WHARF MINE
LEAD, SOUTH DAKOTA
NIRATE/ARSENIC GEOCHEMICAL MIXING CELL MODEL
Area - North Trojan Pit Overlap 02

INPUT BLOCK

CHEMICAL	Nitrate	

INFILTRATION	Total Drainage Area:	277,408	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	2,182,070	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	9	9	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	38,955	106,488	203,773	838,797	-116,405	-230,058	157,577	801,282	50,691	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	38,955	145,443	349,217	1,188,014	1,071,609	841,550	999,127	1,800,409	1,851,100	1,851,100	1,851,100	1,851,100
	Material Added	B1		tons	0	0	0	0	0	38,955	106,488	203,773	838,797	-116,405	-230,058	157,577	801,282	50,691	0	0	0	0
	Total Solids in Cell	C1	A1 + B1	tons	0	0	0	0	0	38,955	145,443	349,217	1,188,014	1,071,609	841,550	999,127	1,800,409	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100
WATER	Initial Mass Water in Cell	D1	V1 from previous year	tons	0	0	0	0	0	0	1,558	5,818	13,969	47,521	42,864	33,662	39,965	72,016	74,044	74,044	74,044	74,044
	Inflow from Infiltration	E1	infiltration rate x area x conversion factor	tons	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	3,247	3,247	3,247
	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	1,558	4,260	8,151	33,552	0	0	6,303	32,051	2,028	0	0	0	0
	Total Water in Cell	H1	D1 + E1 + F1 + G1	tons	6,493	6,493	6,493	6,493	6,493	8,052	12,311	20,462	54,014	54,014	49,358	46,459	78,510	80,537	80,537	77,291	77,291	77,291
CHEMICALS	Initial Chemicals	I1	Z1 from previous year	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.077	0.250	1.271	1.009	0.688	0.785	1.767	1.691	1.554	1.489	1.426
	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	0.055	0.152	0.290	1.194	0.000	0.000	0.224	1.141	0.072	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	0.055	0.152	0.290	1.194	0.000	0.000	0.224	1.141	0.072	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	0.011	0.077	0.250	1.271	1.009	0.688	0.785	1.767	1.691	1.554	1.489	1.426
	Total Chemicals in Cell	P1	O1 + N1	tons	0.000	0.000	0.000	0.000	0.000	0.055	0.162	0.367	1.445	1.271	1.009	0.912	1.926	1.839	1.691	1.554	1.489	1.426
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	0.055	0.162	0.367	1.445	1.271	1.009	0.912	1.926	1.839	1.691	1.554	1.489	1.426
	Liquid Concentration	U1	T1 / H1 x 10e6	ppm	0.000	0.000	0.000	0.000	0.000	6.890	13.189	17.931	26.751	23.535	20.439	19.639	24.531	22.832	20.991	20.109	19.264	18.455
OUTFLOW	Water Remaining	V1	C1 x % moisture	tons	0	0	0	0	0	1,558	5,818	13,969	47,521	42,864	33,662	39,965	72,016	74,044	74,044	74,044	74,044	74,044
	Water Out	W1	H1 - V1	tons	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	11,150	15,696	6,493	6,493	6,493	6,493	3,247	3,247	3,247
	Chemicals Out in Water	X1	W1 x U1 / 10e6	tons	0.000	0.000	0.000	0.000	0.000	0.045	0.086	0.116	0.174	0.262	0.321	0.128	0.159	0.148	0.136	0.065	0.063	0.060
	Chemicals Remaining in Water	Y1	T1 - X1	tons	0.000	0.000	0.000	0.000	0.000	0.011	0.077	0.250	1.271	1.009	0.688	0.785	1.767	1.691	1.554	1.489	1.426	1.366
	Total Chemicals Remaining	Z1	R1 + Y1	tons	0.000	0.000	0.000	0.000	0.000	0.011	0.077	0.250	1.271	1.009	0.688	0.785	1.767	1.691	1.554	1.489	1.426	1.366

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	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070
WATER	Initial Mass Water in Cell	D2	V2 from previous year	tons	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821
	Inflow from Cell Above	E2	W1	tons	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	11,150	15,696	6,493	6,493	6,493	6,493	3,247	3,247	3,247
	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	28,314	28,314	28,314	28,314	28,314	28,314	28,314	28,314	28,314	32,970	37,516	28,314	28,314	28,314	28,314	25,067	25,067	25,067
CHEMICALS	Initial Chemicals	I2	Z2 from previous year	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.034	0.093	0.161	0.258	0.344	0.387	0.396	0.428	0.444	0.447	0.446	0.443
	Chemicals from Above	J2	X1	tons	0.000	0.000	0.000	0.000	0.000	0.045	0.086	0.116	0.174	0.262	0.321	0.128	0.159	0.148	0.136	0.065	0.063	0.060
	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	0.045	0.120	0.209	0.335	0.520	0.665	0.514	0.556	0.577	0.581	0.513	0.509	0.503
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	0.045	0.120	0.209	0.335	0.520	0.665	0.514	0.556	0.577	0.581	0.513	0.509	0.503
	Liquid Concentration	U2	T2 / H2 x 10e6	ppm	0.000	0.000	0.000	0.000	0.000	1.580	4.242	7.382	11.824	15.784	17.731	18.169	19.628	20.363	20.507	20.455	20.301	20.062
OUTFLOW	Water Remaining	V2	D2	tons	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821
	Water Out	W2	H2 - V2	tons	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	6,493	11,150	15,696	6,493	6,493	6,493	6,493	3,247	3,247	3,247
	Chemicals Out in Water	X2	W2 x U2 / 10e6	tons	0.000	0.000	0.000	0.000	0.000	0.010	0.028	0.048	0.077	0.176	0.278	0.118	0.127	0.132	0.133	0.066	0.066	0.065
	Chemicals Remaining in Water	Y2	T2 - X2	tons	0.000	0.000	0.000	0.000	0.000	0.034	0.093	0.161	0.258	0.344	0.387	0.396	0.428	0.444	0.447	0.446	0.443	0.438
	Total Chemicals Remaining	Z2	R2 + Y2	tons	0.000	0.000	0.000	0.000	0.000	0.034	0.093	0.161	0.258	0.344	0.387	0.396	0.428	0.444	0.447	0.446	0.443	0.438

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
1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100
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
1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100

74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044
3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
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
77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291

1.366	1.309	1.254	1.201	1.151	1.103	1.056	1.012	0.969	0.929	0.890	0.852	0.816	0.782	0.749	0.718	0.688	0.659	0.631	0.605	0.579	0.555	0.532	0.509	0.488	0.467
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.366	1.309	1.254	1.201	1.151	1.103	1.056	1.012	0.969	0.929	0.890	0.852	0.816	0.782	0.749	0.718	0.688	0.659	0.631	0.605	0.579	0.555	0.532	0.509	0.488	0.467
1.366	1.309	1.254	1.201	1.151	1.103	1.056	1.012	0.969	0.929	0.890	0.852	0.816	0.782	0.749	0.718	0.688	0.659	0.631	0.605	0.579	0.555	0.532	0.509	0.488	0.467

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.366	1.309	1.254	1.201	1.151	1.103	1.056	1.012	0.969	0.929	0.890	0.852	0.816	0.782	0.749	0.718	0.688	0.659	0.631	0.605	0.579	0.555	0.532	0.509	0.488	0.467
17.680	16.937	16.226	15.544	14.891	14.266	13.666	13.092	12.542	12.015	11.511	11.027	10.564	10.120	9.695	9.288	8.898	8.524	8.166	7.823	7.494	7.179	6.878	6.589	6.312	6.047

74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044
3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
0.057	0.055	0.053	0.050	0.048	0.046	0.044	0.043	0.041	0.039	0.037	0.036	0.034	0.033	0.031	0.030	0.029	0.028	0.027	0.025	0.024	0.023	0.022	0.021	0.020	0.020
1.309	1.254	1.201	1.151	1.103	1.056	1.012	0.969	0.929	0.890	0.852	0.816	0.782	0.749	0.718	0.688	0.659	0.631	0.605	0.579	0.555	0.532	0.509	0.488	0.467	0.448
1.309	1.254	1.201	1.151	1.103	1.056	1.012	0.969	0.929	0.890	0.852	0.816	0.782	0.749	0.718	0.688	0.659	0.631	0.605	0.579	0.555	0.532	0.509	0.488	0.467	0.448

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
2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070

21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821
3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
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
25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067

0.438	0.431	0.423	0.414	0.404	0.394	0.383	0.372	0.361	0.350	0.338	0.327	0.316	0.305	0.294	0.283	0.273	0.263	0.253	0.243	0.234	0.225	0.216	0.207	0.199	0.191
0.057	0.055	0.053	0.050	0.048	0.046	0.044	0.043	0.041	0.039	0.037	0.036	0.034	0.033	0.031	0.030	0.029	0.028	0.027	0.025	0.024	0.023	0.022	0.021	0.020	0.020
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.495	0.486	0.476	0.465	0.453	0.440	0.428	0.415	0.402	0.389	0.376	0.363	0.350	0.338	0.325	0.313	0.302	0.290	0.279	0.268	0.258	0.248	0.238	0.229	0.220	0.211

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.495	0.486	0.476	0.465	0.453	0.440	0.428	0.415	0.402	0.389	0.376	0.363	0.350	0.338	0.325	0.313	0.302	0.290	0.279	0.268	0.258	0.248	0.238	0.229	0.220	0.211
19.753	19.389	18.979	18.534	18.062	17.570	17.065	16.550	16.031	15.511	14.993	14.479	13.972	13.473	12.984	12.505	12.038	11.583	11.140	10.711	10.294	9.891	9.500	9.123	8.759	8.408

21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821
3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
0.064	0.063	0.062	0.060	0.059	0.057	0.055	0.054	0.052	0.050	0.049	0.047	0.045	0.044	0.042	0.041	0.039	0.038	0.036	0.035	0.033	0.032	0.031	0.030	0.028	0.027
0.431	0.423	0.414	0.404	0.394	0.383	0.372	0.361	0.350	0.338	0.327	0.316	0.305	0.294	0.283	0.273	0.263	0.253	0.243	0.234	0.225	0.216	0.207	0.199	0.191	0.183
0.431	0.423	0.414	0.404	0.394	0.383	0.372	0.361	0.350	0.338	0.327	0.316	0.305	0.294	0.283	0.273	0.263	0.253	0.243	0.234	0.225	0.216	0.207	0.199	0.191	0.183

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
1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100	1,851,100

74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044
3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
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
77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291	77,291

0.448	0.429	0.411	0.394	0.377	0.361	0.346	0.332	0.318	0.304	0.292	0.279	0.268	0.256	0.246	0.235	0.225	0.216
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.448	0.429	0.411	0.394	0.377	0.361	0.346	0.332	0.318	0.304	0.292	0.279	0.268	0.256	0.246	0.235	0.225	0.216
0.448	0.429	0.411	0.394	0.377	0.361	0.346	0.332	0.318	0.304	0.292	0.279	0.268	0.256	0.246	0.235	0.225	0.216

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.448	0.429	0.411	0.394	0.377	0.361	0.346	0.332	0.318	0.304	0.292	0.279	0.268	0.256	0.246	0.235	0.225	0.216
5.793	5.550	5.317	5.093	4.879	4.674	4.478	4.290	4.110	3.937	3.772	3.613	3.461	3.316	3.177	3.043	2.915	2.793

74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044	74,044
3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
0.019	0.018	0.017	0.017	0.016	0.015	0.015	0.014	0.013	0.013	0.012	0.012	0.011	0.011	0.010	0.010	0.009	0.009
0.429	0.411	0.394	0.377	0.361	0.346	0.332	0.318	0.304	0.292	0.279	0.268	0.256	0.246	0.235	0.225	0.216	0.207
0.429	0.411	0.394	0.377	0.361	0.346	0.332	0.318	0.304	0.292	0.279	0.268	0.256	0.246	0.235	0.225	0.216	0.207

2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070	2,182,070

21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821
3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067	25,067

0.183	0.176	0.169	0.162	0.155	0.149	0.143	0.137	0.132	0.126	0.121	0.116	0.111	0.106	0.102	0.098	0.094	0.090
0.019	0.018	0.017	0.017	0.016	0.015	0.015	0.014	0.013	0.013	0.012	0.012	0.011	0.011	0.010	0.010	0.009	0.009
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.202	0.194	0.186	0.179	0.171	0.164	0.158	0.151	0.145	0.139	0.133	0.128	0.122	0.117	0.112	0.108	0.103	0.099

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.202	0.194	0.186	0.179	0.171	0.164	0.158	0.151	0.145	0.139	0.133	0.128	0.122	0.117	0.112	0.108	0.103	0.099
8.069	7.743	7.429	7.126	6.835	6.555	6.286	6.028	5.779	5.541	5.312	5.092	4.880	4.678	4.483	4.297	4.118	3.946

21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821	21,821
3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
0.026	0.025	0.024	0.023	0.022	0.021	0.020	0.020	0.019	0.018	0.017	0.017	0.016	0.015	0.015	0.014	0.013	0.013
0.176	0.169	0.162	0.155	0.149	0.143	0.137	0.132	0.126	0.121	0.116	0.111	0.106	0.102	0.098	0.094	0.090	0.086
0.176	0.169	0.162	0.155	0.149	0.143	0.137	0.132	0.126	0.121	0.116	0.111	0.106	0.102	0.098	0.094	0.090	0.086