

**§ 265.91**

**40 CFR Ch. I (7-1-06 Edition)**

(f) The Regional Administrator may replace all or part of the requirements of this subpart applying to a regulated unit (as defined in 40 CFR 264.90), with alternative requirements developed for groundwater monitoring set out in an approved closure or post-closure plan or in an enforceable document (as defined in 40 CFR 270.1(c)(7)), where the Regional Administrator determines that:

(1) A regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management unit(s) (or areas of concern) are likely to have contributed to the release; and

(2) It is not necessary to apply the requirements of this subpart because the alternative requirements will protect human health and the environment. The alternative standards for the regulated unit must meet the requirements of 40 CFR 264.101(a).

[45 FR 33232, May 19, 1980, as amended at 47 FR 1255, Jan. 11, 1982; 50 FR 4514, Jan. 31, 1985; 63 FR 56734, Oct. 22, 1998; 71 FR 16909, Apr. 4, 2006]

**§ 265.91 Ground-water monitoring system.**

(a) A ground-water monitoring system must be capable of yielding ground-water samples for analysis and must consist of:

(1) Monitoring wells (at least one) installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the waste management area. Their number, locations, and depths must be sufficient to yield ground-water samples that are:

(i) Representative of background ground-water quality in the uppermost aquifer near the facility; and

(ii) Not affected by the facility; and

(2) Monitoring wells (at least three) installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the waste management area. Their number, locations, and depths must ensure that they immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

(3) The facility owner or operator may demonstrate that an alternate hydraulically downgradient monitoring well location will meet the criteria outlined below. The demonstration must be in writing and kept at the facility. The demonstration must be certified by a qualified ground-water scientist and establish that:

(i) An existing physical obstacle prevents monitoring well installation at the hydraulically downgradient limit of the waste management area; and

(ii) The selected alternate downgradient location is as close to the limit of the waste management area as practical; and

(iii) The location ensures detection that, given the alternate location, is as early as possible of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

(iv) Lateral expansion, new, or replacement units are not eligible for an alternate downgradient location under this paragraph.

(b) Separate monitoring systems for each waste management component of a facility are not required provided that provisions for sampling upgradient and downgradient water quality will detect any discharge from the waste management area.

(1) In the case of a facility consisting of only one surface impoundment, landfill, or land treatment area, the waste management area is described by the waste boundary (perimeter).

(2) In the case of a facility consisting of more than one surface impoundment, landfill, or land treatment area, the waste management area is described by an imaginary boundary line which circumscribes the several waste management components.

(c) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed with a suitable material (e.g., cement grout or

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bentonite slurry) to prevent contamination of samples and the ground water.

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985; 56 FR 66369, Dec. 23, 1991]

### § 265.92 Sampling and analysis.

(a) The owner or operator must obtain and analyze samples from the installed ground-water monitoring system. The owner or operator must develop and follow a ground-water sampling and analysis plan. He must keep this plan at the facility. The plan must include procedures and techniques for:

- (1) Sample collection;
- (2) Sample preservation and shipment;
- (3) Analytical procedures; and
- (4) Chain of custody control.

[*Comment:* See "Procedures Manual For Ground-water Monitoring At Solid Waste Disposal Facilities," EPA-530/SW-611, August 1977 and "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1979 for discussions of sampling and analysis procedures.]

(b) The owner or operator must determine the concentration or value of the following parameters in ground-water samples in accordance with paragraphs (c) and (d) of this section:

(1) Parameters characterizing the suitability of the ground water as a drinking water supply, as specified in appendix III.

(2) Parameters establishing ground-water quality:

- (i) Chloride
- (ii) Iron
- (iii) Manganese
- (iv) Phenols
- (v) Sodium
- (vi) Sulfate

[*Comment:* These parameters are to be used as a basis for comparison in the event a ground-water quality assessment is required under § 265.93(d).]

(3) Parameters used as indicators of ground-water contamination:

- (i) pH
- (ii) Specific Conductance
- (iii) Total Organic Carbon
- (iv) Total Organic Halogen

(c)(1) For all monitoring wells, the owner or operator must establish initial background concentrations or val-

ues of all parameters specified in paragraph (b) of this section. He must do this quarterly for one year.

(2) For each of the indicator parameters specified in paragraph (b)(3) of this section, at least four replicate measurements must be obtained for each sample and the initial background arithmetic mean and variance must be determined by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year.

(d) After the first year, all monitoring wells must be sampled and the samples analyzed with the following frequencies:

(1) Samples collected to establish ground-water quality must be obtained and analyzed for the parameters specified in paragraph (b)(2) of this section at least annually.

(2) Samples collected to indicate ground-water contamination must be obtained and analyzed for the parameters specified in paragraph (b)(3) of this section at least semi-annually.

(e) Elevation of the ground-water surface at each monitoring well must be determined each time a sample is obtained.

[45 FR 33232, May 19, 1980, as amended at 50 FR 4514, Jan. 31, 1985]

### § 265.93 Preparation, evaluation, and response.

(a) Within one year after the effective date of these regulations, the owner or operator must prepare an *outline* of a ground-water quality assessment program. The outline must describe a more comprehensive ground-water monitoring program (than that described in §§ 265.91 and 265.92) capable of determining:

(1) Whether hazardous waste or hazardous waste constituents have entered the ground water;

(2) The rate and extent of migration of hazardous waste or hazardous waste constituents in the ground water; and

(3) The concentrations of hazardous waste or hazardous waste constituents in the ground water.

(b) For each indicator parameter specified in § 265.92(b)(3), the owner or operator must calculate the arithmetic mean and variance, based on at least