

Table 1
Soil Acceptance Criteria
Dudley Reclamation Project
123 Oxford Ave, Dudley, MA

Test	Parameter	Dudley <RCS-1 Acceptance Criteria	Dudley <RCS-2 Acceptance Criteria	MassDEP RCS-1 Reportable Concentration	MassDEP RCS-2 Reportable Concentration
PID (ppmv)	Total Organic Vapors	5	5	NE	NE
VOCs (mg/kg)	Acetone (2-propanone)	0.6	0.6	6	50
	Acrylonitrile	10	10	100	1,000
	Benzene	0.2	0.2	2	200
	Bromobenzene	10	10	100	1,000
	Bromochloromethane	—	—	NE	NE
	Bromodichloromethane	0.01	0.01	0.1	0.1
	Bromoform	0.01	0.01	0.1	1
	Bromomethane	0.05	0.05	0.5	0.5
	2-Butanone (MEK)	0.4	0.4	4	50
	<i>n</i> -Butylbenzene	—	—	NE	NE
	<i>sec</i> -Butylbenzene	—	—	NE	NE
	<i>tert</i> -Butylbenzene	10	10	100	1,000
	Carbon Disulfide	10	10	100	1,000
	Carbon Tetrachloride	0.5	0.5	5	5
	Chlorobenzene	0.1	0.1	1	3
	Chloroethane	10	10	100	1,000
	Chloroform	0.02	0.02	0.2	0.2
	Chloromethane	10	10	100	1,000
	2-Chlorotoluene (<i>ortho</i>)	10	10	100	1,000
	4-Chlorotoluene	1	1	10	100
	1,2-Dibromo-3-chloropropane	1	1	10	100
	Dibromochloromethane	0.0005	0.0005	0.005	0.03
	1,2-Dibromoethane (FDB)	0.01	0.01	0.1	0.1
	Dibromomethane	50	50	500	5,000
	1,2-Dichlorobenzene (<i>o</i> -DCB)	0.9	0.9	9	100
	1,3-Dichlorobenzene (<i>m</i> -DCB)	0.3	0.3	3	200
	1,4-Dichlorobenzene (<i>p</i> -DCB)	0.07	0.07	0.7	1
	<i>trans</i> -1,4-Dichloro-2-butene	1	1	10	100
	Dichlorodifluoromethane	100	100	1,000	10,000
	1,1-Dichloroethane	0.04	0.04	0.4	9
	1,2-Dichloroethane	0.01	0.01	0.1	0.1
	1,1-Dichloroethene	0.3	0.3	3	40
	<i>cis</i> -1,2-Dichloroethene	0.01	0.01	0.1	0.1
	<i>trans</i> -1,2-Dichloroethene	0.1	0.1	1	1
	1,2-Dichloropropane	0.01	0.01	0.1	0.1
	1,3-Dichloropropane	50	50	500	5,000
	2,2-Dichloropropane	0.01	0.01	0.1	0.2
	1,1-Dichloropropene	0.001	0.001	0.01	0.1
	<i>cis</i> -1,3-Dichloropropene	0.001	0.001	0.01	0.4
	<i>trans</i> -1,3-Dichloropropene	0.001	0.001	0.01	0.4
	Ethylbenzene	4	4	40	1,000
	Hexachlorobutadiene	3	3	30	100
	2-Hexanone (MBK)	10	10	100	1,000
	Isopropylbenzene	100	100	1,000	10,000
	2-Isopropyltoluene (<i>ortho</i>)	—	—	NE	NE
	4-Isopropyltoluene (<i>para</i>)	10	10	100	1,000
	Methyl Tertiary Butyl Ether (MTBE)	0.01	0.01	0.1	100
	4-Methyl-2-pentanone (MIBK)	0.04	0.04	0.4	50
	Methylene Chloride (DCM)	0.01	0.01	0.1	4
	Naphthalene	0.4	0.4	4	20
	<i>n</i> -Propylbenzene	10	10	100	1,000
	Styrene	0.3	0.3	3	4
	1,1,1,2-Tetrachloroethane	0.01	0.01	0.1	0.1
	1,1,2,2-Tetrachloroethane	0.0005	0.0005	0.005	0.02
	Tetrachloroethene (PCE)	0.1	0.1	1	10
	Tetrahydrofuran	50	50	500	5,000
	Toluene	3	3	30	1,000
	1,2,3-Trichlorobenzene	—	—	NE	NE
	1,2,4-Trichlorobenzene	0.2	0.2	2	6
	1,1,1-Trichloroethane (TCA)	3	3	30	600
1,1,2-Trichloroethane	0.01	0.01	0.1	2	
Trichloroethene (TCE)	0.03	0.03	0.3	0.3	
Trichlorofluoroethane	—	—	NE	NE	
Trichlorofluoromethane	100	100	1,000	10,000	
1,2,3-Trichloropropane	10	10	100	1,000	
1,2,4-Trimethylbenzene	100	100	1,000	10,000	
1,3,5-Trimethylbenzene	1	1	10	100	
Vinyl chloride	0.07	0.07	0.7	0.7	
<i>m, p</i> -Xylenes <i>o</i> -Xylenes Xylenes (total)	10	10	100	100	
	10	10	100	100	
	10	10	100	100	
1,4-Dioxane	0.02	0.02	0.2	6	
Diethyl ether	10	10	100	1000	
Diisopropyl ether	10	10	100	1000	
Ethyl tert butyl ether	—	—	NE	NE	
Tert-amyl methyl ether	—	—	NE	NE	
TPH (mg/kg)	Total Petroleum Hydrocarbons Petroleum Identification (qualitative)	500	1,000	1,000	3,000

Notes

NE = No Established standard

All acceptance criteria are less than the concentration listed unless otherwise noted

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SVOCs (mg/kg)	Acenaphthene	4	5	4	3,000
	Acenaphthylene	1	5	1	10
	Acetophenone	100	100	1,000	10,000
	Aniline	100	100	1,000	10,000
	Anthracene	10	10	1,000	3,000
	Benzo(a)anthracene	7	20	7	40
	Benzdine	1	10	10	100
	Benzo(a)pyrene	2	7	2	7
	Benzo(b)fluoranthene	7	20	7	40
	Benzo(g,h,i)perylene	10	10	1,000	3,000
	Benzo(k)fluoranthene	10	10	70	400
	Benzoic acid	100	100	1,000	10,000
	Benzyl butyl phthalate	10	100	100	1,000
	bis (2-chloroethoxy)methane	50	100	500	5,000
	bis (2-Chloroethyl)ether	0.07	0.07	0.7	0.7
	bis (2-Chloroisopropyl)ether	0.07	0.07	0.7	0.7
	bis (2-Ethylhexyl)phthalate	9	60	90	600
	4-Bromophenyl phenyl ether	10	100	100	1,000
	Carbazole	—	—	NE	NE
	4-Chloroaniline (para)	0.1	0.3	1	3
	2-Chloronaphthalene	100	100	1,000	10,000
	4-Chloro-3-methylphenol	100	100	1,000	10,000
	2-Chlorophenol	0.07	100	0.7	100
	4-Chlorophenyl phenyl ether	100	100	1,000	10,000
	Chrysene	20	20	70	400
	Dibenzo(a,h)anthracene	0.7	4.0	0.7	4
	Dibenzofuran	10	100	100	1,000
	3,3'-Dichlorobenzidine	0.3	2	3	20
	1,2-Dichlorobenzene (o -DCB)	0.9	10	9	100
	1,3-Dichlorobenzene (m -DCB)	0.3	20	3	200
	1,4-Dichlorobenzene (p -DCB)	0.07	0.1	0.7	1
	2,4-Dichlorophenol	0.07	4.0	0.7	40
	Diethyl Phthalate	1	20	10	200
	2,4-Dimethylphenol	0.07	10.0	0.7	100
	Dimethyl Phthalate	0.07	5.0	0.7	50
	Di-n -Butyl Phthalate	5	50	50	500
	4,6-Dinitro-2-methylphenol	5	50	50	500
	2,4-Dinitrophenol	0.3	5	3	50
	2,4-Dinitrotoluene	0.07	1.0	0.7	10
	2,6-Dinitrotoluene	10	100	100	1,000
	Di-n -Octyl Phthalate	100	100	1,000	10,000
	1,2-Diphenylhydrazine	5	50	50	500
	Fluoranthene	40	40	1,000	3,000
	Fluorene	10	10	1,000	3,000
	Hexachlorobenzene	0.07	0.08	0.7	0.8
	Hexachlorobutadiene	3	10	30	100
	Hexachlorocyclopentadiene	5	50	50	500
	Hexachloroethane	0.07	0.3	0.7	3
	Indeno(1,2,3-cd)pyrene	7	10	7	40
	Isophorone	10	100	100	1,000
	2-Methylnaphthalene	0.7	5.0	0.7	80
	2-Methylphenol (o-cresol)	50	100	500	5,000
	3&4-Methylphenol (m&p-cresol)	50	100	500	5,000
	Naphthalene	4	5	4	20
	2-Nitroaniline (ortho)	—	—	NE	NE
	3-Nitroaniline (meta)	—	—	NE	NE
	4-Nitroaniline (para)	100	100	1,000	10,000
	Nitrobenzene	50	100	500	5,000
N-Nitrosodimethylamine	50	100	500	5,000	
N-Nitrosodi-n -propylamine	50	100	500	5,000	
N-Nitrosodiphenylamine	10	100	100	1,000	
2-Nitrophenol (ortho)	10	100	100	1,000	
4-Nitrophenol (para)	10	100	100	1,000	
Pentachloronitrobenzene	10	100	100	1,000	
Pentachlorophenol	0.3	1	3	10	
Phenanthrene	10	30	10	1,000	
Phenol	0.1	2	1	20	
Pvrene	40	40	1,000	3,000	
Pvridine	10	100	100	1,000	
1,1-Biphenyl	0.005	0.6	0.05	6	
1,2,4,5-Tetrachlorobenzene	100	100	1,000	10,000	
1,2,4-Trichlorobenzene	0.2	0.6	2	6	
2,4,5-Trichlorophenol	0.4	60	4	600	
2,4,6-Trichlorophenol	0.07	2.0	0.7	20	
PCBs	No Aroclor identification	0.1	0.1	1	4

Notes

NT = Not Tested (for that parameter)

Total SVOCs must be less than 100

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Test	Parameter	Dudley <RCS-1 Acceptance Criteria	Dudley <RCS-2 Acceptance Criteria	MassDEP RCS-1 Reportable Concentration	MassDEP RCS-2 Reportable Concentration
Total Metals (mg/kg)	Antimony	10	10	20	30
	Arsenic	20	20	20	20
	Barium	375	375	1,000	3,000
	Beryllium	4	4	90	200
	Cadmium	20	20	70	100
	Chromium (total)	100	200	100	200
	Lead	200	500	200	600
	Mercury	3	3	20	30
	Nickel	150	150	600	1,000
	Selenium	5	5	400	700
	Silver	6	6	100	200
	Thallium	6	6	8	60
	Vanadium	225	225	400	700
	Zinc	500	500	1,000	3,000
Chlorinated Pesticides & Herbicides (mg/kg)	Alachlor	10	100	100	1,000
	Aldrin	0.008	0.05	0.08	0.5
	α-BHC	5	50	50	500
	1-BHC	1	10	10	100
	γ-BHC (Lindane, γ-HCH)	0.0003	0.05	0.003	0.5
	o-BHC	1	10	10	100
	Chlordane	0.07	3	0.7	30
	4,4-DDD (p,p')	0.8	4	8	40
	4,4-DDE (p,p')	0.6	3	6	30
	4,4-DDT (p,p')	0.6	3	6	30
	Dieldrin	0.008	0.05	0.08	0.5
	α-Endosulfan (I)	0.05	0.1	0.5	1
	1-Endosulfan (II)	0.05	0.1	0.5	1
	Endosulfan Sulfate	"See listed constituents"			
	Endrin	1/2	2	10	20
	Endrin Aldehyde	1/10	10	10	100
	Endrin ketone	NE		NE	NE
	Heptachlor	0.03	0.2	0.3	2
	Heptachlor Epoxide	0.01	0.09	0.1	0.9
	Hexachlorobenzene	0.07	0.08	0.7	0.8
	Methoxychlor	20	40	200	400
	Toxaphene	1	10	10	100
	2,4-D	10	100	100	1,000
	2,4-DB	10	100	100	1,000
	Dalapon	100	1,000	1,000	10,000
	Dicamba	50	500	500	5,000
	Dichlorprop	NE		NE	NE
	Dinoseb	50	500	500	5,000
	MCPPA	10	100	100	1,000
	MCPA	NE		NE	NE
	MCPP	NE		NE	NE
	2,4,5-T	10	100	100	1,000
	2,4,5-TP (Silvex)	10	100	100	1,000
Other Units (mg/kg)	Percent Solids	No Free Liquids			—
	pH (Standard Units)	5.0-9.0 S.U.†			>2.0 or <12.5 S.U.
	Corrosivity (positive/negative)	Negative			Negative
	Specific Conductance (µmhos/cm)	2,000			—
	Flashpoint (°F)	Non-ignitable			Non-ignitable
	Ignitability (°F)	>140 °F			>140 °F
	Cyanide Reactivity	<250			Non-Reactive
	Sulfide Reactivity	<500			Non-Reactive
	Reactivity (positive/negative)	None			Negative
	Amenable Cyanide ⁽¹⁾	3	10	30	100
	Asbestos ⁽¹⁾	ND	ND	NE	NE
	Dioxins ⁽¹⁾	0.000002	0.000005	0.00002	0.00005
	Perchlorate Compounds ⁽¹⁾	0.01	0.01	0.1	5
	Per- and Polyfluoroalkyl Substances (PFAS) ⁽¹⁾	See individual constituents listed below		See individual constituents listed below	
	Perfluorodecanoic Acid (PFDA) ⁽¹⁾⁽²⁾	0.0003	0.04	0.0003	0.4
	Perfluoroheptanoic Acid (PFHpA) ⁽¹⁾⁽²⁾	0.0005	0.04	0.0005	0.4
	Perfluorohexanesulfonic Acid (PFHxS) ⁽¹⁾⁽²⁾	0.0003	0.04	0.0003	0.4
	Perfluorononanoic Acid (PFNA) ⁽¹⁾⁽²⁾	0.00032	0.04	0.00032	0.4
Perfluorooctanesulfonic Acid (PFOS) ⁽¹⁾⁽²⁾	0.0002	0.04	0.002	0.4	
Perfluorooctanoic Acid (PFOA) ⁽¹⁾⁽²⁾	0.00072	0.04	0.00072	0.4	

Notes

NE = No Established standard

* Herbicides or pesticides <10% applicable RCs (and no known or potential source)

(1) Must analyze if considered to be a chemical of concern at generating site

(2) The LSP/QEP should be familiar with the "Interim Guidance on Sampling and Analysis for PFAS as Disposal Sites Regulated under the Massachusetts Contingency Plan dated June 19, 2018 and updated December 27, 2019" and can be found here: <https://www.mass.gov/doc/interim-guidance-on-sampling-and-analysis-for-pfas-at-disposal-sites-regulated-under-the/download>

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