

**WAC 173-351-410 Groundwater sampling and analysis requirements.**

(1) The groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells installed in compliance with WAC 173-351-400 and with this section. The owner or operator must submit the sampling and analysis program documentation as a part of the permit application in accordance with WAC 173-351-730 (1)(b)(iii). The program must include procedures and techniques for:

- (a) Sample collection and handling;
- (b) Sample preservation and shipment;
- (c) Analytical procedures;
- (d) Chain-of-custody control;
- (e) Quality assurance and quality control;
- (f) Cleansing of drilling and sampling equipment;
- (g) Procedures to ensure employee health and safety during well installation and monitoring; and
- (h) Well operation and maintenance procedures.

(2) The groundwater monitoring program must include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples or reflect an acceptable practical quantitation limit (PQL). Groundwater samples must not be field-filtered prior to laboratory analysis except for geochemical indicator parameters used for cation-anion balance evaluations in WAC 173-351-430(5). All analyses must be sent to an accredited laboratory in accordance with chapter 173-50 WAC, Accreditation of environmental laboratories.

(3) Groundwater elevations must be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator must determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same MSWLF unit must be measured within a period of time short enough to avoid any groundwater fluctuations which could preclude the accurate determination of groundwater flow rate and direction. All groundwater elevations must be determined:

- (a) By a method that ensures measurement to the 0.01 (one/one hundredth) of a foot (3mm) relative to the top of the well casing; and
- (b) The orthometric elevation of the top of the well casing is related to a vertical benchmark based on the North American vertical datum of 1988 (NAVD88) and be established to 3rd order classification standards per federal geodetic control committee.

(4) The owner or operator must establish background groundwater quality in hydraulically placed upgradient or background well(s) for each of the monitoring parameters or constituents required in the particular groundwater monitoring program that applies to the MSWLF unit, as determined under WAC 173-351-430, 173-351-440, or 173-351-450. Background groundwater quality may be established at wells that are not located hydraulically upgradient from the MSWLF unit if it meets the requirements of WAC 173-351-400 through 173-351-490.

(5) The number of samples collected to establish water quality data must be consistent with the appropriate statistical procedures determined pursuant to WAC 173-351-420. The sampling procedures must be those specified under WAC 173-351-430 for detection monitoring, WAC 173-351-440 for assessment monitoring, and WAC 173-351-440(7) for remedial action.

[Statutory Authority: RCW 70.95.020(3), 70.95.060(1), and 70.95.260(1), (6). WSR 12-23-009 (Order 07-15), § 173-351-410, filed 11/8/12, effective 12/9/12. Statutory Authority: Chapter 70.95 RCW and 40 C.F.R. 258. WSR 93-22-016, § 173-351-410, filed 10/26/93, effective 11/26/93.]