.1 Proof of Lennard-Jones Potentials First Derivative

The following proof is provided by the document "Global Optimisation applied to molecular architecture", by WJ Pullan.[16]

The total energy of the system is given by

$V = \sum_{i<j}^{N}(1.0/r_{ij}^{12} - 2.0/r_{ij}^{6})$

Where

$r_{ij} = \sqrt{r_{ij}^2} = \sqrt{x_{ij}^2 + y_{ij}^2}$

Let

$\psi_k = \sum_{a=1}^{k} \alpha_i$

$given(x_0, y_0) = (0, 0)$ and $\psi_0 = 0$ then

$x_i = \sum_{k=0}^{i-1} cos(\psi_k)$ $y_i = \sum_{k=0}^{i-1} sin(\psi_k)$
now

$V_{\alpha_m} = -12 \sum_{i<j}(1.0/r_{ij}^{13} - 1.0/r_{ij}^{7}) r_{ij\alpha_m}$
and

$(r_{ij})_{a_m} = ((x_i - x_j)(x_i - x_j)_{a_m} + (y_i - y_j)(y_i - y_j)_{a_m})/r_{ij}$

Assuming that $j > i$:

$(x_i - x_j)_{a_m} = -\sum_{k=i}^{j-1}(cos(\psi_k))_{a_m} = \sum_{k=max(i,m)}^{j-1} sin(\psi_k)$

$(y_i - y_j)_{a_m} = -\sum_{k=i}^{j-1}(sin(\psi_k))_{a_m} = \sum_{k=max(i,m)}^{j-1} cos(\psi_k)$

Therefore:

$(r_{ij})_{\alpha_m} = ((x_i - x_j)(\sum_{k=max(i,m)}^{j-1} sin(\psi_k)) + (y_i - y_j)(-\sum_{k=max(i,m)}^{j-1} cos(\psi_k)))/r_{ij}$

Which is zero when $m \leq i$. Assuming $m > i$, we have:

$-\sum_{k=m}^{j-1} cos(\psi_k = x_j - x_m$

$\sum_{k=m}^{j-1} cos(\psi_k = y_m - y_j$

and

$(r_{ij})_{\alpha_m} = ((x_i - x_j)(y_m - y_j) + (y_i - y_j)(x_j - x_m))/r_{ij}$

Combining terms we have

$V_{a_m} = -12 \sum_{i=0}^{m-1} \sum_{j=m+1}^{n} (1.0/r_{iij}^{14} - 1.0/r_{ij}^{8})((x_i - x_j)(y_m - y_j) + (y_i - y_j)(x_j - x_m))$

.2 Utility Programs

Two utility programs which were used for the testing of this software can be found in the */utilities* directory.

test.shl

This script launches the program for the $n = 2$ to $n = 500$ case, and logs all output to a text file log.txt. It enables the writing of coordinates and alpha values to the */coordinates* and */alphas* folder, and saves the best found minimum energies to the file 'best.csv'.

makegraphs.py

This script takes a file directory as an argument and recursively searches for .csv files which it can use to graph the coordinates of the containing values on the x,y plane. This program is used to generate all of the diagrams used in this report, and in testing is simply provided the */coords* folder. This program has not been written to handle invalid files or different file formats, and was written specifically for the use with this program.

.3 Raw Experimental Data For $n = 2$ to $n = 150$ Atom Trials

This section contains the raw output data of the running program for the two to one hundred and fifty atom cases. For each 'n' atom case, the tests were performed in the following order:

1. Atom by Atom Optimisation - Line Start
2. Atom by Atom Optimisation - Circle Start
3. Atom by Atom Optimisation - Square Start
4. Iterative Atom Optimisation - Line Start

5. Iterative Atom Optimisation - Circle Start
6. Iterative Atom Optimisation - Square Start
7. Brute Force Atom Optimisation - Line Start
8. Brute Force Atom Optimisation - Circle Start
9. Brute Force Atom Optimisation - Square Start
10. Atom by Atom Line Start - BFGS
11. Atom by Atom Circle Start - BFGS
12. Atom by Atom Square Start - BFGS
13. Iterative Atom Line Start - BFGS
14. Iterative Atom Circle Start - BFGS
15. Iterative Atom Square Start - BFGS
16. Brute Force Atom Line Start - BFGS
17. Brute Force Atom Circle Start - BFGS
18. Brute Force Atom Square Start - BFGS

Atoms	Optimal	Found	Error	Gen	Time
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
2	-1.00	-1.00	-0.00	50	0.00
Atoms	Optimal	Found	Error	Gen	Time
3	-3.00	-2.88	4.10	50	0.00
3	-3.00	-3.00	-0.00	50	0.00

3	-3.00	-2.90	3.50	50	0.00
3	-3.00	-2.99	0.25	50	0.00
3	-3.00	-3.00	-0.00	50	0.00
3	-3.00	-3.00	-0.00	50	0.00
3	-3.00	-2.99	0.44	50	0.01
3	-3.00	-3.00	-0.00	50	0.00
3	-3.00	-2.99	0.43	50	0.00
3	-3.00	-2.88	4.10	50	0.00
3	-3.00	-3.00	-0.00	50	0.00
3	-3.00	-2.90	3.50	50	0.00
3	-3.00	-2.99	0.25	50	0.00
3	-3.00	-3.00	-0.00	50	0.00
3	-3.00	-3.00	-0.00	50	0.00
3	-3.00	-2.99	0.44	50	0.00
3	-3.00	-3.00	-0.00	50	0.00
3	-3.00	-2.99	0.43	50	0.00
Atoms	Optimal	Found	Error	Gen	Time
4	-5.06	-4.86	3.93	50	0.00
4	-5.06	-4.47	11.65	50	0.00
4	-5.06	-4.47	11.63	50	0.00
4	-5.06	-5.03	0.62	50	0.00
4	-5.06	-4.82	4.69	50	0.00
4	-5.06	-4.47	11.63	50	0.00
4	-5.06	-5.06	0.02	50	0.00
4	-5.06	-4.47	11.65	50	0.00
4	-5.06	-4.47	11.63	50	0.00
4	-5.06	-4.96	1.88	50	0.00
4	-5.06	-4.47	11.59	50	0.00
4	-5.06	-4.47	11.63	50	0.00
4	-5.06	-5.03	0.62	50	0.00
4	-5.06	-4.82	4.69	50	0.00
4	-5.06	-4.47	11.63	50	0.00
4	-5.06	-5.06	-0.00	50	0.01
4	-5.06	-4.47	11.59	50	0.00
4	-5.06	-4.47	11.63	50	0.00
Atoms	Optimal	Found	Error	Gen	Time
5	-7.16	-7.01	2.16	50	0.00
5	-7.16	-4.85	32.27	50	0.00
5	-7.16	-6.53	8.89	50	0.00
5	-7.16	-6.54	8.70	50	0.00
5	-7.16	-5.55	22.57	50	0.00
5	-7.16	-6.52	9.04	50	0.00
5	-7.16	-7.15	0.15	50	0.00
5	-7.16	-5.54	22.65	50	0.00
5	-7.16	-6.54	8.68	50	0.00

5	-7.16	-7.14	0.39	50	0.00
5	-7.16	-4.85	32.27	50	0.01
5	-7.16	-6.55	8.53	50	0.00
5	-7.16	-6.55	8.51	50	0.00
5	-7.16	-5.87	18.09	50	0.00
5	-7.16	-6.52	8.97	50	0.02
5	-7.16	-7.16	-0.00	50	0.00
5	-7.16	-5.91	17.56	50	0.00
5	-7.16	-6.55	8.62	50	0.00
Atoms	Optimal	Found	Error	Gen	Time
6	-9.35	-9.20	1.70	50	0.00
6	-9.35	-9.15	2.23	50	0.00
6	-9.35	-7.17	23.36	50	0.00
6	-9.35	-7.93	15.22	50	0.00
6	-9.35	-9.35	0.02	50	0.02
6	-9.35	-8.03	14.14	50	0.00
6	-9.35	-9.34	0.20	50	0.00
6	-9.35	-9.35	0.02	50	0.00
6	-9.35	-7.99	14.64	50	0.00
6	-9.35	-9.32	0.36	50	0.00
6	-9.35	-9.35	-0.00	50	0.01
6	-9.35	-8.67	7.33	50	0.00
6	-9.35	-8.23	11.97	50	0.02
6	-9.35	-9.35	0.00	50	0.00
6	-9.35	-8.67	7.37	50	0.00
6	-9.35	-9.35	0.10	50	0.02
6	-9.35	-9.35	0.00	50	0.00
6	-9.35	-8.66	7.40	50	0.01
Atoms	Optimal	Found	Error	Gen	Time
7	-12.52	-12.10	3.33	50	0.00
7	-12.52	-12.24	2.22	50	0.00
7	-12.52	-10.15	18.95	50	0.00
7	-12.52	-10.81	13.62	50	0.00
7	-12.52	-12.26	2.04	50	0.01
7	-12.52	-10.11	19.21	50	0.00
7	-12.52	-12.48	0.33	50	0.00
7	-12.52	-11.56	7.66	50	0.00
7	-12.52	-10.17	18.76	50	0.02
7	-12.52	-12.48	0.32	50	0.00
7	-12.52	-12.37	1.20	50	0.01
7	-12.52	-11.03	11.93	50	0.00
7	-12.52	-12.40	0.94	50	0.02
7	-12.52	-12.52	-0.00	50	0.00
7	-12.52	-10.21	18.46	50	0.02
7	-12.52	-12.52	0.02	50	0.01

7	-12.52	-12.50	0.17	50	0.00
7	-12.52	-11.09	11.39	50	0.02
Atoms	Optimal	Found	Error	Gen	Time
8	-14.68	-14.20	3.25	50	0.00
8	-14.68	-12.81	12.71	50	0.01
8	-14.68	-11.72	20.11	50	0.00
8	-14.68	-11.62	20.82	50	0.00
8	-14.68	-12.75	13.10	50	0.02
8	-14.68	-13.04	11.16	50	0.00
8	-14.68	-14.61	0.45	50	0.01
8	-14.68	-12.39	15.60	50	0.00
8	-14.68	-11.92	18.80	50	0.00
8	-14.68	-14.63	0.34	50	0.02
8	-14.68	-14.68	-0.00	50	0.00
8	-14.68	-13.22	9.91	50	0.02
8	-14.68	-11.64	20.71	50	0.03
8	-14.68	-12.77	13.01	50	0.02
8	-14.68	-13.09	10.80	50	0.01
8	-14.68	-14.66	0.11	50	0.02
8	-14.68	-14.66	0.14	50	0.00
8	-14.68	-12.22	16.71	50	0.01
Atoms	Optimal	Found	Error	Gen	Time
9	-16.85	-16.31	3.26	50	0.01
9	-16.85	-14.89	11.68	50	0.00
9	-16.85	-14.00	16.94	50	0.02
9	-16.85	-13.28	21.19	50	0.01
9	-16.85	-12.96	23.13	50	0.00
9	-16.85	-13.31	21.03	50	0.02
9	-16.85	-16.81	0.29	50	0.00
9	-16.85	-13.89	17.60	50	0.00
9	-16.85	-13.93	17.37	50	0.02
9	-16.85	-16.82	0.21	50	0.00
9	-16.85	-16.81	0.25	50	0.01
9	-16.85	-15.32	9.10	50	0.02
9	-16.85	-11.64	30.96	50	0.03
9	-16.85	-16.04	4.84	50	0.00
9	-16.85	-15.07	10.61	50	0.03
9	-16.85	-16.85	-0.00	50	0.02
9	-16.85	-13.85	17.82	50	0.03
9	-16.85	-15.43	8.47	50	0.02
Atoms	Optimal	Found	Error	Gen	Time
10	-20.08	-19.23	4.21	50	0.01
10	-20.08	-17.68	11.95	50	0.02
10	-20.08	-15.86	20.97	50	0.01
10	-20.08	-14.78	26.39	50	0.00

10	-20.08	-16.13	19.66	50	0.02
10	-20.08	-15.18	24.38	50	0.02
10	-20.08	-20.02	0.26	50	0.01
10	-20.08	-18.42	8.23	50	0.00
10	-20.08	-16.06	19.99	50	0.02
10	-20.08	-20.07	0.05	50	0.02
10	-20.08	-20.07	0.03	50	0.00
10	-20.08	-16.36	18.52	50	0.03
10	-20.08	-12.62	37.12	50	0.03
10	-20.08	-16.57	17.46	50	0.03
10	-20.08	-17.11	14.77	50	0.03
10	-20.08	-20.08	-0.00	50	0.03
10	-20.08	-18.75	6.60	50	0.03
10	-20.08	-17.58	12.41	50	0.02
Atoms	Optimal	Found	Error	Gen	Time
11	-22.31	-21.46	3.81	50	0.01
11	-22.31	-19.27	13.64	50	0.02
11	-22.31	-16.95	24.04	50	0.01
11	-22.31	-17.40	21.99	50	0.02
11	-22.31	-18.39	17.57	50	0.03
11	-22.31	-17.02	23.70	50	0.02
11	-22.31	-22.26	0.25	50	0.00
11	-22.31	-19.70	11.72	50	0.02
11	-22.31	-17.68	20.75	50	0.01
11	-22.31	-22.28	0.15	50	0.00
11	-22.31	-20.15	9.70	50	0.05
11	-22.31	-20.15	9.70	50	0.02
11	-22.31	-17.75	20.43	50	0.05
11	-22.31	-18.37	17.65	50	0.06
11	-22.31	-20.37	8.70	50	0.03
11	-22.31	-22.31	-0.00	50	0.05
11	-22.31	-20.25	9.22	50	0.02
11	-22.31	-18.19	18.49	50	0.05
Atoms	Optimal	Found	Error	Gen	Time
12	-25.53	-25.11	1.65	50	0.01
12	-25.53	-22.47	11.98	50	0.02
12	-25.53	-22.01	13.78	50	0.03
12	-25.53	-19.64	23.05	50	0.02
12	-25.53	-19.29	24.45	50	0.03
12	-25.53	-19.35	24.19	50	0.03
12	-25.53	-25.44	0.35	50	0.02
12	-25.53	-22.71	11.03	50	0.00
12	-25.53	-21.57	15.49	50	0.01
12	-25.53	-25.52	0.01	50	0.05
12	-25.53	-23.00	9.91	50	0.06

12	-25.53	-22.60	11.47	50	0.01
12	-25.53	-19.71	22.79	50	0.06
12	-25.53	-22.96	10.05	50	0.03
12	-25.53	-20.25	20.68	50	0.06
12	-25.53	-25.53	-0.00	50	0.06
12	-25.53	-23.23	8.99	50	0.05
12	-25.53	-22.15	13.23	50	0.05
Atoms	Optimal	Found	Error	Gen	Time
13	-27.75	-26.73	3.69	50	0.03
13	-27.75	-24.46	11.88	50	0.03
13	-27.75	-24.33	12.33	50	0.03
13	-27.75	-21.03	24.24	50	0.03
13	-27.75	-21.24	23.45	50	0.03
13	-27.75	-20.47	26.23	50	0.03
13	-27.75	-27.66	0.32	50	0.02
13	-27.75	-24.46	11.87	50	0.01
13	-27.75	-24.25	12.62	50	0.02
13	-27.75	-27.38	1.34	50	0.03
13	-27.75	-25.12	9.48	50	0.06
13	-27.75	-24.91	10.24	50	0.06
13	-27.75	-21.49	22.59	50	0.06
13	-27.75	-21.93	20.99	50	0.06
13	-27.75	-21.15	23.80	50	0.08
13	-27.75	-27.75	-0.00	50	0.08
13	-27.75	-25.69	7.44	50	0.09
13	-27.75	-24.57	11.46	50	0.08
Atoms	Optimal	Found	Error	Gen	Time
14	-30.98	-29.90	3.51	50	0.03
14	-30.98	-26.15	15.61	50	0.03
14	-30.98	-25.44	17.89	50	0.05
14	-30.98	-23.76	23.30	50	0.03
14	-30.98	-21.25	31.43	50	0.05
14	-30.98	-23.08	25.51	50	0.05
14	-30.98	-30.89	0.31	50	0.02
14	-30.98	-27.20	12.21	50	0.01
14	-30.98	-24.63	20.50	50	0.03
14	-30.98	-30.62	1.17	50	0.09
14	-30.98	-27.35	11.72	50	0.06
14	-30.98	-26.95	13.03	50	0.03
14	-30.98	-23.98	22.60	50	0.09
14	-30.98	-21.56	30.42	50	0.09
14	-30.98	-27.16	12.33	50	0.06
14	-30.98	-30.98	-0.00	50	0.09
14	-30.98	-28.42	8.27	50	0.03
14	-30.98	-25.66	17.19	50	0.09

Atoms	Optimal	Found	Error	Gen	Time
15	-33.23	-33.09	0.44	50	0.05
15	-33.23	-28.85	13.19	50	0.05
15	-33.23	-28.64	13.81	50	0.05
15	-33.23	-24.03	27.68	50	0.05
15	-33.23	-20.51	38.29	50	0.05
15	-33.23	-21.48	35.37	50	0.05
15	-33.23	-33.12	0.33	50	0.03
15	-33.23	-28.75	13.50	50	0.03
15	-33.23	-29.84	10.22	50	0.03
15	-33.23	-33.23	-0.00	50	0.06
15	-33.23	-30.57	8.00	50	0.05
15	-33.23	-29.50	11.22	50	0.06
15	-33.23	-25.59	22.99	50	0.11
15	-33.23	-23.03	30.71	50	0.09
15	-33.23	-21.69	34.73	50	0.12
15	-33.23	-33.22	0.05	50	0.09
15	-33.23	-29.58	11.00	50	0.11
15	-33.23	-30.29	8.87	50	0.14
Atoms	Optimal	Found	Error	Gen	Time
16	-36.45	-33.59	7.85	50	0.05
16	-36.45	-32.87	9.82	50	0.06
16	-36.45	-29.35	19.47	50	0.06
16	-36.45	-22.54	38.16	50	0.06
16	-36.45	-26.96	26.04	50	0.06
16	-36.45	-27.79	23.78	50	0.06
16	-36.45	-36.30	0.41	50	0.03
16	-36.45	-31.46	13.69	50	0.03
16	-36.45	-31.86	12.61	50	0.03
16	-36.45	-34.02	6.68	50	0.14
16	-36.45	-33.13	9.12	50	0.16
16	-36.45	-31.17	14.50	50	0.12
16	-36.45	-23.07	36.70	50	0.12
16	-36.45	-29.42	19.29	50	0.11
16	-36.45	-29.38	19.39	50	0.05
16	-36.45	-36.45	-0.00	50	0.14
16	-36.45	-32.54	10.74	50	0.12
16	-36.45	-32.20	11.68	50	0.17
Atoms	Optimal	Found	Error	Gen	Time
17	-38.69	-36.12	6.65	50	0.08
17	-38.69	-34.36	11.19	50	0.06
17	-38.69	-31.68	18.13	50	0.08
17	-38.69	-28.78	25.63	50	0.08
17	-38.69	-23.37	39.60	50	0.08
17	-38.69	-27.56	28.78	50	0.06

17	-38.69	-38.55	0.38	50	0.05
17	-38.69	-32.65	15.61	50	0.03
17	-38.69	-33.55	13.30	50	0.05
17	-38.69	-38.29	1.04	50	0.11
17	-38.69	-34.46	10.95	50	0.16
17	-38.69	-32.93	14.91	50	0.12
17	-38.69	-31.72	18.02	50	0.11
17	-38.69	-26.30	32.02	50	0.03
17	-38.69	-27.96	27.73	50	0.12
17	-38.69	-38.69	-0.00	50	0.17
17	-38.69	-33.80	12.66	50	0.19
17	-38.69	-34.09	11.89	50	0.19
Atoms	Optimal	Found	Error	Gen	Time
18	-42.01	-37.92	9.74	50	0.09
18	-42.01	-34.40	18.10	50	0.08
18	-42.01	-35.24	16.11	50	0.09
18	-42.01	-24.15	42.50	50	0.08
18	-42.01	-31.29	25.51	50	0.09
18	-42.01	-28.27	32.71	50	0.08
18	-42.01	-41.80	0.49	50	0.05
18	-42.01	-36.77	12.48	50	0.06
18	-42.01	-34.10	18.83	50	0.05
18	-42.01	-38.11	9.28	50	0.23
18	-42.01	-37.61	10.46	50	0.06
18	-42.01	-36.11	14.03	50	0.17
18	-42.01	-29.38	30.07	50	0.09
18	-42.01	-33.65	19.90	50	0.12
18	-42.01	-29.37	30.08	50	0.20
18	-42.01	-42.01	-0.00	50	0.14
18	-42.01	-37.24	11.35	50	0.17
18	-42.01	-34.72	17.36	50	0.20
Atoms	Optimal	Found	Error	Gen	Time
19	-45.26	-43.21	4.53	50	0.11
19	-45.26	-41.23	8.90	50	0.09
19	-45.26	-35.41	21.76	50	0.11
19	-45.26	-30.24	33.18	50	0.09
19	-45.26	-32.91	27.29	50	0.11
19	-45.26	-28.63	36.75	50	0.11
19	-45.26	-44.99	0.59	50	0.06
19	-45.26	-37.99	16.06	50	0.05
19	-45.26	-36.40	19.57	50	0.06
19	-45.26	-43.57	3.74	50	0.23
19	-45.26	-41.82	7.59	50	0.17
19	-45.26	-37.25	17.70	50	0.25
19	-45.26	-31.49	30.43	50	0.23

19	-45.26	-33.55	25.88	50	0.27
19	-45.26	-28.82	36.32	50	0.28
19	-45.26	-45.26	-0.00	50	0.19
19	-45.26	-38.30	15.38	50	0.22
19	-45.26	-37.04	18.16	50	0.23
Atoms	Optimal	Found	Error	Gen	Time
20	-47.49	-47.28	0.43	50	0.12
20	-47.49	-41.67	12.26	50	0.11
20	-47.49	-36.91	22.27	50	0.12
20	-47.49	-36.47	23.20	50	0.12
20	-47.49	308.72	750.08	50	0.12
20	-47.49	-33.23	30.03	50	0.11
20	-47.49	-47.21	0.59	50	0.08
20	-47.49	-41.00	13.67	50	0.06
20	-47.49	-38.14	19.69	50	0.06
20	-47.49	-47.44	0.10	50	0.25
20	-47.49	-42.78	9.92	50	0.20
20	-47.49	-37.62	20.78	50	0.31
20	-47.49	-37.67	20.67	50	0.28
20	-47.49	161.76	440.62	50	0.23
20	-47.49	-33.64	29.17	50	0.33
20	-47.49	-47.49	-0.00	50	0.23
20	-47.49	-41.89	11.80	50	0.20
20	-47.49	-39.74	16.33	50	0.28
Atoms	Optimal	Found	Error	Gen	Time
21	-50.73	-48.46	4.46	50	0.14
21	-50.73	-43.04	15.14	50	0.14
21	-50.73	-43.05	15.14	50	0.14
21	-50.73	-29.07	42.69	50	0.14
21	-50.73	-26.31	48.14	50	0.14
21	-50.73	-36.16	28.71	50	0.14
21	-50.73	-50.43	0.58	50	0.08
21	-50.73	-45.45	10.40	50	0.06
21	-50.73	-42.72	15.78	50	0.08
21	-50.73	-50.25	0.93	50	0.20
21	-50.73	-44.21	12.85	50	0.33
21	-50.73	-43.87	13.52	50	0.20
21	-50.73	-30.22	40.42	50	0.19
21	-50.73	-26.50	47.75	50	0.12
21	-50.73	-36.29	28.46	50	0.38
21	-50.73	-50.73	-0.00	50	0.27
21	-50.73	-45.83	9.65	50	0.34
21	-50.73	-43.33	14.59	50	0.30
Atoms	Optimal	Found	Error	Gen	Time
22	-52.97	-50.31	5.02	50	0.16

22	-52.97	-47.69	9.97	50	0.16
22	-52.97	-43.93	17.07	50	0.16
22	-52.97	-37.72	28.78	50	0.17
22	-52.97	-39.42	25.58	50	0.16
22	-52.97	-28.68	45.86	50	0.16
22	-52.97	-52.68	0.56	50	0.09
22	-52.97	-47.91	9.55	50	0.08
22	-52.97	-45.77	13.59	50	0.09
22	-52.97	-51.60	2.58	50	0.41
22	-52.97	-48.32	8.78	50	0.30
22	-52.97	-45.33	14.43	50	0.31
22	-52.97	-39.44	25.55	50	0.27
22	-52.97	-39.92	24.63	50	0.44
22	-52.97	-30.18	43.03	50	0.25
22	-52.97	-52.97	-0.00	50	0.31
22	-52.97	-50.31	5.03	50	0.14
22	-52.97	-47.76	9.84	50	0.20
Atoms	Optimal	Found	Error	Gen	Time
23	-56.29	-50.11	10.98	50	0.19
23	-56.29	-50.44	10.40	50	0.19
23	-56.29	-43.04	23.54	50	0.19
23	-56.29	-38.88	30.94	50	0.19
23	-56.29	-40.55	27.96	50	0.19
23	-56.29	-36.70	34.80	50	0.20
23	-56.29	-55.98	0.55	50	0.09
23	-56.29	-49.98	11.20	50	0.09
23	-56.29	-46.56	17.28	50	0.11
23	-56.29	-53.43	5.09	50	0.38
23	-56.29	-52.42	6.88	50	0.14
23	-56.29	-43.69	22.39	50	0.47
23	-56.29	-40.97	27.22	50	0.36
23	-56.29	-43.08	23.47	50	0.14
23	-56.29	-36.87	34.50	50	0.48
23	-56.29	-56.29	-0.00	50	0.23
23	-56.29	-51.39	8.71	50	0.31
23	-56.29	-47.29	15.99	50	0.42
Atoms	Optimal	Found	Error	Gen	Time
24	-59.56	-57.11	4.12	50	0.20
24	-59.56	-53.49	10.20	50	0.22
24	-59.56	-48.19	19.09	50	0.20
24	-59.56	-42.30	28.98	50	0.22
24	-59.56	-31.30	47.44	50	0.22
24	-59.56	-35.78	39.92	50	0.22
24	-59.56	-59.24	0.54	50	0.12
24	-59.56	-52.46	11.93	50	0.11

24	-59.56	-49.84	16.32	50	0.11
24	-59.56	-58.88	1.16	50	0.33
24	-59.56	-54.40	8.67	50	0.53
24	-59.56	-49.40	17.06	50	0.45
24	-59.56	-48.08	19.27	50	0.30
24	-59.56	-31.50	47.11	50	0.52
24	-59.56	-36.57	38.60	50	0.42
24	-59.56	-59.56	-0.00	50	0.33
24	-59.56	-53.51	10.17	50	0.52
24	-59.56	-50.79	14.73	50	0.55
Atoms	Optimal	Found	Error	Gen	Time
25	-61.81	-59.46	3.79	50	0.23
25	-61.81	-54.77	11.38	50	0.22
25	-61.81	-52.96	14.32	50	0.25
25	-61.81	-48.62	21.33	50	0.25
25	-61.81	-31.88	48.42	50	0.23
25	-61.81	-41.28	33.22	50	0.25
25	-61.81	-61.48	0.53	50	0.12
25	-61.81	-55.33	10.49	50	0.14
25	-61.81	-52.49	15.08	50	0.12
25	-61.81	-61.17	1.03	50	0.22
25	-61.81	-55.46	10.26	50	0.42
25	-61.81	-54.18	12.34	50	0.50
25	-61.81	-49.07	20.61	50	0.61
25	-61.81	-32.12	48.04	50	0.34
25	-61.81	-41.37	33.07	50	0.66
25	-61.81	-61.81	-0.00	50	0.33
25	-61.81	-56.80	8.10	50	0.38
25	-61.81	-53.44	13.54	50	0.62
Atoms	Optimal	Found	Error	Gen	Time
26	-65.13	-62.79	3.59	50	0.27
26	-65.13	-57.73	11.36	50	0.28
26	-65.13	-53.49	17.88	50	0.27
26	-65.13	-42.30	35.06	50	0.28
26	-65.13	-34.23	47.44	50	0.28
26	-65.13	-44.04	32.39	50	0.28
26	-65.13	-64.75	0.59	50	0.14
26	-65.13	-58.28	10.52	50	0.14
26	-65.13	-54.03	17.05	50	0.16
26	-65.13	-63.18	3.00	50	0.66
26	-65.13	-59.33	8.91	50	0.50
26	-65.13	-54.92	15.68	50	0.59
26	-65.13	-48.33	25.79	50	0.11
26	-65.13	-35.00	46.26	50	0.34
26	-65.13	-44.21	32.12	50	0.62

26	-65.13	-65.13	-0.00	50	0.27
26	-65.13	-58.75	9.79	50	0.61
26	-65.13	-55.14	15.34	50	0.62
Atoms	Optimal	Found	Error	Gen	Time
27	-68.40	-64.62	5.52	50	0.30
27	-68.40	-57.73	15.59	50	0.31
27	-68.40	-54.29	20.62	50	0.30
27	-68.40	-39.54	42.19	50	0.31
27	-68.40	-47.97	29.87	50	0.31
27	-68.40	-45.29	33.78	50	0.30
27	-68.40	-67.95	0.65	50	0.17
27	-68.40	-59.43	13.10	50	0.16
27	-68.40	-55.19	19.31	50	0.16
27	-68.40	-67.33	1.56	50	0.30
27	-68.40	-59.11	13.58	50	0.61
27	-68.40	-55.70	18.56	50	0.41
27	-68.40	-42.04	38.53	50	0.31
27	-68.40	-48.26	29.44	50	0.78
27	-68.40	-51.39	24.87	50	0.55
27	-68.40	-68.40	-0.00	50	0.44
27	-68.40	-61.30	10.38	50	0.52
27	-68.40	-56.00	18.12	50	0.73
Atoms	Optimal	Found	Error	Gen	Time
28	-70.63	-68.45	3.09	50	0.33
28	-70.63	-60.49	14.36	50	0.34
28	-70.63	-57.77	18.21	50	0.34
28	-70.63	-43.24	38.78	50	0.36
28	-70.63	-43.53	38.37	50	0.34
28	-70.63	-41.73	40.92	50	0.36
28	-70.63	-70.16	0.67	50	0.19
28	-70.63	-63.44	10.18	50	0.17
28	-70.63	-57.76	18.23	50	0.19
28	-70.63	-68.95	2.38	50	0.58
28	-70.63	-64.39	8.85	50	0.42
28	-70.63	-59.87	15.24	50	0.44
28	-70.63	-46.40	34.31	50	0.23
28	-70.63	-45.69	35.32	50	0.31
28	-70.63	-50.33	28.75	50	0.12
28	-70.63	-70.63	-0.00	50	0.52
28	-70.63	-64.40	8.82	50	0.55
28	-70.63	-58.34	17.41	50	0.81
Atoms	Optimal	Found	Error	Gen	Time
29	-73.95	-66.33	10.31	50	0.39
29	-73.95	-65.70	11.16	50	0.39
29	-73.95	-56.18	24.03	50	0.39

29	-73.95	-44.13	40.33	50	0.39
29	-73.95	-44.43	39.92	50	0.39
29	-73.95	-44.87	39.33	50	0.39
29	-73.95	-73.43	0.70	50	0.20
29	-73.95	-66.52	10.05	50	0.20
29	-73.95	-59.10	20.08	50	0.20
29	-73.95	-71.63	3.14	50	0.67
29	-73.95	-66.82	9.64	50	0.67
29	-73.95	-57.42	22.35	50	0.91
29	-73.95	-45.04	39.10	50	0.81
29	-73.95	-45.10	39.02	50	1.05
29	-73.95	-49.46	33.12	50	0.33
29	-73.95	-73.95	-0.00	50	0.50
29	-73.95	-67.05	9.34	50	0.78
29	-73.95	-59.85	19.07	50	0.97
Atoms	Optimal	Found	Error	Gen	Time
30	-77.23	-73.70	4.57	50	0.44
30	-77.23	-70.84	8.27	50	0.41
30	-77.23	-61.33	20.59	50	0.42
30	-77.23	-48.38	37.35	50	0.44
30	-77.23	-48.96	36.61	50	0.42
30	-77.23	-40.59	47.44	50	0.44
30	-77.23	-76.65	0.75	50	0.23
30	-77.23	-66.44	13.97	50	0.23
30	-77.23	-66.82	13.48	50	0.22
30	-77.23	-76.44	1.02	50	0.78
30	-77.23	-72.33	6.34	50	0.52
30	-77.23	-61.92	19.82	50	0.81
30	-77.23	-49.01	36.53	50	0.88
30	-77.23	-52.90	31.50	50	0.41
30	-77.23	-46.39	39.93	50	0.45
30	-77.23	-77.23	-0.00	50	0.48
30	-77.23	-70.64	8.53	50	0.19
30	-77.23	-67.47	12.64	50	0.72
Atoms	Optimal	Found	Error	Gen	Time
31	-79.48	-73.35	7.72	50	0.47
31	-79.48	-69.05	13.12	50	0.47
31	-79.48	-65.15	18.02	50	0.45
31	-79.48	-44.67	43.79	50	0.48
31	-79.48	-44.66	43.81	50	0.45
31	-79.48	-50.58	36.35	50	0.47
31	-79.48	-78.86	0.77	50	0.27
31	-79.48	-69.90	12.06	50	0.25
31	-79.48	-67.55	15.01	50	0.25
31	-79.48	-76.21	4.11	50	1.05

31	-79.48	-71.91	9.53	50	0.38
31	-79.48	-68.81	13.43	50	0.36
31	-79.48	-45.42	42.85	50	0.67
31	-79.48	-46.82	41.09	50	0.59
31	-79.48	-52.55	33.88	50	0.27
31	-79.48	-79.48	-0.00	50	0.53
31	-79.48	-72.89	8.28	50	0.28
31	-79.48	-69.97	11.96	50	0.89
Atoms	Optimal	Found	Error	Gen	Time
32	-82.80	-74.52	10.00	50	0.53
32	-82.80	-72.70	12.19	50	0.52
32	-82.80	-62.80	24.15	50	0.53
32	-82.80	-54.40	34.30	50	0.52
32	-82.80	-37.81	54.33	50	0.53
32	-82.80	-59.68	27.92	50	0.53
32	-82.80	-82.17	0.76	50	0.30
32	-82.80	-72.34	12.63	50	0.28
32	-82.80	-69.10	16.54	50	0.27
32	-82.80	-79.61	3.85	50	0.72
32	-82.80	-74.88	9.57	50	0.73
32	-82.80	-64.05	22.64	50	1.44
32	-82.80	-59.76	27.82	50	0.48
32	-82.80	-40.78	50.75	50	0.86
32	-82.80	-61.89	25.25	50	1.06
32	-82.80	-82.80	-0.00	50	0.47
32	-82.80	-74.99	9.43	50	0.67
32	-82.80	-71.49	13.66	50	0.98
Atoms	Optimal	Found	Error	Gen	Time
33	-86.07	-77.19	10.32	50	0.58
33	-86.07	-68.16	20.81	50	0.56
33	-86.07	-69.97	18.71	50	0.58
33	-86.07	-48.55	43.59	50	0.58
33	-86.07	-56.60	34.25	50	0.58
33	-86.07	-60.89	29.25	50	0.58
33	-86.07	-85.37	0.82	50	0.31
33	-86.07	-76.29	11.36	50	0.33
33	-86.07	-68.60	20.30	50	0.30
33	-86.07	-81.68	5.11	50	0.94
33	-86.07	-74.52	13.42	50	0.66
33	-86.07	-73.07	15.11	50	0.86
33	-86.07	-51.05	40.70	50	0.92
33	-86.07	-57.92	32.71	50	1.34
33	-86.07	-62.97	26.84	50	0.77
33	-86.07	-86.07	-0.00	50	0.42
33	-86.07	-79.25	7.92	50	1.24

33	-86.07	-69.42	19.34	50	1.33
Atoms	Optimal	Found	Error	Gen	Time
34	-88.31	-81.92	7.24	50	0.62
34	-88.31	-78.42	11.20	50	0.64
34	-88.31	-70.68	19.97	50	0.62
34	-88.31	-50.21	43.14	50	0.64
34	-88.31	-50.39	42.94	50	0.61
34	-88.31	-52.58	40.46	50	0.64
34	-88.31	-87.60	0.81	50	0.34
34	-88.31	-79.07	10.47	50	0.34
34	-88.31	-71.05	19.54	50	0.34
34	-88.31	-85.72	2.93	50	1.20
34	-88.31	-79.03	10.51	50	1.11
34	-88.31	-75.31	14.72	50	0.84
34	-88.31	-51.20	42.02	50	1.33
34	-88.31	-50.76	42.52	50	1.47
34	-88.31	-58.49	33.77	50	0.38
34	-88.31	-88.31	-0.00	50	0.34
34	-88.31	-80.18	9.21	50	1.34
34	-88.31	-72.26	18.18	50	1.19
Atoms	Optimal	Found	Error	Gen	Time
35	-91.65	-86.13	6.01	50	0.69
35	-91.65	-83.82	8.53	50	0.70
35	-91.65	-71.53	21.95	50	0.66
35	-91.65	-56.74	38.08	50	0.69
35	-91.65	-55.23	39.73	50	0.70
35	-91.65	-53.78	41.32	50	0.67
35	-91.65	-90.90	0.81	50	0.38
35	-91.65	-82.29	10.21	50	0.38
35	-91.65	-73.21	20.12	50	0.36
35	-91.65	-88.29	3.66	50	1.44
35	-91.65	-85.17	7.07	50	1.36
35	-91.65	-75.25	17.89	50	0.78
35	-91.65	-59.16	35.45	50	0.58
35	-91.65	-56.75	38.07	50	1.31
35	-91.65	-55.82	39.09	50	1.34
35	-91.65	-91.65	-0.00	50	0.55
35	-91.65	-83.72	8.65	50	1.53
35	-91.65	-74.04	19.21	50	1.58
Atoms	Optimal	Found	Error	Gen	Time
36	-95.00	-88.58	6.75	50	0.75
36	-95.00	-84.33	11.23	50	0.75
36	-95.00	-77.67	18.24	50	0.73
36	-95.00	-55.26	41.83	50	0.75
36	-95.00	-55.52	41.55	50	0.75

36	-95.00	-61.71	35.04	50	0.75
36	-95.00	-94.24	0.80	50	0.41
36	-95.00	-83.03	12.59	50	0.39
36	-95.00	-77.41	18.51	50	0.41
36	-95.00	-91.90	3.26	50	1.36
36	-95.00	-88.43	6.91	50	0.58
36	-95.00	-80.33	15.44	50	0.70
36	-95.00	-58.13	38.80	50	0.39
36	-95.00	-56.73	40.28	50	1.08
36	-95.00	-64.16	32.47	50	0.88
36	-95.00	-95.00	-0.00	50	0.72
36	-95.00	-85.39	10.12	50	1.30
36	-95.00	-80.67	15.08	50	1.09
Atoms	Optimal	Found	Error	Gen	Time
37	-98.26	-93.33	5.02	50	0.81
37	-98.26	-87.74	10.71	50	0.81
37	-98.26	-77.72	20.90	50	0.81
37	-98.26	-59.18	39.77	50	0.80
37	-98.26	-60.90	38.02	50	0.81
37	-98.26	-54.08	44.97	50	0.81
37	-98.26	-97.51	0.76	50	0.44
37	-98.26	-85.68	12.81	50	0.44
37	-98.26	-79.52	19.07	50	0.44
37	-98.26	-96.47	1.82	50	0.89
37	-98.26	-88.92	9.51	50	1.30
37	-98.26	-82.59	15.95	50	1.25
37	-98.26	-64.14	34.72	50	0.58
37	-98.26	-64.06	34.81	50	0.78
37	-98.26	-56.57	42.42	50	1.02
37	-98.26	-98.26	-0.00	50	0.55
37	-98.26	-87.76	10.69	50	1.61
37	-98.26	-83.01	15.52	50	1.42
Atoms	Optimal	Found	Error	Gen	Time
38	-100.52	-87.58	12.86	50	0.88
38	-100.52	-84.08	16.35	50	0.86
38	-100.52	-66.94	33.40	50	0.88
38	-100.52	-63.48	36.85	50	0.86
38	-100.52	-60.83	39.48	50	0.91
38	-100.52	-62.61	37.71	50	0.88
38	-100.52	-99.75	0.76	50	0.48
38	-100.52	-86.56	13.89	50	0.48
38	-100.52	-80.05	20.36	50	0.48
38	-100.52	-95.08	5.41	50	0.56
38	-100.52	-88.11	12.34	50	1.11
38	-100.52	-69.95	30.41	50	1.75

38	-100.52	-66.86	33.48	50	1.05
38	-100.52	-62.63	37.69	50	1.22
38	-100.52	-63.49	36.83	50	2.06
38	-100.52	-100.52	-0.00	50	0.42
38	-100.52	-88.29	12.17	50	1.76
38	-100.52	-86.07	14.37	50	1.31
Atoms	Optimal	Found	Error	Gen	Time
39	-103.83	-94.32	9.15	50	0.95
39	-103.83	-95.47	8.05	50	0.95
39	-103.83	-83.32	19.75	50	0.95
39	-103.83	-64.68	37.71	50	0.95
39	-103.83	-61.01	41.24	50	0.97
39	-103.83	-62.10	40.19	50	0.94
39	-103.83	-103.00	0.79	50	0.52
39	-103.83	-89.21	14.08	50	0.50
39	-103.83	-84.69	18.43	50	0.50
39	-103.83	-98.43	5.20	50	0.66
39	-103.83	-97.01	6.57	50	1.00
39	-103.83	-85.15	17.99	50	1.59
39	-103.83	-67.15	35.32	50	1.26
39	-103.83	-61.62	40.65	50	1.16
39	-103.83	-63.28	39.06	50	1.47
39	-103.83	-103.83	-0.00	50	0.33
39	-103.83	-90.74	12.60	50	1.70
39	-103.83	-87.16	16.05	50	1.74
Atoms	Optimal	Found	Error	Gen	Time
40	-107.11	-100.07	6.57	50	1.03
40	-107.11	-91.12	14.93	50	1.00
40	-107.11	-85.07	20.57	50	1.03
40	-107.11	-62.27	41.86	50	1.05
40	-107.11	-63.10	41.08	50	1.05
40	-107.11	-67.77	36.73	50	1.05
40	-107.11	-106.21	0.84	50	0.56
40	-107.11	-91.07	14.98	50	0.55
40	-107.11	-87.82	18.01	50	0.55
40	-107.11	-104.49	2.44	50	0.28
40	-107.11	-96.99	9.45	50	1.05
40	-107.11	-87.85	17.97	50	1.25
40	-107.11	-70.99	33.72	50	0.31
40	-107.11	-70.00	34.64	50	0.31
40	-107.11	-71.56	33.19	50	0.45
40	-107.11	-107.11	-0.00	50	0.47
40	-107.11	-93.58	12.63	50	1.48
40	-107.11	-90.38	15.62	50	1.31
Atoms	Optimal	Found	Error	Gen	Time

41	-109.35	-94.20	13.86	50	1.14
41	-109.35	-97.54	10.80	50	1.08
41	-109.35	-83.23	23.89	50	1.12
41	-109.35	-60.97	44.24	50	1.12
41	-109.35	-69.47	36.47	50	1.14
41	-109.35	-58.87	46.16	50	1.14
41	-109.35	-108.46	0.82	50	0.61
41	-109.35	-96.28	11.95	50	0.58
41	-109.35	-88.65	18.93	50	0.61
41	-109.35	-99.03	9.44	50	2.39
41	-109.35	-98.74	9.70	50	1.77
41	-109.35	-89.91	17.78	50	1.69
41	-109.35	-65.87	39.77	50	0.30
41	-109.35	-70.48	35.55	50	2.17
41	-109.35	-62.35	42.98	50	1.72
41	-109.35	-109.35	-0.00	50	0.44
41	-109.35	-97.80	10.57	50	1.86
41	-109.35	-91.46	16.36	50	1.69
Atoms	Optimal	Found	Error	Gen	Time
42	-112.68	-104.41	7.34	50	1.19
42	-112.68	-98.00	13.03	50	1.19
42	-112.68	-88.79	21.21	50	1.17
42	-112.68	-59.64	47.07	50	1.20
42	-112.68	-68.64	39.08	50	1.22
42	-112.68	-60.92	45.94	50	1.23
42	-112.68	-111.77	0.81	50	0.64
42	-112.68	-99.21	11.95	50	0.64
42	-112.68	-89.35	20.71	50	0.64
42	-112.68	-109.85	2.51	50	0.44
42	-112.68	-99.86	11.38	50	1.94
42	-112.68	-91.98	18.37	50	1.72
42	-112.68	-63.88	43.31	50	0.41
42	-112.68	-73.40	34.86	50	1.94
42	-112.68	-65.76	41.64	50	1.33
42	-112.68	-112.68	-0.00	50	0.39
42	-112.68	-100.84	10.51	50	1.92
42	-112.68	-92.90	17.56	50	1.66
Atoms	Optimal	Found	Error	Gen	Time
43	-116.04	-110.96	4.38	50	1.26
43	-116.04	-103.36	10.93	50	1.30
43	-116.04	-90.47	22.03	50	1.28
43	-116.04	-68.13	41.29	50	1.30
43	-116.04	-55.14	52.48	50	1.30
43	-116.04	-63.60	45.19	50	1.28
43	-116.04	-115.12	0.80	50	0.70

43	-116.04	-101.44	12.58	50	0.69
43	-116.04	-92.07	20.65	50	0.69
43	-116.04	-113.96	1.79	50	0.78
43	-116.04	-106.50	8.22	50	1.08
43	-116.04	-95.51	17.69	50	1.23
43	-116.04	-69.59	40.03	50	1.11
43	-116.04	-56.20	51.57	50	0.77
43	-116.04	-66.81	42.43	50	0.89
43	-116.04	-116.04	-0.00	50	0.55
43	-116.04	-103.25	11.02	50	1.97
43	-116.04	-95.48	17.72	50	1.55
Atoms	Optimal	Found	Error	Gen	Time
44	-119.32	-112.17	5.99	50	1.38
44	-119.32	-107.89	9.57	50	1.36
44	-119.32	-92.84	22.19	50	1.38
44	-119.32	-68.52	42.58	50	1.39
44	-119.32	-68.51	42.58	50	1.38
44	-119.32	-70.99	40.50	50	1.38
44	-119.32	-118.36	0.80	50	0.75
44	-119.32	-104.39	12.51	50	0.73
44	-119.32	-94.67	20.66	50	0.73
44	-119.32	-116.30	2.53	50	0.67
44	-119.32	-111.34	6.69	50	0.86
44	-119.32	-94.53	20.77	50	2.27
44	-119.32	-70.20	41.16	50	1.58
44	-119.32	-69.39	41.85	50	2.31
44	-119.32	-76.13	36.19	50	0.41
44	-119.32	-119.32	-0.00	50	0.38
44	-119.32	-105.54	11.55	50	2.56
44	-119.32	-98.03	17.84	50	2.19
Atoms	Optimal	Found	Error	Gen	Time
45	-121.56	-107.62	11.47	50	1.50
45	-121.56	-110.90	8.77	50	1.45
45	-121.56	-94.23	22.49	50	1.48
45	-121.56	-71.53	41.16	50	1.45
45	-121.56	1103.55	1007.79	50	1.50
45	-121.56	-71.91	40.85	50	1.52
45	-121.56	-120.57	0.82	50	0.80
45	-121.56	-103.07	15.21	50	0.80
45	-121.56	-94.99	21.86	50	0.78
45	-121.56	-113.87	6.33	50	1.76
45	-121.56	-114.98	5.41	50	1.08
45	-121.56	-97.62	19.69	50	1.95
45	-121.56	-71.88	40.87	50	3.16
45	-121.56	1100.85	1005.57	50	4.64

45	-121.56	-83.65	31.18	50	0.56
45	-121.56	-121.56	-0.00	50	0.58
45	-121.56	-106.81	12.14	50	2.44
45	-121.56	-101.10	16.84	50	2.36
Atoms	Optimal	Found	Error	Gen	Time
46	-124.89	-113.65	9.00	50	1.58
46	-124.89	-107.14	14.21	50	1.59
46	-124.89	-97.10	22.25	50	1.56
46	-124.89	-72.00	42.35	50	1.59
46	-124.89	-67.00	46.35	50	1.59
46	-124.89	-68.88	44.85	50	1.59
46	-124.89	-123.86	0.82	50	0.84
46	-124.89	-105.55	15.48	50	0.84
46	-124.89	-97.35	22.05	50	0.84
46	-124.89	-120.00	3.91	50	1.88
46	-124.89	-114.13	8.61	50	0.77
46	-124.89	-103.91	16.80	50	2.23
46	-124.89	-76.19	39.00	50	1.11
46	-124.89	-68.25	45.35	50	1.56
46	-124.89	-70.47	43.57	50	0.44
46	-124.89	-124.89	-0.00	50	0.62
46	-124.89	-109.41	12.39	50	2.67
46	-124.89	-103.40	17.20	50	2.55
Atoms	Optimal	Found	Error	Gen	Time
47	-128.24	-117.67	8.24	50	1.69
47	-128.24	-112.63	12.17	50	1.70
47	-128.24	-99.57	22.36	50	1.72
47	-128.24	-73.83	42.43	50	1.67
47	-128.24	-72.81	43.23	50	1.69
47	-128.24	-71.61	44.16	50	1.69
47	-128.24	-127.09	0.90	50	0.91
47	-128.24	-113.88	11.19	50	0.91
47	-128.24	-98.94	22.85	50	0.89
47	-128.24	-124.62	2.82	50	1.75
47	-128.24	-117.08	8.71	50	1.12
47	-128.24	-105.82	17.48	50	1.30
47	-128.24	-75.96	40.77	50	2.41
47	-128.24	-77.89	39.26	50	0.81
47	-128.24	-75.42	41.19	50	1.64
47	-128.24	-128.24	-0.00	50	0.61
47	-128.24	-117.11	8.68	50	2.84
47	-128.24	-105.05	18.08	50	2.95
Atoms	Optimal	Found	Error	Gen	Time
48	-131.52	-126.15	4.08	50	1.81
48	-131.52	-118.69	9.75	50	1.81

48	-131.52	-102.10	22.37	50	1.83
48	-131.52	-66.86	49.16	50	1.81
48	-131.52	976.95	842.84	50	1.80
48	-131.52	-83.64	36.40	50	1.78
48	-131.52	-130.28	0.94	50	0.97
48	-131.52	-119.87	8.86	50	0.95
48	-131.52	-112.82	14.21	50	0.95
48	-131.52	-128.90	1.99	50	1.86
48	-131.52	-119.76	8.94	50	3.23
48	-131.52	-111.72	15.05	50	0.81
48	-131.52	-70.39	46.48	50	0.72
48	-131.52	318.55	342.22	50	5.50
48	-131.52	-85.20	35.22	50	3.55
48	-131.52	-131.52	-0.00	50	0.44
48	-131.52	-121.40	7.69	50	2.94
48	-131.52	-115.67	12.05	50	1.88
Atoms	Optimal	Found	Error	Gen	Time
49	-133.76	-123.56	7.62	50	1.92
49	-133.76	-113.49	15.15	50	1.91
49	-133.76	-103.61	22.54	50	1.94
49	-133.76	-73.82	44.81	50	1.91
49	-133.76	-75.64	43.45	50	1.95
49	-133.76	-75.94	43.22	50	1.91
49	-133.76	-132.49	0.95	50	1.02
49	-133.76	-119.14	10.93	50	1.02
49	-133.76	-115.93	13.33	50	1.03
49	-133.76	-129.20	3.41	50	2.56
49	-133.76	-115.42	13.71	50	2.39
49	-133.76	-110.45	17.42	50	0.80
49	-133.76	-74.23	44.51	50	4.30
49	-133.76	-82.56	38.28	50	0.83
49	-133.76	-79.43	40.62	50	2.66
49	-133.76	-133.76	-0.00	50	0.59
49	-133.76	-125.18	6.41	50	0.98
49	-133.76	-119.47	10.68	50	0.83
Atoms	Optimal	Found	Error	Gen	Time
50	-137.08	-123.75	9.73	50	2.02
50	-137.08	-111.83	18.42	50	2.00
50	-137.08	-106.03	22.65	50	2.05
50	-137.08	-86.89	36.61	50	2.08
50	-137.08	-82.20	40.04	50	2.08
50	-137.08	-79.76	41.82	50	2.03
50	-137.08	-135.68	1.02	50	1.09
50	-137.08	-122.16	10.89	50	1.08
50	-137.08	-116.72	14.86	50	1.08

50	-137.08	-132.25	3.52	50	2.38
50	-137.08	-118.19	13.78	50	3.38
50	-137.08	-113.84	16.95	50	2.55
50	-137.08	-92.15	32.78	50	1.84
50	-137.08	-86.65	36.79	50	1.14
50	-137.08	-85.24	37.82	50	2.20
50	-137.08	-137.08	-0.00	50	0.53
50	-137.08	-126.62	7.63	50	1.28
50	-137.08	-120.11	12.38	50	1.34
Atoms	Optimal	Found	Error	Gen	Time
51	-140.44	-127.11	9.49	50	2.17
51	-140.44	-113.99	18.83	50	2.20
51	-140.44	-116.90	16.77	50	2.19
51	-140.44	-75.63	46.15	50	2.17
51	-140.44	-76.85	45.28	50	2.20
51	-140.44	-71.49	49.10	50	2.20
51	-140.44	-138.92	1.08	50	1.17
51	-140.44	-125.27	10.81	50	1.16
51	-140.44	-111.50	20.61	50	1.17
51	-140.44	-137.39	2.17	50	1.64
51	-140.44	-122.08	13.08	50	2.02
51	-140.44	-120.41	14.27	50	2.69
51	-140.44	-79.76	43.21	50	0.59
51	-140.44	-80.81	42.46	50	2.67
51	-140.44	-76.24	45.72	50	0.75
51	-140.44	-140.44	-0.00	50	0.61
51	-140.44	-131.65	6.26	50	0.69
51	-140.44	-114.02	18.82	50	3.94
Atoms	Optimal	Found	Error	Gen	Time
52	-143.72	-134.50	6.42	50	2.34
52	-143.72	-126.40	12.06	50	2.31
52	-143.72	-113.83	20.80	50	2.31
52	-143.72	-79.57	44.64	50	2.30
52	-143.72	-75.62	47.38	50	2.31
52	-143.72	-77.92	45.79	50	2.31
52	-143.72	-142.11	1.12	50	1.23
52	-143.72	-125.15	12.92	50	1.23
52	-143.72	-114.43	20.38	50	1.22
52	-143.72	-140.22	2.43	50	3.03
52	-143.72	-129.81	9.68	50	2.03
52	-143.72	-119.64	16.76	50	2.70
52	-143.72	-85.40	40.58	50	0.72
52	-143.72	-84.71	41.06	50	0.88
52	-143.72	-87.57	39.07	50	5.44
52	-143.72	-143.72	-0.00	50	0.58

52	-143.72	-131.51	8.50	50	2.27
52	-143.72	-116.93	18.64	50	3.34
Atoms	Optimal	Found	Error	Gen	Time
53	-145.96	-127.64	12.55	50	2.48
53	-145.96	-121.97	16.44	50	2.42
53	-145.96	-117.08	19.79	50	2.44
53	-145.96	-83.89	42.53	50	2.45
53	-145.96	-75.96	47.96	50	2.45
53	-145.96	-78.14	46.46	50	2.48
53	-145.96	-144.36	1.10	50	1.34
53	-145.96	-125.14	14.27	50	1.33
53	-145.96	-115.05	21.18	50	1.33
53	-145.96	-133.05	8.85	50	2.27
53	-145.96	-126.08	13.62	50	4.45
53	-145.96	-120.63	17.36	50	2.59
53	-145.96	-86.57	40.69	50	3.34
53	-145.96	-76.83	47.36	50	3.31
53	-145.96	-78.85	45.98	50	5.39
53	-145.96	-145.96	-0.00	50	0.75
53	-145.96	-129.11	11.54	50	2.88
53	-145.96	-117.57	19.45	50	4.30
Atoms	Optimal	Found	Error	Gen	Time
54	-149.30	-135.71	9.10	50	2.67
54	-149.30	-128.40	14.00	50	2.64
54	-149.30	-120.89	19.02	50	2.59
54	-149.30	776.63	620.19	50	2.61
54	-149.30	-85.31	42.86	50	2.62
54	-149.30	-79.75	46.58	50	2.61
54	-149.30	-147.56	1.16	50	1.45
54	-149.30	-129.76	13.09	50	1.42
54	-149.30	-134.81	9.70	50	1.41
54	-149.30	-143.09	4.16	50	2.17
54	-149.30	-132.77	11.07	50	3.56
54	-149.30	-131.45	11.96	50	2.86
54	-149.30	692.55	563.87	50	6.56
54	-149.30	-91.12	38.97	50	0.89
54	-149.30	-85.33	42.85	50	0.73
54	-149.30	-149.30	-0.00	50	0.67
54	-149.30	-134.68	9.79	50	3.59
54	-149.30	-144.00	3.55	50	2.92
Atoms	Optimal	Found	Error	Gen	Time
55	-152.65	-140.55	7.93	50	2.78
55	-152.65	-129.07	15.45	50	2.81
55	-152.65	-121.19	20.61	50	2.77
55	-152.65	-86.87	43.09	50	2.77

55	-152.65	-90.05	41.01	50	2.78
55	-152.65	-76.19	50.09	50	2.77
55	-152.65	-150.85	1.18	50	1.49
55	-152.65	-131.00	14.18	50	1.48
55	-152.65	-137.73	9.78	50	1.49
55	-152.65	-148.35	2.82	50	1.16
55	-152.65	-137.48	9.94	50	2.59
55	-152.65	-127.98	16.16	50	1.75
55	-152.65	-90.51	40.71	50	0.72
55	-152.65	-100.51	34.16	50	1.19
55	-152.65	-79.40	47.99	50	2.66
55	-152.65	-152.65	-0.00	50	0.69
55	-152.65	-136.46	10.61	50	3.48
55	-152.65	-147.22	3.56	50	2.69
Atoms	Optimal	Found	Error	Gen	Time
56	-155.93	-141.06	9.54	50	3.00
56	-155.93	-139.10	10.80	50	2.97
56	-155.93	-121.44	22.12	50	2.89
56	-155.93	-85.17	45.38	50	2.91
56	-155.93	-79.83	48.80	50	2.92
56	-155.93	-83.58	46.40	50	2.91
56	-155.93	-154.07	1.20	50	1.55
56	-155.93	-134.37	13.83	50	1.56
56	-155.93	-138.85	10.96	50	1.58
56	-155.93	-148.34	4.87	50	1.42
56	-155.93	-146.83	5.84	50	0.77
56	-155.93	-130.09	16.57	50	1.47
56	-155.93	-92.76	40.52	50	1.19
56	-155.93	-87.75	43.72	50	0.81
56	-155.93	-85.53	45.15	50	1.09
56	-155.93	-155.93	-0.00	50	0.83
56	-155.93	-139.59	10.48	50	4.70
56	-155.93	-147.77	5.23	50	3.44
Atoms	Optimal	Found	Error	Gen	Time
57	-158.17	-145.56	7.97	50	3.14
57	-158.17	-139.13	12.04	50	3.14
57	-158.17	-121.50	23.18	50	3.12
57	-158.17	-95.93	39.35	50	3.05
57	-158.17	-85.12	46.18	50	3.12
57	-158.17	-81.50	48.47	50	3.08
57	-158.17	-156.31	1.17	50	1.66
57	-158.17	-135.60	14.27	50	1.64
57	-158.17	-135.18	14.53	50	1.59
57	-158.17	-153.70	2.83	50	2.61
57	-158.17	-142.61	9.84	50	3.83

57	-158.17	-128.16	18.97	50	4.53
57	-158.17	-104.25	34.09	50	0.89
57	-158.17	-95.40	39.69	50	1.42
57	-158.17	-82.96	47.55	50	2.70
57	-158.17	-158.17	-0.00	50	1.00
57	-158.17	-143.09	9.54	50	4.09
57	-158.17	-140.71	11.04	50	2.91
Atoms	Optimal	Found	Error	Gen	Time
58	-161.52	-155.02	4.02	50	3.27
58	-161.52	-138.30	14.37	50	3.27
58	-161.52	-134.88	16.50	50	3.27
58	-161.52	-90.95	43.69	50	3.23
58	-161.52	-91.21	43.53	50	3.31
58	-161.52	-87.44	45.87	50	3.33
58	-161.52	-159.57	1.21	50	1.72
58	-161.52	-147.00	8.99	50	1.76
58	-161.52	-137.42	14.92	50	1.74
58	-161.52	-158.81	1.68	50	1.00
58	-161.52	-141.50	12.40	50	6.16
58	-161.52	-144.13	10.77	50	2.91
58	-161.52	-100.73	37.64	50	1.48
58	-161.52	-96.65	40.16	50	1.19
58	-161.52	-90.79	43.79	50	1.50
58	-161.52	-161.52	-0.00	50	0.77
58	-161.52	-149.42	7.49	50	3.75
58	-161.52	-143.21	11.33	50	3.67
Atoms	Optimal	Found	Error	Gen	Time
59	-164.88	-140.21	14.96	50	3.38
59	-164.88	-147.23	10.71	50	3.42
59	-164.88	-135.43	17.86	50	3.39
59	-164.88	-91.24	44.66	50	3.53
59	-164.88	-99.44	39.69	50	3.44
59	-164.88	-84.06	49.02	50	3.47
59	-164.88	-162.88	1.21	50	1.81
59	-164.88	-150.17	8.92	50	1.84
59	-164.88	-138.49	16.00	50	1.81
59	-164.88	-149.44	9.36	50	4.17
59	-164.88	-150.97	8.44	50	3.33
59	-164.88	-143.00	13.27	50	2.94
59	-164.88	-94.99	42.39	50	2.34
59	-164.88	-103.67	37.12	50	1.56
59	-164.88	-89.91	45.47	50	1.01
59	-164.88	-164.88	-0.00	50	0.86
59	-164.88	-152.36	7.60	50	3.80
59	-164.88	-142.79	13.40	50	3.08

Atoms	Optimal	Found	Error	Gen	Time
60	-168.23	-150.58	10.49	50	3.61
60	-168.23	-149.55	11.10	50	3.66
60	-168.23	-140.73	16.35	50	3.67
60	-168.23	-81.21	51.73	50	3.64
60	-168.23	1618.74	1062.23	50	3.67
60	-168.23	-92.88	44.79	50	3.58
60	-168.23	-166.17	1.23	50	1.94
60	-168.23	-153.91	8.51	50	2.00
60	-168.23	-141.09	16.13	50	1.92
60	-168.23	-156.26	7.11	50	5.62
60	-168.23	-153.68	8.65	50	1.62
60	-168.23	-143.11	14.93	50	6.11
60	-168.23	-86.23	48.74	50	4.22
60	-168.23	1618.69	1062.20	50	11.31
60	-168.23	-103.95	38.21	50	2.81
60	-168.23	-168.23	-0.00	50	1.01
60	-168.23	-155.49	7.57	50	2.47
60	-168.23	-147.01	12.61	50	3.03
Atoms	Optimal	Found	Error	Gen	Time
61	-171.50	-156.66	8.65	50	3.88
61	-171.50	-154.76	9.76	50	3.78
61	-171.50	-142.53	16.89	50	3.83
61	-171.50	-98.88	42.34	50	3.86
61	-171.50	-91.26	46.79	50	3.83
61	-171.50	-101.99	40.53	50	3.81
61	-171.50	-169.33	1.26	50	1.98
61	-171.50	-152.97	10.81	50	2.03
61	-171.50	-144.09	15.98	50	2.03
61	-171.50	-165.54	3.48	50	1.41
61	-171.50	-158.27	7.71	50	1.52
61	-171.50	-147.58	13.95	50	3.80
61	-171.50	-107.33	37.42	50	1.03
61	-171.50	-96.21	43.90	50	1.01
61	-171.50	-110.26	35.71	50	0.92
61	-171.50	-171.50	-0.00	50	1.03
61	-171.50	-159.37	7.07	50	1.61
61	-171.50	-150.51	12.24	50	4.03
Atoms	Optimal	Found	Error	Gen	Time
62	-173.74	-164.49	5.33	50	4.01
62	-173.74	-157.91	9.11	50	4.00
62	-173.74	-143.80	17.23	50	4.00
62	-173.74	-91.45	47.36	50	4.02
62	-173.74	-85.95	50.53	50	3.95
62	-173.74	-92.46	46.78	50	4.03

62	-173.74	-171.53	1.27	50	2.14
62	-173.74	-154.01	11.36	50	2.12
62	-173.74	-144.62	16.76	50	2.12
62	-173.74	-171.36	1.37	50	2.70
62	-173.74	-163.83	5.71	50	1.67
62	-173.74	-149.27	14.08	50	2.48
62	-173.74	-96.62	44.39	50	1.03
62	-173.74	-88.00	49.35	50	2.36
62	-173.74	-101.13	41.79	50	1.03
62	-173.74	-173.74	-0.00	50	1.12
62	-173.74	-161.12	7.26	50	1.99
62	-173.74	-150.23	13.53	50	3.56
Atoms	Optimal	Found	Error	Gen	Time
63	-177.05	-151.70	14.32	50	4.20
63	-177.05	-153.84	13.11	50	4.19
63	-177.05	-150.15	15.19	50	4.24
63	-177.05	-104.79	40.81	50	4.20
63	-177.05	-100.76	43.09	50	4.17
63	-177.05	-100.40	43.29	50	4.16
63	-177.05	-174.67	1.35	50	2.22
63	-177.05	-159.13	10.12	50	2.22
63	-177.05	-155.25	12.31	50	2.22
63	-177.05	-160.63	9.27	50	5.92
63	-177.05	-160.76	9.20	50	2.86
63	-177.05	-158.07	10.72	50	5.34
63	-177.05	-113.15	36.09	50	1.84
63	-177.05	-108.09	38.95	50	1.56
63	-177.05	-107.62	39.22	50	1.62
63	-177.05	-177.05	-0.00	50	1.14
63	-177.05	-162.86	8.02	50	5.00
63	-177.05	-162.99	7.94	50	1.16
Atoms	Optimal	Found	Error	Gen	Time
64	-180.41	-151.93	15.79	50	4.45
64	-180.41	-163.08	9.61	50	4.50
64	-180.41	-150.68	16.48	50	4.45
64	-180.41	-108.51	39.86	50	4.39
64	-180.41	-100.47	44.31	50	4.41
64	-180.41	-79.72	55.81	50	4.41
64	-180.41	-177.84	1.43	50	2.34
64	-180.41	-163.53	9.36	50	2.31
64	-180.41	-157.48	12.71	50	2.38
64	-180.41	-157.73	12.57	50	5.50
64	-180.41	-168.86	6.41	50	1.19
64	-180.41	-160.42	11.08	50	2.88
64	-180.41	-119.54	33.74	50	2.97

64	-180.41	-109.51	39.30	50	4.31
64	-180.41	-80.59	55.33	50	7.66
64	-180.41	-180.41	-0.00	50	1.16
64	-180.41	-167.05	7.40	50	4.41
64	-180.41	-165.36	8.35	50	1.42
Atoms	Optimal	Found	Error	Gen	Time
65	-183.70	-162.55	11.51	50	4.66
65	-183.70	-162.23	11.69	50	4.58
65	-183.70	-149.72	18.50	50	4.59
65	-183.70	-108.85	40.74	50	4.49
65	-183.70	-96.33	47.56	50	4.55
65	-183.70	-102.61	44.14	50	4.51
65	-183.70	-181.00	1.47	50	2.52
65	-183.70	-166.64	9.29	50	2.48
65	-183.70	-159.22	13.33	50	2.53
65	-183.70	-174.07	5.24	50	3.73
65	-183.70	-170.98	6.93	50	2.73
65	-183.70	-156.51	14.80	50	5.24
65	-183.70	-113.31	38.32	50	2.06
65	-183.70	-102.96	43.95	50	6.47
65	-183.70	-103.83	43.48	50	1.80
65	-183.70	-183.70	-0.00	50	1.25
65	-183.70	-170.93	6.95	50	3.97
65	-183.70	-166.88	9.16	50	2.14
Atoms	Optimal	Found	Error	Gen	Time
66	-185.93	-157.71	15.18	50	4.94
66	-185.93	-163.39	12.13	50	4.91
66	-185.93	-153.85	17.25	50	4.81
66	-185.93	-102.35	44.95	50	4.73
66	-185.93	-102.45	44.90	50	4.77
66	-185.93	-105.23	43.40	50	4.86
66	-185.93	-183.25	1.44	50	2.56
66	-185.93	-166.48	10.46	50	2.55
66	-185.93	-152.89	17.77	50	2.53
66	-185.93	-162.05	12.84	50	8.39
66	-185.93	-166.79	10.29	50	7.30
66	-185.93	-165.84	10.80	50	3.97
66	-185.93	-107.05	42.42	50	2.34
66	-185.93	-104.18	43.97	50	4.47
66	-185.93	-115.58	37.84	50	4.11
66	-185.93	-185.93	-0.00	50	1.70
66	-185.93	-174.52	6.14	50	2.80
66	-185.93	-155.80	16.21	50	9.19
Atoms	Optimal	Found	Error	Gen	Time
67	-189.26	-169.46	10.46	50	5.17

67	-189.26	-170.56	9.88	50	5.12
67	-189.26	-155.24	17.98	50	5.06
67	-189.26	-101.21	46.52	50	5.06
67	-189.26	-98.97	47.71	50	5.11
67	-189.26	-100.83	46.72	50	5.05
67	-189.26	-186.34	1.54	50	2.69
67	-189.26	-171.06	9.62	50	2.69
67	-189.26	-154.93	18.14	50	2.67
67	-189.26	-173.83	8.15	50	6.89
67	-189.26	-174.43	7.84	50	3.09
67	-189.26	-167.72	11.38	50	3.84
67	-189.26	-104.46	44.81	50	1.81
67	-189.26	-101.60	46.32	50	3.30
67	-189.26	-104.80	44.63	50	2.59
67	-189.26	-189.26	-0.00	50	1.76
67	-189.26	-176.46	6.77	50	3.28
67	-189.26	-158.91	16.04	50	8.81
Atoms	Optimal	Found	Error	Gen	Time
68	-192.63	-168.03	12.77	50	5.25
68	-192.63	-177.17	8.03	50	5.25
68	-192.63	-159.01	17.45	50	5.31
68	-192.63	-104.03	46.00	50	5.28
68	-192.63	-103.72	46.16	50	5.27
68	-192.63	-102.50	46.79	50	5.22
68	-192.63	-189.60	1.57	50	2.77
68	-192.63	-161.39	16.22	50	2.80
68	-192.63	-154.81	19.63	50	2.80
68	-192.63	-177.00	8.12	50	4.69
68	-192.63	-180.78	6.15	50	2.45
68	-192.63	-167.69	12.95	50	5.02
68	-192.63	-107.01	44.45	50	2.19
68	-192.63	-108.78	43.53	50	2.25
68	-192.63	-108.24	43.81	50	2.16
68	-192.63	-192.63	-0.00	50	1.42
68	-192.63	-169.00	12.27	50	4.97
68	-192.63	-158.48	17.73	50	8.59
Atoms	Optimal	Found	Error	Gen	Time
69	-195.99	-169.10	13.72	50	5.50
69	-195.99	-161.78	17.45	50	5.53
69	-195.99	-159.59	18.57	50	5.50
69	-195.99	-106.99	45.41	50	5.50
69	-195.99	-117.28	40.16	50	5.47
69	-195.99	-103.12	47.38	50	5.48
69	-195.99	-192.83	1.61	50	2.92
69	-195.99	-165.39	15.61	50	2.89

69	-195.99	-178.90	8.72	50	2.95
69	-195.99	-181.26	7.51	50	6.94
69	-195.99	-169.15	13.69	50	4.03
69	-195.99	-168.35	14.10	50	2.17
69	-195.99	-116.32	40.65	50	1.83
69	-195.99	-121.52	37.99	50	2.48
69	-195.99	-107.11	45.35	50	2.09
69	-195.99	-195.99	-0.00	50	1.94
69	-195.99	-178.92	8.71	50	3.09
69	-195.99	-185.82	5.19	50	3.52
Atoms	Optimal	Found	Error	Gen	Time
70	-199.27	-187.83	5.74	50	5.75
70	-199.27	-178.26	10.54	50	5.78
70	-199.27	-160.92	19.25	50	5.81
70	-199.27	-112.89	43.35	50	5.70
70	-199.27	-100.93	49.35	50	5.67
70	-199.27	-104.21	47.71	50	5.75
70	-199.27	-196.01	1.64	50	3.05
70	-199.27	-167.95	15.72	50	3.05
70	-199.27	-181.59	8.88	50	3.08
70	-199.27	-194.40	2.45	50	2.22
70	-199.27	-184.01	7.66	50	4.02
70	-199.27	-171.88	13.75	50	4.83
70	-199.27	-121.71	38.92	50	2.83
70	-199.27	-107.53	46.04	50	1.88
70	-199.27	-106.62	46.49	50	6.36
70	-199.27	-199.27	-0.00	50	1.34
70	-199.27	-172.51	13.43	50	6.16
70	-199.27	-189.01	5.15	50	2.39
Atoms	Optimal	Found	Error	Gen	Time
71	-201.53	-177.72	11.81	50	6.01
71	-201.53	-179.75	10.81	50	6.02
71	-201.53	-161.01	20.11	50	6.03
71	-201.53	-112.82	44.02	50	6.00
71	-201.53	-87.06	56.80	50	6.02
71	-201.53	-114.71	43.08	50	6.00
71	-201.53	-198.25	1.63	50	3.19
71	-201.53	-169.34	15.97	50	3.19
71	-201.53	-183.85	8.77	50	3.19
71	-201.53	-188.36	6.54	50	4.61
71	-201.53	-188.10	6.67	50	2.44
71	-201.53	-166.59	17.34	50	5.47
71	-201.53	-119.29	40.81	50	2.55
71	-201.53	-90.72	54.98	50	9.58
71	-201.53	-121.39	39.77	50	1.66

71	-201.53	-201.53	-0.00	50	1.42
71	-201.53	-174.47	13.43	50	8.30
71	-201.53	-190.59	5.43	50	2.84
Atoms	Optimal	Found	Error	Gen	Time
72	-204.85	-180.84	11.72	50	6.28
72	-204.85	-185.04	9.67	50	6.25
72	-204.85	-162.64	20.61	50	6.28
72	-204.85	-116.58	43.09	50	6.31
72	-204.85	4595.42	2343.35	50	6.33
72	-204.85	-109.03	46.78	50	6.20
72	-204.85	-201.41	1.67	50	3.33
72	-204.85	-171.35	16.35	50	3.31
72	-204.85	-173.19	15.46	50	3.33
72	-204.85	-195.63	4.50	50	2.11
72	-204.85	-189.86	7.31	50	5.53
72	-204.85	-170.85	16.60	50	6.50
72	-204.85	-126.30	38.34	50	1.62
72	-204.85	2245.86	1196.37	50	17.28
72	-204.85	-118.64	42.08	50	4.16
72	-204.85	-204.85	-0.00	50	1.98
72	-204.85	-177.90	13.16	50	5.64
72	-204.85	-180.23	12.02	50	5.70
Atoms	Optimal	Found	Error	Gen	Time
73	-208.23	-173.45	16.70	50	6.53
73	-208.23	-187.36	10.02	50	6.55
73	-208.23	-164.95	20.78	50	6.55
73	-208.23	-119.56	42.58	50	6.48
73	-208.23	-114.94	44.80	50	6.47
73	-208.23	-113.31	45.58	50	6.51
73	-208.23	-204.68	1.70	50	3.47
73	-208.23	-175.94	15.51	50	3.47
73	-208.23	-175.96	15.50	50	3.53
73	-208.23	-181.02	13.07	50	9.64
73	-208.23	-191.00	8.27	50	5.59
73	-208.23	-174.17	16.36	50	4.45
73	-208.23	-130.41	37.37	50	1.77
73	-208.23	-125.50	39.73	50	1.88
73	-208.23	-118.67	43.01	50	1.67
73	-208.23	-208.23	-0.00	50	1.77
73	-208.23	-181.30	12.93	50	9.19
73	-208.23	-181.49	12.84	50	6.86
Atoms	Optimal	Found	Error	Gen	Time
74	-211.58	-203.33	3.90	50	6.88
74	-211.58	-191.00	9.73	50	6.81
74	-211.58	-168.37	20.42	50	6.91

74	-211.58	-121.07	42.78	50	6.84
74	-211.58	-112.53	46.82	50	6.88
74	-211.58	-110.98	47.55	50	6.75
74	-211.58	-207.95	1.72	50	3.61
74	-211.58	-176.30	16.67	50	3.61
74	-211.58	-176.00	16.82	50	3.58
74	-211.58	-208.10	1.64	50	1.77
74	-211.58	-196.30	7.22	50	2.86
74	-211.58	-175.97	16.83	50	3.47
74	-211.58	-131.04	38.07	50	1.86
74	-211.58	-119.14	43.69	50	2.39
74	-211.58	-115.68	45.33	50	2.05
74	-211.58	-211.58	-0.00	50	1.66
74	-211.58	-181.67	14.14	50	9.78
74	-211.58	-181.41	14.26	50	5.67
Atoms	Optimal	Found	Error	Gen	Time
75	-214.84	-195.46	9.02	50	7.09
75	-214.84	-182.63	14.99	50	7.14
75	-214.84	-173.90	19.05	50	7.09
75	-214.84	-113.39	47.22	50	7.11
75	-214.84	-122.30	43.07	50	7.09
75	-214.84	-114.85	46.54	50	7.11
75	-214.84	-211.13	1.73	50	3.80
75	-214.84	-178.47	16.93	50	3.77
75	-214.84	-177.41	17.42	50	3.75
75	-214.84	-202.35	5.81	50	4.69
75	-214.84	-195.85	8.84	50	3.19
75	-214.84	-186.69	13.10	50	2.39
75	-214.84	-120.41	43.95	50	3.17
75	-214.84	-128.79	40.05	50	1.91
75	-214.84	-119.82	44.23	50	5.92
75	-214.84	-214.84	-0.00	50	1.80
75	-214.84	-184.20	14.26	50	11.30
75	-214.84	-180.34	16.05	50	11.56
Atoms	Optimal	Found	Error	Gen	Time
76	-217.09	-187.31	13.72	50	7.38
76	-217.09	-191.55	11.76	50	7.41
76	-217.09	-176.98	18.48	50	7.41
76	-217.09	-112.37	48.24	50	7.27
76	-217.09	-113.56	47.69	50	7.52
76	-217.09	-109.91	49.37	50	7.50
76	-217.09	-213.36	1.72	50	3.94
76	-217.09	-184.39	15.06	50	3.98
76	-217.09	-180.02	17.08	50	4.00
76	-217.09	-199.14	8.27	50	6.66

76	-217.09	-199.08	8.30	50	5.28
76	-217.09	-190.51	12.24	50	2.70
76	-217.09	-116.74	46.23	50	3.12
76	-217.09	-129.45	40.37	50	2.38
76	-217.09	-119.91	44.77	50	1.92
76	-217.09	-217.09	-0.00	50	1.78
76	-217.09	-189.08	12.90	50	5.70
76	-217.09	-183.18	15.62	50	11.61
Atoms	Optimal	Found	Error	Gen	Time
77	-220.41	-196.16	11.00	50	7.78
77	-220.41	-183.01	16.97	50	7.73
77	-220.41	-171.33	22.27	50	7.80
77	-220.41	-112.01	49.18	50	7.64
77	-220.41	-105.04	52.34	50	7.62
77	-220.41	-111.95	49.21	50	7.61
77	-220.41	-216.49	1.78	50	4.11
77	-220.41	-184.92	16.10	50	4.12
77	-220.41	-181.35	17.72	50	4.05
77	-220.41	-212.36	3.65	50	2.45
77	-220.41	-190.13	13.74	50	10.12
77	-220.41	-186.46	15.40	50	9.69
77	-220.41	-115.68	47.51	50	4.64
77	-220.41	-109.52	50.31	50	2.16
77	-220.41	-118.41	46.28	50	3.88
77	-220.41	-220.41	-0.00	50	1.83
77	-220.41	-189.82	13.88	50	13.52
77	-220.41	-184.47	16.31	50	10.48
Atoms	Optimal	Found	Error	Gen	Time
78	-223.76	-195.20	12.76	50	8.05
78	-223.76	-198.77	11.17	50	8.00
78	-223.76	-179.14	19.94	50	8.09
78	-223.76	117.99	152.73	50	7.92
78	-223.76	-121.33	45.78	50	7.99
78	-223.76	-104.87	53.13	50	7.98
78	-223.76	-219.62	1.85	50	4.20
78	-223.76	-187.66	16.13	50	4.24
78	-223.76	-197.39	11.78	50	4.20
78	-223.76	-201.03	10.16	50	2.53
78	-223.76	-208.26	6.93	50	2.97
78	-223.76	-191.31	14.50	50	6.51
78	-223.76	65.89	129.45	50	11.05
78	-223.76	-128.87	42.41	50	2.06
78	-223.76	-107.90	51.78	50	2.00
78	-223.76	-223.76	-0.00	50	2.00
78	-223.76	-191.76	14.30	50	11.89

78	-223.76	-203.66	8.98	50	5.20
Atoms	Optimal	Found	Error	Gen	Time
79	-226.94	-197.93	12.78	50	8.44
79	-226.94	-189.32	16.57	50	8.28
79	-226.94	-188.15	17.09	50	8.36
79	-226.94	-125.34	44.77	50	8.27
79	-226.94	-122.33	46.10	50	8.41
79	-226.94	-122.85	45.87	50	8.25
79	-226.94	-222.55	1.93	50	4.44
79	-226.94	-189.23	16.62	50	4.47
79	-226.94	-199.72	11.99	50	4.48
79	-226.94	-212.75	6.25	50	4.81
79	-226.94	-193.80	14.60	50	10.75
79	-226.94	-200.67	11.57	50	6.41
79	-226.94	-138.10	39.15	50	2.22
79	-226.94	-129.63	42.88	50	2.09
79	-226.94	-129.68	42.86	50	4.36
79	-226.94	-226.94	-0.00	50	2.14
79	-226.94	-193.54	14.72	50	10.36
79	-226.94	-206.02	9.22	50	3.52
Atoms	Optimal	Found	Error	Gen	Time
80	-230.41	-205.09	10.99	50	8.70
80	-230.41	-208.24	9.62	50	8.69
80	-230.41	-185.01	19.71	50	8.67
80	-230.41	-115.53	49.86	50	8.67
80	-230.41	481.14	308.82	50	8.66
80	-230.41	-117.26	49.11	50	8.56
80	-230.41	-225.88	1.97	50	4.56
80	-230.41	-193.26	16.12	50	4.58
80	-230.41	-200.46	13.00	50	4.58
80	-230.41	-222.57	3.41	50	5.70
80	-230.41	-214.47	6.92	50	2.69
80	-230.41	-196.97	14.52	50	2.42
80	-230.41	-118.25	48.68	50	14.81
80	-230.41	261.01	213.28	50	5.00
80	-230.41	-126.84	44.95	50	2.36
80	-230.41	-230.41	-0.00	50	2.77
80	-230.41	-197.39	14.33	50	11.45
80	-230.41	-208.91	9.33	50	3.12
Atoms	Optimal	Found	Error	Gen	Time
81	-232.66	-204.38	12.15	50	9.05
81	-232.66	-213.09	8.41	50	9.19
81	-232.66	-180.94	22.23	50	9.02
81	-232.66	-118.75	48.96	50	8.95
81	-232.66	-108.94	53.17	50	8.88

81	-232.66	-129.04	44.54	50	8.95
81	-232.66	-228.13	1.95	50	4.72
81	-232.66	-194.48	16.41	50	4.72
81	-232.66	-197.98	14.91	50	4.66
81	-232.66	-215.39	7.42	50	7.14
81	-232.66	-216.51	6.94	50	6.55
81	-232.66	-194.39	16.45	50	4.83
81	-232.66	-128.48	44.78	50	3.02
81	-232.66	-111.41	52.11	50	9.12
81	-232.66	-136.71	41.24	50	4.23
81	-232.66	-232.66	-0.00	50	2.27
81	-232.66	-200.88	13.66	50	8.70
81	-232.66	-205.05	11.86	50	10.67
Atoms	Optimal	Found	Error	Gen	Time
82	-235.99	-206.13	12.66	50	9.36
82	-235.99	-198.88	15.73	50	9.33
82	-235.99	-189.39	19.75	50	9.38
82	-235.99	-121.41	48.56	50	9.30
82	-235.99	-117.67	50.14	50	9.30
82	-235.99	-126.75	46.29	50	9.25
82	-235.99	-231.25	2.01	50	4.86
82	-235.99	-196.41	16.77	50	4.97
82	-235.99	-201.21	14.74	50	4.94
82	-235.99	-221.33	6.21	50	3.33
82	-235.99	-204.76	13.24	50	11.14
82	-235.99	-202.67	14.12	50	2.23
82	-235.99	-131.73	44.18	50	3.11
82	-235.99	-124.53	47.23	50	4.09
82	-235.99	-126.53	46.38	50	29.70
82	-235.99	-235.99	-0.00	50	3.02
82	-235.99	-201.91	14.44	50	12.27
82	-235.99	-208.17	11.79	50	12.11
Atoms	Optimal	Found	Error	Gen	Time
83	-239.35	-207.39	13.35	50	9.61
83	-239.35	-211.63	11.58	50	9.66
83	-239.35	-185.14	22.65	50	9.69
83	-239.35	-126.44	47.18	50	9.61
83	-239.35	-122.99	48.62	50	9.62
83	-239.35	-140.80	41.17	50	9.59
83	-239.35	-234.52	2.02	50	5.03
83	-239.35	-196.76	17.79	50	5.06
83	-239.35	-203.38	15.03	50	5.05
83	-239.35	-223.74	6.52	50	3.31
83	-239.35	-220.92	7.70	50	5.74
83	-239.35	-191.26	20.09	50	11.34

83	-239.35	-136.33	43.04	50	2.47
83	-239.35	-136.40	43.01	50	2.69
83	-239.35	-156.45	34.64	50	2.33
83	-239.35	-239.35	-0.00	50	2.38
83	-239.35	-203.17	15.12	50	14.97
83	-239.35	-210.42	12.09	50	10.92
Atoms	Optimal	Found	Error	Gen	Time
84	-242.71	-216.37	10.85	50	10.06
84	-242.71	-208.19	14.22	50	9.98
84	-242.71	-191.66	21.03	50	10.02
84	-242.71	-128.74	46.96	50	9.97
84	-242.71	-121.16	50.08	50	10.02
84	-242.71	-136.03	43.96	50	9.95
84	-242.71	-237.77	2.04	50	5.25
84	-242.71	-199.17	17.94	50	5.27
84	-242.71	-209.75	13.58	50	5.28
84	-242.71	-221.86	8.59	50	7.75
84	-242.71	-216.23	10.91	50	11.17
84	-242.71	-201.42	17.01	50	5.00
84	-242.71	-132.65	45.35	50	6.98
84	-242.71	-126.79	47.76	50	4.22
84	-242.71	-147.99	39.03	50	2.34
84	-242.71	-242.71	-0.00	50	2.50
84	-242.71	-205.68	15.26	50	12.28
84	-242.71	-213.50	12.04	50	9.62
Atoms	Optimal	Found	Error	Gen	Time
85	-245.98	-230.33	6.36	50	10.47
85	-245.98	-220.26	10.46	50	10.47
85	-245.98	-203.99	17.07	50	10.65
85	-245.98	-113.81	53.73	50	10.55
85	-245.98	-119.71	51.33	50	10.33
85	-245.98	-120.58	50.98	50	10.38
85	-245.98	-240.96	2.04	50	5.48
85	-245.98	-197.15	19.85	50	5.50
85	-245.98	-210.39	14.47	50	5.47
85	-245.98	-240.29	2.31	50	4.44
85	-245.98	-225.04	8.52	50	7.88
85	-245.98	-214.23	12.91	50	4.30
85	-245.98	-127.98	47.97	50	3.41
85	-245.98	-126.50	48.57	50	7.36
85	-245.98	-128.90	47.60	50	2.52
85	-245.98	-245.98	-0.00	50	2.45
85	-245.98	-210.28	14.52	50	7.27
85	-245.98	-215.30	12.48	50	7.80
Atoms	Optimal	Found	Error	Gen	Time

86	-248.24	-216.91	12.62	50	10.95
86	-248.24	-214.48	13.60	50	11.05
86	-248.24	-188.35	24.13	50	10.81
86	-248.24	-125.52	49.43	50	10.73
86	-248.24	-114.43	53.90	50	10.69
86	-248.24	-131.23	47.14	50	10.69
86	-248.24	-243.20	2.03	50	5.72
86	-248.24	-228.48	7.96	50	5.66
86	-248.24	-210.03	15.39	50	5.70
86	-248.24	-234.84	5.40	50	4.75
86	-248.24	-220.69	11.10	50	5.91
86	-248.24	-199.03	19.82	50	9.30
86	-248.24	-142.42	42.63	50	8.41
86	-248.24	-118.00	52.47	50	9.59
86	-248.24	-136.04	45.20	50	3.50
86	-248.24	-248.24	-0.00	50	2.59
86	-248.24	-236.08	4.90	50	2.89
86	-248.24	-213.99	13.80	50	9.70
Atoms	Optimal	Found	Error	Gen	Time
87	-251.57	-221.75	11.86	50	11.00
87	-251.57	-229.27	8.86	50	11.08
87	-251.57	-207.85	17.38	50	11.12
87	-251.57	-109.64	56.42	50	11.14
87	-251.57	-131.32	47.80	50	11.11
87	-251.57	-131.55	47.71	50	11.03
87	-251.57	-246.41	2.05	50	5.86
87	-251.57	-212.28	15.62	50	5.89
87	-251.57	-208.08	17.29	50	5.94
87	-251.57	-241.07	4.17	50	3.16
87	-251.57	-234.23	6.89	50	6.76
87	-251.57	-216.55	13.92	50	6.39
87	-251.57	-110.21	56.19	50	4.25
87	-251.57	-145.99	41.97	50	2.69
87	-251.57	-140.65	44.09	50	2.97
87	-251.57	-251.57	-0.00	50	2.67
87	-251.57	-221.15	12.09	50	15.31
87	-251.57	-220.23	12.46	50	5.45
Atoms	Optimal	Found	Error	Gen	Time
88	-254.94	-212.87	16.50	50	11.47
88	-254.94	-209.45	17.85	50	11.45
88	-254.94	-201.19	21.08	50	11.44
88	-254.94	-127.85	49.85	50	11.34
88	-254.94	-131.02	48.61	50	11.44
88	-254.94	-129.34	49.27	50	11.34
88	-254.94	-249.70	2.06	50	6.00

88	-254.94	-221.31	13.19	50	6.06
88	-254.94	-210.71	17.35	50	6.09
88	-254.94	-228.92	10.21	50	13.00
88	-254.94	-219.36	13.96	50	15.16
88	-254.94	-209.58	17.79	50	3.81
88	-254.94	-140.73	44.80	50	2.81
88	-254.94	-138.03	45.86	50	4.39
88	-254.94	-135.96	46.67	50	2.94
88	-254.94	-254.94	-0.00	50	2.72
88	-254.94	-228.77	10.27	50	10.89
88	-254.94	-222.71	12.64	50	4.50
Atoms	Optimal	Found	Error	Gen	Time
89	-258.30	-212.90	17.58	50	11.92
89	-258.30	-222.38	13.91	50	11.86
89	-258.30	-197.11	23.69	50	11.91
89	-258.30	-134.97	47.75	50	11.73
89	-258.30	-140.27	45.69	50	11.90
89	-258.30	-122.92	52.41	50	11.91
89	-258.30	-252.98	2.06	50	6.31
89	-258.30	-223.36	13.53	50	6.25
89	-258.30	-213.93	17.18	50	6.28
89	-258.30	-225.87	12.56	50	9.38
89	-258.30	-236.05	8.61	50	3.83
89	-258.30	-208.98	19.09	50	4.22
89	-258.30	-149.79	42.01	50	3.28
89	-258.30	-151.25	41.45	50	3.23
89	-258.30	-128.65	50.19	50	3.78
89	-258.30	-258.30	-0.00	50	2.97
89	-258.30	-231.11	10.52	50	11.45
89	-258.30	-226.79	12.20	50	3.48
Atoms	Optimal	Found	Error	Gen	Time
90	-261.67	-239.37	8.52	50	12.30
90	-261.67	-218.00	16.69	50	12.30
90	-261.67	-200.71	23.30	50	12.31
90	-261.67	-136.40	47.87	50	12.19
90	-261.67	2046.81	882.22	50	12.36
90	-261.67	-133.51	48.98	50	12.23
90	-261.67	-256.21	2.08	50	6.58
90	-261.67	-242.65	7.27	50	6.62
90	-261.67	-210.75	19.46	50	6.49
90	-261.67	-254.00	2.93	50	4.06
90	-261.67	-226.75	13.35	50	9.69
90	-261.67	-216.67	17.20	50	3.89
90	-261.67	-143.11	45.31	50	4.42
90	-261.67	249.03	195.17	50	7.83

90	-261.67	-143.76	45.06	50	4.44
90	-261.67	-261.67	-0.00	50	3.00
90	-261.67	-249.39	4.69	50	3.09
90	-261.67	-218.73	16.41	50	12.17
Atoms	Optimal	Found	Error	Gen	Time
91	-264.93	-214.16	19.16	50	12.83
91	-264.93	-214.43	19.06	50	12.92
91	-264.93	-211.14	20.31	50	13.02
91	-264.93	-141.98	46.41	50	12.78
91	-264.93	-147.63	44.27	50	12.69
91	-264.93	-129.25	51.21	50	12.75
91	-264.93	-259.33	2.11	50	6.74
91	-264.93	-244.21	7.82	50	6.80
91	-264.93	-211.60	20.13	50	6.76
91	-264.93	-227.30	14.21	50	13.69
91	-264.93	-231.23	12.72	50	4.22
91	-264.93	-225.33	14.95	50	4.53
91	-264.93	-151.59	42.78	50	3.27
91	-264.93	-158.06	40.34	50	4.27
91	-264.93	-140.40	47.01	50	3.27
91	-264.93	-264.93	-0.00	50	3.03
91	-264.93	-251.38	5.12	50	4.34
91	-264.93	-222.08	16.18	50	11.12
Atoms	Optimal	Found	Error	Gen	Time
92	-267.17	-241.55	9.59	50	13.31
92	-267.17	-239.64	10.30	50	13.12
92	-267.17	-204.92	23.30	50	13.08
92	-267.17	-135.37	49.33	50	13.00
92	-267.17	-144.69	45.84	50	13.02
92	-267.17	-160.02	40.11	50	13.03
92	-267.17	-261.53	2.11	50	6.91
92	-267.17	-247.34	7.42	50	6.94
92	-267.17	-211.94	20.67	50	6.92
92	-267.17	-252.16	5.62	50	4.31
92	-267.17	-251.92	5.71	50	3.67
92	-267.17	-220.78	17.36	50	3.47
92	-267.17	-138.67	48.10	50	13.20
92	-267.17	-152.86	42.79	50	3.38
92	-267.17	-171.13	35.95	50	3.33
92	-267.17	-267.17	-0.00	50	3.19
92	-267.17	-251.60	5.83	50	5.11
92	-267.17	-222.01	16.90	50	5.92
Atoms	Optimal	Found	Error	Gen	Time
93	-270.49	-241.58	10.69	50	13.61
93	-270.49	-225.14	16.76	50	13.69

93	-270.49	-224.81	16.89	50	13.53
93	-270.49	-134.16	50.40	50	13.45
93	-270.49	-133.41	50.68	50	13.52
93	-270.49	-145.51	46.21	50	13.39
93	-270.49	-264.61	2.17	50	7.17
93	-270.49	-250.01	7.57	50	7.17
93	-270.49	-227.19	16.01	50	7.08
93	-270.49	-257.70	4.73	50	4.42
93	-270.49	-232.26	14.13	50	12.92
93	-270.49	-235.89	12.79	50	7.52
93	-270.49	-138.75	48.70	50	5.08
93	-270.49	-138.48	48.80	50	3.56
93	-270.49	-164.00	39.37	50	3.28
93	-270.49	-270.49	-0.00	50	3.41
93	-270.49	-255.15	5.67	50	4.20
93	-270.49	-231.38	14.46	50	6.59
Atoms	Optimal	Found	Error	Gen	Time
94	-273.84	-248.39	9.29	50	14.08
94	-273.84	-250.27	8.61	50	14.11
94	-273.84	-227.69	16.85	50	14.09
94	-273.84	-144.58	47.20	50	13.83
94	-273.84	-146.26	46.59	50	14.00
94	-273.84	-146.75	46.41	50	13.95
94	-273.84	-267.67	2.25	50	7.45
94	-273.84	-251.75	8.07	50	7.42
94	-273.84	-229.79	16.09	50	7.41
94	-273.84	-266.58	2.65	50	3.36
94	-273.84	-258.12	5.74	50	3.73
94	-273.84	-236.55	13.62	50	5.67
94	-273.84	-157.70	42.41	50	3.78
94	-273.84	-157.17	42.61	50	3.59
94	-273.84	-158.81	42.01	50	4.08
94	-273.84	-273.84	-0.00	50	3.23
94	-273.84	-258.59	5.57	50	3.70
94	-273.84	-234.58	14.34	50	6.48
Atoms	Optimal	Found	Error	Gen	Time
95	-277.23	-231.40	16.53	50	14.45
95	-277.23	-244.41	11.84	50	14.47
95	-277.23	-209.75	24.34	50	14.52
95	-277.23	-135.64	51.07	50	14.44
95	-277.23	-160.47	42.12	50	14.48
95	-277.23	-129.04	53.46	50	14.47
95	-277.23	-270.80	2.32	50	7.61
95	-277.23	-257.86	6.99	50	7.70
95	-277.23	-233.71	15.70	50	7.64

95	-277.23	-238.70	13.90	50	12.39
95	-277.23	-251.10	9.42	50	13.11
95	-277.23	-221.47	20.11	50	12.03
95	-277.23	-144.33	47.94	50	16.20
95	-277.23	-165.84	40.18	50	4.20
95	-277.23	-138.95	49.88	50	3.77
95	-277.23	-277.23	-0.00	50	3.47
95	-277.23	-264.72	4.51	50	4.00
95	-277.23	-237.23	14.43	50	12.14
Atoms	Optimal	Found	Error	Gen	Time
96	-280.50	-240.34	14.32	50	15.16
96	-280.50	-236.50	15.69	50	15.02
96	-280.50	-222.58	20.65	50	15.05
96	-280.50	-141.05	49.71	50	14.83
96	-280.50	-138.55	50.61	50	15.06
96	-280.50	-129.95	53.67	50	14.88
96	-280.50	-273.91	2.35	50	7.91
96	-280.50	-258.28	7.92	50	7.91
96	-280.50	-246.42	12.15	50	7.98
96	-280.50	-256.04	8.72	50	7.66
96	-280.50	-244.87	12.70	50	14.33
96	-280.50	-239.63	14.57	50	5.75
96	-280.50	-146.79	47.67	50	7.78
96	-280.50	-149.34	46.76	50	5.83
96	-280.50	-141.82	49.44	50	3.97
96	-280.50	-280.50	-0.00	50	3.89
96	-280.50	-266.05	5.15	50	3.88
96	-280.50	-259.76	7.39	50	4.20
Atoms	Optimal	Found	Error	Gen	Time
97	-282.75	-253.62	10.30	50	15.38
97	-282.75	-262.38	7.20	50	15.52
97	-282.75	-228.90	19.04	50	15.53
97	-282.75	-151.09	46.56	50	15.25
97	-282.75	-142.09	49.75	50	15.33
97	-282.75	-151.53	46.41	50	15.42
97	-282.75	-276.16	2.33	50	8.19
97	-282.75	-261.39	7.55	50	8.14
97	-282.75	-249.29	11.84	50	8.19
97	-282.75	-270.32	4.40	50	4.91
97	-282.75	-268.77	4.94	50	4.78
97	-282.75	-243.01	14.06	50	5.09
97	-282.75	-155.04	45.17	50	4.61
97	-282.75	-147.86	47.71	50	5.09
97	-282.75	-163.46	42.19	50	3.91
97	-282.75	-282.75	-0.00	50	3.88

97	-282.75	-268.76	4.95	50	4.62
97	-282.75	-261.96	7.35	50	4.45
Atoms	Optimal	Found	Error	Gen	Time
98	-286.08	-233.96	18.22	50	16.16
98	-286.08	-246.25	13.92	50	16.17
98	-286.08	-224.39	21.57	50	16.00
98	-286.08	-144.21	49.59	50	15.86
98	-286.08	-163.45	42.87	50	15.86
98	-286.08	-138.38	51.63	50	15.89
98	-286.08	-279.10	2.44	50	8.41
98	-286.08	-254.57	11.02	50	8.41
98	-286.08	-252.09	11.88	50	8.30
98	-286.08	-248.26	13.22	50	18.83
98	-286.08	-253.76	11.30	50	12.66
98	-286.08	-249.18	12.90	50	4.03
98	-286.08	-155.52	45.64	50	3.91
98	-286.08	-170.18	40.51	50	4.61
98	-286.08	-153.84	46.22	50	4.42
98	-286.08	-286.08	-0.00	50	4.00
98	-286.08	-267.07	6.65	50	5.16
98	-286.08	-265.02	7.36	50	4.27
Atoms	Optimal	Found	Error	Gen	Time
99	-289.45	-268.89	7.10	50	16.58
99	-289.45	-242.63	16.18	50	16.47
99	-289.45	-222.96	22.97	50	16.48
99	-289.45	24506.51	8566.54	50	16.36
99	-289.45	-143.74	50.34	50	16.19
99	-289.45	-145.43	49.76	50	16.14
99	-289.45	-282.31	2.47	50	8.64
99	-289.45	-258.29	10.77	50	8.62
99	-289.45	-245.84	15.07	50	8.52
99	-289.45	-280.13	3.22	50	4.83
99	-289.45	-259.43	10.37	50	7.72
99	-289.45	-244.86	15.41	50	4.28
99	-289.45	24487.94	8560.12	50	51.62
99	-289.45	-153.75	46.88	50	3.80
99	-289.45	-156.91	45.79	50	5.00
99	-289.45	-289.45	-0.00	50	3.92
99	-289.45	-270.47	6.56	50	5.30
99	-289.45	-258.39	10.73	50	6.88
Atoms	Optimal	Found	Error	Gen	Time
100	-292.81	-242.24	17.27	50	16.91
100	-292.81	-242.06	17.33	50	16.88
100	-292.81	-239.83	18.09	50	16.94
100	-292.81	-156.43	46.58	50	16.69

100	-292.81	-143.79	50.89	50	17.06
100	-292.81	-143.53	50.98	50	16.75
100	-292.81	-285.52	2.49	50	8.84
100	-292.81	-259.86	11.25	50	8.86
100	-292.81	-248.82	15.02	50	8.78
100	-292.81	-254.59	13.05	50	14.59
100	-292.81	-252.00	13.94	50	9.56
100	-292.81	-259.29	11.45	50	4.28
100	-292.81	-164.08	43.96	50	4.23
100	-292.81	-163.52	44.15	50	4.27
100	-292.81	-154.78	47.14	50	4.38
100	-292.81	-292.81	-0.00	50	3.97
100	-292.81	-275.82	5.80	50	5.05
100	-292.81	-263.20	10.11	50	5.06
Atoms	Optimal	Found	Error	Gen	Time
101	-296.17	-266.62	9.98	50	17.59
101	-296.17	-250.44	15.44	50	17.61
101	-296.17	-234.82	20.71	50	17.67
101	-296.17	-160.66	45.75	50	17.55
101	-296.17	-154.08	47.98	50	17.44
101	-296.17	-153.54	48.16	50	17.69
101	-296.17	-288.67	2.53	50	9.30
101	-296.17	-261.57	11.68	50	9.28
101	-296.17	-250.88	15.29	50	9.22
101	-296.17	-285.84	3.49	50	4.49
101	-296.17	-261.00	11.87	50	16.33
101	-296.17	-251.97	14.92	50	4.62
101	-296.17	-163.99	44.63	50	4.08
101	-296.17	-159.97	45.99	50	4.86
101	-296.17	-162.79	45.04	50	5.81
101	-296.17	-296.17	-0.00	50	4.34
101	-296.17	-278.00	6.13	50	4.47
101	-296.17	-263.33	11.09	50	6.69
Atoms	Optimal	Found	Error	Gen	Time
102	-299.45	-250.88	16.22	50	18.16
102	-299.45	-254.41	15.04	50	18.17
102	-299.45	-239.56	20.00	50	18.22
102	-299.45	-152.03	49.23	50	17.83
102	-299.45	-145.50	51.41	50	17.86
102	-299.45	2072.67	792.16	50	17.77
102	-299.45	-291.81	2.55	50	9.39
102	-299.45	-272.01	9.16	50	9.44
102	-299.45	-245.00	18.18	50	9.44
102	-299.45	-269.21	10.10	50	19.91
102	-299.45	-261.91	12.54	50	16.83

102	-299.45	-252.65	15.63	50	4.50
102	-299.45	-164.24	45.15	50	6.48
102	-299.45	-152.28	49.15	50	5.36
102	-299.45	1559.36	620.74	50	45.83
102	-299.45	-299.45	-0.00	50	4.28
102	-299.45	-282.40	5.69	50	4.83
102	-299.45	-251.16	16.13	50	6.97
Atoms	Optimal	Found	Error	Gen	Time
103	-301.70	-258.59	14.29	50	18.62
103	-301.70	-264.56	12.31	50	18.50
103	-301.70	-231.80	23.17	50	18.56
103	-301.70	-144.23	52.19	50	18.25
103	-301.70	-152.61	49.42	50	18.27
103	-301.70	-153.98	48.96	50	18.30
103	-301.70	-294.06	2.53	50	9.70
103	-301.70	-267.52	11.33	50	9.69
103	-301.70	-247.14	18.08	50	9.69
103	-301.70	-283.30	6.10	50	4.84
103	-301.70	-280.67	6.97	50	4.99
103	-301.70	-252.38	16.35	50	10.02
103	-301.70	-156.16	48.24	50	5.06
103	-301.70	-166.57	44.79	50	4.28
103	-301.70	-174.27	42.24	50	4.81
103	-301.70	-301.70	-0.00	50	4.31
103	-301.70	-282.79	6.27	50	4.69
103	-301.70	-253.46	15.99	50	6.27
Atoms	Optimal	Found	Error	Gen	Time
104	-305.01	-253.92	16.75	50	18.98
104	-305.01	-258.39	15.29	50	19.03
104	-305.01	-242.89	20.37	50	18.98
104	-305.01	-162.70	46.66	50	18.78
104	-305.01	-156.01	48.85	50	18.83
104	-305.01	-145.70	52.23	50	18.83
104	-305.01	-297.12	2.59	50	9.95
104	-305.01	-265.15	13.07	50	10.02
104	-305.01	-249.20	18.30	50	9.97
104	-305.01	-265.05	13.10	50	14.09
104	-305.01	-268.56	11.95	50	13.70
104	-305.01	-254.72	16.49	50	8.06
104	-305.01	-179.02	41.31	50	4.67
104	-305.01	-165.15	45.86	50	4.78
104	-305.01	-154.43	49.37	50	5.01
104	-305.01	-305.01	-0.00	50	4.44
104	-305.01	-281.84	7.60	50	5.83
104	-305.01	-255.82	16.13	50	7.25

Atoms	Optimal	Found	Error	Gen	Time
105	-308.36	-264.31	14.29	50	19.55
105	-308.36	-269.10	12.73	50	19.48
105	-308.36	-249.11	19.22	50	19.45
105	-308.36	-165.03	46.48	50	19.31
105	-308.36	-159.43	48.30	50	19.41
105	-308.36	-144.95	52.99	50	19.23
105	-308.36	-300.37	2.59	50	10.22
105	-308.36	-268.04	13.08	50	10.22
105	-308.36	-261.07	15.34	50	10.17
105	-308.36	-291.54	5.45	50	13.53
105	-308.36	-285.00	7.58	50	5.72
105	-308.36	-270.21	12.37	50	4.70
105	-308.36	-174.40	43.44	50	5.17
105	-308.36	-165.83	46.22	50	6.39
105	-308.36	-151.07	51.01	50	5.36
105	-308.36	-308.36	-0.00	50	4.73
105	-308.36	-285.69	7.35	50	8.19
105	-308.36	-265.55	13.88	50	13.27
Atoms	Optimal	Found	Error	Gen	Time
106	-311.77	-287.43	7.81	50	19.97
106	-311.77	-258.79	16.99	50	19.97
106	-311.77	-244.28	21.65	50	19.88
106	-311.77	-155.89	50.00	50	19.75
106	-311.77	-163.41	47.59	50	19.72
106	-311.77	-163.83	47.45	50	19.81
106	-311.77	-303.59	2.63	50	10.48
106	-311.77	-273.32	12.33	50	10.48
106	-311.77	-263.57	15.46	50	10.48
106	-311.77	-303.21	2.75	50	5.23
106	-311.77	-267.54	14.19	50	11.25
106	-311.77	-270.28	13.31	50	11.27
106	-311.77	-164.35	47.28	50	4.94
106	-311.77	-166.35	46.64	50	7.30
106	-311.77	-170.25	45.39	50	5.49
106	-311.77	-311.77	-0.00	50	4.92
106	-311.77	-290.31	6.88	50	9.91
106	-311.77	-267.04	14.35	50	24.80
Atoms	Optimal	Found	Error	Gen	Time
107	-315.11	-253.95	19.41	50	20.56
107	-315.11	-279.98	11.15	50	20.52
107	-315.11	-243.59	22.70	50	20.52
107	-315.11	-158.09	49.83	50	20.34
107	-315.11	-164.48	47.80	50	20.33
107	-315.11	-161.75	48.67	50	20.34

107	-315.11	-306.82	2.63	50	10.78
107	-315.11	-280.12	11.11	50	10.78
107	-315.11	-264.55	16.05	50	10.81
107	-315.11	-266.97	15.28	50	14.23
107	-315.11	-290.88	7.69	50	5.16
107	-315.11	-265.73	15.67	50	7.26
107	-315.11	-183.25	41.85	50	4.91
107	-315.11	-176.03	44.14	50	6.38
107	-315.11	-173.66	44.89	50	4.81
107	-315.11	-315.11	-0.00	50	5.08
107	-315.11	-292.78	7.09	50	8.27
107	-315.11	-267.97	14.96	50	28.33
Atoms	Optimal	Found	Error	Gen	Time
108	-318.40	-285.11	10.45	50	21.16
108	-318.40	-253.49	20.39	50	21.12
108	-318.40	-247.48	22.27	50	21.06
108	-318.40	-161.83	49.17	50	20.86
108	-318.40	-144.32	54.67	50	20.91
108	-318.40	-162.04	49.11	50	20.94
108	-318.40	-309.97	2.65	50	11.11
108	-318.40	-283.42	10.98	50	11.14
108	-318.40	-269.89	15.24	50	11.08
108	-318.40	-300.61	5.59	50	6.41
108	-318.40	-271.94	14.59	50	17.05
108	-318.40	-261.80	17.78	50	14.12
108	-318.40	-172.13	45.94	50	5.47
108	-318.40	-153.69	51.73	50	5.28
108	-318.40	-174.43	45.21	50	7.17
108	-318.40	-318.40	-0.00	50	4.86
108	-318.40	-294.53	7.50	50	10.50
108	-318.40	-287.10	9.83	50	13.56
Atoms	Optimal	Found	Error	Gen	Time
109	-320.62	-269.10	16.07	50	21.72
109	-320.62	-273.23	14.78	50	21.67
109	-320.62	-248.11	22.62	50	21.72
109	-320.62	-170.93	46.69	50	21.42
109	-320.62	-169.42	47.16	50	21.45
109	-320.62	-171.47	46.52	50	21.41
109	-320.62	-312.20	2.63	50	11.39
109	-320.62	-271.66	15.27	50	11.44
109	-320.62	-272.47	15.02	50	11.41
109	-320.62	-283.59	11.55	50	18.97
109	-320.62	-283.65	11.53	50	17.59
109	-320.62	-261.23	18.52	50	7.41
109	-320.62	-181.56	43.37	50	5.23

109	-320.62	-177.35	44.69	50	6.39
109	-320.62	-188.23	41.29	50	5.30
109	-320.62	-320.62	-0.00	50	5.16
109	-320.62	-297.24	7.29	50	5.64
109	-320.62	-289.99	9.55	50	14.16
Atoms	Optimal	Found	Error	Gen	Time
110	-323.94	-290.40	10.35	50	22.30
110	-323.94	-257.78	20.43	50	22.39
110	-323.94	-265.65	17.99	50	22.30
110	-323.94	-164.55	49.21	50	22.16
110	-323.94	3249.93	1103.24	50	22.05
110	-323.94	-157.60	51.35	50	22.14
110	-323.94	-315.25	2.68	50	11.75
110	-323.94	-281.97	12.96	50	11.73
110	-323.94	-274.72	15.19	50	11.72
110	-323.94	-313.56	3.21	50	5.34
110	-323.94	-279.47	13.73	50	15.14
110	-323.94	-282.92	12.66	50	7.59
110	-323.94	-173.69	46.38	50	5.39
110	-323.94	2012.51	721.25	50	57.67
110	-323.94	-163.98	49.38	50	6.75
110	-323.94	-323.94	-0.00	50	5.25
110	-323.94	-303.06	6.45	50	8.03
110	-323.94	-291.96	9.87	50	15.20
Atoms	Optimal	Found	Error	Gen	Time
111	-327.28	-273.56	16.41	50	22.88
111	-327.28	-277.34	15.26	50	22.97
111	-327.28	-261.11	20.22	50	22.92
111	-327.28	-159.20	51.36	50	22.72
111	-327.28	-186.90	42.89	50	22.67
111	-327.28	-172.24	47.37	50	22.69
111	-327.28	-318.41	2.71	50	12.02
111	-327.28	-285.77	12.68	50	12.06
111	-327.28	-267.73	18.20	50	12.00
111	-327.28	-285.99	12.62	50	8.67
111	-327.28	-286.82	12.36	50	14.33
111	-327.28	-274.17	16.23	50	7.27
111	-327.28	-168.35	48.56	50	5.66
111	-327.28	-194.05	40.71	50	7.42
111	-327.28	-181.49	44.55	50	5.24
111	-327.28	-327.28	-0.00	50	5.34
111	-327.28	-306.55	6.33	50	7.17
111	-327.28	-276.75	15.44	50	11.78
Atoms	Optimal	Found	Error	Gen	Time
112	-330.65	-297.80	9.93	50	23.50

112	-330.65	-270.82	18.09	50	23.50
112	-330.65	-260.27	21.29	50	23.53
112	-330.65	-177.10	46.44	50	23.36
112	-330.65	-170.85	48.33	50	23.34
112	-330.65	-149.34	54.83	50	23.31
112	-330.65	-321.38	2.80	50	12.36
112	-330.65	-290.37	12.18	50	12.36
112	-330.65	-271.00	18.04	50	12.38
112	-330.65	-319.02	3.52	50	5.69
112	-330.65	-283.57	14.24	50	17.70
112	-330.65	-275.82	16.58	50	11.42
112	-330.65	-190.81	42.29	50	6.31
112	-330.65	-195.23	40.95	50	5.97
112	-330.65	-166.34	49.69	50	9.94
112	-330.65	-330.65	-0.00	50	5.39
112	-330.65	-307.32	7.06	50	6.09
112	-330.65	-280.04	15.31	50	12.05
Atoms	Optimal	Found	Error	Gen	Time
113	-333.74	-295.81	11.36	50	24.28
113	-333.74	-282.47	15.36	50	24.31
113	-333.74	-264.71	20.68	50	24.33
113	-333.74	-171.22	48.70	50	24.14
113	-333.74	-165.31	50.47	50	24.33
113	-333.74	-160.12	52.02	50	23.92
113	-333.74	-324.49	2.77	50	12.69
113	-333.74	-285.90	14.33	50	12.70
113	-333.74	-271.67	18.60	50	12.67
113	-333.74	-317.39	4.90	50	6.11
113	-333.74	-297.51	10.86	50	15.55
113	-333.74	-277.52	16.84	50	8.66
113	-333.74	-191.24	42.70	50	6.88
113	-333.74	-184.92	44.59	50	6.03
113	-333.74	-166.06	50.24	50	5.95
113	-333.74	-333.74	-0.00	50	5.64
113	-333.74	-299.20	10.35	50	10.12
113	-333.74	-280.24	16.03	50	10.89
Atoms	Optimal	Found	Error	Gen	Time
114	-337.33	-285.74	15.29	50	24.95
114	-337.33	-295.34	12.45	50	24.88
114	-337.33	-275.23	18.41	50	24.70
114	-337.33	-165.28	51.00	50	24.52
114	-337.33	-151.31	55.14	50	24.48
114	-337.33	-159.05	52.85	50	24.52
114	-337.33	-327.50	2.91	50	13.00
114	-337.33	-295.66	12.35	50	12.98

114	-337.33	-289.11	14.30	50	13.02
114	-337.33	-306.86	9.03	50	15.39
114	-337.33	-309.61	8.22	50	6.58
114	-337.33	-293.74	12.92	50	6.45
114	-337.33	-176.30	47.74	50	6.11
114	-337.33	-157.91	53.19	50	6.11
114	-337.33	-165.30	51.00	50	7.19
114	-337.33	-337.33	-0.00	50	5.80
114	-337.33	-311.85	7.55	50	6.44
114	-337.33	-307.70	8.78	50	6.58
Atoms	Optimal	Found	Error	Gen	Time
115	-339.56	-281.24	17.17	50	25.38
115	-339.56	-297.15	12.49	50	25.45
115	-339.56	-278.38	18.02	50	25.39
115	-339.56	-159.31	53.09	50	25.05
115	-339.56	-174.16	48.71	50	25.14
115	-339.56	-166.74	50.90	50	25.06
115	-339.56	-329.75	2.89	50	13.33
115	-339.56	-298.03	12.23	50	13.31
115	-339.56	-291.90	14.04	50	13.36
115	-339.56	-292.78	13.78	50	24.42
115	-339.56	-312.80	7.88	50	16.83
115	-339.56	-287.77	15.25	50	13.34
115	-339.56	-165.36	51.30	50	11.19
115	-339.56	-183.91	45.84	50	6.47
115	-339.56	-178.73	47.37	50	6.58
115	-339.56	-339.56	-0.00	50	6.11
115	-339.56	-313.60	7.65	50	7.14
115	-339.56	-311.11	8.38	50	6.83
Atoms	Optimal	Found	Error	Gen	Time
116	-342.91	-283.63	17.29	50	26.00
116	-342.91	-294.84	14.02	50	25.97
116	-342.91	-282.23	17.70	50	26.02
116	-342.91	-177.72	48.17	50	25.73
116	-342.91	-178.11	48.06	50	25.77
116	-342.91	-170.58	50.26	50	25.77
116	-342.91	-332.72	2.97	50	13.66
116	-342.91	-307.10	10.44	50	13.69
116	-342.91	-294.91	14.00	50	13.69
116	-342.91	-300.76	12.29	50	18.28
116	-342.91	-303.81	11.40	50	10.12
116	-342.91	-299.31	12.72	50	7.30
116	-342.91	-191.81	44.06	50	6.38
116	-342.91	-191.24	44.23	50	6.11
116	-342.91	-191.64	44.11	50	6.52

116	-342.91	-342.91	-0.00	50	6.36
116	-342.91	-322.36	5.99	50	6.12
116	-342.91	-314.36	8.33	50	7.03
Atoms	Optimal	Found	Error	Gen	Time
117	-346.26	-282.75	18.34	50	26.77
117	-346.26	-296.48	14.38	50	26.77
117	-346.26	-292.76	15.45	50	26.70
117	-346.26	-155.46	55.10	50	26.48
117	-346.26	-188.15	45.66	50	26.50
117	-346.26	-167.73	51.56	50	26.52
117	-346.26	-335.95	2.98	50	14.03
117	-346.26	-310.12	10.44	50	14.05
117	-346.26	-302.27	12.70	50	14.05
117	-346.26	-297.16	14.18	50	17.78
117	-346.26	-307.40	11.22	50	21.81
117	-346.26	-307.21	11.28	50	9.70
117	-346.26	-159.12	54.05	50	27.64
117	-346.26	-200.23	42.18	50	6.86
117	-346.26	-177.42	48.76	50	6.62
117	-346.26	-346.26	-0.00	50	6.08
117	-346.26	-319.71	7.67	50	12.78
117	-346.26	-318.59	7.99	50	7.81
Atoms	Optimal	Found	Error	Gen	Time
118	-349.60	-289.19	17.28	50	27.44
118	-349.60	-292.33	16.38	50	27.53
118	-349.60	-293.40	16.08	50	27.84
118	-349.60	-169.34	51.56	50	27.69
118	-349.60	-199.98	42.80	50	27.38
118	-349.60	-167.76	52.01	50	27.34
118	-349.60	-339.17	2.98	50	14.56
118	-349.60	-312.29	10.67	50	14.66
118	-349.60	-305.22	12.70	50	14.64
118	-349.60	-308.98	11.62	50	15.56
118	-349.60	-308.55	11.74	50	10.30
118	-349.60	-309.29	11.53	50	7.39
118	-349.60	-184.70	47.17	50	6.84
118	-349.60	-214.99	38.50	50	6.64
118	-349.60	-176.84	49.42	50	7.62
118	-349.60	-349.60	-0.00	50	6.72
118	-349.60	-331.46	5.19	50	6.53
118	-349.60	-321.89	7.93	50	6.99
Atoms	Optimal	Found	Error	Gen	Time
119	-353.00	-305.43	13.48	50	28.59
119	-353.00	-294.87	16.47	50	28.38
119	-353.00	-259.49	26.49	50	28.47

119	-353.00	-171.19	51.50	50	28.09
119	-353.00	-175.02	50.42	50	28.45
119	-353.00	-170.98	51.56	50	28.30
119	-353.00	-342.35	3.02	50	14.91
119	-353.00	-314.63	10.87	50	14.91
119	-353.00	-307.49	12.89	50	14.95
119	-353.00	-333.01	5.66	50	10.00
119	-353.00	-310.62	12.01	50	9.81
119	-353.00	-291.07	17.54	50	7.44
119	-353.00	-186.85	47.07	50	6.70
119	-353.00	-189.21	46.40	50	6.80
119	-353.00	-186.92	47.05	50	7.80
119	-353.00	-353.00	-0.00	50	6.70
119	-353.00	-333.38	5.56	50	6.44
119	-353.00	-324.52	8.07	50	6.92
Atoms	Optimal	Found	Error	Gen	Time
120	-356.27	-310.42	12.87	50	29.16
120	-356.27	578145228051.49	162275544631.19	50	29.16
120	-356.27	-291.16	18.28	50	29.11
120	-356.27	-187.04	47.50	50	28.88
120	-356.27	2454.70	788.99	50	28.81
120	-356.27	-177.96	50.05	50	28.77
120	-356.27	-345.50	3.02	50	15.23
120	-356.27	-324.90	8.81	50	15.36
120	-356.27	-297.41	16.52	50	15.28
120	-356.27	-335.24	5.90	50	8.92
120	-356.27	287839771231.71	80791734335.67	50	92.59
120	-356.27	-302.86	14.99	50	13.53
120	-356.27	-199.85	43.91	50	6.74
120	-356.27	1958.68	649.77	50	77.88
120	-356.27	-193.79	45.61	50	7.01
120	-356.27	-356.27	-0.00	50	6.83
120	-356.27	-338.14	5.09	50	7.88
120	-356.27	-305.64	14.21	50	17.03
Atoms	Optimal	Found	Error	Gen	Time
121	-358.52	-301.89	15.80	50	29.94
121	-358.52	-331.65	7.49	50	30.02
121	-358.52	-297.97	16.89	50	29.95
121	-358.52	-168.41	53.03	50	29.55
121	-358.52	-173.34	51.65	50	29.62
121	-358.52	-178.47	50.22	50	29.72
121	-358.52	-347.75	3.00	50	15.77
121	-358.52	-331.66	7.49	50	15.62
121	-358.52	-300.74	16.12	50	15.77
121	-358.52	-314.68	12.23	50	23.88

121	-358.52	-340.21	5.11	50	7.09
121	-358.52	-318.00	11.30	50	7.80
121	-358.52	-179.41	49.96	50	7.33
121	-358.52	-184.93	48.42	50	6.97
121	-358.52	-206.04	42.53	50	8.14
121	-358.52	-358.52	-0.00	50	7.14
121	-358.52	-343.05	4.31	50	7.42
121	-358.52	-309.22	13.75	50	18.67
Atoms	Optimal	Found	Error	Gen	Time
122	-361.83	-326.10	9.87	50	30.56
122	-361.83	-300.23	17.02	50	30.66
122	-361.83	-290.46	19.73	50	30.80
122	-361.83	-179.58	50.37	50	30.56
122	-361.83	-186.61	48.43	50	30.23
122	-361.83	-183.66	49.24	50	30.25
122	-361.83	-350.85	3.04	50	15.98
122	-361.83	-331.33	8.43	50	16.05
122	-361.83	-303.90	16.01	50	16.00
122	-361.83	-351.09	2.97	50	7.95
122	-361.83	-313.59	13.33	50	27.14
122	-361.83	-312.69	13.58	50	7.92
122	-361.83	-190.74	47.29	50	7.45
122	-361.83	-196.37	45.73	50	7.44
122	-361.83	-199.84	44.77	50	8.11
122	-361.83	-361.83	-0.00	50	7.09
122	-361.83	-342.64	5.30	50	7.47
122	-361.83	-312.37	13.67	50	14.67
Atoms	Optimal	Found	Error	Gen	Time
123	-365.18	-298.27	18.32	50	31.56
123	-365.18	-300.40	17.74	50	31.55
123	-365.18	-299.90	17.88	50	32.00
123	-365.18	-175.70	51.89	50	30.84
123	-365.18	-190.97	47.71	50	31.23
123	-365.18	-196.28	46.25	50	31.09
123	-365.18	-354.11	3.03	50	16.64
123	-365.18	-334.59	8.38	50	16.61
123	-365.18	-306.93	15.95	50	16.56
123	-365.18	-317.14	13.16	50	15.39
123	-365.18	-316.86	13.23	50	8.16
123	-365.18	-315.45	13.62	50	8.81
123	-365.18	-186.45	48.94	50	10.33
123	-365.18	-207.59	43.15	50	9.72
123	-365.18	-208.63	42.87	50	7.44
123	-365.18	-365.18	-0.00	50	7.55
123	-365.18	-345.55	5.38	50	8.22

123	-365.18	-320.96	12.11	50	8.22
Atoms	Optimal	Found	Error	Gen	Time
124	-368.59	-297.86	19.19	50	32.06
124	-368.59	-305.89	17.01	50	32.22
124	-368.59	-291.92	20.80	50	32.08
124	-368.59	-179.31	51.35	50	32.23
124	-368.59	-196.99	46.56	50	32.39
124	-368.59	-169.34	54.06	50	32.67
124	-368.59	-357.35	3.05	50	17.03
124	-368.59	-336.37	8.74	50	16.86
124	-368.59	-309.89	15.93	50	16.88
124	-368.59	-309.41	16.06	50	10.39
124	-368.59	-315.98	14.27	50	27.81
124	-368.59	-315.39	14.43	50	8.86
124	-368.59	-190.74	48.25	50	8.09
124	-368.59	-216.68	41.21	50	7.91
124	-368.59	-182.14	50.59	50	9.09
124	-368.59	-368.59	-0.00	50	7.95
124	-368.59	-349.03	5.31	50	7.77
124	-368.59	-324.03	12.09	50	7.94
Atoms	Optimal	Found	Error	Gen	Time
125	-371.94	-305.40	17.89	50	33.14
125	-371.94	-326.39	12.25	50	33.08
125	-371.94	-306.10	17.70	50	33.19
125	-371.94	-168.30	54.75	50	32.66
125	-371.94	-177.28	52.34	50	32.69
125	-371.94	-195.09	47.55	50	32.77
125	-371.94	-360.59	3.05	50	17.42
125	-371.94	-338.53	8.98	50	17.77
125	-371.94	-312.23	16.05	50	17.58
125	-371.94	-319.03	14.23	50	27.08
125	-371.94	-342.12	8.02	50	18.14
125	-371.94	-320.16	13.92	50	7.80
125	-371.94	-182.92	50.82	50	8.52
125	-371.94	-186.52	49.85	50	8.38
125	-371.94	-210.00	43.54	50	7.80
125	-371.94	-371.94	-0.00	50	8.02
125	-371.94	-352.47	5.24	50	7.94
125	-371.94	-326.76	12.15	50	8.36
Atoms	Optimal	Found	Error	Gen	Time
126	-375.30	-329.61	12.18	50	34.05
126	-375.30	-328.98	12.34	50	34.00
126	-375.30	-304.44	18.88	50	33.89
126	-375.30	-186.23	50.38	50	33.80
126	-375.30	-174.35	53.54	50	33.92

126	-375.30	-184.11	50.94	50	34.03
126	-375.30	-363.78	3.07	50	18.17
126	-375.30	-347.68	7.36	50	17.92
126	-375.30	-318.33	15.18	50	17.97
126	-375.30	-358.26	4.54	50	8.36
126	-375.30	-343.17	8.56	50	11.89
126	-375.30	-331.49	11.68	50	9.50
126	-375.30	-200.85	46.48	50	8.83
126	-375.30	-198.65	47.07	50	9.53
126	-375.30	-196.44	47.66	50	8.09
126	-375.30	-375.30	-0.00	50	8.17
126	-375.30	-357.78	4.67	50	8.11
126	-375.30	-339.43	9.56	50	8.75
Atoms	Optimal	Found	Error	Gen	Time
127	-378.57	-317.12	16.23	50	35.17
127	-378.57	-336.96	10.99	50	34.95
127	-378.57	-311.32	17.77	50	35.33
127	-378.57	-179.41	52.61	50	34.73
127	-378.57	-188.44	50.22	50	34.34
127	-378.57	-190.83	49.59	50	34.12
127	-378.57	-366.85	3.10	50	18.33
127	-378.57	-347.22	8.28	50	18.27
127	-378.57	-320.75	15.27	50	18.09
127	-378.57	-346.80	8.39	50	10.73
127	-378.57	-351.57	7.13	50	9.45
127	-378.57	-327.94	13.37	50	8.64
127	-378.57	-186.87	50.64	50	8.33
127	-378.57	-202.82	46.42	50	9.88
127	-378.57	-214.82	43.26	50	18.59
127	-378.57	-378.57	-0.00	50	8.05
127	-378.57	-358.64	5.27	50	8.45
127	-378.57	-341.68	9.75	50	9.34
Atoms	Optimal	Found	Error	Gen	Time
128	-380.82	-327.27	14.06	50	35.83
128	-380.82	-315.34	17.19	50	35.80
128	-380.82	-293.23	23.00	50	35.72
128	-380.82	76599.63	20214.52	50	35.64
128	-380.82	-191.74	49.65	50	35.42
128	-380.82	-173.21	54.52	50	35.42
128	-380.82	-369.04	3.09	50	18.91
128	-380.82	-346.68	8.96	50	19.03
128	-380.82	-320.95	15.72	50	18.88
128	-380.82	-351.75	7.63	50	12.05
128	-380.82	-330.73	13.15	50	28.48
128	-380.82	-321.47	15.58	50	9.69

128	-380.82	12706.59	3436.66	50	70.70
128	-380.82	-201.99	46.96	50	8.66
128	-380.82	-195.66	48.62	50	8.53
128	-380.82	-380.82	-0.00	50	8.58
128	-380.82	-360.30	5.39	50	9.47
128	-380.82	-336.98	11.51	50	11.45
Atoms	Optimal	Found	Error	Gen	Time
129	-384.12	-317.75	17.28	50	36.41
129	-384.12	-336.30	12.45	50	36.20
129	-384.12	-299.66	21.99	50	36.38
129	-384.12	-214.50	44.16	50	35.92
129	-384.12	-188.92	50.82	50	36.28
129	-384.12	-189.96	50.55	50	36.16
129	-384.12	-372.05	3.14	50	19.11
129	-384.12	-350.84	8.66	50	19.42
129	-384.12	-328.75	14.41	50	19.33
129	-384.12	-335.01	12.79	50	13.36
129	-384.12	-354.67	7.67	50	13.39
129	-384.12	-325.41	15.29	50	8.70
129	-384.12	-240.30	37.44	50	8.70
129	-384.12	-221.48	42.34	50	10.83
129	-384.12	-202.54	47.27	50	9.44
129	-384.12	-384.12	-0.00	50	8.59
129	-384.12	-362.47	5.64	50	9.17
129	-384.12	-349.96	8.89	50	22.81
Atoms	Optimal	Found	Error	Gen	Time
130	-387.45	-323.00	16.63	50	37.22
130	-387.45	-321.75	16.96	50	37.27
130	-387.45	-310.44	19.87	50	37.31
130	-387.45	-187.46	51.62	50	36.77
130	-387.45	-184.12	52.48	50	36.77
130	-387.45	-176.31	54.49	50	36.83
130	-387.45	-375.14	3.18	50	19.59
130	-387.45	-353.53	8.75	50	19.62
130	-387.45	-331.39	14.47	50	19.47
130	-387.45	-345.54	10.82	50	11.73
130	-387.45	-335.73	13.35	50	24.67
130	-387.45	-335.64	13.37	50	9.23
130	-387.45	-194.18	49.88	50	11.42
130	-387.45	-205.10	47.06	50	9.19
130	-387.45	-181.15	53.25	50	9.28
130	-387.45	-387.45	-0.00	50	8.72
130	-387.45	-366.57	5.39	50	9.31
130	-387.45	-352.42	9.04	50	25.38
Atoms	Optimal	Found	Error	Gen	Time

131	-390.80	-350.35	10.35	50	37.92
131	-390.80	-356.95	8.66	50	37.94
131	-390.80	-314.39	19.55	50	37.94
131	-390.80	-187.28	52.08	50	37.56
131	-390.80	-185.84	52.45	50	37.64
131	-390.80	-186.99	52.15	50	37.55
131	-390.80	-378.03	3.27	50	20.02
131	-390.80	-357.80	8.45	50	20.00
131	-390.80	-330.69	15.38	50	19.94
131	-390.80	-377.89	3.30	50	9.06
131	-390.80	-366.95	6.10	50	11.05
131	-390.80	-333.54	14.65	50	16.03
131	-390.80	-210.16	46.22	50	12.44
131	-390.80	-196.92	49.61	50	10.30
131	-390.80	-192.14	50.83	50	10.55
131	-390.80	-390.80	-0.00	50	8.89
131	-390.80	-370.31	5.24	50	9.69
131	-390.80	-352.98	9.68	50	22.83
Atoms	Optimal	Found	Error	Gen	Time
132	-393.92	-334.97	14.96	50	39.08
132	-393.92	-338.02	14.19	50	38.92
132	-393.92	-311.28	20.98	50	39.05
132	-393.92	-184.17	53.25	50	38.39
132	-393.92	-192.07	51.24	50	39.17
132	-393.92	-196.12	50.21	50	39.03
132	-393.92	-381.12	3.25	50	20.31
132	-393.92	-334.07	15.19	50	20.31
132	-393.92	-331.96	15.73	50	20.42
132	-393.92	-357.58	9.23	50	18.69
132	-393.92	-357.65	9.21	50	13.66
132	-393.92	-323.66	17.84	50	11.09
132	-393.92	-194.08	50.73	50	14.75
132	-393.92	-204.80	48.01	50	9.97
132	-393.92	-204.23	48.16	50	12.44
132	-393.92	-393.92	-0.00	50	9.27
132	-393.92	-343.64	12.76	50	26.03
132	-393.92	-341.00	13.43	50	19.94
Atoms	Optimal	Found	Error	Gen	Time
133	-397.53	-324.35	18.41	50	39.72
133	-397.53	-354.93	10.72	50	40.22
133	-397.53	-307.93	22.54	50	39.72
133	-397.53	-200.32	49.61	50	39.59
133	-397.53	10458.00	2730.75	50	39.75
133	-397.53	-207.69	47.75	50	39.83
133	-397.53	-384.18	3.36	50	21.11

133	-397.53	-337.43	15.12	50	21.25
133	-397.53	-333.92	16.00	50	20.92
133	-397.53	-350.29	11.88	50	11.59
133	-397.53	-367.33	7.60	50	16.34
133	-397.53	-329.30	17.16	50	11.77
133	-397.53	-212.02	46.67	50	9.53
133	-397.53	4725.80	1288.79	50	72.67
133	-397.53	-231.28	41.82	50	10.66
133	-397.53	-397.53	-0.00	50	9.41
133	-397.53	-352.10	11.43	50	28.02
133	-397.53	-343.22	13.66	50	22.59
Atoms	Optimal	Found	Error	Gen	Time
134	-399.77	-337.39	15.60	50	40.88
134	-399.77	-331.20	17.15	50	41.27
134	-399.77	-309.50	22.58	50	41.11
134	-399.77	-200.28	49.90	50	40.77
134	-399.77	-218.63	45.31	50	40.58
134	-399.77	-196.24	50.91	50	40.52
134	-399.77	-386.43	3.34	50	21.34
134	-399.77	-362.76	9.26	50	21.30
134	-399.77	-336.55	15.81	50	21.36
134	-399.77	-362.82	9.24	50	27.84
134	-399.77	-344.64	13.79	50	24.97
134	-399.77	-325.19	18.66	50	13.94
134	-399.77	-223.67	44.05	50	10.73
134	-399.77	-227.19	43.17	50	9.42
134	-399.77	-202.33	49.39	50	11.08
134	-399.77	-399.77	-0.00	50	9.67
134	-399.77	-376.22	5.89	50	9.91
134	-399.77	-346.65	13.29	50	17.14
Atoms	Optimal	Found	Error	Gen	Time
135	-402.50	-347.57	13.65	50	41.78
135	-402.50	-329.14	18.23	50	42.11
135	-402.50	-310.14	22.95	50	41.92
135	-402.50	-215.18	46.54	50	41.19
135	-402.50	8267.66	2154.06	50	41.91
135	-402.50	-211.59	47.43	50	41.69
135	-402.50	-389.22	3.30	50	22.17
135	-402.50	-367.27	8.75	50	22.14
135	-402.50	-342.40	14.93	50	22.11
135	-402.50	-370.57	7.93	50	18.64
135	-402.50	-348.65	13.38	50	25.05
135	-402.50	-327.32	18.68	50	12.48
135	-402.50	-225.89	43.88	50	9.94
135	-402.50	2575.16	739.78	50	62.09

135	-402.50	-219.41	45.49	50	29.64
135	-402.50	-402.50	-0.00	50	9.84
135	-402.50	-378.29	6.02	50	10.09
135	-402.50	-364.62	9.41	50	9.98
Atoms	Optimal	Found	Error	Gen	Time
136	-406.44	-336.52	17.20	50	42.97
136	-406.44	-355.78	12.46	50	43.03
136	-406.44	-319.87	21.30	50	43.86
136	-406.44	-204.69	49.64	50	43.56
136	-406.44	-227.18	44.11	50	43.38
136	-406.44	-199.73	50.86	50	43.12
136	-406.44	-392.26	3.49	50	23.20
136	-406.44	-357.16	12.13	50	23.06
136	-406.44	-345.19	15.07	50	22.97
136	-406.44	-362.90	10.71	50	21.41
136	-406.44	-380.18	6.46	50	11.66
136	-406.44	-339.77	16.40	50	12.77
136	-406.44	-214.71	47.17	50	10.95
136	-406.44	-250.37	38.40	50	10.14
136	-406.44	-208.67	48.66	50	10.02
136	-406.44	-406.44	-0.00	50	9.83
136	-406.44	-371.83	8.52	50	13.81
136	-406.44	-371.42	8.62	50	10.09
Atoms	Optimal	Found	Error	Gen	Time
137	-409.78	-334.55	18.36	50	44.03
137	-409.78	-327.75	20.02	50	43.92
137	-409.78	-312.65	23.70	50	44.06
137	-409.78	-189.18	53.83	50	43.83
137	-409.78	-206.98	49.49	50	43.30
137	-409.78	-200.70	51.02	50	43.56
137	-409.78	-395.46	3.49	50	22.91
137	-409.78	-368.22	10.14	50	22.98
137	-409.78	-341.52	16.66	50	22.97
137	-409.78	-356.62	12.97	50	13.92
137	-409.78	-341.92	16.56	50	28.92
137	-409.78	-331.69	19.06	50	18.53
137	-409.78	-199.91	51.22	50	10.94
137	-409.78	-222.76	45.64	50	10.67
137	-409.78	-214.75	47.59	50	10.27
137	-409.78	-409.78	-0.00	50	10.66
137	-409.78	-382.58	6.64	50	10.53
137	-409.78	-365.06	10.91	50	10.36
Atoms	Optimal	Found	Error	Gen	Time
138	-413.14	-364.68	11.73	50	44.75
138	-413.14	-328.39	20.51	50	44.72

138	-413.14	-336.23	18.62	50	44.67
138	-413.14	-193.20	53.24	50	44.13
138	-413.14	-214.58	48.06	50	44.17
138	-413.14	-206.49	50.02	50	44.20
138	-413.14	-398.58	3.52	50	23.50
138	-413.14	-384.23	7.00	50	23.38
138	-413.14	-369.50	10.56	50	23.42
138	-413.14	-392.62	4.97	50	10.75
138	-413.14	-356.75	13.65	50	25.34
138	-413.14	-360.55	12.73	50	14.00
138	-413.14	-197.41	52.22	50	11.44
138	-413.14	-229.57	44.43	50	11.02
138	-413.14	-221.45	46.40	50	11.16
138	-413.14	-413.14	-0.00	50	10.39
138	-413.14	-394.70	4.46	50	10.41
138	-413.14	-393.73	4.70	50	12.14
Atoms	Optimal	Found	Error	Gen	Time
139	-416.53	-351.44	15.63	50	45.73
139	-416.53	-337.38	19.00	50	46.06
139	-416.53	-326.79	21.54	50	45.80
139	-416.53	-203.37	51.18	50	45.31
139	-416.53	-193.70	53.50	50	45.67
139	-416.53	-196.50	52.83	50	45.36
139	-416.53	-401.62	3.58	50	24.27
139	-416.53	-384.74	7.63	50	24.41
139	-416.53	-372.51	10.57	50	24.13
139	-416.53	-384.88	7.60	50	11.73
139	-416.53	-358.36	13.96	50	19.12
139	-416.53	-367.30	11.82	50	11.48
139	-416.53	-213.22	48.81	50	15.36
139	-416.53	-206.48	50.43	50	11.88
139	-416.53	-208.26	50.00	50	12.00
139	-416.53	-416.53	-0.00	50	11.23
139	-416.53	-395.67	5.01	50	11.44
139	-416.53	-397.23	4.63	50	13.02
Atoms	Optimal	Found	Error	Gen	Time
140	-419.81	-342.50	18.42	50	47.58
140	-419.81	-353.31	15.84	50	47.25
140	-419.81	-347.00	17.35	50	47.16
140	-419.81	-213.24	49.21	50	46.25
140	-419.81	-210.79	49.79	50	46.22
140	-419.81	35430.20	8539.52	50	46.03
140	-419.81	-404.72	3.60	50	24.45
140	-419.81	-388.42	7.48	50	24.45
140	-419.81	-375.50	10.56	50	24.56

140	-419.81	-375.21	10.62	50	15.88
140	-419.81	-369.22	12.05	50	28.75
140	-419.81	-364.73	13.12	50	12.14
140	-419.81	-234.27	44.20	50	11.41
140	-419.81	-226.31	46.09	50	12.44
140	-419.81	8378.80	2095.84	50	113.56
140	-419.81	-419.81	-0.00	50	10.69
140	-419.81	-399.48	4.84	50	11.22
140	-419.81	-400.76	4.54	50	12.03
Atoms	Optimal	Found	Error	Gen	Time
141	-422.05	-352.65	16.44	50	47.84
141	-422.05	-350.28	17.01	50	47.94
141	-422.05	-338.07	19.90	50	48.02
141	-422.05	-189.40	55.12	50	47.55
141	-422.05	-213.96	49.30	50	47.97
141	-422.05	-182.55	56.75	50	47.88
141	-422.05	-406.97	3.57	50	25.25
141	-422.05	-384.44	8.91	50	25.09
141	-422.05	-352.51	16.48	50	25.45
141	-422.05	-383.41	9.16	50	19.64
141	-422.05	-375.71	10.98	50	16.42
141	-422.05	-358.48	15.06	50	14.30
141	-422.05	-200.93	52.39	50	13.00
141	-422.05	-228.78	45.79	50	11.64
141	-422.05	-206.35	51.11	50	13.52
141	-422.05	-422.05	-0.00	50	11.41
141	-422.05	-398.60	5.56	50	11.77
141	-422.05	-372.63	11.71	50	15.87
Atoms	Optimal	Found	Error	Gen	Time
142	-425.38	-358.02	15.84	50	48.72
142	-425.38	-340.04	20.06	50	48.80
142	-425.38	-331.23	22.13	50	48.69
142	-425.38	-217.17	48.95	50	47.92
142	-425.38	-213.08	49.91	50	47.97
142	-425.38	-207.93	51.12	50	48.14
142	-425.38	-409.85	3.65	50	25.62
142	-425.38	-383.07	9.95	50	25.33
142	-425.38	-354.88	16.57	50	25.38
142	-425.38	-381.86	10.23	50	33.61
142	-425.38	-354.55	16.65	50	42.45
142	-425.38	-350.52	17.60	50	11.94
142	-425.38	-227.25	46.58	50	12.56
142	-425.38	-225.89	46.90	50	13.28
142	-425.38	-223.46	47.47	50	11.91
142	-425.38	-425.38	-0.00	50	11.70

142	-425.38	-401.49	5.62	50	12.27
142	-425.38	-374.14	12.05	50	16.94
Atoms	Optimal	Found	Error	Gen	Time
143	-428.72	-357.43	16.63	50	50.27
143	-428.72	-356.45	16.86	50	50.25
143	-428.72	-339.37	20.84	50	50.78
143	-428.72	-208.72	51.31	50	50.13
143	-428.72	-216.95	49.40	50	50.17
143	-428.72	-203.47	52.54	50	50.03
143	-428.72	-413.04	3.66	50	26.08
143	-428.72	-386.84	9.77	50	26.25
143	-428.72	-356.34	16.88	50	26.11
143	-428.72	-379.25	11.54	50	14.80
143	-428.72	-369.31	13.86	50	27.33
143	-428.72	-371.16	13.43	50	13.48
143	-428.72	-231.77	45.94	50	12.80
143	-428.72	-232.39	45.79	50	11.86
143	-428.72	-209.65	51.10	50	12.47
143	-428.72	-428.72	-0.00	50	12.50
143	-428.72	-402.41	6.14	50	11.98
143	-428.72	-374.97	12.54	50	27.44
Atoms	Optimal	Found	Error	Gen	Time
144	-432.11	-367.57	14.94	50	51.28
144	-432.11	-348.64	19.32	50	50.95
144	-432.11	-345.77	19.98	50	51.02
144	-432.11	-226.61	47.56	50	50.22
144	-432.11	1254.20	390.25	50	50.39
144	-432.11	-209.49	51.52	50	50.41
144	-432.11	-416.25	3.67	50	26.66
144	-432.11	-401.31	7.13	50	26.73
144	-432.11	-354.67	17.92	50	26.66
144	-432.11	-383.28	11.30	50	27.39
144	-432.11	-368.18	14.79	50	18.47
144	-432.11	-364.50	15.65	50	12.08
144	-432.11	-244.36	43.45	50	11.88
144	-432.11	-15.96	96.31	50	90.69
144	-432.11	-224.84	47.97	50	14.02
144	-432.11	-432.11	-0.00	50	11.44
144	-432.11	-413.40	4.33	50	12.11
144	-432.11	-372.43	13.81	50	12.89
Atoms	Optimal	Found	Error	Gen	Time
145	-435.49	-360.37	17.25	50	52.14
145	-435.49	-359.58	17.43	50	52.39
145	-435.49	-348.03	20.08	50	52.47
145	-435.49	-212.68	51.16	50	51.58

145	-435.49	-222.05	49.01	50	51.39
145	-435.49	-209.61	51.87	50	51.47
145	-435.49	-419.37	3.70	50	27.22
145	-435.49	-393.20	9.71	50	27.34
145	-435.49	-357.26	17.96	50	27.19
145	-435.49	-380.69	12.58	50	13.88
145	-435.49	-373.93	14.14	50	24.31
145	-435.49	-366.99	15.73	50	13.25
145	-435.49	-226.22	48.05	50	12.73
145	-435.49	-236.83	45.62	50	13.23
145	-435.49	-219.85	49.52	50	12.34
145	-435.49	-435.49	-0.00	50	12.75
145	-435.49	-408.26	6.25	50	12.50
145	-435.49	-374.86	13.92	50	13.48
Atoms	Optimal	Found	Error	Gen	Time
146	-438.86	-370.37	15.61	50	52.88
146	-438.86	-362.56	17.39	50	53.33
146	-438.86	-354.54	19.21	50	54.31
146	-438.86	-223.87	48.99	50	53.17
146	-438.86	-224.89	48.76	50	53.91
146	-438.86	-201.90	53.99	50	53.70
146	-438.86	-422.56	3.71	50	28.02
146	-438.86	-396.07	9.75	50	28.19
146	-438.86	-360.21	17.92	50	28.41
146	-438.86	-384.88	12.30	50	31.11
146	-438.86	-382.84	12.77	50	16.00
146	-438.86	-370.22	15.64	50	14.81
146	-438.86	-240.71	45.15	50	13.39
146	-438.86	-232.79	46.96	50	14.70
146	-438.86	-214.90	51.03	50	13.59
146	-438.86	-438.86	-0.00	50	12.44
146	-438.86	-410.47	6.47	50	12.89
146	-438.86	-377.11	14.07	50	15.98
Atoms	Optimal	Found	Error	Gen	Time
147	-442.12	-381.84	13.64	50	55.70
147	-442.12	-350.12	20.81	50	55.58
147	-442.12	-349.65	20.92	50	54.95
147	-442.12	-201.65	54.39	50	54.89
147	-442.12	1673.59	478.54	50	54.86
147	-442.12	-231.43	47.65	50	54.73
147	-442.12	-425.66	3.72	50	29.16
147	-442.12	-397.14	10.17	50	29.06
147	-442.12	-374.19	15.36	50	28.89
147	-442.12	-418.04	5.45	50	12.77
147	-442.12	-368.82	16.58	50	41.88

147	-442.12	-376.28	14.89	50	13.97
147	-442.12	-212.79	51.87	50	13.70
147	-442.12	1118.16	352.91	50	137.03
147	-442.12	-246.46	44.26	50	17.30
147	-442.12	-442.12	-0.00	50	13.25
147	-442.12	-414.79	6.18	50	13.62
147	-442.12	-395.39	10.57	50	32.08
Atoms	Optimal	Found	Error	Gen	Time
148	-444.36	-376.55	15.26	50	56.23
148	-444.36	-372.99	16.06	50	56.20
148	-444.36	-358.89	19.23	50	56.45
148	-444.36	8354.78	1980.19	50	56.09
148	-444.36	-231.77	47.84	50	56.00
148	-444.36	-230.80	48.06	50	57.25
148	-444.36	-427.90	3.71	50	30.25
148	-444.36	-407.12	8.38	50	29.73
148	-444.36	-376.64	15.24	50	29.92
148	-444.36	-409.98	7.74	50	18.31
148	-444.36	-390.27	12.17	50	13.73
148	-444.36	-378.40	14.84	50	14.55
148	-444.36	7974.29	1894.56	50	174.38
148	-444.36	-243.50	45.20	50	15.48
148	-444.36	-250.58	43.61	50	14.91
148	-444.36	-444.36	-0.00	50	13.52
148	-444.36	-420.67	5.33	50	13.52
148	-444.36	-397.87	10.46	50	36.17
Atoms	Optimal	Found	Error	Gen	Time
149	-447.65	-384.17	14.18	50	58.22
149	-447.65	-370.80	17.17	50	57.92
149	-447.65	-359.86	19.61	50	57.56
149	-447.65	-218.99	51.08	50	56.66
149	-447.65	-224.04	49.95	50	57.45
149	-447.65	-213.72	52.26	50	58.25
149	-447.65	-430.82	3.76	50	30.75
149	-447.65	-412.91	7.76	50	30.05
149	-447.65	-376.75	15.84	50	30.11
149	-447.65	-418.85	6.44	50	15.62
149	-447.65	-389.24	13.05	50	32.17
149	-447.65	-384.72	14.06	50	14.05
149	-447.65	-244.42	45.40	50	16.22
149	-447.65	-233.79	47.77	50	17.66
149	-447.65	-230.11	48.60	50	14.38
149	-447.65	-447.65	-0.00	50	13.44
149	-447.65	-423.12	5.48	50	14.34
149	-447.65	-398.16	11.06	50	36.98

Atoms	Optimal	Found	Error	Gen	Time
150	-450.98	-377.74	16.24	50	58.69
150	-450.98	-387.83	14.00	50	59.62
150	-450.98	-356.82	20.88	50	59.69
150	-450.98	-218.02	51.66	50	57.16
150	-450.98	-212.88	52.80	50	56.72
150	-450.98	-222.17	50.74	50	56.06
150	-450.98	-433.98	3.77	50	29.89
150	-450.98	-411.07	8.85	50	29.75
150	-450.98	-389.19	13.70	50	29.75
150	-450.98	-400.69	11.15	50	15.66
150	-450.98	-399.10	11.50	50	34.52
150	-450.98	-379.13	15.93	50	15.25
150	-450.98	-244.47	45.79	50	14.92
150	-450.98	-240.06	46.77	50	14.25
150	-450.98	-233.98	48.12	50	13.47
150	-450.98	-450.98	-0.00	50	13.06
150	-450.98	-424.82	5.80	50	13.42
150	-450.98	-406.63	9.83	50	13.69