File ACT/007/006
Folder #3
(revisions folder also)

0033

PLATEAU MINING COMPANY

A Subsidiary of Getty Mining Company
P.O. Drawer PMC Price, Utah 84501
Telephone (801) 637-2875

August 20, 1984

Mr. James Smith
Utah Division of Oil, Gas, & Mining
4241 State Office Building
Salt Lake City, UT 84114

FILE: ENV 1-2

RECEIVED
AUG 20 1984
DIVISION OF OIL
GAS & MINING

Subject: Plateau Mining Company
Unit Train Loadout Modification
Sedimentation Pond - 8 Designs

Dear Mr. Smith:

In accordance with a meeting with your technical staff on August 17, 1984, Plateau Mining Company has reviewed and recalculated the design parameters for Sedimentation Pond 8. The Deposits model was utilized to check the inflow and outflow hydrographs shown in Exhibit 2 of the Unit Train Loadout Modification. The output from the modeling program is attached. These calculations verify the design of Pond 8, and show that the automatic dewatering device proposed will provide sufficient detention time to achieve discharge water quality in compliance with effluent limitations. The automatic dewatering device has additional advantages as follows: 1) little or no maintenance of mechanical apparatus; 2) efficient dewatering of detention volumes allowing treatment of multiple storm runoff events; and, 3) reduced time of containment resulting in less water loss and salt loading from evaporation. PMC contends that the designs for Pond 8 are in full compliance with regulatory requirements of the UDOGM.

The following are responses to comments in a draft memorandum to D. Wayne Hedburg from Jack Wittman dated July 30, 1984, which was also discussed in the meeting on August 17:

UMC 816.46(u): The issue is whether energy dissipation structures are necessary in drainages tributary to sedimentation ponds, in contrast to diversions which discharge directly to receiving streams. PMC will install appropriate structures to control erosion as necessary to prevent additional contribution of suspended solids to streams.

UMC 817.42: The containment ditch proposed at the toe of the outslope of the silo pad will be constructed to retain the runoff and sediment yield from the 10-year, 24-hour event. Mulching, straw dikes, or other sediment control measures may be used on the outslope as appropriate.

UMC 817.46: (1) As previously stated, the inflow hydrograph and detention time calculations have been verified by the Deposits model developed at the University of Kentucky, as shown on the attached output. (2) PMC will install anti-seep collars on the discharge conduit at 10 foot intervals, which will provide a 10% increase in flow length. (3) The 2 foot contours used in Table 4 of Exhibit 2 were interpolated from the contours on Map 6 and field observations to provide more detail in stage-storage calculations.

Finally, several suggestions were discussed during the meeting for oil skimmer designs. The preferred design is a 42 inch CMP sleeve attached to the 36 inch riser pipe. Details of the actual installation will be included in the as-built report submitted to the UDOGM after construction.

The information enclosed with this letter should address the concerns of the Division regarding Pond 8 in relation to the Unit Train Loadout Modification. Please contact me at Plateau Mining Company with any questions or comments.

Very truly yours,

Ben A. Grimes
Environmental Coordinator

BAG:mo

Enclosures

cc: Vic Cox
Kent Crofts
Jeff Collins
Jeff Saunders
Bob Lauman

********** STORM HYDROGRAPH GENERATED FROM START OF RUNOFF **********

TIME *	0.00	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45
0.00 *	0.03	0.15	0.94	2.88	5.56	8.47	13.02	19.78	26.50	32.41
0.50 *	30.20	19.01	10.40	6.37	4.89	4.40	4.26	4.24	4.22	4.18
1.00 *	4.16	4.17	4.16	4.12	4.09	4.10	4.08	4.03	4.00	4.00
1.50 *	3.98	3.92	3.89	3.88	3.86	3.80	3.76	3.75	3.72	3.66
2.00 *	3.61	3.60	3.57	3.50	3.46	3.44	3.41	3.33	3.28	3.27
2.50 *	2.97	2.36	1.93	1.74	1.66	1.64	1.62	1.62	1.62	1.61
3.00 *	1.61	1.61	1.60	1.59	1.59	1.59	1.59	1.58	1.57	1.57
3.50 *	1.57	1.56	1.56	1.55	1.55	1.54	1.54	1.54	1.53	1.52
4.00 *	1.52	1.52	1.51	1.50	1.50	1.50	1.49	1.48	1.48	1.48
4.50 *	1.47	1.46	1.46	1.46	1.45	1.44	1.44	1.44	1.43	1.42
5.00 *	1.42	1.41	1.41	1.40	1.39	1.39	1.39	1.38	1.37	1.37
5.50 *	1.36	1.35	1.35	1.35	1.34	1.33	1.33	1.32	1.32	1.31
6.00 *	1.30	1.30	1.29	1.28	1.28	1.27	1.27	1.26	1.25	1.25
6.50 *	1.24	1.23	1.23	1.23	1.22	1.21	1.20	1.20	1.19	1.18
7.00 *	1.18	1.17	1.17	1.16	1.15	1.15	1.14	1.13	1.12	1.12
7.50 *	1.12	1.10	1.10	1.09	1.09	1.08	1.07	1.07	1.06	1.05
8.00 *	1.04	1.04	1.03	1.02	1.02	1.01	1.01	1.00	0.99	0.98
8.50 *	0.98	0.97	0.96	0.96	0.95	0.94	0.93	0.93	0.92	0.91
9.00 *	0.90	0.90	0.89	0.88	0.87	0.87	0.86	0.85	0.84	0.84
9.50 *	0.83	0.82	0.81	0.81	0.80	0.79	0.78	0.78	0.77	0.76
10.00 *	0.76	0.75	0.75	0.73	0.73	0.72	0.72	0.70	0.70	0.69
10.50 *	0.68	0.67	0.66	0.66	0.65	0.64	0.63	0.63	0.62	0.61
11.00 *	0.60	0.60	0.59	0.58	0.57	0.57	0.56	0.55	0.54	0.54
11.50 *	0.53	0.52	0.51	0.51	0.50	0.49	0.48	0.48	0.47	0.46
12.00 *	0.45	0.44	0.44	0.43	0.42	0.41	0.41	0.39	0.32	0.17
12.50 *	0.07	0.02	0.01	0.00						

THE DEPTH OF WATER ON WATERSHED = 0.468 INCHES

VOLUME OF RUNOFF = 2.21 ACRE-FT

PEAK RUNOFF RATE = 32.4 CFS

TIME OF PEAK RUNOFF = 12.05 HRS

TIME INCR. OF NEW HYDROGRAPH = 0.25 HRS

****** STORM HYDROGRAPH GENERATED FROM START OF RUNOFF *******

5.6	32.4	4.9	4.2	4.1	4.0	3.9	3.7	3.5	3.3
1.7	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.4
1.4	1.4	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.1
1.1	1.1	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8
0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.2
0.0									

1
1

********** THE DEPOSITS MODEL. JANUARY 1980 **********

***** INPUT CONTROL VARIABLES *****

MP	M	N	NS	MS	LS
8	51	8	7	400	0

NSTORM	CONSED	DEPOST	FLOW	TRP	FILTER	FIX	FRACTN	FLOWAV
1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00

INFLOW SEDIMENT DISTRIBUTION COMPLETE MIXING

MASS	VISCOS	DELTAT	DELPLG	DENSTY	SG	SET	SHORT	SLAG	DEAD
0.450	0.0114	0.25	0.25	1.20	2.65	2.00	1.00	0.00	0.00

***** DEPOSITS ERROR MESSAGES *****

1 ***** STORM EVENT SUMMARY *****

PERMANENT POOL CAPACITY	=	0.64	ACRE-FT
DEAD STORAGE	=	0.00	ACRE-FT
STORM RUNOFF VOLUME	=	2.26	ACRE-FT
STORM VOLUME DISCHARGED	=	0.87	ACRE-FT
POND VOLUME AT PEAK STAGE	=	2.71	ACRE-FT
PEAK STAGE	=	10.79	FT
PEAK INFLOW RATE	=	32.41	CFS
PEAK DISCHARGE RATE	=	0.20	CFS
PEAK INFLOW SEDIMENT CONCENTRATION	=	348.8	MG/L
PEAK EFFLUENT SEDIMENT CONCENTRATION	=	41.8	MG/L
STORM AVERAGE EFFLUENT CONCENTRATION	=	29.7	MG/L
AVERAGE EFFLUENT SEDIMENT CONCENTRATION	=	17.1	MG/L
BASIN TRAP EFFICIENCY	=	92.16	%

DETENTION TIME OF FLOW WITH SEDIMENT = 86.75 HRS

DETENTION TIME FROM HYDROGRAPH CENTERS = 44.79 HRS

DETENTION TIME INCLUDING STORED FLOW = 77.77 HRS

SEDIMENT LOAD = 0.45 TONS

***** PARTICLE SIZE DISTRIBUTION OF SEDIMENT INFLOW *****

SIZE (MM)	0.0000	0.0100	0.0250	0.0500	0.1000	0.1500	0.2000
% FINER	0.0	32.9	79.5	92.9	95.4	99.3	99.9

***** PARTICLE SIZE DISTRIBUTION OF EFFLUENT ******

SIZE (MM)	0.0000	0.0100	0.0250	0.0500	0.1000	0.1500	0.2000
% FINER	0.0	100.0	100.0	100.0	100.0	100.0	100.0

***** OUTFLOW WITHDRAWAL DISTRIBUTION *****

STAGE (FT)	OUTFLOW 1 (%)	OUTFLOW 2 (%)	OUTFLOW 3 (%)	OUTFLOW 4 (%)
0.00	25.00	25.00	25.00	25.00
2.00	25.00	25.00	25.00	25.00
4.00	25.00	25.00	25.00	25.00
6.00	25.00	25.00	25.00	25.00
8.00	25.00	25.00	25.00	25.00
10.00	25.00	25.00	25.00	25.00
12.00	25.00	25.00	25.00	25.00
14.00	25.00	25.00	25.00	25.00

***** BASIN GEOMETRY *****

STAGE (FT)	AREA (ACRES)	AVERAGE DEPTH (FT)	DISCHARGE (CFS)	CAPACITY (ACRES-FT)
0.0000	0.00000	0.00	0.00	0.00000
2.0000	0.04300	1.00	0.00	0.04300
4.0000	0.13400	2.17	0.00	0.22000
6.0000	0.29000	3.18	0.00	0.64400

8.0000	0.40300	4.41	0.15	1.33700
10.0000	0.50300	5.78	0.20	2.24300
12.0000	0.66000	7.08	0.20	3.40600
14.0000	0.82300	8.29	0.20	4.88900

1

***** STORM HYDROGRAPHS & SEDIMENTGRAPHS *****

TIME (HRS)	INFLOW (CFS)	DISCHARGE (CFS)	DETENTION TIME (HRS)	STAGE (FT)	DEPTH (FT)	SEDIMENT (%)	INFLUENT (MG/L)	EFFLUENT (MG/L)
0.25	32.41	0.08	0.13	3.56	1.94	0.00	348.8	0.0
0.50	4.89	0.15	0.38	7.65	2.69	0.00	342.7	0.0
0.75	4.18	0.16	0.63	8.28	3.38	0.00	83.4	0.0
1.00	4.09	0.16	0.88	8.47	3.75	0.00	76.0	0.0
1.25	4.00	0.17	1.13	8.65	3.98	0.00	74.3	0.0
1.50	3.86	0.17	1.38	8.82	4.15	0.00	72.2	0.0
1.75	3.66	0.18	1.63	8.99	4.29	0.00	69.0	0.0
2.00	3.46	0.18	1.88	9.15	4.40	0.00	65.3	0.0
2.25	3.27	0.18	2.13	9.30	4.50	0.00	61.8	0.0
2.50	1.66	0.19	2.38	9.42	4.59	0.00	45.3	0.0
2.75	1.61	0.19	2.63	9.51	4.67	0.00	30.1	0.0
3.00	1.59	0.19	2.88	9.57	4.74	0.00	29.4	0.0
3.25	1.57	0.19	3.13	9.64	4.80	0.00	29.1	0.0
3.50	1.55	0.19	3.38	9.70	4.85	0.00	28.7	0.0
3.75	1.52	0.19	3.63	9.76	4.90	0.00	28.2	0.0
4.00	1.50	0.20	3.88	9.82	4.95	0.00	27.8	0.0
4.25	1.48	0.20	4.13	9.88	5.00	0.00	27.3	0.0
4.50	1.45	0.20	4.38	9.94	5.04	0.00	26.9	0.0
4.75	1.42	0.20	4.63	9.99	5.08	0.00	26.4	0.0
5.00	1.39	0.20	4.88	10.04	5.11	0.00	25.9	0.0
5.25	1.37	0.20	5.13	10.08	5.15	0.00	25.4	0.0
5.50	1.34	0.20	5.38	10.13	5.18	0.00	24.9	0.0
5.75	1.31	0.20	5.63	10.17	5.21	0.00	24.3	0.0
6.00	1.28	0.20	5.88	10.21	5.24	0.00	23.7	0.0
6.25	1.25	0.20	6.13	10.24	5.27	0.00	23.2	0.0
6.50	1.22	0.20	6.38	10.28	5.29	0.00	22.7	0.0
6.75	1.18	0.20	6.63	10.32	5.32	0.00	22.1	0.0
7.00	1.15	0.20	6.88	10.35	5.34	0.00	21.4	0.0
7.25	1.12	0.20	7.13	10.39	5.37	0.00	20.9	0.0
7.50	1.09	0.20	7.38	10.42	5.39	0.00	20.3	0.0
7.75	1.05	0.20	7.63	10.45	5.41	0.00	19.6	0.0
8.00	1.02	0.20	7.88	10.48	5.43	0.00	19.0	0.0
8.25	0.98	0.20	8.13	10.51	5.45	0.00	18.4	0.0
8.50	0.95	0.20	8.38	10.54	5.47	0.00	17.8	0.0
8.75	0.91	0.20	8.63	10.56	5.49	0.00	17.1	0.0
9.00	0.87	0.20	8.88	10.59	5.51	0.00	16.4	0.0
9.25	0.84	0.20	9.13	10.61	5.53	0.00	15.7	0.0
9.50	0.80	0.20	9.38	10.64	5.55	0.00	15.1	0.0
9.75	0.76	0.20	9.63	10.66	5.56	0.00	14.4	0.0
10.00	0.73	0.20	9.88	10.68	5.58	0.00	13.7	0.0
10.25	0.69	0.20	10.13	10.70	5.60	0.00	13.0	0.0
10.50	0.65	0.20	10.38	10.71	5.61	0.00	12.4	0.0
10.75	0.61	0.20	10.63	10.73	5.63	0.00	11.6	0.0
11.00	0.57	0.20	10.88	10.74	5.64	0.00	10.9	0.0
11.25	0.54	0.20	11.13	10.76	5.65	0.00	10.2	0.0
11.50	0.50	0.20	11.38	10.77	5.67	0.00	9.5	0.0
11.75	0.46	0.20	11.63	10.78	5.68	0.00	8.8	0.0
12.00	0.42	0.20	11.88	10.79	5.69	0.00	8.0	0.0
12.25	0.17	0.20	12.13	10.79	5.71	0.00	5.4	0.0
12.50	0.00	0.20	12.38	10.79	5.72	0.00	1.6	0.0
12.75	0.00	0.20	12.63	10.79	5.73	0.00	0.0	0.0

13.00	0.00	0.20	12.88	10.78	5.74	0.00	0.0	0.0
13.25	0.00	0.20	13.13	10.77	5.75	0.00	0.0	0.0
13.50	0.00	0.20	13.38	10.77	5.76	0.00	0.0	0.0
13.75	0.00	0.20	13.63	10.76	5.77	0.00	0.0	0.0
14.00	0.00	0.20	13.88	10.75	5.78	0.00	0.0	0.0
14.25	0.00	0.20	14.13	10.75	5.79	0.00	0.0	0.0
14.50	0.00	0.20	14.38	10.74	5.80	0.00	0.0	0.0
14.75	0.00	0.20	14.63	10.73	5.80	0.00	0.0	0.0
15.00	0.00	0.20	14.88	10.73	5.81	0.00	0.0	0.0
15.25	0.00	0.20	15.13	10.72	5.82	0.00	0.0	0.0
15.50	0.00	0.20	15.38	10.71	5.83	0.00	0.0	0.0
15.75	0.00	0.20	15.63	10.70	5.83	0.00	0.0	0.0
16.00	0.00	0.20	15.88	10.70	5.84	0.00	0.0	0.0
16.25	0.00	0.20	16.13	10.69	5.84	0.00	0.0	0.0
16.50	0.00	0.20	16.38	10.68	5.85	0.00	0.0	0.0
16.75	0.00	0.20	16.63	10.68	5.86	0.00	0.0	0.0
17.00	0.00	0.20	16.88	10.67	5.86	0.00	0.0	0.0
17.25	0.00	0.20	17.13	10.66	5.87	0.00	0.0	0.0
17.50	0.00	0.20	17.38	10.65	5.87	0.00	0.0	0.0
17.75	0.00	0.20	17.63	10.65	5.88	0.00	0.0	0.0
18.00	0.00	0.20	17.88	10.64	5.88	0.00	0.0	0.0
18.25	0.00	0.20	18.13	10.63	5.88	0.00	0.0	0.0
18.50	0.00	0.20	18.38	10.63	5.89	0.00	0.0	0.0
18.75	0.00	0.20	18.63	10.62	5.89	0.00	0.0	0.0
19.00	0.00	0.20	18.88	10.61	5.90	0.00	0.0	0.0
19.25	0.00	0.20	19.13	10.60	5.90	0.00	0.0	0.0
19.50	0.00	0.20	19.38	10.60	5.90	0.00	0.0	0.0
19.75	0.00	0.20	19.63	10.59	5.91	0.00	0.0	0.0
20.00	0.00	0.20	19.88	10.58	5.91	0.00	0.0	0.0
20.25	0.00	0.20	20.13	10.58	5.91	0.00	0.0	0.0
20.50	0.00	0.20	20.38	10.57	5.92	0.00	0.0	0.0
20.75	0.00	0.20	20.63	10.56	5.92	0.00	0.0	0.0
21.00	0.00	0.20	20.88	10.55	5.92	0.00	0.0	0.0
21.25	0.00	0.20	21.13	10.55	5.92	0.00	0.0	0.0
21.50	0.00	0.20	21.38	10.54	5.93	0.00	0.0	0.0
21.75	0.00	0.20	21.63	10.53	5.93	0.00	0.0	0.0
22.00	0.00	0.20	21.88	10.53	5.93	0.00	0.0	0.0
22.25	0.00	0.20	22.13	10.52	5.93	0.00	0.0	0.0
22.50	0.00	0.20	22.38	10.51	5.93	0.00	0.0	0.0
22.75	0.00	0.20	22.63	10.50	5.94	0.00	0.0	0.0
23.00	0.00	0.20	22.88	10.50	5.94	0.00	0.0	0.0
23.25	0.00	0.20	23.13	10.49	5.94	0.00	0.0	0.0
23.50	0.00	0.20	23.38	10.48	5.94	0.00	0.0	0.0
23.75	0.00	0.20	23.63	10.48	5.94	0.00	0.0	0.0
24.00	0.00	0.20	23.88	10.47	5.94	0.00	0.0	0.0
24.25	0.00	0.20	24.13	10.46	5.95	0.00	0.0	0.0
24.50	0.00	0.20	24.38	10.45	5.95	0.00	0.0	0.0
24.75	0.00	0.20	24.63	10.45	5.95	0.00	0.0	0.0
25.00	0.00	0.20	24.88	10.44	5.95	0.00	0.0	0.0
25.25	0.00	0.20	25.13	10.43	5.95	0.00	0.0	0.0
25.50	0.00	0.20	25.38	10.43	5.95	0.00	0.0	0.0
25.75	0.00	0.20	25.63	10.42	5.95	0.00	0.0	0.0
26.00	0.00	0.20	25.88	10.41	5.95	0.00	0.0	0.0
26.25	0.00	0.20	26.13	10.41	5.95	0.00	0.0	0.0
26.50	0.00	0.20	26.38	10.40	5.96	0.00	0.0	0.0
26.75	0.00	0.20	26.63	10.39	5.96	0.00	0.0	0.0
27.00	0.00	0.20	26.88	10.38	5.96	0.00	0.0	0.0
27.25	0.00	0.20	27.13	10.38	5.96	0.00	0.0	0.0
27.50	0.00	0.20	27.38	10.37	5.96	0.00	0.0	0.0
27.75	0.00	0.20	27.63	10.36	5.96	0.00	0.0	0.0
28.00	0.00	0.20	27.88	10.36	5.96	0.00	0.0	0.0
28.25	0.00	0.20	28.13	10.35	5.96	0.00	0.0	0.0
28.50	0.00	0.20	28.38	10.34	5.96	0.00	0.0	0.0
28.75	0.00	0.20	28.63	10.33	5.96	0.00	0.0	0.0
29.00	0.00	0.20	28.88	10.33	5.96	0.00	0.0	0.0
29.25	0.00	0.20	29.13	10.32	5.96	0.00	0.0	0.0

29.50	0.00	0.20	29.38	10.31	5.96	0.00	0.0	0.0
29.75	0.00	0.20	29.63	10.31	5.96	0.00	0.0	0.0
30.00	0.00	0.20	29.88	10.30	5.96	0.00	0.0	0.0
30.25	0.00	0.20	30.13	10.29	5.96	0.00	0.0	0.0
30.50	0.00	0.20	30.38	10.28	5.96	0.00	0.0	0.0
30.75	0.00	0.20	30.63	10.28	5.96	0.00	0.0	0.0
31.00	0.00	0.20	30.88	10.27	5.96	0.00	0.0	0.0
31.25	0.00	0.20	31.13	10.26	5.96	0.00	0.0	0.0
31.50	0.00	0.20	31.38	10.26	5.96	0.00	0.0	0.0
31.75	0.00	0.20	31.63	10.25	5.96	0.00	0.0	0.0
32.00	0.00	0.20	31.88	10.24	5.96	0.00	0.0	0.0
32.25	0.00	0.20	32.13	10.23	5.96	0.00	0.0	0.0
32.50	0.00	0.20	32.38	10.23	5.96	0.00	0.0	0.0
32.75	0.00	0.20	32.63	10.22	5.96	0.00	0.0	0.0
33.00	0.00	0.20	32.88	10.21	5.96	0.00	0.0	0.0
33.25	0.00	0.20	33.13	10.21	5.96	0.00	0.0	0.0
33.50	0.00	0.20	33.38	10.20	5.96	0.00	0.0	0.0
33.75	0.00	0.20	33.63	10.19	5.96	0.00	0.0	0.0
34.00	0.00	0.20	33.88	10.18	5.96	0.00	0.0	0.0
34.25	0.00	0.20	34.13	10.18	5.96	0.00	0.0	0.0
34.50	0.00	0.20	34.38	10.17	5.96	0.00	0.0	0.0
34.75	0.00	0.20	34.63	10.16	5.96	0.00	0.0	0.0
35.00	0.00	0.20	34.88	10.16	5.96	0.00	0.0	0.0
35.25	0.00	0.20	35.13	10.15	5.96	0.00	0.0	0.0
35.50	0.00	0.20	35.38	10.14	5.95	0.00	0.0	0.0
35.75	0.00	0.20	35.63	10.14	5.95	0.00	0.0	0.0
36.00	0.00	0.20	35.88	10.13	5.95	0.00	0.0	0.0
36.25	0.00	0.20	36.13	10.12	5.95	0.00	0.0	0.0
36.50	0.00	0.20	36.38	10.11	5.95	0.00	0.0	0.0
36.75	0.00	0.20	36.63	10.11	5.95	0.00	0.0	0.0
37.00	0.00	0.20	36.88	10.10	5.95	0.00	0.0	0.0
37.25	0.00	0.20	37.13	10.09	5.95	0.00	0.0	0.0
37.50	0.00	0.20	37.38	10.09	5.95	0.00	0.0	0.0
37.75	0.00	0.20	37.63	10.08	5.95	0.00	0.0	0.0
38.00	0.00	0.20	37.88	10.07	5.95	0.00	0.0	0.0
38.25	0.00	0.20	38.13	10.06	5.95	0.00	0.0	0.0
38.50	0.00	0.20	38.38	10.06	5.95	0.00	0.0	0.0
38.75	0.00	0.20	38.63	10.05	5.95	0.00	0.0	0.0
39.00	0.00	0.20	38.88	10.04	5.94	0.00	0.0	0.0
39.25	0.00	0.20	39.13	10.04	5.94	0.00	0.0	0.0
39.50	0.00	0.20	39.38	10.03	5.94	0.00	0.0	0.0
39.75	0.00	0.20	39.62	10.02	5.94	0.03	0.0	23.7
40.00	0.00	0.20	39.87	10.01	5.94	0.08	0.0	41.8
40.25	0.00	0.20	40.12	10.01	5.94	0.13	0.0	41.7
40.50	0.00	0.20	40.37	10.00	5.94	0.19	0.0	41.5
40.75	0.00	0.20	40.61	9.99	5.94	0.24	0.0	41.4
41.00	0.00	0.20	40.86	9.98	5.94	0.29	0.0	41.3
41.25	0.00	0.20	41.11	9.97	5.94	0.34	0.0	41.2
41.50	0.00	0.20	41.36	9.96	5.94	0.39	0.0	41.0
41.75	0.00	0.20	41.60	9.95	5.94	0.44	0.0	40.9
42.00	0.00	0.20	41.85	9.95	5.93	0.49	0.0	40.8
42.25	0.00	0.20	42.10	9.94	5.93	0.54	0.0	40.7
42.50	0.00	0.20	42.35	9.93	5.93	0.59	0.0	40.5
42.75	0.00	0.20	42.59	9.92	5.93	0.64	0.0	40.4
43.00	0.00	0.20	42.84	9.91	5.93	0.69	0.0	40.3
43.25	0.00	0.20	43.09	9.90	5.93	0.74	0.0	40.2
43.50	0.00	0.20	43.34	9.89	5.93	0.79	0.0	40.0
43.75	0.00	0.20	43.58	9.88	5.93	0.84	0.0	39.9
44.00	0.00	0.20	43.83	9.87	5.93	0.89	0.0	39.8
44.25	0.00	0.20	44.08	9.86	5.93	0.94	0.0	39.7
44.50	0.00	0.20	44.33	9.86	5.92	0.99	0.0	39.6
44.75	0.00	0.20	44.57	9.85	5.92	1.03	0.0	39.5
45.00	0.00	0.20	44.82	9.84	5.92	1.08	0.0	39.3
45.25	0.00	0.20	45.07	9.83	5.92	1.13	0.0	39.2
45.50	0.00	0.20	45.31	9.82	5.92	1.18	0.0	39.1
45.75	0.00	0.20	45.56	9.81	5.92	1.23	0.0	39.0

46.00	0.00	0.19	45.81	9.80	5.92	1.27	0.0	38.9
46.25	0.00	0.19	46.06	9.79	5.92	1.32	0.0	38.8
46.50	0.00	0.19	46.30	9.78	5.91	1.37	0.0	38.7
46.75	0.00	0.19	46.55	9.78	5.91	1.41	0.0	38.6
47.00	0.00	0.19	46.80	9.77	5.91	1.46	0.0	38.5
47.25	0.00	0.19	47.05	9.76	5.91	1.51	0.0	38.3
47.50	0.00	0.19	47.29	9.75	5.91	1.55	0.0	38.2
47.75	0.00	0.19	47.54	9.74	5.91	1.60	0.0	38.1
48.00	0.00	0.19	47.79	9.73	5.91	1.65	0.0	38.0
48.25	0.00	0.19	48.04	9.72	5.90	1.69	0.0	37.9
48.50	0.00	0.19	48.28	9.71	5.90	1.74	0.0	37.8
48.75	0.00	0.19	48.53	9.70	5.90	1.78	0.0	37.7
49.00	0.00	0.19	48.78	9.70	5.90	1.83	0.0	37.6
49.25	0.00	0.19	49.03	9.69	5.90	1.87	0.0	37.5
49.50	0.00	0.19	49.27	9.68	5.90	1.92	0.0	37.4
49.75	0.00	0.19	49.52	9.67	5.90	1.96	0.0	37.3
50.00	0.00	0.19	49.77	9.66	5.89	2.01	0.0	37.2
50.25	0.00	0.19	50.02	9.65	5.89	2.05	0.0	37.1
50.50	0.00	0.19	50.26	9.64	5.89	2.09	0.0	37.0
50.75	0.00	0.19	50.51	9.63	5.89	2.14	0.0	36.9
51.00	0.00	0.19	50.76	9.63	5.89	2.18	0.0	36.8
51.25	0.00	0.19	51.01	9.62	5.89	2.23	0.0	36.7
51.50	0.00	0.19	51.25	9.61	5.88	2.27	0.0	36.6
51.75	0.00	0.19	51.50	9.60	5.88	2.31	0.0	36.5
52.00	0.00	0.19	51.75	9.59	5.88	2.36	0.0	36.4
52.25	0.00	0.19	52.00	9.58	5.88	2.40	0.0	36.3
52.50	0.00	0.19	52.24	9.57	5.88	2.44	0.0	36.2
52.75	0.00	0.19	52.49	9.57	5.88	2.48	0.0	36.2
53.00	0.00	0.19	52.74	9.56	5.87	2.53	0.0	36.1
53.25	0.00	0.19	52.99	9.55	5.87	2.57	0.0	36.0
53.50	0.00	0.19	53.23	9.54	5.87	2.61	0.0	35.9
53.75	0.00	0.19	53.48	9.53	5.87	2.65	0.0	35.8
54.00	0.00	0.19	53.73	9.52	5.87	2.70	0.0	35.7
54.25	0.00	0.19	53.98	9.51	5.87	2.74	0.0	35.6
54.50	0.00	0.19	54.22	9.51	5.86	2.78	0.0	35.5
54.75	0.00	0.19	54.47	9.50	5.86	2.82	0.0	35.4
55.00	0.00	0.19	54.72	9.49	5.86	2.86	0.0	35.3
55.25	0.00	0.19	54.97	9.48	5.86	2.90	0.0	35.3
55.50	0.00	0.19	55.21	9.47	5.86	2.94	0.0	35.2
55.75	0.00	0.19	55.46	9.46	5.85	2.98	0.0	35.1
56.00	0.00	0.19	55.71	9.45	5.85	3.03	0.0	35.0
56.25	0.00	0.19	55.96	9.45	5.85	3.07	0.0	34.9
56.50	0.00	0.19	56.20	9.44	5.85	3.11	0.0	34.8
56.75	0.00	0.19	56.45	9.43	5.85	3.15	0.0	34.7
57.00	0.00	0.19	56.70	9.42	5.85	3.19	0.0	34.7
57.25	0.00	0.19	56.95	9.41	5.84	3.23	0.0	34.6
57.50	0.00	0.18	57.19	9.40	5.84	3.27	0.0	34.5
57.75	0.00	0.18	57.44	9.39	5.84	3.31	0.0	34.4
58.00	0.00	0.18	57.69	9.39	5.84	3.35	0.0	34.3
58.25	0.00	0.18	57.94	9.38	5.84	3.39	0.0	34.2
58.50	0.00	0.18	58.18	9.37	5.83	3.42	0.0	34.2
58.75	0.00	0.18	58.43	9.36	5.83	3.46	0.0	34.1
59.00	0.00	0.18	58.68	9.35	5.83	3.50	0.0	34.0
59.25	0.00	0.18	58.93	9.34	5.83	3.54	0.0	33.9
59.50	0.00	0.18	59.18	9.34	5.83	3.58	0.0	33.8
59.75	0.00	0.18	59.42	9.33	5.82	3.62	0.0	33.8
60.00	0.00	0.18	59.67	9.32	5.82	3.66	0.0	33.7
60.25	0.00	0.18	59.92	9.31	5.82	3.70	0.0	33.6
60.50	0.00	0.18	60.17	9.30	5.82	3.73	0.0	33.5
60.75	0.00	0.18	60.41	9.29	5.82	3.77	0.0	33.5
61.00	0.00	0.18	60.66	9.29	5.81	3.81	0.0	33.4
61.25	0.00	0.18	60.91	9.28	5.81	3.85	0.0	33.3
61.50	0.00	0.18	61.16	9.27	5.81	3.89	0.0	33.2
61.75	0.00	0.18	61.40	9.26	5.81	3.92	0.0	33.2
62.00	0.00	0.18	61.65	9.25	5.81	3.96	0.0	33.1
62.25	0.00	0.18	61.90	9.24	5.80	4.00	0.0	33.0

62.50	0.00	0.18	62.15	9.24	5.80	4.04	0.0	32.9
62.75	0.00	0.18	62.39	9.23	5.80	4.07	0.0	32.9
63.00	0.00	0.18	62.64	9.22	5.80	4.11	0.0	32.8
63.25	0.00	0.18	62.89	9.21	5.80	4.15	0.0	32.7
63.50	0.00	0.18	63.14	9.20	5.79	4.18	0.0	32.6
63.75	0.00	0.18	63.38	9.19	5.79	4.22	0.0	32.6
64.00	0.00	0.18	63.63	9.19	5.79	4.26	0.0	32.5
64.25	0.00	0.18	63.88	9.18	5.79	4.29	0.0	32.4
64.50	0.00	0.18	64.13	9.17	5.79	4.33	0.0	32.4
64.75	0.00	0.18	64.38	9.16	5.78	4.36	0.0	32.0
65.00	0.00	0.18	64.62	9.15	5.78	4.40	0.0	31.6
65.25	0.00	0.18	64.87	9.15	5.78	4.43	0.0	31.6
65.50	0.00	0.18	65.12	9.14	5.78	4.47	0.0	31.5
65.75	0.00	0.18	65.37	9.13	5.77	4.50	0.0	31.4
66.00	0.00	0.18	65.61	9.12	5.77	4.54	0.0	31.4
66.25	0.00	0.18	65.86	9.11	5.77	4.57	0.0	31.3
66.50	0.00	0.18	66.11	9.11	5.77	4.61	0.0	31.2
66.75	0.00	0.18	66.36	9.10	5.77	4.64	0.0	31.2
67.00	0.00	0.18	66.60	9.09	5.76	4.68	0.0	31.1
67.25	0.00	0.18	66.85	9.08	5.76	4.71	0.0	31.0
67.50	0.00	0.18	67.10	9.07	5.76	4.75	0.0	31.0
67.75	0.00	0.18	67.35	9.06	5.76	4.78	0.0	30.9
68.00	0.00	0.18	67.59	9.06	5.75	4.81	0.0	30.8
68.25	0.00	0.18	67.84	9.05	5.75	4.85	0.0	30.8
68.50	0.00	0.18	68.09	9.04	5.75	4.88	0.0	30.7
68.75	0.00	0.18	68.34	9.03	5.75	4.92	0.0	30.6
69.00	0.00	0.18	68.58	9.02	5.75	4.95	0.0	30.6
69.25	0.00	0.18	68.83	9.02	5.74	4.98	0.0	30.5
69.50	0.00	0.18	69.08	9.01	5.74	5.02	0.0	30.5
69.75	0.00	0.17	69.33	9.00	5.74	5.05	0.0	30.4
70.00	0.00	0.17	69.58	8.99	5.74	5.08	0.0	30.3
70.25	0.00	0.17	69.82	8.98	5.73	5.12	0.0	30.3
70.50	0.00	0.17	70.07	8.98	5.73	5.15	0.0	30.2
70.75	0.00	0.17	70.32	8.97	5.73	5.18	0.0	30.1
71.00	0.00	0.17	70.57	8.96	5.73	5.21	0.0	30.1
71.25	0.00	0.17	70.81	8.95	5.73	5.25	0.0	30.0
71.50	0.00	0.17	71.06	8.95	5.72	5.28	0.0	30.0
71.75	0.00	0.17	71.31	8.94	5.72	5.31	0.0	29.9
72.00	0.00	0.17	71.56	8.93	5.72	5.34	0.0	29.8
72.25	0.00	0.17	71.80	8.92	5.72	5.38	0.0	29.8
72.50	0.00	0.17	72.05	8.91	5.71	5.41	0.0	29.7
72.75	0.00	0.17	72.30	8.91	5.71	5.44	0.0	29.7
73.00	0.00	0.17	72.55	8.90	5.71	5.47	0.0	29.6
73.25	0.00	0.17	72.80	8.89	5.71	5.50	0.0	29.5
73.50	0.00	0.17	73.04	8.88	5.70	5.53	0.0	29.5
73.75	0.00	0.17	73.29	8.87	5.70	5.57	0.0	29.4
74.00	0.00	0.17	73.54	8.87	5.70	5.60	0.0	29.4
74.25	0.00	0.17	73.79	8.86	5.70	5.63	0.0	29.3
74.50	0.00	0.17	74.03	8.85	5.70	5.66	0.0	29.3
74.75	0.00	0.17	74.28	8.84	5.69	5.69	0.0	29.2
75.00	0.00	0.17	74.53	8.84	5.69	5.72	0.0	29.1
75.25	0.00	0.17	74.78	8.83	5.69	5.75	0.0	29.1
75.50	0.00	0.17	75.02	8.82	5.69	5.78	0.0	29.0
75.75	0.00	0.17	75.27	8.81	5.68	5.82	0.0	29.0
76.00	0.00	0.17	75.52	8.80	5.68	5.85	0.0	28.9
76.25	0.00	0.17	75.77	8.80	5.68	5.88	0.0	28.9
76.50	0.00	0.17	76.02	8.79	5.68	5.91	0.0	28.8
76.75	0.00	0.17	76.26	8.78	5.67	5.94	0.0	28.8
77.00	0.00	0.17	76.51	8.77	5.67	5.97	0.0	28.7
77.25	0.00	0.17	76.76	8.77	5.67	6.00	0.0	28.6
77.50	0.00	0.17	77.01	8.76	5.67	6.03	0.0	28.6
77.75	0.00	0.17	77.25	8.75	5.66	6.06	0.0	28.5
78.00	0.00	0.17	77.50	8.74	5.66	6.09	0.0	28.5
78.25	0.00	0.17	77.75	8.73	5.66	6.12	0.0	28.4
78.50	0.00	0.17	78.00	8.73	5.66	6.15	0.0	28.4
78.75	0.00	0.17	78.24	8.72	5.66	6.18	0.0	28.3

79.00	0.00	0.17	78.49	8.71	5.65	6.21	0.0	28.3
79.25	0.00	0.17	78.74	8.70	5.65	6.24	0.0	28.2
79.50	0.00	0.17	78.99	8.70	5.65	6.27	0.0	28.2
79.75	0.00	0.17	79.24	8.69	5.65	6.30	0.0	28.1
80.00	0.00	0.17	79.48	8.68	5.64	6.32	0.0	28.1
80.25	0.00	0.17	79.73	8.67	5.64	6.35	0.0	28.0
80.50	0.00	0.17	79.98	8.67	5.64	6.38	0.0	28.0
80.75	0.00	0.17	80.23	8.66	5.64	6.41	0.0	27.9
81.00	0.00	0.17	80.47	8.65	5.63	6.44	0.0	27.8
81.25	0.00	0.17	80.72	8.64	5.63	6.47	0.0	27.8
81.50	0.00	0.17	80.97	8.64	5.63	6.50	0.0	27.7
81.75	0.00	0.17	81.22	8.63	5.63	6.53	0.0	27.7
82.00	0.00	0.17	81.47	8.62	5.62	6.56	0.0	27.6
82.25	0.00	0.17	81.71	8.61	5.62	6.58	0.0	27.6
82.50	0.00	0.17	81.96	8.61	5.62	6.61	0.0	27.5
82.75	0.00	0.16	82.21	8.60	5.62	6.64	0.0	27.5
83.00	0.00	0.16	82.46	8.59	5.61	6.67	0.0	27.4
83.25	0.00	0.16	82.70	8.58	5.61	6.70	0.0	27.4
83.50	0.00	0.16	82.95	8.58	5.61	6.73	0.0	27.3
83.75	0.00	0.16	83.20	8.57	5.61	6.75	0.0	27.3
84.00	0.00	0.16	83.45	8.56	5.61	6.78	0.0	27.3
84.25	0.00	0.16	83.70	8.55	5.60	6.81	0.0	27.2
84.50	0.00	0.16	83.94	8.55	5.60	6.84	0.0	27.2
84.75	0.00	0.16	84.19	8.54	5.60	6.86	0.0	27.1
85.00	0.00	0.16	84.44	8.53	5.60	6.89	0.0	27.1
85.25	0.00	0.16	84.69	8.52	5.59	6.92	0.0	27.0
85.50	0.00	0.16	84.94	8.52	5.59	6.95	0.0	27.0
85.75	0.00	0.16	85.18	8.51	5.59	6.97	0.0	26.9
86.00	0.00	0.16	85.43	8.50	5.59	7.00	0.0	26.9
86.25	0.00	0.16	85.68	8.49	5.58	7.03	0.0	26.8
86.50	0.00	0.16	85.93	8.49	5.58	7.06	0.0	26.8
86.75	0.00	0.16	86.17	8.48	5.58	7.08	0.0	26.7
87.00	0.00	0.16	86.42	8.47	5.58	7.11	0.0	26.7
87.25	0.00	0.16	86.67	8.46	5.57	7.14	0.0	26.6
87.50	0.00	0.16	86.92	8.46	5.57	7.16	0.0	26.6
87.75	0.00	0.16	87.17	8.45	5.57	7.19	0.0	26.5
88.00	0.00	0.16	87.41	8.44	5.57	7.22	0.0	26.5
88.25	0.00	0.16	87.66	8.43	5.56	7.24	0.0	26.5
88.50	0.00	0.16	87.91	8.43	5.56	7.27	0.0	26.4
88.75	0.00	0.16	88.16	8.42	5.56	7.30	0.0	26.4
89.00	0.00	0.16	88.40	8.41	5.56	7.32	0.0	26.3
89.25	0.00	0.16	88.65	8.40	5.55	7.35	0.0	26.3
89.50	0.00	0.16	88.90	8.40	5.55	7.37	0.0	26.2
89.75	0.00	0.16	89.15	8.39	5.55	7.40	0.0	26.2
90.00	0.00	0.16	89.40	8.38	5.55	7.43	0.0	26.1
90.25	0.00	0.16	89.64	8.38	5.55	7.45	0.0	26.1
90.50	0.00	0.16	89.89	8.37	5.54	7.48	0.0	26.1
90.75	0.00	0.16	90.14	8.36	5.54	7.50	0.0	26.0
91.00	0.00	0.16	90.39	8.35	5.54	7.53	0.0	26.0
91.25	0.00	0.16	90.64	8.35	5.54	7.56	0.0	25.9
91.50	0.00	0.16	90.88	8.34	5.53	7.58	0.0	25.9
91.75	0.00	0.16	91.13	8.33	5.53	7.61	0.0	25.8
92.00	0.00	0.16	91.38	8.33	5.53	7.63	0.0	25.8
92.25	0.00	0.16	91.63	8.32	5.53	7.66	0.0	25.8
92.50	0.00	0.16	91.87	8.31	5.52	7.67	0.0	15.3
92.75	0.00	0.16	92.12	8.30	5.52	7.68	0.0	6.2
93.00	0.00	0.16	92.36	8.30	5.52	7.69	0.0	6.2
93.25	0.00	0.16	92.60	8.29	5.52	7.69	0.0	6.2
93.50	0.00	0.16	92.84	8.28	5.51	7.70	0.0	6.2
93.75	0.00	0.16	93.08	8.27	5.51	7.70	0.0	6.2
94.00	0.00	0.16	93.32	8.27	5.51	7.71	0.0	6.2
94.25	0.00	0.16	93.56	8.26	5.51	7.72	0.0	6.2
94.50	0.00	0.16	93.81	8.25	5.50	7.72	0.0	6.2
94.75	0.00	0.16	94.05	8.25	5.50	7.73	0.0	6.2
95.00	0.00	0.16	94.29	8.24	5.50	7.73	0.0	6.2
95.25	0.00	0.16	94.53	8.23	5.50	7.74	0.0	6.1

95.50	0.00	0.16	94.77	8.22	5.50	7.75	0.0	6.1
95.75	0.00	0.16	95.01	8.22	5.49	7.75	0.0	6.1
96.00	0.00	0.16	95.25	8.21	5.49	7.76	0.0	6.1
96.25	0.00	0.16	95.50	8.20	5.49	7.76	0.0	6.1
96.50	0.00	0.15	95.74	8.20	5.49	7.77	0.0	6.1
96.75	0.00	0.15	95.98	8.19	5.48	7.78	0.0	6.1
97.00	0.00	0.15	96.22	8.18	5.48	7.78	0.0	6.1
97.25	0.00	0.15	96.46	8.18	5.48	7.79	0.0	6.1
97.50	0.00	0.15	96.70	8.17	5.48	7.79	0.0	6.1
97.75	0.00	0.15	96.94	8.16	5.47	7.80	0.0	6.1
98.00	0.00	0.15	97.19	8.15	5.47	7.80	0.0	6.0
98.25	0.00	0.15	97.43	8.15	5.47	7.81	0.0	6.0
98.50	0.00	0.15	97.67	8.14	5.47	7.82	0.0	6.0
98.75	0.00	0.15	97.91	8.13	5.46	7.82	0.0	6.0
99.00	0.00	0.15	98.15	8.13	5.46	7.83	0.0	6.0
99.25	0.00	0.15	98.39	8.12	5.46	7.83	0.0	6.0
99.50	0.00	0.15	98.64	8.11	5.46	7.84	0.0	6.0
99.75	0.00	0.15	98.88	8.11	5.45	7.84	0.0	5.8