ANNEX A

TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION
SUBPART D. ENVIRONMENTAL HEALTH AND SAFETY
ARTICLE VI. GENERAL HEALTH AND SAFETY
CHAPTER 250. ADMINISTRATION OF LAND RECYCLING PROGRAM

Appendix A

Table 2 – Medium-Specific Concentrations (MSCs) for Inorganic Regulated Substances in Groundwater

Regulated Substance	CASRN	Used Aquifers								Nonuse Aquifers			
		TDS ≤ 2500 mg/L				TDS > 2500 mg/L							
		R		NR		R		NR		R		NR	
* * * * *													
VANADIUM	7440-62-2	**[2.4] 170**	G	**[6.8] 490**	G	**[240] 17,000**	G	**[680] 49,000**	G	**[2,400] 170,000**	G	**[6,800] 490,000**	G
* * * * *													

All concentrations in µg/L (except asbestos)
M = Maximum Contaminant Level
H = Lifetime Health Advisory Level
SMCL = Secondary Maximum Contaminant Level
G = Ingestion
N = Inhalation
PA State MCL adopted as MSC for Copper and Lead
R = Residential
NR = Nonresidential

Table 4 – Medium-Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil
A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential MSC 0-15 feet		Nonresidential MSCs			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
* * * * *							
VANADIUM	7440-62-2	**[15] <u>1,100</u>**	G	**[220] <u>16,000</u>**	G	190,000	C
* * * * *							

All concentrations in mg/kg
R—Residential
NR—Non-Residential
G—Ingestion
N—Inhalation
C—Cap
U—UBK Model
S—SEGH Model
NA—Not Applicable

Table 4 – Medium-Specific Concentrations (MSCs) for Inorganic Regulated Substances in Soil
B. Soil to Groundwater Numeric Values[1]

REGULATED SUBSTANCE	CASRN	Used Aquifers								Nonuse Aquifers				Soil Buffer Distance (feet)
		TDS ≤ 2500 mg/L				TDS > 2500 mg/L								
		R		NR		R		NR		R		NR		
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	
* * * * *														
VANADIUM	7440-62-2	**[0.24] 17**	**[240] 17,000**	**[0.68] 49**	**[680] 49,000**	**[24] 1,700**	**[24,000] 190,000**	**[68] 4,900**	**[68,000] 190,000**	**[240] 17,000**	190,000	**[680] 49,000**	190,000	5
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[1]For other options see Section 250.308
All concentrations in mg/kg
R—Residential
NR—Non-Residential
NA—Not Applicable

Table 5 – Physical and Toxicological Properties
B. Inorganic Regulated Substances

Regulated Substance	CAS	RfDo (mg/kg-d)		CSFo $(mg/kg\text{-}d)^{-1}$	RfCi (mg/m^3)		IUR $(ug/m^3)^{-1}$	Kd
* * * * *								
VANADIUM	7440-62-2	**[0.00007] <u>0.005</u>**	**[P] <u>Id</u>**		0.0001	D		1,000
* * * * *								

Toxicity Value Sources:
C = California EPA Cancer Potency Factor
D = ATSDR Minimal Risk Level
H = Health Effects Assessment Summary Table (HEAST)
I = Integrated Risk Information System (IRIS)
P = EPA Provisional Peer-Reviewed Toxicity Value
X = EPA Provisional Peer-Reviewed Toxicity Value Appendix
<u>Id = IRIS derived – Value derived from the IRIS oral RfD for Vanadium Pentoxide (0.009 mg/kg-day). Vanadium constitutes 56% of the molecular weight of the Vanadium Pentoxide molecule. 0.009 mg/kg-day x 0.56 = 0.005 mg/kg-day.</u>