

ferment

Simulate fermentor dynamics with Runge-Kutta's 4th-Order Method

Note: Recalculation of this spreadsheet takes about one minute on a 486 PC (and about an hour during the ve

Instructor: Nam Sun Wang

ODEs:

$$dx/dt = (u(s)-D)*x$$

$$ds/dt = D*(s_f-s)-u(s)*x/Y(s)$$

where

$$u(s) = u_m*s/(K_m+s)$$

$$Y(s) = Y_a+Y_b*s$$

Operating parameters:

D 0.1 hr⁻¹

s_f 200 g/L

Specific growth rate parameters:

u_m 0.3 h⁻¹

K_m 50 g/L

Yield coefficient parameters:

Y_a 0.004

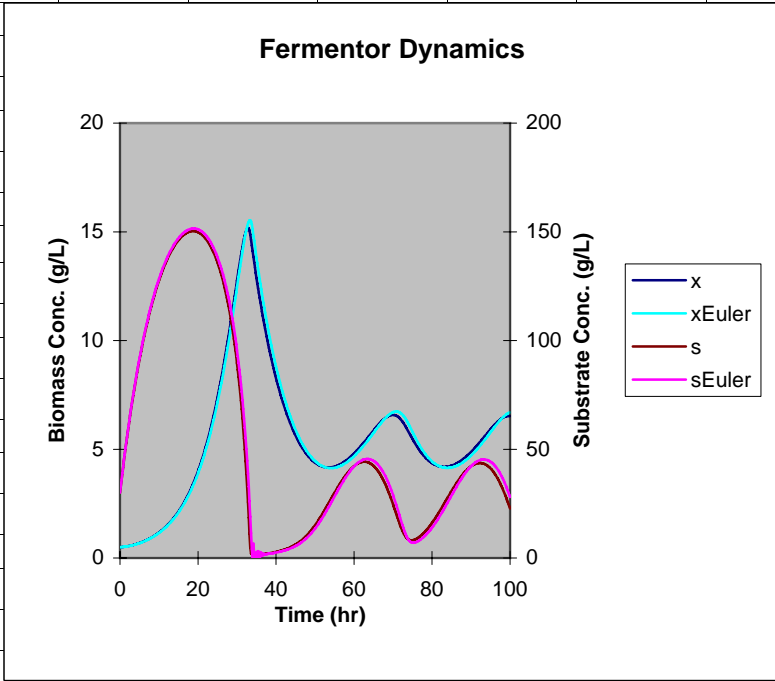
Y_b 0.001 L/g

Integration parameters:

x₀ 0.5 g/L

s₀ 30 g/L

h 0.2 hr



Use |Insert|Macro|Module|

dxdt(x,s) dsdt(x,s) dxdt(x+k_{x1}) dsdt(x+k_{x1}*h/2,s+k_{s1}*h/2)

t	x	s	k _{x1}	k _{s1}	k _{x2}	k _{s2}	k _{x3}	k _{s3}	k _{x4}
0.0	5.00E-01	3.00E+01	6.3E-03	1.5E+01	8.0E-03	1.5E+01	8.0E-03	1.5E+01	9.7E-03
0.2	5.02E-01	3.30E+01	9.7E-03	1.5E+01	1.1E-02	1.5E+01	1.1E-02	1.5E+01	1.3E-02
0.4	5.04E-01	3.60E+01	1.3E-02	1.5E+01	1.4E-02	1.5E+01	1.4E-02	1.5E+01	1.6E-02
0.6	5.07E-01	3.90E+01	1.6E-02	1.5E+01	1.7E-02	1.4E+01	1.7E-02	1.4E+01	1.9E-02
0.8	5.10E-01	4.19E+01	1.9E-02	1.4E+01	2.0E-02	1.4E+01	2.0E-02	1.4E+01	2.1E-02
1.0	5.14E-01	4.47E+01	2.1E-02	1.4E+01	2.3E-02	1.4E+01	2.3E-02	1.4E+01	2.4E-02
1.2	5.19E-01	4.75E+01	2.4E-02	1.4E+01	2.5E-02	1.4E+01	2.5E-02	1.4E+01	2.6E-02
1.4	5.24E-01	5.02E+01	2.6E-02	1.4E+01	2.8E-02	1.3E+01	2.8E-02	1.3E+01	2.9E-02
1.6	5.29E-01	5.29E+01	2.9E-02	1.3E+01	3.0E-02	1.3E+01	3.0E-02	1.3E+01	3.1E-02
1.8	5.35E-01	5.55E+01	3.1E-02	1.3E+01	3.2E-02	1.3E+01	3.2E-02	1.3E+01	3.3E-02
2.0	5.42E-01	5.81E+01	3.3E-02	1.3E+01	3.4E-02	1.3E+01	3.4E-02	1.3E+01	3.5E-02
2.2	5.49E-01	6.06E+01	3.5E-02	1.3E+01	3.6E-02	1.2E+01	3.6E-02	1.2E+01	3.7E-02
2.4	5.56E-01	6.31E+01	3.7E-02	1.2E+01	3.9E-02	1.2E+01	3.9E-02	1.2E+01	4.0E-02
2.6	5.64E-01	6.55E+01	4.0E-02	1.2E+01	4.1E-02	1.2E+01	4.1E-02	1.2E+01	4.2E-02
2.8	5.72E-01	6.79E+01	4.2E-02	1.2E+01	4.3E-02	1.2E+01	4.3E-02	1.2E+01	4.4E-02
3.0	5.80E-01	7.03E+01	4.4E-02	1.2E+01	4.5E-02	1.1E+01	4.5E-02	1.1E+01	4.6E-02
3.2	5.89E-01	7.26E+01	4.6E-02	1.1E+01	4.7E-02	1.1E+01	4.7E-02	1.1E+01	4.8E-02
3.4	5.98E-01	7.48E+01	4.8E-02	1.1E+01	4.9E-02	1.1E+01	4.9E-02	1.1E+01	5.0E-02
3.6	6.08E-01	7.70E+01	5.0E-02	1.1E+01	5.1E-02	1.1E+01	5.1E-02	1.1E+01	5.2E-02
3.8	6.18E-01	7.92E+01	5.2E-02	1.1E+01	5.3E-02	1.1E+01	5.3E-02	1.1E+01	5.4E-02
4.0	6.29E-01	8.13E+01	5.4E-02	1.0E+01	5.5E-02	1.0E+01	5.5E-02	1.0E+01	5.6E-02
4.2	6.40E-01	8.34E+01	5.6E-02	1.0E+01	5.7E-02	1.0E+01	5.7E-02	1.0E+01	5.8E-02
4.4	6.51E-01	8.54E+01	5.8E-02	1.0E+01	5.9E-02	1.0E+01	5.9E-02	1.0E+01	6.0E-02

ferment

4.6	6.63E-01	8.74E+01	6.0E-02	9.9E+00	6.1E-02	9.8E+00	6.1E-02	9.8E+00	6.2E-02
4.8	6.75E-01	8.94E+01	6.2E-02	9.7E+00	6.3E-02	9.6E+00	6.3E-02	9.6E+00	6.5E-02
5.0	6.88E-01	9.13E+01	6.5E-02	9.5E+00	6.6E-02	9.4E+00	6.6E-02	9.4E+00	6.7E-02
5.2	7.01E-01	9.32E+01	6.7E-02	9.3E+00	6.8E-02	9.2E+00	6.8E-02	9.2E+00	6.9E-02
5.4	7.15E-01	9.50E+01	6.9E-02	9.1E+00	7.0E-02	9.0E+00	7.0E-02	9.0E+00	7.1E-02
5.6	7.29E-01	9.68E+01	7.1E-02	8.9E+00	7.2E-02	8.8E+00	7.2E-02	8.8E+00	7.4E-02
5.8	7.43E-01	9.86E+01	7.4E-02	8.7E+00	7.5E-02	8.6E+00	7.5E-02	8.6E+00	7.6E-02
6.0	7.58E-01	1.00E+02	7.6E-02	8.5E+00	7.7E-02	8.4E+00	7.7E-02	8.4E+00	7.8E-02
6.2	7.74E-01	1.02E+02	7.8E-02	8.3E+00	8.0E-02	8.2E+00	8.0E-02	8.2E+00	8.1E-02
6.4	7.90E-01	1.04E+02	8.1E-02	8.2E+00	8.2E-02	8.1E+00	8.2E-02	8.1E+00	8.3E-02
6.6	8.06E-01	1.05E+02	8.3E-02	8.0E+00	8.5E-02	7.9E+00	8.5E-02	7.9E+00	8.6E-02
6.8	8.23E-01	1.07E+02	8.6E-02	7.8E+00	8.7E-02	7.7E+00	8.7E-02	7.7E+00	8.8E-02
7.0	8.41E-01	1.08E+02	8.8E-02	7.6E+00	9.0E-02	7.5E+00	9.0E-02	7.5E+00	9.1E-02
7.2	8.58E-01	1.10E+02	9.1E-02	7.5E+00	9.2E-02	7.4E+00	9.2E-02	7.4E+00	9.4E-02
7.4	8.77E-01	1.11E+02	9.4E-02	7.3E+00	9.5E-02	7.2E+00	9.5E-02	7.2E+00	9.7E-02
7.6	8.96E-01	1.13E+02	9.7E-02	7.1E+00	9.8E-02	7.0E+00	9.8E-02	7.0E+00	9.9E-02
7.8	9.16E-01	1.14E+02	9.9E-02	7.0E+00	1.0E-01	6.9E+00	1.0E-01	6.9E+00	1.0E-01
8.0	9.36E-01	1.16E+02	1.0E-01	6.8E+00	1.0E-01	6.7E+00	1.0E-01	6.7E+00	1.1E-01
8.2	9.57E-01	1.17E+02	1.1E-01	6.6E+00	1.1E-01	6.6E+00	1.1E-01	6.6E+00	1.1E-01
8.4	9.78E-01	1.18E+02	1.1E-01	6.5E+00	1.1E-01	6.4E+00	1.1E-01	6.4E+00	1.1E-01
8.6	1.00E+00	1.20E+02	1.1E-01	6.3E+00	1.1E-01	6.3E+00	1.1E-01	6.3E+00	1.1E-01
8.8	1.02E+00	1.21E+02	1.1E-01	6.2E+00	1.2E-01	6.1E+00	1.2E-01	6.1E+00	1.2E-01
9.0	1.05E+00	1.22E+02	1.2E-01	6.0E+00	1.2E-01	6.0E+00	1.2E-01	6.0E+00	1.2E-01
9.2	1.07E+00	1.23E+02	1.2E-01	5.9E+00	1.2E-01	5.8E+00	1.2E-01	5.8E+00	1.2E-01
9.4	1.09E+00	1.24E+02	1.2E-01	5.7E+00	1.3E-01	5.7E+00	1.3E-01	5.7E+00	1.3E-01
9.6	1.12E+00	1.25E+02	1.3E-01	5.6E+00	1.3E-01	5.5E+00	1.3E-01	5.5E+00	1.3E-01
9.8	1.15E+00	1.27E+02	1.3E-01	5.5E+00	1.3E-01	5.4E+00	1.3E-01	5.4E+00	1.4E-01
10.0	1.17E+00	1.28E+02	1.4E-01	5.3E+00	1.4E-01	5.2E+00	1.4E-01	5.2E+00	1.4E-01
10.2	1.20E+00	1.29E+02	1.4E-01	5.2E+00	1.4E-01	5.1E+00	1.4E-01	5.1E+00	1.4E-01
10.4	1.23E+00	1.30E+02	1.4E-01	5.0E+00	1.5E-01	5.0E+00	1.5E-01	5.0E+00	1.5E-01
10.6	1.26E+00	1.31E+02	1.5E-01	4.9E+00	1.5E-01	4.8E+00	1.5E-01	4.8E+00	1.5E-01
10.8	1.29E+00	1.32E+02	1.5E-01	4.8E+00	1.5E-01	4.7E+00	1.5E-01	4.7E+00	1.6E-01
11.0	1.32E+00	1.33E+02	1.6E-01	4.6E+00	1.6E-01	4.6E+00	1.6E-01	4.6E+00	1.6E-01
11.2	1.35E+00	1.34E+02	1.6E-01	4.5E+00	1.6E-01	4.4E+00	1.6E-01	4.4E+00	1.6E-01
11.4	1.38E+00	1.34E+02	1.6E-01	4.4E+00	1.7E-01	4.3E+00	1.7E-01	4.3E+00	1.7E-01
11.6	1.41E+00	1.35E+02	1.7E-01	4.2E+00	1.7E-01	4.2E+00	1.7E-01	4.2E+00	1.7E-01
11.8	1.45E+00	1.36E+02	1.7E-01	4.1E+00	1.8E-01	4.1E+00	1.8E-01	4.1E+00	1.8E-01
12.0	1.48E+00	1.37E+02	1.8E-01	4.0E+00	1.8E-01	3.9E+00	1.8E-01	3.9E+00	1.8E-01
12.2	1.52E+00	1.38E+02	1.8E-01	3.9E+00	1.8E-01	3.8E+00	1.8E-01	3.8E+00	1.9E-01
12.4	1.56E+00	1.38E+02	1.9E-01	3.7E+00	1.9E-01	3.7E+00	1.9E-01	3.7E+00	1.9E-01
12.6	1.59E+00	1.39E+02	1.9E-01	3.6E+00	2.0E-01	3.6E+00	2.0E-01	3.6E+00	2.0E-01
12.8	1.63E+00	1.40E+02	2.0E-01	3.5E+00	2.0E-01	3.4E+00	2.0E-01	3.4E+00	2.0E-01
13.0	1.67E+00	1.41E+02	2.0E-01	3.4E+00	2.1E-01	3.3E+00	2.1E-01	3.3E+00	2.1E-01
13.2	1.72E+00	1.41E+02	2.1E-01	3.3E+00	2.1E-01	3.2E+00	2.1E-01	3.2E+00	2.1E-01
13.4	1.76E+00	1.42E+02	2.1E-01	3.1E+00	2.2E-01	3.1E+00	2.2E-01	3.1E+00	2.2E-01
13.6	1.80E+00	1.43E+02	2.2E-01	3.0E+00	2.2E-01	3.0E+00	2.2E-01	3.0E+00	2.3E-01
13.8	1.85E+00	1.43E+02	2.3E-01	2.9E+00	2.3E-01	2.8E+00	2.3E-01	2.8E+00	2.3E-01
14.0	1.89E+00	1.44E+02	2.3E-01	2.8E+00	2.3E-01	2.7E+00	2.3E-01	2.7E+00	2.4E-01
14.2	1.94E+00	1.44E+02	2.4E-01	2.7E+00	2.4E-01	2.6E+00	2.4E-01	2.6E+00	2.4E-01
14.4	1.99E+00	1.45E+02	2.4E-01	2.5E+00	2.5E-01	2.5E+00	2.5E-01	2.5E+00	2.5E-01
14.6	2.04E+00	1.45E+02	2.5E-01	2.4E+00	2.5E-01	2.4E+00	2.5E-01	2.4E+00	2.6E-01

ferment

14.8	2.09E+00	1.46E+02	2.6E-01	2.3E+00	2.6E-01	2.3E+00	2.6E-01	2.3E+00	2.6E-01
15.0	2.14E+00	1.46E+02	2.6E-01	2.2E+00	2.7E-01	2.1E+00	2.7E-01	2.1E+00	2.7E-01
15.2	2.19E+00	1.47E+02	2.7E-01	2.1E+00	2.7E-01	2.0E+00	2.7E-01	2.0E+00	2.8E-01
15.4	2.25E+00	1.47E+02	2.8E-01	2.0E+00	2.8E-01	1.9E+00	2.8E-01	1.9E+00	2.9E-01
15.6	2.30E+00	1.47E+02	2.9E-01	1.9E+00	2.9E-01	1.8E+00	2.9E-01	1.8E+00	2.9E-01
15.8	2.36E+00	1.48E+02	2.9E-01	1.7E+00	3.0E-01	1.7E+00	3.0E-01	1.7E+00	3.0E-01
16.0	2.42E+00	1.48E+02	3.0E-01	1.6E+00	3.0E-01	1.6E+00	3.0E-01	1.6E+00	3.1E-01
16.2	2.48E+00	1.48E+02	3.1E-01	1.5E+00	3.1E-01	1.4E+00	3.1E-01	1.4E+00	3.2E-01
16.4	2.54E+00	1.49E+02	3.2E-01	1.4E+00	3.2E-01	1.3E+00	3.2E-01	1.3E+00	3.3E-01
16.6	2.61E+00	1.49E+02	3.3E-01	1.3E+00	3.3E-01	1.2E+00	3.3E-01	1.2E+00	3.3E-01
16.8	2.67E+00	1.49E+02	3.3E-01	1.2E+00	3.4E-01	1.1E+00	3.4E-01	1.1E+00	3.4E-01
17.0	2.74E+00	1.49E+02	3.4E-01	1.0E+00	3.5E-01	9.8E-01	3.5E-01	9.8E-01	3.5E-01
17.2	2.81E+00	1.50E+02	3.5E-01	9.2E-01	3.6E-01	8.6E-01	3.6E-01	8.6E-01	3.6E-01
17.4	2.88E+00	1.50E+02	3.6E-01	8.0E-01	3.6E-01	7.5E-01	3.6E-01	7.5E-01	3.7E-01
17.6	2.96E+00	1.50E+02	3.7E-01	6.9E-01	3.7E-01	6.3E-01	3.7E-01	6.3E-01	3.8E-01
17.8	3.03E+00	1.50E+02	3.8E-01	5.7E-01	3.8E-01	5.1E-01	3.8E-01	5.1E-01	3.9E-01
18.0	3.11E+00	1.50E+02	3.9E-01	4.5E-01	3.9E-01	3.9E-01	3.9E-01	3.9E-01	4.0E-01
18.2	3.19E+00	1.50E+02	4.0E-01	3.3E-01	4.0E-01	2.7E-01	4.0E-01	2.7E-01	4.1E-01
18.4	3.27E+00	1.50E+02	4.1E-01	2.0E-01	4.1E-01	1.4E-01	4.1E-01	1.4E-01	4.2E-01
18.6	3.35E+00	1.50E+02	4.2E-01	8.2E-02	4.2E-01	2.0E-02	4.2E-01	2.0E-02	4.3E-01
18.8	3.43E+00	1.50E+02	4.3E-01	-4.3E-02	4.4E-01	-1.0E-01	4.4E-01	-1.1E-01	4.4E-01
19.0	3.52E+00	1.50E+02	4.4E-01	-1.7E-01	4.5E-01	-2.3E-01	4.5E-01	-2.3E-01	4.5E-01
19.2	3.61E+00	1.50E+02	4.5E-01	-2.9E-01	4.6E-01	-3.6E-01	4.6E-01	-3.6E-01	4.6E-01
19.4	3.70E+00	1.50E+02	4.6E-01	-4.2E-01	4.7E-01	-4.9E-01	4.7E-01	-4.9E-01	4.7E-01
19.6	3.80E+00	1.50E+02	4.7E-01	-5.5E-01	4.8E-01	-6.2E-01	4.8E-01	-6.2E-01	4.9E-01
19.8	3.89E+00	1.50E+02	4.9E-01	-6.8E-01	4.9E-01	-7.5E-01	4.9E-01	-7.5E-01	5.0E-01
20.0	3.99E+00	1.50E+02	5.0E-01	-8.2E-01	5.0E-01	-8.8E-01	5.0E-01	-8.8E-01	5.1E-01
20.2	4.09E+00	1.50E+02	5.1E-01	-9.5E-01	5.2E-01	-1.0E+00	5.2E-01	-1.0E+00	5.2E-01
20.4	4.19E+00	1.49E+02	5.2E-01	-1.1E+00	5.3E-01	-1.2E+00	5.3E-01	-1.2E+00	5.4E-01
20.6	4.30E+00	1.49E+02	5.4E-01	-1.2E+00	5.4E-01	-1.3E+00	5.4E-01	-1.3E+00	5.5E-01
20.8	4.41E+00	1.49E+02	5.5E-01	-1.4E+00	5.6E-01	-1.4E+00	5.6E-01	-1.4E+00	5.6E-01
21.0	4.52E+00	1.49E+02	5.6E-01	-1.5E+00	5.7E-01	-1.6E+00	5.7E-01	-1.6E+00	5.8E-01
21.2	4.63E+00	1.48E+02	5.8E-01	-1.7E+00	5.8E-01	-1.7E+00	5.8E-01	-1.7E+00	5.9E-01
21.4	4.75E+00	1.48E+02	5.9E-01	-1.8E+00	6.0E-01	-1.9E+00	6.0E-01	-1.9E+00	6.0E-01
21.6	4.87E+00	1.48E+02	6.0E-01	-2.0E+00	6.1E-01	-2.0E+00	6.1E-01	-2.0E+00	6.2E-01
21.8	4.99E+00	1.47E+02	6.2E-01	-2.1E+00	6.3E-01	-2.2E+00	6.3E-01	-2.2E+00	6.3E-01
22.0	5.12E+00	1.47E+02	6.3E-01	-2.3E+00	6.4E-01	-2.4E+00	6.4E-01	-2.4E+00	6.5E-01
22.2	5.25E+00	1.46E+02	6.5E-01	-2.4E+00	6.6E-01	-2.5E+00	6.6E-01	-2.5E+00	6.6E-01
22.4	5.38E+00	1.46E+02	6.6E-01	-2.6E+00	6.7E-01	-2.7E+00	6.7E-01	-2.7E+00	6.8E-01
22.6	5.51E+00	1.45E+02	6.8E-01	-2.8E+00	6.9E-01	-2.9E+00	6.9E-01	-2.9E+00	6.9E-01
22.8	5.65E+00	1.45E+02	6.9E-01	-2.9E+00	7.0E-01	-3.0E+00	7.0E-01	-3.0E+00	7.1E-01
23.0	5.79E+00	1.44E+02	7.1E-01	-3.1E+00	7.2E-01	-3.2E+00	7.2E-01	-3.2E+00	7.3E-01
23.2	5.93E+00	1.43E+02	7.3E-01	-3.3E+00	7.3E-01	-3.4E+00	7.3E-01	-3.4E+00	7.4E-01
23.4	6.08E+00	1.43E+02	7.4E-01	-3.5E+00	7.5E-01	-3.6E+00	7.5E-01	-3.6E+00	7.6E-01
23.6	6.23E+00	1.42E+02	7.6E-01	-3.7E+00	7.7E-01	-3.8E+00	7.7E-01	-3.8E+00	7.8E-01
23.8	6.38E+00	1.41E+02	7.8E-01	-3.9E+00	7.8E-01	-4.0E+00	7.8E-01	-4.0E+00	7.9E-01
24.0	6.54E+00	1.41E+02	7.9E-01	-4.1E+00	8.0E-01	-4.2E+00	8.0E-01	-4.2E+00	8.1E-01
24.2	6.70E+00	1.40E+02	8.1E-01	-4.3E+00	8.2E-01	-4.4E+00	8.2E-01	-4.4E+00	8.3E-01
24.4	6.86E+00	1.39E+02	8.3E-01	-4.5E+00	8.4E-01	-4.6E+00	8.4E-01	-4.6E+00	8.4E-01
24.6	7.03E+00	1.38E+02	8.4E-01	-4.7E+00	8.5E-01	-4.8E+00	8.5E-01	-4.8E+00	8.6E-01
24.8	7.20E+00	1.37E+02	8.6E-01	-4.9E+00	8.7E-01	-5.0E+00	8.7E-01	-5.0E+00	8.8E-01

ferment

25.0	7.38E+00	1.36E+02	8.8E-01	-5.2E+00	8.9E-01	-5.3E+00	8.9E-01	-5.3E+00	9.0E-01
25.2	7.55E+00	1.35E+02	9.0E-01	-5.4E+00	9.1E-01	-5.5E+00	9.1E-01	-5.5E+00	9.2E-01
25.4	7.74E+00	1.34E+02	9.2E-01	-5.6E+00	9.2E-01	-5.8E+00	9.2E-01	-5.8E+00	9.3E-01
25.6	7.92E+00	1.33E+02	9.3E-01	-5.9E+00	9.4E-01	-6.0E+00	9.4E-01	-6.0E+00	9.5E-01
25.8	8.11E+00	1.31E+02	9.5E-01	-6.2E+00	9.6E-01	-6.3E+00	9.6E-01	-6.3E+00	9.7E-01
26.0	8.30E+00	1.30E+02	9.7E-01	-6.4E+00	9.8E-01	-6.6E+00	9.8E-01	-6.6E+00	9.9E-01
26.2	8.50E+00	1.29E+02	9.9E-01	-6.7E+00	1.0E+00	-6.9E+00	1.0E+00	-6.9E+00	1.0E+00
26.4	8.70E+00	1.27E+02	1.0E+00	-7.0E+00	1.0E+00	-7.1E+00	1.0E+00	-7.1E+00	1.0E+00
26.6	8.90E+00	1.26E+02	1.0E+00	-7.3E+00	1.0E+00	-7.5E+00	1.0E+00	-7.5E+00	1.0E+00
26.8	9.10E+00	1.25E+02	1.0E+00	-7.6E+00	1.0E+00	-7.8E+00	1.0E+00	-7.8E+00	1.1E+00
27.0	9.31E+00	1.23E+02	1.1E+00	-7.9E+00	1.1E+00	-8.1E+00	1.1E+00	-8.1E+00	1.1E+00
27.2	9.53E+00	1.21E+02	1.1E+00	-8.3E+00	1.1E+00	-8.5E+00	1.1E+00	-8.5E+00	1.1E+00
27.4	9.74E+00	1.20E+02	1.1E+00	-8.6E+00	1.1E+00	-8.8E+00	1.1E+00	-8.8E+00	1.1E+00
27.6	9.96E+00	1.18E+02	1.1E+00	-9.0E+00	1.1E+00	-9.2E+00	1.1E+00	-9.2E+00	1.1E+00
27.8	1.02E+01	1.16E+02	1.1E+00	-9.4E+00	1.1E+00	-9.6E+00	1.1E+00	-9.6E+00	1.1E+00
28.0	1.04E+01	1.14E+02	1.1E+00	-9.8E+00	1.1E+00	-1.0E+01	1.1E+00	-1.0E+01	1.1E+00
28.2	1.06E+01	1.12E+02	1.1E+00	-1.0E+01	1.1E+00	-1.0E+01	1.1E+00	-1.0E+01	1.2E+00
28.4	1.09E+01	1.10E+02	1.2E+00	-1.1E+01	1.2E+00	-1.1E+01	1.2E+00	-1.1E+01	1.2E+00
28.6	1.11E+01	1.08E+02	1.2E+00	-1.1E+01	1.2E+00	-1.1E+01	1.2E+00	-1.1E+01	1.2E+00
28.8	1.13E+01	1.06E+02	1.2E+00	-1.2E+01	1.2E+00	-1.2E+01	1.2E+00	-1.2E+01	1.2E+00
29.0	1.16E+01	1.03E+02	1.2E+00	-1.2E+01	1.2E+00	-1.2E+01	1.2E+00	-1.2E+01	1.2E+00
29.2	1.18E+01	1.01E+02	1.2E+00	-1.3E+01	1.2E+00	-1.3E+01	1.2E+00	-1.3E+01	1.2E+00
29.4	1.20E+01	9.82E+01	1.2E+00	-1.3E+01	1.2E+00	-1.4E+01	1.2E+00	-1.4E+01	1.2E+00
29.6	1.23E+01	9.55E+01	1.2E+00	-1.4E+01	1.2E+00	-1.4E+01	1.2E+00	-1.4E+01	1.2E+00
29.8	1.25E+01	9.26E+01	1.2E+00	-1.5E+01	1.2E+00	-1.5E+01	1.2E+00	-1.5E+01	1.2E+00
30.0	1.28E+01	8.97E+01	1.2E+00	-1.5E+01	1.2E+00	-1.6E+01	1.2E+00	-1.6E+01	1.2E+00
30.2	1.30E+01	8.65E+01	1.2E+00	-1.6E+01	1.2E+00	-1.6E+01	1.2E+00	-1.6E+01	1.2E+00
30.4	1.32E+01	8.33E+01	1.2E+00	-1.7E+01	1.1E+00	-1.7E+01	1.1E+00	-1.7E+01	1.1E+00
30.6	1.35E+01	7.98E+01	1.1E+00	-1.8E+01	1.1E+00	-1.8E+01	1.1E+00	-1.8E+01	1.1E+00
30.8	1.37E+01	7.62E+01	1.1E+00	-1.9E+01	1.1E+00	-1.9E+01	1.1E+00	-1.9E+01	1.1E+00
31.0	1.39E+01	7.24E+01	1.1E+00	-2.0E+01	1.1E+00	-2.0E+01	1.1E+00	-2.0E+01	1.0E+00
31.2	1.41E+01	6.84E+01	1.0E+00	-2.1E+01	1.0E+00	-2.1E+01	1.0E+00	-2.1E+01	9.8E-01
31.4	1.43E+01	6.42E+01	9.8E-01	-2.2E+01	9.5E-01	-2.2E+01	9.5E-01	-2.2E+01	9.2E-01
31.6	1.45E+01	5.97E+01	9.2E-01	-2.3E+01	8.8E-01	-2.4E+01	8.8E-01	-2.4E+01	8.4E-01
31.8	1.47E+01	5.49E+01	8.4E-01	-2.5E+01	7.9E-01	-2.5E+01	7.9E-01	-2.5E+01	7.4E-01
32.0	1.48E+01	4.99E+01	7.4E-01	-2.6E+01	6.8E-01	-2.7E+01	6.8E-01	-2.7E+01	6.2E-01
32.2	1.50E+01	4.44E+01	6.2E-01	-2.8E+01	5.5E-01	-2.9E+01	5.4E-01	-2.9E+01	4.6E-01
32.4	1.51E+01	3.86E+01	4.6E-01	-3.0E+01	3.7E-01	-3.1E+01	3.7E-01	-3.1E+01	2.7E-01
32.6	1.52E+01	3.24E+01	2.7E-01	-3.2E+01	1.6E-01	-3.4E+01	1.5E-01	-3.4E+01	2.7E-02
32.8	1.52E+01	2.57E+01	2.7E-02	-3.5E+01	-1.2E-01	-3.6E+01	-1.2E-01	-3.6E+01	-2.9E-01
33.0	1.52E+01	1.85E+01	-2.9E-01	-3.6E+01	-4.7E-01	-3.7E+01	-4.7E-01	-3.7E+01	-6.8E-01
33.2	1.51E+01	1.13E+01	-6.8E-01	-3.6E+01	-9.0E-01	-3.2E+01	-8.7E-01	-3.3E+01	-1.1E+00
33.4	1.49E+01	4.95E+00	-1.1E+00	-2.5E+01	-1.3E+00	-1.2E+01	-1.2E+00	-2.0E+01	-1.4E+00
33.6	1.46E+01	2.09E+00	-1.3E+00	-9.1E+00	-1.4E+00	5.7E-01	-1.3E+00	-9.3E+00	-1.4E+00
33.8	1.44E+01	1.71E+00	-1.3E+00	-5.2E+00	-1.3E+00	6.7E-01	-1.3E+00	-5.6E+00	-1.4E+00
34.0	1.41E+01	1.52E+00	-1.3E+00	-2.7E+00	-1.3E+00	4.8E-01	-1.3E+00	-3.0E+00	-1.3E+00
34.2	1.39E+01	1.41E+00	-1.3E+00	-1.3E+00	-1.3E+00	3.1E-01	-1.3E+00	-1.4E+00	-1.3E+00
34.4	1.36E+01	1.37E+00	-1.3E+00	-4.5E-01	-1.2E+00	2.2E-01	-1.2E+00	-4.9E-01	-1.2E+00
34.6	1.34E+01	1.37E+00	-1.2E+00	-7.1E-02	-1.2E+00	1.9E-01	-1.2E+00	-8.3E-02	-1.2E+00
34.8	1.31E+01	1.39E+00	-1.2E+00	8.7E-02	-1.2E+00	1.8E-01	-1.2E+00	8.4E-02	-1.2E+00
35.0	1.29E+01	1.42E+00	-1.2E+00	1.5E-01	-1.2E+00	1.8E-01	-1.2E+00	1.5E-01	-1.2E+00

ferment

35.2	1.26E+01	1.46E+00	-1.2E+00	1.7E-01	-1.1E+00	1.9E-01	-1.1E+00	1.7E-01	-1.1E+00
35.4	1.24E+01	1.49E+00	-1.1E+00	1.9E-01	-1.1E+00	1.9E-01	-1.1E+00	1.8E-01	-1.1E+00
35.6	1.22E+01	1.53E+00	-1.1E+00	1.9E-01	-1.1E+00	2.0E-01	-1.1E+00	1.9E-01	-1.1E+00
35.8	1.20E+01	1.57E+00	-1.1E+00	2.0E-01	-1.1E+00	2.1E-01	-1.1E+00	2.0E-01	-1.1E+00
36.0	1.17E+01	1.61E+00	-1.1E+00	2.1E-01	-1.1E+00	2.1E-01	-1.1E+00	2.1E-01	-1.0E+00
36.2	1.15E+01	1.66E+00	-1.0E+00	2.1E-01	-1.0E+00	2.2E-01	-1.0E+00	2.1E-01	-1.0E+00
36.4	1.13E+01	1.70E+00	-1.0E+00	2.2E-01	-1.0E+00	2.3E-01	-1.0E+00	2.2E-01	-1.0E+00
36.6	1.11E+01	1.74E+00	-1.0E+00	2.3E-01	-9.9E-01	2.3E-01	-9.9E-01	2.3E-01	-9.8E-01
36.8	1.09E+01	1.79E+00	-9.8E-01	2.4E-01	-9.7E-01	2.4E-01	-9.7E-01	2.4E-01	-9.6E-01
37.0	1.07E+01	1.84E+00	-9.6E-01	2.4E-01	-9.5E-01	2.5E-01	-9.5E-01	2.4E-01	-9.4E-01
37.2	1.05E+01	1.89E+00	-9.4E-01	2.5E-01	-9.3E-01	2.6E-01	-9.3E-01	2.5E-01	-9.2E-01
37.4	1.04E+01	1.94E+00	-9.2E-01	2.6E-01	-9.1E-01	2.7E-01	-9.1E-01	2.6E-01	-9.0E-01
37.6	1.02E+01	1.99E+00	-9.0E-01	2.7E-01	-8.9E-01	2.8E-01	-8.9E-01	2.7E-01	-8.8E-01
37.8	1.00E+01	2.05E+00	-8.8E-01	2.8E-01	-8.7E-01	2.8E-01	-8.7E-01	2.8E-01	-8.6E-01
38.0	9.83E+00	2.10E+00	-8.6E-01	2.9E-01	-8.5E-01	2.9E-01	-8.5E-01	2.9E-01	-8.5E-01
38.2	9.66E+00	2.16E+00	-8.5E-01	3.0E-01	-8.4E-01	3.0E-01	-8.4E-01	3.0E-01	-8.3E-01
38.4	9.49E+00	2.22E+00	-8.3E-01	3.1E-01	-8.2E-01	3.1E-01	-8.2E-01	3.1E-01	-8.1E-01
38.6	9.33E+00	2.29E+00	-8.1E-01	3.2E-01	-8.0E-01	3.3E-01	-8.0E-01	3.2E-01	-7.9E-01
38.8	9.16E+00	2.35E+00	-7.9E-01	3.3E-01	-7.8E-01	3.4E-01	-7.8E-01	3.3E-01	-7.8E-01
39.0	9.01E+00	2.42E+00	-7.8E-01	3.4E-01	-7.7E-01	3.5E-01	-7.7E-01	3.4E-01	-7.6E-01
39.2	8.85E+00	2.49E+00	-7.6E-01	3.5E-01	-7.5E-01	3.6E-01	-7.5E-01	3.6E-01	-7.4E-01
39.4	8.70E+00	2.56E+00	-7.4E-01	3.7E-01	-7.4E-01	3.7E-01	-7.4E-01	3.7E-01	-7.3E-01
39.6	8.56E+00	2.63E+00	-7.3E-01	3.8E-01	-7.2E-01	3.9E-01	-7.2E-01	3.8E-01	-7.1E-01
39.8	8.41E+00	2.71E+00	-7.1E-01	3.9E-01	-7.0E-01	4.0E-01	-7.0E-01	4.0E-01	-7.0E-01
40.0	8.27E+00	2.79E+00	-7.0E-01	4.1E-01	-6.9E-01	4.2E-01	-6.9E-01	4.1E-01	-6.8E-01
40.2	8.13E+00	2.87E+00	-6.8E-01	4.2E-01	-6.7E-01	4.3E-01	-6.7E-01	4.3E-01	-6.7E-01
40.4	8.00E+00	2.96E+00	-6.7E-01	4.4E-01	-6.6E-01	4.5E-01	-6.6E-01	4.4E-01	-6.5E-01
40.6	7.87E+00	3.05E+00	-6.5E-01	4.5E-01	-6.4E-01	4.6E-01	-6.4E-01	4.6E-01	-6.4E-01
40.8	7.74E+00	3.14E+00	-6.4E-01	4.7E-01	-6.3E-01	4.8E-01	-6.3E-01	4.8E-01	-6.2E-01
41.0	7.61E+00	3.24E+00	-6.2E-01	4.9E-01	-6.2E-01	5.0E-01	-6.2E-01	5.0E-01	-6.1E-01
41.2	7.49E+00	3.34E+00	-6.1E-01	5.1E-01	-6.0E-01	5.2E-01	-6.0E-01	5.2E-01	-5.9E-01
41.4	7.37E+00	3.44E+00	-5.9E-01	5.3E-01	-5.9E-01	5.4E-01	-5.9E-01	5.4E-01	-5.8E-01
41.6	7.25E+00	3.55E+00	-5.8E-01	5.5E-01	-5.7E-01	5.6E-01	-5.7E-01	5.6E-01	-5.7E-01
41.8	7.14E+00	3.66E+00	-5.7E-01	5.7E-01	-5.6E-01	5.8E-01	-5.6E-01	5.8E-01	-5.5E-01
42.0	7.03E+00	3.78E+00	-5.5E-01	5.9E-01	-5.5E-01	6.1E-01	-5.5E-01	6.0E-01	-5.4E-01
42.2	6.92E+00	3.90E+00	-5.4E-01	6.2E-01	-5.4E-01	6.3E-01	-5.4E-01	6.3E-01	-5.3E-01
42.4	6.81E+00	4.02E+00	-5.3E-01	6.4E-01	-5.2E-01	6.6E-01	-5.2E-01	6.5E-01	-5.2E-01
42.6	6.70E+00	4.15E+00	-5.2E-01	6.7E-01	-5.1E-01	6.8E-01	-5.1E-01	6.8E-01	-5.0E-01
42.8	6.60E+00	4.29E+00	-5.0E-01	6.9E-01	-5.0E-01	7.1E-01	-5.0E-01	7.1E-01	-4.9E-01
43.0	6.50E+00	4.43E+00	-4.9E-01	7.2E-01	-4.9E-01	7.4E-01	-4.9E-01	7.3E-01	-4.8E-01
43.2	6.41E+00	4.58E+00	-4.8E-01	7.5E-01	-4.7E-01	7.7E-01	-4.7E-01	7.6E-01	-4.7E-01
43.4	6.31E+00	4.73E+00	-4.7E-01	7.8E-01	-4.6E-01	8.0E-01	-4.6E-01	8.0E-01	-4.6E-01
43.6	6.22E+00	4.89E+00	-4.6E-01	8.1E-01	-4.5E-01	8.3E-01	-4.5E-01	8.3E-01	-4.4E-01
43.8	6.13E+00	5.06E+00	-4.4E-01	8.5E-01	-4.4E-01	8.7E-01	-4.4E-01	8.6E-01	-4.3E-01
44.0	6.04E+00	5.23E+00	-4.3E-01	8.8E-01	-4.3E-01	9.0E-01	-4.3E-01	9.0E-01	-4.2E-01
44.2	5.96E+00	5.41E+00	-4.2E-01	9.2E-01	-4.2E-01	9.4E-01	-4.2E-01	9.4E-01	-4.1E-01
44.4	5.87E+00	5.60E+00	-4.1E-01	9.6E-01	-4.0E-01	9.8E-01	-4.0E-01	9.8E-01	-4.0E-01
44.6	5.79E+00	5.79E+00	-4.0E-01	1.0E+00	-3.9E-01	1.0E+00	-3.9E-01	1.0E+00	-3.9E-01
44.8	5.71E+00	6.00E+00	-3.9E-01	1.0E+00	-3.8E-01	1.1E+00	-3.8E-01	1.1E+00	-3.8E-01
45.0	5.64E+00	6.21E+00	-3.8E-01	1.1E+00	-3.7E-01	1.1E+00	-3.7E-01	1.1E+00	-3.7E-01
45.2	5.56E+00	6.43E+00	-3.7E-01	1.1E+00	-3.6E-01	1.2E+00	-3.6E-01	1.1E+00	-3.6E-01

ferment

45.4	5.49E+00	6.66E+00	-3.6E-01	1.2E+00	-3.5E-01	1.2E+00	-3.5E-01	1.2E+00	-3.4E-01
45.6	5.42E+00	6.90E+00	-3.4E-01	1.2E+00	-3.4E-01	1.2E+00	-3.4E-01	1.2E+00	-3.3E-01
45.8	5.35E+00	7.15E+00	-3.3E-01	1.3E+00	-3.3E-01	1.3E+00	-3.3E-01	1.3E+00	-3.2E-01
46.0	5.29E+00	7.41E+00	-3.2E-01	1.3E+00	-3.2E-01	1.3E+00	-3.2E-01	1.3E+00	-3.1E-01
46.2	5.22E+00	7.68E+00	-3.1E-01	1.4E+00	-3.1E-01	1.4E+00	-3.1E-01	1.4E+00	-3.0E-01
46.4	5.16E+00	7.96E+00	-3.0E-01	1.4E+00	-3.0E-01	1.5E+00	-3.0E-01	1.5E+00	-2.9E-01
46.6	5.10E+00	8.25E+00	-2.9E-01	1.5E+00	-2.9E-01	1.5E+00	-2.9E-01	1.5E+00	-2.8E-01
46.8	5.04E+00	8.55E+00	-2.8E-01	1.5E+00	-2.8E-01	1.6E+00	-2.8E-01	1.6E+00	-2.7E-01
47.0	4.99E+00	8.86E+00	-2.7E-01	1.6E+00	-2.7E-01	1.6E+00	-2.7E-01	1.6E+00	-2.6E-01
47.2	4.93E+00	9.19E+00	-2.6E-01	1.7E+00	-2.6E-01	1.7E+00	-2.6E-01	1.7E+00	-2.5E-01
47.4	4.88E+00	9.53E+00	-2.5E-01	1.7E+00	-2.5E-01	1.7E+00	-2.5E-01	1.7E+00	-2.4E-01
47.6	4.83E+00	9.88E+00	-2.4E-01	1.8E+00	-2.4E-01	1.8E+00	-2.4E-01	1.8E+00	-2.3E-01
47.8	4.78E+00	1.02E+01	-2.3E-01	1.8E+00	-2.3E-01	1.9E+00	-2.3E-01	1.9E+00	-2.2E-01
48.0	4.74E+00	1.06E+01	-2.2E-01	1.9E+00	-2.2E-01	1.9E+00	-2.2E-01	1.9E+00	-2.2E-01
48.2	4.69E+00	1.10E+01	-2.2E-01	2.0E+00	-2.1E-01	2.0E+00	-2.1E-01	2.0E+00	-2.1E-01
48.4	4.65E+00	1.14E+01	-2.1E-01	2.0E+00	-2.0E-01	2.1E+00	-2.0E-01	2.1E+00	-2.0E-01
48.6	4.61E+00	1.18E+01	-2.0E-01	2.1E+00	-1.9E-01	2.1E+00	-1.9E-01	2.1E+00	-1.9E-01
48.8	4.57E+00	1.22E+01	-1.9E-01	2.2E+00	-1.8E-01	2.2E+00	-1.8E-01	2.2E+00	-1.8E-01
49.0	4.54E+00	1.27E+01	-1.8E-01	2.2E+00	-1.7E-01	2.3E+00	-1.7E-01	2.3E+00	-1.7E-01
49.2	4.50E+00	1.31E+01	-1.7E-01	2.3E+00	-1.6E-01	2.3E+00	-1.6E-01	2.3E+00	-1.6E-01
49.4	4.47E+00	1.36E+01	-1.6E-01	2.3E+00	-1.6E-01	2.4E+00	-1.6E-01	2.4E+00	-1.5E-01
49.6	4.44E+00	1.41E+01	-1.5E-01	2.4E+00	-1.5E-01	2.4E+00	-1.5E-01	2.4E+00	-1.4E-01
49.8	4.41E+00	1.46E+01	-1.4E-01	2.5E+00	-1.4E-01	2.5E+00	-1.4E-01	2.5E+00	-1.3E-01
50.0	4.38E+00	1.51E+01	-1.3E-01	2.5E+00	-1.3E-01	2.6E+00	-1.3E-01	2.6E+00	-1.3E-01
50.2	4.36E+00	1.56E+01	-1.3E-01	2.6E+00	-1.2E-01	2.6E+00	-1.2E-01	2.6E+00	-1.2E-01
50.4	4.33E+00	1.61E+01	-1.2E-01	2.6E+00	-1.1E-01	2.7E+00	-1.1E-01	2.7E+00	-1.1E-01
50.6	4.31E+00	1.66E+01	-1.1E-01	2.7E+00	-1.0E-01	2.7E+00	-1.0E-01	2.7E+00	-1.0E-01
50.8	4.29E+00	1.72E+01	-1.0E-01	2.8E+00	-9.6E-02	2.8E+00	-9.6E-02	2.8E+00	-9.2E-02
51.0	4.27E+00	1.77E+01	-9.2E-02	2.8E+00	-8.8E-02	2.8E+00	-8.8E-02	2.8E+00	-8.4E-02
51.2	4.25E+00	1.83E+01	-8.4E-02	2.8E+00	-7.9E-02	2.9E+00	-7.9E-02	2.9E+00	-7.5E-02
51.4	4.24E+00	1.89E+01	-7.5E-02	2.9E+00	-7.1E-02	2.9E+00	-7.1E-02	2.9E+00	-6.7E-02
51.6	4.22E+00	1.94E+01	-6.7E-02	2.9E+00	-6.4E-02	3.0E+00	-6.4E-02	3.0E+00	-6.0E-02
51.8	4.21E+00	2.00E+01	-6.0E-02	3.0E+00	-5.6E-02	3.0E+00	-5.6E-02	3.0E+00	-5.2E-02
52.0	4.20E+00	2.06E+01	-5.2E-02	3.0E+00	-4.8E-02	3.0E+00	-4.8E-02	3.0E+00	-4.4E-02
52.2	4.19E+00	2.12E+01	-4.4E-02	3.0E+00	-4.0E-02	3.1E+00	-4.0E-02	3.1E+00	-3.7E-02
52.4	4.18E+00	2.19E+01	-3.7E-02	3.1E+00	-3.3E-02	3.1E+00	-3.3E-02	3.1E+00	-2.9E-02
52.6	4.17E+00	2.25E+01	-2.9E-02	3.1E+00	-2.6E-02	3.1E+00	-2.5E-02	3.1E+00	-2.2E-02
52.8	4.17E+00	2.31E+01	-2.2E-02	3.1E+00	-1.8E-02	3.1E+00	-1.8E-02	3.1E+00	-1.5E-02
53.0	4.16E+00	2.37E+01	-1.5E-02	3.1E+00	-1.1E-02	3.1E+00	-1.1E-02	3.1E+00	-7.4E-03
53.2	4.16E+00	2.43E+01	-7.4E-03	3.1E+00	-3.9E-03	3.1E+00	-3.9E-03	3.1E+00	-3.8E-04
53.4	4.16E+00	2.50E+01	-3.8E-04	3.2E+00	3.1E-03	3.2E+00	3.1E-03	3.2E+00	6.6E-03
53.6	4.16E+00	2.56E+01	6.6E-03	3.2E+00	1.0E-02	3.2E+00	1.0E-02	3.2E+00	1.3E-02
53.8	4.16E+00	2.62E+01	1.3E-02	3.2E+00	1.7E-02	3.2E+00	1.7E-02	3.2E+00	2.0E-02
54.0	4.17E+00	2.69E+01	2.0E-02	3.2E+00	2.4E-02	3.2E+00	2.4E-02	3.2E+00	2.7E-02
54.2	4.17E+00	2.75E+01	2.7E-02	3.2E+00	3.0E-02	3.1E+00	3.0E-02	3.1E+00	3.3E-02
54.4	4.18E+00	2.81E+01	3.3E-02	3.1E+00	3.7E-02	3.1E+00	3.7E-02	3.1E+00	4.0E-02
54.6	4.19E+00	2.87E+01	4.0E-02	3.1E+00	4.3E-02	3.1E+00	4.3E-02	3.1E+00	4.6E-02
54.8	4.19E+00	2.94E+01	4.6E-02	3.1E+00	4.9E-02	3.1E+00	4.9E-02	3.1E+00	5.2E-02
55.0	4.20E+00	3.00E+01	5.2E-02	3.1E+00	5.6E-02	3.1E+00	5.6E-02	3.1E+00	5.9E-02
55.2	4.21E+00	3.06E+01	5.9E-02	3.1E+00	6.2E-02	3.1E+00	6.2E-02	3.1E+00	6.5E-02
55.4	4.23E+00	3.12E+01	6.5E-02	3.0E+00	6.8E-02	3.0E+00	6.8E-02	3.0E+00	7.1E-02

ferment

55.6	4.24E+00	3.18E+01	7.1E-02	3.0E+00	7.4E-02	3.0E+00	7.4E-02	3.0E+00	7.7E-02
55.8	4.26E+00	3.24E+01	7.7E-02	3.0E+00	8.0E-02	3.0E+00	8.0E-02	3.0E+00	8.2E-02
56.0	4.27E+00	3.30E+01	8.2E-02	2.9E+00	8.5E-02	2.9E+00	8.5E-02	2.9E+00	8.8E-02
56.2	4.29E+00	3.36E+01	8.8E-02	2.9E+00	9.1E-02	2.9E+00	9.1E-02	2.9E+00	9.4E-02
56.4	4.31E+00	3.42E+01	9.4E-02	2.8E+00	9.7E-02	2.8E+00	9.7E-02	2.8E+00	9.9E-02
56.6	4.33E+00	3.47E+01	9.9E-02	2.8E+00	1.0E-01	2.8E+00	1.0E-01	2.8E+00	1.0E-01
56.8	4.35E+00	3.53E+01	1.0E-01	2.7E+00	1.1E-01	2.7E+00	1.1E-01	2.7E+00	1.1E-01
57.0	4.37E+00	3.58E+01	1.1E-01	2.7E+00	1.1E-01	2.7E+00	1.1E-01	2.7E+00	1.2E-01
57.2	4.39E+00	3.64E+01	1.2E-01	2.6E+00	1.2E-01	2.6E+00	1.2E-01	2.6E+00	1.2E-01
57.4	4.41E+00	3.69E+01	1.2E-01	2.6E+00	1.2E-01	2.5E+00	1.2E-01	2.5E+00	1.3E-01
57.6	4.44E+00	3.74E+01	1.3E-01	2.5E+00	1.3E-01	2.5E+00	1.3E-01	2.5E+00	1.3E-01
57.8	4.46E+00	3.79E+01	1.3E-01	2.4E+00	1.3E-01	2.4E+00	1.3E-01	2.4E+00	1.4E-01
58.0	4.49E+00	3.84E+01	1.4E-01	2.4E+00	1.4E-01	2.3E+00	1.4E-01	2.3E+00	1.4E-01
58.2	4.52E+00	3.88E+01	1.4E-01	2.3E+00	1.4E-01	2.2E+00	1.4E-01	2.2E+00	1.5E-01
58.4	4.55E+00	3.93E+01	1.5E-01	2.2E+00	1.5E-01	2.2E+00	1.5E-01	2.2E+00	1.5E-01
58.6	4.58E+00	3.97E+01	1.5E-01	2.1E+00	1.5E-01	2.1E+00	1.5E-01	2.1E+00	1.5E-01
58.8	4.61E+00	4.01E+01	1.5E-01	2.0E+00	1.6E-01	2.0E+00	1.6E-01	2.0E+00	1.6E-01
59.0	4.64E+00	4.05E+01	1.6E-01	2.0E+00	1.6E-01	1.9E+00	1.6E-01	1.9E+00	1.6E-01
59.2	4.67E+00	4.09E+01	1.6E-01	1.9E+00	1.7E-01	1.8E+00	1.7E-01	1.8E+00	1.7E-01
59.4	4.70E+00	4.13E+01	1.7E-01	1.8E+00	1.7E-01	1.7E+00	1.7E-01	1.7E+00	1.7E-01
59.6	4.74E+00	4.16E+01	1.7E-01	1.7E+00	1.7E-01	1.6E+00	1.7E-01	1.6E+00	1.8E-01
59.8	4.77E+00	4.19E+01	1.8E-01	1.6E+00	1.8E-01	1.5E+00	1.8E-01	1.5E+00	1.8E-01
60.0	4.81E+00	4.22E+01	1.8E-01	1.5E+00	1.8E-01	1.4E+00	1.8E-01	1.4E+00	1.8E-01
60.2	4.84E+00	4.25E+01	1.8E-01	1.4E+00	1.9E-01	1.3E+00	1.9E-01	1.3E+00	1.9E-01
60.4	4.88E+00	4.28E+01	1.9E-01	1.3E+00	1.9E-01	1.2E+00	1.9E-01	1.2E+00	1.9E-01
60.6	4.92E+00	4.30E+01	1.9E-01	1.2E+00	1.9E-01	1.1E+00	1.9E-01	1.1E+00	1.9E-01
60.8	4.96E+00	4.33E+01	1.9E-01	1.1E+00	2.0E-01	1.0E+00	2.0E-01	1.0E+00	2.0E-01
61.0	5.00E+00	4.35E+01	2.0E-01	9.7E-01	2.0E-01	9.1E-01	2.0E-01	9.1E-01	2.0E-01
61.2	5.04E+00	4.37E+01	2.0E-01	8.5E-01	2.0E-01	8.0E-01	2.0E-01	8.0E-01	2.0E-01
61.4	5.08E+00	4.38E+01	2.0E-01	7.4E-01	2.1E-01	6.8E-01	2.1E-01	6.8E-01	2.1E-01
61.6	5.12E+00	4.40E+01	2.1E-01	6.3E-01	2.1E-01	5.7E-01	2.1E-01	5.7E-01	2.1E-01
61.8	5.16E+00	4.41E+01	2.1E-01	5.1E-01	2.1E-01	4.5E-01	2.1E-01	4.5E-01	2.1E-01
62.0	5.20E+00	4.42E+01	2.1E-01	3.9E-01	2.1E-01	3.3E-01	2.1E-01	3.3E-01	2.1E-01
62.2	5.24E+00	4.42E+01	2.1E-01	2.6E-01	2.2E-01	2.0E-01	2.2E-01	2.0E-01	2.2E-01
62.4	5.29E+00	4.43E+01	2.2E-01	1.4E-01	2.2E-01	7.8E-02	2.2E-01	7.7E-02	2.2E-01
62.6	5.33E+00	4.43E+01	2.2E-01	1.4E-02	2.2E-01	-4.9E-02	2.2E-01	-5.0E-02	2.2E-01
62.8	5.37E+00	4.43E+01	2.2E-01	-1.1E-01	2.2E-01	-1.8E-01	2.2E-01	-1.8E-01	2.2E-01
63.0	5.42E+00	4.42E+01	2.2E-01	-2.4E-01	2.2E-01	-3.1E-01	2.2E-01	-3.1E-01	2.2E-01
63.2	5.46E+00	4.42E+01	2.2E-01	-3.8E-01	2.2E-01	-4.4E-01	2.2E-01	-4.4E-01	2.2E-01
63.4	5.51E+00	4.41E+01	2.2E-01	-5.1E-01	2.2E-01	-5.8E-01	2.2E-01	-5.8E-01	2.2E-01
63.6	5.55E+00	4.40E+01	2.2E-01	-6.5E-01	2.2E-01	-7.1E-01	2.2E-01	-7.1E-01	2.2E-01
63.8	5.60E+00	4.38E+01	2.2E-01	-7.8E-01	2.2E-01	-8.5E-01	2.2E-01	-8.5E-01	2.2E-01
64.0	5.64E+00	4.37E+01	2.2E-01	-9.2E-01	2.2E-01	-9.9E-01	2.2E-01	-9.9E-01	2.2E-01
64.2	5.69E+00	4.35E+01	2.2E-01	-1.1E+00	2.2E-01	-1.1E+00	2.2E-01	-1.1E+00	2.2E-01
64.4	5.73E+00	4.32E+01	2.2E-01	-1.2E+00	2.2E-01	-1.3E+00	2.2E-01	-1.3E+00	2.2E-01
64.6	5.78E+00	4.30E+01	2.2E-01	-1.4E+00	2.2E-01	-1.4E+00	2.2E-01	-1.4E+00	2.2E-01
64.8	5.82E+00	4.27E+01	2.2E-01	-1.5E+00	2.2E-01	-1.6E+00	2.2E-01	-1.6E+00	2.2E-01
65.0	5.87E+00	4.24E+01	2.2E-01	-1.6E+00	2.2E-01	-1.7E+00	2.2E-01	-1.7E+00	2.2E-01
65.2	5.91E+00	4.20E+01	2.2E-01	-1.8E+00	2.2E-01	-1.9E+00	2.2E-01	-1.9E+00	2.2E-01
65.4	5.95E+00	4.17E+01	2.2E-01	-1.9E+00	2.2E-01	-2.0E+00	2.1E-01	-2.0E+00	2.1E-01
65.6	6.00E+00	4.13E+01	2.1E-01	-2.1E+00	2.1E-01	-2.2E+00	2.1E-01	-2.2E+00	2.1E-01

ferment

65.8	6.04E+00	4.08E+01	2.1E-01	-2.2E+00	2.1E-01	-2.3E+00	2.1E-01	-2.3E+00	2.1E-01
66.0	6.08E+00	4.04E+01	2.1E-01	-2.4E+00	2.0E-01	-2.5E+00	2.0E-01	-2.5E+00	2.0E-01
66.2	6.12E+00	3.99E+01	2.0E-01	-2.6E+00	2.0E-01	-2.6E+00	2.0E-01	-2.6E+00	2.0E-01
66.4	6.16E+00	3.93E+01	2.0E-01	-2.7E+00	2.0E-01	-2.8E+00	2.0E-01	-2.8E+00	1.9E-01
66.6	6.20E+00	3.88E+01	1.9E-01	-2.9E+00	1.9E-01	-2.9E+00	1.9E-01	-2.9E+00	1.9E-01
66.8	6.24E+00	3.82E+01	1.9E-01	-3.0E+00	1.8E-01	-3.1E+00	1.8E-01	-3.1E+00	1.8E-01
67.0	6.27E+00	3.76E+01	1.8E-01	-3.2E+00	1.8E-01	-3.3E+00	1.8E-01	-3.3E+00	1.7E-01
67.2	6.31E+00	3.69E+01	1.7E-01	-3.3E+00	1.7E-01	-3.4E+00	1.7E-01	-3.4E+00	1.7E-01
67.4	6.34E+00	3.62E+01	1.7E-01	-3.5E+00	1.6E-01	-3.6E+00	1.6E-01	-3.6E+00	1.6E-01
67.6	6.38E+00	3.55E+01	1.6E-01	-3.7E+00	1.5E-01	-3.7E+00	1.5E-01	-3.7E+00	1.5E-01
67.8	6.41E+00	3.48E+01	1.5E-01	-3.8E+00	1.4E-01	-3.9E+00	1.4E-01	-3.9E+00	1.4E-01
68.0	6.44E+00	3.40E+01	1.4E-01	-4.0E+00	1.3E-01	-4.0E+00	1.3E-01	-4.0E+00	1.3E-01
68.2	6.46E+00	3.32E+01	1.3E-01	-4.1E+00	1.2E-01	-4.2E+00	1.2E-01	-4.2E+00	1.2E-01
68.4	6.49E+00	3.23E+01	1.2E-01	-4.3E+00	1.1E-01	-4.3E+00	1.1E-01	-4.3E+00	1.0E-01
68.6	6.51E+00	3.15E+01	1.0E-01	-4.4E+00	9.7E-02	-4.5E+00	9.7E-02	-4.5E+00	9.0E-02
68.8	6.53E+00	3.06E+01	9.0E-02	-4.5E+00	8.4E-02	-4.6E+00	8.3E-02	-4.6E+00	7.6E-02
69.0	6.54E+00	2.97E+01	7.6E-02	-4.7E+00	6.9E-02	-4.7E+00	6.9E-02	-4.7E+00	6.2E-02
69.2	6.56E+00	2.87E+01	6.2E-02	-4.8E+00	5.4E-02	-4.9E+00	5.4E-02	-4.9E+00	4.6E-02
69.4	6.57E+00	2.77E+01	4.6E-02	-4.9E+00	3.8E-02	-5.0E+00	3.8E-02	-5.0E+00	3.0E-02
69.6	6.58E+00	2.67E+01	3.0E-02	-5.0E+00	2.1E-02	-5.1E+00	2.1E-02	-5.1E+00	1.2E-02
69.8	6.58E+00	2.57E+01	1.2E-02	-5.1E+00	3.5E-03	-5.2E+00	3.4E-03	-5.2E+00	-5.7E-03
70.0	6.58E+00	2.47E+01	-5.7E-03	-5.2E+00	-1.5E-02	-5.3E+00	-1.5E-02	-5.3E+00	-2.5E-02
70.2	6.58E+00	2.36E+01	-2.5E-02	-5.3E+00	-3.4E-02	-5.3E+00	-3.4E-02	-5.3E+00	-4.4E-02
70.4	6.57E+00	2.26E+01	-4.4E-02	-5.3E+00	-5.4E-02	-5.3E+00	-5.4E-02	-5.3E+00	-6.4E-02
70.6	6.56E+00	2.15E+01	-6.4E-02	-5.4E+00	-7.5E-02	-5.4E+00	-7.5E-02	-5.4E+00	-8.5E-02
70.8	6.55E+00	2.04E+01	-8.5E-02	-5.4E+00	-9.6E-02	-5.3E+00	-9.6E-02	-5.3E+00	-1.1E-01
71.0	6.53E+00	1.94E+01	-1.1E-01	-5.3E+00	-1.2E-01	-5.3E+00	-1.2E-01	-5.3E+00	-1.3E-01
71.2	6.50E+00	1.83E+01	-1.3E-01	-5.3E+00	-1.4E-01	-5.2E+00	-1.4E-01	-5.2E+00	-1.5E-01
71.4	6.48E+00	1.72E+01	-1.5E-01	-5.2E+00	-1.6E-01	-5.1E+00	-1.6E-01	-5.1E+00	-1.7E-01
71.6	6.44E+00	1.62E+01	-1.7E-01	-5.0E+00	-1.8E-01	-5.0E+00	-1.8E-01	-5.0E+00	-1.9E-01
71.8	6.41E+00	1.52E+01	-1.9E-01	-4.9E+00	-2.0E-01	-4.8E+00	-2.0E-01	-4.8E+00	-2.1E-01
72.0	6.37E+00	1.43E+01	-2.1E-01	-4.6E+00	-2.2E-01	-4.5E+00	-2.2E-01	-4.5E+00	-2.3E-01
72.2	6.32E+00	1.34E+01	-2.3E-01	-4.4E+00	-2.4E-01	-4.2E+00	-2.4E-01	-4.2E+00	-2.5E-01
72.4	6.27E+00	1.25E+01	-2.5E-01	-4.1E+00	-2.6E-01	-3.9E+00	-2.6E-01	-3.9E+00	-2.7E-01
72.6	6.22E+00	1.18E+01	-2.7E-01	-3.7E+00	-2.7E-01	-3.5E+00	-2.7E-01	-3.5E+00	-2.8E-01
72.8	6.17E+00	1.10E+01	-2.8E-01	-3.4E+00	-2.9E-01	-3.2E+00	-2.9E-01	-3.2E+00	-2.9E-01
73.0	6.11E+00	1.04E+01	-2.9E-01	-3.0E+00	-3.0E-01	-2.8E+00	-3.0E-01	-2.8E+00	-3.1E-01
73.2	6.05E+00	9.87E+00	-3.1E-01	-2.6E+00	-3.1E-01	-2.3E+00	-3.1E-01	-2.4E+00	-3.1E-01
73.4	5.99E+00	9.40E+00	-3.1E-01	-2.2E+00	-3.2E-01	-1.9E+00	-3.2E-01	-2.0E+00	-3.2E-01
73.6	5.92E+00	9.00E+00	-3.2E-01	-1.8E+00	-3.2E-01	-1.6E+00	-3.2E-01	-1.6E+00	-3.3E-01
73.8	5.86E+00	8.69E+00	-3.3E-01	-1.4E+00	-3.3E-01	-1.2E+00	-3.3E-01	-1.2E+00	-3.3E-01
74.0	5.79E+00	8.45E+00	-3.3E-01	-1.0E+00	-3.3E-01	-8.6E-01	-3.3E-01	-8.7E-01	-3.3E-01
74.2	5.73E+00	8.28E+00	-3.3E-01	-7.1E-01	-3.3E-01	-5.6E-01	-3.3E-01	-5.6E-01	-3.3E-01
74.4	5.66E+00	8.17E+00	-3.3E-01	-4.2E-01	-3.3E-01	-2.8E-01	-3.3E-01	-2.9E-01	-3.3E-01
74.6	5.60E+00	8.11E+00	-3.3E-01	-1.6E-01	-3.2E-01	-4.0E-02	-3.2E-01	-4.7E-02	-3.2E-01
74.8	5.53E+00	8.10E+00	-3.2E-01	6.8E-02	-3.2E-01	1.8E-01	-3.2E-01	1.7E-01	-3.2E-01
75.0	5.47E+00	8.13E+00	-3.2E-01	2.7E-01	-3.1E-01	3.7E-01	-3.1E-01	3.6E-01	-3.1E-01
75.2	5.41E+00	8.21E+00	-3.1E-01	4.5E-01	-3.1E-01	5.3E-01	-3.1E-01	5.3E-01	-3.1E-01
75.4	5.34E+00	8.31E+00	-3.1E-01	6.1E-01	-3.0E-01	6.8E-01	-3.0E-01	6.8E-01	-3.0E-01
75.6	5.28E+00	8.45E+00	-3.0E-01	7.5E-01	-3.0E-01	8.2E-01	-3.0E-01	8.2E-01	-2.9E-01
75.8	5.22E+00	8.61E+00	-2.9E-01	8.8E-01	-2.9E-01	9.4E-01	-2.9E-01	9.4E-01	-2.8E-01

ferment

76.0	5.17E+00	8.80E+00	-2.8E-01	1.0E+00	-2.8E-01	1.1E+00	-2.8E-01	1.1E+00	-2.8E-01
76.2	5.11E+00	9.01E+00	-2.8E-01	1.1E+00	-2.7E-01	1.2E+00	-2.7E-01	1.2E+00	-2.7E-01
76.4	5.06E+00	9.24E+00	-2.7E-01	1.2E+00	-2.6E-01	1.3E+00	-2.6E-01	1.3E+00	-2.6E-01
76.6	5.00E+00	9.49E+00	-2.6E-01	1.3E+00	-2.6E-01	1.4E+00	-2.6E-01	1.3E+00	-2.5E-01
76.8	4.95E+00	9.76E+00	-2.5E-01	1.4E+00	-2.5E-01	1.4E+00	-2.5E-01	1.4E+00	-2.4E-01
77.0	4.90E+00	1.01E+01	-2.4E-01	1.5E+00	-2.4E-01	1.5E+00	-2.4E-01	1.5E+00	-2.4E-01
77.2	4.85E+00	1.04E+01	-2.4E-01	1.6E+00	-2.3E-01	1.6E+00	-2.3E-01	1.6E+00	-2.3E-01
77.4	4.81E+00	1.07E+01	-2.3E-01	1.6E+00	-2.2E-01	1.7E+00	-2.2E-01	1.7E+00	-2.2E-01
77.6	4.76E+00	1.10E+01	-2.2E-01	1.7E+00	-2.1E-01	1.8E+00	-2.1E-01	1.8E+00	-2.1E-01
77.8	4.72E+00	1.14E+01	-2.1E-01	1.8E+00	-2.1E-01	1.8E+00	-2.1E-01	1.8E+00	-2.0E-01
78.0	4.68E+00	1.17E+01	-2.0E-01	1.9E+00	-2.0E-01	1.9E+00	-2.0E-01	1.9E+00	-1.9E-01
78.2	4.64E+00	1.21E+01	-1.9E-01	1.9E+00	-1.9E-01	2.0E+00	-1.9E-01	2.0E+00	-1.8E-01
78.4	4.60E+00	1.25E+01	-1.8E-01	2.0E+00	-1.8E-01	2.1E+00	-1.8E-01	2.0E+00	-1.8E-01
78.6	4.57E+00	1.29E+01	-1.8E-01	2.1E+00	-1.7E-01	2.1E+00	-1.7E-01	2.1E+00	-1.7E-01
78.8	4.53E+00	1.33E+01	-1.7E-01	2.2E+00	-1.6E-01	2.2E+00	-1.6E-01	2.2E+00	-1.6E-01
79.0	4.50E+00	1.38E+01	-1.6E-01	2.2E+00	-1.5E-01	2.3E+00	-1.5E-01	2.3E+00	-1.5E-01
79.2	4.47E+00	1.42E+01	-1.5E-01	2.3E+00	-1.5E-01	2.3E+00	-1.5E-01	2.3E+00	-1.4E-01
79.4	4.44E+00	1.47E+01	-1.4E-01	2.3E+00	-1.4E-01	2.4E+00	-1.4E-01	2.4E+00	-1.3E-01
79.6	4.41E+00	1.52E+01	-1.3E-01	2.4E+00	-1.3E-01	2.4E+00	-1.3E-01	2.4E+00	-1.2E-01
79.8	4.39E+00	1.57E+01	-1.2E-01	2.5E+00	-1.2E-01	2.5E+00	-1.2E-01	2.5E+00	-1.2E-01
80.0	4.36E+00	1.62E+01	-1.2E-01	2.5E+00	-1.1E-01	2.6E+00	-1.1E-01	2.6E+00	-1.1E-01
80.2	4.34E+00	1.67E+01	-1.1E-01	2.6E+00	-1.0E-01	2.6E+00	-1.0E-01	2.6E+00	-1.0E-01
80.4	4.32E+00	1.72E+01	-1.0E-01	2.6E+00	-9.6E-02	2.7E+00	-9.6E-02	2.7E+00	-9.2E-02
80.6	4.30E+00	1.77E+01	-9.2E-02	2.7E+00	-8.8E-02	2.7E+00	-8.8E-02	2.7E+00	-8.4E-02
80.8	4.28E+00	1.83E+01	-8.4E-02	2.7E+00	-8.1E-02	2.8E+00	-8.0E-02	2.8E+00	-7.7E-02
81.0	4.27E+00	1.88E+01	-7.7E-02	2.8E+00	-7.3E-02	2.8E+00	-7.3E-02	2.8E+00	-6.9E-02
81.2	4.25E+00	1.94E+01	-6.9E-02	2.8E+00	-6.5E-02	2.8E+00	-6.5E-02	2.8E+00	-6.1E-02
81.4	4.24E+00	2.00E+01	-6.1E-02	2.9E+00	-5.7E-02	2.9E+00	-5.7E-02	2.9E+00	-5.4E-02
81.6	4.23E+00	2.05E+01	-5.4E-02	2.9E+00	-5.0E-02	2.9E+00	-5.0E-02	2.9E+00	-4.6E-02
81.8	4.22E+00	2.11E+01	-4.6E-02	2.9E+00	-4.2E-02	3.0E+00	-4.2E-02	2.9E+00	-3.9E-02
82.0	4.21E+00	2.17E+01	-3.9E-02	3.0E+00	-3.5E-02	3.0E+00	-3.5E-02	3.0E+00	-3.1E-02
82.2	4.20E+00	2.23E+01	-3.1E-02	3.0E+00	-2.8E-02	3.0E+00	-2.8E-02	3.0E+00	-2.4E-02
82.4	4.20E+00	2.29E+01	-2.4E-02	3.0E+00	-2.1E-02	3.0E+00	-2.1E-02	3.0E+00	-1.7E-02
82.6	4.19E+00	2.35E+01	-1.7E-02	3.0E+00	-1.4E-02	3.0E+00	-1.4E-02	3.0E+00	-1.0E-02
82.8	4.19E+00	2.41E+01	-1.0E-02	3.0E+00	-6.6E-03	3.1E+00	-6.6E-03	3.1E+00	-3.1E-03
83.0	4.19E+00	2.47E+01	-3.1E-03	3.1E+00	2.8E-04	3.1E+00	2.9E-04	3.1E+00	3.7E-03
83.2	4.19E+00	2.53E+01	3.7E-03	3.1E+00	7.1E-03	3.1E+00	7.1E-03	3.1E+00	1.0E-02
83.4	4.19E+00	2.59E+01	1.0E-02	3.1E+00	1.4E-02	3.1E+00	1.4E-02	3.1E+00	1.7E-02
83.6	4.19E+00	2.66E+01	1.7E-02	3.1E+00	2.0E-02	3.1E+00	2.0E-02	3.1E+00	2.4E-02
83.8	4.20E+00	2.72E+01	2.4E-02	3.1E+00	2.7E-02	3.1E+00	2.7E-02	3.1E+00	3.0E-02
84.0	4.20E+00	2.78E+01	3.0E-02	3.1E+00	3.3E-02	3.1E+00	3.3E-02	3.1E+00	3.6E-02
84.2	4.21E+00	2.84E+01	3.6E-02	3.0E+00	4.0E-02	3.0E+00	4.0E-02	3.0E+00	4.3E-02
84.4	4.22E+00	2.90E+01	4.3E-02	3.0E+00	4.6E-02	3.0E+00	4.6E-02	3.0E+00	4.9E-02
84.6	4.22E+00	2.96E+01	4.9E-02	3.0E+00	5.2E-02	3.0E+00	5.2E-02	3.0E+00	5.5E-02
84.8	4.23E+00	3.02E+01	5.5E-02	3.0E+00	5.8E-02	3.0E+00	5.8E-02	3.0E+00	6.1E-02
85.0	4.25E+00	3.08E+01	6.1E-02	3.0E+00	6.4E-02	3.0E+00	6.4E-02	3.0E+00	6.7E-02
85.2	4.26E+00	3.14E+01	6.7E-02	2.9E+00	7.0E-02	2.9E+00	7.0E-02	2.9E+00	7.3E-02
85.4	4.27E+00	3.20E+01	7.3E-02	2.9E+00	7.6E-02	2.9E+00	7.6E-02	2.9E+00	7.9E-02
85.6	4.29E+00	3.26E+01	7.9E-02	2.9E+00	8.1E-02	2.8E+00	8.1E-02	2.8E+00	8.4E-02
85.8	4.30E+00	3.31E+01	8.4E-02	2.8E+00	8.7E-02	2.8E+00	8.7E-02	2.8E+00	9.0E-02
86.0	4.32E+00	3.37E+01	9.0E-02	2.8E+00	9.2E-02	2.8E+00	9.2E-02	2.8E+00	9.5E-02

ferment

86.2	4.34E+00	3.42E+01	9.5E-02	2.7E+00	9.8E-02	2.7E+00	9.8E-02	2.7E+00	1.0E-01
86.4	4.36E+00	3.48E+01	1.0E-01	2.7E+00	1.0E-01	2.7E+00	1.0E-01	2.7E+00	1.1E-01
86.6	4.38E+00	3.53E+01	1.1E-01	2.6E+00	1.1E-01	2.6E+00	1.1E-01	2.6E+00	1.1E-01
86.8	4.40E+00	3.58E+01	1.1E-01	2.6E+00	1.1E-01	2.5E+00	1.1E-01	2.5E+00	1.2E-01
87.0	4.43E+00	3.63E+01	1.2E-01	2.5E+00	1.2E-01	2.5E+00	1.2E-01	2.5E+00	1.2E-01
87.2	4.45E+00	3.68E+01	1.2E-01	2.5E+00	1.2E-01	2.4E+00	1.2E-01	2.4E+00	1.3E-01
87.4	4.47E+00	3.73E+01	1.3E-01	2.4E+00	1.3E-01	2.4E+00	1.3E-01	2.4E+00	1.3E-01
87.6	4.50E+00	3.78E+01	1.3E-01	2.3E+00	1.3E-01	2.3E+00	1.3E-01	2.3E+00	1.4E-01
87.8	4.53E+00	3.82E+01	1.4E-01	2.2E+00	1.4E-01	2.2E+00	1.4E-01	2.2E+00	1.4E-01
88.0	4.55E+00	3.87E+01	1.4E-01	2.2E+00	1.4E-01	2.1E+00	1.4E-01	2.1E+00	1.5E-01
88.2	4.58E+00	3.91E+01	1.5E-01	2.1E+00	1.5E-01	2.1E+00	1.5E-01	2.1E+00	1.5E-01
88.4	4.61E+00	3.95E+01	1.5E-01	2.0E+00	1.5E-01	2.0E+00	1.5E-01	2.0E+00	1.5E-01
88.6	4.64E+00	3.99E+01	1.5E-01	1.9E+00	1.6E-01	1.9E+00	1.6E-01	1.9E+00	1.6E-01
88.8	4.67E+00	4.03E+01	1.6E-01	1.8E+00	1.6E-01	1.8E+00	1.6E-01	1.8E+00	1.6E-01
89.0	4.71E+00	4.07E+01	1.6E-01	1.8E+00	1.6E-01	1.7E+00	1.6E-01	1.7E+00	1.7E-01
89.2	4.74E+00	4.10E+01	1.7E-01	1.7E+00	1.7E-01	1.6E+00	1.7E-01	1.6E+00	1.7E-01
89.4	4.77E+00	4.13E+01	1.7E-01	1.6E+00	1.7E-01	1.5E+00	1.7E-01	1.5E+00	1.7E-01
89.6	4.81E+00	4.16E+01	1.7E-01	1.5E+00	1.8E-01	1.4E+00	1.8E-01	1.4E+00	1.8E-01
89.8	4.84E+00	4.19E+01	1.8E-01	1.4E+00	1.8E-01	1.3E+00	1.8E-01	1.3E+00	1.8E-01
90.0	4.88E+00	4.22E+01	1.8E-01	1.3E+00	1.8E-01	1.2E+00	1.8E-01	1.2E+00	1.9E-01
90.2	4.91E+00	4.24E+01	1.9E-01	1.2E+00	1.9E-01	1.1E+00	1.9E-01	1.1E+00	1.9E-01
90.4	4.95E+00	4.27E+01	1.9E-01	1.1E+00	1.9E-01	1.0E+00	1.9E-01	1.0E+00	1.9E-01
90.6	4.99E+00	4.29E+01	1.9E-01	9.7E-01	1.9E-01	9.1E-01	1.9E-01	9.1E-01	2.0E-01
90.8	5.03E+00	4.30E+01	2.0E-01	8.6E-01	2.0E-01	8.0E-01	2.0E-01	8.0E-01	2.0E-01
91.0	5.07E+00	4.32E+01	2.0E-01	7.5E-01	2.0E-01	6.9E-01	2.0E-01	6.9E-01	2.0E-01
91.2	5.11E+00	4.33E+01	2.0E-01	6.4E-01	2.0E-01	5.8E-01	2.0E-01	5.8E-01	2.0E-01
91.4	5.15E+00	4.35E+01	2.0E-01	5.2E-01	2.0E-01	4.6E-01	2.0E-01	4.6E-01	2.1E-01
91.6	5.19E+00	4.35E+01	2.1E-01	4.0E-01	2.1E-01	3.4E-01	2.1E-01	3.4E-01	2.1E-01
91.8	5.23E+00	4.36E+01	2.1E-01	2.8E-01	2.1E-01	2.2E-01	2.1E-01	2.2E-01	2.1E-01
92.0	5.27E+00	4.37E+01	2.1E-01	1.6E-01	2.1E-01	1.0E-01	2.1E-01	1.0E-01	2.1E-01
92.2	5.31E+00	4.37E+01	2.1E-01	3.9E-02	2.1E-01	-2.3E-02	2.1E-01	-2.3E-02	2.1E-01
92.4	5.36E+00	4.37E+01	2.1E-01	-8.6E-02	2.1E-01	-1.5E-01	2.1E-01	-1.5E-01	2.2E-01
92.6	5.40E+00	4.36E+01	2.2E-01	-2.1E-01	2.2E-01	-2.8E-01	2.2E-01	-2.8E-01	2.2E-01
92.8	5.44E+00	4.36E+01	2.2E-01	-3.4E-01	2.2E-01	-4.1E-01	2.2E-01	-4.1E-01	2.2E-01
93.0	5.49E+00	4.35E+01	2.2E-01	-4.7E-01	2.2E-01	-5.4E-01	2.2E-01	-5.4E-01	2.2E-01
93.2	5.53E+00	4.34E+01	2.2E-01	-6.0E-01	2.2E-01	-6.7E-01	2.2E-01	-6.7E-01	2.2E-01
93.4	5.57E+00	4.33E+01	2.2E-01	-7.4E-01	2.2E-01	-8.1E-01	2.2E-01	-8.1E-01	2.2E-01
93.6	5.62E+00	4.31E+01	2.2E-01	-8.7E-01	2.2E-01	-9.4E-01	2.2E-01	-9.4E-01	2.2E-01
93.8	5.66E+00	4.29E+01	2.2E-01	-1.0E+00	2.2E-01	-1.1E+00	2.2E-01	-1.1E+00	2.2E-01
94.0	5.71E+00	4.27E+01	2.2E-01	-1.2E+00	2.2E-01	-1.2E+00	2.2E-01	-1.2E+00	2.2E-01
94.2	5.75E+00	4.25E+01	2.2E-01	-1.3E+00	2.2E-01	-1.4E+00	2.2E-01	-1.4E+00	2.2E-01
94.4	5.79E+00	4.22E+01	2.2E-01	-1.4E+00	2.2E-01	-1.5E+00	2.2E-01	-1.5E+00	2.1E-01
94.6	5.83E+00	4.19E+01	2.1E-01	-1.6E+00	2.1E-01	-1.7E+00	2.1E-01	-1.7E+00	2.1E-01
94.8	5.88E+00	4.16E+01	2.1E-01	-1.7E+00	2.1E-01	-1.8E+00	2.1E-01	-1.8E+00	2.1E-01
95.0	5.92E+00	4.12E+01	2.1E-01	-1.9E+00	2.1E-01	-1.9E+00	2.1E-01	-1.9E+00	2.1E-01
95.2	5.96E+00	4.08E+01	2.1E-01	-2.0E+00	2.1E-01	-2.1E+00	2.1E-01	-2.1E+00	2.0E-01
95.4	6.00E+00	4.04E+01	2.0E-01	-2.2E+00	2.0E-01	-2.2E+00	2.0E-01	-2.2E+00	2.0E-01
95.6	6.04E+00	3.99E+01	2.0E-01	-2.3E+00	2.0E-01	-2.4E+00	2.0E-01	-2.4E+00	2.0E-01
95.8	6.08E+00	3.95E+01	2.0E-01	-2.5E+00	1.9E-01	-2.5E+00	1.9E-01	-2.5E+00	1.9E-01
96.0	6.12E+00	3.90E+01	1.9E-01	-2.6E+00	1.9E-01	-2.7E+00	1.9E-01	-2.7E+00	1.9E-01
96.2	6.16E+00	3.84E+01	1.9E-01	-2.8E+00	1.8E-01	-2.8E+00	1.8E-01	-2.8E+00	1.8E-01

ferment

ferment

9.7E+00	6.1E-02	9.8E+00		0.66	87.91	6.0E-02	9.8E+00
9.5E+00	6.3E-02	9.6E+00		0.67	89.88	6.2E-02	9.6E+00
9.3E+00	6.6E-02	9.4E+00		0.68	91.80	6.4E-02	9.4E+00
9.1E+00	6.8E-02	9.2E+00		0.69	93.69	6.6E-02	9.2E+00
8.9E+00	7.0E-02	9.0E+00		0.71	95.54	6.9E-02	9.0E+00
8.7E+00	7.2E-02	8.8E+00		0.72	97.35	7.1E-02	8.9E+00
8.5E+00	7.5E-02	8.6E+00		0.74	99.12	7.3E-02	8.7E+00
8.3E+00	7.7E-02	8.4E+00		0.75	100.85	7.5E-02	8.5E+00
8.2E+00	8.0E-02	8.2E+00		0.77	102.55	7.8E-02	8.3E+00
8.0E+00	8.2E-02	8.1E+00		0.78	104.21	8.0E-02	8.1E+00
7.8E+00	8.5E-02	7.9E+00		0.80	105.83	8.3E-02	7.9E+00
7.6E+00	8.7E-02	7.7E+00		0.81	107.42	8.5E-02	7.8E+00
7.5E+00	9.0E-02	7.5E+00		0.83	108.97	8.8E-02	7.6E+00
7.3E+00	9.2E-02	7.4E+00		0.85	110.49	9.0E-02	7.4E+00
7.1E+00	9.5E-02	7.2E+00		0.87	111.97	9.3E-02	7.3E+00
7.0E+00	9.8E-02	7.0E+00		0.89	113.42	9.6E-02	7.1E+00
6.8E+00	1.0E-01	6.9E+00		0.90	114.84	9.9E-02	6.9E+00
6.6E+00	1.0E-01	6.7E+00		0.92	116.23	1.0E-01	6.8E+00
6.5E+00	1.1E-01	6.6E+00		0.94	117.58	1.0E-01	6.6E+00
6.3E+00	1.1E-01	6.4E+00		0.97	118.90	1.1E-01	6.5E+00
6.2E+00	1.1E-01	6.3E+00		0.99	120.19	1.1E-01	6.3E+00
6.0E+00	1.2E-01	6.1E+00		1.01	121.45	1.1E-01	6.1E+00
5.9E+00	1.2E-01	6.0E+00		1.03	122.68	1.2E-01	6.0E+00
5.7E+00	1.2E-01	5.8E+00		1.05	123.88	1.2E-01	5.8E+00
5.6E+00	1.3E-01	5.7E+00		1.08	125.05	1.2E-01	5.7E+00
5.5E+00	1.3E-01	5.5E+00		1.10	126.19	1.3E-01	5.6E+00
5.3E+00	1.3E-01	5.4E+00		1.13	127.30	1.3E-01	5.4E+00
5.2E+00	1.4E-01	5.2E+00		1.15	128.38	1.3E-01	5.3E+00
5.0E+00	1.4E-01	5.1E+00		1.18	129.44	1.4E-01	5.1E+00
4.9E+00	1.5E-01	5.0E+00		1.21	130.47	1.4E-01	5.0E+00
4.8E+00	1.5E-01	4.8E+00		1.24	131.47	1.5E-01	4.9E+00
4.6E+00	1.5E-01	4.7E+00		1.27	132.44	1.5E-01	4.7E+00
4.5E+00	1.6E-01	4.6E+00		1.30	133.39	1.5E-01	4.6E+00
4.4E+00	1.6E-01	4.4E+00		1.33	134.31	1.6E-01	4.5E+00
4.2E+00	1.7E-01	4.3E+00		1.36	135.20	1.6E-01	4.3E+00
4.1E+00	1.7E-01	4.2E+00		1.39	136.07	1.7E-01	4.2E+00
4.0E+00	1.8E-01	4.1E+00		1.42	136.91	1.7E-01	4.1E+00
3.9E+00	1.8E-01	3.9E+00		1.46	137.73	1.8E-01	4.0E+00
3.7E+00	1.8E-01	3.8E+00		1.49	138.52	1.8E-01	3.8E+00
3.6E+00	1.9E-01	3.7E+00		1.53	139.29	1.8E-01	3.7E+00
3.5E+00	2.0E-01	3.6E+00		1.57	140.04	1.9E-01	3.6E+00
3.4E+00	2.0E-01	3.4E+00		1.60	140.75	1.9E-01	3.5E+00
3.3E+00	2.1E-01	3.3E+00		1.64	141.45	2.0E-01	3.4E+00
3.1E+00	2.1E-01	3.2E+00		1.68	142.12	2.1E-01	3.2E+00
3.0E+00	2.2E-01	3.1E+00		1.72	142.77	2.1E-01	3.1E+00
2.9E+00	2.2E-01	3.0E+00		1.77	143.39	2.2E-01	3.0E+00
2.8E+00	2.3E-01	2.8E+00		1.81	143.99	2.2E-01	2.9E+00
2.7E+00	2.3E-01	2.7E+00		1.85	144.56	2.3E-01	2.8E+00
2.5E+00	2.4E-01	2.6E+00		1.90	145.12	2.3E-01	2.6E+00
2.4E+00	2.5E-01	2.5E+00		1.95	145.64	2.4E-01	2.5E+00
2.3E+00	2.5E-01	2.4E+00		1.99	146.15	2.5E-01	2.4E+00

ferment

2.2E+00	2.6E-01	2.3E+00		2.04	146.63	2.5E-01	2.3E+00
2.1E+00	2.7E-01	2.1E+00		2.09	147.09	2.6E-01	2.2E+00
2.0E+00	2.7E-01	2.0E+00		2.15	147.53	2.7E-01	2.1E+00
1.9E+00	2.8E-01	1.9E+00		2.20	147.95	2.7E-01	2.0E+00
1.7E+00	2.9E-01	1.8E+00		2.25	148.34	2.8E-01	1.8E+00
1.6E+00	3.0E-01	1.7E+00		2.31	148.71	2.9E-01	1.7E+00
1.5E+00	3.0E-01	1.6E+00		2.37	149.06	3.0E-01	1.6E+00
1.4E+00	3.1E-01	1.4E+00		2.43	149.38	3.0E-01	1.5E+00
1.3E+00	3.2E-01	1.3E+00		2.49	149.68	3.1E-01	1.4E+00
1.2E+00	3.3E-01	1.2E+00		2.55	149.96	3.2E-01	1.3E+00
1.0E+00	3.4E-01	1.1E+00		2.61	150.21	3.3E-01	1.2E+00
9.2E-01	3.5E-01	9.8E-01		2.68	150.45	3.4E-01	1.1E+00
8.0E-01	3.6E-01	8.6E-01		2.74	150.66	3.4E-01	9.4E-01
6.9E-01	3.6E-01	7.5E-01		2.81	150.85	3.5E-01	8.2E-01
5.7E-01	3.7E-01	6.3E-01		2.88	151.01	3.6E-01	7.1E-01
4.5E-01	3.8E-01	5.1E-01		2.96	151.15	3.7E-01	5.9E-01
3.3E-01	3.9E-01	3.9E-01		3.03	151.27	3.8E-01	4.7E-01
2.0E-01	4.0E-01	2.7E-01		3.11	151.36	3.9E-01	3.5E-01
8.2E-02	4.1E-01	1.4E-01		3.18	151.43	4.0E-01	2.4E-01
-4.3E-02	4.2E-01	2.0E-02		3.26	151.48	4.1E-01	1.2E-01
-1.7E-01	4.4E-01	-1.1E-01		3.35	151.50	4.2E-01	-4.8E-03
-2.9E-01	4.5E-01	-2.3E-01		3.43	151.50	4.3E-01	-1.3E-01
-4.2E-01	4.6E-01	-3.6E-01		3.52	151.48	4.4E-01	-2.5E-01
-5.5E-01	4.7E-01	-4.9E-01		3.61	151.43	4.5E-01	-3.7E-01
-6.8E-01	4.8E-01	-6.2E-01		3.70	151.35	4.6E-01	-5.0E-01
-8.2E-01	4.9E-01	-7.5E-01		3.79	151.25	4.8E-01	-6.3E-01
-9.5E-01	5.0E-01	-8.8E-01		3.88	151.13	4.9E-01	-7.6E-01
-1.1E+00	5.2E-01	-1.0E+00		3.98	150.98	5.0E-01	-8.9E-01
-1.2E+00	5.3E-01	-1.2E+00		4.08	150.80	5.1E-01	-1.0E+00
-1.4E+00	5.4E-01	-1.3E+00		4.18	150.60	5.2E-01	-1.2E+00
-1.5E+00	5.6E-01	-1.4E+00		4.29	150.36	5.4E-01	-1.3E+00
-1.7E+00	5.7E-01	-1.6E+00		4.40	150.11	5.5E-01	-1.4E+00
-1.8E+00	5.8E-01	-1.7E+00		4.51	149.82	5.6E-01	-1.6E+00
-2.0E+00	6.0E-01	-1.9E+00		4.62	149.51	5.8E-01	-1.7E+00
-2.1E+00	6.1E-01	-2.0E+00		4.73	149.16	5.9E-01	-1.9E+00
-2.3E+00	6.3E-01	-2.2E+00		4.85	148.79	6.0E-01	-2.0E+00
-2.4E+00	6.4E-01	-2.4E+00		4.97	148.39	6.2E-01	-2.2E+00
-2.6E+00	6.6E-01	-2.5E+00		5.10	147.96	6.3E-01	-2.3E+00
-2.8E+00	6.7E-01	-2.7E+00		5.22	147.50	6.5E-01	-2.5E+00
-2.9E+00	6.9E-01	-2.9E+00		5.35	147.00	6.6E-01	-2.6E+00
-3.1E+00	7.0E-01	-3.0E+00		5.48	146.47	6.8E-01	-2.8E+00
-3.3E+00	7.2E-01	-3.2E+00		5.62	145.92	6.9E-01	-3.0E+00
-3.5E+00	7.3E-01	-3.4E+00		5.76	145.32	7.1E-01	-3.1E+00
-3.7E+00	7.5E-01	-3.6E+00		5.90	144.69	7.3E-01	-3.3E+00
-3.9E+00	7.7E-01	-3.8E+00		6.05	144.03	7.4E-01	-3.5E+00
-4.1E+00	7.8E-01	-4.0E+00		6.19	143.33	7.6E-01	-3.7E+00
-4.3E+00	8.0E-01	-4.2E+00		6.35	142.59	7.7E-01	-3.9E+00
-4.5E+00	8.2E-01	-4.4E+00		6.50	141.82	7.9E-01	-4.1E+00
-4.7E+00	8.4E-01	-4.6E+00		6.66	141.01	8.1E-01	-4.3E+00
-4.9E+00	8.5E-01	-4.8E+00		6.82	140.15	8.3E-01	-4.5E+00
-5.2E+00	8.7E-01	-5.0E+00		6.99	139.26	8.4E-01	-4.7E+00

ferment

-5.4E+00	8.9E-01	-5.3E+00		7.15	138.32	8.6E-01	-4.9E+00
-5.6E+00	9.1E-01	-5.5E+00		7.33	137.34	8.8E-01	-5.1E+00
-5.9E+00	9.2E-01	-5.8E+00		7.50	136.31	9.0E-01	-5.4E+00
-6.2E+00	9.4E-01	-6.0E+00		7.68	135.24	9.1E-01	-5.6E+00
-6.4E+00	9.6E-01	-6.3E+00		7.86	134.11	9.3E-01	-5.9E+00
-6.7E+00	9.8E-01	-6.6E+00		8.05	132.94	9.5E-01	-6.1E+00
-7.0E+00	1.0E+00	-6.9E+00		8.24	131.72	9.7E-01	-6.4E+00
-7.3E+00	1.0E+00	-7.1E+00		8.43	130.45	9.9E-01	-6.7E+00
-7.6E+00	1.0E+00	-7.5E+00		8.63	129.12	1.0E+00	-6.9E+00
-7.9E+00	1.0E+00	-7.8E+00		8.83	127.73	1.0E+00	-7.2E+00
-8.3E+00	1.1E+00	-8.1E+00		9.04	126.28	1.0E+00	-7.5E+00
-8.6E+00	1.1E+00	-8.5E+00		9.24	124.78	1.1E+00	-7.9E+00
-9.0E+00	1.1E+00	-8.8E+00		9.46	123.21	1.1E+00	-8.2E+00
-9.4E+00	1.1E+00	-9.2E+00		9.67	121.57	1.1E+00	-8.5E+00
-9.8E+00	1.1E+00	-9.6E+00		9.89	119.86	1.1E+00	-8.9E+00
-1.0E+01	1.1E+00	-1.0E+01		10.11	118.09	1.1E+00	-9.3E+00
-1.1E+01	1.1E+00	-1.0E+01		10.33	116.24	1.1E+00	-9.6E+00
-1.1E+01	1.2E+00	-1.1E+01		10.56	114.31	1.1E+00	-1.0E+01
-1.2E+01	1.2E+00	-1.1E+01		10.79	112.29	1.2E+00	-1.0E+01
-1.2E+01	1.2E+00	-1.2E+01		11.02	110.20	1.2E+00	-1.1E+01
-1.3E+01	1.2E+00	-1.2E+01		11.26	108.01	1.2E+00	-1.1E+01
-1.3E+01	1.2E+00	-1.3E+01		11.49	105.73	1.2E+00	-1.2E+01
-1.4E+01	1.2E+00	-1.4E+01		11.73	103.35	1.2E+00	-1.2E+01
-1.5E+01	1.2E+00	-1.4E+01		11.97	100.86	1.2E+00	-1.3E+01
-1.5E+01	1.2E+00	-1.5E+01		12.21	98.27	1.2E+00	-1.4E+01
-1.6E+01	1.2E+00	-1.6E+01		12.45	95.55	1.2E+00	-1.4E+01
-1.7E+01	1.2E+00	-1.6E+01		12.69	92.71	1.2E+00	-1.5E+01
-1.8E+01	1.1E+00	-1.7E+01		12.93	89.74	1.2E+00	-1.6E+01
-1.9E+01	1.1E+00	-1.8E+01		13.17	86.63	1.2E+00	-1.6E+01
-2.0E+01	1.1E+00	-1.9E+01		13.41	83.37	1.2E+00	-1.7E+01
-2.1E+01	1.1E+00	-2.0E+01		13.65	79.95	1.2E+00	-1.8E+01
-2.2E+01	1.0E+00	-2.1E+01		13.88	76.35	1.1E+00	-1.9E+01
-2.3E+01	9.5E-01	-2.2E+01		14.10	72.56	1.1E+00	-2.0E+01
-2.5E+01	8.8E-01	-2.4E+01		14.32	68.56	1.1E+00	-2.1E+01
-2.6E+01	7.9E-01	-2.5E+01		14.53	64.34	1.0E+00	-2.2E+01
-2.8E+01	6.8E-01	-2.7E+01		14.73	59.88	9.4E-01	-2.4E+01
-3.0E+01	5.4E-01	-2.9E+01		14.92	55.14	8.6E-01	-2.5E+01
-3.2E+01	3.7E-01	-3.1E+01		15.09	50.10	7.6E-01	-2.7E+01
-3.5E+01	1.5E-01	-3.4E+01		15.24	44.72	6.3E-01	-2.9E+01
-3.6E+01	-1.2E-01	-3.6E+01		15.37	38.96	4.8E-01	-3.1E+01
-3.6E+01	-4.7E-01	-3.6E+01		15.47	32.78	2.9E-01	-3.3E+01
-2.5E+01	-8.9E-01	-3.2E+01		15.52	26.14	4.6E-02	-3.6E+01
4.0E+00	-1.2E+00	-1.4E+01		15.53	19.00	-2.7E-01	-3.8E+01
1.5E+01	-1.3E+00	-1.9E+00		15.48	11.47	-6.8E-01	-3.7E+01
9.1E+00	-1.3E+00	-9.9E-01		15.34	4.04	-1.2E+00	-2.3E+01
4.8E+00	-1.3E+00	-5.1E-01		15.10	-0.60	-1.6E+00	3.6E+01
2.2E+00	-1.3E+00	-2.0E-01		14.79	6.65	-9.6E-01	-3.0E+01
9.8E-01	-1.2E+00	-2.8E-03		14.60	0.74	-1.4E+00	6.5E+00
4.6E-01	-1.2E+00	1.0E-01		14.32	2.04	-1.3E+00	-8.1E+00
2.8E-01	-1.2E+00	1.5E-01		14.07	0.43	-1.4E+00	1.2E+01
2.2E-01	-1.2E+00	1.7E-01		13.79	2.81	-1.2E+00	-1.3E+01

ferment

2.1E-01	-1.1E+00	1.8E-01		13.56	0.29	-1.3E+00	1.5E+01
2.1E-01	-1.1E+00	1.9E-01		13.29	3.19	-1.1E+00	-1.4E+01
2.1E-01	-1.1E+00	2.0E-01		13.08	0.47	-1.3E+00	1.2E+01
2.2E-01	-1.1E+00	2.0E-01		12.82	2.82	-1.1E+00	-1.0E+01
2.2E-01	-1.1E+00	2.1E-01		12.61	0.74	-1.2E+00	8.3E+00
2.3E-01	-1.0E+00	2.2E-01		12.37	2.40	-1.1E+00	-6.8E+00
2.4E-01	-1.0E+00	2.3E-01		12.15	1.04	-1.1E+00	5.1E+00
2.4E-01	-9.9E-01	2.3E-01		11.92	2.07	-1.1E+00	-3.6E+00
2.5E-01	-9.7E-01	2.4E-01		11.71	1.34	-1.1E+00	2.7E+00
2.6E-01	-9.5E-01	2.5E-01		11.50	1.87	-1.0E+00	-1.4E+00
2.7E-01	-9.3E-01	2.6E-01		11.29	1.59	-1.0E+00	1.1E+00
2.7E-01	-9.1E-01	2.6E-01		11.09	1.82	-9.9E-01	-2.6E-01
2.8E-01	-8.9E-01	2.7E-01		10.89	1.77	-9.8E-01	4.7E-01
2.9E-01	-8.7E-01	2.8E-01		10.69	1.86	-9.5E-01	1.5E-01
3.0E-01	-8.5E-01	2.9E-01		10.50	1.89	-9.4E-01	3.0E-01
3.1E-01	-8.4E-01	3.0E-01		10.32	1.95	-9.2E-01	2.6E-01
3.2E-01	-8.2E-01	3.1E-01		10.13	2.00	-9.0E-01	2.8E-01
3.3E-01	-8.0E-01	3.2E-01		9.95	2.06	-8.8E-01	2.9E-01
3.4E-01	-7.8E-01	3.3E-01		9.78	2.12	-8.6E-01	3.0E-01
3.6E-01	-7.7E-01	3.5E-01		9.61	2.18	-8.4E-01	3.1E-01
3.7E-01	-7.5E-01	3.6E-01		9.44	2.24	-8.2E-01	3.2E-01
3.8E-01	-7.4E-01	3.7E-01		9.27	2.30	-8.0E-01	3.3E-01
3.9E-01	-7.2E-01	3.9E-01		9.11	2.37	-7.9E-01	3.4E-01
4.1E-01	-7.0E-01	4.0E-01		8.96	2.44	-7.7E-01	3.5E-01
4.2E-01	-6.9E-01	4.1E-01		8.80	2.51	-7.5E-01	3.7E-01
4.4E-01	-6.7E-01	4.3E-01		8.65	2.58	-7.4E-01	3.8E-01
4.6E-01	-6.6E-01	4.5E-01		8.50	2.66	-7.2E-01	3.9E-01
4.7E-01	-6.4E-01	4.6E-01		8.36	2.74	-7.1E-01	4.1E-01
4.9E-01	-6.3E-01	4.8E-01		8.22	2.82	-6.9E-01	4.2E-01
5.1E-01	-6.2E-01	5.0E-01		8.08	2.90	-6.7E-01	4.4E-01
5.3E-01	-6.0E-01	5.2E-01		7.95	2.99	-6.6E-01	4.6E-01
5.5E-01	-5.9E-01	5.4E-01		7.81	3.08	-6.5E-01	4.7E-01
5.7E-01	-5.7E-01	5.6E-01		7.68	3.18	-6.3E-01	4.9E-01
5.9E-01	-5.6E-01	5.8E-01		7.56	3.28	-6.2E-01	5.1E-01
6.2E-01	-5.5E-01	6.0E-01		7.43	3.38	-6.0E-01	5.3E-01
6.4E-01	-5.4E-01	6.3E-01		7.31	3.48	-5.9E-01	5.5E-01
6.7E-01	-5.2E-01	6.5E-01		7.20	3.59	-5.7E-01	5.7E-01
6.9E-01	-5.1E-01	6.8E-01		7.08	3.71	-5.6E-01	6.0E-01
7.2E-01	-5.0E-01	7.1E-01		6.97	3.83	-5.5E-01	6.2E-01
7.5E-01	-4.9E-01	7.4E-01		6.86	3.95	-5.4E-01	6.5E-01
7.8E-01	-4.7E-01	7.7E-01		6.75	4.08	-5.2E-01	6.7E-01
8.2E-01	-4.6E-01	8.0E-01		6.65	4.22	-5.1E-01	7.0E-01
8.5E-01	-4.5E-01	8.3E-01		6.55	4.36	-5.0E-01	7.3E-01
8.8E-01	-4.4E-01	8.7E-01		6.45	4.50	-4.8E-01	7.6E-01
9.2E-01	-4.3E-01	9.0E-01		6.35	4.65	-4.7E-01	7.9E-01
9.6E-01	-4.2E-01	9.4E-01		6.26	4.81	-4.6E-01	8.2E-01
1.0E+00	-4.0E-01	9.8E-01		6.16	4.98	-4.5E-01	8.6E-01
1.0E+00	-3.9E-01	1.0E+00		6.07	5.15	-4.4E-01	8.9E-01
1.1E+00	-3.8E-01	1.1E+00		5.99	5.33	-4.3E-01	9.3E-01
1.1E+00	-3.7E-01	1.1E+00		5.90	5.51	-4.1E-01	9.7E-01
1.2E+00	-3.6E-01	1.1E+00		5.82	5.71	-4.0E-01	1.0E+00

ferment

1.2E+00	-3.5E-01	1.2E+00		5.74	5.91	-3.9E-01	1.1E+00
1.3E+00	-3.4E-01	1.2E+00		5.66	6.12	-3.8E-01	1.1E+00
1.3E+00	-3.3E-01	1.3E+00		5.58	6.34	-3.7E-01	1.1E+00
1.4E+00	-3.2E-01	1.3E+00		5.51	6.57	-3.6E-01	1.2E+00
1.4E+00	-3.1E-01	1.4E+00		5.44	6.80	-3.5E-01	1.2E+00
1.5E+00	-3.0E-01	1.5E+00		5.37	7.05	-3.4E-01	1.3E+00
1.5E+00	-2.9E-01	1.5E+00		5.30	7.31	-3.3E-01	1.3E+00
1.6E+00	-2.8E-01	1.6E+00		5.23	7.58	-3.2E-01	1.4E+00
1.7E+00	-2.7E-01	1.6E+00		5.17	7.85	-3.1E-01	1.4E+00
1.7E+00	-2.6E-01	1.7E+00		5.11	8.14	-3.0E-01	1.5E+00
1.8E+00	-2.5E-01	1.7E+00		5.05	8.45	-2.9E-01	1.6E+00
1.8E+00	-2.4E-01	1.8E+00		4.99	8.76	-2.8E-01	1.6E+00
1.9E+00	-2.3E-01	1.9E+00		4.94	9.08	-2.7E-01	1.7E+00
2.0E+00	-2.2E-01	1.9E+00		4.88	9.42	-2.6E-01	1.7E+00
2.0E+00	-2.1E-01	2.0E+00		4.83	9.77	-2.5E-01	1.8E+00
2.1E+00	-2.0E-01	2.1E+00		4.78	10.13	-2.4E-01	1.9E+00
2.2E+00	-1.9E-01	2.1E+00		4.74	10.51	-2.3E-01	1.9E+00
2.2E+00	-1.8E-01	2.2E+00		4.69	10.89	-2.2E-01	2.0E+00
2.3E+00	-1.7E-01	2.3E+00		4.65	11.29	-2.1E-01	2.1E+00
2.3E+00	-1.6E-01	2.3E+00		4.61	11.71	-2.0E-01	2.1E+00
2.4E+00	-1.6E-01	2.4E+00		4.57	12.14	-1.9E-01	2.2E+00
2.5E+00	-1.5E-01	2.4E+00		4.53	12.58	-1.8E-01	2.3E+00
2.5E+00	-1.4E-01	2.5E+00		4.49	13.03	-1.7E-01	2.3E+00
2.6E+00	-1.3E-01	2.6E+00		4.46	13.50	-1.6E-01	2.4E+00
2.6E+00	-1.2E-01	2.6E+00		4.43	13.98	-1.5E-01	2.5E+00
2.7E+00	-1.1E-01	2.7E+00		4.40	14.47	-1.4E-01	2.5E+00
2.8E+00	-1.0E-01	2.7E+00		4.37	14.98	-1.3E-01	2.6E+00
2.8E+00	-9.6E-02	2.8E+00		4.34	15.49	-1.3E-01	2.6E+00
2.8E+00	-8.8E-02	2.8E+00		4.32	16.02	-1.2E-01	2.7E+00
2.9E+00	-7.9E-02	2.9E+00		4.29	16.56	-1.1E-01	2.8E+00
2.9E+00	-7.1E-02	2.9E+00		4.27	17.12	-1.0E-01	2.8E+00
3.0E+00	-6.4E-02	3.0E+00		4.25	17.68	-9.2E-02	2.9E+00
3.0E+00	-5.6E-02	3.0E+00		4.23	18.25	-8.4E-02	2.9E+00
3.0E+00	-4.8E-02	3.0E+00		4.21	18.84	-7.5E-02	3.0E+00
3.1E+00	-4.0E-02	3.1E+00		4.20	19.43	-6.7E-02	3.0E+00
3.1E+00	-3.3E-02	3.1E+00		4.19	20.03	-5.9E-02	3.0E+00
3.1E+00	-2.6E-02	3.1E+00		4.17	20.64	-5.1E-02	3.1E+00
3.1E+00	-1.8E-02	3.1E+00		4.16	21.26	-4.4E-02	3.1E+00
3.1E+00	-1.1E-02	3.1E+00		4.16	21.88	-3.6E-02	3.1E+00
3.2E+00	-3.9E-03	3.1E+00		4.15	22.51	-2.8E-02	3.2E+00
3.2E+00	3.1E-03	3.2E+00		4.14	23.15	-2.1E-02	3.2E+00
3.2E+00	1.0E-02	3.2E+00		4.14	23.79	-1.4E-02	3.2E+00
3.2E+00	1.7E-02	3.2E+00		4.14	24.43	-6.3E-03	3.2E+00
3.2E+00	2.4E-02	3.2E+00		4.13	25.08	8.7E-04	3.2E+00
3.1E+00	3.0E-02	3.1E+00		4.13	25.73	7.9E-03	3.3E+00
3.1E+00	3.7E-02	3.1E+00		4.14	26.38	1.5E-02	3.3E+00
3.1E+00	4.3E-02	3.1E+00		4.14	27.03	2.2E-02	3.3E+00
3.1E+00	4.9E-02	3.1E+00		4.14	27.68	2.9E-02	3.3E+00
3.1E+00	5.6E-02	3.1E+00		4.15	28.33	3.5E-02	3.2E+00
3.0E+00	6.2E-02	3.1E+00		4.16	28.98	4.2E-02	3.2E+00
3.0E+00	6.8E-02	3.0E+00		4.16	29.63	4.8E-02	3.2E+00

ferment

3.0E+00	7.4E-02	3.0E+00		4.17	30.27	5.5E-02	3.2E+00
2.9E+00	8.0E-02	3.0E+00		4.19	30.91	6.1E-02	3.2E+00
2.9E+00	8.5E-02	2.9E+00		4.20	31.54	6.7E-02	3.1E+00
2.8E+00	9.1E-02	2.9E+00		4.21	32.17	7.3E-02	3.1E+00
2.8E+00	9.7E-02	2.8E+00		4.23	32.79	8.0E-02	3.1E+00
2.7E+00	1.0E-01	2.8E+00		4.24	33.41	8.5E-02	3.0E+00
2.7E+00	1.1E-01	2.7E+00		4.26	34.01	9.1E-02	3.0E+00
2.6E+00	1.1E-01	2.7E+00		4.28	34.61	9.7E-02	2.9E+00
2.6E+00	1.2E-01	2.6E+00		4.30	35.20	1.0E-01	2.9E+00
2.5E+00	1.2E-01	2.5E+00		4.32	35.78	1.1E-01	2.8E+00
2.4E+00	1.3E-01	2.5E+00		4.34	36.35	1.1E-01	2.8E+00
2.4E+00	1.3E-01	2.4E+00		4.36	36.90	1.2E-01	2.7E+00
2.3E+00	1.4E-01	2.3E+00		4.39	37.45	1.2E-01	2.7E+00
2.2E+00	1.4E-01	2.2E+00		4.41	37.98	1.3E-01	2.6E+00
2.1E+00	1.5E-01	2.2E+00		4.44	38.50	1.4E-01	2.5E+00
2.0E+00	1.5E-01	2.1E+00		4.46	39.01	1.4E-01	2.5E+00
2.0E+00	1.6E-01	2.0E+00		4.49	39.50	1.5E-01	2.4E+00
1.9E+00	1.6E-01	1.9E+00		4.52	39.97	1.5E-01	2.3E+00
1.8E+00	1.7E-01	1.8E+00		4.55	40.43	1.6E-01	2.2E+00
1.7E+00	1.7E-01	1.7E+00		4.58	40.88	1.6E-01	2.1E+00
1.6E+00	1.7E-01	1.6E+00		4.61	41.31	1.6E-01	2.0E+00
1.5E+00	1.8E-01	1.5E+00		4.65	41.72	1.7E-01	2.0E+00
1.4E+00	1.8E-01	1.4E+00		4.68	42.11	1.7E-01	1.9E+00
1.3E+00	1.9E-01	1.3E+00		4.72	42.48	1.8E-01	1.8E+00
1.2E+00	1.9E-01	1.2E+00		4.75	42.83	1.8E-01	1.7E+00
1.1E+00	1.9E-01	1.1E+00		4.79	43.17	1.9E-01	1.6E+00
9.7E-01	2.0E-01	1.0E+00		4.82	43.48	1.9E-01	1.5E+00
8.5E-01	2.0E-01	9.1E-01		4.86	43.78	1.9E-01	1.4E+00
7.4E-01	2.0E-01	8.0E-01		4.90	44.05	2.0E-01	1.3E+00
6.3E-01	2.1E-01	6.8E-01		4.94	44.31	2.0E-01	1.2E+00
5.1E-01	2.1E-01	5.7E-01		4.98	44.54	2.1E-01	1.0E+00
3.9E-01	2.1E-01	4.5E-01		5.02	44.74	2.1E-01	9.2E-01
2.6E-01	2.1E-01	3.3E-01		5.07	44.93	2.1E-01	8.1E-01
1.4E-01	2.2E-01	2.0E-01		5.11	45.09	2.2E-01	6.9E-01
1.4E-02	2.2E-01	7.8E-02		5.15	45.23	2.2E-01	5.7E-01
-1.1E-01	2.2E-01	-4.9E-02		5.19	45.34	2.2E-01	4.5E-01
-2.4E-01	2.2E-01	-1.8E-01		5.24	45.43	2.2E-01	3.2E-01
-3.8E-01	2.2E-01	-3.1E-01		5.28	45.49	2.3E-01	1.9E-01
-5.1E-01	2.2E-01	-4.4E-01		5.33	45.53	2.3E-01	6.3E-02
-6.5E-01	2.2E-01	-5.8E-01		5.37	45.55	2.3E-01	-6.9E-02
-7.8E-01	2.2E-01	-7.1E-01		5.42	45.53	2.3E-01	-2.0E-01
-9.2E-01	2.2E-01	-8.5E-01		5.47	45.49	2.3E-01	-3.4E-01
-1.1E+00	2.2E-01	-9.9E-01		5.51	45.42	2.4E-01	-4.8E-01
-1.2E+00	2.2E-01	-1.1E+00		5.56	45.33	2.4E-01	-6.2E-01
-1.4E+00	2.2E-01	-1.3E+00		5.61	45.21	2.4E-01	-7.6E-01
-1.5E+00	2.2E-01	-1.4E+00		5.66	45.05	2.4E-01	-9.0E-01
-1.6E+00	2.2E-01	-1.6E+00		5.70	44.87	2.4E-01	-1.1E+00
-1.8E+00	2.2E-01	-1.7E+00		5.75	44.66	2.4E-01	-1.2E+00
-1.9E+00	2.2E-01	-1.9E+00		5.80	44.42	2.4E-01	-1.3E+00
-2.1E+00	2.2E-01	-2.0E+00		5.85	44.15	2.4E-01	-1.5E+00
-2.2E+00	2.1E-01	-2.2E+00		5.90	43.85	2.4E-01	-1.7E+00

ferment

-2.4E+00	2.1E-01	-2.3E+00		5.94	43.52	2.4E-01	-1.8E+00
-2.6E+00	2.0E-01	-2.5E+00		5.99	43.16	2.3E-01	-2.0E+00
-2.7E+00	2.0E-01	-2.6E+00		6.04	42.77	2.3E-01	-2.1E+00
-2.9E+00	2.0E-01	-2.8E+00		6.08	42.34	2.3E-01	-2.3E+00
-3.0E+00	1.9E-01	-2.9E+00		6.13	41.88	2.3E-01	-2.5E+00
-3.2E+00	1.8E-01	-3.1E+00		6.17	41.39	2.2E-01	-2.6E+00
-3.3E+00	1.8E-01	-3.3E+00		6.22	40.87	2.2E-01	-2.8E+00
-3.5E+00	1.7E-01	-3.4E+00		6.26	40.31	2.1E-01	-3.0E+00
-3.7E+00	1.6E-01	-3.6E+00		6.30	39.72	2.1E-01	-3.1E+00
-3.8E+00	1.5E-01	-3.7E+00		6.35	39.09	2.0E-01	-3.3E+00
-4.0E+00	1.4E-01	-3.9E+00		6.39	38.44	1.9E-01	-3.5E+00
-4.1E+00	1.3E-01	-4.0E+00		6.42	37.74	1.9E-01	-3.6E+00
-4.3E+00	1.2E-01	-4.2E+00		6.46	37.02	1.8E-01	-3.8E+00
-4.4E+00	1.1E-01	-4.3E+00		6.50	36.25	1.7E-01	-4.0E+00
-4.5E+00	9.7E-02	-4.5E+00		6.53	35.46	1.6E-01	-4.1E+00
-4.7E+00	8.3E-02	-4.6E+00		6.56	34.63	1.5E-01	-4.3E+00
-4.8E+00	6.9E-02	-4.7E+00		6.59	33.77	1.4E-01	-4.5E+00
-4.9E+00	5.4E-02	-4.9E+00		6.62	32.87	1.3E-01	-4.7E+00
-5.0E+00	3.8E-02	-5.0E+00		6.65	31.94	1.1E-01	-4.8E+00
-5.1E+00	2.1E-02	-5.1E+00		6.67	30.97	9.8E-02	-5.0E+00
-5.2E+00	3.4E-03	-5.2E+00		6.69	29.98	8.3E-02	-5.1E+00
-5.3E+00	-1.5E-02	-5.3E+00		6.70	28.95	6.7E-02	-5.3E+00
-5.3E+00	-3.4E-02	-5.3E+00		6.72	27.90	5.0E-02	-5.4E+00
-5.4E+00	-5.4E-02	-5.3E+00		6.73	26.81	3.2E-02	-5.5E+00
-5.4E+00	-7.5E-02	-5.4E+00		6.73	25.70	1.2E-02	-5.7E+00
-5.3E+00	-9.6E-02	-5.3E+00		6.74	24.57	-7.8E-03	-5.8E+00
-5.3E+00	-1.2E-01	-5.3E+00		6.74	23.42	-2.9E-02	-5.8E+00
-5.2E+00	-1.4E-01	-5.2E+00		6.73	22.25	-5.1E-02	-5.9E+00
-5.0E+00	-1.6E-01	-5.1E+00		6.72	21.06	-7.4E-02	-5.9E+00
-4.9E+00	-1.8E-01	-5.0E+00		6.70	19.88	-9.8E-02	-5.9E+00
-4.6E+00	-2.0E-01	-4.8E+00		6.68	18.69	-1.2E-01	-5.9E+00
-4.4E+00	-2.2E-01	-4.5E+00		6.66	17.50	-1.5E-01	-5.8E+00
-4.1E+00	-2.4E-01	-4.2E+00		6.63	16.33	-1.7E-01	-5.7E+00
-3.7E+00	-2.6E-01	-3.9E+00		6.60	15.19	-2.0E-01	-5.5E+00
-3.4E+00	-2.7E-01	-3.5E+00		6.56	14.08	-2.2E-01	-5.3E+00
-3.0E+00	-2.9E-01	-3.2E+00		6.51	13.02	-2.5E-01	-5.0E+00
-2.6E+00	-3.0E-01	-2.8E+00		6.46	12.02	-2.7E-01	-4.7E+00
-2.2E+00	-3.1E-01	-2.4E+00		6.41	11.08	-2.9E-01	-4.2E+00
-1.8E+00	-3.2E-01	-2.0E+00		6.35	10.24	-3.1E-01	-3.8E+00
-1.4E+00	-3.2E-01	-1.6E+00		6.29	9.49	-3.3E-01	-3.3E+00
-1.0E+00	-3.3E-01	-1.2E+00		6.22	8.83	-3.4E-01	-2.7E+00
-7.1E-01	-3.3E-01	-8.7E-01		6.15	8.29	-3.5E-01	-2.2E+00
-4.2E-01	-3.3E-01	-5.6E-01		6.08	7.85	-3.6E-01	-1.7E+00
-1.6E-01	-3.3E-01	-2.9E-01		6.01	7.52	-3.7E-01	-1.2E+00
6.8E-02	-3.2E-01	-4.4E-02		5.94	7.27	-3.7E-01	-7.9E-01
2.7E-01	-3.2E-01	1.7E-01		5.86	7.11	-3.7E-01	-4.3E-01
4.5E-01	-3.1E-01	3.6E-01		5.79	7.03	-3.6E-01	-1.2E-01
6.1E-01	-3.1E-01	5.3E-01		5.72	7.01	-3.6E-01	1.5E-01
7.5E-01	-3.0E-01	6.8E-01		5.65	7.04	-3.6E-01	3.7E-01
8.8E-01	-3.0E-01	8.2E-01		5.57	7.11	-3.5E-01	5.5E-01
1.0E+00	-2.9E-01	9.4E-01		5.50	7.22	-3.4E-01	7.1E-01

ferment

1.1E+00	-2.8E-01	1.1E+00		5.44	7.36	-3.3E-01	8.4E-01
1.2E+00	-2.7E-01	1.2E+00		5.37	7.53	-3.3E-01	9.6E-01
1.3E+00	-2.6E-01	1.3E+00		5.30	7.72	-3.2E-01	1.1E+00
1.4E+00	-2.6E-01	1.3E+00		5.24	7.94	-3.1E-01	1.2E+00
1.5E+00	-2.5E-01	1.4E+00		5.18	8.17	-3.0E-01	1.3E+00
1.6E+00	-2.4E-01	1.5E+00		5.12	8.42	-2.9E-01	1.3E+00
1.6E+00	-2.3E-01	1.6E+00		5.06	8.69	-2.8E-01	1.4E+00
1.7E+00	-2.2E-01	1.7E+00		5.00	8.97	-2.7E-01	1.5E+00
1.8E+00	-2.1E-01	1.8E+00		4.95	9.27	-2.6E-01	1.6E+00
1.9E+00	-2.1E-01	1.8E+00		4.90	9.58	-2.5E-01	1.6E+00
1.9E+00	-2.0E-01	1.9E+00		4.85	9.91	-2.4E-01	1.7E+00
2.0E+00	-1.9E-01	2.0E+00		4.80	10.26	-2.3E-01	1.8E+00
2.1E+00	-1.8E-01	2.1E+00		4.75	10.61	-2.3E-01	1.9E+00
2.2E+00	-1.7E-01	2.1E+00		4.71	10.99	-2.2E-01	1.9E+00
2.2E+00	-1.6E-01	2.2E+00		4.66	11.37	-2.1E-01	2.0E+00
2.3E+00	-1.5E-01	2.3E+00		4.62	11.77	-2.0E-01	2.1E+00
2.3E+00	-1.5E-01	2.3E+00		4.58	12.19	-1.9E-01	2.1E+00
2.4E+00	-1.4E-01	2.4E+00		4.54	12.62	-1.8E-01	2.2E+00
2.5E+00	-1.3E-01	2.4E+00		4.51	13.06	-1.7E-01	2.3E+00
2.5E+00	-1.2E-01	2.5E+00		4.47	13.51	-1.6E-01	2.3E+00
2.6E+00	-1.1E-01	2.6E+00		4.44	13.98	-1.5E-01	2.4E+00
2.6E+00	-1.0E-01	2.6E+00		4.41	14.46	-1.4E-01	2.5E+00
2.7E+00	-9.6E-02	2.7E+00		4.38	14.96	-1.4E-01	2.5E+00
2.7E+00	-8.8E-02	2.7E+00		4.35	15.47	-1.3E-01	2.6E+00
2.8E+00	-8.1E-02	2.8E+00		4.33	15.99	-1.2E-01	2.7E+00
2.8E+00	-7.3E-02	2.8E+00		4.31	16.52	-1.1E-01	2.7E+00
2.9E+00	-6.5E-02	2.8E+00		4.28	17.06	-1.0E-01	2.8E+00
2.9E+00	-5.7E-02	2.9E+00		4.26	17.61	-9.3E-02	2.8E+00
2.9E+00	-5.0E-02	2.9E+00		4.24	18.18	-8.5E-02	2.9E+00
3.0E+00	-4.2E-02	2.9E+00		4.23	18.75	-7.7E-02	2.9E+00
3.0E+00	-3.5E-02	3.0E+00		4.21	19.34	-6.9E-02	3.0E+00
3.0E+00	-2.8E-02	3.0E+00		4.20	19.93	-6.1E-02	3.0E+00
3.0E+00	-2.1E-02	3.0E+00		4.19	20.53	-5.3E-02	3.0E+00
3.0E+00	-1.4E-02	3.0E+00		4.18	21.14	-4.5E-02	3.1E+00
3.1E+00	-6.6E-03	3.1E+00		4.17	21.75	-3.8E-02	3.1E+00
3.1E+00	2.8E-04	3.1E+00		4.16	22.38	-3.0E-02	3.1E+00
3.1E+00	7.1E-03	3.1E+00		4.15	23.00	-2.3E-02	3.2E+00
3.1E+00	1.4E-02	3.1E+00		4.15	23.64	-1.5E-02	3.2E+00
3.1E+00	2.0E-02	3.1E+00		4.15	24.27	-8.1E-03	3.2E+00
3.1E+00	2.7E-02	3.1E+00		4.14	24.91	-9.8E-04	3.2E+00
3.0E+00	3.3E-02	3.1E+00		4.14	25.55	6.1E-03	3.2E+00
3.0E+00	4.0E-02	3.0E+00		4.15	26.20	1.3E-02	3.2E+00
3.0E+00	4.6E-02	3.0E+00		4.15	26.84	2.0E-02	3.2E+00
3.0E+00	5.2E-02	3.0E+00		4.15	27.49	2.7E-02	3.2E+00
3.0E+00	5.8E-02	3.0E+00		4.16	28.13	3.3E-02	3.2E+00
2.9E+00	6.4E-02	3.0E+00		4.16	28.77	4.0E-02	3.2E+00
2.9E+00	7.0E-02	2.9E+00		4.17	29.41	4.6E-02	3.2E+00
2.9E+00	7.6E-02	2.9E+00		4.18	30.05	5.3E-02	3.2E+00
2.8E+00	8.1E-02	2.8E+00		4.19	30.68	5.9E-02	3.1E+00
2.8E+00	8.7E-02	2.8E+00		4.20	31.31	6.5E-02	3.1E+00
2.7E+00	9.2E-02	2.8E+00		4.22	31.93	7.1E-02	3.1E+00

ferment

2.7E+00	9.8E-02	2.7E+00		4.23	32.55	7.7E-02	3.1E+00
2.6E+00	1.0E-01	2.7E+00		4.25	33.16	8.3E-02	3.0E+00
2.6E+00	1.1E-01	2.6E+00		4.26	33.77	8.9E-02	3.0E+00
2.5E+00	1.1E-01	2.5E+00		4.28	34.36	9.5E-02	2.9E+00
2.5E+00	1.2E-01	2.5E+00		4.30	34.95	1.0E-01	2.9E+00
2.4E+00	1.2E-01	2.4E+00		4.32	35.52	1.1E-01	2.8E+00
2.3E+00	1.3E-01	2.4E+00		4.34	36.09	1.1E-01	2.8E+00
2.2E+00	1.3E-01	2.3E+00		4.36	36.64	1.2E-01	2.7E+00
2.2E+00	1.4E-01	2.2E+00		4.39	37.19	1.2E-01	2.7E+00
2.1E+00	1.4E-01	2.1E+00		4.41	37.72	1.3E-01	2.6E+00
2.0E+00	1.5E-01	2.1E+00		4.44	38.23	1.3E-01	2.5E+00
1.9E+00	1.5E-01	2.0E+00		4.46	38.74	1.4E-01	2.4E+00
1.8E+00	1.6E-01	1.9E+00		4.49	39.23	1.4E-01	2.4E+00
1.8E+00	1.6E-01	1.8E+00		4.52	39.70	1.5E-01	2.3E+00
1.7E+00	1.6E-01	1.7E+00		4.55	40.16	1.5E-01	2.2E+00
1.6E+00	1.7E-01	1.6E+00		4.58	40.61	1.6E-01	2.1E+00
1.5E+00	1.7E-01	1.5E+00		4.61	41.03	1.6E-01	2.0E+00
1.4E+00	1.8E-01	1.4E+00		4.64	41.44	1.7E-01	2.0E+00
1.3E+00	1.8E-01	1.3E+00		4.68	41.83	1.7E-01	1.9E+00
1.2E+00	1.8E-01	1.2E+00		4.71	42.21	1.8E-01	1.8E+00
1.1E+00	1.9E-01	1.1E+00		4.75	42.56	1.8E-01	1.7E+00
9.7E-01	1.9E-01	1.0E+00		4.78	42.90	1.8E-01	1.6E+00
8.6E-01	1.9E-01	9.1E-01		4.82	43.22	1.9E-01	1.5E+00
7.5E-01	2.0E-01	8.0E-01		4.86	43.51	1.9E-01	1.4E+00
6.4E-01	2.0E-01	6.9E-01		4.90	43.79	2.0E-01	1.3E+00
5.2E-01	2.0E-01	5.8E-01		4.94	44.04	2.0E-01	1.2E+00
4.0E-01	2.0E-01	4.6E-01		4.98	44.27	2.0E-01	1.1E+00
2.8E-01	2.1E-01	3.4E-01		5.02	44.48	2.1E-01	9.4E-01
1.6E-01	2.1E-01	2.2E-01		5.06	44.67	2.1E-01	8.2E-01
3.9E-02	2.1E-01	1.0E-01		5.10	44.84	2.1E-01	7.1E-01
-8.6E-02	2.1E-01	-2.3E-02		5.14	44.98	2.2E-01	5.9E-01
-2.1E-01	2.1E-01	-1.5E-01		5.19	45.10	2.2E-01	4.7E-01
-3.4E-01	2.2E-01	-2.8E-01		5.23	45.19	2.2E-01	3.4E-01
-4.7E-01	2.2E-01	-4.1E-01		5.27	45.26	2.2E-01	2.2E-01
-6.0E-01	2.2E-01	-5.4E-01		5.32	45.30	2.3E-01	8.7E-02
-7.4E-01	2.2E-01	-6.7E-01		5.36	45.32	2.3E-01	-4.4E-02
-8.7E-01	2.2E-01	-8.1E-01		5.41	45.31	2.3E-01	-1.8E-01
-1.0E+00	2.2E-01	-9.4E-01		5.46	45.27	2.3E-01	-3.1E-01
-1.2E+00	2.2E-01	-1.1E+00		5.50	45.21	2.3E-01	-4.5E-01
-1.3E+00	2.2E-01	-1.2E+00		5.55	45.12	2.3E-01	-5.9E-01
-1.4E+00	2.2E-01	-1.4E+00		5.60	45.00	2.4E-01	-7.3E-01
-1.6E+00	2.2E-01	-1.5E+00		5.64	44.86	2.4E-01	-8.7E-01
-1.7E+00	2.1E-01	-1.7E+00		5.69	44.68	2.4E-01	-1.0E+00
-1.9E+00	2.1E-01	-1.8E+00		5.74	44.48	2.4E-01	-1.2E+00
-2.0E+00	2.1E-01	-1.9E+00		5.78	44.25	2.4E-01	-1.3E+00
-2.2E+00	2.1E-01	-2.1E+00		5.83	43.99	2.4E-01	-1.5E+00
-2.3E+00	2.0E-01	-2.2E+00		5.88	43.69	2.3E-01	-1.6E+00
-2.5E+00	2.0E-01	-2.4E+00		5.93	43.37	2.3E-01	-1.8E+00
-2.6E+00	1.9E-01	-2.5E+00		5.97	43.02	2.3E-01	-1.9E+00
-2.8E+00	1.9E-01	-2.7E+00		6.02	42.63	2.3E-01	-2.1E+00
-2.9E+00	1.8E-01	-2.8E+00		6.06	42.22	2.3E-01	-2.2E+00

