Table 6
Sensitivity Results

	Time	conc	
VS2DT Parameter	**[d]**	**[g/m^3]**	**Case**
Base case ben	1.62E+02	6.22E-01	
foc vad 0.001 Kd 6.17E-8	1.49E+02	4.72E-01	low
foc vad 0.01 Kd 6.17E-7	1.78E+02	6.86E-01	high
foc sat 0.006 Kd 3.70E-7	2.86E+02	5.27E-01	mid
foc sat 0.01 Kd 6.17E-7	3.89E+02	4.86E-01	high
Dw 4.23 m^2/d	1.64E+02	5.88E-01	mid
Dw 0.0 m^2/d	1.67E+02	5.49E-01	low
Deg 360 d vad	1.44E+02	5.30E-01	mid
Deg 360 d sat	1.55E+02	5.46E-01	mid
Deg 360 d both	1.39E+02	4.67E-01	mid
Deg 180 d vad	1.33E+02	4.62E-01	high
Deg 180 d sat	1.49E+02	4.82E-01	high
Deg 180 d both	1.24E+02	3.64E-01	high
Dt = 0.01 m vad	2.04E+02	5.23E-01	low
Dl = 0.01 m vad	1.60E+02	5.80E-01	low
Dt = 0.1 m vad	1.50E+02	6.68E-01	high
Dl = 0.1 m vad	1.63E+02	6.66E-01	high
Dl = 1.3 m sat	1.78E+02	5.64E-01	high
Dl=0.1 m sat	1.48E+02	7.21E-01	low
Dt=0.1 m sat	1.58E+02	6.08E-01	high
Dt = 0.0325 m sat	1.75E+02	6.05E-01	low
Gradient 0.001	6.14E+02	1.23E+00	low
Gradient 0.01	6.96E+01	4.69E-01	high
Infil 5.0E-5	1.43E+02	4.41E-01	low
Infil 5.0E-4	1.90E+02	8.98E-01	high
Vad K 1.0 m/d	2.24E+02	5.31E-01	low
Vad K 15.0 m/d	1.39E+02	6.67E-01	high
Sat K 1.0 m/d	1.13E+03	2.08E+00	low
Sat K 15.0 m/d	7.96E+01	3.92E-01	high
BD 1.3	1.56E+02	6.09E-01	low
BD 1.7	1.69E+02	6.34E-01	high
Anis 0.5	1.62E+02	6.22E-01	mid
Anis 0.1	1.63E+02	6.24E-01	low
0.5 m source thickness	1.62E+02	6.22E-01	low
2.9 m source thickness	1.62E+02	6.22E-01	high
3 m horiz thickness	1.88E+02	2.22E-01	low
6 m horiz thickness	1.72E+02	4.43E-01	mid

	Percolation
HELP Parameter	**[mm/yr]**
Kalispel base	83.12
Billings	64.77
Helena	37.79
5% slope	83.04
10% slope	83.00
Coarse sand	120.11
clay	37.15
100% runoff	80.93
80% runoff	91.17
ET depth 5 cm	132.99
ET depth 30 cm	70.40
LAI 2	77.04
LAI 4	82.81

VS2DT Model	**Param**	**high**	**mid**	**low**	**Base**
Sensitivity Summary	**Sensitivity**	**value**	**value**	**value**	**Case**
Saturated zone conductivity [m/d]	5.30	1.50E+01	7.00E+00	1.00E+00	7.00E+00
Source width [m]	2.80	9.00E+00	6.00E+00	3.00E+00	9.00E+00
Ground water gradient [m/m]	2.61	1.00E-02	5.00E-03	1.00E-03	5.00E-03
Percolation rate [m/d]	2.04	5.00E-04	2.50E-04	5.00E-05	2.50E-04
Vadose/Saturated zone degradation rate [1/d]	1.71	3.85E-03	1.93E-03	0.00E+00	0.00E+00
Vadose zone organic carbon content [g/g]	1.45	1.00E-02	6.00E-03	1.00E-03	6.00E-03
Vadose zone degradation rate [1/d]	1.35	3.85E-03	1.93E-03	0.00E+00	0.00E+00
Saturated zone degradation rate [1/d]	1.29	3.85E-03	1.93E-03	0.00E+00	0.00E+00
Saturated zone longitudinal dispersivity [m]	1.28	1.30E+00	6.50E-01	1.00E-01	6.50E-01
Saturated zone organic carbon content [g/g]	1.28	1.00E-02	6.00E-03	1.00E-03	1.00E-03
Vadose zone transverse dispersivity [m]	1.28	1.00E-01	5.00E-02	1.00E-02	5.00E-02
Vadose zone conductivity [m/d]	1.26	1.50E+01	7.00E+00	1.00E+00	7.00E+00
Vadose zone longitudinal dispersivity [m]	1.15	1.00E-01	5.00E-02	1.00E-02	5.00E-02
Vadose/Saturated zone molecular diffusivity [m^2/d]	1.13	8.47E-05	4.23E-05	0.00E+00	8.47E-05
Vadose/Saturated zone bulk density [g/m^3]	1.04	1.70E+00	1.50E+00	1.30E+00	1.50E+00
Saturated zone transverse dispersivity [m]	1.01	1.00E-01	6.50E-02	3.25E-02	6.50E-02
Vadose zone anisotropy Kz/Kx	1.00	1.00E-01	5.00E-01	1.00E+00	1.00E+00
Source thickness [m]	1.00	2.90E+00	1.50E+00	5.00E-01	1.50E+00

HELP Model	**Param**	**high**	**mid**	**low**	**Base**
Sensitivity Summary	**Sensitivity**	**value**	**value**	**value**	**Case**
soil type	3.23	Coarse snd	Silty snd	Clay	Silty snd
Climate database city	2.20	Kalispell	Billings	Helena	Kalispell
ET depth [cm]	1.89	30	15	5	15
Area available for runoff [cm]	1.13	100%	95%	80%	95%
Vegetative Cover-LAI Index	1.07	4	2	1	1
Surface slope	1.00	10%	5%	1%	1%