

Target Detection Limit and Methods 2004 and 2016 Comparison Information

Revisions from 2004 tables of TDLs and designated analytical methods list:

- Reformatted to be consistent with clean up criteria table
- TDLs and methods added for vapor intrusion screening levels
- TDLs and methods added for contaminants not previously provided
- Contaminants removed where no cleanup criteria or screening levels are available
- Contaminants naming revised to be consistent with cleanup criteria table
- TDLs for water and soil reduced where lower reporting limit can be achieved to allow comparison to most restrictive health-based criteria
- TDLs for soils raised where lower reporting limit was costly and lower than necessary to allow comparison to most restrictive health-based criteria
- Additional designated analytical methods were added as appropriate

Contaminants Added To TDL and Designated Analytical Methods List

Contaminant	CAS No	Water TDL µg/l	Soil TDL µg/kg	Designated Methods
Acrylamide	79061	-----	10	8270C
Bromate	15541454	10	200	300.0 300.1
p-Chlorobenzene sulfonic acid	98668	10	200	8321B
Phenytoin	57410	15	250	8270C
Sodium Azide	26628228	50	1,500	Ion Chromatography
1,2,3-Trichlorobenzene	87616	5	250	8260B
1,2,3-Trimethylbenzene	526738	5	250	8260B
Provided for use as water and soil characteristics:				
Total Petroleum Hydrocarbons Oil Range Organics (ORO)	-----	500	20,000	8015C/D
Carbonaceous Biological Chemical Demand (CBOD)	-----	8,000	-----	SM 5210 A-B
Ferrous Iron	-----	20	-----	Appropriate field kits
Particle Size Analysis	-----	-----	-----	ASTM D421-85(2002) ASTM D422-63(2002)
Soil Texture	-----	-----	-----	USDA Classification
Dry Soil Bulk Density	-----	-----	-----	ASTM D2937-04 ASTM D2216-05 MOSA Chapter 13

Rationale for Contaminants Where TDLs were Raised

		Soil	
CAS No	Contaminant	TDLs µg/kg	Rationale
7440360	Antimony Previous TDL Revised TDL	300 1,000	The most restrictive criterion is 4,300µg/kg. The previous TDL was set too low requiring a separate expensive method (~\$50) to attain the 300µg/kg level. The current TDL will allow routine methods to include antimony at a cost of ≤\$15.
7440382	Arsenic Previous TDL Revised TDL	100 2,000	The most restrictive criterion is 4,600µg/kg. The previous TDL was set too low requiring a separate expensive method (~\$60) to attain the 100µg/kg level. The current TDL will allow routine methods to include arsenic at a cost of ~\$12.

Rationale for Contaminants Where TDLs were Reduced

Water			
CAS No	Contaminant	TDLs $\mu\text{g/l}$	Rationale
64197	Acetic Acid Previous TDL Revised TDL	1,000 100	The previous TDL was based on limited data. Data from ion chromatography indicates levels of 100 $\mu\text{g/l}$ can be attained. The revision allows comparison to the health-based value of 360 $\mu\text{g/l}$
71501	Acetate Previous TDL Revised TDL	1,000 100	Acetate analysis is used to measure acetic acid levels.
50328	Benzo(a)pyrene Previous TDL Revised TDL	1 0.2	Review of government and commercial lab reporting limits supports reducing the TDL to allow comparison to the drinking water standard.
57749	Chlordane Previous TDL Revised TDL	2 0.05	alpha-Chlordane (5103719) and gamma-Chlordane (5103742), components that are added for comparison to the chlordane criteria have reporting limits of 0.01 $\mu\text{g/l}$ using method 8081B. The revision assures compliance with the drinking water standard of 2 $\mu\text{g/l}$ and improves the ability to assess risks for the GSI criteria of 0.000025 $\mu\text{g/l}$.
64186	Formic Acid Previous TDL Revised TDL	1,000 50	The previous TDL was based on limited data. Data from ion chromatography indicates levels of 50 $\mu\text{g/l}$ can be attained.

Soil			
CAS No	Contaminant	TDLs $\mu\text{g/kg}$	Rationale
87616	1,2,4-Trichlorobenzene Previous TDL Revised TDL	330 250	The previous TDL was a mistake.

Additional TDL/Methods Revisions

Water and Soil				
CAS No	Contaminant	Water TDL $\mu\text{g/l}$	Soil TDL $\mu\text{g/kg}$	Rationale
133221	Asbestos (TEM)	7 MFL	1%	TDL & Method (100.1) unchanged for water TDL unchanged for soil; EPA methods added: PLM: EPA/600/R-93/116 CARB 435 TEM: EPA/600/R-93/116 CARB 435
-----	Total Petroleum Hydrocarbons Gasoline Range Organics (GRO) Previous TDL Revised TDL	200 100	4,000 10,000	Provided for use with NAPL Resource Materials.
-----	Total Petroleum Hydrocarbons Diesel Range Organics (DRO) Previous TDL Revised TDL	100 100	4,000 10,000	Provided for use with NAPL Resource Materials.

Contaminants Removed from TDL and Designated Analytical Methods List

No Cleanup Criterion Available:

CAS No	Contaminant
1066519	Aminomethylphosphoric acid (AMPA-Glyphosate-metabolite)
98873	Benzal Chloride
98077	Benzotrichloride
111911	Bis(2-chloroethoxy)methane
108601	Bis(2-chloroisopropyl)ether
74975	Bromochloromethane
101553	4-Bromophenyl phenylether
106478	4-Chloroaniline
108430	3-Chlorophenol
7005783	4-Chlorophenyl phenylether
106434	4-Chlorotoluene
1702176	Clopyralid
-----	Dacthal metabolites
319868	delta-Hexachlorocyclohexane
2303164	Diallate
87650	2,6-Dichlorophenol
526750	2,3-Dimethylphenol
108689	3,5-Dimethylphenol
51285	2,4-Dinitrophenol
122667	1,2-Diphenylhydrazine
764410	1,4-Dichloro-2-butene, trans
594207	2,2-Dichloropropane
142289	1,3-Dichloropropane
563586	1.1-Dichloropropene
141935	1,3-Diethylbenzene
462953	Diethoxymethane
298044	Disulfoton
7421934	Endrin Aldehyde
53494705	Endrin Ketone
76017	Ethane
759944	Ethyl dipropylthiocarbamate (EPTC)
75218	Ethylene
75218	Ethylene Oxide
1031078	Endosulfan Sulfate
944229	Fonofos
-----	Formate
99876	p-Isopropyl Toluene (p-Cymene)
7727379	Kjeldahl-N
330552	Linuron
74884	Methyl Iodide
93652	MCPP α -(4-Chloro-2-methylphenoxy)propionic acid
2212671	Molinate
62759	N-Nitrosodimethylamine
7727379	Nitrogen, total (elemental)
554847	3-Nitrophenol

CAS No	Contaminant
100027	4-Nitrophenol
88744	2-Nitroaniline
99092	3-Nitroaniline
100016	4-Nitroaniline
10024972	Nitrous Oxide
706785	Octachlorocyclopentene
14797730	Perchlorate
1267792	PCB Aroclor (unspecified)
-----	Polybrominated diphenyl ethers (PBDEs)
13071799	Terbufos
634662	1,2,3,4-Tetrachlorobenzene
634902	1,2,3,5-Tetrachlorobenzene
7440611	Thorium
93765	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)
57136	Urea

Note: Removing these contaminants from the MDEQ published TDLs and Designated Analytical Methods List has been done solely to make the list consistent with the Cleanup Criteria Tables. If a contaminant from this list is present at a facility, further evaluation may be necessary to determine whether criteria, TDLs and designated analytical methods should be developed.

Contaminants Renamed to be Consistent with Cleanup Criteria Tables

CAS No	Previous Contaminant Name	Current Contaminant Name
71363	n-Butyl Alcohol	n-Butanol
135988	s-Butylbenzene	sec-Butylbenzene
98066	t-Butylbenzene	tert-Butylbenzene
91587	2-Chloronaphthalene	beta- Chloronaphthalene
95498	2-Chlorotoluene	o-Chlorotoluene
124481	Dibromochloromethane	1,2-Dibromo-3-chloromethane
96128	1,2-Dibromo-3-chloropropane	Dibromochloropropane
99309	Dichloran(2,6-Dichlor-4-nitroaniline)	2,6-Dichlor-4-nitroaniline
108203	Di-isopropyl ether	Diisopropyl ether
64175	Ethyl Alcohol	Ethanol
7782414	Fluoride	Fluorine (soluble fluoride)
67561	Methyl Alcohol	Methanol
12185103	Phosphorus (white)	White Phosphorus