

**Table 2.4-1**

**Reference List of Potentially Applicable Analytes and Associated Screening Levels (rev. Oct 2019)  
Management Protocol for Handling and Disposition of Displaced Material**

*PG&E Topock Compressor Station, Needles, California*

[Group] Analyte	Surrogate Assumed	Interim Soil Management Screening Level <sup>a</sup>	Interim Screening Level Source
<b>Dioxins and Furans (ng/kg)</b>			
1,2,3,4,6,7,8-HpCDD	--	NE	Not Established
1,2,3,4,6,7,8-HpCDF	--	NE	Not Established
1,2,3,4,7,8,9-HpCDF	--	NE	Not Established
1,2,3,4,7,8-HxCDD	--	NE	Not Established
1,2,3,4,7,8-HxCDF	--	NE	Not Established
1,2,3,6,7,8-HxCDD	--	NE	Not Established
1,2,3,6,7,8-HxCDF	--	NE	Not Established
1,2,3,7,8,9-HxCDD	--	NE	Not Established
1,2,3,7,8,9-HxCDF	--	NE	Not Established
1,2,3,7,8-PeCDD	--	NE	Not Established
1,2,3,7,8-PeCDF	--	NE	Not Established
2,3,4,6,7,8-HxCDF	--	NE	Not Established
2,3,4,7,8-PeCDF	--	NE	Not Established
2,3,7,8-TCDD	--	4.8	EPA Residential RSL
2,3,7,8-TCDF	--	NE	Not Established
OCDD	--	NE	Not Established
OCDF	--	NE	Not Established
TEQ Avian	--	16	Soil Ecological Comparison Value (ECV)
TEQ Human	TCDD, 2,3,7,8-	50 <sup>b</sup>	DTSC Note 2
TEQ Mammals	--	1.6	Soil Ecological Comparison Value (ECV)
<b>Metals (mg/kg)</b>			
Aluminum	--	16,400	Background Level
Antimony	--	0.285	Soil Ecological Comparison Value (ECV)
Arsenic	--	11	Background Level
Barium	--	410	Background Level
Beryllium	--	0.672	Background Level
Cadmium	--	1.1	Background Level
Calcium	--	66,500	Background Level
Chromium, Hexavalent	--	0.83	Background Level
Chromium, total	Chromium III	39.8	Background Level

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Cobalt	--	12.7	Background Level
Copper	--	16.8	Background Level
Cyanide	--	0.9	Soil Ecological Comparison Value (ECV)
Iron	--	55,000	EPA Residential RSL
Lead	--	8.39	Background Level
Magnesium	--	12,100	Background Level
Manganese	--	402	Background Level
Mercury	Mercuric Chloride (and other Mercury salts)	0.0125	Soil Ecological Comparison Value (ECV)
Molybdenum	--	1.37	Background Level
Nickel	--	27.3	Background Level
Potassium	--	4,400	Background Level
Selenium	--	1.47	Background Level
Silver	--	5.15	Soil Ecological Comparison Value (ECV)
Sodium	--	2,070	Background Level
Thallium	--	4.56	Background Level
Vanadium	--	52.2	Background Level
Zinc	--	58	Background Level
<b>Pesticides (µg/kg)</b>			
4,4-DDD	--	21	Soil Ecological Comparison Value (ECV)
4,4-DDE	--	21	Soil Ecological Comparison Value (ECV)
4,4-DDT	--	21	Soil Ecological Comparison Value (ECV)
Aldrin	--	39	EPA Residential RSL
alpha-BHC	--	86	EPA Residential RSL
alpha-Chlordane	Chlordane	470	Soil Ecological Comparison Value (ECV)
beta-BHC	--	300	EPA Residential RSL
delta-BHC	beta-BHC	300	EPA Residential RSL
Dieldrin	--	5	Soil Ecological Comparison Value (ECV)
Endo sulfan I	Endosulfan	470,000	EPA Residential RSL
Endo sulfan II	Endosulfan	470,000	EPA Residential RSL
Endosulfan sulfate	Endosulfan	470,000	EPA Residential RSL

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Endrin	--	19,000	EPA Residential RSL
Endrin aldehyde	Endrin	19,000	EPA Residential RSL
Endrin ketone	Endrin	19,000	EPA Residential RSL
gamma-BHC (Lindane)	--	570	EPA Residential RSL
gamma-Chlordane	Chlordane	1,700	EPA Residential RSL
Heptachlor	--	130	EPA Residential RSL
Heptachlor Epoxide	--	70	EPA Residential RSL
Methoxychlor	--	320,000	EPA Residential RSL
Toxaphene	--	490	EPA Residential RSL
<b>Polyaromatic Hydrocarbons (µg/kg)</b>			
1-Methyl naphthalene	--	18,000	EPA Residential RSL
2-Methyl naphthalene	--	240,000	EPA Residential RSL
Acenaphthene	--	3,600,000	EPA Residential RSL
Acenaphthylene	Acenaphthene	3,600,000	EPA Residential RSL
Anthracene	--	18,000,000	EPA Residential RSL
B(a)P Equivalent	Benzo (a) pyrene	110	EPA Residential RSL
Benzo (a) anthracene	--	1,100	EPA Residential RSL
Benzo (a) pyrene	--	110	EPA Residential RSL
Benzo (b) fluoranthene	--	1,100	EPA Residential RSL
Benzo (ghi) perylene	Pyrene	1,800,000	EPA Residential RSL
Benzo (k) fluoranthene	--	11,000	EPA Residential RSL
Chrysene	--	110,000	EPA Residential RSL
Dibenzo (a,h) anthracene	--	28	Appendix I
Fluoranthene	--	2,400,000	EPA Residential RSL
Fluorene	--	2,400,000	EPA Residential RSL
Indeno (1,2,3-cd) pyrene	--	1,100	EPA Residential RSL
Naphthalene	--	3,800	EPA Residential RSL
PAH High molecular weight	--	1,160	Soil Ecological Comparison Value (ECV)
PAH Low molecular weight	--	10,000	Soil Ecological Comparison Value (ECV)
Phenanthrene	Anthracene	18,000,000	EPA Residential RSL
Pyrene	--	1,800,000	EPA Residential RSL

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<b>Polychlorinated Biphenyls (µg/kg)</b>			
Aroclor 1016	--	4,100	EPA Residential RSL
Aroclor 1221	--	200	EPA Residential RSL
Aroclor 1232	--	170	EPA Residential RSL
Aroclor 1242	--	230	EPA Residential RSL
Aroclor 1248	--	230	EPA Residential RSL
Aroclor 1254	--	240	EPA Residential RSL
Aroclor 1260	--	240	EPA Residential RSL
Aroclor 1262	Aroclor 1254	240	EPA Residential RSL
Aroclor 1268	Aroclor 1254	240	EPA Residential RSL
Total PCBs	Polychlorinated Biphenyls (high risk)	204	Soil Ecological Comparison Value (ECV)
<b>Semivolatile Organic Compounds (µg/kg)</b>			
1,1'-Biphenyl	--	47,000	EPA Residential RSL
1,2,4,5-Tetrachlorobenzene	--	23,000	EPA Residential RSL
1,4-Dioxane	--	5,300	EPA Residential RSL
2,3,4,6-Tetrachlorophenol	--	1,900,000	EPA Residential RSL
2,4,5-Trichlorophenol	--	6,300,000	EPA Residential RSL
2,4,6-Trichlorophenol	--	7,500	DTSC-Residential SL
2,4-Dichlorophenol	--	190,000	EPA Residential RSL
2,4-Dimethylphenol	--	1,300,000	EPA Residential RSL
2,4-Dinitrophenol	--	130,000	EPA Residential RSL
2,4-Dinitrotoluene	--	1,700	EPA Residential RSL
2,6-Dinitrotoluene	--	360	EPA Residential RSL
2-Chloronaphthalene	--	4,800,000	EPA Residential RSL
2-Chlorophenol	--	390,000	EPA Residential RSL
2-Methylphenol (o-Cresol)	--	3,200,000	EPA Residential RSL
2-Nitroaniline	--	630,000	EPA Residential RSL
3,3-Dichlorobenzidene	--	1,200	DTSC-Residential SL
3-Nitroaniline	Nitroaniline, 2-	630,000	EPA Residential RSL
4,6-Dinitro-2-methylphenol	--	5,100	EPA Residential RSL

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4-Chloro-3-methylphenol	--	6,300,000	EPA Residential RSL
4-Chloroaniline	--	2,700	EPA Residential RSL
4-Methylphenol (p-Cresol)	--	500	Soil Ecological Comparison Value (ECV)
4-Nitroaniline	--	27,000	EPA Residential RSL
Acetophenone	--	6,000,000	DTSC-Residential SL
Atrazine	--	2,400	EPA Residential RSL
Benzaldehyde	--	46,000	DTSC-Residential SL
Benzoic acid	--	250,000,000	EPA Residential RSL
Benzyl alcohol	--	6,300,000	EPA Residential RSL
Bis (2-chloroethoxy) methane	--	190,000	EPA Residential RSL
Bis (2-ethylhexyl) phthalate	--	2,870	Soil Ecological Comparison Value (ECV)
Butyl benzyl phthalate	--	290,000	EPA Residential RSL
Caprolactam	--	31,000,000	EPA Residential RSL
Carbazole	N,N-Diphenylamine	6,300,000	EPA Residential RSL
Dibenzofuran	--	73,000	EPA Residential RSL
Diethyl phthalate	--	51,000,000	EPA Residential RSL
Dimethyl phthalate	Diethyl Phthalate	51,000,000	EPA Residential RSL
Di-N-butyl phthalate	--	46.9	Soil Ecological Comparison Value (ECV)
Di-N-octyl phthalate	--	630,000	EPA Residential RSL
Hexachlorobenzene	--	210	EPA Residential RSL
Hexachloroethane	--	1,800	EPA Residential RSL
N-Nitroso-di-n-propylamine	--	78	EPA Residential RSL
N-nitrosodiphenylamine	--	110,000	EPA Residential RSL
Pentachlorophenol	--	1,000	EPA Residential RSL
Phenol	--	19,000,000	EPA Residential RSL
<b>Total Petroleum Hydrocarbons (mg/kg)</b>			
TPH as diesel	--	260	SF RWQCB ESL for direct exposure (Jan 2019)
TPH as gasoline	--	430	SF RWQCB ESL for direct exposure (Jan 2019)
TPH as motor oil	--	12,000	SF RWQCB ESL for direct exposure (Jan 2019)

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<b>Volatiles Organic Compounds (µg/kg)</b>			
1,1,1,2-Tetrachloroethane	--	2,000	DTSC-Residential SL
1,1,1-Trichloroethane	--	1,700,000	DTSC-Residential SL
1,1,2,2-Tetrachloroethane	--	600	DTSC-Residential SL
1,1,2-Trichloroethane	--	1,100	EPA Residential RSL
1,1,2-Trichlorotrifluoroethane (Freon 113)	--	6,700,000	EPA Residential RSL
1,1-Dichloroethane	--	3,600	DTSC-Residential SL
1,1-Dichloroethene	--	230,000	EPA Residential RSL
1,1-Dichloropropene	1,3-Dichloropropene	1,800	EPA Residential RSL
1,2,3-Trichlorobenzene	--	63,000	DTSC-Residential SL
1,2,3-Trichloropropane	--	1.5	DTSC-Residential SL
1,2,4-Trichlorobenzene	--	24,000	EPA Residential RSL
1,2,4-Trimethylbenzene	--	300,000	EPA Residential RSL
1,2-Dibromo-3-chloropropane	--	5.3	EPA Residential RSL
1,2-Dibromoethane	--	36	DTSC-Residential SL
1,2-Dichlorobenzene	--	1,800,000	EPA Residential RSL
1,2-Dichloroethane	--	460	EPA Residential RSL
1,2-Dichloropropane	--	2,500	EPA Residential RSL
1,3,5-Trimethylbenzene	--	270,000	EPA Residential RSL
1,3-Dichlorobenzene	1,2-Dichlorobenzene	1,800,000	EPA Residential RSL
1,3-Dichloropropane	--	410,000	DTSC-Residential SL
1,4-Dichlorobenzene	--	2,600	EPA Residential RSL
2,2-Dichloropropane	1,2-Dichloropropane	2,500	EPA Residential RSL
2-Chlorotoluene	--	470,000	DTSC-Residential SL
2-Hexanone	--	200,000	EPA Residential RSL
4-Isopropyltoluene	Cumene	1,900,000	EPA Residential RSL
Acetone	--	61,000,000	EPA Residential RSL
Acrolein	--	140	EPA Residential RSL
Acrylonitrile	--	250	EPA Residential RSL
Benzene	--	330	DTSC-Residential SL

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Bis (2-chloroethyl) ether	--	230	EPA Residential RSL
Bis (2-chloroisopropyl) ether	--	2,000,000	DTSC-Residential SL
Bromobenzene	--	29,000	EPA Residential RSL
Bromochloromethane	--	150,000	EPA Residential RSL
Bromodichloromethane	--	290	DTSC-Residential SL
Bromoform	--	19,000	DTSC-Residential SL
Bromomethane	--	6,800	EPA Residential RSL
Carbon disulfide	--	770,000	EPA Residential RSL
Carbon tetrachloride	--	650	EPA Residential RSL
Chlorobenzene	--	280,000	EPA Residential RSL
Chloroethane	--	14,000,000	EPA Residential RSL
Chloroform	--	320	EPA Residential RSL
Chloromethane	--	110,000	EPA Residential RSL
cis-1,2-Dichloroethene	--	18,000	DTSC-Residential SL
cis-1,3-Dichloropropene	Dichloropropene, 1,3-	1,800	EPA Residential RSL
Cyclohexane	--	6,500,000	EPA Residential RSL
Dibromochloromethane	--	940	DTSC-Residential SL
Dibromomethane	--	24,000	EPA Residential RSL
Dichlorodifluoromethane	--	87,000	EPA Residential RSL
Ethylbenzene	--	5,800	EPA Residential RSL
Hexachlorobutadiene	--	1,200	DTSC-Residential SL
Hexachlorocyclopentadiene	--	1,800	EPA Residential RSL
Isophorone	--	570,000	EPA Residential RSL
Isopropylbenzene	--	1,900,000	EPA Residential RSL
m,p-Xylenes	Xylene, m-	550,000	EPA Residential RSL
Methyl acetate	--	24,000,000	DTSC-Residential SL
Methyl ethyl ketone	--	27,000,000	EPA Residential RSL
Methyl isobutyl ketone	--	33,000,000	EPA Residential RSL
Methyl tert-butyl ether (MTBE)	--	47,000	EPA Residential RSL
Methylcyclohexane	Cyclohexane	5,500,000	DTSC-Residential SL
Methylene chloride	--	2,200	DTSC-Residential SL

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N-Butylbenzene	--	2,400,000	DTSC-Residential SL
Nitrobenzene	--	5,100	EPA Residential RSL
N-Propylbenzene	--	3,800,000	EPA Residential RSL
o-Xylene	--	650,000	EPA Residential RSL
p-Chlorotoluene	--	440,000	DTSC-Residential SL
sec-Butylbenzene	--	2,200,000	DTSC-Residential SL
Styrene	--	6,000,000	EPA Residential RSL
tert-Butylbenzene	--	2,200,000	DTSC-Residential SL
Tetrachloroethene	--	590	DTSC-Residential SL
Toluene	--	1,100,000	DTSC-Residential SL
trans-1,2-Dichloroethene	--	130,000	DTSC-Residential SL
trans-1,3-Dichloropropene	Dichloropropene, 1,3-	1,800	EPA Residential RSL
Trichloroethene	--	940	EPA Residential RSL
Trichlorofluoromethane (Freon 11)	--	1,200,000	DTSC-Residential SL
Vinyl chloride	--	8.2	DTSC-Residential SL
Xylenes, total	Xylenes	580,000	EPA Residential RSL

Notes:

This table presents a reference list of analytes and associated screening levels that may be applicable for making decisions related to disposition of displaced site materials. The specific analytes and screening levels applicable for characterization of displaced material will be determined based on the origin of the material and potential disposition locations.

<sup>a</sup> Interim Screening Levels – The screening levels for metals are predominantly Topock-specific soil background values. However, if a background value is not available then the lesser of the human health screening level or the ecological comparison value is used. If a DTSC HHRA Note 3 Screening Level is not available, then the lesser of the USEPA residential regional screening level (RSL) or the ecological comparison value is used. When applicable, RSLs are adjusted to include toxicity factors from Appendix I of California OEHHA Toxicity Criteria, September 2018 (22 CCR, Section 69021 and 69022), if these levels are the most conservative. It is assumed that the project-specific soil cleanup goal will be equal to or greater than these levels.

<sup>b</sup> Note that 50 ng/kg is the agreed upon value for soil management decision at the Topock site, the risk based screening level for a residential scenario is 4.8 ng/kg.

Background = Final Soil Background Investigation at Pacific Gas and Electric Company Topock Compressor Station, Needles, California (CH2M Hill 2009c) and Determination of Thallium Ambient/Background Concentration at the Pacific Gas and Electric Company Topock Compressor Station, Needles, California (Jacobs August 13, 2019).

ECV = Ecological Comparison Values; ECV were calculated as needed for constituents detected during the Part A Phase I sampling (Arcadis 2008)

NE = not established

mg/kg = milligrams per kilogram

ng/kg = nanograms per kilogram

µg/kg = micrograms per kilogram

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[Group] Analyte	Surrogate Assumed	Interim Soil Management Screening Level <sup>a</sup>	Interim Screening Level Source
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References:

DTSC Appendix I. California OEHHA Toxicity Criteria - September 2018. <<https://www.dtsc.ca.gov/LawsRegsPolicies/Regs/upload/Final-Toxicity-Criteria-Rule-Rule-Text-Appdx-2018-09-04-clean.pdf>>

DTSC Note 3 Update - June 2018. <<https://www.dtsc.ca.gov/AssessingRisk/upload/HHRA-Note-3-Tables-June-2018.xlsx>>

HHRA Note 2. DTSC Human Health Risk Assessment (HHRA) Note 2: Soil Remedial Goals for Dioxins and Dioxin-like Compounds for Consideration at California Hazardous Waste Sites – (April 2017).

United States Environmental Protection Agency (USEPA). 2018. Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites. November. <<https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables>>