WHARF MINE
LEAD, SOUTH DAKOTA
NIRATE/ARSENIC GEOCHEMICAL MIXING CELL MODEL
Area - Trojan Pit Overlap 01

INPUT BLOCK

CHEMICAL	Nitrate	

INFILTRATION	Total Drainage Area:	592,643	ft^2
	Unreclaimned Infiltration Rate:	9	in/yr
	Reclaimed Infilgration Rate:	4.5	in/yr

BARREN ROCK	Porewater Concentration:	35.6	ppm
	Moisture at Offload:	0.04	wt %

CELLS	Cell No.	Material	Mass (tons)	Kd (L/kg)	Moisture (wt%)	GW Inflow (tons)	GW Conc. (ppm)
	1	Barren Rock	Time Dependent	0.000	0.04	0	0
	2	Unsaturated Bedrock	12,120,379	0.000	0.01	0	0
	3	Unused	0	0.000	0	0	0
	4	Unused	0	0.000	0	0	0
	5	Unused	0	0.000	0	0	0
	6	Unused	0	0.000	0	0	0
	7	Unused	0	0.000	0	0	0

TIME																					
	Start Time		yrs	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
	Time Step		yrs	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	End Time		yrs	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00
	Calendar Year		year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016

TIME DEPENDENT DATA																					
	Infiltration Rate		in/yr	9	9	9	9	9	9	9	9	9	9	9	9	9	4.5	4.5	4.5	4.5	4.5
	Chemicals in Infiltration		ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Backfill Added		tons	0	0	0	0	0	41,664	113,891	217,940	895,074	-124,498	-246,054	3,518,485	0	0	0	0	0	0

CALCULATION BLOCK

CELL 1 - Barren Rock

DATA	VARIABLE		FORMULA	UNITS	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ROCK	Initial Solids in Cell	A1	C1 from previous year	tons	0	0	0	0	0	0	41,664	155,555	373,495	1,268,569	1,144,070	898,016	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501
	Material Added	B1		tons	0	0	0	0	0	41,664	113,891	217,940	895,074	-124,498	-246,054	3,518,485	0	0	0	0	0	0
	Total Solids in Cell	C1	A1 + B1	tons	0	0	0	0	0	41,664	155,555	373,495	1,268,569	1,144,070	898,016	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501
WATER	Initial Mass Water in Cell	D1	V1 from previous year	tons	0	0	0	0	0	0	1,667	6,222	14,940	50,743	45,763	35,921	176,660	176,660	176,660	176,660	176,660	176,660
	Inflow from Infiltration	E1	infiltration rate x area x conversion factor	tons	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	6,936	6,936	6,936	6,936	6,936
	Inflow from Groundwater	F1		tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	New ore Moisture	G1	B1 x % moisture at offload	tons	0	0	0	0	0	1,667	4,556	8,718	35,803	0	0	140,739	0	0	0	0	0	0
	Total Water in Cell	H1	D1 + E1 + F1 + G1	tons	13,872	13,872	13,872	13,872	13,872	15,539	20,094	28,812	64,615	64,615	59,635	190,532	190,532	183,596	183,596	183,596	183,596	183,596
CHEMICALS	Initial Chemicals	I1	Z1 from previous year	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.052	0.188	1.149	0.813	0.490	5.100	4.729	4.550	4.378	4.213	4.053
	Chemicals from Above	J1	E1 x infiltration chemical concentration	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Chemicals from Groundwater	K1	F1 x groundwater chemical concentration	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Chemicals in New Porewater	L1	G1 x porewater chemical concentration	tons	0.000	0.000	0.000	0.000	0.000	0.059	0.162	0.310	1.275	0.000	0.000	5.010	0.000	0.000	0.000	0.000	0.000	0.000
	Adsorbed Chemicals in Ore	M1	B1 x Q1 x porewater chemical concentration	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total Chemicals in Liquid	N1	J1 + K1 + L1	tons	0.000	0.000	0.000	0.000	0.000	0.059	0.162	0.310	1.275	0.000	0.000	5.010	0.000	0.000	0.000	0.000	0.000	0.000
	Total Chemicals on Solids	O1	I1 + M1	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.052	0.188	1.149	0.813	0.490	5.100	4.729	4.550	4.378	4.213	4.053
	Total Chemicals in Cell	P1	O1 + N1	tons	0.000	0.000	0.000	0.000	0.000	0.059	0.169	0.363	1.463	1.149	0.813	5.500	5.100	4.729	4.550	4.378	4.213	4.053
PARTITION CHEMICALS	Kd	Q1		L/kg	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Adsorbed Chemicals	R1	(Q1 x C1 x P1) / (Q1 x C1 + H1)	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Solid Concentration	S1	R1 / C1 x 10e6	ppm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Dissolved Chemicals	T1	P1 - R1	tons	0.000	0.000	0.000	0.000	0.000	0.059	0.169	0.363	1.463	1.149	0.813	5.500	5.100	4.729	4.550	4.378	4.213	4.053
	Liquid Concentration	U1	T1 / H1 x 10e6	ppm	0.000	0.000	0.000	0.000	0.000	3.818	8.388	12.583	22.635	17.776	13.641	28.868	26.766	25.755	24.782	23.846	22.945	22.078
OUTFLOW	Water Remaining	V1	C1 x % moisture	tons	0	0	0	0	0	1,667	6,222	14,940	50,743	45,763	35,921	176,660	176,660	176,660	176,660	176,660	176,660	176,660
	Water Out	W1	H1 - V1	tons	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	18,852	23,714	13,872	13,872	6,936	6,936	6,936	6,936	6,936
	Chemicals Out in Water	X1	W1 x U1 / 10e6	tons	0.000	0.000	0.000	0.000	0.000	0.053	0.116	0.175	0.314	0.335	0.323	0.400	0.371	0.179	0.172	0.165	0.159	0.153
	Chemicals Remaining in Water	Y1	T1 - X1	tons	0.000	0.000	0.000	0.000	0.000	0.006	0.052	0.188	1.149	0.813	0.490	5.100	4.729	4.550	4.378	4.213	4.053	3.900
	Total Chemicals Remaining	Z1	R1 + Y1	tons	0.000	0.000	0.000	0.000	0.000	0.006	0.052	0.188	1.149	0.813	0.490	5.100	4.729	4.550	4.378	4.213	4.053	3.900

CELL 2 - Unsaturated Bedrock

DATA	VARIABLE		FORMULA	UNITS	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ROCK	Total Solids in Cell	C2		tons	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379
WATER	Initial Mass Water in Cell	D2	V2 from previous year	tons	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204
	Inflow from Cell Above	E2	W1	tons	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	18,852	23,714	13,872	13,872	6,936	6,936	6,936	6,936	6,936
	Inflow from Groundwater	F2		tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Water in Cell	H2	D2 + E2 + F2	tons	135,076	135,076	135,076	135,076	135,076	135,076	135,076	135,076	135,076	140,056	144,918	135,076	135,076	128,140	128,140	128,140	128,140	128,140
CHEMICALS	Initial Chemicals	I2	Z2 from previous year	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.147	0.289	0.541	0.758	0.904	1.171	1.384	1.478	1.560	1.632	1.695
	Chemicals from Above	J2	X1	tons	0.000	0.000	0.000	0.000	0.000	0.053	0.116	0.175	0.314	0.335	0.323	0.400	0.371	0.179	0.172	0.165	0.159	0.153
	Chemicals from Groundwater	K2	F2 x groundwater chemical concentration	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total Chemicals in Cell	P2	I2 + J2 + K2	tons	0.000	0.000	0.000	0.000	0.000	0.053	0.164	0.322	0.603	0.876	1.081	1.305	1.542	1.562	1.650	1.726	1.792	1.848
PARTITION CHEMICALS	Kd	Q2		L/kg	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Adsorbed Chemicals	R2	(Q2 x C2 x P2) / (Q2 x C2 + H2)	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Solid Concentration	S2	R2 / C2 x 10e6	ppm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Dissolved Chemicals	T2	P2 - R2	tons	0.000	0.000	0.000	0.000	0.000	0.053	0.164	0.322	0.603	0.876	1.081	1.305	1.542	1.562	1.650	1.726	1.792	1.848
	Liquid Concentration	U2	T2 / H2 x 10e6	ppm	0.000	0.000	0.000	0.000	0.000	0.392	1.213	2.381	4.461	6.253	7.462	9.660	11.417	12.193	12.875	13.469	13.982	14.420
OUTFLOW	Water Remaining	V2	D2	tons	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204
	Water Out	W2	H2 - V2	tons	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	18,852	23,714	13,872	13,872	6,936	6,936	6,936	6,936	6,936
	Chemicals Out in Water	X2	W2 x U2 / 10e6	tons	0.000	0.000	0.000	0.000	0.000	0.005	0.017	0.033	0.062	0.118	0.177	0.134	0.158	0.085	0.089	0.093	0.097	0.100
	Chemicals Remaining in Water	Y2	T2 - X2	tons	0.000	0.000	0.000	0.000	0.000	0.048	0.147	0.289	0.541	0.758	0.904	1.171	1.384	1.478	1.560	1.632	1.695	1.748
	Total Chemicals Remaining	Z2	R2 + Y2	tons	0.000	0.000	0.000	0.000	0.000	0.048	0.147	0.289	0.541	0.758	0.904	1.171	1.384	1.478	1.560	1.632	1.695	1.748

18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00	38.00	39.00	40.00	41.00	42.00	43.00
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00	38.00	39.00	40.00	41.00	42.00	43.00	44.00
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042

4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501

176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660
6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596

3.900	3.753	3.611	3.475	3.343	3.217	3.096	2.979	2.866	2.758	2.654	2.553	2.457	2.364	2.275	2.189	2.106	2.027	1.950	1.876	1.805	1.737	1.672	1.608	1.548	1.489
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3.900	3.753	3.611	3.475	3.343	3.217	3.096	2.979	2.866	2.758	2.654	2.553	2.457	2.364	2.275	2.189	2.106	2.027	1.950	1.876	1.805	1.737	1.672	1.608	1.548	1.489
3.900	3.753	3.611	3.475	3.343	3.217	3.096	2.979	2.866	2.758	2.654	2.553	2.457	2.364	2.275	2.189	2.106	2.027	1.950	1.876	1.805	1.737	1.672	1.608	1.548	1.489

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3.900	3.753	3.611	3.475	3.343	3.217	3.096	2.979	2.866	2.758	2.654	2.553	2.457	2.364	2.275	2.189	2.106	2.027	1.950	1.876	1.805	1.737	1.672	1.608	1.548	1.489
21.244	20.441	19.669	18.926	18.211	17.523	16.861	16.224	15.611	15.021	14.454	13.908	13.382	12.877	12.390	11.922	11.472	11.038	10.621	10.220	9.834	9.462	9.105	8.761	8.430	8.112

176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660
6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936
0.147	0.142	0.136	0.131	0.126	0.122	0.117	0.113	0.108	0.104	0.100	0.096	0.093	0.089	0.086	0.083	0.080	0.077	0.074	0.071	0.068	0.066	0.063	0.061	0.058	0.056
3.753	3.611	3.475	3.343	3.217	3.096	2.979	2.866	2.758	2.654	2.553	2.457	2.364	2.275	2.189	2.106	2.027	1.950	1.876	1.805	1.737	1.672	1.608	1.548	1.489	1.433
3.753	3.611	3.475	3.343	3.217	3.096	2.979	2.866	2.758	2.654	2.553	2.457	2.364	2.275	2.189	2.106	2.027	1.950	1.876	1.805	1.737	1.672	1.608	1.548	1.489	1.433

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379

121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204
6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140

1.748	1.793	1.830	1.860	1.883	1.901	1.913	1.920	1.922	1.921	1.915	1.906	1.894	1.880	1.862	1.843	1.821	1.798	1.773	1.747	1.719	1.691	1.661	1.631	1.600	1.569
0.147	0.142	0.136	0.131	0.126	0.122	0.117	0.113	0.108	0.104	0.100	0.096	0.093	0.089	0.086	0.083	0.080	0.077	0.074	0.071	0.068	0.066	0.063	0.061	0.058	0.056
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.895	1.934	1.966	1.991	2.009	2.022	2.030	2.032	2.031	2.025	2.016	2.003	1.987	1.969	1.948	1.926	1.901	1.875	1.847	1.818	1.788	1.756	1.725	1.692	1.659	1.625

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.895	1.934	1.966	1.991	2.009	2.022	2.030	2.032	2.031	2.025	2.016	2.003	1.987	1.969	1.948	1.926	1.901	1.875	1.847	1.818	1.788	1.756	1.725	1.692	1.659	1.625
14.789	15.095	15.343	15.537	15.681	15.781	15.840	15.860	15.847	15.802	15.729	15.631	15.509	15.366	15.205	15.028	14.835	14.630	14.413	14.186	13.950	13.707	13.458	13.204	12.945	12.684

121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204
6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936
0.103	0.105	0.106	0.108	0.109	0.109	0.110	0.110	0.110	0.110	0.109	0.108	0.108	0.107	0.105	0.104	0.103	0.101	0.100	0.098	0.097	0.095	0.093	0.092	0.090	0.088
1.793	1.830	1.860	1.883	1.901	1.913	1.920	1.922	1.921	1.915	1.906	1.894	1.880	1.862	1.843	1.821	1.798	1.773	1.747	1.719	1.691	1.661	1.631	1.600	1.569	1.537
1.793	1.830	1.860	1.883	1.901	1.913	1.920	1.922	1.921	1.915	1.906	1.894	1.880	1.862	1.843	1.821	1.798	1.773	1.747	1.719	1.691	1.661	1.631	1.600	1.569	1.537

44.00	45.00	46.00	47.00	48.00	49.00	50.00	51.00	52.00	53.00	54.00	55.00	56.00	57.00	58.00	59.00	60.00	61.00
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
45.00	46.00	47.00	48.00	49.00	50.00	51.00	52.00	53.00	54.00	55.00	56.00	57.00	58.00	59.00	60.00	61.00	62.00
2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060

4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501	4,416,501
176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660
6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596	183,596
1.433	1.379	1.327	1.277	1.228	1.182	1.137	1.094	1.053	1.013	0.975	0.938	0.903	0.869	0.836	0.804	0.774	0.745
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.433	1.379	1.327	1.277	1.228	1.182	1.137	1.094	1.053	1.013	0.975	0.938	0.903	0.869	0.836	0.804	0.774	0.745
1.433	1.379	1.327	1.277	1.228	1.182	1.137	1.094	1.053	1.013	0.975	0.938	0.903	0.869	0.836	0.804	0.774	0.745
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.433	1.379	1.327	1.277	1.228	1.182	1.137	1.094	1.053	1.013	0.975	0.938	0.903	0.869	0.836	0.804	0.774	0.745
7.805	7.510	7.226	6.953	6.691	6.438	6.195	5.961	5.736	5.519	5.310	5.110	4.917	4.731	4.552	4.380	4.215	4.056
176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660	176,660
6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936
0.054	0.052	0.050	0.048	0.046	0.045	0.043	0.041	0.040	0.038	0.037	0.035	0.034	0.033	0.032	0.030	0.029	0.028
1.379	1.327	1.277	1.228	1.182	1.137	1.094	1.053	1.013	0.975	0.938	0.903	0.869	0.836	0.804	0.774	0.745	0.716
1.379	1.327	1.277	1.228	1.182	1.137	1.094	1.053	1.013	0.975	0.938	0.903	0.869	0.836	0.804	0.774	0.745	0.716

2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379	12,120,379
121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204
6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140	128,140
1.537	1.505	1.473	1.441	1.408	1.376	1.344	1.312	1.280	1.248	1.217	1.186	1.155	1.125	1.095	1.066	1.037	1.008
0.054	0.052	0.050	0.048	0.046	0.045	0.043	0.041	0.040	0.038	0.037	0.035	0.034	0.033	0.032	0.030	0.029	0.028
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.591	1.557	1.523	1.489	1.455	1.421	1.387	1.353	1.320	1.286	1.254	1.221	1.189	1.158	1.127	1.096	1.066	1.036
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.591	1.557	1.523	1.489	1.455	1.421	1.387	1.353	1.320	1.286	1.254	1.221	1.189	1.158	1.127	1.096	1.066	1.036
12.420	12.154	11.887	11.620	11.353	11.087	10.822	10.559	10.298	10.039	9.784	9.531	9.281	9.034	8.792	8.553	8.318	8.088
121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204	121,204
6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936	6,936
0.086	0.084	0.082	0.081	0.079	0.077	0.075	0.073	0.071	0.070	0.068	0.066	0.064	0.063	0.061	0.059	0.058	0.056
1.505	1.473	1.441	1.408	1.376	1.344	1.312	1.280	1.248	1.217	1.186	1.155	1.125	1.095	1.066	1.037	1.008	0.980
1.505	1.473	1.441	1.408	1.376	1.344	1.312	1.280	1.248	1.217	1.186	1.155	1.125	1.095	1.066	1.037	1.008	0.980