

## MODULE VI

### GROUNDWATER MONITORING

#### VI.A. APPLICABILITY

- VI.A.1. The requirements of this Module shall pertain to all approved sumps specified in Table V-1 of Module V, *Disposal in Landfills*.
- VI.A.2. A “unit” within this Module shall be defined as a Mixed Waste Landfill Cell.
- VI.A.3. Within this Module, the term “compliance point” shall be defined as wells GW-130 through GW-136 as depicted within Attachment II-11, *Facility Drawings*.
- VI.A.3.a Sumps containing waste codes F020 through F023, F026, and F027 (dioxins and furans) shall have two “compliance point” monitoring wells located immediately down gradient of each sump pair. For example, if dioxin/furan waste is placed in sumps 8A and 8B, monitoring wells GW-132 and GW-133 will be designated as the “compliance point”.
- VI.A.4. Within this Module, the term “monitoring well” shall be defined as the wells identified in Condition VI.A.3. and wells GW-66R and I-1-30.
- VI.A.5. The installation of new monitoring wells shall require a permit modification in accordance with Condition I.D.2 of Module I, *Standard Conditions*.
- VI.A.6. As new land disposal units are completed at the Facility, the groundwater monitoring network associated with the new unit shall be subject to this Module.

#### VI.B. GROUNDWATER PROTECTION

- VI.B.1. The Permittee shall follow all of the provisions under Utah Admin. Code R315-8-6, Groundwater Protection, and as defined by these permit conditions. For purposes of this Permit, Utah Admin. Code R315-8-6 shall apply to all units at the Facility listed in Condition VI.A.1.
- VI.B.2. The Permittee shall submit to the Director for approval, a detailed plan for any proposed monitoring wells. The plan shall be submitted at least 30 calendar days prior to initiation of installation.
- VI.B.3. A certified map of the site shall be included with the monitoring well installation plan and shall provide the location of the existing monitoring wells and the unit being monitored.

VI.B.4. No additions to the monitoring network shall be installed until after the plan has been approved, in writing, by the Director.

VI.C. REQUIRED PROGRAMS

VI.C.1. The Permittee shall conduct a Detection Monitoring Program as outlined in Condition VI.F. for all units subject to these provisions.

VI.C.2. Whenever hazardous constituents described in Utah Admin. Code R315-8-6.4 are detected at any compliance point(s) in concentrations exceeding the groundwater concentration limits of Tables VI-1 and VI-2, the Permittee shall follow the requirements of Condition VI.I.

VI.C.3. Following completion of any required Compliance Monitoring Program or Corrective Action Program, the Permittee shall reinstate the Detection Monitoring Program in accordance with Condition VI.F.

VI.D. GROUNDWATER CONCENTRATION LIMITS

VI.D.1. The Director shall establish groundwater concentration limits for each hazardous constituent that has entered groundwater at the time the Detection Monitoring Program or other evidence indicates that hazardous constituents have entered groundwater beneath a unit.

VI.D.2. The Director may also determine at such time, the hazardous constituents that the protection standard applies to as defined in Utah Admin. Code R315-8-6.4, the concentration limits as defined in Utah Admin. Code R315-8-6.5, the point(s) of compliance under Utah Admin. Code R315-8-6.6, and the compliance period under Utah Admin. Code R315-8-6.7.

VI.D.3. The compliance period during which the groundwater protection standard applies shall commence upon issuance of this Permit and continue for at least 30 years following certification of closure.

VI.D.4. If the Permittee is conducting a Corrective Action Program at the end of the 30-year period specified in Condition VI.D.3., or is unable to demonstrate for the last three consecutive years of the 30-year period that the groundwater concentration limits have not been exceeded, the compliance period shall be extended beyond the 30 years until the Permittee demonstrates three years of compliance with the groundwater concentration limits. The Director shall extend the groundwater monitoring program if he finds that the extended period is necessary to protect human health and the environment.

VI.E. GENERAL GROUNDWATER MONITORING REQUIREMENTS

- VI.E.1. The Permittee shall comply with the following general requirements for groundwater monitoring:
- VI.E.1.a. The Permittee shall install a groundwater monitoring network that consists of a sufficient number of monitoring wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost (shallow, unconfined) aquifer that represent the quality of:
- VI.E.1.a.i. background water that has not been affected by leakage from a regulated unit; and
- VI.E.1.a.ii. groundwater passing the point(s) of compliance.
- VI.E.1.b. The Permittee shall follow requirements for measurement of the groundwater surface elevation in accordance with Attachment VI-1, *Groundwater Field Sampling Plan*.
- VI.E.1.c. The Permittee shall develop inferred flow nets from measured elevation information. A new flow net shall be developed each year from the annual elevation information.
- VI.E.1.d. The Permittee shall perform an annual survey of the top surface apron elevation of all monitoring wells. For any new monitoring wells, the Permittee shall place permanent survey markers.
- VI.E.1.e. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer at least once each year based on groundwater surface elevation measurements.
- VI.E.1.f. The Permittee shall notify the Director, in writing, at least 14 calendar days prior to any quarterly, semi-annual, or annual sampling event required by this Permit. The Permittee shall notify the Director in writing at least seven calendar days prior to any resampling event required by this Permit.
- VI.E.2. The Permittee shall install and maintain a groundwater monitoring network as specified below:
- VI.E.2.a. All monitoring wells shall be constructed in accordance with the techniques described in the Technical Enforcement Guidance Document (TEGD), OSWER-9950.1, September 1986, and 1992 TEGD Addendum, or latest version, and Utah Admin. Code R315-8-6.8(c).
- VI.E.2.b. The Permittee shall construct and maintain new monitoring wells in accordance with plans and specifications to be submitted to the Director for approval at the time of the permit modification in accordance with Condition VI.B.2.

- VI.E.2.c. Additional monitoring wells shall be installed to maintain and evaluate compliance if subsurface conditions change after permit issuance. Such changes may include but are not limited to: water level elevation; apparent flow direction changes; or detection of contaminants in a well.
- VI.E.2.d. Upon notification by the Director in writing, or as a result of a compliance action, the Permittee may be required to install and sample additional monitoring wells at any time during the active life of the Facility, closure periods, post-closure periods, or if new information reveals a need for additional monitoring to protect human health and the environment.
- VI.E.2.e. The Permittee shall submit monitoring well completion reports within 60 calendar days of installation. Completion reports shall include boring logs (representative of samples collected with a split barrel sampler, or rock corer), water level elevations, groundwater contour maps, well development results including hydraulic conductivity measurement(s) and other observations, as applicable.
- VI.E.2.f. Monitoring wells shall be maintained in an operational condition for the the active life of the facility and for the post-closure period. The Permittee shall notify the Director within 72 hours when any well is no longer properly functioning (e.g. a change in pumping rate, presence of sandy or silty materials, and cracked or broken casings) or when the Permittee intends to close one or more wells associated with the unit. The Director shall approve the conditions for replacement or correction of improperly operating well(s).
- VI.E.2.g. The Permittee shall determine, on an annual basis, the depth to the bottom of all monitoring wells. This information shall be used in well purging volume calculations.
- VI.E.2.h. All wells removed from the monitoring network shall be plugged and abandoned in accordance with Attachment VI-2, *Permanent Abandonment of Monitoring Wells*. A written report describing the well plugging and abandonment methods and details shall be submitted to the Director within 30 calendar days after the date the wells are plugged and abandoned.
- VI.E.3. The Permittee shall use the following techniques and procedures when collecting and analyzing samples from the groundwater monitoring wells:
- VI.E.3.a. Samples shall be collected by the techniques described in Attachment VI-1, *Groundwater Field Sampling Plan*. Purge water shall be placed in the Evaporation Tanks, the Surface Impoundment or the Decontamination Pad Settling Tank.
- VI.E.3.b. Samples shall be preserved and transported in accordance with the procedures specified in Attachment VI-1, *Groundwater Field Sampling Plan*.

VI.E.3.c. The Permittee shall only use analytical-test methods in accordance with the most recent EPA approved edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, or equivalent methods approved by the Director pursuant to Utah Admin. Code R315-2-15. All major peaks greater than 10% of the peak area or height of the closest internal standard shall be identified using the latest National Bureau of Standards (NBS) or a library that has been documented to the NBS as equivalent for performing compound identification. The quantity of these compounds shall be estimated based upon the nearest internal standard. Any major peak found during the analysis may become a target parameter. In addition, the following conditions shall be met:

VI.E.3.c.i. The Permittee shall provide at least one VOA trip blank for each cooler containing samples for VOC analysis. The Permittee shall also provide one set of replicates representing 10% of the total number of samples, one laboratory blank, and one VOA pour blank for analysis for each sampling event in the groundwater monitoring program.

VI.E.3.c.ii. The Permittee shall retain at the Facility throughout the post-closure care period, the raw organic and inorganic information for required sampling and analyses, including organics gas-chromatographs, mass spectral analyses, and Quality Assurance/Quality Control surrogate and spiking results.

VI.E.3.c.iii. Samples shall be tracked and controlled using the chain-of-custody procedures specified in Attachment VI-1, *Groundwater Field Sampling Plan*.

#### VI.F. DETECTION MONITORING PROGRAM

VI.F.1. The Permittee shall collect, preserve, and analyze groundwater samples in accordance with Condition VI.E.3.

VI.F.2. Monitoring well sampling shall be conducted on a quarterly basis for the first year after each monitoring well is installed. Following this, sample frequency shall be annually for each monitoring well for Class I Parameters listed in Table VI-1 and for Class II Parameters listed within Table VI-2. If a groundwater concentration limit is exceeded in accordance with Condition VI.I, sample frequency requirements of Conditions VI.I. and VI.J. apply.

VI.F.3. For purposes of the Detection Monitoring Program, there shall be two classes of parameters for measurement and analysis:

VI.F.3.a. Class 1 Groundwater Monitoring Parameters are provided in Table VI-1. These compounds are a subset of 40 CFR 261 Appendix VIII.

- VI.F.3.b. Class 2 Groundwater Monitoring Parameters are provided in Table VI-2. These compounds are a subset of 40 CFR 261 Appendix VIII.
- VI.F.3.c. Class 1 and Class 2 (excluding TDS and TSS) Groundwater Monitoring Parameters shall be used as the Principal Hazardous Constituents and Indicators.
- VI.F.4. The Permittee shall follow requirements defined in Utah Admin. Code R315-8-6.8.g. for establishing background water quality for Class 1 and Class 2 parameters.
- VI.F.5. The Permittee shall perform statistical analysis of Class 1 parameters in accordance with *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities*, Unified Guidance, March 2009, or most current version to determine whether changes to background levels have occurred. Reporting of the analysis shall include documentation of assumptions and methodology used in the analysis.
- VI.F.6. The Director may modify parameters or methods of analysis, including statistical analysis, for any samples upon written notice to the Permittee. Conditions requiring modification may include maintaining or upgrading the quality or type of data produced by the Permittee to account for background conditions; future conditions such as availability of improved analytical methods; the presence of better indicators; or more easily detectable parameters in leachate.
- VI.F.7. The Director may prescribe additional sampling and analysis for wastes contained in a unit or leachate deemed appropriate to determine whether a hazardous constituent may have originated from a unit; to establish appropriate monitoring parameters; or for other reasons.
- VI.F.8. The Permittee shall analyze samples from the monitoring wells and any additional required monitoring wells installed in accordance with Condition VI.E.2. The data shall be submitted to the Director according to the schedule found in Condition VI.G.2.
- VI.G. REPORTING AND RECORDKEEPING
- VI.G.1. The Permittee shall enter all monitoring, testing, and analytical data obtained in accordance with Condition VI.C. in the Facility operating record.
- VI.G.2. The Permittee shall submit to the Director the analytical results required by Conditions VI.E., VI.F., and VI.J. in accordance with the following schedule:

<u>Samples collected during the months of</u>	<u>Annual sampling events</u>	<u>Results due to the Director</u>
January-March		May 1
April-June	January-June	August 1
July-September		November 1
October-December		February 1

VI.G.3. The Permittee shall, within 30 calendar days after the analytical results have been submitted to the Director, determine whether there has been statistically significant evidence of contamination.

VI.G.4. The annual report shall also include:

VI.G.4.i. An updated inferred flow net.

VI.G.4.ii. A summary of the top-of-surface apron elevations for all monitoring wells.

VI.G.4.iii. An updated groundwater flow-rate and direction map using saline groundwater elevations.

VI.G.4.iv. A summary of the total depth for all monitoring wells.

VI.G.4.v. A summary of notifications made, if any, that a groundwater concentration limit has been exceeded as defined by Condition VI.I.1.

VI.G.4.vi. A summary of statistical analyses as specified in Condition VI.F.5.

VI.H. ASSURANCE OF COMPLIANCE

VI.H.1. The Permittee shall assure that monitoring and corrective action measures necessary to achieve compliance with the groundwater protection standard are taken during the term of this Permit.

VI.I. SPECIAL REQUIREMENTS IF GROUNDWATER CONCENTRATION LIMIT IS EXCEEDED

VI.I.1. If a concentration limit is exceeded at any monitoring well, the Permittee shall notify the Director, in writing, within seven calendar days of analytical confirmation. The notification shall indicate which limits have been exceeded. This notification shall not be required for the Class 2 parameters: TDS and TSS. A groundwater concentration limit shall be determined to be exceeded if any of the following criteria are met:

- VI.I.1.a. The analytical value for any hazardous waste constituent exceeds the concentration limit listed in Table VI-1 and VI-2, excluding TDS and TSS.
- VI.I.1.b. Any hazardous waste constituent analytical value is determined to be a statistically significant increase over background levels specified in Condition VI.F.5.
- VI.I.2. For any well where one or more parameters are found to exceed a groundwater concentration limit, the well shall be resampled in accordance with Condition VI.E.3., unless the Director has determined that resampling is not necessary.
- VI.I.3. If exceedances of the groundwater concentration limit are indicated, the Permittee shall notify the Director at least seven calendar days prior to resampling. A copy of the initial data shall be provided along with the resampling data to the Director with a determination of whether there is statistically significant evidence of contamination.
- VI.I.4. Resampling need only take place for those compounds and at those wells where exceedances of the groundwater concentration limit are indicated.
- VI.I.5. If the analysis for the resampled well or wells indicates exceedance of the groundwater concentration limit, the Permittee shall resample again not more than three months following the original annual sampling event. The Permittee shall provide the results within 60 calendar days of sampling to the Director.
- VI.I.6. If the analysis of the third consecutive sample exceeds the groundwater concentration limits listed in Tables VI-1 and VI-2 excluding TDS and TSS, the Permittee shall determine if the constituents are from a hazardous waste unit. The Permittee may make a demonstration that the groundwater concentration limit was exceeded due to sources other than a regulated unit or errors in sampling, analysis, or evaluation as follows:
  - VI.I.6.a. The Permittee shall notify the Director in writing, within seven calendar days of receiving the third sample results, that a demonstration will be made.
  - VI.I.6.b. The Permittee shall submit a report to the Director, within 90 calendar days of notification under Condition VI.I.6.a., which demonstrates the source that caused the groundwater concentration limit to be exceeded or that the apparent non-compliance was a result of an error in sampling, analysis, or evaluation.
  - VI.I.6.c. The Permittee shall continue compliance monitoring in accordance with Condition VI.J. until it has received written notification from the Director that detection monitoring may resume.



- VI.I.7. If the constituents are from a hazardous waste unit, the Permittee shall institute a Compliance Monitoring Program in accordance with Condition VI.J. and a Corrective Action Program in accordance with Condition VI.K.
- VI.I.8. If the constituents are not from a hazardous waste unit, the Permittee shall continue quarterly compliance monitoring until the source of detected constituents is determined.

VI.J. COMPLIANCE MONITORING REQUIREMENTS

- VI.J.1. The Compliance Monitoring Program and assessment shall begin for monitoring wells at the time the third sample exceeds a groundwater concentration limit in accordance with Condition VI.I.6. The Compliance Monitoring Program shall continue until the Permittee demonstrates that the groundwater concentration limit in Condition VI.D. has not been exceeded at the compliance point(s) for three consecutive years.
- VI.J.2. Within 90 calendar days of the determination that a Compliance Monitoring Program is required; the Permittee shall submit to the Director a Class 3 modification to establish a Compliance Monitoring Program meeting the requirements of Utah Admin. Code R315-8-6.10 for the hazardous waste unit showing evidence of contamination. The modification shall include, at a minimum, the following information:
- VI.J.2.a. Parameters specified in Tables VI-1 and VI-2 that exceed concentration limits in groundwater at each monitoring well;
- VI.J.2.b. Proposed changes to the groundwater monitoring network necessary to meet the requirements of Utah Admin. Code R315-8-6.10;
- VI.J.2.c. Proposed changes to the monitoring frequency, sampling, and analysis procedures used at the Facility necessary to meet the requirements of Utah Admin. Code R315-8-6.10; and
- VI.J.2.d. For each hazardous constituent found at the compliance point, a proposed concentration limit or a notice of intent to seek an alternate concentration limit in accordance with Utah Admin. Code R315-8-6.5(b).
- VI.J.2.e. The Permittee shall assure that monitoring and corrective action measures necessary to achieve compliance with the groundwater concentration limits of Utah Admin. Code R315-8-6.3 and Condition VI.D., are taken during the term of the permit modification.

- VI.J.3. Within 180 calendar days of the notice to seek an alternate concentration limit, the Permittee shall submit to the Director all data necessary to justify any alternate concentration limit sought in accordance with Utah Admin. Code R315-8-6.5(b).
- VI.J.4. The Compliance Monitoring Program shall consist of quarterly sampling of Class 1 and Class 2 parameters and annual sampling for Utah Admin. Code R315-50-10 hazardous constituents. The initial sampling for these parameters shall be performed within 120 calendar days of entry into the Compliance Monitoring Program.
- VI.J.5. Following the first sampling event according to Condition VI.J.4. for hazardous constituents, sampling shall occur during the first quarter of each year.
- VI.J.6. The Director may require any additional field tests, monitoring well installation, or further analytical tests necessary to adequately assess the horizontal and vertical rate and extent of migration of the contaminants, including the unsaturated zone routes of migration.
- VI.J.7. In the event of groundwater contamination caused by any regulated unit or solid waste management unit within a waste management area that is determined to be the source of hazardous constituents in groundwater, the unit shall be closed, repaired, or otherwise managed in accordance with any relevant specific conditions of this Permit for a unit requiring action.
- VI.K. CORRECTIVE ACTION REQUIREMENTS
- VI.K.1. If a Corrective Action Program is required in accordance with Condition VI.I.7., the Permittee shall take corrective action to ensure that units are in compliance with the groundwater concentration limits in accordance with Condition VI.D.
- VI.K.2. The Permittee shall implement a Corrective Action Program that prevents hazardous constituents from exceeding the concentration limits at the compliance points by removing the hazardous constituents or treating them in place. A Class 3 permit modification that specifies the measures to be taken shall be submitted to the Director within 180 calendar days of determination that corrective actions are necessary.
- VI.K.3. In conjunction with a Corrective Action Program, the Permittee shall establish and implement a Groundwater Monitoring Program to demonstrate the effectiveness of the Corrective Action Program. The Groundwater Monitoring Program may be based on the requirements for a Compliance Monitoring Program as specified in Condition VI.J.
- VI.K.4. The Permittee shall report semi-annually in writing to the Director on the effectiveness of the Corrective Action Program.

- VI.K.5. The Permittee shall continue corrective action measures for as long as necessary to achieve compliance with the groundwater concentration limit.
- VI.K.6. If the Permittee determines that the Corrective Action Program is no longer needed or no longer satisfies the requirements of Condition VI.K, the Permittee shall, within 90 calendar days, submit a Class 3 permit modification request to the Director to modify or terminate the Corrective Action Program. Corrective action measures under this Permit may be terminated once the concentration of hazardous constituents meets the criteria in Condition VI.D. for three consecutive years.
- VI.K.7. The Permittee shall institute the Corrective Action Program as necessary to protect human health and the environment from all releases of hazardous waste or constituents from any Solid Waste Management Unit at the Facility, regardless of the time at which the waste was applied in the unit. This requirement shall remain in force for the life of this Permit and through the closure/post-closure periods for all regulated units at the Facility.

Table VI-1  
 CLASS 1 GROUNDWATER MONITORING PARAMETERS

<u>Hazardous Waste Constituent</u>	<u>Test Method (or most current SW846 Method)</u>	<u>PQL (Practical Quantitation Limit (µg/l))</u>	<u>Concentration limit (µg/l)</u>	<u>Hazardous Waste Constituent</u>	<u>Test Method (or most current SW846 Method)</u>	<u>PQL (Practical Quantitation Limit (µg/l))</u>	<u>Concentration limit (µg/l)</u>
Acenaphthene	8270C	10	10	Carbon disulfide	8260B	5	5
Acenaphthylene	8270C	10	10	Carbon tetrachloride	8260B	5	5
Acetone	8260B	25	100	p-Chloroaniline	8270C	10	20
Acetophenone	8270C	10	10	Chlorobenzene	8260B	5	5
2-Acetylaminofluorene: 2-AAF	8270C	10	10	Chlorobenzilate (4-chloro-3-methyl phenol)	8270C	30	10
Acrolein	8260B	200	200	p-Chloro-m-cresol	8270C	25	25
Acrylonitrile	8260B	20	20	Chloroethane; Ethyl chloride	8260B	10	10
Aldrin	8081A	10	10	Chloroform	8260B	5	5
Allyl chloride	8260B	20	100	2-Chloronaphthalene	8270C	10	10
4-Aminobiphenyl	8270C	10	10	2-Chlorophenol	8270C	25	10
Aniline	8270C	10	10	4-Chlorophenyl phenyl ether	8270C	10	10
Anthracene	8270C	10	10	Chloroprene	8260B	200	200
Aramite	8270C	10	10	Chrysene	8270C	10	10
Benzene	8260B	5	5	m-Cresol	8270C	25	25
Benzo(a)anthracene;	8270C	10	10	O-Cresol	8270C	25	25
Benzanthracene							
Benzo(b)fluoranthene	8270C	10	10	p-Cresol	8270C	25	25
Benzo(k)fluoranthene	8270C	10	10	4,4'- DDD	8081A	0.20	10
Benzo(ghi)perylene	8270C	10	10	4,4'- DDE	8081A	0.20	10
Benzo(a)pyrene	8270C	10	10	4,4' - DDT	8081A	0.20	10
Benzyl alcohol	8270C	25	25	Diallate	8270C	20	20
Bis(2-chloroethoxy)methane	8270C	50	50	Dibenz(a,h)anthracene	8270C	10	10
Bis(2-Chloroethyl)ether	8270C	10	10	Dibenzofuran	8270C	10	10
Bis(2-chloro-1-methylethyl)ether	8270C	10	10	Dibromochloromethane;	8260B	5	5
2,2'-Dichlorodiisopropyl ether				Chlorodibromomethane			
Bis(2-ethylhexyl)phthalate	8270C	10	10	1,2-Dibromo-3-chloropropane;	8260B	5	5
				DBCP			
Bromodichloromethane	8260B	5	5	1,2 - Dibromoethane; Ethylene dibromide	8260B	5	5
Bromoform: Tribromomethane	8260B	5	5	Di-n-butyl phthalate	8270C	25	25
4-Bromophenyl phenyl ether	8270C	10	10	O-Dichlorobenzene	8260B	10	10
Butyl benzyl phthalate; Benzyl buthalate	8270C	25	25	m-Dichlorobenzene	8260B	10	10

<u>Hazardous Waste Constituent</u>	<u>Test Method (or most current SW846 Method)</u>	<u>PQL (Practical Quantitation Limit (µg/l))</u>	<u>Concentration limit (µg/l)</u>	<u>Hazardous Waste Constituent</u>	<u>Test Method (or most current SW846 Method)</u>	<u>PQL (Practical Quantitation Limit (µg/l))</u>	<u>Concentration limit (µg/l)</u>
p-Dichlorobenzene	8260B	10	75	Endosulfan sulfate	8081A	0.10	10
3,3' - Dichlorobenzidine	8270C	10	20	Endrin aldehyde	8081A	0.10	10
trans - 1,4-Dichloro-2-butene	8260B	20	20	Ethylbenzene	8260B	5	5
Dichlorodifluoromethane	8260B	5	5	Ethyl methacrylate	8260B	20	10
1,1 – Dichloroethane	8260B	5	5	Ethyl methanesulfonate	8270C	10	10
1,2-Dichloroethane; Ethylene dichloride	8260B	5	5	Famphur	8270C	10	10
1,1 - Dichloroethene; Vinylidene chloride	8260B	5	5	Fluoranthene	8270C	10	10
trans-1,2-Dichloroethylene	8260B	5	5	Fluorene	8270C	10	10
2,4-Dichlorophenol	8270C	25	10	Heptachlor	8081A	0.10	10
2,6-Dichlorophenol	8270C	25	25	Heptachlor epoxide	8081A	0.10	10
1,2'-Dichloropropane	8260B	5	5	Hexachlorobenzene	8270C	10	10
cis-1,3-Dichloropropene	8260B	5	5	Hexachlorobutadiene	8270C	10	10
trans-1,3-Dichloropropene	8260B	5	5	Hexachlorocyclopentadiene	8270C	20	10
Dieldrin	8081A	10	10	Hexachloroethane	8270C	10	10
Diethyl phthalate	8270C	10	10	Hexachlorophene	8270C	400	400
0,0-Diethyl 0-(2-pyrazinyl) phosphorothiosate; Thionazi	8270C	10	10	Hexachloropropene	8270C	10	10
Dimethoate	8270C	200	100	2-Hexanone	8260B	20	50
p-(Dimethylamino)azobenzene	8270C	10	10	Indeno(1,2,3-cd)pyrene	8270C	10	10
7,12-Dimethylbenz(a)anthracene	8270C	10	10	Isodrin	8081A	0.10	10
3,3'-Dimethylbenzidine	8270C	10	10	Isophorone	8270C	10	10
alpha, alpha-Dimethylphenethylamine	8270C	40	20	Isosafrole	8270C	10	10
2,4-Dimethylphenol	8270C	25	25	Kepone	8270C	100	100
Dimethyl phthalate	8270C	10	10	Methacrylonitrile	8260B	20	20
m-Dinitrobenzene	8270C	10	10	Methapyrilene	8270C	20	20
4,6-Dinitro-o-cresol (4,6-Dinitro-2-Methylphenol)	8270C	50	50	Methoxychlor	8081A	0.10	100
2,4 Dinitrophenol	8270C	25	50	Methyl bromide; Bromomethane	8260B	5	5
2,4-Dinitrotoluene	8270C	10	10	Methyl chloride; Chloromethane	8260B	5	5
2,6-Dinitrotoluene	8270C	10	10	3-Methylcholanthrene	8270C	10	10
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	8270C	40	160	Methylene bromide; Dibromomethane	8260B	5	5
Di-n-octyl phthalate	8270C	10	10	Methylenechloride; Dichlormethane	8260B	5	5
Diphenylamine	8270C	10	10	Methyl ethyl ketone; MEK	8260B	25	100
Disulfoton	8270C	20	10	Methyl iodide; Iodomethane	8260B	20	20

<u>Hazardous Waste Constituent</u>	<u>Test Method (or most current SW846 Method)</u>	<u>PQL (Practical Quantitation Limit (µg/l))</u>	<u>Concentration limit (µg/l)</u>	<u>Hazardous Waste Constituent</u>	<u>Test Method (or most current SW846 Method)</u>	<u>PQL (Practical Quantitation Limit (µg/l))</u>	<u>Concentration limit (µg/l)</u>
Methyl methacrylate	8260B	20	20	Phenol	8270C	25	25
Methyl methanesulfonate	8270C	10	10	p-Phenylenediamine	8270C	100	100
2-Methylnaphthalene	8270C	10	10	Phorate	8270C	20	15
Methyl parathion; Parathion methyl	8270C	20	20	2-Picoline	8270C	10	10
4-Methyl-2-pentanone; Methyl isobutylketone	8260B	12.5	200	Polychlorinated Biphenyls	8082	0.5*	0.5*
Naphthalene	8270C	10	10	Pronamide	8270C	10	10
1,4-Naphthoquinone	8270C	20	10	Propionitrile; Ethyl cyanide	8260B	250	250
1-Naphthylamine	8270C	10	10	Pyrene	8270C	10	10
2-Naphthylamine	8270C	10	10	Pyridine	8270C	10	5
O-Nitroaniline	8270C	10	50	Safrole	8270C	10	10
m-Nitroaniline	8270C	10	50	Styrene	8260B	5	5
p-Nitroaniline	8270C	10	50	1,2,4,5-Tetrachlorobenzene	8270C	10	10
Nitrobenzene	8270C	10	10	1,1,1,2-Tetrachloroethane	8260B	5	5
O-Nitrophenol	8270C	25	25	1,1,2,2-Tetrachloroethane	8260B	5	5
p-Nitrophenol	8270C	25	50	Tetrachloroethylene; Perchloroethylene; Tetrachloroethene	8260B	5	5
4-Nitroquinoline 1-oxide	8270C	100	50	2,3,4,6-Tetrachlorophenol	8270C	20	10
N-Nitrosodi-n-butylamine	8270C	10	10	Tetraethyl dithiopyrophosphate; Sulfotepp	8270C	10	10
N-Nitrosodiethylamine	8270C	10	10	Toluene	8260B	5	5
N-Nitrosodimethylamine	8270C	10	10	o-Toluidine	8270C	10	10
N-Nitrosodiphenylamine	8270C	10	10	1,2,4-Trichlorobenzene	8270C	10	10
N-Nitrosodipropylamine; Di-n-propylnitrosamine	8270C	10	10	1,1,1-Trichloroethane; Methylchloroform	8260B	5	10
N-Nitrosomethylethylamine	8270C	10	10	1,1,2-Trichloroethane	8260B	5	5
N-Nitrosomorpholine	8270C	10	10	Trichloroethylene; Trichloroethene	8260B	5	5
N-Nitrosopiperidine	8270C	10	10	Trichlorofluoromethane	8260B	5	5
N-Nitrosopyrrolidine	8270C	10	10	2,4,5-Trichlorophenol	8270C	25	25
5-Nitro-o-toluidine	8270C	10	10	2,4,6-Trichlorophenol	8270C	25	25
Parathion	8270C	30	30	1,2,3-Trichloropropane	8260B	5	5
Pentachlorobenzene	8270C	10	10	O,O,O-Triethyl phosphorothioate	8270C	10	10
Pentachloroethane	8260B	100	100	sym-Trinitrobenzene	8270C	10	10
Pentachloronitrobenzene	8270C	10	10	Vinyl acetate	8260B	5	5
Pentachlorophenol	8270C	25	50	Vinyl chloride	8260B	5	2
Phenacetin	8270C	10	10	Xylene (total)	8260B	15	15
Phenanthrene	8270C	10	10	OCDF	8290	100	100
2,3,7,8-TCDD	8290	10	10	1,2,3,7,8-PeCDD	8290	50	50

1,2,3,4,7,8-HeCDD	8290	50	50	1,2,3,6,7,8-HeCDD	8290	50	50
1,2,3,7,8,9-HeCDD	8290	50	50	1,2,3,4,6,7,8-HpCDD	8290	50	50
OCDD	8290	100	100	2,3,7,9-TCDF	8290	10	10
1,2,3,7,8-PeCDF	8290	50	50	2,3,4,7,8-PeCDF	8290	50	50
1,2,3,4,7,8-HeCDF	8290	50	50	1,2,3,6,7,8-HeCDF	8290	50	50
2,3,4,6,7,8-HeCDF	8290	50	50	1,2,3,7,8,9-HeCDF	8290	50	50
1,2,3,4,6,7,8-HpCDF	8290	50	50	1,2,3,4,7,8,9-HpCDF	8290	50	50

\*The Groundwater Concentration Limit for PCBs expressed as the total of all detectable Aroclors shall be 0.5 µg/l.

Table VI-2  
 CLASS 2 GROUNDWATER MONITORING PARAMETERS

<u>Hazardous Waste Constituent</u>	<u>Test Method (or most current SW846 Method)</u>	<u>PQL (Practical Quantitation Limit (µg/l))</u>	<u>Concentration limit (µg/l)</u>	<u>Hazardous Waste Constituent</u>	<u>Test Method (or most current SW846 Method)</u>	<u>PQL (Practical Quantitation Limit (µg/l))</u>	<u>Concentration limit (µg/l)</u>
Antimony (unfiltered)	6020A 7040	300 300	300 300	Selenium (unfiltered)	6020A	100	100
Arsenic (unfiltered)	6020A 7060A	100 500	500 500	Silver (unfiltered)	7760A 6020 A	70 15	70 400
Barium (unfiltered)	6020A 7080A	20 100	2000 2000	Sulfide (unfiltered)	EPA 376.1 EPA 376.2 9030B	3,500	3,500
Beryllium (unfiltered)	6020A 7090	2 5	3 5	Thallium (unfiltered)	6020A 7840	100 400	400 400
Cadmium (unfiltered)	6020A 7130	10 40	40 40	Vanadium (unfiltered)	6020A 7910	15 200	80 200
Chromium (unfiltered)	6020A 7190	70 70	70 70	Zinc (unfiltered)	6020A 7950	250 20	250 20
Cobalt (unfiltered)	6020A 7200	10 70	70 70	Turbidity (unfiltered)	EPA 180.1	N/A	N/A
Copper (unfiltered)	6020A 7210	50 60	60 60			<u>PQL (Practical Quantitation Limit (mg/l))</u>	<u>Concentration limit (mg/l)</u>
Lead (unfiltered)	6020A 7420	80 100	80 100	Total Dissolved Solids (TDS) (unfiltered)	EPA 160.1	50,000	50,000
Mercury (unfiltered)	7470	0.5	2	Total Suspended Solids (TSS) (unfiltered)	EPA 160.2	50,000	50,000
Nickel (unfiltered)	6020A 7520 OR 7521	50 50	50 50				

END OF MODULE VI