

OGAP Rebuttal Exhibit (page 1)
Comparison of MULTIMED Model Input Parameters

Parameter	OCD 2007 Exhibit 20	OCD 2007 Exhibit 7	OCD 2009 Exhibit 9	IPANM 2012 Exhibit 8	IPANM 2012 Exhibit 16	IPANM 2012 Exhibit 18
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Vadose Zone Material Variables

Sat Hydraulic Conductivity	3.6 cm/hr	3.6 cm/hr	3.6 cm/hr	3.6 cm/hr	3.6 cm/hr	3.6 cm/hr
Unsaturated zone porosity	0.250	0.250	0.250	0.250	0.250	0.250
Air entry pressure head	0.70 m	0.70 m	0.70 m	0.70 m	0.70 m	0.70 m
Depth of unsat zone	15.2 m (50 ft)	15.2 m (50 ft)	30.4 m (100 ft)	30.4 m (100 ft)	7.62 m (25 ft)	7.62 m (25 ft)

Vadose Zone Function Variables

Residual water content	0.116	0.116	0.116	0.116	0.116	0.116
Alpha coefficient	0.005 cm ⁻¹	0.005 cm ⁻¹	0.005 cm ⁻¹	0.005 cm ⁻¹	0.005 cm ⁻¹	0.005 cm ⁻¹
Van Genuchten exponent	1.09	1.09	1.09	1.09	1.09	1.09

Vadose Transport Variables

Thickness of layer	15.2 m (50 ft)	15.2 m (50 ft)	30.4 m (100 ft)	30.4 m (100 ft)	7.62 m (25 ft)	7.62 m (25 ft)
Longitudinal dispersivity	1.0	1.0	1.0	1.0	1.0	1.0
Bulk density	1.83	1.83	1.73	1.73	1.73	1.73
Reference temperature	20 C	20 C	20 C	20 C	20 C	20 C

Source Specific Variables

Infiltration rate	HELP model No liner Poor liner Good liner Lea County Permian Basin	HELP model No liner San Juan Basin	HELP model No liner pit "Trench" - good liner Lea County	HELP model Good liner Hobbs, Maljamar-2 Carlsbad, Artesia, Roswell-2,	0.00153 m/yr Good liner Carlsbad	0.00153 m/yr Good liner Carlsbad
Area of waste disposal	167 m2 or 42 ft x 42 ft	10 ft x 10 ft 30 ft x 30 ft	167 m2 or 42 ft x 42 ft	167 m2 or 42 ft x 42 ft	167 m2 or 42 ft x 42 ft	167 m2 or 42 ft x 42 ft
Duration of pulse	50 years	50	50	20 years	20 years	20 years
Initial concentration at landfill - Chloride	1000 mg/l 10,000 mg/l 50,000 mg/l 100,000 mg/l	5000 mg/l	50,000 mg/l	100,000 mg/l	1000 mg/l	1000 mg/l

Exhibit

OGAP Rebuttal Exhibit (page 2)
Continuation of comparison of MULTIMED Model input parameters
Aquifer Specific Variables

Parameter	OCD 2007 Exhibit 20	OCD 2007 Exhibit 7	OCD 2009 Exhibit 9	IPANM 2012 Exhibit 8	IPANM 2012 Exhibit 16	IPANM 2012 Exhibit 18
Particle diameter	0.05 cm	0.05 cm	0.05 cm	0.05 cm	0.05 cm	0.05 cm
Aquifer porosity	0.3	0.3	0.3	0.30	0.30	0.30
Aquifer bulk density	1.7 g/cc	1.7 g/cc	1.7 g/cc	1.7 g/cc	1.7 g/cc	1.7 g/cc
Aquifer thickness	21 m 33 m	145 m	21 m 31 m	21 m	21 m	21 m
Source Thickness (Mixing zone depth)	0.1 m derived	0.1 m derived	3.05 m	3.05 m constant	3.05 m constant	3.05 m constant
Hydraulic conductivity	30 m/yr	300 m/yr	30 m/yr	30 m/yr	30 m/yr	30 m/yr
Hydraulic gradient	0.001	0.001	0.001	0.001	0.001	0.001
Well distance from site	1 m (3 ft) 30.3 m (100 ft) 60.6 m (200 ft)	30.3 m (100 ft) 60.6 m (200 ft)	1 m (3 ft)	30.4 m (100 ft)	30.4 m (100 ft)	1 m (3 ft)