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Orig. File
ACT 10071035 #

93-40-5-4
8 of 9
3 of 9

SUNNYSIDE COGENERATION ASSOCIATES

POST OFFICE BOX 58087
SALT LAKE CITY, UTAH 84158-0087

RECEIVED

AUG 27 1993

DIVISION OF
OIL, GAS & MINING

August 27, 1993

Ms. Pamela Grubaugh-Littig
Division of Oil, Gas and Mining
3 Triad Center - Suite 350
Salt Lake City, UT 84180-1203

Dear Pam,

This letter is in regards to Violation No. 8 of 9 concerning the outlet diversion of the Pasture Pond, the revegetation test plot area, and the revegetation test plot topsoil stockpile.

Calculations for the outlet of the Pasture Pond are included for your review. SCA proposes to realign the outlet diversion of the Pasture Pond so that the majority of the ditch lies outside the SCA Permit Boundary. The only section that will remain on the SCA Permit Boundary is the first approximately 50 feet of the ditch. SCA will be responsible for maintenance on this section. SCA has also consulted with Parsons Main to request that they maintain the portion of the ditch outside the SCA Permit boundary. SCA commits to restoring the disturbed portions of the SCA Permit Area that remain after the ditch is realigned.

SCA is in the process of resolving issues surrounding the revegetation test plot area. SCA is reviewing Mr. Pat Collins report on the test plot area and using the data to determine the future of this site. SCA is requesting an extension until September 10, 1993 to resolve the issues concerning this violation.

The revegetation test plot topsoil stockpile is not within the SCA Permit Boundary. Therefore, SCA is proposing to remove this stockpile from all applicable drawings contained within the SCA PAP.

To resolve all of the issues discussed above, SCA is formally requesting an extension to September 30, 1993 to satisfy the requirements of these violations.

15 AEB

Sincerely,



David R. Pearce
Authorized Member, Management Committee



Alane E. Boyd, P.E.
Senior Engineer

cc: Brian Burnett, CDN

**PASTURE POND OUTLET DESIGN SUMMARY:
CRITERIA AND RESULTS**

100 year, 6 hour storm

PEAK STAGE 6.25 feet deep ELEVATION 6490.75

PEAK DISCHARGE RATE 1.258 cfs @ 5.0 hours

PEAK DISCHARGE THROUGH 2" PIPE 0.1 cfs or 4.6 ft/s

2" PIPE DISCHARGES BETWEEN 2.8 hours AND 50 hours

BASIN TRAP EFFICIENCY 81.3%

TOTAL SEDIMENT LOAD INFLOW 9.12 tons or 110 ft³

TOTAL SEDIMENT LOAD DISCHARGED 1.71 tons or 20.7 ft³

OUTLET DITCH:

TRAPEZOIDAL DITCH WITH 4" DIAMETER RIP RAP

BOTTOM WIDTH = 0.5 ft

BOTTOM SLOPE = 2%

SIDE SLOPES = 2:1 (h:v)

MAXIMUM FLOW DEPTH = 0.4 ft

PASTURE POND DRAINAGE CALCULATIONS

"Sedimot-II" is used to calculate the hydrographs as runoff flows through the culverts and ditches and into the Pasture Pond. The peak flows were used to properly size the culverts and ditches to pass a 100 year, 6 hour storm (2.05 inches precipitation). The total runoff was used to size the pond to hold a 10 year, 24 hour storm (1.84 inches), or a 25 year, 6 hour storm (1.62 inches).

This report explains the calculations needed for input into the software program.

SUBWATERSHEDS

The Pasture Pond drainage area is divided into four subwatersheds for routing analysis. "Sedimot-II" organizes the drainage system as follows:

- Subwatershed (SWS) = area from which water collects by overland flow to the outlet.
- Structure (S) = Culverts. For software purposes, null structure must be placed before each junction when no physical structure exists.
- Branch (B) = Ditch or waterway.
- Junction (J) = Point where a two or three branches join, or the outlet of a watershed.

This drainage system is divided into one junction with two branches. The first branch has two structures with one subwatershed each. The second branch has one structure with two subwatersheds. These are located as follows (see Figure 1):

- J1 = Junction of the two culverts meeting at the west side of the Coal Access Road. The combined flow discharges directly into the Pasture Pond from this point.
- B1 = Branch 1 is the ditch on the south side of the Lower Haul Road.
- B2 = Branch 2 is the ditch on the north side of the Lower Haul Road.
- B1.S1 = Proposed 12" culvert at the northeast end of storage area 2. Runoff from storage area 2 flows through the culvert.
- B1.S2 = Existing 12" culvert crossing the Lower Haul Road to the west side of the Coal Access Road. Runoff from storage area 2 and from the hillside south of the Lower Haul Road flows through the culvert. This culvert passes 4.13 cfs with a submerged inlet head = 1.9ft (Fig.3).
- B2.S1 = Existing 24" culvert crossing the Coal Access Road at the outlet of storage area 1.
- B2.S1.SWS1 = This subwatershed is the drainage area northeast of storage area 1.
- B2.S1.SWS2 = This subwatershed is storage area 1.

The four subwatershed areas are therefore identified as (see Figure 1):

J1.B1.S1.SWS1; J1.B1.S2.SWS1; J1.B2.S1.SWS1; J1.B2.S1.SWS2

CURVE NUMBERS

The Pasture Pond curve numbers are based on the Soil Conservation Service graph included as Figure 2. The soil types found on the site correspond to SCS Class B or SCS Class C seen in Figure 2. The vegetation cover is relatively sparse, consisting of a mixture of Juniper Grass, Mountain Brush, and Desert Brush. Curve numbers were averaged from these vegetation types.

TIME OF CONCENTRATION

Each subwatershed requires a certain time for the water to reach the outlet following the longest path. The runoff from these subwatersheds is approximated by the "Sedimot-II" "Disturbed" unit hydrograph for areas with poor vegetative cover. The overland flow velocity was estimated using the Soil Conservation Service Upland Curves (SCS 1972) corresponding to the slope and vegetation of the drainage areas. Time of concentration was calculated by dividing the average velocity into the distance to the subwatershed outlet.

J1.B1.S1.SWS1 (Storage Area 2)

The soil type for this watershed is between SCS Class B and SCS Class C (see Figure 2). This soil has moderate to slow infiltration rates when thoroughly wetted.

Vegetation in this area averages about 10-15% cover density. The CN numbers used for averaging are as follows:

Juniper Grass	82
Mountain Brush	84
<u>Desert Brush</u>	<u>86</u>
Average	84

The area is 3.1 acres. The longest path is about 700 feet with a 3% slope and an overland velocity of about 0.7 ft/sec. This produces a TC of approximately 0.28 hrs.

J1.B1.S2.SWS1

The soil type for this watershed is Class B. This soil has moderate infiltration rates when thoroughly wetted.

Vegetation averages about 10-15% cover density. The CN numbers used for averaging are as follows:

Juniper Grass	78
Mountain Brush	80
<u>Desert Brush</u>	<u>84</u>
Average	81

The area is 2.1 acres. The longest path is about 800 feet with a 3% slope or a velocity of about 0.7 ft/sec. This produces a TC of approximately 0.32 hrs.

J1.B2.S1.SWS1

The soil type for this watershed is SCS Class B. This soil has moderate infiltration rates when thoroughly wetted.

Vegetation here averages about 25-35% cover density. The CN numbers used for averaging are as follows:

Juniper Grass	69
Mountain Brush	73
<u>Desert Brush</u>	<u>83</u>
Average	75

The area is 5.9 acres. The longest path is about 1400 feet at a 2% slope and an overland velocity of about 0.6 ft/sec. This produces a TC of approximately 0.65 hrs.

J1.B2.S1.SWS2 (Storage area 1)

The soil type for this watershed is Class B. This soil has moderate infiltration rates when thoroughly wetted.

Vegetation averages about 10-15% cover density. The CN numbers used for averaging are as follows:

Juniper Grass	78
Mountain Brush	80
<u>Desert Brush</u>	<u>84</u>
Average	81

The area is 3.8 acres. The longest path is about 800 feet with a 3% slope and an overland velocity of about 0.7 ft/sec. This produces a TC of approximately 0.32 hrs.

ROUTING COEFFICIENTS

"Sedimot-II" uses Muskingum routing methods. Flows must be routed between structures or from a subwatershed outlet to the corresponding structure (if the outlet is not at the structure). No routing is used through subwatersheds that do not have inflow from a previous watershed, or structure (this water flow is accounted for with the time of concentration and the unit hydrograph). Muskingum coefficients K and X are used as follows:

$$K = \text{Travel time through diversion.} \quad X = \frac{1}{2} \frac{\text{Velocity}}{(1.7 + \text{Velocity})}$$

Two areas required routing:

Branch 1, from Structure 1 to Structure 2.

Slope = 3% Horiz. Dist = 900 ft. Velocity = 2.9 ft/s

K = .09 hrs X = 0.31

Branch 2, from the outlet of Subwatershed 1 to Structure 1.

Slope = 3% Horiz. Dist = 800 ft. Velocity = 2.8 ft/s

K = .08 hrs X = 0.31

RIPRAP SIZING

Riprap is placed at the culvert outlets to prevent erosion. The size of the stones is based on the expected maximum velocity of water flowing out of the culvert. Velocities are expected to reach up to 5 ft/s. The three culverts will use a minimum of 4" diameter stones (see Figure 4).

UNIVERSITY OF KENTUCKY COMPUTER MODEL
OF SURFACE MINE HYDROLOGY AND SEDIMENTOLOGY
FOR MORE INFORMATION CONTACT THE AGRICULTURAL
ENGINEERING DEPARTMENT

THE UK MODEL IS A DESIGN MODEL DEVELOPED TO PREDICT
THE HYDRAULIC AND SEDIMENT RESPONSE FROM SURFACE
MINED LANDS FOR A SPECIFIED RAINFALL EVENT (SINGLE STORM)

VERSION DATE 5-25-83

DISCLAIMER: NEITHER THE UNIVERSITY NOR ANY OF ITS EMPLOYEES
ACCEPT ANY RESPONSIBILITY OR LEGAL LIABILITY FOR THE
CONCLUSIONS DRAWN FROM THE RESULTS OF THIS MODEL

WATERSHED IDENTIFICATION CODE

PASTURE POND OUTLET DESIGN 100 YEAR, 6 HOUR

===== STORM INPUT =====

QUESTION
NO.

1. STORM TYPE -	SCS'S TYPE 2
2. RAINFALL DEPTH -	2.05 INCHES
3. STORM DURATION -	6.00 HOURS
4. TIME INCREMENT -	.10 HOURS

===== WATERSHED DATA =====

QUESTION
NO.

1. NUMBER OF JUNCTIONS -	2
2. JUNCTION NUMBER OF BRANCHES	

1
2

2
1

3. COMPUTATION - BOTH HYDROLOGY AND SEDIMENTOLOGY

=====

===== SEDIMENTOLOGY INPUTS =====

QUESTION

NO.

1. SPECIFIC GRAVITY -	2.65
2. COEFFICIENT FOR DISTRIBUTING SEDIMENT LOAD -	1.50
3. SUBMERGED BULK SPECIFIC GRAVITY -	1.40
4. NUMBER OF PARTICLE SIZE DISTRIBUTIONS -	1
5. NUMBER OF DATA VALUES PER PARTICLE SIZE DISTRIBUTION -	6

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===== INPUT PARTICLE SIZE DISTRIBUTIONS =====

VALUE NO.	SIZE, MM
1	75.0000
2	4.7500
3	2.0000
4	.4250
5	.0750
6	.0001

=====

===== PERCENT FINER DISTRIBUTIONS =====

VALUE NO.	PARTICLE SIZE #
	1
1	95.00
2	92.00
3	85.00
4	67.00
5	40.00
6	.00

=====

===== STRUCTURE INPUT FOR JUNCTION #1 =====

BRANCH	NUMBER OF STRUCTURES
1	2
2	1

=====

===== BETWEEN STRUCTURE ROUTING PARAMETERS =====

BRANCH NO.	BETWEEN	PARAMETERS		
		1 TIME	2 MUSK. K	3 MUSK. X,
1	PRIOR J OR S TO STRUCTURE 1	.00	.00	.00
1	PRIOR J OR S TO STRUCTURE 2	.09	.09	.31
2	PRIOR J OR S TO STRUCTURE 1	.00	.00	.00

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===== STRUCTURE INPUT FOR JUNCTION #2 =====

BRANCH	NUMBER OF STRUCTURES
1	1

=====

===== BETWEEN STRUCTURE ROUTING PARAMETERS =====

BRANCH NO.	BETWEEN	PARAMETERS		
		1 TIME	2 MUSK. K	3 MUSK. X,
1	PRIOR J OR S TO STRUCTURE 1	.01	.01	.35

=====

===== STRUCTURE DATA FOR JUNCTION #1 =====

QUESTION NO.	
1.	NUMBER OF SUBWATERSHEDS - 1
2.	TYPE OF SEDIMENT CONTROL STRUCTURE - NULL STRUC.

=====

JUNCTION 1, BRANCH 1, STRUCTURE 1

***** RESULTS FROM SUBWATERSHED 1 *****

*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	75.0000	4.7500	2.0000	.4250	.0750	.0001
PERCENT FINER	100.0000	100.0000	100.0000	81.0116	48.3652	.0000

*** HYDROGRAPH AND SEDIMENT GRAPH ***
 (TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	*****	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.10	.000	.000
.20	.000	.000	*	.30	.000	.000
.40	.000	.000	*	.50	.000	.000
.60	.000	.000	*	.70	.000	.000
.80	.000	.000	*	.90	.000	.000
1.00	.000	.000	*	1.10	.000	.000
1.20	.000	.000	*	1.30	.000	.000
1.40	.000	.000	*	1.50	.000	.000
1.60	.000	.000	*	1.70	.000	.000
1.80	.000	.000	*	1.90	.000	.000
2.00	.000	.000	*	2.10	.000	.000
2.20	.000	.000	*	2.30	.000	.000
2.40	.000	.000	*	2.50	.000	.000
2.60	.022	1572.160	*	2.70	.253	5363.290
2.80	.867	9903.659	*	2.90	1.664	13698.250
3.00	2.409	16465.190	*	3.10	2.908	18080.780
3.20	2.612	17142.010	*	3.30	1.755	14067.900
3.40	1.297	12101.230	*	3.50	1.151	11405.180
3.60	1.005	10658.140	*	3.70	.809	9565.147
3.80	.608	8296.004	*	3.90	.523	7697.123
4.00	.497	7506.215	*	4.10	.473	7319.465
4.20	.431	6988.359	*	4.30	.382	6579.346
4.40	.359	6380.735	*	4.50	.352	6316.462
4.60	.343	6240.098	*	4.70	.322	6044.938
4.80	.294	5780.241	*	4.90	.281	5645.430
5.00	.276	5599.807	*	5.10	.270	5532.661
5.20	.249	5320.875	*	5.30	.222	5018.104
5.40	.208	4855.957	*	5.50	.203	4796.414
5.60	.199	4751.598	*	5.70	.196	4722.008
5.80	.195	4708.022	*	5.90	.195	4709.327
6.00	.196	4714.038	*	6.10	.188	4615.646
6.20	.141	4008.215	*	6.30	.073	2889.542
6.40	.037	2048.481	*	6.50	.023	1611.091
6.60	.012	1172.949	*	6.70	.005	733.483

 JUNCTION 1, BRANCH 1, STRUCTURE 1

*** HYDRAULIC INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	AREA ACRES	CURVE NUMBER	TC HR	TT HR	ROUTING COEFFICIENTS K-HRS	X,	UNIT HYDRO
1	3.10	84.00	.280	.000	.000	.00	1.0

*** SEDIMENT INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	SEG NUM	SOIL K	LENGTH FEET	SLOPE PCT	CP VALUE	PART OPT	SURF COND
1	1	.20	50.0	3.00	1.000	1.0	.0

*** COMPUTED VALUES FOR INDIVIDUAL WATERSHEDS ***

WATERSHED	PEAK FLOW (CFS)	RUNOFF (INCHES)	SEDIMENT TONS	DIAM (MM)	DELIVERY RATIO 1	DELIVERY RATIO 2
1	2.91	.78	3.27	.082	.827	1.000

***** SUMMARY TABLE FOR TOTAL WATERSHED *****

STORM DURATION	=	6.00	HOURS
PRECIPITATION DEPTH	=	2.05	INCHES
RUNOFF VOLUME	=	.2014	ACRE-FT
PEAK DISCHARGE	=	2.9083	CFS
AREA	=	3.1000	ACRES
TIME OF PEAK DISCHARGE	=	3.10	HRS
LOAD RATE EXPONENT FACTOR	=	1.50	
BETA	=	1.0000	
SUBMERGE BULK SPECIFIC GRAVITY	=	1.40	
RAINFALL EROSIVITY FACTOR	=	40.00	EI UNIT
PEAK CONCENTRATION	=	18080.78	MG/L
PEAK SETTLEABLE CONCENTRATION	=	8.4278	ML/L
PEAK SETTLEABLE CONCENTRATION	=	11798.89	MG/L
TOTAL SEDIMENT YIELD	=	3.2689	TONS
REPRESENTATIVE PARTICLE SIZE	=	.0818	MM
TIME OF PEAK CONCENTRATION	=	3.10	HRS
PERIOD OF SIGNIFICANT CONCENTRATION	=	4.20	HRS
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	5.50	ML/L
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	5.50	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	3.25	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	.57	ML/L

===== STRUCTURE DATA FOR JUNCTION #1 =====

QUESTION NO.

1. NUMBER OF SUBWATERSHEDS -	1
2. TYPE OF SEDIMENT CONTROL STRUCTURE -	NULL STRUC.

=====

JUNCTION 1, BRANCH 1, STRUCTURE 2

***** RESULTS FROM SUBWATERSHED 1 *****

*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	75.0000	4.7500	2.0000	.4250	.0750	.0001
PERCENT FINER	100.0000	100.0000	100.0000	86.2181	51.4735	.0000

*** HYDROGRAPH AND SEDIMENT GRAPH ***
(TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	***** *	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.10	.000	.000
.20	.000	.000	*	.30	.000	.000
.40	.000	.000	*	.50	.000	.000
.60	.000	.000	*	.70	.000	.000
.80	.000	.000	*	.90	.000	.000
1.00	.000	.000	*	1.10	.000	.000
1.20	.000	.000	*	1.30	.000	.000
1.40	.000	.000	*	1.50	.000	.000
1.60	.000	.000	*	1.70	.000	.000
1.80	.000	.000	*	1.90	.000	.000
2.00	.000	.000	*	2.10	.000	.000
2.20	.000	.000	*	2.30	.000	.000
2.40	.000	.000	*	2.50	.000	.000
2.60	.000	.000	*	2.70	.089	3000.261
2.80	.350	5950.214	*	2.90	.771	8820.935
3.00	1.225	11110.170	*	3.10	1.503	12299.340
3.20	1.385	11810.030	*	3.30	.985	9966.863
3.40	.749	8696.825	*	3.50	.678	8276.224
3.60	.606	7822.633	*	3.70	.499	7102.089
3.80	.383	6221.070	*	3.90	.316	5656.460
4.00	.300	5513.997	*	4.10	.285	5370.729
4.20	.261	5136.772	*	4.30	.233	4853.879
4.40	.217	4688.747	*	4.50	.213	4640.737
4.60	.207	4576.606	*	4.70	.195	4439.632
4.80	.179	4261.096	*	4.90	.171	4156.702
5.00	.168	4122.250	*	5.10	.163	4061.605
5.20	.151	3912.526	*	5.30	.136	3709.395
5.40	.127	3586.618	*	5.50	.124	3540.603
5.60	.122	3509.312	*	5.70	.120	3486.701
5.80	.119	3473.007	*	5.90	.119	3468.398
6.00	.119	3472.809	*	6.10	.111	3359.035
6.20	.085	2929.126	*	6.30	.047	2193.028
6.40	.025	1602.411	*	6.50	.016	1278.232
6.60	.010	989.796	*	6.70	.005	699.267

JUNCTION 1, BRANCH 1, STRUCTURE 2

* * * * *

BETA IS NEGATIVE WHICH INHERENTLY INDICATES THAT THE STREAM SYSTEM TRANSPORT CAPACITY EXCEEDS THE SEDIMENT LOAD, AS EVALUATED BY WILLIAMS' TECHNIQUE. SEDIMOT II DOES NOT CONSIDER ERODIBLE CHANNELS SO BETA IS SET EQUAL TO .01. IF THE USER WISHES TO EVALUATE THE TRANSPORT CAPACITY OF THE STREAM DIRECTLY HE/SHE SHOULD USE SUBROUTINE SLOSS.

*** HYDRAULIC INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	AREA ACRES	CURVE NUMBER	TC HR	TT HR	ROUTING K-HRS	COEFFICIENTS X,	UNIT HYDRO
1	2.10	81.00	.320	.000	.000	.00	1.0

*** SEDIMENT INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	SEG NUM	SOIL K	LENGTH FEET	SLOPE PCT	CP VALUE	PART OPT	SURF COND
1	1	.20	20.0	3.00	1.000	1.0	.0

* * * COMPUTED VALUES FOR INDIVIDUAL WATERSHEDS * * *

WATERSHED	PEAK FLOW (CFS)	RUNOFF (INCHES)	SEDIMENT TONS	DIAM (MM)	DELIVERY RATIO 1	DELIVERY RATIO 2
1	1.50	.64	1.23	.062	.777	1.000

***** SUMMARY TABLE FOR TOTAL WATERSHED *****

STORM DURATION	=	6.00	HOURS
PRECIPITATION DEPTH	=	2.05	INCHES
RUNOFF VOLUME	=	.1114	ACRE-FT
PEAK DISCHARGE	=	1.5026	CFS
AREA	=	2.1000	ACRES
TIME OF PEAK DISCHARGE	=	3.10	HRS
LOAD RATE EXPONENT FACTOR	=	1.50	
BETA	=	.0100	
SUBMERGE BULK SPECIFIC GRAVITY	=	1.40	
RAINFALL EROSITIVITY FACTOR	=	40.00	EI UNIT
PEAK CONCENTRATION	=	12299.34	MG/L
PEAK SETTLEABLE CONCENTRATION	=	5.5412	ML/L
PEAK SETTLEABLE CONCENTRATION	=	7757.72	MG/L
TOTAL SEDIMENT YIELD	=	1.2314	TONS
REPRESENTATIVE PARTICLE SIZE	=	.0621	MM
TIME OF PEAK CONCENTRATION	=	3.10	HRS

PERIOD OF SIGNIFICANT CONCENTRATION=	4.20	HRS
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION =	3.63	ML/L
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD =	3.63	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION =	2.23	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD =	.39	ML/L

SUMMARY TABLE OF COMBINED HYDROGRAPH AND SEDIGRAPH VALUES

PREVIOUS MUSKINGUM ROUTING X,	=	.31	
PREVIOUS MUSKINGUM ROUTING K	=	.0900	HRS
PREVIOUS ROUTED PEAK DISCHARGE	=	2.74	CFS
TIME OF ROUTED PEAK DISCHARGE	=	3.20	HRS
TOTAL DRAINAGE AREA	=	5.20	ACRES
TOTAL RUNOFF VOLUME	=	.3127	AC-FT
PEAK RUNOFF DISCHARGE	=	4.13	CFS
TIME TO PEAK DISCHARGE	=	3.20	HRS
PREVIOUS STRUCTURE DELIVERY RATIO	=	1.00	
PREVIOUS STRUCTURE TRAVEL TIME	=	.0900	HRS
TOTAL SEDIMENT YIELD	=	4.4995	TONS
PEAK SEDIMENT CONCENTRATION	=	15923.41	MG/L
PEAK SETTLEABLE CONCENTRATION	=	7.3534	ML/L
PEAK SETTLEABLE CONCENTRATION	=	10294.82	MG/L
TIME TO PEAK CONCENTRATION	=	3.20	HRS
PERIOD OF SIGNIFICANT CONCENTRATION	=	4.30	HRS
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION =	4.83	ML/L	
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD =	4.83	ML/L	
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION =	2.89	ML/L	
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD =	.52	ML/L	

===== STRUCTURE DATA FOR JUNCTION #1 =====

QUESTION

NO.

- | | |
|---|-------------|
| 1. NUMBER OF SUBWATERSHEDS - | 2 |
| 2. TYPE OF SEDIMENT CONTROL STRUCTURE - | NULL STRUC. |

=====

JUNCTION 1, BRANCH 2, STRUCTURE 1

***** RESULTS FROM SUBWATERSHED 1 *****

*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	75.0000	4.7500	2.0000	.4250	.0750	.0001
PERCENT FINER	100.0000	100.0000	100.0000	100.0000	68.1408	.0000

*** HYDROGRAPH AND SEDIMENT GRAPH ***
(TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	***** *	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.10	.000	.000
.20	.000	.000	*	.30	.000	.000
.40	.000	.000	*	.50	.000	.000
.60	.000	.000	*	.70	.000	.000
.80	.000	.000	*	.90	.000	.000
1.00	.000	.000	*	1.10	.000	.000
1.20	.000	.000	*	1.30	.000	.000
1.40	.000	.000	*	1.50	.000	.000
1.60	.000	.000	*	1.70	.000	.000
1.80	.000	.000	*	1.90	.000	.000
2.00	.000	.000	*	2.10	.000	.000
2.20	.000	.000	*	2.30	.000	.000
2.40	.000	.000	*	2.50	.000	.000
2.60	.000	.000	*	2.70	.000	.000
2.80	.007	715.661	*	2.90	.051	1972.325
3.00	.185	3772.128	*	3.10	.460	5935.836
3.20	.860	8112.362	*	3.30	1.276	9874.384
3.40	1.588	11013.100	*	3.50	1.698	11387.170
3.60	1.602	11061.360	*	3.70	1.425	10435.410
3.80	1.246	9758.843	*	3.90	1.105	9192.333
4.00	1.011	8793.165	*	4.10	.932	8446.361
4.20	.859	8107.650	*	4.30	.791	7784.120
4.40	.730	7477.629	*	4.50	.672	7175.619
4.60	.613	6854.810	*	4.70	.557	6533.162
4.80	.508	6239.806	*	4.90	.471	6008.351
5.00	.444	5835.779	*	5.10	.420	5672.087
5.20	.397	5520.668	*	5.30	.377	5376.662
5.40	.358	5237.807	*	5.50	.339	5096.171
5.60	.319	4945.498	*	5.70	.301	4809.480
5.80	.288	4702.043	*	5.90	.279	4627.514
6.00	.274	4581.855	*	6.10	.270	4548.358
6.20	.263	4492.446	*	6.30	.248	4362.152
6.40	.222	4132.598	*	6.50	.186	3781.552
6.60	.144	3322.393	*	6.70	.105	2846.835
6.80	.076	2414.552	*	6.90	.055	2065.441
7.00	.043	1815.749	*	7.10	.034	1615.379
7.20	.026	1422.653	*	7.30	.020	1230.942
7.40	.014	1039.221	*	7.50	.009	847.365

JUNCTION 1, BRANCH 2, STRUCTURE 1

***** RESULTS FROM SUBWATERSHED 2 *****

*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	75.0000	4.7500	2.0000	.4250	.0750	.0001
PERCENT FINER	100.0000	100.0000	100.0000	86.2181	51.4735	.0000

*** HYDROGRAPH AND SEDIMENT GRAPH ***
(TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	***** *	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.10	.000	.000
.20	.000	.000	*	.30	.000	.000
.40	.000	.000	*	.50	.000	.000
.60	.000	.000	*	.70	.000	.000
.80	.000	.000	*	.90	.000	.000
1.00	.000	.000	*	1.10	.000	.000
1.20	.000	.000	*	1.30	.000	.000
1.40	.000	.000	*	1.50	.000	.000
1.60	.000	.000	*	1.70	.000	.000
1.80	.000	.000	*	1.90	.000	.000
2.00	.000	.000	*	2.10	.000	.000
2.20	.000	.000	*	2.30	.000	.000
2.40	.000	.000	*	2.50	.000	.000
2.60	.011	906.901	*	2.70	.161	3443.878
2.80	.633	6828.883	*	2.90	1.395	10121.900
3.00	2.217	12747.130	*	3.10	2.719	14110.580
3.20	2.506	13549.580	*	3.30	1.782	11436.100
3.40	1.356	9979.554	*	3.50	1.227	9497.139
3.60	1.096	8976.862	*	3.70	.903	8150.330
3.80	.692	7139.627	*	3.90	.572	6491.857
4.00	.544	6328.403	*	4.10	.516	6164.024
4.20	.472	5895.588	*	4.30	.421	5570.993
4.40	.393	5381.513	*	4.50	.385	5326.425
4.60	.374	5252.837	*	4.70	.352	5095.663
4.80	.324	4890.794	*	4.90	.309	4771.001
5.00	.304	4731.467	*	5.10	.295	4661.875
5.20	.273	4490.800	*	5.30	.246	4257.695
5.40	.230	4116.798	*	5.50	.224	4063.991
5.60	.220	4028.082	*	5.70	.217	4002.134
5.80	.215	3986.418	*	5.90	.215	3981.129
6.00	.215	3986.191	*	6.10	.201	3855.623
6.20	.153	3362.238	*	6.30	.086	2517.401
6.40	.046	1839.487	*	6.50	.029	1467.372
6.60	.017	1136.274	*	6.70	.009	802.763

 JUNCTION 1, BRANCH 2, STRUCTURE 1

*** HYDRAULIC INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	AREA ACRES	CURVE NUMBER	TC HR	TT HR	ROUTING COEFFICIENTS K-HRS	X,	UNIT HYDRO
1	5.90	75.00	.650	.080	.080	.31	1.0
2	3.80	81.00	.320	.000	.000	.00	1.0

*** SEDIMENT INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	SEG NUM	SOIL K	LENGTH FEET	SLOPE PCT	CP VALUE	PART OPT	SURF COND
1	1	.20	500.0	1.00	1.000	1.0	.0
2	1	.20	25.0	3.00	1.000	1.0	.0

* * * COMPUTED VALUES FOR INDIVIDUAL WATERSHEDS * * *

WATERSHED	PEAK FLOW (CFS)	RUNOFF (INCHES)	SEDIMENT TONS	DIAM (MM)	DELIVERY RATIO 1	DELIVERY RATIO 2
1	1.75	.41	2.20	.013	.587	.855
2	2.72	.64	2.56	.062	.777	1.000

***** SUMMARY TABLE FOR TOTAL WATERSHED *****

STORM DURATION	=	6.00	HOURS
PRECIPITATION DEPTH	=	2.05	INCHES
RUNOFF VOLUME	=	.4010	ACRE-FT
PEAK DISCHARGE	=	3.3659	CFS
AREA	=	9.7000	ACRES
TIME OF PEAK DISCHARGE	=	3.20	HRS
LOAD RATE EXPONENT FACTOR	=	1.50	
BETA	=	17.2108	
SUBMERGE BULK SPECIFIC GRAVITY	=	1.40	
RAINFALL EROSITIVITY FACTOR	=	40.00	EI UNIT
PEAK CONCENTRATION	=	12114.47	MG/L
PEAK SETTLEABLE CONCENTRATION	=	4.7382	ML/L
PEAK SETTLEABLE CONCENTRATION	=	6633.54	MG/L
TOTAL SEDIMENT YIELD	=	4.4392	TONS
REPRESENTATIVE PARTICLE SIZE	=	.0185	MM
TIME OF PEAK CONCENTRATION	=	3.10	HRS
PERIOD OF SIGNIFICANT CONCENTRATION	=	5.10	HRS
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	3.16	ML/L
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	3.16	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	2.03	ML/L

ARITHMETIC AVERAGE SETTLEABLE
 CONCENTRATION DURING PEAK 24 HOUR
 PERIOD = .43 ML/L

===== STRUCTURE DATA FOR JUNCTION #2 =====

QUESTION

NO.

- 1. NUMBER OF SUBWATERSHEDS - 1
- 2. TYPE OF SEDIMENT CONTROL STRUCTURE - POND

=====

JUNCTION 2, BRANCH 1, STRUCTURE 1

***** RESULTS FROM SUBWATERSHED 1 *****

*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	75.0000	4.7500	2.0000	.4250	.0750	.0001
PERCENT FINER	95.0000	92.0000	85.0000	67.0000	40.0000	.0000

*** HYDROGRAPH AND SEDIMENT GRAPH ***
 (TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	*****	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.10	.000	.000
.20	.000	.000	*	.30	.000	.000
.40	.000	.000	*	.50	.000	.000
.60	.000	.000	*	.70	.000	.000
.80	.000	.000	*	.90	.000	.000
1.00	.000	.000	*	1.10	.000	.000
1.20	.000	.000	*	1.30	.000	.000
1.40	.000	.000	*	1.50	.000	.000
1.60	.000	.000	*	1.70	.000	.000
1.80	.000	.000	*	1.90	.000	.000
2.00	.000	.000	*	2.10	.000	.000
2.20	.000	.000	*	2.30	.000	.000
2.40	.000	.000	*	2.50	.000	.000
2.60	.000	.000	*	2.70	.021	63989.500
2.80	.035	81665.090	*	2.90	.046	93103.520
3.00	.054	101267.100	*	3.10	.011	46829.150
3.20	.011	47331.340	*	3.30	.012	47810.410
3.40	.012	48267.540	*	3.50	.012	48702.940
3.60	.000	.000	*	3.70	.000	.000
3.80	.000	.000	*	3.90	.000	.000
4.00	.000	.000	*	4.10	.000	.000
4.20	.000	.000	*	4.30	.000	.000
4.40	.000	.000	*	4.50	.000	.000
4.60	.000	.000	*	4.70	.000	.000
4.80	.000	.000	*	4.90	.000	.000

5.00	.000	.000	*	5.10	.000	.000
5.20	.000	.000	*	5.30	.000	.000
5.40	.000	.000	*	5.50	.000	.000
5.60	.000	.000	*	5.70	.000	.000

 JUNCTION 2, BRANCH 1, STRUCTURE 1

*** HYDRAULIC INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	AREA ACRES	CURVE NUMBER	TC HR	TT HR	ROUTING K-HRS	COEFFICIENTS X,	UNIT HYDRO
1	.05	81.00	.030	.000	.000	.00	.0

*** SEDIMENT INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	SEG NUM	SOIL K	LENGTH FEET	SLOPE PCT	CP VALUE	PART OPT	SURF COND
1	1	.20	30.0	16.00	1.000	1.0	.0

*** COMPUTED VALUES FOR INDIVIDUAL WATERSHEDS ***

WATERSHED	PEAK FLOW (CFS)	RUNOFF (INCHES)	SEDIMENT TONS	DIAM (MM)	DELIVERY RATIO 1	DELIVERY RATIO 2
1	.05	.64	.19	.143	1.000	1.000

***** SUMMARY TABLE FOR TOTAL WATERSHED *****

STORM DURATION	=	6.00	HOURS
PRECIPITATION DEPTH	=	2.05	INCHES
RUNOFF VOLUME	=	.0027	ACRE-FT
PEAK DISCHARGE	=	.0542	CFS
AREA	=	.0500	ACRES
TIME OF PEAK DISCHARGE	=	3.00	HRS
LOAD RATE EXPONENT FACTOR	=	1.50	
BETA	=	1.0000	
SUBMERGE BULK SPECIFIC GRAVITY	=	1.40	
RAINFALL EROSITIVITY FACTOR	=	40.00	EI UNIT
PEAK CONCENTRATION	=	101267.10	MG/L
PEAK SETTLEABLE CONCENTRATION	=	51.4811	ML/L
PEAK SETTLEABLE CONCENTRATION	=	72073.48	MG/L
TOTAL SEDIMENT YIELD	=	.1935	TONS
REPRESENTATIVE PARTICLE SIZE	=	.1426	MM
TIME OF PEAK CONCENTRATION	=	3.00	HRS
PERIOD OF SIGNIFICANT CONCENTRATION=		.90	HRS
VOLUME WEIGHTED AVERAGE SETTLEABLE			
CONCENTRATION DURING PERIOD OF			

SIGNIFICANT CONCENTRATION	=	39.73	ML/L
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	39.73	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	32.70	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	1.23	ML/L

SUMMARY TABLE OF COMBINED HYDROGRAPH AND SEDIGRAPH VALUES

INFLOW TO
PASTURE POND

PREVIOUS MUSKINGUM ROUTING X,	=	.35	
PREVIOUS MUSKINGUM ROUTING K	=	.0070	HRS
PREVIOUS ROUTED PEAK DISCHARGE	=	7.49	CFS
TIME OF ROUTED PEAK DISCHARGE	=	3.20	HRS
TOTAL DRAINAGE AREA	=	14.95	ACRES
TOTAL RUNOFF VOLUME	=	.7164	AC-FT
PEAK RUNOFF DISCHARGE	=	7.50	CFS
TIME TO PEAK DISCHARGE	=	3.20	HRS
PREVIOUS STRUCTURE DELIVERY RATIO	=	1.00	
PREVIOUS STRUCTURE TRAVEL TIME	=	.0070	HRS
TOTAL SEDIMENT YIELD	=	9.1205	TONS
PEAK SEDIMENT CONCENTRATION	=	13918.68	MG/L
PEAK SETTLEABLE CONCENTRATION	=	5.9562	ML/L
PEAK SETTLEABLE CONCENTRATION	=	8338.65	MG/L
TIME TO PEAK CONCENTRATION	=	3.20	HRS
PERIOD OF SIGNIFICANT CONCENTRATION	=	5.10	HRS
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	3.98	ML/L
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	3.98	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	2.37	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	.50	ML/L

===== POND INPUT =====

QUESTION

- | | | |
|-----|--|-------------|
| NO. | | |
| 1. | TIME INCREMENT OF THE ROUTED HYDROGRAPH - | .20 HOURS |
| 2. | NON-IDEAL SETTLING CORRECTION FACTOR - | 1.00 |
| 3. | PERCENT OF PERMANENT POOL THAT IS DEAD SPACE - | 23.00 |
| 4. | OUTFLOW WITHDRAWAL OPTION - | BED |
| 5. | INFLOW VERTICAL CONCENTRATION - | COMP. MIXED |
| 6. | NUMBER OF STAGE POINTS - | 10 |
| 7. | NUMBER OF ROUTED HYDROGRAPH POINTS - | 500 |
| 8. | STAGE-DISCHARGE OPTION - | INPUT |
| 9. | OUTPUT OPTION - | GRAPHS |
| 10. | NUMBER OF CONTINUOUS STIRRED REACTORS | 2 |

1	.00
2	1.50
3	2.10
4	2.50
5	3.50
6	4.50
7	5.50
8	6.10
9	6.30
10	6.50

===== POND STAGE DATA =====

STAGE POINT	VALUE
1	.00
2	1.50
3	2.10
4	2.50
5	3.50
6	4.50
7	5.50
8	6.10
9	6.30
10	6.50

===== POND AREA DATA =====

AREA POINT	VALUE
1	.08
2	.10
3	.11
4	.11
5	.12
6	.14
7	.15
8	.16
9	.16
10	.17

===== POND DISCHARGE DATA =====

DISCHARGE POINT	VALUE
1	.00
2	.00
3	.00

4	.06
5	.07
6	.08
7	.10
8	.10
9	1.70
10	4.50

CAUTION: THE STAGE OF YOUR PRINCIPLE SPILLWAY
MAY CAUSE BED SCOUR. SEDIMOT II DOES NOT CONSIDER
POSSIBLE BED SCOUR; HENCE, YOUR OBSERVED EFFLUENT
MAY NOT MEET THE DESIRED EFFLUENT STANDARD. INCREASE
THE STAGE OF YOUR PRINCIPAL SPILLWAY.

* * * * *

POND RESULTS

* * * * *

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

STAGE (FT)	AREA (ACRES)	AVERAGE DEPTH (FT)	DISCHARGE (CFS)	CAPACITY (ACRES-FT)
.00	.084	.00	.00	.00
1.50	.100	1.43	.00	.14
2.10	.106	2.00	.00	.20
2.50	.110	2.37	.06	.24
3.50	.120	3.28	.07	.36
4.50	.140	4.13	.08	.49
5.50	.150	4.95	.10	.63
6.10	.160	5.44	.10	.73
6.30	.163	5.60	1.70	.76
6.50	.165	5.76	4.50	.79

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

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TURBULENCE FACTOR = 1.00
PERMANENT POOL CAPACITY = .200 ACRE-FT
DEAD STORAGE = 23.00 PERCENT
TIME INCREMENT OUTFLOW = .20 HRS
VISCOSITY = .009 CM**2/SEC
INFLOW RUNOFF VOLUME = .716 ACRE-FT
OUTFLOW ROUTED VOLUME = .503 ACRE-FT
STORM VOLUME DISCHARGED = .503 ACRE-FT
POND VOLUME AT PEAK STAGE = .749 ACRE-FT
PEAK STAGE = 6.245 FT
PEAK INFLOW RATE = 7.504 CFS
PEAK DISCHARGE RATE = 1.258 CFS
PEAK INFLOW SEDIMENT CONCENTRATION = 13918.68 MG/L
PEAK EFFLUENT SEDIMENT CONCENTRATION = 3333.13 MG/L
PEAK EFFLUENT SETTLEABLE CONCENTRATION = .7062 ML/L
PEAK EFFLUENT SETTLEABLE CONCENTRATION = 988.67 MG/L
STORM AVERAGE EFFLUENT CONCENTRATION = 2490.55 MG/L
AVERAGE EFFLUENT SEDIMENT CONCENTRATION = 2490.55 MG/L
BASIN TRAP EFFICIENCY = 81.30 PERCENT
DETENTION TIME OF FLOW WITH SEDIMENT = 15.07 HRS
DETENTION TIME FROM HYDROGRAPH CENTERS = 15.07 HRS
DETENTION TIME INCLUDING STORED FLOW = 15.07 HRS
SEDIMENT LOAD DISCHARGED = 1.71 TONS
PERIOD OF SIGNIFICANT CONCENTRATION = 47.20 HRS
VOLUME WEIGHTED AVERAGE SETTLEABLE
CONCENTRATION DURING PERIOD OF
SIGNIFICANT CONCENTRATION = .52 ML/L
VOLUME WEIGHTED AVERAGE SETTLEABLE
CONCENTRATION DURING PEAK 24 HOUR
PERIOD = .57 ML/L
ARITHMETIC AVERAGE SETTLEABLE
CONCENTRATION DURING PERIOD OF
SIGNIFICANT CONCENTRATION = .47 ML/L
ARITHMETIC AVERAGE SETTLEABLE
CONCENTRATION DURING PEAK 24 HOUR
PERIOD = .52 ML/L

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*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	75.0000	4.7500	2.0000	.4250	.0750	.0001
PERCENT FINER	100.0000	100.0000	100.0000	100.0000	100.0000	.0000

*** HYDROGRAPH AND SEDIMENT GRAPH ***
(TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	***** *	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.20	.000	.000
.40	.000	.000	*	.60	.000	.000
.80	.000	.000	*	1.00	.000	.000
1.20	.000	.000	*	1.40	.000	.000
1.60	.000	.000	*	1.80	.000	.000
2.00	.000	.000	*	2.20	.000	.000
2.40	.000	.000	*	2.60	.000	.000

2.80	.002	17.905	*	3.00	.039	672.694
3.20	.066	2409.193	*	3.40	.076	3153.207
3.60	.085	3333.135	*	3.80	.095	3328.223
4.00	.100	3266.845	*	4.20	.100	3220.241
4.40	.100	3168.870	*	4.60	.702	3125.695
4.80	1.170	3092.468	*	5.00	1.258	3061.633
5.20	1.221	3032.174	*	5.40	1.139	2999.378
5.60	1.025	2967.777	*	5.80	.933	2937.539
6.00	.868	2908.537	*	6.20	.827	2877.735
6.40	.725	2839.863	*	6.60	.523	2805.997
6.80	.335	2776.976	*	7.00	.193	2752.419
7.20	.108	2730.939	*	7.40	.100	2711.168
7.60	.100	2692.807	*	7.80	.100	2675.600
8.00	.100	2659.586	*	8.20	.100	2644.406
8.40	.100	2629.965	*	8.60	.100	2616.190
8.80	.100	2603.016	*	9.00	.100	2590.390
9.20	.100	2578.266	*	9.40	.100	2566.604
9.60	.100	2555.367	*	9.80	.100	2544.527
10.00	.100	2534.054	*	10.20	.100	2523.923
10.40	.100	2514.114	*	10.60	.100	2504.605
10.80	.100	2495.378	*	11.00	.100	2486.417
11.20	.100	2477.707	*	11.40	.100	2469.233
11.60	.100	2460.984	*	11.80	.100	2452.947
12.00	.100	2445.113	*	12.20	.100	2437.469
12.40	.100	2430.009	*	12.60	.100	2422.723
12.80	.100	2415.603	*	13.00	.100	2408.641
13.20	.100	2401.832	*	13.40	.100	2395.167
13.60	.100	2388.642	*	13.80	.100	2382.250
14.00	.100	2375.987	*	14.20	.100	2369.846
14.40	.100	2363.824	*	14.60	.100	2357.916
14.80	.100	2352.117	*	15.00	.100	2346.425
15.20	.100	2340.834	*	15.40	.100	2335.342
15.60	.100	2329.945	*	15.80	.100	2324.639
16.00	.100	2319.422	*	16.20	.100	2314.291
16.40	.100	2309.243	*	16.60	.100	2304.275
16.80	.100	2299.385	*	17.00	.100	2294.571
17.20	.100	2289.831	*	17.40	.100	2285.161
17.60	.100	2280.560	*	17.80	.100	2276.026
18.00	.100	2271.557	*	18.20	.100	2267.152
18.40	.100	2262.808	*	18.60	.100	2258.524
18.80	.100	2254.297	*	19.00	.100	2250.127
19.20	.099	2246.013	*	19.40	.099	2241.952
19.60	.099	2237.943	*	19.80	.099	2233.985
20.00	.098	2230.077	*	20.20	.098	2226.217
20.40	.098	2222.404	*	20.60	.098	2218.638
20.80	.097	2214.916	*	21.00	.097	2211.239
21.20	.097	2207.604	*	21.40	.097	2204.011
21.60	.097	2200.459	*	21.80	.096	2196.948
22.00	.096	2193.475	*	22.20	.096	2190.041
22.40	.096	2186.644	*	22.60	.096	2183.284
22.80	.095	2179.960	*	23.00	.095	2176.671
23.20	.095	2173.416	*	23.40	.095	2170.195
23.60	.094	2167.006	*	23.80	.094	2163.851
24.00	.094	2160.727	*	24.20	.094	2157.634
24.40	.094	2154.571	*	24.60	.093	2151.539
24.80	.093	2148.535	*	25.00	.093	2145.561
25.20	.093	2142.615	*	25.40	.093	2139.696
25.60	.092	2136.805	*	25.80	.092	2133.940
26.00	.092	2131.102	*	26.20	.092	2128.288
26.40	.091	2125.500	*	26.60	.091	2122.738

26.80	.091	2119.999	*	27.00	.091	2117.284
27.20	.091	2114.594	*	27.40	.090	2111.926
27.60	.090	2109.280	*	27.80	.090	2106.657
28.00	.090	2104.057	*	28.20	.090	2101.477
28.40	.089	2098.919	*	28.60	.089	2096.382
28.80	.089	2093.866	*	29.00	.089	2091.369
29.20	.089	2088.893	*	29.40	.088	2086.436
29.60	.088	2083.999	*	29.80	.088	2081.580
30.00	.088	2079.181	*	30.20	.088	2076.799
30.40	.087	2074.436	*	30.60	.087	2072.090
30.80	.087	2069.763	*	31.00	.087	2067.452
31.20	.087	2065.159	*	31.40	.086	2062.883
31.60	.086	2060.623	*	31.80	.086	2058.379
32.00	.086	2056.152	*	32.20	.086	2053.940
32.40	.085	2051.744	*	32.60	.085	2049.564
32.80	.085	2047.399	*	33.00	.085	2045.249
33.20	.085	2043.113	*	33.40	.084	2040.993
33.60	.084	2038.886	*	33.80	.084	2036.794
34.00	.084	2034.716	*	34.20	.084	2032.652
34.40	.083	2030.601	*	34.60	.083	2028.564
34.80	.083	2026.540	*	35.00	.083	2024.529
35.20	.083	2022.532	*	35.40	.083	2020.547
35.60	.082	2018.575	*	35.80	.082	2016.615
36.00	.082	2014.668	*	36.20	.082	2012.732
36.40	.082	2010.809	*	36.60	.081	2008.898
36.80	.081	2006.998	*	37.00	.081	2005.110
37.20	.081	2003.233	*	37.40	.081	2001.368
37.60	.080	1999.513	*	37.80	.080	1997.670
38.00	.080	1995.838	*	38.20	.080	1994.016
38.40	.080	1992.205	*	38.60	.080	1990.405
38.80	.080	1988.615	*	39.00	.080	1986.835
39.20	.079	1985.066	*	39.40	.079	1983.307
39.60	.079	1981.557	*	39.80	.079	1979.818
40.00	.079	1978.089	*	40.20	.079	1976.368
40.40	.079	1974.658	*	40.60	.079	1972.957
40.80	.079	1971.265	*	41.00	.079	1969.583
41.20	.078	1967.909	*	41.40	.078	1966.245
41.60	.078	1964.590	*	41.80	.078	1962.943
42.00	.078	1961.306	*	42.20	.078	1959.676
42.40	.078	1958.056	*	42.60	.078	1956.444
42.80	.078	1954.840	*	43.00	.078	1953.245
43.20	.077	1951.658	*	43.40	.077	1950.079
43.60	.077	1948.508	*	43.80	.077	1946.945
44.00	.077	1945.390	*	44.20	.077	1943.843
44.40	.077	1942.303	*	44.60	.077	1940.771
44.80	.077	1939.247	*	45.00	.077	1937.731
45.20	.076	1936.221	*	45.40	.076	1934.719
45.60	.076	1933.225	*	45.80	.076	1931.737
46.00	.076	1930.257	*	46.20	.076	1928.784
46.40	.076	1927.318	*	46.60	.076	1925.859
46.80	.076	1924.406	*	47.00	.076	1922.961
47.20	.076	1921.522	*	47.40	.075	1920.091
47.60	.075	1918.665	*	47.80	.075	1917.246
48.00	.075	1915.834	*	48.20	.075	1914.428
48.40	.075	1913.029	*	48.60	.075	1911.635
48.80	.075	1910.248	*	49.00	.075	1908.868
49.20	.075	1907.494	*	49.40	.074	1906.125
49.60	.074	1904.763	*	49.80	.074	1903.406

*** RUN COMPLETED ****