

## 405 KAR 30:310. Diversion of flows and water withdrawal.

RELATES TO: KRS 350.600

STATUTORY AUTHORITY: KRS 151.125, 224.033, 350.028, 350.050, 350.600

NECESSITY, FUNCTION, AND CONFORMITY: KRS 350.600 requires the Environmental and Public Protection Cabinet to develop administrative regulations for oil shale operations to minimize and prevent their adverse effects on the citizens and environment of the Commonwealth. This administrative regulation sets forth requirements for design and construction of temporary and permanent diversions of overland flow, shallow groundwater flow, ephemeral streams, and intermittent and perennial streams and water withdrawals.

Section 1. Diversions and Conveyance of Overland Flow and Shallow Groundwater Flow, and Ephemeral Streams. Overland flow, including flow through litter, and shallow groundwater flow from undisturbed areas, and flow in ephemeral streams, may be diverted away from disturbed areas by means of temporary or permanent diversions, if required or approved by the cabinet as necessary to minimize erosion, to reduce the volume of water to be treated, and to prevent or remove water from contact with acid-forming or toxic-forming materials. The following requirements shall be met for all diversions and for all collection drains that are used to transport water into water treatment facilities and for all diversions of overland and shallow groundwater flow and ephemeral streams:

(1) Temporary diversions shall be constructed to pass safely the peak run-off from a precipitation event with a two (2) year recurrence interval, or a larger event as specified by the cabinet.

(2) To protect fills and property and to avoid danger to public health and safety, permanent diversions shall be constructed to pass safely the peak run-off from a precipitation event with a ten (10) year recurrence interval, or a larger event as specified by the cabinet. Permanent diversions shall be constructed with gently sloping banks that are stabilized by vegetation. Asphalt, concrete, or other similar linings shall be used only when approved by the cabinet to prevent seepage or to provide stability.

(3) Diversions shall be designed, constructed, and maintained in a manner which prevents additional contributions of suspended solids to stream flow and to run off outside the permit area, to the extent possible using the best technology currently available.

Appropriate sediment control measures for these diversions may include, but not be limited to, maintenance of appropriate gradients, channel lining, revegetation, roughness structures, and detention basins.

(4) No diversion shall be located so as to increase the potential for land slides. No diversion shall be constructed on existing land slides, unless approved by the cabinet.

(5) When no longer needed, each temporary diversion shall be removed and the affected land regraded, topsoiled, and revegetated in accordance with 405 KAR 30:290, 405 KAR 30:390, and 405 KAR 30:400.

(6) Diversion design shall incorporate the following:

(a) Channel lining shall be designed using standard engineering practices to pass safely the design velocities.

(b) Freeboard shall be no less than three-tenths (0.3) feet. Protection shall be provided for transition of flows and for critical areas such as swales and curves. Where the area protected is a critical area as determined by the cabinet, the design freeboard may be increased.

(c) Energy dissipators shall be installed, when necessary, at discharge points, where diversions intersect with natural streams and exit velocity of the diversion ditch flow is greater than that of the receiving stream.

(d) Excess excavated material not necessary for diversion channel geometry or regrading of the

channel shall be disposed of in accordance with the plan approved by the cabinet and submitted under 405 KAR 30:130, Section 6(13).

(e) Topsoil shall be handled in compliance with 405 KAR 30:290.

Section 2. Stream Channel Diversions. (1) Flow from perennial and intermittent streams within the permit area may be diverted, if the diversions:

(a) Comply with applicable local, state, and federal statutes and regulations;

(b) Pass the design flow (100 year storm) without causing an increase of more than one (1) foot over existing flood heights or an increase in potential flood hazard to life and/or property; and

(c) Pass the design velocities without causing any significant increase in flow velocities.

(2) When stream flow is allowed to be diverted, the stream channel diversion shall be designed, constructed, and removed, in accordance with the following:

(a) The longitudinal profile of the stream, the channel, and the flood plain shall be designed and constructed to remain stable and to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to stream flow or to run off outside the permit area. These contributions shall not be in excess of requirements of state or federal law. Erosion control structures such as channel lining structures, retention basins, and artificial roughness structures shall be used in diversions only when approved by the cabinet as being necessary to control erosion. These structures shall be approved for permanent diversions only where they are stable and will require infrequent maintenance.

(b) The combination of channel, bank, and flood plain configurations shall be adequate to pass safely the peak run-off of a ten (10) year, twenty-four (24) hour precipitation event for temporary diversions, a 100-year, twenty-four (24) hour precipitation event for permanent diversions, with drainage areas less than 200 acres, or larger events specified by the cabinet for drainage areas greater than 200 acres. However, the capacity of the channel itself should be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream of the diversion.

(3) When no longer needed to achieve the purpose for which they were authorized, all temporary stream channel diversions shall be removed and the affected land regraded and revegetated, in accordance with 405 KAR 30:290, 405 KAR 30:390, and 405 KAR 30:400. At the time diversions are removed, downstream water treatment facilities previously protected by the diversion shall be modified or removed to prevent overtopping or failure of the facilities. This requirement shall not relieve the permittee from maintenance of a water treatment facility otherwise required under 405 KAR or the permit.

(4) When permanent diversions are constructed or stream channels restored, after temporary diversions, the permittee shall:

(a) Restore, enhance where practicable, or maintain natural riparian vegetation on the banks of the stream;

(b) Establish or restore the stream to an environmentally acceptable meandering shape and gradient, as determined by the cabinet; and

(c) Establish or restore the stream to a longitudinal profile and cross-section, including aquatic habitats (usually a pattern of riffles, pools, and drops rather than uniform depth) that approximate premining stream channel characteristics.

Section 3. Stream Buffer Zones. (1) No land within 100 feet of a perennial stream or a stream with a biological community determined according to subsection (3) of this section shall be disturbed by oil shale operations unless the cabinet specifically authorizes such activities closer to or through such a stream under the following conditions.

(a) Any temporary or permanent diversion shall comply with all provisions of this administrative

regulation and shall be constructed prior to any disturbance of the buffer zone;

(b) That the original stream channel will be restored or relocated in a manner satisfactory to the cabinet; and

(c) During and after the mining, the water quantity and quality from the stream section within 100 feet of the surface mining activities shall not be adversely affected.

(2) The area not to be disturbed shall be designated a buffer zone and marked as specified in 405 KAR 30:210.

(3) A stream with a biological community shall be determined by the existence in the stream at any time of an assemblage of two (2) or more species of arthropods or mulluscan animals which are:

(a) Adapted to flowing water for all or part of their life cycle;

(b) Dependent upon a flowing water habitat;

(c) Reproducing or can reasonably be expected to reproduce in the water body where they are found; and

(d) Longer than two (2) millimeters at some stage of the part of their life cycle spent in the flowing water habitat.

Section 4. Water Withdrawals, Transfers or Diversions. Water withdrawals, transfers or diversions from public water shall comply with requirements set forth in KRS 151.140, KRS 151.150, KRS 151.160, KRS 151.170, KRS 151.200 and 401 KAR 4:010. (8 Ky.R. 124; 485; eff. 3-1-1982; TAm eff. 8-9-2007; Crt eff. 7-3-2018.)