

1 ENERGY AND ENVIRONMENT CABINET

2 Department for Environmental Protection

3 Division of Waste Management

4 (Amendment)

5 401 KAR 46:101. Definitions for 401 KAR Chapter 46.

6 RELATES TO: KRS 224.1, 224.10, 224.40-100, 224.50, 224.70, 224.99, 16 U.S.C. 1531,
7 33 U.S.C. 1251, 42 U.S.C. 82, 40 C.F.R. 257.53

8 STATUTORY AUTHORITY: KRS 224.10-100, 224.40-305, 224.50-760

9 NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100(28) authorizes the
10 cabinet to promulgate administrative regulations not inconsistent with the provisions of law
11 administered by the cabinet. KRS 224.50-760(1)(d) authorizes the cabinet to promulgate
12 administrative regulations for the management of special wastes. KRS 224.40-305 requires a waste
13 site or facility to obtain a permit from the cabinet. This administrative regulation defines terms
14 used in 401 KAR Chapter 46. Some federal terms have been replaced with the definitions
15 established in KRS Chapter 224. Definitions contained in KRS Chapter 224 have been referenced
16 to the appropriate statutory citation. Some terms do not have a federal counterpart and have been
17 added to clarify requirements and provisions of KRS Chapter 224 and 401 KAR Chapter 46.

18 Section 1. Definitions. Except as provided in this section, the definitions shall be as
19 defined~~established~~ in 40 C.F.R 257.53.

20 (1) “Alternative monitoring point” means any geologic feature natural to the
21 Commonwealth of Kentucky including cave streams, springs, seeps, or other similar karst

features or groundwater expressions formed by the intersection of a flowing body of groundwater at or below the local water table, below which the subsurface material is saturated with groundwater flow, and whose source groundwater is demonstrated to be hydraulically connected in part or whole to the contaminant source.

(2) "Alternative Performance Standard" means a standard that is different from the specific requirements of 401 KAR 46:110.

(3) "Ambient background" means the concentrations of naturally occurring substances and ubiquitous anthropogenic substances in the environment that are representative of the region surrounding the site not attributable to a release at another site and not attributable to an identifiable release at the site to which it applies. Ambient background samples may be impacted either by naturally occurring or ambient anthropogenic sources, but not by the source in question.

(4) "Cabinet" is defined by KRS 224.1-010(8)[224.1-010(9)].

(5) "Capture zone concentration" means the numerical value derived by calculating the groundwater mass discharge rate at or near the groundwater plume's downgradient terminus in order to calculate and predict a worst-case scenario concentration for contaminants of concern at an extraction point, including a domestic use well, a municipal well or a well field, stream, spring, or river, by assuming full capture of the plume where:

(a) Capture zone concentration is measured in mass over volume (M/L^3), $C_{sw} = M_d \div Q_{sw}$;

(b) C_{sw} = contaminant concentration in water extracted from the extraction point in units of M/L^3 as mg/L;

(c) M_d = mass discharge of plume located at or near the groundwater plume terminus in units of M/t as g/d; and

(d) Q_{sw} = pumping or extraction rate of extraction point in units of L^3/t as L/d.

1 (6) “Certification by a PE” means “certification” as defined by KRS 322.010(16).

2 (7) “CCR Formal Permit” means a permit issued by the cabinet to a facility for
3 construction, operation, corrective action, or closure in accordance with the requirements of this
4 Chapter.

5 (8) “CCR Permit-by-rule” means a permit for beneficial use of CCR management
6 practices established in 401 KAR 46:120, which shall be deemed to have a permit without the
7 user having made application or registration with the cabinet.

8 (9) “CCR Registered Permit-by-rule” means a permit for beneficial use of CCR
9 management practices established in 401 KAR 46:120, which shall be deemed to have a permit
10 without further action by the cabinet upon approval by the cabinet of a complete registration by
11 the user.

12 (10) “CCR unit” means any CCR landfill, CCR surface impoundment, or lateral
13 expansion of a CCR landfill or CCR surface impoundment, or a combination of more than one of
14 these units, based on the context of the paragraph in which it is used.

15 (11) “Coal combustion residuals (CCR)”:

16 (a) Is defined by 40 C.F.R. 257.53;

17 (b) Means “utility wastes” as defined by KRS 224.50-760(1)(a);

18 (c) Means solid wastes as defined by 40 C.F.R. 261.4(b)(4)(ii); or

19 (d) Means industrial solid wastes generated incidental to coal milling and the preparation
20 process prior to combustion, including mill rejects and pyrites, that are non-hazardous.

21 (12) “Commingled Facility” means a facility that contains a:

22 (a) Special waste landfill or special waste surface impoundment that is:

23 1. Subject to 401 KAR Chapter 45; and

1 2. Not subject to 401 KAR Chapter 46; and

2 (b) A CCR unit subject to 401 KAR Chapter 46.

3 (13) “Conceptual Site Model (CSM)” means a written and pictorial technical document
4 that represents a site-specific environmental system and the biological, physical, and chemical
5 processes that determine the transport of contaminants from sources through environmental
6 media to environmental exposure and extraction points to receptors within the system. The CSM
7 shall contain:

8 (a) Site-specific conditions;

9 (b) Data and information, including impacted groundwater, release history, mass strength,
10 and magnitude;

11 (c) Plume stability; and

12 (d) The fate and transport of contamination in relation to present and future exposure
13 pathways, point of exposure, extraction point, and the groundwater plume terminus.

14 (14) “Contaminant of Concern (COC)” means a contaminant listed in 40 C.F.R. 257,
15 Appendix III or IV that is sufficiently present in strength, mass, areal, vertical, or volumetric
16 extent and concentration in the environment above risk screening levels, maximum contaminant
17 levels, or ambient background, as appropriate, to require further evaluation of human health
18 effects and impact to an environmental resource and, as necessary, ecological health effects.

19 (15) “Darcy velocity” means the rate of flow of a water or liquid through a porous
20 medium due to the difference in hydraulic head, as a sum of the pressure head and elevation
21 head, proportional to the hydraulic gradient in the direction of flow over said distance. Darcy
22 velocity is measured in units of length over time (L/T), $q_i = k * \delta h / \delta l$ where;

23 (a) q_i = groundwater Darcy flux;

1 (b) k = hydraulic conductivity (L/T);

2 (c) δh = the difference in hydraulic head between two (2) points in the direction of flow;

3 and

4 (d) δl = the length between two (2) points in the direction of flow.

5 (16) “Deed notation” means “environmental covenant” as defined by KRS 224.80-
6 100(5).

7 (17)[(2) “Coal combustion residuals (CCR) permit by rule” or “CCR permit by rule”
8 means the beneficial use of CCR, consistent with 401 KAR Chapter 46, without the submission
9 of an application to the cabinet by a beneficial use of CCR user.

10 (3) “Coal combustion residuals registered permit by rule” or “CCR registered permit by-
11 rule” means authorization allowing the management, or disposal, upon notification as established
12 in 401 KAR 46:120, Section 1(1)(e)1.

13 (4)] “Disposal” is defined by KRS 224.1-010(9)[224.1-010(10)].

14 (18) “Engineering control” means a design and build apparatus, method, or structure that
15 is constructed in, into, or around a release to the environment necessary to control the risk
16 associated with it, and implemented to help minimize the potential for human exposure to
17 contamination and to protect the integrity of the remedy.

18 (19) “Exposure pathways” means the route a contaminant of concern takes from its
19 source to its end point, and how a receptor can come into contact with the contaminant of
20 concern.

21 (20) “Facility” means all contiguous land, and structures, appurtenances, and
22 improvements on the land, where an electric utility or independent power producer subject to the
23 requirements of this chapter, is located. A facility may contain multiple CCR units or CCRMUs,

1 (21) “Field deviation” means an unforeseen and encountered condition for a specific
2 construction event resulting in a change from the permitted design that does not meet the
3 definition of an alternative performance standard.

4 (22) “Formal Permit” means a permit for a CCR Unit issued by the cabinet after review
5 of the designated application form and completion by the applicant of the requirements
6 established in 401 KAR 46:120.

7 (23) “Groundwater extraction point” means the current or future point of exposure where
8 groundwater is:

9 (a) A groundwater resource that is or can be mechanically withdrawn for use as a
10 domestic use well, municipal well, or wellfield; or

11 (b) Expressed as surface water flow from a natural feature, including cave streams,
12 springs, seeps, or other similar karst features or groundwater expressions.

13 (24) “Groundwater plume terminus” means the plume end-point where a contaminant of
14 concern concentration falls below a maximum contaminant level or ambient background level.

15 (25) “Institutional control” means “environmental covenant” as defined by KRS 224.80-
16 100(5).

17 (26) “Karst feature” as defined by 401 KAR 45:105, Section 1(1).

18 (27) “Karst terrain” as defined by 401 KAR 47:005, Section 1(81).

19 (28) “Liquids” means “free liquids” as defined in 40 C.F.R. 257.53.

20 (29) “Mass discharge” means the total mass of contaminants of concern moving in the
21 groundwater from a given source. Commonly referred to in scientific literature variously as
22 contaminant mass discharge, total mass flux, and integrated mass flux. Mass discharge is a
23 quantification of the total contaminated groundwater’s source or plume strength, as the total

1 contaminant mass conveyed by a source or plume, at a given cross-sectional area location, and
2 measured as a daily-loading rate in units of mass per time as grams per day. $M_d = \sum (C_n * A_n * q_i)$ where:

4 (a) M_d = Mass discharge;

5 (b) C_n = Concentration in a representative polygon n of the total cross-sectional area;

6 (c) A_n = Area of the segment polygon n; and

7 (d) q_i = Groundwater Darcy velocity.

8 (30) "Migration pathway" means the course a contaminant takes in the environment and
9 moves away from the source to exposure point, extraction point, or receptor.

10 (31) "Operator" means the person responsible for the overall operation of a CCR unit as
11 listed on the CCR permit.

12 (32)[(5)] "Person" is defined by KRS 224.1-010(16)[224.1-010(17)].

13 (33) "Plume major axis" means the long axis along the general length of a groundwater
14 plume in the predominant downgradient flow direction.

15 (34) "Plume minor axis" means the short axis along the general width of a groundwater
16 plume perpendicular to the predominant downgradient flow direction.

17 (35) "Point of exposure" means the point at which a receptor is likely to come in contact
18 with a contaminant of concern.

19 (36) "Professional Engineer" or "PE" is defined by KRS 322.010(3).

20 (37) "Professional Geologist" or "PG" means "Registered geologist" as defined by KRS
21 322A.010(4).

22 (38) "Receptor" means a human or ecological entity potentially exposed to and adversely
23 affected by contaminants of concern that are present at the point of exposure.

1 (39) "Regional Screening Level (RSL)" is defined by KRS 224.1-530(1).

2 (40) "Residential" means a type of property used:

3 (a) As a residence or dwelling, including a house, apartment, or condominium; or

4 (b) For other purposes with a similar potential for human exposure.

5 ~~(41)[(6) "Secretary" is defined by KRS 224.1-010(24).~~

6 ~~(7)] "Solid waste" is defined by KRS 224.1-010(30)(a)[224.1-010(31)(a)].~~

7 ~~(42)[(8)] "Solid waste management" is defined by KRS 224.1-010(38)[224.1-010(39)].~~

8 (43) "Source" means the origin of the release of a contaminant of concern into
9 environmental media.

10 ~~(44)[(9)] "Special waste" is established by KRS 224.50-760(1)(a).~~

11 ~~(45)[(10)] "State" means the Commonwealth of Kentucky.~~

12 ~~(46)[(11)] "State director" means the Director of the Division of Waste Management~~
13 ~~["secretary" as defined by KRS 224.1-010(24)].~~

14 (47) "Target risk" means an excess cancer risk of one (1) in one (1) million for
15 carcinogenic endpoints and a hazard index of 1.0 for noncancerous endpoints in impacted
16 environmental media.

17 ~~(48)[(12)] "User" means the person beneficially using CCR in the Commonwealth of~~
18 ~~Kentucky.~~

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