AP-111

AGWMR 8 of 12

2013

APPENDIX B

Applicable Standards

NMAC 20.6.2.3103 - Standards for Ground Water

Table 6.2 TPH Screening Guidelines for Potable Ground Water (GW-1)

NMAC 20.6.2.2101 – General Requirements

20.6.2.2004 - 20.6.2.2099: [RESERVED] [12-1-95; 20.6.2.2001 - 20.6.2.2099 NMAC - Rn, 20 NMAC 6.2.I.1221-2099, 1-15-01; A, 5-18-11]

APPLICABILITY: The requirements of Section 20.6.2.2101 and 20.6.2.2102 NMAC shall not apply to any discharge which is subject to a permit under the National Pollutant Discharge Elimination System of P. L. 92-500; provided that any discharger who is given written notice of National Pollutant Discharge Elimination System permit violation from the Administrator of the Environmental Protection Agency and who has not corrected the violation within thirty days of receipt of said notice shall be subject to Section 20.6.2.2101 and 20.6.2.2102 NMAC until in compliance with the National Pollution Discharge Elimination System permit conditions; provided further that nothing in this Part shall be construed as a deterrent to action under Section 74-6-11 NMSA, 1978. [8-13-76; 20.6.2.2100 NMAC - Rn, 20 NMAC 6.2.II.2100, 1-15-01]

GENERAL REQUIREMENTS: 20.6.2.2101

Except as otherwise provided in Sections 20.6.2.2000 through 20.6.2.2201 NMAC, no person A. shall cause or allow effluent to discharge to a watercourse if the effluent as indicated by:

(1) . any two consecutive daily composite samples;

(2) more than one daily composite sample in any thirty-day period (in which less than ten (10) daily composite samples are examined);

(3) more than ten percent (10%) of the daily composite samples in any thirty-day period (in which ten (10) or more daily composite samples are examined); or

a grab sample collected during flow from an intermittent or infrequent discharge does not conform to the following:

Bio-chemical Oxygen Demand (BOD) Less than 30 mg/l Less than 125 mg/l Chemical Oxygen Demand (COD) Less than 0.5 mg/l Settleable Solids (c)

Fecal Coliform Bacteria (d)

Less than 500 organisms per 100 ml

(e)

Between 6.6 and 8.6

Upon-application, the secretary may eliminate the pH requirement for any effluent source that the secretary determines does not unreasonably degrade the water into which the effluent is discharged.

Subsection A of this Section does not apply to the weight of constituents in the water diverted.

Samples shall be examined in accordance with the most current edition of Standard Methods for the Examination of Water and Wastewater published by the American Public Health Association or the most current edition of Methods for Chemical Analysis of Water and Wastes published by the Environmental Protection Agency, where applicable.

[4-20-68, 3-14-71, 10-8-71, 8-13-76, 2-20-81, 12-1-95; 20.6.2.2101 NMAC - Rn, 20 NMAC 6.2.II.2101, 1-15-01]

RIO GRANDE BASIN--COMMUNITY SEWERAGE SYSTEMS: 20.6.2.2102

No person shall cause or allow effluent from a community sewerage system to discharge to a watercourse in the Rio Grande Basin between the headwaters of Elephant Butte Reservoir and Angostura Diversion Dam as described in Subsection E of this Section if the effluent, as indicated by:

any two consecutive daily composite samples;

more than one daily composite sample in any thirty-day period (in which less than ten (10) daily composite samples are examined);

(3) more than ten percent (10%) of the daily composite samples in any thirty-day period (in which ten (10) or more daily composite samples are examined); or

a grab sample collected during flow from an intermittent or infrequent discharge does not conform to the following:

Bio-chemical Oxygen Demand (BOD) Less than 30 mg/l Chemical Oxygen Demand (COD) Less than 80 mg/l Less than 0.1 mg/l Settleable Solids

Less than 500 organisms per 100 ml (d) · Fecal Coliform Bacteria

Between 6.6 and 8.6 pH

(e) Upon application, the secretary may eliminate the pH requirement for any effluent source that the B. secretary determines does not unreasonably degrade the water into which the effluent is discharged.

Subsection A of this Section does not apply to the weight of constituents in the water diverted.

- D. Samples shall be examined in accordance with the most current edition of <u>Standard Methods for the Analysis of Water and Wastewater</u> published by the American Public Health Association or the most current edition of <u>Methods for Chemical Analysis of Water and Wastes</u> published by the Environmental Protection Agency, where applicable.
- E. The following is a description of the Rio Grande Basin from the headwaters of Elephant Butte Reservoir to Angostura Diversion Dam as used in this Section. Begin at San Marcial USGS gauging station, which is the headwaters of Elephant Butte Reservoir Irrigation Project, thence northwest to U.S. Highway 60, nine miles \pm west of Magdalena; thence west along the northeast edge of the San Agustin Plains closed basin; thence north along the east side of the north plains closed basin to the Continental Divide; thence northly along the Continental Divide to the community of Regina on State Highway 96; thence southeasterly along the crest of the San Pedro Mountains to Cerro Toledo Peak; thence southwesterly along the Sierra de Los Valles ridge and the Borrego Mesa to Bodega Butte; thence southerly to Angostura Diversion Dam which is the upper reach of the Rio Grande in this basin; thence southeast to the crest and the crest of the Manzano Mountains and the Los Pinos Mountains; thence southerly along the divide that contributes to the Rio Grande to San Marcial gauging station to the point and place of beginning; excluding all waters upstream of Jemez Pueblo which flow into the Jemez River drainage and the Bluewater Lake. Counties included in the basin are:
 - (1) north portion of Socorro County;
 - (2) northeast corner of Catron County;
 - (3) east portion of Valencia County;
 - (4) west portion of Bernalillo County;
 - (5) east portion of McKinley County; and
 - (6) most of Sandoval County.

[3-14-71, 9-3-72, 8-13-76, 2-20-81, 12-1-95; 20.6.2.2102 NMAC - Rn, 20 NMAC 6.2.II.2102, 1-15-01]

20.6.2.2103 - 20.6.2.2199: [RESERVED]

[12-1-95; 20.6.2.2103 - 20.6.2.2199 NMAC - Rn, 20 NMAC 6.2.II.2103-2199, 1-15-01]

20.6.2.2200 WATERCOURSE PROTECTION:

_[12-1-95;-20.6.2.2200_NMAC - Rn,-20_NMAC-6.2.II.2200,-1-15-01]

20.6.2.2201 DISPOSAL OF REFUSE: No person shall dispose of any refuse in a natural watercourse or in a location and manner where there is a reasonable probability that the refuse will be moved into a natural watercourse by leaching or otherwise. Solids diverted from the stream and returned thereto are not subject to abatement under this Section.

[4-20-68, 9-3-72; 20.6.2.2201 NMAC - Rn, 20 NMAC 6.2.II.2201, 1-15-01]

20.6.2.2202 - 20.6.2.2999: [RESERVED]

[12-1-95; 20.6.2.2202 - 20.6.2.2999 NMAC - Rn, 20 NMAC 6.2.II.2202-3100, 1-15-01]

20.6.2.3000 PERMITTING AND GROUND WATER STANDARDS:

[12-1-95; 20.6.2.3000 NMAC - Rn, 20 NMAC 6.2.III, 1-15-01]

20.6.2.3001 - 20.6.2.3100: [RESERVED]

[12-1-95; 20.6.2.3001 - 20.6.2.3100 NMAC - Rn, 20 NMAC 6.2.II.2202-3100, 1-15-01]

20.6.2.3101 PURPOSE:

- A. The purpose of Sections 20.6.2.3000 through 20.6.2.3114 NMAC controlling discharges onto or below the surface of the ground is to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow, for uses designated in the New Mexico Water Quality Standards. Sections 20.6.2.3000 through 20.6.2.3114 NMAC are written so that in general:
- (1) if the existing concentration of any water contaminant in ground water is in conformance with the standard of 20.6.2.3103 NMAC, degradation of the ground water up to the limit of the standard will be allowed; and
- (2) if the existing concentration of any water contaminant in ground water exceeds the standard of Section 20.6.2.3103 NMAC, no degradation of the ground water beyond the existing concentration will be allowed.

- B. Ground water standards are numbers that represent the pH range and maximum concentrations of water contaminants in the ground water which still allow for the present and future use of ground water resources.
- C. The standards are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations.

 [2-18-77; 20.6.2.3101 NMAC Rn, 20 NMAC 6.2.III.3101, 1-15-01]

20.6.2.3102: [RESERVED]

unfiltered concentrations of the contaminants.

[12-1-95; 20.6.2.3102 NMAC - Rn, 20 NMAC 6.2.III.3102, 1-15-01]

20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/l TDS CONCENTRATION OR LESS: The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection D of Section 20.6.2.3109 NMAC. Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentration shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section. These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "methods for chemical analysis of water and waste of the U.S. environmental protection agency," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total

A. Human Health Standards-Ground water shall meet the standards of Subsection A and B of this section unless otherwise provided. If more than one water contaminant affecting human health is present, the toxic pollutant criteria as set forth in the definition of toxic pollutant in Section 20.6.2.1101 NMAC for the combination of contaminants, or the Human Health Standard of Subsection A of Section 20.6.2.3103 NMAC for each contaminant shall apply, whichever is more stringent. Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.

(1)	Arsenic (As)	
(-2-)	–Barium-(Ba)	1.0-mg/l
(3)	Cadmium (Cd)	0.01 mg/l
(4)	Chromium (Cr)	0.05 mg/1
(5)	Cyanide (CN)	0.2 mg/l
(6)	Fluoride (F)	1.6 mg/l
(7)	Lead (Pb)	
(8)	Total Mercury (Hg)	0.002 mg/l
(9)	Nitrate (NO ₃ as N)	10.0 mg/l
(10)	Selenium (Se)	
(11)	Silver (Ag)	0.05 mg/l
(12)	Uranium (U)	0.03 mg/l
(13)	Radioactivity: Combined Radium-226 & Radium-228	30 pCi/l
(14)	Benzene	
(15)	Polychlorinated biphenyls (PCB's)	0.001 mg/l
(16)	Toluene	0.75 mg/l
(17)	Carbon Tetrachloride	0.01 mg/l
(18)	1,2-dichloroethane (EDC)	0.01 mg/l
(19)	1,1-dichloroethylene (1,1-DCE)	
(20)	1,1,2,2-tetrachloroethylene (PCE)	0.02 mg/l
(21)	1,1,2-trichloroethylene (TCE)	
(22)	ethylbenzene	0.75 mg/l
(23)	total xylenes	
(24)	methylene chloride	
(25)	chloroform	
(26)	1,1-dichloroethane	
(27)	ethylene dibromide (EDB)	0.0001 mg/l
(28)	1,1,1-trichloroethane,	0.06 mg/l
(29)	1,1,2-trichloroethane	0.01 mg/l

(4.0)	0.01 mg/l			
(30)	0.001			
(31)	vinyl chloride0.001 mg/l			
(32)	PAHs: total naphthalene plus monomethylnaphthalenes0-03-mg/l			
(33)	benzo-a-pyrene0.0007 mg/l			
В.	Other Standards for Domestic Water Supply			
(1)	Chloride (Cl)250.0 mg/l			
(2)	Copper (Cu)			
(3)	Iron (Fe)			
(4)	Manganese (Mn)			
(6)	Phenols			
(7)	Sulfate (SO ₄)600.0 mg/l			
(8)	Total Dissolved Solids (TDS)			
	Zinc (Zn)			
(9) (10)				
()	Standards for Irrigation Use - Ground water shall meet the standards of Subsection A, B,			
C.				
	ction unless otherwise provided.			
(1)	Aluminum (Al)			
(2)	Boron (B)0.75 mg/l			
(3)	Cobalt (Co)			
(4)	Molybdenum (Mo)1.0 mg/1			
(5)	Nickel (Ni)0.2 mg/l			
[2-18-77, 1-29-8]	2, 11-17-83, 3-3-86, 12-1-95; 20.6.2.3103 NMAC - Rn, 20 NMAC 6.2.III.3103, 1-15-01; A, 9-26-			
041	•			
Note: For nurne	ses of application of the amended numeric uranium standard to past and current water discharges			
(or of 0.26.04) t	he new standard will not become effective until June 1, 2007. For any new water discharges, the			
uranium standard is effective 9-26-04.]				
uranium standard	IS ELICULUS 3-20-04.]			

20.6.2.3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow-effluent or leachate to discharge so that it may move directly-of-indirectly-into-ground-water-unless-heis discharging pursuant to a discharge permit issued by the secretary. When a permit has been issued, discharges must be consistent with the terms and conditions of the permit. In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20.6.2.3111 NMAC, regarding transfers. [2-18-77, 12-24-87, 12-1-95; Rn & A, 20.6.2.3104 NMAC - 20 NMAC 6.2.III.3104, 1-15-01; A, 12-1-01]

20.6.2.3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20.6.2.3104 and 20.6.2.3106 NMAC do not apply to the following:

A. Effluent or leachate which conforms to all the listed numerical standards of Section 20.6.2.3103 NMAC and has a total nitrogen concentration of 10 mg/l or less, and does not contain any toxic pollutant. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is discharged from a sewerage system used only for disposal of household and other domestic waste which is designed to receive and which receives 2,000 gallons or less of liquid waste per day;

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system;

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided in this section;

- F. Those constituents which are subject to effective and enforceable effluent limitations in a National Pollutant Discharge Elimination System (NPDES) permit, where discharge onto or below the surface of the ground so that water contaminants may move directly or indirectly into ground water occurs downstream from the outfall where NPDES effluent limitations are imposed, unless the secretary determines that a hazard to public health may result. For purposes of this subsection, monitoring requirements alone do not constitute effluent limitations;
 - G. Discharges resulting from flood control systems;
- H. Leachate which results from the direct natural infiltration of precipitation through disturbed materials, unless the secretary determines that a hazard to public health may result;
- I. Leachate which results entirely from the direct natural infiltration of precipitation through undisturbed materials;
- J. Leachate from materials disposed of in accordance with the Solid Waste Management Regulations (20 NMAC 9.1) adopted by the New Mexico Environmental Improvement Board;
- K. Natural ground water seeping or flowing into conventional mine workings which re-enters the ground by natural gravity flow prior to pumping or transporting out of the mine and without being used in any mining process; this exemption does not apply to solution mining;
- L. Effluent or leachate discharges resulting from activities regulated by a mining plan approved and permit issued by the New Mexico Coal Surface Mining Commission, provided that this exemption shall not be construed as limiting the application of appropriate ground water protection requirements by the New Mexico Coal Surface Mining Commission;
- M. Effluent or leachate discharges which are regulated by the Oil Conservation Commission and the regulation of which by the Water Quality Control Commission would interfere with the exclusive authority granted under Section 70-2-12 NMSA 1978, or under other laws, to the Oil Conservation Commission. [2-18-77, 6-26-80, 7-2-81, 12-24-87, 12-1-95; 20.6.2.3105 NMAC Rn, 20 NMAC 6.2.III.3105, 1-15-01; A, 12-1-01]

20.6.2.3106 APPLICATION FOR DISCHARGE PERMITS AND RENEWALS:

- A. Any person who, before or on June 18, 1977, is discharging any of the water contaminants listed in Section 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall, within 120 days of receipt of written notice from the secretary that a discharge permit is required, or such longer time as the secretary shall for good cause allow, submit a discharge plan to the secretary for approval; such person may discharge without a discharge permit until 240 days after written notification by the secretary that a discharge permit is required or such longer time as the secretary shall for good cause allow.
- B. Any person who intends to begin, after June 18, 1977, discharging any of the water contaminants listed in Section 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall notify the secretary giving the information enumerated in Subsection B of Section 20.6.2.1201NMAC; the secretary shall, within 60 days, notify such person if a discharge permit is required; upon submission, the secretary shall review the discharge plan pursuant to Sections 20.6.2.3108 and 20.6.2.3109 NMAC. For good cause shown the secretary may allow such person to discharge without a discharge permit for a period not to exceed 120 days.
- C. A proposed discharge plan shall set forth in detail the methods or techniques the discharger proposes to use or processes expected to naturally occur which will ensure compliance with this Part. At least the following information shall be included in the plan:
 - (1) Quantity, quality and flow characteristics of the discharge;
- (2) Location of the discharge and of any bodies of water, watercourses and ground water discharge sites within one mile of the outside perimeter of the discharge site, and existing or proposed wells to be used for monitoring;
 - (3) Depth to and TDS concentration of the ground water most likely to be affected by the discharge;
 - (4) Flooding potential of the site;
- (5) Location and design of site(s) and method(s) to be available for sampling, and for measurement or calculation of flow;
- (6) Depth to and lithological description of rock at base of alluvium below the discharge site if such information is available:
- (7) Any additional information that may be necessary to demonstrate that the discharge permit will not result in concentrations in excess of the standards of Section 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use. Detailed information

Not considering the effects of additivity when screening multiple chemicals.

It is important to note that the generic NMED SSLs were developed assuming distinct soil horizons for each receptor. The soils of interest differ according to the exposure pathway being addressed. For direct ingestion, dermal, and fugitive dust exposure pathways, the primary soil horizon of concern are surface soils. For inhalation of volatiles and migration to groundwater, subsurface soils are of primary concern. Both a residential receptor and a commercial/industrial worker are typically exposed only to surface soil, which may be defined as extending to a depth of approximately two feet below ground surface, depending on site-specific conditions and the amount of intrusive activity that may occur. Construction workers will typically have much greater exposures to subsurface soils. Therefore, when generic SSLs are used for screening level evaluations at a facility, site-specific conditions must be evaluated for each receptor to determine if the assumptions associated with the generic SSLs are appropriate for comparison with the available site data.

6.0 TOTAL PETROLEUM HYDROCABONS (TPH)

In some instances, it may be practical to assess areas of soil contamination that are the result of releases of petroleum products such as jet fuel and diesel, using total petroleum hydrocarbon (TPH) analyses. TPH results may be used to delineate the extent of petroleum-related contamination at these sites and ascertain if the residual level of petroleum products in soil represents an unacceptable risk to future users of the site. Petroleum hydrocarbons represent complex mixtures of compounds, some of which are regulated constituents and some compounds that are not regulated. In addition, the amount and types of the constituent compounds in a petroleum hydrocarbon release differ widely depending on what type of product was spilled and how the spill has weathered. This variability makes it difficult to determine the toxicity of weathered petroleum products in soil solely from TPH results; however, these results can be used to approximate risk in some cases, depending upon the nature of the petroleum product, the release scenario, how well the site has been characterized, and anticipated potential future land uses. In some cases, site cleanup cannot be based solely on the results of TPH sampling. NMED will make these determinations on a case by case basis. If NMED determines that additional data are necessary, these TPH guidelines must be used in conjunction with the SSLs for individual petroleum-related contaminants in Table A-1 and other contaminants, as applicable.

The screening levels for each petroleum carbon range from the Massachusetts Department of Environmental Protection (MADEP) Volatile Petroleum Hydrocarbons/Extractable Petroleum Hydrocarbons (VPH/EPH) approach and the percent composition table below were used to generate screening levels corresponding to total TPH. Except for waste oil, the information in the compositional assumptions table was obtained from the Massachusetts Department of Environmental Protection guidance document *Implementation of the MADEP VPH/EPH Approach* (October 31, 2002). TPH toxicity (MADEP, 2009) was based only on the weighted sum of the toxicity of the hydrocarbon fractions listed in Table 6-1.

February 2012 (updated June 2012)

Table 6-1. TPH Compositional Assumptions in Soil

Petroleum Product C11-C22 Aromatics		C9-C18 Aliphatics	C19-C36 Aliphatics
Diesel #2/ new crankcase oil	60%	40%	0%
#3 and #6 Fuel Oil	70%	30%	0%
Kerosene and jet fuel	30%	70%	0%
Mineral oil dielectric fluid	20%	40%	40%
Unknown oil ^a	100%	0%	0%
Waste Oil ^b	0%	0%	100%

Sites with oil from unknown sources must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Tables 6-2 and 6-3 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED SSLs summarized in Table A-1.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Tables 6-2 and 6-3 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED SSLs summarized in Table A-1.

A TPH screening guideline was calculated for each of the types of petroleum product based on the assumed composition from Table 6-1 for petroleum products and the direct soil standards incorporating ceiling concentrations given in the MADEP VPH/EPH (December 2009) Excel spreadsheet for each of the carbon fractions (MADEP, 2009). Groundwater concentrations are based on the weighted sum of the noncarcinogenic toxicity of the petroleum fractions.

Method 1 from the MADEP VPH/EPH document and spreadsheet (MADEP, 2009) was applied, which represents generic cleanup standards for soil and groundwater. Method 1 applies if contamination exists in only soil and groundwater. The MADEP VPH/EPH further divides groundwater into standards. Standard GW-1 applies when groundwater may be used for drinking water purposes. GW-1 standards are based upon ingestion and use of groundwater as a potable water supply. The TPH screening guidelines for sites with potable groundwater are presented in Table 6-2. It is noted that the below guidelines are not necessarily risk-based values but may reflect a ceiling level.

Table 6-2. TPH Screening Guidelines for Potable Groundwater (GW-1)

	ТРН		
Petroleum Product Residential Direct Exposure (mg/kg)		Industrial Direct Exposure (mg/kg)	Concentration in Groundwater (mg/L)
Diesel #2/crankcase oil	1000	1800	0.4
#3 and #6 Fuel Oil	1000	1600	0.35
Kerosene and jet fuel	1000	2400	0.55
Mineral oil dielectric	1800	3400	5.92

February 2012 (updated June 2012)

fluid			
Unknown oil	1000	1000 ·	0.2
Waste Oil	3000	5000	See individual contaminants in Appendix A
Gasoline	Not applicable	Not applicable	See individual contaminants in Appendix A

Sites with oil from unknown sources must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 6-2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

The second standard is GW-2 (MADEP, 2009), which is applicable for sites where the depth to groundwater is less than 15 feet from the ground surface and within 30 feet of an occupied structure. The structure may be either residential or industrial. GW-2 standards are based upon "inhalation exposures that could occur to occupants of the building impacted by volatile compounds, which partition from the groundwater" (MADEP, 2001). The GW-2 screening guidelines ONLY apply for the evaluation of inhalation exposures. If potential ingestion or contact with contaminated soil and/or groundwater could occur, then the screening guidelines provided in Table 6-2 should be applied. Table 6-3 lists the TPH screening guidelines for the inhalation scenario (MADEP, 2009). It is noted that the below guidelines are not necessarily risk-based values but may reflect a ceiling level.

Table 6-3. TPH Screening Guidelines - Vapor Migration and Inhalation of Groundwater (GW-2)

	ТРН	Consentuation in Committee	
Petroleum Product	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)	Concentration in Groundwater (mg/L)
Diesel #2/crankcase oil	1000	3000	32
#3 and #6 Fuel Oil	1000	3000 .	36.5
Kerosene and jet fuel	1000	3000	18.5
Mineral oil dielectric fluid	1800	3800	12
Unknown oil	1000	3000	50
Waste Oil	3000	5000	See individual contaminants in Appendix A
Gasoline	omio z tot, FF		See individual contaminants in Appendix A

Sites with oil from unknown sources must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 6-3 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED SSLs summarized in Table A-1.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 6-2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste

APPENDIX B

Applicable Standards

40 CFR 141.62 Maximum Contaminant Levels (MCLs)

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of April 24, 2014

Title 40: Protection of Environment

PART 141—NATIONAL PRIMARY DRINKING WATER REGULATIONS

Subpart G—National Primary Drinking Water Regulations: Maximum Contaminant Levels and Maximum Residual Disinfectant Levels

Contents

- §141.60 Effective dates.
- §141.61 Maximum contaminant levels for organic contaminants.
- §141.62 Maximum contaminant levels for inorganic contaminants.
- §141.63 Maximum contaminant levels (MCLs) for microbiological contaminants.
- §141.64 Maximum contaminant levels for disinfection byproducts.
- §141.65 Maximum residual disinfectant levels.
- §141.66 Maximum contaminant levels for radionuclides.

♣ Back to Top

§141.60 Effective dates.

- (a) The effective dates for §141.61 are as follows:
- (1) The effective date for paragraphs (a)(1) through (a)(8) of §141.61 is January 9, 1989.
- (2) The effective date for paragraphs (a)(9) through (a)(18) and (c)(1) through (c)(18) of §141.61 is July 30, 1992.
- (3) The effective date for paragraphs (a)(19) through (a)(21), (c)(19) through (c)(25), and (c)(27) through (c)(33) of §141.61 is January 17, 1994. The effective date of §141.61(c)(26) is August 17, 1992.
 - (b) The effective dates for §141.62 are as follows:
 - (1) The effective date of paragraph (b)(1) of §141.62 is October 2, 1987.
 - (2) The effective date for paragraphs (b)(2) and (b)(4) through (b)(10) of §141.62 is July 30, 1992.
 - (3) The effective date for paragraphs (b)(11) through (b)(15) of §141.62 is January 17, 1994.
 - (4) The effective date for §141.62(b)(16) is January 23, 2006.

[56 FR 3593, Jan. 30, 1991, as amended at 57 FR 31846, July 17, 1992; 59 FR 34324, July 1, 1994; 66FR 7063, Jan. 22, 2001]

Back to Top

§141.61 Maximum contaminant levels for organic contaminants.

(a) The following maximum contaminant levels for organic contaminants apply to community and non-transient, non-community water systems.

CAS No.	Contaminant	MCL (mg/l)
(1) 75-01-4	Vinyl chloride	0.002
(2) 71-43-2	Benzene	0.005
(3) 56-23-5	Carbon tetrachloride	0.005
(4) 107-06-2	1,2-Dichloroethane	0.005
(5) 79-01-6	Trichloroethylene	0.005
(6) 106-46-7	para-Dichlorobenzene	0.075
(7) 75-35-4	1,1-Dichloroethylene	0.007
(8) 71-55-6	1,1,1-Trichloroethane	0.2
(9) 156-59-2	cis-1,2-Dichloroethylene	0.07
(10) 78-87-5	1,2-Dichloropropane	0.005
(11) 100-41-4	Ethylbenzene	0.7
(12) 108-90-7	Monochlorobenzene	0.1
(13) 95-50-1	o-Dichlorobenzene	0.6
(14) 100-42-5	Styrene	0.1
(15) 127-18-4	Tetrachloroethylene	0.005
(16) 108-88-3	Toluene	1
(17) 156-60-5	trans-1,2-Dichloroethylene	0.1
(18) 1330-20-7	Xylenes (total)	10
(19) 75-09-2	Dichloromethane	0.005
(20) 120-82-1	1,2,4-Trichloro- benzene	.07
(21) 79-00-5	1,1,2-Trichloro- ethane	.005

(b) The Administrator, pursuant to section 1412 of the Act, hereby identifies as indicated in the Table below granular activated carbon (GAC), packed tower aeration (PTA), or oxidation (OX) as the best technology treatment technique, or other means available for achieving compliance with the maximum contaminant level for organic contaminants identified in paragraphs (a) and (c) of this section:

BAT FOR ORGANIC CONTAMINANTS LISTED IN §141.61 (A) AND (C)

CAS No.	Contaminant	GAC	PTA	ОХ
15972-60-8	Alachlor	Х		
116-06-3	Aldicarb	Х		
1646-88-4	Aldicarb sulfone	Х		
1646-87-3	Aldicarb sulfoxide	Х		
1912-24-9	Atrazine	Х		
71-43-2	Benzene	Х	Х	
50-32-8	Benzo[a]pyrene	Х		
1563-66-2	Carbofuran	Х		
56-23-5	Carbon tetrachloride	Х	Х	
57-74-9	Chlordane	Χ		
75-99-0	Dalapon	Х		
94-75-7	2,4-D	Х		
103-23-1	Di (2-ethylhexyl) adipate	Х	Х	

117-81-7	Di (2-ethylhexyl) phthalate	l x		
96-12-8	Dibromochloropropane (DBCP)	Х		
95-50-1	o-Dichlorobenzene	Х		
106-46-7	para-Dichlorobenzene	Х	Х	
107-06-2	1,2-Dichloroethane	Х	Х	
75-35-4	1,1-Dichloroethylene	Х	Х	
156-59-2	cis-1,2-Dichloroethylene	Х	Х	
156-60-5	trans-1,2-Dichloroethylene	Х	Х	
75-09-2	Dichloromethane		Х	
78-87-5	1,2-Dichloropropane	Х	Х	
88-85-7	Dinoseb	Х		
85-00-7	Diquat	Х		
145-73-3	Endothall	Х		
72-20-8	Endrin	Х		
100-41-4	Ethylbenzene	Х	Х	
106-93-4	Ethylene Dibromide (EDB)	Х	Х	
1071-83-6	Gylphosate			Х
76-44-8	Heptachlor	Х		
1024-57-3	Heptachlor epoxide	X		
118-74-1	Hexachlorobenzene	Х		
77-47-3	Hexachlorocyclopentadiene	Х	Х	
58-89-9	Lindane	Х		
72-43-5	Methoxychlor	Х		
108-90-7	Monochlorobenzene	Х	Х	
23135-22-0	Oxamyl (Vydate)	Х		
87-86-5	Pentachlorophenol	Х		
1918-02-1	Picloram	X		
1336-36-3	Polychlorinated biphenyls (PCB)	X		
122-34-9	Simazine	X		
100-42-5	Styrene	X	Х	
1746-01-6	2,3,7,8-TCDD (Dioxin)	X		
127-18-4	Tetrachloroethylene	X	Х	
108-88-3	Toluene	X	Х	
8001-35-2	Toxaphene	X		
93-72-1	2,4,5-TP (Silvex)	X		
120-82-1	1,2,4-Trichlorobenzene	X	Х	
71-55-6	1,1,1-Trichloroethane	Х	Х	
79-00-5	1,1,2-Trichloroethane	Х	Х	
79-01-6	Trichloroethylene	Х	Х	
75-01-4	Vinyl chloride		Х	
1330-20-7	Xylene	X	Х	

(c) The following maximum contaminant levels for synthetic organic contaminants apply to community water systems and non-transient, non-community water systems:

CAS No.	Contaminant	MCL (mg/l)
(1) 15972-60-8	Alachlor	0.002
(2) 116-06-3	Aldicarb	0.003
(3) 1646-87-3	Aldicarb sulfoxide	0.004

_		
(4) 1646-87-4	Aldicarb sulfone	0.002
(5) 1912-24-9	Atrazine	0.003
(6) 1563-66-2	Carbofuran	0.04
(7) 57-74-9	Chlordane	0.002
(8) 96-12-8	Dibromochloropropane	0.0002
(9) 94-75-7	2,4-D	0.07
(10) 106-93-4	Ethylene dibromide	0.00005
(11) 76-44-8	Heptachlor	0.0004
(12) 1024-57-3	Heptachlor epoxide	0.0002
(13) 58-89-9	Lindane	0.0002
(14) 72-43-5	Methoxychlor	0.04
(15) 1336-36-3	Polychlorinated biphenyls	0.0005
(16) 87-86-5	Pentachlorophenol	0.001
(17) 8001-35-2	Toxaphene	0.003
(18) 93-72-1	2,4,5-TP	0.05
(19) 50-32-8	Benzo[a]pyrene	0.0002
(20) 75-99-0	Dalapon	0.2
(21) 103-23-1	Di(2-ethylhexyl) adipate	0.4
(22) 117-81-7	Di(2-ethylhexyl) phthalate	0.006
(23) 88-85-7	Dinoseb	0.007
(24) 85-00-7	Diquat	0.02
(25) 145-73-3	Endothall	0.1
(26) 72-20-8	Endrin	0.002
(27) 1071-53-6	Glyphosate	0.7
(28) 118-74-1	Hexacholorbenzene	0.001
(29) 77-47-4	Hexachlorocyclopentadiene	0.05
(30) 23135-22-0	Oxamyl (Vydate)	0.2
(31) 1918-02-1	Picloram	0.5
(32) 122-34-9	Simazine	0.004
(33) 1746-01-6	2,3,7,8-TCDD (Dioxin)	3×10 ⁻⁸

[56 FR 3593, Jan. 30, 1991, as amended at 56 FR 30280, July 1, 1991; 57 FR 31846, July 17, 1992; 59 FR 34324, July 1, 1994]

♣ Back to Top

§141.62 Maximum contaminant levels for inorganic contaminants.

(a) [Reserved]

(b) The maximum contaminant levels for inorganic contaminants specified in paragraphs (b) (2)-(6), (b)(10), and (b) (11)-(16) of this section apply to community water systems and non-transient, non-community water systems. The maximum contaminant level specified in paragraph (b)(1) of this section only applies to community water systems. The maximum contaminant levels specified in (b)(7), (b)(8), and (b)(9) of this section apply to community water systems; non-transient, non-community water systems; and transient non-community water systems.

Contaminant	MCL (mg/l)
(1) Fluoride	4.0
(2) Asbestos	7 Million Fibers/liter (longer than 10 μm).
(3) Barium	2
(4) Cadmium	0.005

(5) Chromium	0.1
(6) Mercury	0.002
(7) Nitrate	10 (as Nitrogen)
(8) Nitrite	1 (as Nitrogen)
(9) Total Nitrate and Nitrite	10 (as Nitrogen)
(10) Selenium	0.05
(11) Antimony	0.006
(12) Beryllium	0.004
(13) Cyanide (as free Cyanide)	0.2
(14) [Reserved]	
(15) Thallium	0.002
(16) Arsenic	0.010

(c) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment technique, or other means available for achieving compliance with the maximum contaminant levels for inorganic contaminants identified in paragraph (b) of this section, except fluoride:

BAT FOR INORGANIC COMPOUNDS LISTED IN SECTION 141.62(B)

Chemical Name	BAT(s)
Antimony	2,7
Arsenic ⁴	1, 2, 5, 6, 7, 9, 12 ⁵
Asbestos	2,3,8
Barium	5,6,7,9
Beryllium	1,2,5,6,7
Cadmium	2,5,6,7
Chromium	2,5,6 ² ,7
Cyanide	5,7,13
Mercury	2 ¹ ,4,6 ¹ ,7 ¹
Nickel	5,6,7
Nitrate	5,7,9
Nitrite	5,7
Selenium	1,2 ³ ,6,7,9
Thallium	1,5

¹BAT only if influent Hg concentrations ≤10μg/1.

Key to BATS in Table

²BAT for Chromium III only.

³BAT for Selenium IV only.

⁴BATs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.

⁵To obtain high removals, iron to arsenic ratio must be at least 20:1.

^{1 =} Activated Alumina

^{2 =} Coagulation/Filtration (not BAT for systems <500 service connections)

- 3 = Direct and Diatomite Filtration
- 4 = Granular Activated Carbon
- 5 = Ion Exchange
- 6 = Lime Softening (not BAT for systems <500 service connections)
- 7 = Reverse Osmosis
- 8 = Corrosion Control
- 9 = Electrodialysis
- 10 = Chlorine
- 11 = Ultraviolet
- 12 = Oxidation/Filtration
- 13 = Alkaline Chlorination (pH ≥8.5)
- (d) The Administrator, pursuant to section 1412 of the Act, hereby identifies in the following table the affordable technology, treatment technique, or other means available to systems serving 10,000 persons or fewer for achieving compliance with the maximum contaminant level for arsenic:

SMALL SYSTEM COMPLIANCE TECHNOLOGIES (SSCTS)¹ FOR ARSENIC²

Small system compliance technology	Affordable for listed small system categories ³
Activated Alumina (centralized)	All size categories.
Activated Alumina (Point-of-Use) ⁴	All size categories.
Coagulation/Filtration ⁵	501-3,300, 3,301-10,000.
Coagulation-assisted Microfiltration	501-3,300, 3,301-10,000.
Electrodialysis reversal ⁶	501-3,300, 3,301-10,000.
Enhanced coagulation/filtration	All size categories
Enhanced lime softening (pH>10.5)	All size categories.
Ion Exchange	All size categories.
Lime Softening⁵	501-3,300, 3,301-10,000.
Oxidation/Filtration ⁷	All size categories.
Reverse Osmosis (centralized) ⁶	501-3,300, 3,301-10,000.
Reverse Osmosis (Point-of-Use) ⁴	All size categories.

¹Section 1412(b)(4)(E)(ii) of SDWA specifies that SSCTs must be affordable and technically feasible for small systems.

²SSCTs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.

³The Act (ibid.) specifies three categories of small systems: (i) those serving 25 or more, but fewer than 501, (ii) those serving more than 500, but fewer than 3,301, and (iii) those serving more than 3,300, but fewer than 10,001.

⁴When POU or POE devices are used for compliance, programs to ensure proper long-term operation, maintenance, and monitoring must be provided by the water system to ensure adequate performance.

⁵Unlikely to be installed solely for arsenic removal. May require pH adjustment to optimal range if high removals are needed.

⁶Technologies reject a large volume of water—may not be appropriate for areas where water quantity may be an issue.

⁷To obtain high removals, iron to arsenic ratio must be at least 20:1.

[56 FR 3594, Jan. 30, 1991, as amended at 56 FR 30280, July 1, 1991; 57 FR 31847, July 17, 1992; 59 FR 34325, July 1, 1994; 60 FR 33932, June 29, 1995; 66 FR 7063, Jan. 22, 2001; 68 FR 14506, Mar. 25, 2003; 69 FR 38855, June 29, 2004]

♣ Back to Top

§141.63 Maximum contaminant levels (MCLs) for microbiological contaminants.

- (a) Until March 31, 2016, the total coliform MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.
- (1) For a system that collects at least 40 samples per month, if no more than 5.0 percent of the samples collected during a month are total coliform-positive, the system is in compliance with the MCL for total coliforms.
- (2) For a system that collects fewer than 40 samples per month, if no more than one sample collected during a month is total coliform-positive, the system is in compliance with the MCL for total coliforms.
- (b) Until March 31, 2016, any fecal coliform-positive repeat sample or *E. coli*-positive repeat sample, or any total coliform-positive repeat sample following a fecal coliform-positive or *E. coli*-positive routine sample, constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in subpart Q of this part, this is a violation that may pose an acute risk to health.
- (c) Beginning April 1, 2016, a system is in compliance with the MCL for *E. coli* for samples taken under the provisions of subpart Y of this part unless any of the conditions identified in paragraphs (c) (1) through (c)(4) of this section occur. For purposes of the public notification requirements in subpart Q of this part, violation of the MCL may pose an acute risk to health.
- (1) The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample.
- (2) The system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample.
- (3) The system fails to take all required repeat samples following an *E. coli*-positive routine sample.
 - (4) The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.
- (d) Until March 31, 2016, a public water system must determine compliance with the MCL for total coliforms in paragraphs (a) and (b) of this section for each month in which it is required to monitor for total coliforms. Beginning April 1, 2016, a public water system must determine compliance with the MCL for *E. coli* in paragraph (c) of this section for each month in which it is required to monitor for total coliforms.
- (e) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms in paragraphs (a) and (b) of this section and for achieving compliance with the maximum contaminant level for *E. coli* in paragraph (c) of this section:

APPENDIX B

Applicable Standards

EPA Regional Screening Levels (RSLs)

			2.6E-03						8.2E+01	0,000		1.9E-03			2.9E-01	2000							2.7E-01																			8.8E-04	4.4E-04	7.55-04	7.5E-04	7.07-00	1.6E-03																									10. 10. 11	(mg/kg)	(me/ke)	700	SSL	100	MCL-based	MCL-based	Suild water 3505
1 10 10 10 10 10 10 10	8.6E-03 2.4E-07 1.4E+01	8.6E-03	3.3E-01 2.0E-04 1.9E-04	3.02-02	6.6E-01 9.6E-02	4.1E+01	2.3E+01	2.0E-02 3.4E-01	1.2E+02	1.1E+01 8.0E-04	5.2E-04	2.0E-01 1.7E-04 5.2E-04	2.0E-01	1.4E+00	1.3E-03	1 35.02	1.3E-02	1.16+01					1.2E-02 2.7E-01	3.96-03	1.3E-03			3.0E+00	1.2E-01	4.7E-01	1.3E-05	1.2E-01	1.7E+03		2.3E+04	2.0E-04	2000	1.6E-02	1.5E+00	6.5E-04	2000		3.4E-03	2.05-03	3.8E-03	10000	7.5E-04		20.00	9.8E-06	T.6E+00	1.6F+00	9.1E-06	8.4E-06	0 45 05	6.2E-05	4.35-01	4.5E-01	2.6E-02	2.6F-02	8.4E-04	2.45.400	2.4E+00	2.2E-01	2.2E-01	*,JC-0*	4.5E-04	T./E-03	1.7E-03	0.22-04	8.2E-04	20 70 0	(mg/kg)	(mr/kr)	170	SSL	195	Risk-based	Risk-based	בו מוברתמוו מו פונ
1, 10, 10, 10, 10, 10, 10, 10, 10, 10,		T	5.0E+00	1					2.0E+03	2 DE+03		3.0E+00			1.0E+01	1 05-01							6.0E+00							STATE												4.0E+00	2.0E+00	3.05+00	3.0E+00	201707	2.0E+00								1											1							(ng/n)	(ug/L)	1000	MCL				
1. 1. 1. 1. 1. 1. 1. 1.	1.3E+01 n 9.2E-05 c 5.8E+04 n	1					.7E+01 n				1		.8E+02 n				23																	-		•	25 01 0.88				L					ı					-				115-02 "					ı	ZE+00 n					-1						_				pwater	nwater			
1, 100 1	υ		t		L 4	1	88	9 4	c	v	u	U	7	c	* 0 =	, *	U	=	С			7	. 9	c	_		c		m	1	υ		7	9	-	U	***	_		U	,		1	1 .	1		01	_	, .	•0	=	, ,	U	_		U	,		c	-	_	= 6	_	1	2	,	*5	**		,	o		Key	key	7					
1 10 10 10 10 10 10 10	1.8E-04		1.6E+00						2.2E+00	4.0E-01	4.9E-UZ	4.9E-02		Z.ZE-01	2.9E-03	2 9E-03	1.7E+00	0.05-01	8.8E-01					4.4E+00	1.3E+01		4.4E+02			THE PARTY OF	2.0E-03				2.2E+01	Z.0E+00	205.00	4.4E-01		2.5E-03	2 55 03							2.6E+01	2 6E±01	1.8E-01	4.45+00	4.4E+00	1.2E-01	8.8E-02	9 8E-07	9.4E-03	0 45 02		7.6E+02	2.6E+02	8.8E+00	0 05100	1.4E+05			2000	5.6E+00	C CETOO			2.4E+00				_	Industrial	Industrial	To desire the second		2
1 10 10 10 10 10 10 10	-05 c										1					ı																					Г			-04 c	00										١				ı											ı						1			_	100	ntAir			
1 10 10 10 10 10 10 10	n c 1.4E-05 nm					E	_	c c			1					ı						_	· -											_			l.				ı		_				v				١				1										_	1						1			_	anicau	Reside	77.7.4		
				1			E+04				1		LE+04			I						L			7E+02			E+03	E+04	3E+04	2E-02	SE+03	3E+02	F+02			ı	E+03			10-30					1	E+01				١				ı										E+04	ı						1			_	Trial Soil	trial Soil			
			2 2 4 1 2 4 1 2 4				n 1.5		n 1.5		1		ı			ı			nm 1.7			ı									c 8.			n 4.			2 3				ı					1					ı				ı						n 2					1											Indus			-
Mathematical Companies Mathematical Compan	7.8E+01 5.0E-04 2.4E+05	7.8E+01	7.8E+03 1.1E+00 4.9E+00	201707	3.1E+03 L.8E+03	L.8E+04	L.5E+03	2.4E+02 L.8E+03	L.5E+04	2.4E+01 5.1E+00	2.3E-01	2.1E+03 2.1E+00 5.5E-01	3.1E+03	5.5E+02	6.1E-01 2.7E-01	6.1F-01	L9E+01	7.9E+02	2.8E+05	3.1E+01	7.0E+01	3.9E+01	1.2E+01 3.1E+01	3.5E+01	3.8E+01	1.6E+04		1.5E+02	L.2E+03	1.9E+03	2.3E-02	5.5E+02	L.8E+01	3.1E+01	7.7E+04	5.8E-UI	5 8E-01	3.0E+02	L.5E+04	Z.9E-02	2 9E-02		5.1E+01	15-01	5.1E+01	47.04				2.4E-01	10000	3.0E+04	2.3E-01	TO-36-01	1. SF-01	1.3E-01	1 3F-01	7.8E+03	3.75+02	3.7E+02	5.3E+01	3E+01	5.1E+04	15.04	L.2E+03	ı	1					1			_	_	sident Soil			
		+		+	_		4		+		4		_			1						H	9		+								7/3	4			L		_			37-3				t	89	,			+				_											+	B 19		-	-	-	-	-				Res	,		
1 10 10 10 10 10 10 10	108-98-5 92-87-5 65-85-0	108-9	100-52-7 71-43-2 6369-59-1	100.5	17804	1861-	68329	43121	/440-	103-3:	0-764	1912-7	3337-	76578	7440-	7440-	140-5	74115	1309-	1332-	11071	1314-	7440	62-53	75-85	-5777	7664	33083	123-3	1 591-2	75-24			20822	7429-	7070	107-0	107-1	74223	0-606	10-60E	1646-1	1646-	1646-1	116-0	410	15972	111-6	111-6	107-1	OT CI	79-10-	-90-62	70/0	107-0	53-96-	53-96	-98-86	-60-67	75-05	13-86	75-86	67-64	00745	34256	Jacke	/2-0/-	75-07-	30560	30560	1596-1	1596.3	3	CAS	CAS					
1,100 1,10							San San San S															100	===		1					111 11			(1)								The second										-																Action in the last													
											The second second													\ \ \	1						113		000	1								The state of																									Married States													
			4																		7	,		111					'					1																						The state of the s											Carpon Children						- Indigite	Analyte	Analyte					The State of the S
			yl sulfate, 1														Page and				trate				1				,	(2222	1						THE PARTY OF					STATE OF STA													ALC: UNIVERSITY OF	STATE OF STREET																								
Interference Inte			e ine-2-meth	1					1						lanic	tanic		an war	oxide	roxide	tassium Tari	- pixot	etallic)	TULE all	tert	ulfamate			- d		`	7	1	apudso	ochida						Sales Sales Sales	xide	one	900												luorene, 2-	luorene. 2-				Ionyarın	ohvdrin																		
C C C C C C C C C C	Benzolc Acid	Senzenethiol	Senzaluenyu Senzene Senzenedian	lanzaldahud	Senomyl	Senefin	saythroid	Sayleton	arium	vvermectin E vzobenzene sarium	on annual	surazine suramine	Sulam	Ssure	ursenic, Inori	rsenic Inor	ramite	pollo	Intimony Tri	intlmony Te	Intlmony Po	intimony Pe	intimony (m	uniline	myt-Alcono	mmonium	mmonia	muraz	minbpheno	minpheno	minopipher	metryn	mdro	annuman r	Arminum Pt	יייין כווסן ומ	Ilyl Chloride	Ilyl Alcohol	dly	III JUNI	Aldrin	Idicarb sulf	Mdicarb Sulf	Idicarh Sulf	Idicarb	lelianeh	lachlor	ampounding.	diponitrile	crylonitrile		crylic Acid	crylamide		crolein	cetylamino	cetylaminol	cetophenor	cotonhonor	cetonitrile	retone cyan	cetone Cvar	cetone	Cetone	cetochlor	cotochior	cetaldenya	cetaldehyde	cephate	cephate	LAR	IAR								
Noticy and Chemical-specific information Noticy and Chemical-specific information Noticy and Chemical-specific information Noticy and Chemical-specific information Noticy	1.3E+03	1.3E+03	1.8E+03	1 2F±03			Total Control						1	7					7	4		-								1	,							,			7	1					7					'	4				4	2.5E+03 /	2 554.03	1.3E+05 /	T. TETOS	1.15+05	1.1E+05	1 15+05		Ì	T.1E+05	1.15+05	4	4				(mg/kg)	(me/ke)	No.	Crist	,		
Note	0.1		0.1		1 10	0.1	0.1	0.1	1		1	111	1 0.1			L				15	1 21 2	15						1.0	1 0.1	1 0.1	1 0.1	1 0.1	1 0.1					1.00.1	0.1	1.0	0.1	0.1	0.1	0.1	0.1		0.1	1 5	0.1			0.1	0.1			1.0	0.1								1 0.1	10	The state of the s		0.1	0.1	0.1	0.1						1		
New York	Σ								5										0	0.	00	0.	0														ľ									ľ	THE PERSON						Σ													ľ	ST 100 TO 100						7				muta-	- thin		-
C C C C C C C C C C	>	>	-02 I V	>						I				-	- 65 - 65 - 65	-05 C		-	-04 1					- 89	> × ×	> >	-01								-03 P	2 2	V 1 EO-											1 50	-03 P	-03 /		-03 1	-03		-	1		>			2 .	-03 X V	+01 A V	V A 10+			- C2	V I 60-					-	^	>))	0		> ×	k v
National date	a	۵	×	-			-		-		1		-	- 0	– 0	-	Ξ	-:		I				<u>~</u> ×		-		-		H	No Contract	-	_	-		•		-	-			ALC: ALC: ALC: ALC: ALC: ALC: ALC: ALC:	-		-	-	-	-		A	1	-	-		-				-		7.0			-		-			-	-	-	-	٦.	>	>	,	e		×	l k
1.0E-04 1.0E-06 1.0E		1.0E-03	4.0E-03 3.0E-04	1 OF-01	5.0E-02 3.0E-02	3.0E-01	2.5E-02	3.0E-02	Z.UE-UI	4.0E-04 2.0E-01	Т		5.0E-02	9.0E-03	3.0E-04 3.5E-06	3.0E-04	5.0E-02	1.3E-02		4.0E-04	9.0E-04	5.0E-04	4.0E-04		1	2.0E-01		2.3E-U3	2.0E-02	8.0E-02			3.0E-04	4.0E-04	1.0E+0C	1 05.00		5.0E-03	2.5E-01	3.05-03	3.0E-05	St. Marketon	TOE-03	1.0F-03	1.0E-03	1 05.03	1.0E-02	1 05 03		4.0E-02	4000	5.0E-01	2.0E-03	2000	5.0E-04			1.0E-01	1 OF-01				9.0E-01	9.0F-01	2.0E-02	2 OF-02			4.0E-03	4.0E-03	1.55-01	1.5E-01						Ź		
	6.7E-02 1		7.8E-06							3.1E-05 I	7:0F 04	2.5E-04			4.3E-03	4.3E-03 I	7.1E-06 I							1.6E-06	1 00 00			Charles Control												4.35-03	4.9E-03 1					Section of the sectio	STATE OF STATE OF			6.8E-05 I	1 20 20 3		1.0E-04 I	1 05 04	STATE AND	-											Z.ZE-00 I	2.2E-06 I			5.1E-Ub C	5.1E-06 C	1	(m/gn)	(ug/m³)-1	3.4	IOR	IUR	2	K
SFO (mg/kg-day) ¹ (mg/kg-day) ¹ (s. Ft-03 g. S. Ft-04 g. S. Ft-0	2.35+02		5.5E-02 I							1E-01	1				SE+00 1	E+00 1	5E-02 I			The state of the s											9						8	Marie Anna Marie		TOLI	7E+01	The State of the								1F-01			1E-01		State	1													/E-03	1 E-03	3E-02	3E-02 C	٧,	S	-	,	A.		2	×

Key; I IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = PPRTV Appendix; H = HEAST; J = New Jersey; O = EPA Office of Water; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile; F = See FAQ; R = RBA applied (See User Guide for Arsenic notice); c = cancer; * = where:

und Water SSIs	MCI-based	SSL (mg/kg)		3.2E+00									7.7E-02		2 25.03	2.2E-02	70.77											3.8E-01				1.6E-02	1.9E-03					1.46-01								1.2E-02	
Protection of Gro	Risk-based MCI-based	SSL (mg/kg)	8.4E-05	1.3E+01	3.6E-04 5.7E-01	1.1E+03 8.7F-03	1.1E-04	1.1E-02 3 1E-06	1.5E-08	4.4E+01	9.91.400		7.4E-04 1.8E-06	3.6E-02	2.1E-02	3.2E-03	1.8E-03	1.1E-01	8.7E-01	8.6E-06	3.2E-01	6.3E+00	3.3E-01	3.9E-01 8.6E-02	2.5E+00	4.6E+00		5.2E-01	1.9E+00	6.15-04	1.3E+00	2.8E-02 2.1E-01	1.5E-04	9.0E-01 8.0E-01		3.1E-01 5.5E-02	1.3E-04	1.15-04	2.3E-02	1.0E-01		E 25±01	3.2E+01	1.36-04	3.46-04	5.0E-05 6.3E-03	1.3E-04
		MCL (ug/L)		4.0E+00									1.0E+01		0 05401/51	0.0E-01(F)	(1)						10 M					5.0E+00				4.0E+01	5.0E+00					2.0E+00				1.0E+03				6.0E+01	and the second
		ter L) key	٥.	_	00 n 01 n	n 20	01 c	01 u	05 c		n 40	c	o o	01 n	c (, 1	, =		05 n	02 c	c *		-02 n	0 00	-02 n	L C C C C C C C C C C C C C C C C C C C	-02 n	c	n 50+	* * 5	c	c c	U	5 5		 5 6	-01 c	93 0	u 00+	L 203	H02 n	HO2 n	u co	010		- TO	-01 c
1		Tapwater (ug/L)	1	c* 1.6E+01	1.6E+00 7.5E+01		c 3.1E-	4.6E+	c 6.2E-		n 3.1E+03	n 6.2E+	9.6E-02 c 6.4E-03	n 5.4E+			n 7.0E+00	7.6E+		c* 1.6E-	1.5E+	n 3.1E+	3,4E+	c 2.1E+02 2.9E+00	7.8E+	1.6E+03 5.1E+02	3.15	c** 6.9E+00		c 3.5E-01	1.4E	7.3E+01 n 7.2E+02	c 3.9E-	3.7E+01 1.5E+03	c	1.5E+03 2.2E+02		c 3.0E-03	8.6E-	3.0E+02 n 1.6E+03		4.7E		1.5E-01	c 6.0E	3.1E+01	3.2E-01
ed on DAF=	ASSESSMENT OF THE PROPERTY OF	Industrial Air (ug/m³)	2.5E-01	5.1E-03		.8F+00	1.2E+00	3 7E-02	2.0E-04		8.8E+01 8.8E+01	5.7E+01	2.0E-02	2.6E+02	1.8E+02	3.3E-01	2.2E+01			4.1E-01		1.3E+05		2.2E+02				6.8E-03	9.6E+00	2.9E-01 1.9E+01		3.1E+03	2.0E+00		3.9E+00			2.7E-03		6.4E-01	8.8E-01	3 25+05	4 1E-02	70.77	1.6E-01	1 3F-01	7,700
r Levels		key	· د.				0		, ,			E	U				, =			*		E		U				***		o o		c	0		c			ს ს		c					U		
le); SSL valu Screenin		Resident Air (ug/m³)	5.0E-02	1.0E-03		4.2F-01	2.4E-01	7 4E-03	3.9E-05		2.1E+01 2.1E+01	1.4E+01	4.1E-03	6.3E+01	4.2E+01	200-02	5.2E+00			8.1E-02		3.1E+04		4.3E+01				1.4E-03	2.3E+00	5.7E-02 3.7E+00		7.3E+02	4.1E-01		9.4E-01			5.3E-04		1.5E-01	2.1E-01	C 25404	9.15.03	0.11-03	3.2E-02	3.15-02	-
User Guid		key	د.			c c		c (, u	4	EE	С	u u	Su	_ (. *	, e				E (υυ		smu			ши	υυ	С	r S		- -		c c		ზ ი	С	c c	c	= 1	SILLI	ט נ	U	v = E	
d Csat (See		Industrial Soil (mg/kg)	4.9E+00	2.0E+03	6.2E+01 5.5E+03	9.2E+03	2.2E+01	1.8E+03	3.9E-04	3.1E+04	2.05+05	4.1E+04	4.1E+00 1.2E-01	1.8E+03	6.8E+02	ישרבים	3.2E+01	3.1E+U3	1.2E+04	2.6E-01	6.2E+04	1.2E+06	3.1E+04	8.6E+03 4.8E+02	5.1E+04	1.0E+05	1.2E+04	8.0E+02	3.0E+05	1.1E+01 7.5E+02	6.2E+04	3.1E+03 3.7E+03	3.0E+00	6.2E+03 6.2E+04	5.4E+06	6.2E+04 9.2E+03	4.3E+00	1.7E-01	4.3E+02	1.2E+04 9.1E+04	3.0E+04	3.15+04	4 7E 02	3.7E+00	1.7E+01	1.2E+03 1.8F+05	8.6E+00
may excee		key	*2	u		c c	v	= 4	, 0	E	- E	c	u u	c	c (, ,			c c		c *		h	u u		5 5	1		c	ย ย		- S			-		υ	t 0					22	ט ט	*0	0 E E	. 0
centration	THE TAXABLE PARTY	Resident Soil (mg/kg)	1.0E+00	1.6E+02	6.1E+00 5.5E+02	9.2E+02 5.1F+01	4.6E+00	1.8E+02	7.7E-05	3.1E+03	1.6E+04	3.1E+03	9.1E-01 2.4E-02	3.0E+02	1.6E+02	2.75-01	7.35+00	3.1E+02	1.2E+03	5.4E-02	6.1E+03	1.2E+05	3.1E+03	2.4E+03 1.4E+02	3.95+03	7.8E+03	1.2E+03	7.0E+01	3.0E+04	3.2E+00 2.1E+02	6.1E+03	3.1E+02 8.2E+02	6.1E-01	6.1E+02 6.1E+03	1.3E+06	6.1E+03 9.2E+02	1.2E+00	1.6E+00 4.9E-02	4.3E+01	1.2E+03 7.5E+03	2.3E+03	2.3E+03	5.8E+04	1.1E+00	4.9E+00	1.2E+00 1.2E+02 4.3F+04	2.4E+00
concentration may exceed celling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1. Contaminant		CAS No.		7440-41-7	141-66-2 42576-02-3	82657-04-3	1-09-1	1-91-1	542-88-1	05-7	10294-34-5	87-07-2	15541-45-4	3-86-1	97-5	4-17	74-83-9	2104-96-3	1689-84-5	106-99-0	71-36-3	-92-2	08-41-5	725013-16-5	104-51-8	135-98-8	75-60-5	7440-43-9	2-09-5	2425-06-1	63-25-2	1563-66-2	56-23-5	55285 14 8	1306-38-3	302-17-0	8-75-2	3-50-0	470-90-6	90982-32-4	10049-04-4	7758-19-2	5-89-3	65-93-3	-69-2	79-11-8	106-47-8
ee User Gui			100	744	141	826	108	=======================================	542	80-	102	763	251	108	74	-6/	47	717	166	106	77.	78-	1 200))	107	13.	. 75-	4 4	100	13.	63-	\$ K	-95	52.	130	13 30	118	14.	470	906	100	EX	-67	31 1	95	79.	100
ling limit (S	1000000																			STANKS TO	(1111	5)			W.		1300)																	
exceed cei																		1					ices,	n	No. of the least		8		1111																		
ration may		yte														1					(STATE AND																				
ıı	Name of Street	Analyte					er														Ç	2	1	-() 1			a		77	7															Sec. de		
ncancer; n			The Control	spund			/lethyl) eth	nethane	ier ier		July		ne, 1-		Je C	alle			ā			()	1	lsole			C	-11	10 	,			9					(e)				(t)	emane, 1-	ine HCl, 4-	ine, 4-	., 2-	2,4
n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m n	Contract of the last		loride	Beryllium and compounds		rin 1.1%	Bis(2-chloro-1-methylethyl) eth	Bis(2-chloroethoxy)methane	4.2E+03 Bis(chloromethyl)ether	I.A	Boron And Borates Only Boron Trichloride	fluoride	Bromate Bromo-2-chloroethane, 1-	nzene	Bromochloromethane	chiorometr	ethane	501	Bromoxynii Octanoate	e, 1,3-	N-N-N-N-N-N-N-N-N-N-N-N-N-N-N-N-N-N-N-	Butyl alcohol, sec-	1	Butylated hydroxyanisole Butylated hydroxytoldene	zene, n-	Butylbenzene, sec-	Acid	(Water)	Caprolactam	3		an	Carbon Tetrachloride	rcj ucj	de	lydrate ben		Chlordane Chlordecone (Kepone)	vinphos	Chlorine Chlorine	Chlorine Dioxide	Chlorite (Sodium Salt)	T-diffuoro	Chloro-2-methylaniline HCl, 4-	-methylani	Chloroacetaldehyde, 2- Chloroacetic Acid	niline, p-
n SL < 10X			Benzyl Chloride	Beryllium	Bifenox	Biphenthrin Biphenyl, 1.15		Bis(2-chlo	Bis(chlor	Bisphenol A	Boron Ar Boron Tr	Boron Trifluoride			Bromoch	Bromodichi		Bromopnos			Butanol, N-	Butyl alo	Butylate	Butylater	Butylbenzene, n-	Butylben Butylben	Cacodylic Acid	Cadmium (Wate	Caprola	Captafol	Carbaryl	Carbofuran Carbon Disulfide		Carboculfan	Ceric oxide	Chloral Hydrate Chloramben	Chloranil	Chlordane	Chlorfenvinphos	Chlorine	Chlorine				-		Chloroaniline, p-
** = where		C _{sat} (mg/kg)	1.5E+03				1.0E+03		198				2.4E+03	6.8E+02	4.0E+03		3.6E+03			6.7E+02						1.5E+02						7.4E+02	4.6E+02									1 75.03	1.2E+03			2.8E+04	
100X c SL;		GIABS ABS	1	0.007	1 0.1	1 0.1	1	1 0.1	1.	1 0.1		1	11	1		1	1 1	1 0.1	1 0.1	1	1 0.1	1 0.1	1 0.1	1 0.1	1			0.025 0.001		1 0.1	1 0.1	1 0.1	1	1 001	1	1 0.1	1 0.1	1 0.04	1 0.1	1 0.1	1	₩,	1	1 0.1	1 0.1	111	1 0.1
n SL < :	-	muta- gen GI,		0.0																								9 O																			
fic Informa	П	0 0	ь v	1 50-		×		>	> >		-02 H -02 P	-02 C	>	-02 I V	4.0E-02 X V	>	5.0E-03 I V			2.0E-03 I V		+01 P			>	>>		-05 A -05 A			20072	-01 I V	1.0E-01 I V		9.0E-04 I			-04		-04 A		-	- -	20-	1	> 05-05	
mical-specific		e RfC ₁	۵.	1 2.0E-05	- d	I 4.0F-04	-	d		-	P 2.0E-02	U	-	1 6.0E	4.05	-	:	_				P 3.0E+01	-	۵.	Ь	××	4	1 1.0E-05	-		-	1 7.0E-01	-					1 7.0E-04 1	A	1 1 1.5E-04	-	-	2	E	×	I	-
ity and Che	200	RfD。 (mg/kg-day)	2.0E-03	2.0E-03	1.0E-04 9.0E-03	1.5E-02 5.0F-01	4.0E-02	3.0E-03		5.0E-02	2.0E-01 2.0E+00	4.0E-02	4.0E-03	8.0E-03	20.00	2.0E-02	1.4E-03	5.0E-03	2.0E-02 2.0E-02		1.0E-01	2.0E+00	5.0E-02	3.0E-01	5.0E-02	1.0E-01	2.0E-02	1.0E-03 5.0E-04	5.0E-01	2.0E-03 1.3E-01	1.0E-01	5.0E-03 1.0E-01	4.0E-03	1.0E-02		1.0E-01 1.5E-02		3.0E-04	7.0E-04	2.0E-02 1.0E-01	3.0E-02	3.0E-02	2000	Z.UE-UZ	3.0E-03	2.0E-03	4.0E-03
Toxic	¥	IUR e (ug/m³)-2 y	U	2.4E-03 I			1.0E-05 H	35.04	6.2E-02 1				6.0E-04 X			3./E-US C	- TE-00			3.0E-05 I				5.7E-08 C				1.8E-03 1		4.3E-05 C 6.6E-07 C			6.0E-06 I					1.0E-04 4.6E-03 C					1 0000		7.7E-05 C		
	K	ح ب	-	2.			I						-×			1				U	0			U a				44		UU			-				I						ľ	I	۵ :	×	1 P
		SFO (mg/kg-day) ⁻¹	1.7E-01			8.0F-03	7.0E-02	1 15+00	2.2E+02			THE SALES	7.0E-01 2.0E+00		20 10 0	5.2E-02	7.3E-U.			3.4E+00	1 95.03	2		2.0E-04 3.6E-03						1.5E-01 2.3E-03			7.0E-02				4.0E-01	3.5E-01 1.0E+01						4.6E-01	1.0E-0	2.7E-01	2.0E-01