Table 1
Revised Toxicity Equivalency Calculations
Former Palm Springs Landfill
Sampled March 26-27, 2003

	Compound Names		CAS Registry No.	Results (units in ng/g = µg/kg)				
	Abbreviated	Full		B2C-0.5-1	B1-10-10.5	B3-5.5-6	B6-10-10.5	B5-8.5-9
Section 1	2,3,7,8-TCDD	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	1746-01-6	<0.0066	<0.098	<0.0056	<0.018	<0.0096
	1,2,3,7,8-PeCDD	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	40321-76-4	<0.026	<0.91	<0.046	<0.10	<0.083
	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	39227-28-6	<0.015	<0.17	<0.023	<0.033	<0.054
	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	57653-85-7	<0.017	<0.58	<0.025	<0.12	<0.054
	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	19408-74-3	<0.014	<1.1	<0.027	<0.20	<0.044
	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	35822-46-9	<0.085	**1.9**	<0.46	**10**	<0.28
	OCDD	1,2,3,4,5,6,7,8-Octachlorodibenzo-*p*-dioxin	3268-87-9	<0.42	**7.5**	**2.4**	**91**	<0.63
	2,3,7,8-TCDF	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	<0.0039	<0.038	<0.0068	<0.16	<0.015
	1,2,3,7,8-PeCDF	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	<0.010	<0.13	<0.010	<0.027	<0.019
	2,3,4,7,8-PeCDF	2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	<0.011	<0.17	<0.014	<0.045	<0.026
	1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	<0.0077	<0.17	<0.017	<0.025	<0.022
	1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	<0.0059	<0.20	<0.020	<0.044	<0.030
	2,3,4,6,7,8-HxCDF	2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	<0.0078	<0.22	<0.015	<0.12	<0.049
	1,2,3,7,8,9-HxCDF	1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	<0.015	<0.19	<0.017	<0.070	<0.055
	1,2,3,7,8-HpCDF	1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	<0.021	<0.24	<0.014	<0.22	<0.059
	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	<0.040	<0.16	<0.026	<0.13	<0.056
	OCDF	1,2,3,4,5,6,7,8-Octachlorodibenzofuran	39001-02-0	<0.064	<0.27	<0.051	<0.32	<0.086

	Compound Names		CAS Registry No.	One-Half Detection Limit (units in ng/g = µg/kg) [1]				
	Abbreviated	Full		B2C-0.5-1	B1-10-10.5	B3-5.5-6	B6-10-10.5	B5-8.5-9
Section 2	2,3,7,8-TCDD	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	1746-01-6	0.0033	0.049	0.0028	0.009	0.0048
	1,2,3,7,8-PeCDD	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	40321-76-4	0.013	0.455	0.023	0.05	0.0415
	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	39227-28-6	0.0075	0.085	0.0115	0.0165	0.027
	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	57653-85-7	0.0085	0.29	0.0125	0.06	0.027
	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	19408-74-3	0.007	0.55	0.0135	0.1	0.022
	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	35822-46-9	0.0425	**1.9**	0.23	**10**	0.14
	OCDD	1,2,3,4,5,6,7,8-Octachlorodibenzo-*p*-dioxin	3268-87-9	0.21	**7.5**	**2.4**	**91**	0.315
	2,3,7,8-TCDF	2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.00195	0.019	0.0034	0.08	0.0075
	1,2,3,7,8-PeCDF	1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.005	0.065	0.005	0.0135	0.0095
	2,3,4,7,8-PeCDF	2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	0.0055	0.085	0.007	0.0225	0.013
	1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	0.00385	0.085	0.0085	0.0125	0.011
	1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	0.00295	0.1	0.01	0.022	0.015
	2,3,4,6,7,8-HxCDF	2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	0.0039	0.11	0.0075	0.06	0.0245
	1,2,3,7,8,9-HxCDF	1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.0075	0.095	0.0085	0.035	0.0275
	1,2,3,7,8-HpCDF	1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	0.0105	0.12	0.007	0.11	0.0295
	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.02	0.08	0.013	0.065	0.028
	OCDF	1,2,3,4,5,6,7,8-Octachlorodibenzofuran	39001-02-0	0.032	0.135	0.0255	0.16	0.043

	Compound Names		TEF [2]	Adjusted Concentration Relative to TEF (µg/kg) [3]				
	Abbreviated	Full		B2C-0.5-1	B1-10-10.5	B3-5.5-6	B6-10-10.5	B5-8.5-9
Section 3	2,3,7,8-TCDD	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	1	0.0033	0.049	0.0028	0.009	0.0048
	1,2,3,7,8-PeCDD	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	1	0.013	0.455	0.023	0.05	0.0415
	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	0.1	0.00075	0.0085	0.00115	0.00165	0.0027
	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	0.1	0.00085	0.029	0.00125	0.006	0.0027
	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	0.1	0.0007	0.055	0.00135	0.01	0.0022
	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	0.01	0.00043	0.019	0.0023	0.1	0.0014
	OCDD	1,2,3,4,5,6,7,8-Octachlorodibenzo-*p*-dioxin	0.0001	0.00002	0.00075	0.00024	0.0091	0.00003
	2,3,7,8-TCDF	2,3,7,8-Tetrachlorodibenzofuran	0.1	0.00020	0.0019	0.00034	0.008	0.00075
	1,2,3,7,8-PeCDF	1,2,3,7,8-Pentachlorodibenzofuran	0.05	0.00025	0.00325	0.00025	0.00068	0.00048
	2,3,4,7,8-PeCDF	2,3,4,7,8-Pentachlorodibenzofuran	0.5	0.00275	0.0425	0.0035	0.01125	0.0065
	1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	0.00039	0.0085	0.00085	0.00125	0.0011
	1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	0.00030	0.01	0.001	0.0022	0.0015
	2,3,4,6,7,8-HxCDF	2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	0.00039	0.011	0.00075	0.006	0.00245
	1,2,3,7,8,9-HxCDF	1,2,3,7,8,9-Hexachlorodibenzofuran	0.1	0.00075	0.0095	0.00085	0.0035	0.00275
	1,2,3,7,8-HpCDF	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	0.00011	0.0012	0.00007	0.0011	0.00030
	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	0.0002	0.0008	0.00013	0.00065	0.00028
	OCDF	1,2,3,4,5,6,7,8-Octachlorodibenzofuran	0.0001	0.00000	0.00001	0.00000	0.00002	0.00000
		Totals		2.44E-02	7.05E-01	3.98E-02	2.20E-01	7.14E-02

Maximum Permisible Exposure of TCDD in Ambient Air [4]	4.50E-08	µg/m^3
Maximum Total Adjusted Concentration as TCDD [5]	7.05E-01	µg/kg
Default Particulate Emission Factor [6]	1.32E+09	m^3/kg
Calculated Particulate Emissions as TCDD [6]	5.34E-10	µg/m^3

$$\left[\frac{7.05E-1\ \mu g/kg}{kg}\right] \div \left[\frac{1.32E+9\ m^3}{kg}\right] = 5.34E-10\ \mu g/m^3$$

Notes:
1. One-half of method detection limit for analyte used for quantification.
2. Sources: EPA/600/6-88/005Ca, Estimating Exposure to Dioxin-Like Compounds, US EPA, June 1994 and US EPA Proposal for the Adoption of the Revised Toxicity Equivalency Factor (TEF $_{WHO-97}$) Scheme, Public Review Draft, January 2003.
3. TEF = Toxicity Equivalency Factor for CDDs and CDFs relative to 2,3,7,8-Tetrachlorobenzeno- *p*-dioxin (TCDD).
4. Maximum exposure from EPA Region 9, Preliminary Remedial Goals, Ambient Air Exposure, October 1, 2002.
5. Summation of Adjusted Concentration of CDDs and CDFs to establish cumulative risk factor.
6. Calculated by using the default Particulate Emission Factor, USEPA Soil Screening Guidance: Technical Background Document, 1996 (EPA/540/R-95/128).

Methodology: Laboratory analytical results are multiplied by compound-specific TEF and compared to PRG for 2,3,7,8-TCDD. This method produces analogous cleanup goals for the compounds without established PRGs.