Other treatment facilities shall be designed to treat the 10-year, 24-hour precipitation event unless a lesser design event is approved by the regulatory authority based on terrain, climate, other