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ECOM-0280-7

SIMULATION RESEARCH TO DEVELOP OBJECTIVE METEOROLOGICAL PREDICTION CAPABILITY

SEMI-ANNUAL REPORT

By

Tom E. Sanford, Principal Investigator

May 1972

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UNITED STATES ARMY ELECTRONICS COMMAND · FORT MONMOUTH, N.J.

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DEPARTMENTS OF METEOROLOGY AND OCEANOGRAPHY
TEXAS A&M UNIVERSITY
College Station, Texas 77843

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16 May 1971 to 16 November 1971

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Prepared by

Tom E. Sanford, Principal Investigator

TEXAS A & M RESEARCH FOUNDATION

College Station, Texas

For

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13. ABSTRACT

This report is a continuation of the work included in Technical Report ECOM-0280-6 regarding the investigation of the suitability of an alternate expression for the exchange coefficients for momentum which are an integral part of the set of meteorological equations presently being used to simulate the atmospheric boundary layer. Solutions for Cases I-B, II, III, and IV-A of the Dallas Tower Network data incorporating the alternate exchange coefficient are included in this report.

These solutions indicate that the alternate expression for the exchange coefficient for momemtum produces more realistic results which are consistent with the expected diurnal variation of the exchange coefficients and which yield predicted winds at 8-m height which are closer to the observed values for long time intervals than those winds predicted by the original exchange coefficient relationship.

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I. SOLUTIONS OF THE MODIFIED SYSTEM OF EQUATIONS FOR THE DALLAS TOWER NETWORK DATA

A. Introduction

An alternate expression for the integral exchange coefficient for the layer of the atmosphere extending from the surface of the ground to 8-m height was set forth in Technical Report ECOM-0280-6 and is expressed as

$$D_8 = \left[\frac{k(1-\beta)}{\left(\frac{800}{z_o}\right)^{1-\beta} - 1}\right]^2 S_8 \; ; \qquad 0.11 \leq \beta \leq 1.14$$

and the exchange coefficient for momentum at 8-m height is given by

$$K_{m,8} = \frac{S_8 k^2 (1-\beta) z_o^{(1-\beta)} 800^{\beta}}{\left[\left(\frac{800}{z_o}\right)^{(1-\beta)} - 1\right]}$$

where

$$\beta = 1 - 1.43R_i - 6R_i^2 - 10R_i^3 \; ,$$

$$R_i\Big|_0^{8m} = \frac{800g(\theta_8 - \theta_0)}{\bar{\theta}_8 (S_8 + a)^2} \; ,$$

k is Von Karmen's constant, S_8 is the wind speed at eight meters height, z_o is the surface roughness parameter, R_i is the layer Richardson number for the surface layer, g is the acceleration due to gravity, θ_8 is the potential temperature of the air at eight meters height, θ_0 is the potential temperature of the air at the air-soil boundary, $\bar{\theta}_8$ is the mean potential temperature for the surface

layer, and a is a threshold wind speed. As $\beta \rightarrow 1$ these equations reduce to the values attained by the usual logarithmic wind profile law.

Solutions obtained for Cases I-B, II, III, and IV-A of the Dallas Tower Network data are shown on pages 6 through 122 of this report. The most general solution has been obtained for each case for time periods of 1, 2, 6, and 12 hr. The data obtained from the general purpose analog computer (GPAC) are punched directly into punch cards and the voltages representing the various meteorological parameters are subsequently converted by means of an IBM 360/65 digital computer to parameter values. The data as printed by the digital computer consists of a tape log which contains a tape number assigned to each set of solutions and the conditions under which these solutions were obtained, initial values for the parameters included in the solutions, data corresponding to each of the verifying times, solutions obtained on the GPAC, and root-mean-square differences between the observed and calculated values of winds, temperatures, and vapor pressures.

The data formats are the same for all cases; therefore, remarks made for Case I-B will apply to all. The tape log for Case I-B appears on page 6. The first column in the log contains the reference number assigned to each individual tape. The second column contains the applicable prediction interval expressed in hours. The third column, headed SM, refers to the soil model being employed. Two soil models are available in the present equation set, a stratified soil

model (Soil Model A) and a unified Soil Model (Soil Model B). For all of the solutions shown in this report Soil Model A only was used and is indicated in the third column by the letter A. The fourth column is headed $\frac{KM8}{D8}$ and contains the letter V. This column specifies how the exchange coefficients for momentum are employed. The computer operator has the choice of permitting the exchange coefficients to vary with the wind speed at a height of 8 m or of holding their values fixed during the simulation cycle. The V in this column indicates that the exchange coefficients were allowed to vary.

The column headed SCG contains the letter A indicating that the surface contour gradient changed linearly during the solution cycle. The column headed ADV contains an N which indicates that advection of wind, temperature, and vapor pressure varies with the wind, and the column headed GEO indicates whether or not the geostrophic coupling term is omitted (indicated by 0) or is included (indicated by I). The last column containing remarks indicates the settings of the geostrophic coupling potentiometers. The settings for these potentiometers are equal to 500A where A is the coefficient of coupling; consequently, potentiometer settings of 0.2000, 0.4000, 0.6000, 0.8000, and 1.0000 correspond, respectively, to values of A of 0.0004, 0.0008, 0.0012, 0.0016, and 0.0020 gm $cm^{-2} sec^{-1}$.

The pages of initial conditions follow the tape log. The date and local time for which the observations were taken are given in the heading of each page. Since no subscripts are available on the computer printout, subscripts have been indicated by parentheses.

Four pages of comparison data follow the initial conditions. One page is shown for each of the verifying times (indicated in parentheses in the heading) of 1, 2, 6, and 12 hrs after the initial time. Verifying data for winds, temperatures, and vapor pressures are shown at all computational levels above the ground except that no verification value is available for the winds at the height of 2 m. Comparison data for soil temperatures are included as is the calculated short wave solar radiation. The symbol XXXX indicates the absence of verification data for the particular parameter in question.

The solutions obtained on the GPAC begin on Page 13. For a brief explanation of these data sheets, refer to that page. The data for each set of solutions appears on three successive pages. The first page contains the u- and v-components of the wind, the second page contains the air temperatures and vapor pressures, and the third page contains the soil temperatures, surface energy terms, and other miscellaneous variables. The first line of the first page contains the values of the exchange coefficients for momentum for the solutions obtained according to the corresponding tape numbers which occur in the second line of the page, and the third line indicates the length of the prediction interval in hours. For example, the data for tape number 755 appears in the first column. The exchange coefficient for momentum for this set of solutions at the end of the 12 hr simulation interval is 2,979 cm^2/sec.

The value for the exchange coefficient for momentum, the tape number, and the forecast interval are centered above two columns headed GPAC and DIFF, respectively, The columns headed GPAC contain the solution values as obtained on the general purpose analog computer and the columns headed DIFF contain the algebraic differences between the values obtained on the general purpose analog computer and the observed or hand processed values. One complete set of GPAC data and the corresponding differences are shown in each of these pairs of columns commencing on the first page and ending on the third page. Finally, the column located on the left of the page and headed LEVEL(M) indicates the height in meters at which the parameters are applicable. GEO appearing in this column refers to the geostrophic value of the wind component.

A root-mean-square error evaluation for each tape run for a particular case follows the GPAC solutions for that case. The evaluation for Case I-B appears on pages 31 and 32. The numbers in the body of the page are root-mean-squares of the differences obtained for all prediction levels in a particular profile for the parameter appearing at the head of the column in which the number appears. In the left-most column RMS MAGNITUDE refers to the magnitude of the observed data for the atmospheric variable at the indicated number of hours after the initial time. PERSIST DIFF is the root-mean-square difference between the observed data at the time of verification and at the initial time. GPAC DIFF is the difference between the GPAC values and the observed values at verification time.

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CASE I-B TAPE LOG

TAPE NO.	FCST INT	SM	KMB DB	SCG	ADV	GEO	REMARKS
755.	12.00	A	V	A	N	O	
756.	12.00	A	V	A	N	I	GEO=0.20
757.	12.00	A	V	A	N	I	GEO=0.40
758.	12.00	A	V	A	N	I	GEO=0.60
759.	12.00	A	V	A	N	I	GEO=0.80
760.	12.00	A	V	A	N	I	GEO=1.00
761.	6.00	A	V	A	N	C	
762.	6.00	A	V	A	N	I	GEO=0.20
763.	6.00	A	V	A	N	I	GEO=0.40
764.	6.00	A	V	A	N	I	GEO=0.60
765.	6.00	A	V	A	N	I	GEO=0.80
766.	6.00	A	V	A	N	I	GEO=1.00
767.	2.00	A	V	A	N	C	
768.	2.00	A	V	A	N	I	GEO=0.20
769.	2.00	A	V	A	N	I	GEO=0.40
770.	2.00	A	V	A	N	I	GEO=0.60
771.	2.00	A	V	A	N	I	GEO=0.80
772.	2.00	A	V	A	N	I	GEO=1.00
773.	1.00	A	V	A	N	C	
774.	1.00	A	V	A	N	I	GEO=0.20
775.	1.00	A	V	A	N	I	GEO=0.40
776.	1.00	A	V	A	N	I	GEO=0.60
777.	1.00	A	V	A	N	I	GEO=0.80
778.	1.00	A	V	A	N	I	GEO=1.00

CASE I-B INITIAL CONDITIONS - 0600L 15 AUGUST 1962
(PAGE 1 OF 2 PAGES)

SOIL PARAMETERS

LEVEL (M)	TEMP (DEG C)		
0.000	26.32	LAMBDA	= 0.59 CAL/CM^3 DEG
-0.125	28.94	MU/LAMBDA	= 0.0037 CM^2/SEC
-0.250	29.31	(MU X LAMBDA)$^{1/2}$	= 0.036 CAL^2/CM^4 DEG^2 SEC
-0.500	27.99	Z(0)	= 2.0 CM
-1.000	25.56	S(0)	= 0.0004 CAL/CM^2 SEC MB
-2.000	20.52	G	= 3500 CM^2 SEC DEG/CAL

RADIATION PARAMETERS

LOCAL TIME	= 0600	TURBIDITY	= 0.20
DELTA	= 14.06 DEG	PSI	= 0.976
R X 10^5	= 1.16 DEG C/SEC	F(C)	= 1.00
CLOUD CLASS	= 1	ALBEDO	= 0.25
E'(8)	= 19.61 MB	M	= 0.620
EPSILON	= 0.950	N	= 0.0415 MB$^{-1/2}$
PHI	= 32.5 DEG	H	= -90.0 DEG

HORIZONTAL GRADIENTS

LEVEL (M)	DE/DX (MB/100-KM)	DE/DY (MB/100-KM)	DT/DX (DEG C/100-KM)	DT/DY (DEG C/100-KM)
200	0.42	-0.68	-0.25	-1.25
600	0.22	-0.61	-0.53	-0.89
1000	0.04	-0.55	-0.80	-0.52

CASE I-B INITIAL CONDITIONS - 0600L 15 AUGUST 1962
(PAGE 2 OF 2 PAGES)

LEVEL (M)	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
1000	-1.99	1.90	21.15	12.50
900	-2.00	2.58	22.10	13.25
800	-2.00	3.25	22.68	14.00
700	-2.00	3.92	23.25	14.75
600	-2.00	4.60	23.83	15.50
500	-2.00	5.30	24.40	16.25
400	-2.00	6.10	25.95	17.00
300	-1.92	6.94	26.04	17.75
200	-1.02	7.10	26.71	18.50
100	1.20	6.29	27.22	19.09
32	1.60	4.10	25.65	19.47
8	0.70	1.85	24.24	19.61

ADVECTION TERMS
($SEC^{-1} \times 10^{5}$)

LEVEL (M)	ALPHA(1)	BETA(1)	ALPHA(2)	BETA(2)
200	-0.41	-0.75	0.00	-0.48
600	-0.43	-0.87	0.00	-0.77
1000	-0.45	-0.99	0.00	-1.05

SURFACE CONTOUR GRADIENTS

PREDICTION INTERVAL (HR)	AZIMUTH (DEG FROM NORTH)	MAGNITUDE (FT/100-KM)
0	51.00	22.83
1	45.00	15.52
2	52.60	19.48
6	76.90	9.44
12	36.40	14.30

CASE I-B COMPARISON DATA FROM DALLAS (1 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	-4.18	4.18		
1000	-2.01	1.90	21.61	12.42
900	-2.03	2.50	22.16	13.14
800	-2.06	3.10	22.70	13.87
700	-2.10	3.71	23.25	14.59
600	-2.10	4.31	23.79	15.31
500	-2.15	4.91	24.34	16.03
400	-2.20	5.70	24.81	16.75
300	-2.30	6.70	25.35	17.48
200	-0.95	6.21	26.07	18.20
100	0.69	5.00	26.84	18.78
32	1.25	3.30	26.01	19.15
8	0.40	1.60	24.83	19.29
2	XXXX	XXXX	24.59	19.32
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	26.09
-0.125	28.69
-0.250	29.21
-0.500	27.99
-1.000	25.57
-2.000	20.52

WIND SPEED (M/SEC)

8	1.65
2	0.81

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	6.10	Q(F,O)=	XXXX
R(N)=	XXXX	Q(S,O)=	XXXX
Q(C,O)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE I-B COMPARISON DATA FROM DALLAS (2 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	-4.52	5.92		
1000	-2.41	2.30	21.42	12.34
900	-2.58	2.90	21.86	13.04
800	-2.71	3.55	22.30	13.74
700	-2.87	4.16	22.73	14.43
600	-3.01	4.80	23.17	15.12
500	-3.17	5.42	23.61	15.82
400	-3.22	6.07	24.17	16.51
300	-2.60	6.34	25.09	17.21
200	-1.31	5.51	25.96	17.90
100	0.38	3.70	26.32	18.46
32	0.50	1.64	26.50	18.83
8	0.16	0.60	26.67	18.96
2	XXXX	XXXX	26.70	18.99
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	26.35
-0.125	28.46
-0.250	29.09
-0.500	28.01
-1.000	25.60
-2.000	20.52

WIND SPEED (M/SEC)

8	0.62
2	0.25

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	12.00	Q(F,O)=	XXXX
R(N)=	XXXX	Q(S,O)=	XXXX
Q(C,O)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE I-B COMPARISON DATA FROM DALLAS (6 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	-0.81	3.48		
1000	-1.90	0.95	22.86	12.03
900	-1.90	0.90	23.51	12.61
800	-1.90	0.88	24.18	13.22
700	-1.90	0.84	24.84	13.78
600	-1.89	0.80	25.50	14.36
500	-1.88	0.78	26.16	14.95
400	-1.87	0.70	27.22	15.53
300	-1.86	0.61	27.89	16.12
200	-1.77	0.60	29.09	16.70
100	-1.42	0.70	30.11	17.21
32	-1.01	0.67	31.23	17.54
8	-0.65	0.25	31.76	17.67
2	XXXX	XXXX	31.90	17.69
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)	
0.000	34.44
-0.125	28.80
-0.250	28.68
-0.500	27.94
-1.000	25.58
-2.000	20.52

WIND SPEED (M/SEC)	
8	0.69
2	0.21

SURFACE SHEAR STRESS
(DYNES/CM SQ.)X10
TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	24.70	Q(E,C)=	XXXX
R(N)=	XXXX	Q(S,C)=	XXXX
Q(C,O)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE I-B COMPARISON DATA FROM DALLAS (12 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	-4.41	3.25		
1000	-2.49	1.98	24.35	11.55
900	-2.67	1.85	25.12	11.96
800	-2.85	1.73	25.90	12.44
700	-3.03	1.61	26.69	12.81
600	-3.21	1.50	27.48	13.22
500	-3.40	1.40	28.25	13.65
400	-3.55	1.30	29.18	14.05
300	-3.69	0.96	30.25	14.48
200	-3.81	0.26	31.36	14.90
100	-3.80	-0.60	32.44	15.32
32	-3.07	-0.90	33.30	15.61
8	-2.05	-0.50	33.75	15.72
2	XXXX	XXXX	33.85	15.74
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)	
0.000	36.00
-0.125	31.53
-0.250	29.27
-0.500	27.84
-1.000	25.59
-2.000	20.52

WIND SPEED (M/SEC)	
8	2.11
2	1.27

SURFACE SHEAR STRESS
(DYNES/CM SQ.)X10
TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.90	Q(E,0)=	XXXX
R(N)=	XXXX	Q(S,0)=	XXXX
Q(C,0)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE I-B GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	2979	2869	2879	2904
TAPE NO.	755.	756.	757.	758.
INTERVAL	12.00HR	12.00HR	12.00HR	12.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-4.42	-0.01	-4.42	-0.01	-4.42	-0.01	-4.42	-0.01
1000	0.25	2.74	-2.06	0.43	-3.06	-0.57	-3.52	-1.03
900	-1.06	1.61	-1.46	1.21	-1.76	0.91	-1.93	0.74
800	-1.75	1.10	-1.84	1.01	-1.97	0.88	-2.07	0.78
700	-2.21	0.82	-2.19	0.84	-2.26	0.77	-2.33	0.70
600	-2.54	0.67	-2.46	0.75	-2.51	0.70	-2.54	0.67
500	-2.77	0.63	-2.67	0.73	-2.70	0.69	-2.73	0.67
400	-2.95	0.60	-2.84	0.71	-2.85	0.70	-2.87	0.68
300	-3.07	0.62	-2.95	0.73	-2.95	0.73	-2.97	0.72
200	-3.13	0.69	-3.01	0.80	-3.00	0.81	-3.01	0.80
100	-3.04	0.76	-2.93	0.87	-2.93	0.87	-2.93	0.87
32	-2.73	0.34	-2.64	0.43	-2.63	0.44	-2.63	0.44
8	-2.19	-0.14	-2.13	-0.07	-2.12	-0.07	-2.12	-0.07

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	3.24	-0.01	3.24	-0.01	3.24	-0.01	3.25	0.00
1000	5.99	4.01	5.42	3.44	4.89	2.91	4.53	2.56
900	5.68	3.83	5.70	3.85	5.66	3.81	5.61	3.76
800	5.32	3.59	5.37	3.64	5.38	3.65	5.38	3.65
700	4.96	3.35	5.01	3.40	5.03	3.43	5.04	3.43
600	4.64	3.14	4.69	3.19	4.72	3.22	4.74	3.24
500	4.32	2.93	4.36	2.97	4.40	3.01	4.42	3.02
400	3.98	2.68	4.02	2.72	4.06	2.76	4.07	2.77
300	3.64	2.68	3.67	2.71	3.69	2.73	3.72	2.76
200	3.23	2.97	3.26	3.00	3.28	3.02	3.31	3.05
100	2.75	3.35	2.77	3.37	2.80	3.40	2.82	3.42
32	2.17	3.07	2.18	3.08	2.20	3.10	2.22	3.12
8	1.65	2.15	1.66	2.16	1.67	2.17	1.69	2.19

CASE I-B GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	755.		756.		757.		758.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	27.64	3.29	27.52	3.17	27.42	3.07	27.35	3.00
900	28.35	3.23	28.29	3.17	28.22	3.10	28.19	3.07
800	28.66	2.76	28.63	2.73	28.60	2.70	28.57	2.67
700	28.99	2.30	28.90	2.21	28.86	2.17	28.84	2.15
600	29.04	1.56	29.05	1.57	29.04	1.56	29.03	1.55
500	29.18	0.92	29.21	0.95	29.21	0.95	29.18	0.92
400	29.28	0.10	29.31	0.13	29.31	0.13	29.29	0.11
300	29.36	-0.89	29.39	-0.86	29.39	-0.86	29.38	-0.87
200	29.36	-2.00	29.40	-1.96	29.40	-1.96	29.40	-1.96
100	29.32	-3.12	29.36	-3.08	29.35	-3.09	29.35	-3.09
32	28.95	-4.35	29.00	-4.30	29.00	-4.30	29.00	-4.30
8	28.38	-5.37	28.43	-5.32	28.43	-5.32	28.42	-5.33
2	26.95	-6.90	26.99	-6.86	27.00	-6.85	26.99	-6.86
0	25.47	XXXX	25.51	XXXX	25.52	XXXX	25.51	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	20.31	8.76	20.33	8.78	20.32	8.77	20.31	8.76
900	21.42	9.46	21.45	9.49	21.45	9.49	21.45	9.49
800	22.15	9.71	22.19	9.75	22.19	9.75	22.21	9.77
700	22.80	9.99	22.84	10.03	22.85	10.04	22.85	10.04
600	23.34	10.12	23.39	10.17	23.40	10.18	23.41	10.19
500	23.92	10.27	23.96	10.31	23.97	10.32	23.97	10.32
400	24.45	10.40	24.51	10.46	24.51	10.46	24.53	10.48
300	25.05	10.57	25.11	10.63	25.11	10.63	25.13	10.65
200	25.68	10.78	25.74	10.84	25.78	10.88	25.77	10.87
100	26.45	11.13	26.53	11.21	26.56	11.24	26.54	11.22
32	27.31	11.70	27.41	11.80	27.44	11.83	27.42	11.81
8	28.05	12.33	28.15	12.43	28.17	12.45	28.15	12.43
2	29.07	13.33	29.18	13.44	29.20	13.46	29.18	13.44
0	30.12	XXXX	30.24	XXXX	30.25	XXXX	30.23	XXXX

CASE I-B GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	755.		756.		757.		758.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
C.000	30.26	-5.74	30.28	-5.72	30.28	-5.72	30.28	-5.72
-0.125	29.78	-1.75	29.78	-1.75	29.78	-1.75	29.78	-1.75
-0.250	29.01	-0.26	29.01	-0.26	29.01	-0.26	29.01	-0.26
-0.500	28.01	0.17	27.99	0.15	28.01	0.17	28.01	0.17
-1.000	25.55	-0.04	25.56	-0.03	25.56	-0.03	25.56	-0.03
-2.000	20.51	-0.01	20.50	-0.02	20.51	-0.01	20.51	-0.01

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	2.75	0.64	2.69	0.58	2.69	0.58	2.71	0.60
2	1.39	0.12	1.36	0.09	1.37	0.10	1.37	0.10

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.71	-0.19	0.72	-0.18	0.72	-0.18	0.71	-0.19
R(N)	-1.17	XXXX	-1.16	XXXX	-1.16	XXXX	-1.17	XXXX
Q(C,O)	-0.81	XXXX	-0.79	XXXX	-0.79	XXXX	-0.79	XXXX
Q(E,O)	1.01	XXXX	0.98	XXXX	0.98	XXXX	0.99	XXXX
Q(S,O)	-1.36	XXXX	-1.36	XXXX	-1.36	XXXX	-1.36	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	2.28	XXXX	2.16	XXXX	2.18	XXXX	2.20	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	48.50	XXXX	48.40	XXXX	48.50	XXXX	48.50	XXXX

CASE I-B GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	2929	2939	13419	13469
TAPE NO.	759.	760.	761.	762.
INTERVAL	12.00HR	12.00HR	6.00HR	6.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-4.42	-0.01	-4.42	-0.01	-0.79	0.02	-0.80	0.01
1000	-3.77	-1.28	-3.92	-1.43	-0.34	1.55	-0.38	1.52
900	-2.03	0.64	-2.10	0.57	-0.74	1.15	-0.64	1.26
800	-2.13	0.72	-2.17	0.68	-0.99	0.90	-0.83	1.01
700	-2.37	0.66	-2.40	0.63	-1.16	0.74	-1.06	0.84
600	-2.57	0.64	-2.55	0.66	-1.28	0.61	-1.19	0.70
500	-2.75	0.65	-2.77	0.63	-1.37	0.51	-1.29	0.59
400	-2.89	0.66	-2.90	0.65	-1.43	0.44	-1.36	0.51
300	-2.98	0.71	-2.99	0.70	-1.47	0.39	-1.40	0.45
200	-3.02	0.79	-3.03	0.78	-1.48	0.29	-1.42	0.35
100	-2.94	0.86	-2.95	0.85	-1.44	-0.02	-1.38	0.04
32	-2.64	0.43	-2.64	0.43	-1.31	-0.30	-1.26	-0.25
8	-2.12	-0.07	-2.13	-0.08	-1.12	-0.47	-1.08	-0.43

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	3.25	0.00	3.24	-0.01	3.49	0.01	3.49	0.01
1000	4.29	2.31	4.12	2.14	7.64	6.69	6.83	5.88
900	5.57	3.72	5.54	3.69	7.08	6.18	7.04	6.14
800	5.37	3.64	5.36	3.63	6.67	5.79	6.73	5.85
700	5.04	3.43	5.05	3.44	6.33	5.49	6.42	5.58
600	4.75	3.25	4.75	3.25	6.04	5.24	6.13	5.33
500	4.43	3.03	4.44	3.04	5.77	4.99	5.86	5.08
400	4.09	2.79	4.09	2.79	5.49	4.79	5.58	4.88
300	3.73	2.77	3.74	2.78	5.21	4.60	5.29	4.68
200	3.32	3.06	3.33	3.07	4.88	4.27	4.95	4.35
100	2.83	3.43	2.84	3.44	4.45	3.75	4.51	3.81
32	2.23	3.13	2.24	3.14	3.87	3.20	3.92	3.25
8	1.69	2.19	1.70	2.20	3.24	2.99	3.29	3.04

CASE I-6 GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	759.		760.		761.		762.	
INTERVAL	12.00HR		12.00HR		6.00HR		6.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	27.32	2.97	27.29	2.94	24.75	1.89	24.79	1.93
900	28.16	3.04	28.15	3.03	25.59	2.08	25.63	2.12
800	28.55	2.65	28.54	2.64	26.01	1.83	26.05	1.87
700	28.84	2.15	28.82	2.13	26.36	1.52	26.39	1.55
600	29.01	1.53	29.01	1.53	26.63	1.13	26.66	1.16
500	29.18	0.92	29.17	0.91	26.91	0.75	26.93	0.77
400	29.29	0.11	29.28	0.10	27.17	-0.05	27.20	-0.02
300	29.37	-0.88	29.37	-0.88	27.48	-0.41	27.49	-0.40
200	29.39	-1.97	29.37	-1.99	27.82	-1.27	27.84	-1.25
100	29.35	-3.09	29.33	-3.11	28.37	-1.74	28.41	-1.70
32	29.00	-4.30	28.98	-4.32	29.15	-2.08	29.17	-2.06
8	28.43	-5.32	28.40	-5.35	30.19	-1.57	30.21	-1.55
2	27.00	-6.85	26.97	-6.88	32.83	0.93	32.84	0.94
0	25.53	XXXX	25.50	XXXX	35.36	XXXX	35.36	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	20.31	8.76	20.30	8.75	16.42	4.39	16.46	4.43
900	21.45	9.49	21.45	9.49	17.48	4.87	17.52	4.91
800	22.19	9.75	22.19	9.75	18.17	4.95	18.20	4.98
700	22.84	10.03	22.84	10.03	18.78	5.00	18.82	5.04
600	23.39	10.17	23.40	10.18	19.31	4.95	19.34	4.9[illegible]
500	23.96	10.31	23.97	10.32	19.86	4.91	19.90	4.95
400	24.49	10.44	24.52	10.47	20.40	4.87	20.43	4.90
300	25.08	10.60	25.12	10.64	21.03	4.91	21.06	4.94
200	25.85	10.95	25.75	10.85	21.69	4.99	21.72	5.02
100	26.61	11.29	26.53	11.21	22.66	5.45	22.68	5.47
32	27.47	11.86	27.40	11.79	23.87	6.33	23.90	6.36
8	28.21	12.49	28.13	12.41	25.23	7.56	25.25	7.58
2	29.22	13.48	29.15	13.41	28.74	11.05	28.75	11.06
0	30.26	XXXX	30.19	XXXX	32.10	XXXX	32.09	XXXX

CASE I-B GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	759.		760.		761.		762.	
INTERVAL	12.00HR		12.00HR		6.00HR		6.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	30.28	-5.72	30.28	-5.72	30.86	-3.58	30.87	-3.57
-0.125	29.78	-1.75	29.78	-1.75	28.80	-0.00	28.81	0.01
-0.250	29.01	-0.26	29.01	-0.26	29.00	0.32	29.00	0.32
-0.500	28.01	0.17	28.01	0.17	28.01	0.07	27.99	0.05
-1.000	25.56	-0.03	25.56	-0.03	25.57	-0.01	25.57	-0.01
-2.000	20.51	-0.01	20.51	-0.01	20.50	-0.02	20.51	-0.01

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	2.72	0.61	2.72	0.61	3.43	2.74	3.46	2.77
2	1.38	0.11	1.38	0.11	1.68	1.47	1.69	1.48

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.71	-0.19	0.72	-0.18	25.02	0.32	25.03	0.33
R(N)	-1.17	XXXX	-1.17	XXXX	15.81	XXXX	15.82	XXXX
Q(C,O)	-0.79	XXXX	-0.80	XXXX	4.39	XXXX	4.40	XXXX
Q(E,O)	0.99	XXXX	0.98	XXXX	10.12	XXXX	10.13	XXXX
Q(S,O)	-1.36	XXXX	-1.37	XXXX	1.29	XXXX	1.29	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	2.24	XXXX	2.22	XXXX	5.62	XXXX	5.74	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	PAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	48.40	XXXX	46.50	XXXX	23.40	XXXX	23.40	XXXX

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CASE I-B GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	13479	13484	13500	13494
TAPE NO.	763.	764.	765.	766.
INTERVAL	6.00HR	6.00HR	6.00HR	6.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-0.79	0.02	-0.80	0.01	-0.79	0.02	-0.80	0.01
1000	-0.56	1.34	-0.69	1.20	-0.75	1.14	-0.79	1.10
900	-0.67	1.23	-0.70	1.19	-0.73	1.17	-0.74	1.15
800	-0.88	1.01	-0.89	1.01	-0.90	0.99	-0.91	0.98
700	-1.05	0.85	-1.05	0.85	-1.06	0.84	-1.06	0.84
600	-1.17	0.72	-1.17	0.72	-1.17	0.72	-1.18	0.71
500	-1.27	0.61	-1.26	0.62	-1.27	0.61	-1.27	0.61
400	-1.34	0.53	-1.33	0.54	-1.33	0.54	-1.33	0.54
300	-1.38	0.48	-1.38	0.48	-1.38	0.48	-1.38	0.48
200	-1.40	0.37	-1.39	0.38	-1.39	0.38	-1.39	0.38
100	-1.37	0.05	-1.36	0.06	-1.36	0.06	-1.36	0.06
32	-1.25	-0.24	-1.24	-0.23	-1.24	-0.23	-1.24	-0.23
8	-1.07	-0.42	-1.06	-0.41	-1.05	-0.40	-1.06	-0.41

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	3.49	0.01	3.49	0.01	3.49	0.01	3.49	0.01
1000	6.08	5.13	5.57	4.62	5.21	4.26	4.96	4.01
900	6.89	5.99	6.76	5.86	6.66	5.76	6.59	5.69
800	6.69	5.81	6.63	5.75	6.59	5.71	6.56	5.68
700	6.41	5.57	6.39	5.55	6.37	5.53	6.30	5.46
600	6.14	5.34	6.14	5.34	6.13	5.32	6.11	5.31
500	5.88	5.10	5.88	5.10	5.87	5.09	5.86	5.08
400	5.60	4.90	5.60	4.90	5.60	4.90	5.59	4.89
300	5.31	4.70	5.32	4.71	5.32	4.71	5.31	4.70
200	4.97	4.37	4.98	4.38	4.98	4.38	4.98	4.38
100	4.54	3.34	4.55	3.85	4.55	3.85	4.55	3.85
32	3.95	3.28	3.95	3.28	3.95	3.28	3.96	3.29
8	3.30	3.05	3.31	3.06	3.31	3.06	3.31	3.06

CASE I-B GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	763.		764.		765.		766.	
INTERVAL	6.00HR		6.00HR		6.00HR		6.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	24.78	1.92	24.78	1.92	24.76	1.90	24.75	1.89
900	25.63	2.12	25.62	2.11	25.62	2.11	25.61	2.10
800	26.05	1.87	26.05	1.87	26.05	1.87	26.04	1.86
700	26.40	1.56	26.39	1.55	26.38	1.54	26.38	1.54
600	26.66	1.16	26.68	1.18	26.67	1.17	26.66	1.16
500	26.93	0.77	26.94	0.78	26.94	0.78	26.94	0.78
400	27.21	-0.01	27.20	-0.02	27.21	-0.01	27.21	-0.01
300	27.51	-0.38	27.50	-0.39	27.50	-0.39	27.51	-0.38
200	27.85	-1.24	27.86	-1.23	27.87	-1.22	27.86	-1.23
100	28.41	-1.70	28.41	-1.70	28.41	-1.70	28.41	-1.70
32	29.18	-2.05	29.17	-2.06	29.18	-2.05	29.18	-2.05
8	30.22	-1.54	30.22	-1.54	30.22	-1.54	30.22	-1.54
2	32.85	0.95	32.85	0.95	32.84	0.94	32.85	0.95
0	35.36	XXXX	35.36	XXXX	35.35	XXXX	35.36	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	16.46	4.43	16.46	4.43	16.46	4.43	16.45	4.42
900	17.52	4.91	17.52	4.91	17.52	4.91	17.52	4.91
800	18.21	4.99	18.20	4.98	18.21	4.99	18.22	5.00
700	18.82	5.04	18.83	5.05	18.82	5.04	18.82	5.04
600	19.35	4.99	19.35	4.99	19.35	4.99	19.35	4.99
500	19.91	4.96	19.91	4.96	19.91	4.96	19.91	4.96
400	20.44	4.91	20.45	4.92	20.44	4.91	20.45	4.92
300	21.07	4.95	21.08	4.96	21.07	4.95	21.07	4.95
200	21.73	5.03	21.73	5.03	21.73	5.03	21.74	5.04
100	22.69	5.48	22.70	5.49	22.69	5.48	22.70	5.49
32	23.90	6.36	23.91	6.37	23.91	6.37	23.91	6.37
8	25.25	7.58	25.26	7.59	25.26	7.59	25.26	7.59
2	28.74	11.05	28.75	11.06	28.75	11.06	28.75	11.06
0	32.08	XXXX	32.08	XXXX	32.08	XXXX	32.08	XXXX

CASE I-B GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	763.		764.		765.		766.	
INTERVAL	6.00HR		6.00HR		6.00HR		6.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	30.87	-3.57	30.86	-3.58	30.87	-3.57	30.86	-3.58
-0.125	28.81	0.01	28.81	0.01	28.81	0.01	28.81	0.01
-0.250	29.00	0.32	29.00	0.32	29.01	0.33	29.00	0.32
-0.500	28.01	0.07	28.01	0.07	27.99	0.05	28.01	0.07
-1.000	25.56	-0.02	25.57	-0.01	25.57	-0.01	25.57	-0.01
-2.000	20.51	-0.01	20.51	-0.01	20.51	-0.01	20.50	-0.02

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	3.47	2.78	3.47	2.78	3.47	2.78	3.47	2.78
2	1.70	1.49	1.70	1.49	1.70	1.49	1.70	1.49

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	25.00	0.30	25.04	0.34	25.05	0.35	25.04	0.34
R(N)	15.83	XXXX	15.80	XXXX	15.83	XXXX	15.80	XXXX
Q(C,0)	4.40	XXXX	4.40	XXXX	4.40	XXXX	4.40	XXXX
Q(E,0)	10.13	XXXX	10.13	XXXX	10.13	XXXX	10.13	XXXX
Q(S,0)	1.29	XXXX	1.29	XXXX	1.29	XXXX	1.29	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	8.78	XXXX	8.80	XXXX	8.80	XXXX	8.82	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	23.50	XXXX	23.50	XXXX	23.40	XXXX	23.40	XXXX

CASE I-B GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	8289	8284	8274	8279
TAPE NO.	767.	768.	769.	770.
INTERVAL	2.00HR	2.00HR	2.00HR	2.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-4.52	-0.00	-4.52	-0.00	-4.52	-0.00	-4.52	-0.00
1000	-3.22	-0.81	-3.70	-1.30	-3.98	-1.57	-4.14	-1.73
900	-2.96	-0.38	-3.08	-0.50	-3.15	-0.57	-3.20	-0.63
800	-2.75	-0.04	-2.80	-0.09	-2.83	-0.12	-2.86	-0.15
700	-2.56	0.31	-2.59	0.28	-2.61	0.26	-2.63	0.24
600	-2.39	0.62	-2.41	0.60	-2.42	0.59	-2.42	0.59
500	-2.23	0.94	-2.24	0.93	-2.24	0.93	-2.25	0.92
400	-2.09	1.13	-2.09	1.13	-2.10	1.12	-2.10	1.12
300	-1.96	0.64	-1.96	0.64	-1.96	0.64	-1.96	0.64
200	-1.83	-0.52	-1.83	-0.52	-1.83	-0.52	-1.83	-0.52
100	-1.67	-2.05	-1.67	-2.05	-1.67	-2.05	-1.67	-2.05
32	-1.48	-1.98	-1.48	-1.98	-1.48	-1.98	-1.48	-1.98
8	-1.23	-1.39	-1.23	-1.39	-1.23	-1.39	-1.24	-1.40

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	5.91	-0.01	5.91	-0.01	5.91	-0.01	5.91	-0.01
1000	3.07	0.77	4.75	2.45	5.58	3.28	5.98	3.68
900	3.86	0.97	4.19	1.30	4.39	1.49	4.52	1.63
800	4.28	0.73	4.39	0.84	4.47	0.92	4.52	0.97
700	4.51	0.35	4.55	0.39	4.59	0.43	4.61	0.45
600	4.60	-0.20	4.63	-0.18	4.64	-0.16	4.65	-0.15
500	4.59	-0.83	4.60	-0.82	4.61	-0.81	4.62	-0.80
400	4.48	-1.59	4.49	-1.58	4.50	-1.57	4.50	-1.57
300	4.31	-2.03	4.31	-2.03	4.32	-2.02	4.32	-2.02
200	4.03	-1.48	4.03	-1.48	4.03	-1.48	4.04	-1.47
100	3.63	-0.07	3.63	-0.07	3.63	-0.07	3.63	-0.07
32	3.07	1.43	3.07	1.43	3.07	1.43	3.06	1.42
8	2.51	1.91	2.51	1.91	2.51	1.91	2.51	1.91

CASE I-B GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	767.		768.		769.		770.	
INTERVAL	2.00HR		2.00HR		2.00HR		2.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	21.82	0.40	21.83	0.41	21.84	0.42	21.84	0.42
900	23.10	1.24	23.11	1.25	23.11	1.25	23.11	1.25
800	23.79	1.49	23.81	1.51	23.80	1.50	23.81	1.51
700	24.31	1.58	24.31	1.58	24.30	1.57	24.30	1.57
600	24.67	1.50	24.66	1.49	24.66	1.49	24.66	1.49
500	24.96	1.35	24.95	1.34	24.95	1.34	24.96	1.35
400	25.18	1.01	25.18	1.01	25.18	1.01	25.19	1.02
300	25.39	0.30	25.39	0.30	25.39	0.30	25.40	0.31
200	25.56	-0.40	25.56	-0.40	25.56	-0.40	25.56	-0.40
100	25.79	-0.53	25.79	-0.53	25.79	-0.53	25.79	-0.53
32	26.04	-0.46	26.04	-0.46	26.03	-0.47	26.04	-0.46
8	26.49	-0.18	26.49	-0.18	26.49	-0.18	26.49	-0.18
2	27.51	0.81	27.51	0.81	27.51	0.81	27.51	0.81
0	28.46	XXXX	28.47	XXXX	28.46	XXXX	28.46	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	13.21	0.87	13.25	0.91	13.27	0.93	13.29	0.95
900	14.36	1.32	14.41	1.37	14.40	1.36	14.43	1.39
800	15.13	1.39	15.18	1.44	15.15	1.41	15.19	1.45
700	15.80	1.37	15.84	1.41	15.79	1.36	15.84	1.41
600	16.35	1.23	16.37	1.25	16.31	1.19	16.38	1.26
500	16.91	1.09	16.91	1.09	16.80	0.98	16.91	1.09
400	17.40	0.89	17.41	0.90	17.27	0.76	17.41	0.90
300	17.96	0.75	17.97	0.76	17.95	0.64	17.96	0.75
200	18.56	0.66	18.58	0.68	18.48	0.58	18.56	0.66
100	19.35	0.89	19.37	0.91	19.28	0.82	19.35	0.89
32	20.35	1.52	20.37	1.54	20.30	1.47	20.36	1.53
8	21.44	2.48	21.46	2.50	21.41	2.45	21.45	2.49
2	24.06	5.07	24.03	5.04	24.02	5.03	24.06	5.07
0	26.50	XXXX	26.52	XXXX	26.50	XXXX	26.50	XXXX

CASE I-B GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	767.		768.		769.		770.	
INTERVAL	2.00HR		2.00HR		2.00HR		2.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
C.000	26.63	0.28	26.63	0.28	26.63	0.28	26.63	0.28
-0.125	28.58	0.12	28.59	0.13	28.59	0.13	28.59	0.13
-0.250	29.21	0.12	29.22	0.13	29.22	0.13	29.21	0.12
-0.500	27.99	-0.02	27.98	-0.03	27.99	-0.02	27.99	-0.02
-1.000	25.58	-0.02	25.59	-0.01	25.57	-0.03	25.58	-0.02
-2.000	20.51	-0.01	20.51	-0.01	20.51	-0.01	20.51	-0.01

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	2.80	2.18	2.78	2.16	2.80	2.18	2.80	2.18
2	1.35	1.10	1.34	1.09	1.35	1.10	1.35	1.10

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	12.00	0.00	11.99	-0.01	11.99	-0.01	11.95	-0.05
R(N)	6.69	XXXX	6.69	XXXX	6.69	XXXX	6.69	XXXX
Q(C,0)	1.13	XXXX	1.13	XXXX	1.13	XXXX	1.13	XXXX
Q(E,0)	5.03	XXXX	5.03	XXXX	5.03	XXXX	5.03	XXXX
Q(S,0)	0.53	XXXX	0.53	XXXX	0.53	XXXX	0.53	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	4.72	XXXX	4.74	XXXX	4.74	XXXX	4.74	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	3.60	XXXX	3.60	XXXX	3.60	XXXX	3.60	XXXX

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CASE I-B GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	8279	8294	5674	5669
TAPE NO.	771.	772.	773.	774.
INTERVAL	2.00HR	2.00HR	1.00HR	1.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-4.52	-0.00	-4.52	-0.00	-4.17	0.01	-4.17	0.01
1000	-4.25	-1.84	-4.31	-1.90	-2.44	-0.43	-2.97	-0.96
900	-3.23	-0.65	-3.26	-0.68	-2.35	-0.32	-2.41	-0.39
800	-2.88	-0.16	-2.89	-0.18	-2.26	-0.20	-2.27	-0.21
700	-2.63	0.24	-2.64	0.23	-2.15	-0.05	-2.15	-0.05
600	-2.43	0.58	-2.43	0.58	-1.98	0.12	-1.98	0.12
500	-2.25	0.92	-2.26	0.91	-1.76	0.39	-1.76	0.39
400	-2.11	1.11	-2.11	1.11	-1.49	0.70	-1.49	0.70
300	-1.96	0.64	-1.96	0.64	-1.16	1.14	-1.15	1.15
200	-1.83	-0.52	-1.83	-0.52	-0.79	0.16	-0.79	0.16
100	-1.67	-2.05	-1.67	-2.05	-0.39	-1.08	-0.40	-1.09
32	-1.47	-1.97	-1.47	-1.97	-0.16	-1.41	-0.16	-1.41
8	-1.23	-1.39	-1.23	-1.39	-0.09	-0.49	-0.10	-0.50

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	5.91	-0.01	5.91	-0.01	4.16	-0.02	4.17	-0.01
1000	6.17	3.87	6.23	3.93	2.38	0.48	3.30	1.40
900	4.59	1.69	4.64	1.74	3.14	0.64	3.23	0.73
800	4.55	1.00	4.57	1.02	3.75	0.65	3.81	0.71
700	4.63	0.47	4.63	0.47	4.36	0.65	4.36	0.65
600	4.66	-0.14	4.67	-0.13	4.84	0.53	4.84	0.53
500	4.62	-0.80	4.63	-0.80	5.20	0.30	5.19	0.28
400	4.50	-1.57	4.50	-1.57	5.39	-0.31	5.39	-0.31
300	4.32	-2.02	4.32	-2.02	5.40	-1.30	5.41	-1.28
200	4.03	-1.48	4.03	-1.48	5.15	-1.06	5.16	-1.05
100	3.63	-0.07	3.63	-0.07	4.58	-0.42	4.59	-0.41
32	3.07	1.43	3.07	1.43	3.72	0.42	3.73	0.43
8	2.51	1.91	2.51	1.91	2.92	1.32	2.92	1.32

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CASE I-B GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	771.		772.		773.		774.	
INTERVAL	2.00HR		2.00HR		1.00HR		1.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	21.85	0.43	21.85	0.43	21.37	-0.24	21.36	-0.25
900	23.11	1.25	23.11	1.25	22.48	0.32	22.47	0.31
800	23.80	1.50	23.80	1.50	23.19	0.49	23.19	0.49
700	24.31	1.58	24.31	1.58	23.84	0.59	23.83	0.58
600	24.66	1.49	24.66	1.49	24.38	0.59	24.38	0.59
500	24.95	1.34	24.96	1.35	24.87	0.53	24.87	0.53
400	25.19	1.02	25.18	1.01	25.29	0.48	25.28	0.47
300	25.39	0.30	25.38	0.29	25.63	0.28	25.63	0.28
200	25.56	-0.40	25.57	-0.39	25.84	-0.23	25.84	-0.23
100	25.78	-0.54	25.79	-0.53	25.93	-0.91	25.93	-0.91
32	26.04	-0.46	26.03	-0.47	25.80	-0.21	25.81	-0.20
8	26.49	-0.18	26.48	-0.19	25.71	0.88	25.72	0.89
2	27.51	0.81	27.51	0.81	25.52	0.93	25.53	0.94
0	28.47	XXXX	28.47	XXXX	25.29	XXXX	25.29	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	13.31	0.97	13.31	0.97	12.74	0.32	12.75	0.33
900	14.44	1.40	14.45	1.41	13.72	0.58	13.72	0.58
800	15.21	1.47	15.19	1.45	14.53	0.66	14.54	0.67
700	15.85	1.42	15.84	1.41	15.29	0.70	15.29	0.70
600	16.38	1.26	16.37	1.25	15.91	0.60	15.92	0.61
500	16.92	1.10	16.91	1.09	16.53	0.50	16.54	0.51
400	17.41	0.90	17.41	0.90	17.09	0.34	17.11	0.36
300	17.97	0.76	17.97	0.76	17.67	0.19	17.70	0.22
200	18.57	0.67	18.57	0.67	18.36	0.16	18.33	0.13
100	19.36	0.90	19.36	0.90	19.09	0.31	19.06	0.28
32	20.36	1.53	20.36	1.53	19.97	0.82	19.96	0.81
8	21.45	2.49	21.45	2.49	20.93	1.64	20.91	1.62
2	24.07	5.08	24.07	5.06	22.61	3.29	22.59	3.27
0	26.51	XXXX	26.52	XXXX	24.75	XXXX	24.72	XXXX

CASE I-B GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	771.		772.		773.		774.	
INTERVAL	2.00HR		2.00HR		1.00HR		1.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	26.63	0.28	26.63	0.28	26.05	-0.04	26.05	-0.04
-0.125	28.59	0.13	28.59	0.13	28.74	0.05	28.74	0.05
-0.250	29.22	0.13	29.21	0.12	29.28	0.07	29.28	0.07
-0.500	27.98	-0.03	27.99	-0.02	27.98	-0.01	27.97	-0.02
-1.000	25.58	-0.02	25.58	-0.02	25.57	-0.00	25.58	0.01
-2.000	20.51	-0.01	20.50	-0.02	20.51	-0.01	20.51	-0.01

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	2.80	2.18	2.80	2.18	2.93	1.28	2.93	1.28
2	1.35	1.10	1.35	1.10	1.64	0.83	1.64	0.83

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	11.99	-0.01	11.99	-0.01	6.11	0.01	6.10	0.00
R(N)	6.69	XXXX	6.69	XXXX	2.61	XXXX	2.61	XXXX
Q(C,O)	1.13	XXXX	1.13	XXXX	-0.19	XXXX	-0.19	XXXX
Q(E,O)	5.02	XXXX	5.02	XXXX	3.01	XXXX	3.01	XXXX
Q(G,O)	0.53	XXXX	0.53	XXXX	-0.21	XXXX	-0.21	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	4.76	XXXX	4.72	XXXX	3.94	XXXX	3.92	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	3.60	XXXX	3.60	XXXX	1.20	XXXX	1.20	XXXX

CASE I-B GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	5674	5644	5644	5634
TAPE NO.	775.	776.	777.	778.
INTERVAL	1.00HR	1.00HR	1.00HR	1.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-4.17	0.01	-4.17	0.01	-4.17	0.01	-4.17	0.01
1000	-3.34	-1.33	-3.61	-1.60	-3.80	-1.79	-3.93	-1.92
900	-2.45	-0.42	-2.49	-0.46	-2.52	-0.49	-2.54	-0.51
800	-2.28	-0.22	-2.30	-0.24	-2.31	-0.25	-2.31	-0.25
700	-2.15	-0.05	-2.16	-0.06	-2.16	-0.06	-2.17	-0.07
600	-1.98	0.12	-1.99	0.11	-1.99	0.11	-1.99	0.11
500	-1.76	0.39	-1.76	0.39	-1.76	0.39	-1.76	0.39
400	-1.49	0.70	-1.49	0.70	-1.49	0.70	-1.48	0.72
300	-1.15	1.15	-1.15	1.15	-1.16	1.14	-1.15	1.15
200	-0.79	0.16	-0.78	0.17	-0.79	0.16	-0.78	0.17
100	-0.39	-1.08	-0.39	-1.08	-0.39	-1.08	-0.39	-1.08
32	-0.17	-1.42	-0.16	-1.41	-0.16	-1.41	-0.16	-1.41
8	-0.10	-0.50	-0.10	-0.50	-0.09	-0.49	-0.09	-0.49

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	4.17	-0.01	4.17	-0.01	4.17	-0.01	4.17	-0.01
1000	3.95	2.05	4.36	2.47	4.64	2.74	4.81	2.91
900	3.29	0.79	3.35	0.85	3.38	0.88	3.41	0.91
800	3.82	0.72	3.83	0.73	3.84	0.74	3.84	0.74
700	4.36	0.65	4.36	0.65	4.36	0.65	4.36	0.65
600	4.84	0.53	4.85	0.54	4.84	0.53	4.84	0.53
500	5.19	0.28	5.20	0.30	5.19	0.28	5.19	0.28
400	5.39	-0.31	5.40	-0.30	5.39	-0.31	5.39	-0.31
300	5.41	-1.29	5.40	-1.30	5.40	-1.30	5.40	-1.30
200	5.15	-1.06	5.16	-1.05	5.15	-1.06	5.15	-1.06
100	4.59	-0.41	4.59	-0.41	4.59	-0.41	4.59	-0.41
32	3.72	0.42	3.72	0.42	3.72	0.42	3.72	0.42
8	2.92	1.32	2.92	1.32	2.92	1.32	2.92	1.32

CASE I-B GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	775.		776.		777.		778.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	21.37	-0.24	21.36	-0.25	21.37	-0.24	21.37	-0.24
900	22.48	0.32	22.48	0.32	22.48	0.32	22.48	0.32
800	23.19	0.49	23.20	0.50	23.19	0.49	23.19	0.49
700	23.84	0.59	23.83	0.58	23.84	0.59	23.83	0.58
600	24.38	0.59	24.38	0.59	24.38	0.59	24.37	0.58
500	24.89	0.55	24.87	0.53	24.87	0.53	24.88	0.54
400	25.29	0.48	25.29	0.48	25.29	0.48	25.29	0.48
300	25.62	0.27	25.63	0.28	25.63	0.28	25.63	0.28
200	25.85	-0.22	25.84	-0.23	25.84	-0.23	25.81	-0.26
100	25.93	-0.91	25.93	-0.91	25.93	-0.91	25.93	-0.91
32	25.80	-0.21	25.80	-0.21	25.80	-0.21	25.80	-0.21
8	25.71	0.88	25.71	0.88	25.71	0.88	25.71	0.88
2	25.52	0.93	25.52	0.93	25.52	0.93	25.51	0.92
0	25.29	XXXX	25.27	XXXX	25.28	XXXX	25.27	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	12.77	0.35	12.77	0.35	12.76	0.34	12.79	0.37
900	13.72	0.58	13.73	0.59	13.72	0.58	13.74	0.60
800	14.54	0.67	14.54	0.67	14.54	0.67	14.55	0.68
700	15.29	0.70	15.29	0.70	15.29	0.70	15.29	0.70
600	15.92	0.61	15.91	0.60	15.90	0.59	15.93	0.62
500	16.55	0.52	16.54	0.51	16.52	0.49	16.55	0.52
400	17.12	0.37	17.11	0.36	17.11	0.36	17.12	0.37
300	17.71	0.23	17.71	0.23	17.71	0.23	17.71	0.23
200	18.33	0.13	18.33	0.13	18.32	0.12	18.31	0.11
100	19.06	0.28	19.06	0.28	19.06	0.28	19.04	0.26
32	19.95	0.80	19.96	0.81	19.95	0.80	19.94	0.79
8	20.91	1.62	20.91	1.62	20.91	1.62	20.89	1.60
2	22.59	3.27	22.59	3.27	22.60	3.28	22.58	3.26
0	24.72	XXXX	24.71	XXXX	24.72	XXXX	24.71	XXXX

CASE I-B GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	775.		776.		777.		778.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	26.05	-0.04	26.04	-0.05	26.05	-0.04	26.04	-0.05
-0.125	28.73	0.04	28.74	0.05	28.73	0.04	28.74	0.05
-0.250	29.28	0.07	29.28	0.07	29.28	0.07	29.27	0.06
-0.500	27.97	-0.02	27.98	-0.01	27.98	-0.01	27.97	-0.02
-1.000	25.58	0.01	25.58	0.01	25.57	-0.00	25.58	0.01
-2.000	20.51	-0.01	20.50	-0.02	20.50	-0.02	20.51	-0.01

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	2.92	1.27	2.92	1.27	2.92	1.27	2.93	1.28
2	1.63	0.82	1.63	0.82	1.63	0.82	1.63	0.82

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	6.10	0.00	6.07	-0.03	6.07	-0.03	6.07	-0.03
R(N)	2.61	XXXX	2.59	XXXX	2.59	XXXX	2.59	XXXX
Q(C,O)	-0.19	XXXX	-0.19	XXXX	-0.19	XXXX	-0.19	XXXX
Q(E,O)	3.01	XXXX	3.01	XXXX	3.00	XXXX	3.01	XXXX
Q(S,O)	-0.20	XXXX	-0.21	XXXX	-0.21	XXXX	-0.21	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
AU	3.92	XXXX	3.92	XXXX	3.92	XXXX	3.92	XXXX

INTEGRATED EVAPOTRANSPIRATION (CM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	1.20	XXXX	1.20	XXXX	1.10	XXXX	1.20	XXXX

ROOT MEAN SQUARES OF THE DIFFERENCES BETWEEN
THE PREDICTED AND OBSERVED ATMOSPHERIC COLUMNS

CASE I-B 12.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		3.29	1.56	29.56	14.03	28.86
PERSIST DIFF		2.48	4.25	5.02	2.85	4.09
GPAC DIFF	755.	1.06	3.06	3.37	10.72	2.45
GPAC DIFF	756.	0.74	3.04	3.33	10.79	2.45
GPAC DIFF	757.	0.69	3.01	3.31	10.80	2.45
GPAC DIFF	758.	0.69	2.99	3.30	10.80	2.45
GPAC DIFF	759.	0.70	2.98	3.29	10.81	2.45
GPAC DIFF	760.	0.71	2.97	3.30	10.78	2.45

CASE I-B 6.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		1.66	1.20	27.57	15.46	27.97
PERSIST DIFF		1.16	4.19	3.23	1.42	3.33
GPAC DIFF	761.	0.71	4.76	1.46	5.97	1.47
GPAC DIFF	762.	0.75	4.73	1.47	5.99	1.46
GPAC DIFF	763.	0.72	4.66	1.47	6.00	1.46
GPAC DIFF	764.	0.70	4.60	1.47	6.00	1.47
GPAC DIFF	765.	0.69	4.55	1.46	6.00	1.46
GPAC DIFF	766.	0.68	4.52	1.46	6.00	1.47

ROOT MEAN SQUARES OF THE DIFFERENCES BETWEEN
THE PREDICTED AND OBSERVED ATMOSPHERIC COLUMNS

CASE I-B 2.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		2.58	4.43	24.42	16.41	26.49
PERSIST DIFF		0.84	1.21	0.97	0.47	0.22
GPAC DIFF	767.	1.04	1.16	1.00	1.88	0.13
GPAC DIFF	768.	1.08	1.35	1.00	1.90	0.14
GPAC DIFF	769.	1.11	1.50	1.00	1.85	0.14
GPAC DIFF	770.	1.13	1.58	1.00	1.89	0.14
GPAC DIFF	771.	1.15	1.62	1.00	1.90	0.14
GPAC DIFF	772.	1.15	1.64	1.00	1.90	0.14

CASE I-B 1.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		2.09	4.37	24.38	16.65	26.51
PERSIST DIFF		0.24	0.55	0.39	0.24	0.14
GPAC DIFF	773.	0.66	0.73	0.57	1.13	0.04
GPAC DIFF	774.	0.71	0.82	0.57	1.12	0.04
GPAC DIFF	775.	0.76	0.93	0.57	1.12	0.04
GPAC DIFF	776.	0.80	1.00	0.57	1.12	0.04
GPAC DIFF	777.	0.83	1.06	0.57	1.12	0.04
GPAC DIFF	778.	0.85	1.10	0.57	1.12	0.04

CASE II TAPE LOG

TAPE NO.	FCST INT	SM	KM8 D8	SCG	ADV	GEO	REMARKS
678.	12.00	A	V	A	N	O	
679.	12.00	A	V	A	N	I	GEO=0.10
680.	12.00	A	V	A	N	I	GEO=0.30
681.	12.00	A	V	A	N	I	GEO=0.40
682.	12.00	A	V	A	N	I	GEO=0.50
683.	12.00	A	V	A	N	I	GEO=0.60
684.	12.00	A	V	A	N	I	GEO=0.70
685.	12.00	A	V	A	N	I	GEO=0.80
686.	12.00	A	V	A	N	I	GEO=1.00
691.	6.00	A	V	A	N	O	
692.	6.00	A	V	A	N	I	GEO=0.10
693.	6.00	A	V	A	N	I	GEO=0.30
694.	6.00	A	V	A	N	I	GEO=0.40
695.	6.00	A	V	A	N	I	GEO=0.50
696.	6.00	A	V	A	N	I	GEO=0.60
697.	6.00	A	V	A	N	I	GEO=0.70
698.	6.00	A	V	A	N	I	GEO=0.80
699.	6.00	A	V	A	N	I	GEO=1.00
704.	2.00	A	V	A	N	O	
705.	2.00	A	V	A	N	I	GEO=0.10
706.	2.00	A	V	A	N	I	GEO=0.30
707.	2.00	A	V	A	N	I	GEO=0.40
708.	2.00	A	V	A	N	I	GEO=0.50
709.	2.00	A	V	A	N	I	GEO=0.60
710.	2.00	A	V	A	N	I	GEO=0.70
711.	2.00	A	V	A	N	I	GEO=0.80
712.	2.00	A	V	A	N	I	GEO=1.00
717.	1.00	A	V	A	N	O	
718.	1.00	A	V	A	N	I	GEO=0.10
719.	1.00	A	V	A	N	I	GEO=0.30
720.	1.00	A	V	A	N	I	GEO=0.40
721.	1.00	A	V	A	N	I	GEO=0.50
722.	1.00	A	V	A	N	I	GEO=0.60
723.	1.00	A	V	A	N	I	GEO=0.70
724.	1.00	A	V	A	N	I	GEO=0.80
725.	1.00	A	V	A	N	I	GEO=1.00

CASE II INITIAL CONDITIONS - 0000L 8 FEBRUARY 1962
(PAGE 1 OF 2 PAGES)

SOIL PARAMETERS

LEVEL (M)	TEMP (DEG C)		
0.000	9.52	LAMBDA	= 0.59 CAL/CM^3 DEG
-0.125	9.06	MU/ LAMBDA	= 0.0037 CM^2/SEC
-0.250	9.42	(MU * LAMBDA)$^{1/2}$	= 0.036 CAL^2/CM^4 DEG^2 SEC
-0.500	10.84	Z(0)	= 2.0 CM
-1.000	12.42	S(0)	= 0.0004 CAL/CM^2 SEC MB
-2.000	15.81	G	= 3500 CM^2 SEC DEG/CAL

RADIATION PARAMETERS

LOCAL TIME	= 0000	TURBIDITY	= 0.24
DELTA	= -15.30 DEG	PSI	= 1.027
R X 10^5	= 1.35 DEG C/SEC	F(C)	= 0.90
CLOUD CLASS	= 1	ALBEDO	= 0.25
E'(8)	= 10.86 MB	M	= 0.620
EPSILON	= 0.950	N	= 0.0415 MB$^{-1/2}$
PHI	= 32.5 DEG	H	= -180.0 DEG

HORIZONTAL GRADIENTS

LEVEL (M)	DE/DX (MB/100-KM)	DE/DY (MB/100-KM)	DT/DX (DEG C/100-KM)	DT/DY (DEG C/100-KM)
200	0.64	-1.53	0.50	-1.80
600	0.60	-1.10	-0.32	-1.60
1000	0.58	-0.68	-1.14	-1.38

CASE II INITIAL CONDITIONS - 0000L 8 FEBRUARY 1962
(PAGE 2 OF 2 PAGES)

LEVEL (M)	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
1000	13.98	8.23	14.43	5.19
900	14.86	9.90	14.64	5.63
800	15.75	11.60	14.84	6.56
700	16.62	13.30	15.04	7.54
600	17.53	14.98	15.25	8.53
500	18.38	16.70	15.44	9.35
400	16.00	18.13	15.30	9.95
300	13.25	17.35	14.70	10.54
200	9.80	15.40	14.35	11.14
100	5.80	12.20	13.80	11.17
32	3.00	8.75	13.70	10.95
8	1.50	5.50	13.63	10.86

ADVECTION TERMS
$(SEC^{-1} \times 10^{5})$

LEVEL (M)	ALPHA(1)	BETA(1)	ALPHA(2)	BETA(2)
200	-0.46	1.37	0.00	-2.25
600	0.02	0.68	0.00	-1.63
1000	0.50	0.01	0.00	-1.00

SURFACE CONTOUR GRADIENTS

PREDICTION INTERVAL (HR)	AZIMUTH (DEG FROM NORTH)	MAGNITUDE (FT/100-KM)
0	119.00	35.31
1	112.80	28.91
2	105.70	28.00
6	120.00	28.00
12	136.40	44.44

CASE II COMPARISON DATA FROM DALLAS (1 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	4.29	10.21		
1000	12.18	6.75	14.51	4.88
900	12.92	7.99	14.63	5.26
800	13.69	9.21	14.74	6.22
700	14.45	10.46	14.85	7.23
600	15.25	11.70	14.95	8.25
500	16.09	12.95	15.08	9.13
400	16.29	14.25	15.08	9.84
300	13.68	14.89	14.63	10.52
200	10.20	14.45	14.49	11.23
100	6.60	13.00	13.31	11.27
32	3.83	9.30	13.20	11.01
8	2.05	6.00	13.28	10.90
2	XXXX	XXXX	13.30	10.89
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	9.61
-0.125	9.12
-0.250	9.46
-0.500	10.82
-1.000	12.44
-2.000	15.81

WIND SPEED (M/SEC)

8	6.34
2	0.54

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.00	Q(E,0)=	XXXX
R(N)=	XXXX	Q(S,0)=	XXXX
Q(C,0)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

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CASE II COMPARISON DATA FROM DALLAS (2 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	2.90	10.32		
1000	10.85	6.10	14.45	4.56
900	11.64	7.00	14.40	4.89
800	12.40	7.90	14.38	5.87
700	13.20	8.80	14.35	6.92
600	13.98	9.70	14.31	7.98
500	14.74	10.60	14.28	8.91
400	15.05	11.57	13.90	9.72
300	12.80	12.63	13.76	10.51
200	10.28	13.58	14.00	11.32
100	7.15	12.31	13.05	11.36
32	4.00	9.30	12.80	11.07
8	2.05	6.10	12.85	10.95
2	XXXX	XXXX	12.87	10.93
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	9.65
-0.125	9.22
-0.250	9.50
-0.500	10.80
-1.000	12.44
-2.000	15.81

WIND SPEED (M/SEC)

8	6.44
2	2.53

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.00	Q(F,O)=	XXXX
R(N)=	XXXX	Q(S,O)=	XXXX
Q(C,O)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE II COMPARISON DATA FROM DALLAS (6 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	3.83	9.98		
1000	6.83	2.63	15.80	3.30
900	8.20	2.85	15.85	3.40
800	9.60	3.10	15.90	4.49
700	11.00	3.37	15.95	5.68
600	12.80	3.89	16.00	6.87
500	14.96	4.76	16.05	8.05
400	16.52	5.99	16.10	9.26
300	14.10	7.50	14.00	10.45
200	10.30	9.20	13.89	11.65
100	7.30	9.83	13.56	11.74
32	4.13	7.35	12.90	11.30
8	2.00	4.30	12.50	11.13
2	XXXX	XXXX	12.38	11.10
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	9.63
-0.125	9.43
-0.250	9.66
-0.500	10.77
-1.000	12.44
-2.000	15.81

WIND SPEED (M/SEC)

8	4.74
2	2.75

SURFACE SHEAR STRESS
(DYNES/CM SQ.)X10
TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.00	Q(F,0)=	XXXX
R(N)=	XXXX	Q(S,0)=	XXXX
Q(C,0)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE II COMPARISON DATA FROM DALLAS (12 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	12.30	11.72		
1000	8.44	3.30	16.61	3.11
900	8.35	4.08	16.49	3.26
800	8.28	4.85	16.37	3.90
700	8.20	5.62	16.25	4.59
600	8.00	6.40	16.14	5.29
500	7.50	7.19	16.02	5.97
400	6.40	7.90	16.07	6.67
300	5.45	8.14	16.72	7.32
200	4.98	8.19	17.65	7.98
100	4.85	8.25	18.64	8.07
32	4.40	7.90	19.63	7.89
8	3.20	5.20	20.25	7.82
2	XXXX	XXXX	20.45	7.81
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)	
0.000	13.27
-0.125	10.05
-0.250	9.83
-0.500	10.75
-1.000	12.44
-2.000	15.81

WIND SPEED (M/SEC)	
8	6.11
2	2.62

SURFACE SHEAR STRESS
(DYNES/CM SQ.)X10
TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	14.30	Q(E,0)=	XXXX
R(N)=	XXXX	Q(S,0)=	XXXX
Q(C,0)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE II GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	21979	21974	21899	21859
TAPE NO.	678.	679.	680.	681.
INTERVAL	12.00HR	12.00HR	12.00HR	12.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	12.28	-0.02	12.28	-0.02	12.28	-0.02	12.28	-0.02
1000	11.93	3.49	11.76	3.32	11.55	3.11	11.52	3.08
900	10.38	2.02	10.34	1.99	10.21	1.86	10.18	1.83
800	9.59	1.31	9.60	1.32	9.52	1.24	9.50	1.22
700	9.06	0.86	9.09	0.89	9.03	0.83	9.01	0.81
600	8.62	0.62	8.66	0.66	8.63	0.63	8.61	0.61
500	8.23	0.73	8.27	0.77	8.26	0.76	8.24	0.74
400	7.84	1.44	7.90	1.50	7.89	1.49	7.88	1.48
300	7.45	2.01	7.49	2.05	7.49	2.05	7.48	2.03
200	6.97	1.99	7.03	2.05	7.02	2.05	7.01	2.03
100	6.29	1.44	6.35	1.50	6.35	1.50	6.34	1.49
32	5.36	0.97	5.41	1.01	5.41	1.02	5.40	1.00
8	4.34	1.14	4.38	1.18	4.38	1.18	4.35	1.15

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	11.71	-0.01	11.71	-0.01	11.71	-0.01	11.71	-0.01
1000	19.20	15.90	17.99	14.69	16.34	13.04	15.77	12.47
900	18.15	14.07	17.77	13.69	17.21	13.13	17.02	12.94
800	17.43	12.58	17.22	12.37	16.91	12.06	16.80	11.95
700	16.82	11.20	16.69	11.07	16.47	10.85	16.39	10.77
600	16.28	9.88	16.18	9.78	16.02	9.62	15.96	9.56
500	15.76	8.57	15.68	8.49	15.55	8.36	15.50	8.31
400	15.20	7.30	15.13	7.23	15.03	7.13	14.99	7.09
300	14.59	6.45	14.54	6.40	14.46	6.32	14.42	6.28
200	13.84	5.65	13.79	5.60	13.72	5.53	13.69	5.50
100	12.72	4.47	12.69	4.44	12.63	4.38	12.60	4.35
32	11.02	3.12	11.00	3.10	10.95	3.05	10.93	3.03
8	8.98	3.78	8.96	3.76	8.92	3.72	8.90	3.70

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CASE II GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	678.		679.		680.		681.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	22.01	5.40	21.96	5.35	21.83	5.22	21.78	5.17
900	21.63	5.14	21.61	5.12	21.53	5.04	21.49	5.00
800	21.45	5.08	21.44	5.07	21.37	5.00	21.34	4.97
700	21.36	5.11	21.37	5.12	21.32	5.07	21.31	5.06
600	21.30	5.16	21.31	5.17	21.28	5.14	21.26	5.12
500	21.28	5.26	21.30	5.28	21.27	5.25	21.24	5.22
400	21.25	5.18	21.28	5.21	21.25	5.18	21.23	5.16
300	21.26	4.54	21.29	4.57	21.27	4.55	21.25	4.53
200	21.30	3.65	21.32	3.67	21.30	3.65	21.30	3.65
100	21.36	2.72	21.39	2.75	21.37	2.73	21.35	2.71
32	21.46	1.83	21.50	1.87	21.49	1.86	21.47	1.84
8	21.76	1.51	21.79	1.54	21.78	1.53	21.79	1.54
2	22.31	1.86	22.33	1.88	22.33	1.88	22.34	1.89
0	22.83	XXXX	22.84	XXXX	22.86	XXXX	22.86	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	11.51	8.40	11.57	8.46	11.62	8.51	11.63	8.52
900	11.95	8.69	12.02	8.76	12.08	8.82	12.08	8.82
800	12.27	8.37	12.35	8.45	12.41	8.51	12.43	8.53
700	12.56	7.97	12.64	8.05	12.72	8.13	12.72	8.13
600	12.80	7.51	12.90	7.61	12.95	7.66	12.97	7.68
500	13.05	7.08	13.13	7.16	13.21	7.24	13.23	7.26
400	13.28	6.61	13.37	6.70	13.44	6.77	13.46	6.79
300	13.54	6.22	13.62	6.30	13.71	6.39	13.72	6.40
200	13.83	5.85	13.92	5.94	14.01	6.03	14.02	6.04
100	14.14	6.07	14.23	6.16	14.32	6.25	14.34	6.27
32	14.52	6.63	14.61	6.72	14.70	6.81	14.72	6.83
8	14.91	7.09	15.02	7.20	15.07	7.25	15.10	7.28
2	15.71	7.90	15.81	8.00	15.88	8.07	15.90	8.09
0	16.48	XXXX	16.57	XXXX	16.65	XXXX	16.67	XXXX

CASE II GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	678.		679.		680.		681.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	15.52	2.25	15.55	2.28	15.56	2.29	15.57	2.30
-0.125	10.59	0.54	10.61	0.56	10.62	0.57	10.61	0.56
-0.250	9.85	0.02	9.85	0.02	9.86	0.03	9.86	0.03
-0.500	10.77	0.02	10.76	0.01	10.76	0.01	10.76	0.01
-1.000	12.46	0.02	12.46	0.02	12.45	0.01	12.47	0.03
-2.000	15.79	-0.02	15.78	-0.03	15.78	-0.03	15.78	-0.03

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	9.98	3.87	9.97	3.86	9.94	3.83	9.91	3.80
2	4.87	2.25	4.87	2.25	4.86	2.24	4.85	2.23

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	14.59	0.29	14.58	0.28	14.59	0.29	14.59	0.29
R(N)	8.45	XXXX	8.45	XXXX	8.45	XXXX	8.45	XXXX
Q(C,0)	1.77	XXXX	1.77	XXXX	1.79	XXXX	1.81	XXXX
Q(E,0)	4.58	XXXX	4.57	XXXX	4.55	XXXX	4.54	XXXX
Q(S,0)	2.10	XXXX	2.10	XXXX	2.10	XXXX	2.09	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	49.58	XXXX	49.58	XXXX	49.00	XXXX	49.02	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	11.90	XXXX	11.90	XXXX	11.90	XXXX	11.90	XXXX

CASE II GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	21844		21814		21784		21769	
TAPE NO.	682.		683.		684.		685.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	12.28	-0.02	12.28	-0.02	12.29	-0.01	12.28	-0.02
1000	11.52	3.08	11.52	3.08	11.54	3.10	11.56	3.12
900	10.16	1.81	10.14	1.79	10.13	1.77	10.12	1.77
800	9.47	1.19	9.46	1.18	9.45	1.17	9.44	1.16
700	8.99	0.79	8.98	0.78	8.96	0.76	8.96	0.76
600	8.59	0.59	8.58	0.58	8.57	0.57	8.56	0.56
500	8.23	0.73	8.21	0.71	8.20	0.70	8.20	0.70
400	7.86	1.47	7.85	1.45	7.84	1.44	7.84	1.44
300	7.47	2.02	7.46	2.01	7.45	2.01	7.45	2.01
200	7.01	2.03	6.99	2.02	6.99	2.01	6.98	2.01
100	6.34	1.49	6.32	1.47	6.32	1.47	6.32	1.47
32	5.40	1.01	5.39	0.99	5.39	0.99	5.38	0.98
8	4.37	1.17	4.37	1.17	4.35	1.15	4.36	1.16

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	11.71	-0.01	11.71	-0.01	11.71	-0.01	11.71	-0.01
1000	15.32	12.02	14.96	11.66	14.65	11.35	14.40	11.10
900	16.85	12.77	16.72	12.64	16.61	12.53	16.52	12.44
800	16.70	11.85	16.63	11.77	16.55	11.70	16.50	11.65
700	16.32	10.70	16.27	10.65	16.22	10.60	16.18	10.56
600	15.91	9.51	15.87	9.47	15.83	9.43	15.79	9.39
500	15.46	8.27	15.42	8.23	15.39	8.20	15.37	8.18
400	14.95	7.05	14.93	7.03	14.90	7.00	14.88	6.98
300	14.38	6.24	14.36	6.22	14.34	6.20	14.32	6.18
200	13.66	5.47	13.64	5.45	13.63	5.44	13.60	5.41
100	12.58	4.33	12.56	4.31	12.54	4.29	12.53	4.28
32	10.91	3.01	10.89	2.99	10.88	2.98	10.87	2.97
8	8.89	3.69	8.88	3.68	8.86	3.66	8.85	3.65

CASE II GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	682.		683.		684.		685.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	21.73	5.12	21.69	5.08	21.66	5.05	21.62	5.01
900	21.45	4.96	21.43	4.94	21.40	4.91	21.37	4.88
800	21.33	4.96	21.30	4.93	21.29	4.92	21.26	4.89
700	21.28	5.03	21.26	5.01	21.24	4.99	21.22	4.97
600	21.24	5.10	21.22	5.08	21.21	5.07	21.19	5.05
500	21.23	5.21	21.22	5.20	21.21	5.19	21.19	5.17
400	21.22	5.15	21.21	5.14	21.19	5.12	21.17	5.10
300	21.24	4.52	21.22	4.50	21.22	4.50	21.10	4.38
200	21.28	3.63	21.26	3.61	21.25	3.60	21.24	3.59
100	21.34	2.70	21.34	2.70	21.33	2.69	21.31	2.67
32	21.46	1.83	21.46	1.83	21.44	1.81	21.44	1.81
8	21.77	1.52	21.76	1.51	21.76	1.51	21.74	1.49
2	22.32	1.87	22.32	1.87	22.32	1.87	22.30	1.35
0	22.85	XXXX	22.85	XXXX	22.85	XXXX	22.84	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	11.62	8.51	11.62	8.51	11.61	8.50	11.61	8.50
900	12.11	8.85	12.10	8.84	12.11	8.85	12.11	8.85
800	12.43	8.53	12.44	8.54	12.44	8.54	12.44	8.54
700	12.73	8.14	12.74	8.15	12.74	8.15	12.75	8.16
600	12.98	7.69	12.99	7.70	13.01	7.72	12.99	7.70
500	13.24	7.27	13.24	7.27	13.25	7.28	13.26	7.29
400	13.47	6.80	13.49	6.82	13.49	6.82	13.49	6.82
300	13.74	6.42	13.74	6.42	13.75	6.43	13.76	6.44
200	14.03	6.05	14.04	6.06	14.05	6.07	14.05	6.07
100	14.35	6.28	14.36	6.29	14.37	6.30	14.39	6.32
32	14.73	6.84	14.74	6.85	14.74	6.85	14.74	6.85
8	15.11	7.29	15.13	7.31	15.13	7.31	15.12	7.30
2	15.91	8.10	15.92	8.11	15.93	8.12	15.92	8.11
0	16.67	XXXX	16.68	XXXX	16.69	XXXX	16.69	XXXX

CASE II GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	682.		683.		684.		685.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	15.57	2.30	15.57	2.30	15.58	2.31	15.57	2.30
-0.125	10.63	0.58	10.62	0.57	10.63	0.58	10.62	0.57
-0.250	9.86	0.03	9.87	0.04	9.85	0.02	9.85	0.02
-0.500	10.77	0.02	10.76	0.01	10.77	0.02	10.76	0.01
-1.000	12.46	0.02	12.46	0.02	12.46	0.02	12.46	0.02
-2.000	15.78	-0.03	15.78	-0.03	15.79	-0.02	15.79	-0.02

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	9.91	3.80	9.89	3.78	9.88	3.77	9.87	3.76
2	4.84	2.22	4.84	2.22	4.83	2.21	4.83	2.21

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	14.59	0.29	14.58	0.28	14.58	0.28	14.58	0.28
R(N)	8.45	XXXX	8.45	XXXX	8.45	XXXX	8.45	XXXX
Q(C,0)	1.82	XXXX	1.82	XXXX	1.83	XXXX	1.83	XXXX
Q(F,0)	4.53	XXXX	4.53	XXXX	4.52	XXXX	4.51	XXXX
Q(S,0)	2.09	XXXX	2.09	XXXX	2.09	XXXX	2.09	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	48.94	XXXX	48.84	XXXX	48.70	XXXX	48.66	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	11.90	XXXX	11.90	XXXX	11.90	XXXX	11.90	XXXX

CASE II GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	21729	4584	4689	5069
TAPE NO.	686.	691.	692.	693.
INTERVAL	12.00HR	6.00HR	6.00HR	6.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	12.28	-0.02	3.83	0.00	3.83	0.00	3.83	0.00
1000	11.62	3.18	10.63	3.80	8.80	1.97	6.78	-0.05
900	10.11	1.76	9.09	0.89	8.72	0.52	8.24	0.04
800	9.42	1.14	8.16	-1.44	8.02	-1.58	7.81	-1.79
700	8.95	0.75	7.49	-3.51	7.41	-3.59	7.31	-3.69
600	8.55	0.55	6.93	-5.87	6.90	-5.90	6.84	-5.96
500	8.19	0.69	6.45	-8.51	6.43	-8.53	6.40	-8.56
400	7.82	1.43	5.97	-10.55	5.97	-10.55	5.96	-10.56
300	7.45	2.00	5.49	-8.61	5.51	-8.59	5.51	-8.59
200	6.97	1.99	4.95	-5.35	4.97	-5.33	4.99	-5.31
100	6.30	1.45	4.23	-3.07	4.25	-3.05	4.29	-3.01
32	5.38	0.98	3.33	-0.80	3.36	-0.77	3.43	-0.70
8	4.35	1.15	2.51	0.51	2.51	0.51	2.61	0.61

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	11.71	-0.01	9.97	-0.01	9.97	-0.01	9.97	-0.01
1000	14.01	10.71	7.79	5.16	9.65	7.02	10.82	8.19
900	16.37	12.29	7.42	4.57	8.12	5.27	8.81	5.96
800	16.40	11.55	7.00	3.90	7.42	4.32	7.89	4.79
700	16.12	10.50	6.60	3.23	6.80	3.52	7.26	3.89
600	15.74	9.34	6.28	2.39	6.50	2.61	6.80	2.91
500	15.32	8.13	5.96	1.20	6.15	1.39	6.40	1.64
400	14.84	6.94	5.64	-0.35	5.29	-0.70	6.02	0.03
300	14.29	6.15	5.31	-2.19	5.44	-2.06	5.64	-1.86
200	13.57	5.38	4.95	-4.24	5.06	-4.14	5.23	-3.97
100	12.51	4.26	4.48	-5.35	4.56	-5.27	4.71	-5.12
32	10.85	2.95	3.79	-3.56	3.66	-3.49	3.98	-3.37
8	8.83	3.63	2.96	-1.34	3.02	-1.28	3.11	-1.19

CASE II GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	686.		691.		692.		693.	
INTERVAL	12.00HR		6.00HR		6.00HR		6.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	21.59	4.98	19.08	3.28	19.04	3.24	18.93	3.13
900	21.36	4.87	18.07	2.22	18.03	2.18	17.95	2.10
800	21.24	4.87	17.43	1.53	17.41	1.51	17.36	1.46
700	21.21	4.96	16.99	1.04	16.96	1.01	16.94	0.99
600	21.18	5.04	16.58	0.58	16.57	0.57	16.56	0.56
500	21.19	5.17	16.24	0.19	16.24	0.19	16.23	0.18
400	21.16	5.09	15.90	-0.20	15.90	-0.20	15.90	-0.20
300	21.19	4.47	15.55	1.55	15.55	1.55	15.55	1.55
200	21.23	3.58	15.12	1.23	15.13	1.24	15.14	1.25
100	21.30	2.66	14.52	0.96	14.53	0.97	14.55	0.99
32	21.44	1.81	13.56	0.66	13.58	0.68	13.62	0.72
8	21.74	1.49	12.59	0.09	12.63	0.13	12.71	0.21
2	22.30	1.85	10.80	-1.58	10.84	-1.54	10.96	-1.42
0	22.84	XXXX	9.01	XXXX	9.05	XXXX	9.21	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	11.61	8.50	8.32	5.02	8.54	5.24	8.78	5.48
900	12.09	8.83	8.75	5.35	8.91	5.51	9.07	5.67
800	12.44	8.54	9.03	4.54	9.15	4.66	9.29	4.80
700	12.74	8.15	9.27	3.59	9.36	3.68	9.47	3.79
600	12.99	7.70	9.45	2.58	9.52	2.65	9.62	2.75
500	13.26	7.29	9.63	1.58	9.69	1.64	9.78	1.73
400	13.49	6.82	9.79	0.53	9.84	0.58	9.92	0.66
300	13.77	6.45	9.96	-0.49	10.04	-0.41	10.08	-0.37
200	14.05	6.07	10.13	-1.52	10.17	-1.48	10.24	-1.41
100	14.39	6.32	10.29	-1.45	10.33	-1.41	10.39	-1.35
32	14.75	6.86	10.42	-0.88	10.46	-0.84	10.52	-0.78
8	15.13	7.31	10.54	-0.59	10.59	-0.54	10.65	-0.48
2	15.93	8.12	10.69	-0.41	10.74	-0.36	10.80	-0.30
0	16.70	XXXX	10.85	XXXX	10.90	XXXX	10.96	XXXX

CASE II GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	686.	691.	692.	693.
INTERVAL	12.00HR	6.00HR	6.00HR	6.00HR

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	15.57	2.30	9.75	0.12	9.79	0.16	9.81	0.18
-0.125	10.62	0.57	9.50	0.07	9.49	0.06	9.51	0.08
-0.250	9.86	0.03	9.59	-0.07	9.61	-0.05	9.59	-0.07
-0.500	10.76	0.01	10.77	-0.00	10.77	-0.00	10.78	0.01
-1.000	12.47	0.03	12.44	0.00	12.44	0.00	12.44	0.00
-2.000	15.78	-0.03	15.78	-0.03	15.78	-0.03	15.77	-0.04

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	9.84	3.73	3.89	-0.85	3.93	-0.81	4.07	-0.67
2	4.82	2.20	1.95	-0.80	1.97	-0.78	2.04	-0.71

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	14.59	0.29	-0.00	-0.00	0.00	0.00	0.00	0.00
R(N)	8.45	XXXX	-1.58	XXXX	-1.59	XXXX	-1.60	XXXX
Q(C,O)	1.84	XXXX	-1.63	XXXX	-1.64	XXXX	-1.71	XXXX
Q(E,O)	4.51	XXXX	0.24	XXXX	0.24	XXXX	0.27	XXXX
Q(S,O)	2.09	XXXX	-0.21	XXXX	-0.20	XXXX	-0.16	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	48.50	XXXX	5.10	XXXX	5.22	XXXX	5.82	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	11.90	XXXX	2.50	XXXX	2.90	XXXX	2.60	XXXX

CASE II GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	5104	5244	5274	5264
TAPE NO.	694.	695.	696.	697.
INTERVAL	6.00HR	6.00HR	6.00HR	6.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	3.84	0.01	3.83	0.00	3.83	0.00	3.83	0.00
1000	6.21	-0.62	5.79	-1.04	5.49	-1.34	5.26	-1.57
900	8.08	-0.12	7.97	-0.23	7.86	-0.34	7.78	-0.42
800	7.74	-1.86	7.70	-1.90	7.64	-1.96	7.60	-2.00
700	7.27	-3.73	7.25	-3.75	7.21	-3.79	7.19	-3.81
600	6.82	-5.98	6.81	-5.99	6.78	-6.02	6.77	-6.03
500	6.39	-8.57	6.38	-8.58	6.36	-8.60	6.36	-8.60
400	5.95	-10.57	5.95	-10.57	5.95	-10.57	5.95	-10.57
300	5.51	-8.59	5.51	-8.59	5.51	-8.59	5.51	-8.59
200	4.99	-5.31	4.99	-5.31	5.01	-5.29	4.99	-5.31
100	4.29	-3.01	4.29	-3.01	4.31	-2.99	4.30	-3.00
32	3.42	-0.71	3.43	-0.70	3.45	-0.68	3.45	-0.68
8	2.60	0.60	2.61	0.61	2.62	0.62	2.58	0.58

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	9.97	-0.01	9.98	-0.00	9.98	-0.00	9.98	-0.00
1000	10.96	8.33	11.00	8.37	10.97	8.34	10.95	8.32
900	8.99	6.14	9.12	6.27	9.21	6.36	9.27	6.42
800	8.03	4.93	8.14	5.04	8.22	5.12	8.29	5.19
700	7.38	4.01	7.45	4.08	7.54	4.17	7.60	4.23
600	6.91	3.02	6.99	3.10	7.05	3.16	7.11	3.22
500	6.49	1.73	6.57	1.81	6.63	1.86	6.67	1.91
400	6.10	0.11	6.17	0.18	6.22	0.23	6.26	0.27
300	5.71	-1.79	5.78	-1.72	5.82	-1.68	5.86	-1.64
200	5.30	-3.90	5.36	-3.84	5.39	-3.81	5.44	-3.76
100	4.77	-5.06	4.83	-5.00	4.86	-4.97	4.89	-4.94
32	4.03	-3.32	4.07	-3.28	4.09	-3.26	4.13	-3.23
8	3.15	-1.15	3.19	-1.11	3.21	-1.09	3.23	-1.07

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CASE II GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	694.		695.		696.		697.	
INTERVAL	6.00HR		6.00HR		6.00HR		6.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	18.87	3.07	18.83	3.03	18.79	2.99	18.74	2.94
900	17.92	2.07	17.91	2.06	17.87	2.02	17.85	2.00
800	17.34	1.44	17.32	1.42	17.31	1.41	17.30	1.40
700	16.92	0.97	16.92	0.97	16.91	0.96	16.91	0.96
600	16.55	0.55	16.55	0.55	16.55	0.55	16.54	0.54
500	16.23	0.18	16.23	0.18	16.23	0.18	16.22	0.17
400	15.90	-0.20	15.91	-0.19	15.90	-0.20	15.90	-0.20
300	15.56	1.56	15.56	1.56	15.56	1.56	15.56	1.56
200	15.14	1.25	15.15	1.26	15.15	1.26	15.15	1.26
100	14.56	1.00	14.57	1.01	14.59	1.03	14.59	1.03
32	13.64	0.74	13.66	0.76	13.67	0.77	13.67	0.77
8	12.72	0.22	12.74	0.24	12.76	0.26	12.76	0.26
2	10.99	-1.39	11.01	-1.37	11.03	-1.35	11.04	-1.34
0	9.25	XXXX	9.28	XXXX	9.30	XXXX	9.31	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	8.85	5.55	8.89	5.59	8.93	5.63	8.96	5.66
900	9.12	5.72	9.16	5.76	9.19	5.79	9.21	5.81
800	9.33	4.84	9.36	4.87	9.39	4.90	9.41	4.92
700	9.51	3.83	9.54	3.86	9.57	3.89	9.58	3.90
600	9.65	2.78	9.69	2.82	9.70	2.83	9.72	2.85
500	9.81	1.76	9.84	1.79	9.85	1.80	9.87	1.82
400	9.94	0.68	9.98	0.72	9.99	0.73	10.02	0.76
300	10.11	-0.34	10.13	-0.32	10.15	-0.30	10.16	-0.29
200	10.27	-1.38	10.29	-1.36	10.31	-1.34	10.32	-1.33
100	10.41	-1.33	10.43	-1.31	10.45	-1.29	10.49	-1.25
32	10.54	-0.76	10.56	-0.74	10.58	-0.72	10.59	-0.71
8	10.69	-0.44	10.69	-0.44	10.71	-0.42	10.71	-0.42
2	10.83	-0.27	10.84	-0.26	10.86	-0.24	10.86	-0.24
0	10.97	XXXX	10.99	XXXX	11.02	XXXX	11.02	XXXX

CASE II GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	694.		695.		696.		697.	
INTERVAL	6.00HR		6.00HR		6.00HR		6.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	9.82	0.19	9.83	0.20	9.83	0.20	9.84	0.21
-0.125	9.51	0.08	9.49	0.06	9.51	0.08	9.50	0.07
-0.250	9.59	-0.07	9.59	-0.07	9.60	-0.06	9.59	-0.07
-0.500	10.77	-0.00	10.77	-0.00	10.79	0.02	10.77	-0.00
-1.000	12.44	0.00	12.44	0.00	12.44	0.00	12.44	0.00
-2.000	15.77	-0.04	15.78	-0.03	15.78	-0.03	15.78	-0.03

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	4.10	-0.64	4.13	-0.61	4.15	-0.59	4.14	-0.60
2	2.05	-0.70	2.07	-0.68	2.07	-0.68	2.07	-0.68

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	-0.00	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
R(N)	-1.60	XXXX	-1.61	XXXX	-1.61	XXXX	-1.61	XXXX
Q(C,0)	-1.72	XXXX	-1.74	XXXX	-1.74	XXXX	-1.74	XXXX
Q(E,0)	0.27	XXXX	0.28	XXXX	0.27	XXXX	0.27	XXXX
Q(S,0)	-0.16	XXXX	-0.15	XXXX	-0.15	XXXX	-0.15	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	5.94	XXXX	6.06	XXXX	6.12	XXXX	6.12	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
F	2.60	XXXX	2.90	XXXX	2.60	XXXX	2.60	XXXX

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CASE II GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	5044	5454	15625	15564
TAPE NO.	698.	699.	704.	705.
INTERVAL	6.00HR	6.00HR	2.00HR	2.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	3.84	0.01	3.83	0.00	2.89	-0.01	2.88	-0.02
1000	5.07	-1.76	4.83	-2.00	13.97	3.12	12.45	1.60
900	7.75	-0.45	7.61	-0.59	13.95	2.31	13.58	1.94
800	7.59	-2.01	7.51	-2.09	13.58	1.18	13.42	1.02
700	7.19	-3.81	7.14	-3.86	13.18	-0.02	13.09	-0.11
600	6.78	-6.02	6.73	-6.07	12.77	-1.21	12.71	-1.27
500	6.36	-8.60	6.34	-8.62	12.34	-2.40	12.29	-2.45
400	5.95	-10.57	5.93	-10.59	11.88	-3.18	11.83	-3.22
300	5.49	-8.61	5.49	-8.61	11.34	-1.46	11.31	-1.49
200	4.97	-5.33	5.00	-5.30	10.68	0.40	10.65	0.37
100	4.24	-3.06	4.31	-2.99	9.68	2.53	9.65	2.50
32	3.29	-0.84	3.46	-0.67	8.25	4.25	8.22	4.22
8	2.39	0.39	2.64	0.64	6.61	4.56	6.57	4.52

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	9.98	-0.00	9.98	-0.00	10.31	-0.01	10.31	-0.01
1000	10.90	8.27	10.80	8.17	8.75	2.65	9.40	3.30
900	9.34	6.49	9.38	6.53	9.26	2.26	9.48	2.48
800	8.35	5.25	8.41	5.31	9.24	1.34	9.35	1.45
700	7.66	4.29	7.72	4.35	9.07	0.27	9.15	0.35
600	7.16	3.27	7.22	3.33	8.87	-0.83	8.92	-0.78
500	6.72	1.96	6.77	2.01	8.63	-1.98	8.67	-1.93
400	6.31	0.32	6.36	0.37	8.34	-3.23	8.38	-3.19
300	5.91	-1.59	5.95	-1.55	8.01	-4.62	8.03	-4.60
200	5.48	-3.72	5.51	-3.69	7.57	-6.01	7.60	-5.98
100	4.93	-4.90	4.96	-4.87	6.95	-5.36	6.97	-5.34
32	4.16	-3.19	4.18	-3.17	5.98	-3.32	6.00	-3.30
8	3.27	-1.03	3.28	-1.02	4.82	-1.28	4.83	-1.27

CASE II GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	698.		699.		704.		705.	
INTERVAL	6.00HR		6.00HR		2.00HR		2.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	18.72	2.92	18.65	2.85	16.58	2.13	16.55	2.10
900	17.84	1.99	17.79	1.94	16.25	1.85	16.24	1.84
800	17.31	1.41	17.26	1.36	15.97	1.59	15.97	1.59
700	16.91	0.96	16.87	0.92	15.79	1.44	15.77	1.42
600	16.55	0.55	16.52	0.52	15.58	1.27	15.57	1.26
500	16.24	0.19	16.21	0.16	15.41	1.13	15.41	1.13
400	15.90	-0.20	15.90	-0.20	15.21	1.31	15.21	1.31
300	15.57	1.57	15.56	1.56	15.02	1.26	15.02	1.26
200	15.15	1.26	15.14	1.25	14.77	0.77	14.77	0.77
100	14.56	1.00	14.59	1.03	14.43	1.38	14.42	1.37
32	13.65	0.75	13.69	0.79	13.87	1.07	13.87	1.07
8	12.72	0.22	12.80	0.30	13.36	0.51	13.36	0.51
2	10.98	-1.40	11.09	-1.29	12.18	-0.69	12.18	-0.69
0	9.23	XXXX	9.37	XXXX	10.99	XXXX	10.99	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	8.99	5.69	9.02	5.72	7.32	2.76	7.35	2.79
900	9.23	5.83	9.26	5.86	8.11	3.22	8.13	3.24
800	9.42	4.93	9.44	4.95	8.52	2.65	8.54	2.67
700	9.60	3.92	9.62	3.94	8.83	1.91	8.83	1.91
600	9.74	2.87	9.75	2.88	9.04	1.06	9.05	1.07
500	9.88	1.83	9.92	1.87	9.25	0.34	9.27	0.36
400	10.02	0.76	10.04	0.78	9.43	-0.29	9.44	-0.28
300	10.19	-0.26	10.19	-0.26	9.64	-0.87	9.65	-0.86
200	10.33	-1.32	10.35	-1.30	9.81	-1.51	9.81	-1.51
100	10.49	-1.25	10.49	-1.25	10.00	-1.36	10.00	-1.36
32	10.60	-0.70	10.62	-0.68	10.15	-0.92	10.16	-0.91
8	10.72	-0.41	10.73	-0.40	10.29	-0.66	10.29	-0.66
2	10.86	-0.24	10.89	-0.21	10.50	-0.43	10.50	-0.43
0	11.01	XXXX	11.05	XXXX	10.71	XXXX	10.72	XXXX

CASE II GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	698.		699.		704.		705.	
INTERVAL	6.00HR		6.00HR		2.00HR		2.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	9.82	0.19	9.85	0.22	10.07	0.42	10.06	0.41
-0.125	9.51	0.08	9.50	0.07	9.22	-0.00	9.22	-0.00
-0.250	9.59	-0.07	9.59	-0.07	9.47	-0.03	9.47	-0.03
-0.500	10.78	0.01	10.77	-0.00	10.79	-0.01	10.80	-0.00
-1.000	12.44	0.00	12.45	0.01	12.44	0.00	12.44	0.00
-2.000	15.77	-0.04	15.78	-0.03	15.78	-0.03	15.79	-0.02

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	4.06	-0.68	4.22	-0.52	8.18	1.74	8.15	1.71
2	2.03	-0.72	2.11	-0.64	4.11	1.58	4.10	1.57

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.00	0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
R(N)	-1.60	XXXX	-1.62	XXXX	-1.77	XXXX	-1.77	XXXX
Q(C,0)	-1.70	XXXX	-1.76	XXXX	-3.01	XXXX	-3.01	XXXX
Q(E,0)	0.25	XXXX	0.28	XXXX	0.96	XXXX	0.96	XXXX
Q(S,0)	-0.16	XXXX	-0.13	XXXX	0.27	XXXX	0.27	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	5.80	XXXX	6.38	XXXX	30.82	XXXX	30.64	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	2.90	XXXX	2.60	XXXX	1.10	XXXX	1.20	XXXX

CASE II GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	15619	15619	15614	15614
TAPE NO.	706.	707.	708.	709.
INTERVAL	2.00HR	2.00HR	2.00HR	2.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	2.90	0.00	2.89	-0.01	2.89	-0.01	2.89	-0.01
1000	10.18	-0.67	9.35	-1.50	8.66	-2.19	8.08	-2.77
900	13.01	1.37	12.78	1.14	12.59	0.95	12.42	0.78
800	13.15	0.75	13.04	0.64	12.95	0.55	12.88	0.48
700	12.93	-0.27	12.87	-0.33	12.81	-0.39	12.77	-0.43
600	12.61	-1.37	12.57	-1.41	12.52	-1.46	12.50	-1.48
500	12.22	-2.52	12.19	-2.55	12.17	-2.57	12.15	-2.59
400	11.79	-3.26	11.77	-3.28	11.74	-3.31	11.73	-3.32
300	11.28	-1.52	11.25	-1.55	11.24	-1.56	11.24	-1.56
200	10.63	0.35	10.62	0.34	10.60	0.32	10.60	0.32
100	9.65	2.50	9.64	2.49	9.63	2.48	9.63	2.48
32	8.22	4.22	8.21	4.21	8.20	4.20	8.20	4.20
8	6.58	4.53	6.58	4.53	6.57	4.52	6.57	4.52

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	10.31	-0.01	10.31	-0.01	10.31	-0.01	10.31	-0.01
1000	10.20	4.10	10.44	4.34	10.61	4.51	10.73	4.63
900	9.79	2.79	9.90	2.90	9.99	2.99	10.06	3.06
800	9.52	1.62	9.59	1.69	9.65	1.75	9.69	1.79
700	9.26	0.46	9.30	0.50	9.34	0.54	9.37	0.57
600	9.00	-0.70	9.03	-0.67	9.06	-0.64	9.08	-0.62
500	8.72	-1.88	8.74	-1.86	8.77	-1.83	8.79	-1.81
400	8.41	-3.16	8.43	-3.14	8.45	-3.12	8.46	-3.11
300	8.06	-4.57	8.08	-4.55	8.10	-4.53	8.10	-4.53
200	7.63	-5.95	7.64	-5.94	7.65	-5.93	7.66	-5.92
100	6.99	-5.32	6.99	-5.32	7.01	-5.30	7.01	-5.30
32	6.01	-3.29	6.02	-3.28	6.03	-3.27	6.03	-3.27
8	4.84	-1.26	4.84	-1.26	4.85	-1.25	4.85	-1.25

CASE II GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	706.		707.		708.		709.	
INTERVAL	2.00HR		2.00HR		2.00HR		2.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	16.51	2.06	16.49	2.04	16.47	2.02	16.45	2.00
900	16.21	1.81	16.19	1.79	16.19	1.79	16.17	1.77
800	15.95	1.57	15.93	1.55	15.93	1.55	15.92	1.54
700	15.76	1.41	15.76	1.41	15.75	1.40	15.74	1.39
600	15.56	1.25	15.56	1.25	15.56	1.25	15.56	1.25
500	15.30	1.02	15.40	1.12	15.39	1.11	15.39	1.11
400	15.21	1.31	15.20	1.30	15.19	1.29	15.19	1.29
300	15.01	1.25	15.02	1.26	15.02	1.26	15.02	1.26
200	14.76	0.76	14.77	0.77	14.76	0.76	14.76	0.76
100	14.43	1.38	14.43	1.38	14.43	1.38	14.42	1.37
32	13.86	1.06	13.87	1.07	13.87	1.07	13.86	1.06
8	13.36	0.51	13.36	0.51	13.36	0.51	13.36	0.51
2	12.18	-0.69	12.18	-0.69	12.18	-0.69	12.18	-0.69
0	10.98	XXXX	10.99	XXXX	10.99	XXXX	10.99	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	7.43	2.87	7.45	2.89	7.47	2.91	7.48	2.92
900	8.19	3.30	8.10	3.21	8.21	3.32	8.22	3.33
800	8.56	2.69	8.57	2.70	8.59	2.72	8.61	2.74
700	8.85	1.93	8.86	1.94	8.87	1.95	8.89	1.97
600	9.07	1.09	9.08	1.10	9.08	1.10	9.08	1.10
500	9.27	0.36	9.28	0.37	9.29	0.38	9.29	0.38
400	9.45	-0.27	9.46	-0.26	9.46	-0.26	9.47	-0.25
300	9.65	-0.86	9.66	-0.85	9.66	-0.85	9.66	-0.85
200	9.82	-1.50	9.83	-1.49	9.83	-1.49	9.84	-1.48
100	10.00	-1.36	10.00	-1.36	10.03	-1.33	10.04	-1.32
32	10.16	-0.91	10.16	-0.91	10.17	-0.90	10.17	-0.90
8	10.30	-0.65	10.29	-0.66	10.31	-0.64	10.31	-0.64
2	10.51	-0.42	10.51	-0.42	10.52	-0.41	10.52	-0.41
0	10.73	XXXX	10.73	XXXX	10.73	XXXX	10.73	XXXX

CASE II GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	706.		707.		708.		709.	
INTERVAL	2.00HR		2.00HR		2.00HR		2.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	10.07	0.42	10.07	0.42	10.07	0.42	10.06	0.41
-0.125	9.22	-0.00	9.22	-0.00	9.22	-0.00	9.22	-0.00
-0.250	9.47	-0.03	9.47	-0.03	9.47	-0.03	9.49	-0.01
-0.500	10.79	-0.01	10.79	-0.01	10.79	-0.01	10.81	0.01
-1.000	12.43	-0.01	12.44	0.00	12.43	-0.01	12.44	0.00
-2.000	15.78	-0.03	15.79	-0.02	15.78	-0.03	15.78	-0.03

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	8.18	1.74	8.18	1.74	8.17	1.73	8.17	1.73
2	4.11	1.58	4.11	1.58	4.11	1.58	4.11	1.58

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
R(N)	-1.77	XXXX	-1.77	XXXX	-1.77	XXXX	-1.77	XXXX
Q(C,0)	-3.00	XXXX	-3.01	XXXX	-3.00	XXXX	-3.00	XXXX
Q(E,0)	0.96	XXXX	0.96	XXXX	0.96	XXXX	0.96	XXXX
Q(S,0)	0.27	XXXX	0.27	XXXX	0.27	XXXX	0.27	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	30.72	XXXX	30.80	XXXX	30.70	XXXX	30.70	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	1.20	XXXX	1.10	XXXX	1.10	XXXX	1.20	XXXX

CASE II GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	15609	15574	15604	20125
TAPE NO.	710.	711.	712.	717.
INTERVAL	2.00HR	2.00HR	2.00HR	1.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	2.89	-0.01	2.89	-0.01	2.89	-0.01	4.28	-0.01
1000	7.60	-3.25	7.18	-3.67	6.53	-4.32	14.24	2.06
900	12.28	0.64	12.16	0.52	11.95	0.31	15.11	2.19
800	12.80	0.40	12.74	0.34	12.63	0.23	15.03	1.34
700	12.73	-0.47	12.69	-0.51	12.63	-0.57	14.70	0.25
600	12.47	-1.51	12.45	-1.53	12.40	-1.58	14.26	-0.99
500	12.13	-2.61	12.11	-2.63	12.07	-2.67	13.77	-2.32
400	11.71	-3.34	11.70	-3.35	11.68	-3.37	13.23	-3.06
300	11.22	-1.58	11.21	-1.59	11.19	-1.61	12.60	-1.08
200	10.58	0.30	10.57	0.29	10.56	0.28	11.83	1.63
100	9.61	2.46	9.60	2.45	9.59	2.44	10.70	4.10
32	8.20	4.20	8.18	4.18	8.18	4.18	9.10	5.27
8	6.57	4.52	6.55	4.50	6.55	4.50	7.31	5.26

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	10.32	0.00	10.31	-0.01	10.31	-0.01	10.20	-0.01
1000	10.81	4.71	10.87	4.77	10.92	4.82	9.04	2.29
900	10.13	3.13	10.17	3.17	10.25	3.25	10.70	2.71
800	9.73	1.83	9.76	1.86	9.81	1.91	11.34	2.13
700	9.40	0.60	9.42	0.62	9.46	0.66	11.60	1.14
600	9.11	-0.59	9.13	-0.57	9.15	-0.55	11.68	-0.02
500	8.80	-1.80	8.82	-1.78	8.84	-1.76	11.63	-1.32
400	8.48	-3.09	8.49	-3.08	8.51	-3.06	11.45	-2.90
300	8.11	-4.52	8.13	-4.51	8.14	-4.49	11.16	-3.73
200	7.67	-5.91	7.68	-5.90	7.68	-5.90	10.70	-3.75
100	7.02	-5.29	7.03	-5.28	7.04	-5.27	9.91	-3.09
32	6.03	-3.27	6.04	-3.26	6.05	-3.25	8.60	-0.70
8	4.85	-1.25	4.86	-1.24	4.86	-1.24	6.95	0.95

CASE II GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	710.		711.		712.		717.	
INTERVAL	2.00HR		2.00HR		2.00HR		1.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	16.44	1.99	16.43	1.98	16.40	1.95	15.66	1.15
900	16.16	1.76	16.16	1.76	16.14	1.74	15.69	1.06
800	15.92	1.54	15.91	1.53	15.91	1.53	15.57	0.83
700	15.73	1.38	15.70	1.35	15.73	1.38	15.48	0.63
600	15.56	1.25	15.55	1.24	15.54	1.23	15.34	0.39
500	15.39	1.11	15.39	1.11	15.39	1.11	15.22	0.14
400	15.20	1.30	15.19	1.29	15.19	1.29	15.06	-0.12
300	15.00	1.24	15.02	1.26	15.01	1.25	14.91	0.28
200	14.76	0.76	14.76	0.76	14.76	0.76	14.69	0.20
100	14.42	1.37	14.42	1.37	14.42	1.37	14.40	1.09
32	13.87	1.07	13.86	1.06	13.87	1.07	13.92	0.72
8	13.36	0.51	13.35	0.50	13.36	0.51	13.49	0.21
2	12.18	-0.69	12.17	-0.70	12.18	-0.69	12.46	-0.84
0	10.99	XXXX	10.98	XXXX	10.98	XXXX	11.40	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	7.50	2.94	7.51	2.95	7.53	2.97	6.36	1.48
900	8.23	3.34	8.24	3.35	8.25	3.36	7.54	2.28
800	8.61	2.74	8.61	2.74	8.62	2.75	8.16	1.94
700	8.90	1.98	8.91	1.99	8.91	1.99	8.62	1.39
600	9.09	1.11	9.09	1.11	9.10	1.12	8.95	0.70
500	9.29	0.38	9.31	0.40	9.31	0.40	9.23	0.10
400	9.47	-0.25	9.47	-0.25	9.47	-0.25	9.47	-0.37
300	9.67	-0.84	9.66	-0.85	9.68	-0.83	9.74	-0.78
200	9.83	-1.49	9.83	-1.49	9.84	-1.48	9.94	-1.29
100	10.04	-1.32	10.03	-1.33	10.04	-1.32	10.14	-1.13
32	10.17	-0.90	10.18	-0.89	10.17	-0.90	10.32	-0.69
8	10.31	-0.64	10.31	-0.64	10.31	-0.64	10.45	-0.45
2	10.52	-0.41	10.52	-0.41	10.52	-0.41	10.63	-0.26
0	10.74	XXXX	10.73	XXXX	10.74	XXXX	10.82	XXXX

CASE II GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	710.		711.		712.		717.	
INTERVAL	2.00HR		2.00HR		2.00HR		1.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	10.06	0.41	10.06	0.41	10.07	0.42	9.86	0.25
-0.125	9.22	-0.00	9.22	-0.00	9.22	-0.00	9.12	0.00
-0.250	9.47	-0.03	9.47	-0.03	9.47	-0.03	9.44	-0.02
-0.500	10.81	0.01	10.80	-0.00	10.70	-0.10	10.90	-0.02
-1.000	12.44	0.00	12.44	0.00	12.44	0.00	12.44	0.00
-2.000	15.77	-0.04	15.78	-0.03	15.78	-0.03	15.78	-0.03

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	8.17	1.73	8.15	1.71	8.17	1.73	10.09	3.75
2	4.11	1.58	4.10	1.57	4.11	1.58	5.10	4.56

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
R(N)	-1.77	XXXX	-1.77	XXXX	-1.77	XXXX	-1.81	XXXX
Q(C,0)	-3.00	XXXX	-2.99	XXXX	-2.95	XXXX	-3.34	XXXX
Q(E,0)	0.96	XXXX	0.96	XXXX	0.96	XXXX	1.08	XXXX
Q(S,0)	0.27	XXXX	0.27	XXXX	0.27	XXXX	0.44	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	30.72	XXXX	30.58	XXXX	30.62	XXXX	48.08	XX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	1.10	XXXX	1.10	XXXX	1.10	XXXX	0.50	XXXX

CASE II GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	20154		20119		20125		20134	
TAPE NO.	718.		719.		720.		721.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	4.28	-0.01	4.28	-0.01	4.28	-0.01	4.28	-0.01
1000	13.32	1.14	11.80	-0.38	11.19	-0.99	10.64	-1.54
900	14.94	2.02	14.63	1.71	14.50	1.58	14.38	1.46
800	14.96	1.27	14.85	1.16	14.80	1.11	14.75	1.06
700	14.67	0.22	14.61	0.16	14.59	0.14	14.57	0.12
600	14.25	-1.00	14.22	-1.03	14.21	-1.04	14.19	-1.06
500	13.76	-2.32	13.70	-2.39	13.75	-2.33	13.73	-2.36
400	13.22	-3.07	13.21	-3.07	13.21	-3.08	13.20	-3.08
300	12.59	-1.09	12.59	-1.09	12.59	-1.09	12.58	-1.10
200	11.82	1.62	11.82	1.62	11.82	1.62	11.82	1.62
100	10.70	4.10	10.69	4.09	10.70	4.10	10.69	4.09
32	9.10	5.27	9.10	5.27	9.10	5.27	9.10	5.27
8	7.30	5.25	7.30	5.25	7.30	5.25	7.30	5.25

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	10.20	-0.01	10.20	-0.01	10.19	-0.02	10.20	-0.01
1000	9.39	2.64	9.92	3.17	10.11	3.36	10.28	3.53
900	10.79	2.80	10.93	2.94	10.99	3.00	11.04	3.05
800	11.38	2.16	11.45	2.24	11.46	2.25	11.49	2.28
700	11.63	1.16	11.65	1.19	11.66	1.20	11.68	1.22
600	11.69	-0.01	11.70	0.00	11.71	0.01	11.72	0.02
500	11.63	-1.32	11.63	-1.32	11.64	-1.31	11.65	-1.30
400	11.45	-2.80	11.45	-2.80	11.45	-2.80	11.45	-2.80
300	11.15	-3.74	11.16	-3.73	11.16	-3.73	11.17	-3.72
200	10.69	-3.76	10.69	-3.76	10.70	-3.75	10.70	-3.75
100	9.91	-3.09	9.92	-3.08	9.92	-3.08	9.92	-3.08
32	8.59	-0.71	8.60	-0.70	8.60	-0.70	8.60	-0.70
8	6.95	0.95	6.95	0.95	6.95	0.95	6.95	0.95

CASE II GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	718.		719.		720.		721.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	15.65	1.14	15.64	1.13	15.64	1.13	15.63	1.12
900	15.69	1.06	15.67	1.04	15.67	1.04	15.67	1.04
800	15.57	0.83	15.57	0.83	15.57	0.83	15.56	0.82
700	15.47	0.62	15.48	0.63	15.46	0.61	15.46	0.61
600	15.35	0.40	15.34	0.39	15.34	0.39	15.34	0.39
500	15.22	0.14	15.21	0.13	15.22	0.14	15.22	0.14
400	15.06	-0.02	15.06	-0.02	15.06	-0.02	15.06	-0.02
300	14.91	0.28	14.91	0.28	14.91	0.28	14.91	0.28
200	14.69	0.20	14.71	0.22	14.70	0.21	14.69	0.20
100	14.41	1.10	14.40	1.09	14.41	1.10	14.41	1.10
32	13.91	0.71	13.92	0.72	13.92	0.72	13.91	0.71
8	13.49	0.21	13.49	0.21	13.49	0.21	13.49	0.21
2	12.46	-0.84	12.45	-0.85	12.46	-0.84	12.45	-0.85
0	11.40	XXXX	11.39	XXXX	11.40	XXXX	11.39	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	6.45	1.57	6.40	1.52	6.42	1.54	6.43	1.55
900	7.59	2.33	7.59	2.33	7.58	2.32	7.59	2.33
800	8.21	1.99	8.18	1.96	8.19	1.97	8.19	1.97
700	8.63	1.40	8.63	1.40	8.64	1.41	8.63	1.40
600	8.96	0.71	8.96	0.71	8.95	0.70	8.95	0.70
500	9.25	0.12	9.24	0.11	9.24	0.11	9.24	0.11
400	9.48	-0.36	9.48	-0.36	9.48	-0.36	9.48	-0.36
300	9.73	-0.79	9.73	-0.79	9.73	-0.79	9.74	-0.78
200	9.94	-1.29	9.94	-1.29	9.94	-1.29	9.94	-1.29
100	10.19	-1.08	10.17	-1.10	10.19	-1.08	10.17	-1.10
32	10.33	-0.68	10.32	-0.69	10.32	-0.69	10.32	-0.69
8	10.45	-0.45	10.45	-0.45	10.45	-0.45	10.45	-0.45
2	10.64	-0.25	10.63	-0.26	10.63	-0.26	10.64	-0.25
0	10.83	XXXX	10.82	XXXX	10.82	XXXX	10.83	XXXX

CASE II GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	718.		719.		720.		721.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	9.85	0.24	9.86	0.25	9.86	0.25	9.86	0.25
-0.125	9.12	0.00	9.13	0.01	9.13	0.01	9.12	0.00
-0.250	9.44	-0.02	9.44	-0.02	9.44	-0.02	9.45	-0.01
-0.500	10.80	-0.02	10.81	-0.01	10.81	-0.01	10.80	-0.02
-1.000	12.44	0.00	12.44	0.00	12.43	-0.01	12.44	0.00
-2.000	15.78	-0.03	15.78	-0.03	15.77	-0.04	15.78	-0.03

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	10.08	3.74	10.08	3.74	10.09	3.75	10.08	3.74
2	5.10	4.56	5.10	4.56	5.10	4.56	5.10	4.56

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-0.00
R(N)	-1.82	XXXX	-1.81	XXXX	-1.81	XXXX	-1.81	XXXX
Q(C,O)	-3.35	XXXX	-3.34	XXXX	-3.35	XXXX	-3.33	XXXX
Q(E,O)	1.08	XXXX	1.08	XXXX	1.08	XXXX	1.08	XXXX
Q(S,O)	0.44	XXXX	0.44	XXXX	0.44	XXXX	0.44	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	48.08	XXXX	48.08	XXXX	48.18	XXXX	48.08	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	0.60	XXXX	0.60	XXXX	0.60	XXXX	0.60	XXXX

CASE II GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	20125	20125	20119	20114
TAPE NO.	722.	723.	724.	725.
INTERVAL	1.00HR	1.00HR	1.00HR	1.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	4.28	-0.01	4.28	-0.01	4.28	-0.01	4.28	-0.01
1000	10.15	-2.03	9.72	-2.46	9.33	-2.85	8.68	-3.50
900	14.27	1.35	14.17	1.25	14.08	1.16	13.93	1.01
800	14.71	1.02	14.67	0.98	14.64	0.95	14.57	0.88
700	14.55	0.10	14.53	0.08	14.51	0.06	14.48	0.03
600	14.18	-1.07	14.17	-1.08	14.16	-1.09	14.14	-1.11
500	13.73	-2.36	13.72	-2.36	13.71	-2.38	13.71	-2.38
400	13.20	-3.08	13.19	-3.09	13.19	-3.09	13.18	-3.10
300	12.58	-1.10	12.58	-1.10	12.58	-1.10	12.57	-1.11
200	11.81	1.61	11.81	1.61	11.81	1.61	11.81	1.61
100	10.69	4.09	10.69	4.09	10.69	4.09	10.69	4.09
32	9.10	5.27	9.10	5.27	9.10	5.27	9.09	5.26
8	7.30	5.25	7.30	5.25	7.30	5.25	7.30	5.25

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	10.20	-0.01	10.20	-0.01	10.20	-0.01	10.20	-0.01
1000	10.42	3.67	10.53	3.78	10.63	3.88	10.76	4.01
900	11.09	3.10	11.13	3.14	11.17	3.18	11.23	3.24
800	11.51	2.30	11.53	2.32	11.55	2.34	11.58	2.37
700	11.69	1.23	11.70	1.24	11.71	1.25	11.73	1.27
600	11.73	0.03	11.73	0.03	11.74	0.04	11.75	0.05
500	11.65	-1.30	11.65	-1.30	11.66	-1.29	11.66	-1.29
400	11.46	-2.79	11.46	-2.79	11.46	-2.79	11.47	-2.78
300	11.16	-3.73	11.17	-3.72	11.17	-3.72	11.17	-3.72
200	10.70	-3.75	10.70	-3.75	10.70	-3.75	10.70	-3.75
100	9.92	-3.08	9.92	-3.08	9.92	-3.08	9.92	-3.08
32	8.60	-0.70	8.60	-0.70	8.60	-0.70	8.60	-0.70
8	6.95	0.95	6.95	0.95	6.95	0.95	6.95	0.95

CASE II GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	722.		723.		724.		725.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	15.62	1.11	15.61	1.10	15.61	1.10	15.61	1.10
900	15.66	1.03	15.66	1.03	15.65	1.02	15.65	1.02
800	15.56	0.82	15.55	0.81	15.55	0.81	15.54	0.80
700	15.46	0.61	15.46	0.61	15.46	0.61	15.46	0.61
600	15.33	0.38	15.34	0.39	15.33	0.38	15.33	0.38
500	15.21	0.13	15.21	0.13	15.21	0.13	15.21	0.13
400	15.06	-0.02	15.06	-0.02	15.06	-0.02	15.05	-0.03
300	14.91	0.28	14.91	0.28	14.91	0.28	14.91	0.28
200	14.69	0.20	14.70	0.21	14.70	0.21	14.70	0.21
100	14.40	1.09	14.40	1.09	14.40	1.09	14.39	1.08
32	13.91	0.71	13.91	0.71	13.92	0.72	13.91	0.71
8	13.49	0.21	13.49	0.21	13.49	0.21	13.49	0.21
2	12.46	-0.84	12.45	-0.85	12.45	-0.85	12.45	-0.85
0	11.40	XXXX	11.39	XXXX	11.39	XXXX	11.39	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	6.44	1.56	6.44	1.56	6.45	1.57	6.46	1.58
900	7.59	2.33	7.59	2.33	7.59	2.33	7.61	2.35
800	8.20	1.98	8.21	1.99	8.21	1.99	8.21	1.99
700	8.63	1.40	8.64	1.41	8.64	1.41	8.65	1.42
600	8.96	0.71	8.96	0.71	8.96	0.71	8.96	0.71
500	9.24	0.11	9.24	0.11	9.25	0.12	9.25	0.12
400	9.48	-0.36	9.48	-0.36	9.48	-0.36	9.47	-0.37
300	9.73	-0.79	9.74	-0.78	9.74	-0.78	9.74	-0.78
200	9.94	-1.29	9.95	-1.28	9.94	-1.29	9.94	-1.29
100	10.19	-1.08	10.19	-1.08	10.16	-1.11	10.16	-1.11
32	10.32	-0.69	10.33	-0.68	10.33	-0.68	10.33	-0.68
8	10.45	-0.45	10.46	-0.44	10.45	-0.45	10.45	-0.45
2	10.64	-0.25	10.65	-0.24	10.64	-0.25	10.64	-0.25
0	10.83	XXXX	10.84	XXXX	10.83	XXXX	10.83	XXXX

CASE II GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	722.		723.		724.		725.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	9.86	0.25	9.86	0.25	9.86	0.25	9.86	0.25
-0.125	9.12	0.00	9.13	0.01	9.13	0.01	9.12	0.00
-0.250	9.45	-0.01	9.45	-0.01	9.44	-0.02	9.44	-0.02
-0.500	10.81	-0.01	10.80	-0.02	10.79	-0.03	10.79	-0.03
-1.000	12.43	-0.01	12.44	0.00	12.44	0.00	12.44	0.00
-2.000	15.77	-0.04	15.78	-0.03	15.78	-0.03	15.77	-0.04

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	10.09	3.75	10.09	3.75	10.08	3.74	10.08	3.74
2	5.10	4.56	5.10	4.56	5.10	4.56	5.10	4.56

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.00	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
R(N)	-1.80	XXXX	-1.81	XXXX	-1.81	XXXX	-1.81	XXXX
Q(C,0)	-3.34	XXXX	-3.30	XXXX	-3.34	XXXX	-3.34	XXXX
Q(E,0)	1.08	XXXX	1.07	XXXX	1.08	XXXX	1.07	XXXX
Q(S,0)	0.44	XXXX	0.44	XXXX	0.44	XXXX	0.44	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	48.08	XXXX	48.08	XXXX	48.08	XXXX	48.06	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	0.60	XXXX	0.50	XXXX	0.60	XXXX	0.60	XXXX

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ROOT MEAN SQUARES OF THE DIFFERENCES BETWEEN
THE PREDICTED AND OBSERVED ATMOSPHERIC COLUMNS

CASE II 12.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		7.32	7.16	17.56	6.39	12.21
PERSIST DIFF		7.02	6.98	3.31	2.99	1.59
GPAC DIFF	678.	1.62	9.10	4.29	7.32	0.94
GPAC DIFF	679.	1.61	8.84	4.30	7.40	0.96
GPAC DIFF	680.	1.56	8.47	4.25	7.47	0.96
GPAC DIFF	681.	1.54	8.34	4.23	7.49	0.97
GPAC DIFF	682.	1.54	8.24	4.21	7.50	0.97
GPAC DIFF	683.	1.53	8.15	4.19	7.51	0.97
GPAC DIFF	684.	1.52	8.08	4.18	7.51	0.97
GPAC DIFF	685.	1.53	8.03	4.15	7.51	0.97
GPAC DIFF	686.	1.53	7.93	4.15	7.51	0.97

CASE II 6.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		10.31	6.32	14.75	8.90	11.52
PERSIST DIFF		4.12	8.21	0.89	1.35	0.19
GPAC DIFF	691.	5.27	3.36	1.45	2.81	0.06
GPAC DIFF	692.	5.19	3.72	1.43	2.89	0.07
GPAC DIFF	693.	5.18	4.02	1.39	2.98	0.09
GPAC DIFF	694.	5.19	4.08	1.38	3.01	0.09
GPAC DIFF	695.	5.20	4.11	1.37	3.03	0.09
GPAC DIFF	696.	5.21	4.12	1.35	3.04	0.09
GPAC DIFF	697.	5.22	4.13	1.34	3.06	0.10
GPAC DIFF	698.	5.23	4.14	1.34	3.07	0.09
GPAC DIFF	699.	5.25	4.14	1.31	3.08	0.10

ROOT MEAN SQUARES OF THE DIFFERENCES BETWEEN
THE PREDICTED AND OBSERVED ATMOSPHERIC COLUMNS

CASE II 2.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		10.99	9.97	13.81	9.17	11.47
PERSIST DIFF		2.47	3.89	0.81	0.45	0.09
GPAC DIFF	704.	2.50	3.13	1.33	1.67	0.17
GPAC DIFF	705.	2.36	3.18	1.33	1.68	0.17
GPAC DIFF	706.	2.30	3.26	1.31	1.70	0.17
GPAC DIFF	707.	2.33	3.29	1.31	1.70	0.17
GPAC DIFF	708.	2.36	3.31	1.30	1.71	0.17
GPAC DIFF	709.	2.41	3.32	1.29	1.72	0.17
GPAC DIFF	710.	2.45	3.33	1.29	1.73	0.17
GPAC DIFF	711.	2.50	3.34	1.29	1.73	0.17
GPAC DIFF	712.	2.58	3.34	1.28	1.73	0.18

CASE II 1.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		11.90	11.22	14.33	9.25	11.45
PERSIST DIFF		1.54	2.37	0.28	0.22	0.05
GPAC DIFF	717.	2.81	2.27	0.70	1.18	0.10
GPAC DIFF	718.	2.76	2.31	0.69	1.20	0.10
GPAC DIFF	719.	2.73	2.38	0.69	1.19	0.10
GPAC DIFF	720.	2.73	2.41	0.69	1.19	0.10
GPAC DIFF	721.	2.74	2.43	0.69	1.19	0.10
GPAC DIFF	722.	2.76	2.45	0.68	1.20	0.10
GPAC DIFF	723.	2.78	2.47	0.68	1.20	0.10
GPAC DIFF	724.	2.81	2.48	0.68	1.20	0.10
GPAC DIFF	725.	2.86	2.51	0.68	1.21	0.10

CASE III TAPE LOG

TAPE NO.	FCST INT	SM	KM8 D8	SCG	ADV	GEO	REMARKS
730.	12.00	A	V	A	N	O	
731.	12.00	A	V	A	N	I	GEO=0.20
732.	12.00	A	V	A	N	I	GEO=0.40
733.	12.00	A	V	A	N	I	GEO=0.60
734.	12.00	A	V	A	N	I	GEO=0.80
735.	12.00	A	V	A	N	I	GEO=1.00
736.	6.00	A	V	A	N	O	
737.	6.00	A	V	A	N	I	GEO=0.20
738.	6.00	A	V	A	N	I	GEO=0.40
739.	6.00	A	V	A	N	I	GEO=0.60
740.	6.00	A	V	A	N	I	GEO=0.80
741.	6.00	A	V	A	N	I	GEO=1.00
742.	2.00	A	V	A	N	O	
743.	2.00	A	V	A	N	I	GEO=0.20
744.	2.00	A	V	A	N	I	GEO=0.40
745.	2.00	A	V	A	N	I	GEO=0.60
746.	2.00	A	V	A	N	I	GEO=0.80
747.	2.00	A	V	A	N	I	GEO=1.00
748.	1.00	A	V	A	N	O	
749.	1.00	A	V	A	N	I	GEO=0.20
750.	1.00	A	V	A	N	I	GEO=0.40
751.	1.00	A	V	A	N	I	GEO=0.60
752.	1.00	A	V	A	N	I	GEO=0.80
753.	1.00	A	V	A	N	I	GEO=1.00

CASE III INITIAL CONDITIONS - 0000L 4 APRIL 1962
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SOIL PARAMETERS

LEVEL (M)	TEMP (DEG C)		
0.000	13.36	LAMBDA	= 0.59 CAL/CM^3 DEG
-0.125	13.44	MU/LAMBDA	= 0.0037 CM^2/SEC
-0.250	13.29	(MU X LAMBDA)$^{1/2}$	= 0.036 CAL^2/CM^4 DEG^2 SEC
-0.500	13.55	Z(0)	= 2.0 CM
-1.000	14.23	S(0)	= 0.0004 CAL/CM^2 SEC MB
-2.000	15.52	G	= 3500 CM^2 SEC DEG/CAL

RADIATION PARAMETERS

LOCAL TIME	= 0000	TURBIDITY	= 0.40
DELTA	= 5.40 DEG	PSI	= 0.998
R X 10^5	= 2.31 DEG C/SEC	F(C)	= 0.10
CLOUD CLASS	= 4	ALBEDO	= 0.25
E'(8)	= 8.61 MB	M	= 1.000
EPSILON	= 0.950	N	= 0.0000 MB$^{-1/2}$
PHI	= 32.5 DEG	H	= -180.0 DEG

HORIZONTAL GRADIENTS

LEVEL (M)	DE/DX (MB/100-KM)	DE/DY (MB/100-KM)	DT/DX (DEG C/100-KM)	DT/DY (DEG C/100-KM)
200	-0.73	-0.85	-0.60	-0.05
600	-0.71	-0.65	-0.55	-0.16
1000	-0.69	-0.45	-0.49	-0.27

CASE III INITIAL CONDITIONS - 0000L 4 APRIL 1962
(PAGE 2 OF 2 PAGES)

LEVEL (M)	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
1000	0.83	14.50	8.70	7.60
900	0.39	14.99	9.32	7.77
800	-0.10	15.47	9.95	7.93
700	-0.55	15.95	10.55	8.09
600	-1.02	16.42	11.19	8.26
500	-1.50	16.91	11.80	8.37
400	-1.75	17.30	12.41	8.00
300	-1.87	16.32	12.79	7.63
200	-1.78	14.20	13.49	7.92
100	-1.52	11.20	14.20	8.28
32	-1.00	7.98	14.64	8.53
8	-0.45	4.90	14.71	8.61

ADVECTION TERMS
($SEC^{-1} \times 10^{5}$)

LEVEL (M)	ALPHA(1)	BETA(1)	ALPHA(2)	BETA(2)
200	-0.91	-2.60	0.56	-0.81
600	-0.89	-2.93	0.52	-1.15
1000	-0.87	-3.26	0.47	-1.48

SURFACE CONTOUR GRADIENTS

PREDICTION INTERVAL (HR)	AZIMUTH (DEG FROM NORTH)	MAGNITUDE (FT/100-KM)
0	93.60	48.39
1	98.30	46.57
2	97.90	46.40
6	94.40	47.18
12	90.70	47.78

CASE III COMPARISON DATA FROM DALLAS (1 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	2.55	17.52		
1000	1.76	13.57	8.30	7.96
900	1.40	13.85	8.78	8.12
800	1.00	14.14	9.27	8.28
700	0.59	14.44	9.75	8.44
600	0.02	14.73	10.25	8.60
500	-0.64	15.02	10.74	8.70
400	-1.40	15.15	11.00	8.24
300	-2.29	14.58	11.55	7.78
200	-2.90	13.22	12.42	8.09
100	-2.71	11.00	13.26	8.47
32	-1.87	7.85	13.75	8.74
8	-0.90	4.75	13.92	8.83
2	XXXX	XXXX	13.95	8.85
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	13.18
-0.125	13.43
-0.250	13.31
-0.500	13.56
-1.000	14.23
-2.000	15.52

WIND SPEED (M/SEC)

8	4.82
2	2.82

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.00	Q(E,O)=	XXXX
R(N)=	XXXX	Q(S,O)=	XXXX
Q(C,O)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE III COMPARISON DATA FROM DALLAS (2 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	2.44	17.52		
1000	2.49	13.98	8.45	8.32
900	2.02	14.48	8.95	8.48
800	1.60	14.98	9.45	8.63
700	1.13	15.50	9.97	8.79
600	0.70	16.00	10.48	8.94
500	0.21	16.51	10.99	9.03
400	-0.45	16.83	11.10	8.48
300	-1.39	15.37	11.00	7.92
200	-1.99	13.50	11.76	8.25
100	-2.01	11.20	12.60	8.66
32	-1.50	7.95	13.15	8.95
8	-0.75	4.10	13.32	9.05
2	XXXX	XXXX	13.35	9.07
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

C.000	13.02
-0.125	13.35
-C.250	13.32
-0.500	13.57
-1.000	14.22
-2.000	15.52

WIND SPEED (M/SEC)

8	4.17
2	2.04

SURFACE SHEAR STRESS
(DYNES/CM SQ.)X10
TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.00	Q(F,0)=	XXXX
R(N)=	XXXX	Q(S,0)=	XXXX
Q(C,0)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE III COMPARISON DATA FROM DALLAS (6 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	1.39	17.98		
1000	5.48	12.59	8.54	9.76
900	5.06	13.03	9.00	9.90
800	4.63	13.50	9.48	10.04
700	4.22	13.99	9.95	10.18
600	3.81	14.48	10.44	10.31
500	3.30	14.95	10.90	10.35
400	2.20	15.40	10.85	9.43
300	-1.31	14.70	10.04	8.50
200	-4.48	12.01	10.30	8.90
100	-4.70	8.71	10.65	9.42
32	-3.75	5.37	10.50	9.78
8	-2.30	3.00	10.49	9.91
2	XXXX	XXXX	10.49	9.94
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	12.13
-0.125	13.08
-0.250	13.32
-0.500	13.60
-1.000	14.22
-2.000	15.52

WIND SPEED (M/SEC)

8	3.78
2	1.22

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.00	Q(E,0)=	XXXX
R(N)=	XXXX	Q(S,0)=	XXXX
Q(C,0)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE III COMPARISON DATA FROM DALLAS (12 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	0.23	18.21		
1000	-0.21	9.83	7.59	9.60
900	-1.20	9.30	7.93	9.88
800	-2.19	8.79	8.29	10.16
700	-3.14	8.26	8.64	10.44
600	-4.11	7.70	8.98	10.72
500	-5.00	7.26	9.30	10.94
400	-5.51	6.75	9.85	10.69
300	-5.69	6.20	10.71	9.98
200	-5.70	5.47	11.64	10.36
100	-5.51	4.17	12.50	10.94
32	-4.39	2.60	13.03	11.34
8	-3.10	1.30	13.23	11.49
2	XXXX	XXXX	13.27	11.52
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	13.45
-0.125	12.90
-0.250	13.19
-0.500	13.58
-1.000	14.21
-2.000	15.52

WIND SPEED (M/SEC)

8	3.36
2	1.17

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	1.80	Q(E,C)=	XXXX
R(N)=	XXXX	Q(S,C)=	XXXX
Q(C,O)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE III GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	29094	27599	26894	26474
TAPE NO.	730.	731.	732.	733.
INTERVAL	12.00HR	12.00HR	12.00HR	12.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	0.24	0.00	0.24	0.00	0.24	0.00	0.24	0.01
1000	-12.66	-12.45	-8.46	-8.25	-6.22	-6.01	-4.86	-4.65
900	-12.30	-11.10	-10.28	-9.08	-9.22	-8.02	-8.57	-7.37
800	-11.97	-9.78	-10.55	-8.36	-9.79	-7.60	-9.33	-7.14
700	-11.66	-8.52	-10.54	-7.40	-9.93	-6.79	-9.56	-6.42
600	-11.37	-7.26	-10.42	-6.31	-9.89	-5.78	-9.58	-5.47
500	-11.06	-6.06	-10.23	-5.23	-9.77	-4.77	-9.50	-4.50
400	-10.76	-5.25	-9.99	-4.48	-9.60	-4.09	-9.36	-3.85
300	-10.37	-4.68	-9.67	-3.98	-9.33	-3.64	-9.12	-3.43
200	-9.86	-4.16	-9.24	-3.54	-8.93	-3.23	-8.73	-3.03
100	-9.06	-3.55	-8.52	-3.01	-8.25	-2.74	-8.08	-2.57
32	-7.84	-3.45	-7.39	-3.00	-7.16	-2.77	-7.02	-2.63
8	-6.38	-3.27	-6.02	-2.92	-5.83	-2.73	-5.72	-2.62

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	18.20	-0.01	18.20	-0.01	18.20	-0.01	18.20	-0.01
1000	27.88	18.05	23.59	13.76	21.72	11.89	20.76	10.93
900	25.46	16.16	23.16	13.86	22.13	12.82	21.57	12.27
800	24.12	15.33	22.36	13.57	21.55	12.76	21.11	12.3[illegible]
700	23.11	14.85	21.61	13.35	20.91	12.65	20.52	12.26
600	22.25	14.55	20.90	13.20	20.26	12.56	19.91	12.21
500	21.45	14.19	20.21	12.95	19.63	12.37	19.31	12.05
400	20.63	13.88	19.49	12.74	18.95	12.20	18.65	11.90
300	19.76	13.56	18.69	12.49	18.19	11.99	17.91	11.71
200	18.67	13.20	17.69	12.22	17.22	11.75	16.96	11.49
100	17.11	12.94	16.23	12.06	15.81	11.64	15.58	11.41
32	14.76	12.16	14.01	11.41	13.65	11.05	13.45	10.85
8	11.98	10.68	11.38	10.07	11.09	9.79	10.92	9.62

CASE III GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	730.		731.		732.		733.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	11.54	3.95	11.74	4.15	11.85	4.26	11.93	4.34
900	11.53	3.60	11.71	3.78	11.81	3.88	11.90	3.97
800	11.49	3.20	11.67	3.38	11.77	3.48	11.83	3.54
700	11.51	2.87	11.67	3.03	11.76	3.12	11.82	3.18
600	11.48	2.50	11.65	2.67	11.74	2.76	11.79	2.81
500	11.51	2.12	11.66	2.27	11.76	2.37	11.81	2.42
400	11.52	1.67	11.67	1.82	11.76	1.91	11.82	1.97
300	11.53	0.82	11.69	0.98	11.79	1.08	11.83	1.12
200	11.54	-0.10	11.71	0.07	11.78	0.14	11.84	0.20
100	11.59	-0.91	11.75	-0.75	11.85	-0.65	11.91	-0.59
32	11.61	-1.42	11.76	-1.27	11.84	-1.19	11.90	-1.13
8	11.73	-1.50	11.91	-1.32	11.99	-1.24	12.04	-1.19
2	11.79	-1.48	11.96	-1.31	12.04	-1.23	12.10	-1.17
0	12.02	XXXX	12.19	XXXX	12.28	XXXX	12.34	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	10.59	0.99	10.77	1.17	10.89	1.29	10.96	1.36
900	10.79	0.91	10.94	1.06	11.05	1.17	11.11	1.23
800	10.92	0.76	11.09	0.93	11.18	1.02	11.25	1.09
700	11.09	0.65	11.25	0.81	11.35	0.91	11.42	0.98
600	11.22	0.50	11.38	0.66	11.47	0.75	11.53	0.81
500	11.39	0.45	11.53	0.59	11.63	0.69	11.69	0.75
400	11.51	0.82	11.66	0.97	11.75	1.06	11.82	1.13
300	11.66	1.68	11.83	1.85	11.91	1.93	11.99	2.01
200	11.79	1.43	11.95	1.59	12.04	1.68	12.09	1.73
100	11.93	0.99	12.09	1.15	12.19	1.25	12.25	1.31
32	12.05	0.71	12.22	0.88	12.31	0.97	12.38	1.04
8	12.13	0.64	12.29	0.80	12.39	0.90	12.45	0.96
2	12.17	0.65	12.33	0.81	12.41	0.89	12.48	0.96
0	12.31	XXXX	12.48	XXXX	12.50	XXXX	12.63	XXXX

CASE III GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	730.		731.		732.		733.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	12.07	-1.38	12.15	-1.30	12.21	-1.24	12.23	-1.22
-0.125	12.76	-0.14	12.78	-0.12	12.78	-0.12	12.79	-0.11
-0.250	13.26	0.07	13.27	0.08	13.27	0.08	13.26	0.07
-0.500	13.59	0.01	13.59	0.01	13.60	0.02	13.60	0.02
-1.000	14.23	0.02	14.24	0.03	14.23	0.02	14.23	0.02
-2.000	15.51	-0.01	15.51	-0.01	15.51	-0.01	15.51	-0.01

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	13.58	10.22	12.87	9.51	12.53	9.17	12.34	8.98
2	10.90	9.73	10.41	9.24	10.17	9.00	10.03	8.86

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	1.93	0.13	1.92	0.13	1.90	0.10	1.92	0.13
R(N)	1.36	XXXX	1.36	XXXX	1.36	XXXX	1.36	XXXX
Q(C,O)	0.65	XXXX	0.63	XXXX	0.63	XXXX	0.61	XXXX
Q(E,O)	0.72	XXXX	0.71	XXXX	0.70	XXXX	0.71	XXXX
Q(S,O)	-0.01	XXXX	0.01	XXXX	0.03	XXXX	0.04	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	90.20	XXXX	81.08	XXXX	76.86	XXXX	74.48	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	7.20	XXXX	7.10	XXXX	7.10	XXXX	7.10	XXXX

CASE III GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	26194	26009	24829	24484
TAPE NO.	734.	735.	736.	737.
INTERVAL	12.00HR	12.00HR	6.00HR	6.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	0.24	0.01	0.24	0.01	1.39	-0.00	1.39	-0.00
1000	-3.97	-3.76	-3.33	-3.12	-10.02	-15.50	-6.43	-11.91
900	-8.14	-6.94	-7.84	-6.64	-10.07	-15.13	-8.53	-13.59
800	-9.03	-6.84	-8.82	-6.63	-9.97	-14.60	-8.95	-13.58
700	-9.32	-6.18	-9.15	-6.01	-9.82	-14.04	-9.03	-13.25
600	-9.38	-5.27	-9.24	-5.13	-9.64	-13.45	-8.99	-12.80
500	-9.32	-4.32	-9.19	-4.19	-9.45	-12.75	-8.88	-12.18
400	-9.20	-3.69	-9.08	-3.57	-9.23	-11.43	-8.74	-10.94
300	-8.97	-3.28	-8.86	-3.17	-8.93	-7.62	-8.49	-7.18
200	-8.60	-2.90	-8.51	-2.81	-8.53	-4.05	-8.14	-3.66
100	-7.96	-2.45	-7.88	-2.37	-7.87	-3.17	-7.53	-2.83
32	-6.92	-2.53	-6.85	-2.46	-6.82	-3.07	-6.54	-2.79
8	-5.64	-2.54	-5.59	-2.49	-5.55	-3.25	-5.32	-3.02

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	18.20	-0.01	18.20	-0.01	17.96	-0.02	17.96	-0.01
1000	20.18	10.35	19.81	9.98	23.21	10.62	21.42	8.83
900	21.23	11.93	21.00	11.70	21.52	8.49	20.89	7.86
800	20.84	12.05	20.65	11.86	20.51	7.01	20.15	6.65
700	20.28	12.02	20.13	11.86	19.72	5.73	19.47	5.48
600	19.70	12.00	19.55	11.85	19.04	4.56	18.83	4.35
500	19.11	11.85	18.97	11.71	18.39	3.44	18.23	3.28
400	18.46	11.71	18.33	11.58	17.72	2.32	17.58	2.18
300	17.73	11.53	17.61	11.41	16.99	2.29	16.87	2.17
200	16.80	11.33	16.68	11.21	16.08	4.07	15.97	3.96
100	15.42	11.25	15.32	11.15	14.75	6.04	14.65	5.94
32	13.32	10.72	13.24	10.64	12.73	7.36	12.65	7.28
8	10.82	9.52	10.70	9.40	10.33	7.33	10.26	7.26

CASE III GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	734.		735.		736.		737.	
INTERVAL	12.00HR		12.00HR		6.00HR		6.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	11.98	4.39	12.02	4.43	11.69	3.15	11.79	3.25
900	11.92	3.99	11.96	4.03	11.59	2.59	11.66	2.66
800	11.87	3.58	11.90	3.61	11.52	2.04	11.57	2.09
700	11.86	3.22	11.91	3.27	11.49	1.54	11.53	1.58
600	11.84	2.86	11.87	2.89	11.42	0.98	11.47	1.03
500	11.85	2.47	11.90	2.51	11.42	0.52	11.45	0.55
400	11.86	2.01	11.90	2.05	11.38	0.53	11.43	0.58
300	11.8[illegible]	1.18	11.91	1.20	11.35	1.31	11.41	1.37
200	11.88	0.23	11.91	0.27	11.32	1.02	11.35	1.05
100	11.93	-0.57	11.90	-0.60	11.29	0.64	11.33	0.68
32	11.94	-1.09	11.97	-1.06	11.18	0.68	11.23	0.73
8	12.07	-1.16	12.11	-1.12	11.19	0.70	11.22	0.73
2	12.1[illegible]	-1.14	12.17	-1.10	11.11	0.62	11.14	0.65
0	12.38	XXXX	12.41	XXXX	10.[illegible]	XXXX	10.92	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	11.01	1.41	11.06	1.46	9.21	-0.55	9.31	-0.45
900	11.15	1.27	11.19	1.31	9.39	-0.51	9.47	-0.43
800	11.28	1.12	11.33	1.17	9.53	-0.51	9.59	-0.45
700	11.45	1.01	11.49	1.05	9.71	-0.47	9.75	-0.43
600	11.57	0.85	11.61	0.89	9.81	-0.50	9.86	-0.45
500	11.73	0.79	11.77	0.83	9.95	-0.40	10.01	-0.34
400	11.85	1.16	11.90	1.21	10.08	0.65	10.13	0.70
300	12.02	2.04	12.04	2.06	10.21	1.71	10.26	1.76
200	12.13	1.77	12.17	1.81	10.33	1.43	10.37	1.47
100	12.29	1.35	12.32	1.38	10.49	1.07	10.52	1.10
32	12.41	1.07	12.45	1.11	10.60	0.82	10.64	0.86
8	12.49	1.00	12.53	1.04	10.69	0.78	10.72	0.81
2	12.53	1.01	12.57	1.05	10.76	0.82	10.79	0.85
0	12.69	XXXX	12.73	XXXX	10.94	XXXX	10.97	XXXX

CASE III GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	734.		735.		736.		737.	
INTERVAL	12.00HR		12.00HR		6.00HR		6.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	12.24	-1.21	12.27	-1.18	11.90	-0.23	11.90	-0.23
-0.125	12.81	-0.09	12.80	-0.10	13.05	-0.03	13.05	-0.03
-0.250	13.29	0.10	13.27	0.08	13.35	0.03	13.34	0.02
-0.500	13.61	0.03	13.59	0.01	13.57	-0.03	13.57	-0.03
-1.000	14.23	0.02	14.24	0.03	14.23	0.01	14.23	0.01
-2.000	15.51	-0.01	15.51	-0.01	15.50	-0.02	15.51	-0.01

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	12.21	8.85	12.12	8.76	11.73	7.95	11.57	7.79
2	9.94	8.77	9.88	8.71	8.60	7.38	8.47	7.25

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	1.92	0.13	1.93	0.13	0.00	0.00	0.00	0.00
R(N)	1.36	XXXX	1.36	XXXX	0.00	XXXX	0.00	XXXX
Q(C,0)	0.61	XXXX	0.61	XXXX	-0.56	XXXX	-0.56	XXXX
Q(E,0)	0.70	XXXX	0.70	XXXX	0.84	XXXX	0.83	XXXX
Q(S,0)	0.04	XXXX	0.05	XXXX	-0.28	XXXX	-0.27	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	72.94	XXXX	71.88	XXXX	66.76	XXXX	64.92	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	7.10	XXXX	7.10	XXXX	4.30	XXXX	4.30	XXXX

CASE III GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	24274	24134	24039	23964
TAPE NO.	738.	739.	740.	741.
INTERVAL	6.00HR	6.00HR	6.00HR	6.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	1.39	-0.00	1.39	-0.00	1.39	-0.00	1.39	-0.00
1000	-4.49	-9.97	-3.31	-8.79	-2.51	-7.99	-1.94	-7.42
900	-7.68	-12.74	-7.16	-12.22	-6.80	-11.86	-6.54	-11.60
800	-8.36	-12.99	-8.01	-12.64	-7.76	-12.39	-7.59	-12.22
700	-8.58	-12.80	-8.30	-12.52	-8.11	-12.33	-7.97	-12.19
600	-8.62	-12.43	-8.39	-12.20	-8.23	-12.04	-8.11	-11.92
500	-8.56	-11.86	-8.36	-11.66	-8.22	-11.52	-8.12	-11.42
400	-8.45	-10.65	-8.28	-10.48	-8.15	-10.35	-8.06	-10.26
300	-8.24	-6.93	-8.08	-6.77	-7.97	-6.66	-7.89	-6.58
200	-7.91	-3.44	-7.77	-3.29	-7.67	-3.19	-7.55	-3.07
100	-7.33	-2.63	-7.20	-2.51	-7.11	-2.41	-7.05	-2.35
32	-6.38	-2.63	-6.27	-2.52	-6.19	-2.44	-6.14	-2.39
8	-5.19	-2.89	-5.11	-2.81	-5.05	-2.75	-5.01	-2.71

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	17.96	-0.01	17.96	-0.01	17.96	-0.01	17.97	-0.01
1000	20.45	7.86	19.88	7.28	19.50	6.91	19.25	6.66
900	20.53	7.50	20.30	7.27	20.15	7.12	20.04	7.01
800	19.93	6.43	19.78	6.28	19.69	6.19	19.61	6.11
700	19.31	5.32	19.20	5.21	19.13	5.14	19.07	5.08
600	18.71	4.23	18.62	4.14	18.56	4.08	18.51	4.03
500	18.11	3.16	18.04	3.09	17.98	3.03	17.95	3.00
400	17.48	2.08	17.42	2.02	17.37	1.97	17.33	1.93
300	16.78	2.08	16.72	2.02	16.68	1.98	16.65	1.95
200	15.89	3.88	15.84	3.83	15.80	3.79	15.77	3.76
100	14.59	5.88	14.54	5.83	14.51	5.80	14.48	5.77
32	12.59	7.22	12.56	7.19	12.53	7.16	12.50	7.13
8	10.22	7.22	10.19	7.19	10.17	7.17	10.15	7.15

CASE III GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	738.		739.		740.		741.	
INTERVAL	6.00HR		6.00HR		6.00HR		6.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	11.84	3.30	11.87	3.33	11.90	3.36	11.91	3.37
900	11.72	2.72	11.74	2.74	11.77	2.77	11.79	2.79
800	11.61	2.13	11.64	2.16	11.65	2.17	11.67	2.19
700	11.57	1.62	11.59	1.64	11.61	1.66	11.61	1.66
600	11.51	1.07	11.52	1.08	11.54	1.10	11.55	1.11
500	11.49	0.59	11.51	0.61	11.53	0.63	11.53	0.63
400	11.45	0.60	11.47	0.62	11.49	0.64	11.51	0.66
300	11.43	1.39	11.44	1.40	11.46	1.42	11.47	1.43
200	11.38	1.08	11.41	1.11	11.42	1.12	11.43	1.13
100	11.36	0.71	11.39	0.74	11.39	0.74	11.41	0.76
32	11.25	0.75	11.27	0.77	11.29	0.79	11.29	0.79
8	11.20	0.71	11.26	0.77	11.29	0.80	11.29	0.80
2	11.13	0.64	11.18	0.69	11.20	0.71	11.21	0.72
0	10.95	XXXX	10.96	XXXX	10.97	XXXX	10.98	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	9.39	-0.37	9.43	-0.33	9.47	-0.29	9.48	-0.28
900	9.53	-0.37	9.57	-0.33	9.61	-0.29	9.61	-0.29
800	9.66	-0.38	9.69	-0.35	9.71	-0.33	9.72	-0.32
700	9.81	-0.37	9.84	-0.34	9.86	-0.32	9.87	-0.31
600	9.91	-0.40	9.94	-0.37	9.96	-0.35	9.97	-0.34
500	10.05	-0.30	10.09	-0.26	10.01	-0.34	10.11	-0.24
400	10.17	0.74	10.19	0.76	10.23	0.80	10.23	0.80
300	10.31	1.81	10.34	1.84	10.36	1.86	10.39	1.89
200	10.42	1.52	10.45	1.55	10.47	1.57	10.48	1.58
100	10.56	1.14	10.59	1.17	10.61	1.19	10.62	1.20
32	10.68	0.90	10.72	0.94	10.73	0.95	10.74	0.96
8	10.79	0.88	10.79	0.88	10.81	0.90	10.82	0.91
2	10.85	0.91	10.86	0.92	10.88	0.94	10.89	0.95
0	11.02	XXXX	11.05	XXXX	11.06	XXXX	11.08	XXXX

CASE III GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	738.	739.	740.	741.
INTERVAL	6.00HR	6.00HR	6.00HR	6.00HR

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
C.000	11.91	-0.22	11.91	-0.22	11.91	-0.22	11.91	-0.22
-0.125	13.05	-0.03	13.05	-0.03	13.06	-0.02	13.06	-0.02
-0.250	13.35	0.03	13.34	0.02	13.35	0.03	13.34	0.02
-0.500	13.57	-0.03	13.57	-0.03	13.57	-0.03	13.58	-0.02
-1.000	14.25	0.03	14.23	0.01	14.24	0.02	14.24	0.02
-2.000	15.51	-0.01	15.51	-0.01	15.51	-0.01	15.51	-0.01

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	11.47	7.69	11.40	7.62	11.36	7.58	11.32	7.54
2	8.39	7.17	8.33	7.11	8.29	7.07	8.27	7.05

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
R(N)	0.00	XXXX	0.00	XXXX	0.00	XXXX	0.00	XXXX
Q(C,0)	-0.55	XXXX	-0.55	XXXX	-0.55	XXXX	-0.54	XXXX
Q(E,0)	0.83	XXXX	0.83	XXXX	0.82	XXXX	0.82	XXXX
Q(S,0)	-0.27	XXXX	-0.26	XXXX	-0.26	XXXX	-0.26	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	63.80	XXXX	63.08	XXXX	62.56	XXXX	62.16	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	4.30	XXXX	4.30	XXXX	4.20	XXXX	4.30	XXXX

CASE III GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	20054	20064	20074	20089
TAPE NO.	742.	743.	744.	745.
INTERVAL	2.00HR	2.00HR	2.00HR	2.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	2.66	0.23	2.66	0.23	2.66	0.23	2.66	0.22
1000	-3.56	-6.05	-2.22	-4.71	-1.30	-3.79	-0.64	-3.13
900	-4.08	-6.10	-3.75	-5.77	-3.51	-5.53	-3.32	-5.35
800	-4.32	-5.93	-4.17	-5.77	-4.06	-5.66	-3.97	-5.57
700	-4.45	-5.59	-4.38	-5.51	-4.31	-5.44	-4.26	-5.39
600	-4.52	-5.22	-4.47	-5.17	-4.43	-5.13	-4.40	-5.10
500	-4.54	-4.75	-4.51	-4.72	-4.48	-4.69	-4.46	-4.67
400	-4.55	-4.10	-4.52	-4.07	-4.51	-4.06	-4.49	-4.04
300	-4.49	-3.10	-4.47	-3.08	-4.46	-3.07	-4.45	-3.06
200	-4.36	-2.38	-4.35	-2.36	-4.33	-2.34	-4.33	-2.34
100	-4.08	-2.07	-4.07	-2.06	-4.06	-2.05	-4.05	-2.04
32	-3.58	-2.08	-3.57	-2.07	-3.57	-2.07	-3.57	-2.07
8	-2.93	-2.18	-2.92	-2.17	-2.92	-2.17	-2.92	-2.17

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	17.51	-0.01	17.51	-0.01	17.51	-0.01	17.50	-0.02
1000	17.95	3.97	18.25	4.27	18.36	4.38	18.35	4.37
900	17.74	3.26	17.93	3.45	18.04	3.56	18.10	3.62
800	17.34	2.36	17.46	2.48	17.54	2.56	17.55	2.57
700	16.91	1.41	16.99	1.49	17.05	1.55	17.09	1.59
600	16.47	0.47	16.53	0.53	16.58	0.58	16.61	0.61
500	16.02	-0.49	16.06	-0.45	16.09	-0.42	16.12	-0.39
400	15.50	-1.33	15.54	-1.29	15.56	-1.27	15.58	-1.25
300	14.92	-0.45	14.95	-0.42	14.97	-0.40	14.99	-0.38
200	14.16	0.66	14.18	0.68	14.19	0.69	14.20	0.70
100	13.01	1.81	13.03	1.83	13.04	1.84	13.04	1.84
32	11.24	3.29	11.25	3.30	11.26	3.31	11.27	3.32
8	9.12	5.02	9.13	5.03	9.13	5.03	9.14	5.04

CASE III GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	742.		743.		744.		745.	
INTERVAL	2.00HR		2.00HR		2.00HR		2.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	10.81	2.36	10.83	2.38	10.84	2.39	10.85	2.40
900	11.38	2.43	11.39	2.44	11.39	2.44	11.41	2.46
800	11.55	2.10	11.56	2.11	11.56	2.11	11.57	2.12
700	11.65	1.68	11.66	1.69	11.66	1.69	11.67	1.70
600	11.69	1.21	11.69	1.21	11.70	1.22	11.70	1.22
500	11.73	0.74	11.74	0.75	11.74	0.75	11.74	0.75
400	11.75	0.65	11.75	0.65	11.75	0.65	11.76	0.66
300	11.75	0.75	11.75	0.75	11.75	0.75	11.75	0.75
200	11.73	-0.03	11.73	-0.03	11.73	-0.03	11.73	-0.03
100	11.71	-0.89	11.71	-0.89	11.71	-0.89	11.71	-0.89
32	11.57	-1.58	11.57	-1.58	11.57	-1.58	11.59	-1.56
8	11.53	-1.79	11.53	-1.79	11.54	-1.78	11.54	-1.78
2	11.38	-1.97	11.38	-1.97	11.38	-1.97	11.39	-1.96
0	11.03	XXXX	11.04	XXXX	11.03	XXXX	11.04	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	8.18	-0.14	8.21	-0.11	8.22	-0.10	8.24	-0.08
900	8.32	-0.16	8.35	-0.13	8.35	-0.13	8.37	-0.11
800	8.44	-0.19	8.46	-0.17	8.47	-0.16	8.48	-0.15
700	8.60	-0.19	8.62	-0.17	8.62	-0.17	8.63	-0.16
600	8.69	-0.25	8.71	-0.23	8.71	-0.23	8.71	-0.23
500	8.83	-0.20	8.85	-0.18	8.85	-0.18	8.85	-0.18
400	8.94	0.46	8.95	0.47	8.95	0.47	8.96	0.48
300	9.10	1.18	9.09	1.17	9.10	1.18	9.11	1.19
200	9.20	0.95	9.21	0.96	9.21	0.96	9.21	0.96
100	9.35	0.69	9.36	0.70	9.35	0.69	9.35	0.69
32	9.50	0.55	9.51	0.56	9.50	0.55	9.51	0.56
8	9.63	0.58	9.64	0.59	9.63	0.58	9.64	0.59
2	9.77	0.70	9.77	0.70	9.77	0.70	9.78	0.71
0	10.08	XXXX	10.08	XXXX	10.09	XXXX	10.09	XXXX

CASE III GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	742.	743.	744.	745.
INTERVAL	2.00HR	2.00HR	2.00HR	2.00HR

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	12.64	-0.38	12.64	-0.38	12.64	-0.38	12.64	-0.38
-0.125	13.36	0.01	13.35	-0.00	13.35	-0.00	13.36	0.01
-0.250	13.33	0.01	13.32	0.00	13.34	0.02	13.33	0.01
-0.500	13.55	-0.02	13.55	-0.02	13.55	-0.02	13.55	-0.02
-1.000	14.24	0.02	14.24	0.02	14.24	0.02	14.24	0.02
-2.000	15.51	-0.01	15.51	-0.01	15.51	-0.01	15.50	-0.02

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	9.58	5.41	9.59	5.42	9.59	5.42	9.60	5.43
2	6.65	4.61	6.66	4.62	6.66	4.62	6.66	4.62

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	-0.00	-0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
R(N)	0.02	XXXX	0.02	XXXX	0.02	XXXX	0.02	XXXX
Q(C,0)	-0.76	XXXX	-0.75	XXXX	-0.76	XXXX	-0.76	XXXX
Q(E,0)	1.24	XXXX	1.23	XXXX	1.23	XXXX	1.23	XXXX
Q(S,0)	-0.45	XXXX	-0.45	XXXX	-0.45	XXXX	-0.45	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	44.16	XXXX	44.24	XXXX	44.28	XXXX	44.32	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
F	1.90	XXXX	1.90	XXXX	1.90	XXXX	1.90	XXXX

CASE III GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	20104	20099	19274	19279
TAPE NO.	746.	747.	748.	749.
INTERVAL	2.00HR	2.00HR	1.00HR	1.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	2.66	0.22	2.66	0.23	2.55	0.00	2.55	0.00
1000	-0.16	-2.65	0.19	-2.29	-1.45	-3.21	-0.89	-2.55
900	-3.18	-5.20	-3.08	-5.10	-2.06	-3.46	-1.98	-3.38
800	-3.90	-5.51	-3.85	-5.45	-2.42	-3.42	-2.40	-3.40
700	-4.21	-5.34	-4.18	-5.31	-2.67	-3.26	-2.66	-3.25
600	-4.38	-5.07	-4.35	-5.05	-2.84	-2.86	-2.84	-2.86
500	-4.45	-4.66	-4.43	-4.64	-2.96	-2.32	-2.96	-2.32
400	-4.48	-4.03	-4.46	-4.01	-3.05	-1.65	-3.05	-1.65
300	-4.44	-3.05	-4.43	-3.04	-3.08	-0.79	-3.08	-0.79
200	-4.32	-2.33	-4.31	-2.32	-3.05	-0.15	-3.05	-0.15
100	-4.05	-2.04	-4.04	-2.03	-2.90	-0.19	-2.90	-0.19
32	-3.56	-2.06	-3.55	-2.05	-2.58	-0.71	-2.58	-0.71
8	-2.91	-2.16	-2.91	-2.16	-2.12	-1.22	-2.12	-1.22

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	17.50	-0.02	17.50	-0.02	17.53	0.01	17.53	0.01
1000	18.31	4.33	18.25	4.27	16.15	2.58	16.67	3.10
900	18.14	3.66	18.17	3.69	16.67	2.82	16.81	2.96
800	17.63	2.65	17.65	2.67	16.67	2.53	16.73	2.59
700	17.13	1.63	17.14	1.64	16.48	2.04	16.51	2.07
600	16.63	0.63	16.65	0.65	16.18	1.45	16.20	1.47
500	16.14	-0.37	16.15	-0.35	15.80	0.78	15.82	0.80
400	15.60	-1.23	15.61	-1.22	15.34	0.19	15.35	0.20
300	15.00	-0.37	15.01	-0.36	14.78	0.20	14.79	0.21
200	14.22	0.72	14.22	0.72	14.03	0.81	14.03	0.81
100	13.06	1.86	13.06	1.86	12.89	1.89	12.89	1.89
32	11.28	3.33	11.27	3.32	11.13	3.27	11.13	3.28
8	9.14	5.04	9.10	5.00	9.02	4.27	9.02	4.27

CASE III GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	746.		747.		748.		749.	
INTERVAL	2.00HR		2.00HR		1.00HR		1.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	10.36	2.41	10.86	2.41	9.76	1.46	9.76	1.46
900	11.41	2.46	11.42	2.47	10.77	1.99	10.79	2.01
800	11.57	2.13	11.58	2.13	11.24	1.97	11.25	1.98
700	11.67	1.70	11.69	1.72	11.56	1.81	11.56	1.81
600	11.71	1.23	11.71	1.23	11.75	1.50	11.75	1.50
500	11.75	0.76	11.74	0.75	11.92	1.18	11.93	1.19
400	11.76	0.66	11.76	0.66	12.04	1.04	12.03	1.03
300	11.76	0.76	11.76	0.76	12.12	0.57	12.12	0.57
200	11.73	-0.03	11.73	-0.03	12.16	-0.26	12.15	-0.27
100	11.71	-0.89	11.71	-0.89	12.19	-1.07	12.19	-1.07
32	11.58	-1.57	11.58	-1.57	12.07	-1.68	12.07	-1.68
8	11.54	-1.78	11.54	-1.78	11.99	-1.93	11.99	-1.93
2	11.39	-1.96	11.39	-1.96	11.79	-2.16	11.79	-2.16
0	11.04	XXXX	11.04	XXXX	11.37	XXXX	11.36	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	8.25	-0.07	8.26	-0.06	7.91	-0.05	7.92	-0.04
900	8.39	-0.09	8.38	-0.10	8.05	-0.07	8.05	-0.07
800	8.48	-0.15	8.48	-0.15	8.13	-0.15	8.14	-0.14
700	8.63	-0.16	8.63	-0.16	8.26	-0.18	8.27	-0.17
600	8.72	-0.22	8.72	-0.22	8.34	-0.26	8.34	-0.26
500	8.85	-0.18	8.86	-0.17	8.46	-0.24	8.46	-0.24
400	8.96	0.48	8.96	0.48	8.56	0.32	8.56	0.32
300	9.01	1.09	9.09	1.17	8.69	0.91	8.68	0.90
200	9.21	0.96	9.22	0.97	8.79	0.70	8.70	0.61
100	9.36	0.70	9.36	0.70	8.94	0.47	8.95	0.48
32	9.51	0.56	9.51	0.56	9.11	0.37	9.10	0.36
8	9.64	0.59	9.65	0.60	9.26	0.43	9.26	0.43
2	9.78	0.71	9.78	0.71	9.44	0.59	9.44	0.59
0	10.09	XXXX	10.09	XXXX	9.81	XXXX	9.82	XXXX

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CASE III GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	746.		747.		748.		749.	
INTERVAL	2.00HR		2.00HR		1.00HR		1.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	12.63	-0.39	12.64	-0.38	13.01	-0.17	13.01	-0.17
-0.125	13.36	0.01	13.36	0.01	13.41	-0.02	13.40	-0.03
-0.250	13.33	0.01	13.32	0.00	13.31	-0.00	13.31	-0.00
-0.500	13.55	-0.02	13.55	-0.02	13.55	-0.01	13.55	-0.01
-1.000	14.24	0.02	14.24	0.02	14.24	0.01	14.24	0.01
-2.000	15.51	-0.01	15.51	-0.01	15.50	-0.02	15.50	-0.02

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	9.60	5.43	9.60	5.43	9.27	4.45	9.27	4.45
2	6.67	4.63	6.67	4.63	6.26	3.44	6.26	3.44

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	-0.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00
R(N)	0.02	XXXX	0.02	XXXX	0.04	XXXX	0.03	XXXX
Q(C,0)	-0.76	XXXX	-0.76	XXXX	-0.95	XXXX	-0.95	XXXX
Q(E,0)	1.23	XXXX	1.23	XXXX	1.46	XXXX	1.46	XXXX
Q(S,0)	-0.45	XXXX	-0.45	XXXX	-0.47	XXXX	-0.47	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	44.34	XXXX	44.36	XXXX	41.18	XXXX	41.16	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	1.90	XXXX	1.90	XXXX	0.90	XXXX	0.10	XXXX

CASE III GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	19269	19284	19284	[illegible]279
TAPE NO.	750.	751.	752.	753.
INTERVAL	1.00HR	1.00HR	1.00HR	[illegible].00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	2.55	0.00	2.55	0.00	2.55	0.00	2.55	0.00
1000	-0.44	-2.20	-0.08	-1.84	0.21	-1.55	[illegible].45	-1.30
900	-1.91	-3.31	-1.84	-3.24	-1.80	-3.20	[illegible].76	-3.16
800	-2.39	-3.39	-2.37	-3.37	-2.35	-3.35	[illegible] 34	-3.34
700	-2.66	-3.25	-2.65	-3.24	-2.60	-3.19	[illegible].64	-3.23
600	-2.84	-2.86	-2.83	-2.85	-2.83	-2.85	-2.83	-2.85
500	-2.96	-2.32	-2.95	-2.31	-2.96	-2.32	-2.95	-2.31
400	-3.05	-1.65	-3.05	-1.65	-3.05	-1.65	-3.05	-1.65
300	-3.08	-0.79	-3.08	-0.79	-3.08	-0.79	-3.08	-0.79
200	-3.05	-0.15	-3.05	-0.15	-3.05	-0.15	-3.05	-0.15
100	-2.89	-0.18	-2.90	-0.19	-2.90	-0.19	-2.90	-0.19
32	-2.58	-0.71	-2.58	-0.71	-2.58	-0.71	-2.58	-0.71
8	-2.13	-1.22	-2.13	-1.22	-2.13	-1.22	-2.12	-1.22

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	17.53	0.01	17.53	0.01	17.53	0.01	17.53	0.01
1000	17.05	3.48	17.31	3.74	17.49	3.92	17.61	4.04
900	16.92	3.07	17.01	3.16	17.08	3.23	17.13	3.28
800	16.79	2.65	16.83	2.69	16.86	2.72	16.89	2.75
700	16.53	2.09	16.56	2.12	16.57	2.13	16.59	2.15
600	16.21	1.48	16.22	1.49	16.23	1.50	16.24	1.51
500	15.82	0.80	15.83	0.81	15.83	0.81	15.84	0.82
400	15.35	0.20	15.36	0.21	15.36	0.21	15.36	0.21
300	14.79	0.21	14.79	0.21	14.80	0.22	14.80	0.22
200	14.04	0.82	14.03	0.81	14.04	0.82	14.04	0.82
100	12.89	1.89	12.89	1.89	12.89	1.89	12.89	1.89
32	11.12	3.27	11.13	3.28	11.13	3.28	11.13	3.28
8	9.02	4.27	9.02	4.27	9.02	4.27	9.03	4.28

CASE III GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	750.		751.		752.		753.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	9.77	1.47	9.77	1.47	9.78	1.48	9.78	1.48
900	10.78	2.00	10.79	2.01	10.79	2.01	10.79	2.01
800	11.24	1.97	11.25	1.98	11.25	1.98	11.26	1.99
700	11.56	1.81	11.56	1.81	11.56	1.81	11.56	1.81
600	11.76	1.51	11.76	1.51	11.76	1.51	11.75	1.50
500	11.92	1.18	11.92	1.18	11.93	1.19	11.92	1.18
400	12.04	1.04	12.04	1.04	12.04	1.04	12.05	1.05
300	12.12	0.57	12.12	0.57	12.11	0.56	12.12	0.57
200	12.16	-0.26	12.15	-0.27	12.16	-0.26	12.15	-0.27
100	12.19	-1.07	12.19	-1.07	12.20	-1.06	12.18	-1.08
32	12.06	-1.69	12.06	-1.69	12.06	-1.69	12.07	-1.68
8	12.02	-1.90	11.99	-1.93	12.02	-1.90	11.99	-1.93
2	11.81	-2.14	11.78	-2.17	11.80	-2.15	11.78	-2.17
0	11.36	XXXX	11.35	XXXX	11.35	XXXX	11.35	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	7.94	-0.02	7.94	-0.02	7.95	-0.01	7.95	-0.01
900	8.05	-0.07	8.05	-0.07	8.06	-0.06	8.05	-0.07
800	8.14	-0.14	8.14	-0.14	8.14	-0.14	8.14	-0.14
700	8.27	-0.17	8.28	-0.16	8.27	-0.17	8.26	-0.18
600	8.34	-0.26	8.35	-0.25	8.35	-0.25	8.34	-0.26
500	8.47	-0.23	8.47	-0.23	8.47	-0.23	8.46	-0.24
400	8.56	0.32	8.56	0.32	8.56	0.32	8.55	0.31
300	8.69	0.91	8.68	0.90	8.68	0.90	8.69	0.91
200	8.79	0.70	8.80	0.71	8.80	0.71	8.79	0.70
100	8.95	0.48	8.95	0.48	8.95	0.48	8.94	0.47
32	9.11	0.37	9.11	0.37	9.11	0.37	9.11	0.37
8	9.26	0.43	9.26	0.43	9.26	0.43	9.25	0.42
2	9.44	0.59	9.44	0.59	9.44	0.59	9.44	0.59
0	9.82	XXXX	9.82	XXXX	9.81	XXXX	9.82	XXXX

CASE III GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	750.		751.		752.		753.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	13.01	-0.17	13.02	-0.16	13.01	-0.17	13.01	-0.17
-0.125	13.40	-0.03	13.41	-0.02	13.41	-0.02	13.41	-0.02
-0.250	13.32	0.01	13.32	0.01	13.32	0.01	13.31	-0.00
-0.500	13.55	-0.01	13.54	-0.02	13.55	-0.01	13.56	-0.00
-1.000	14.24	0.01	14.24	0.01	14.24	0.01	14.24	0.01
-2.000	15.51	-0.01	15.50	-0.02	15.51	-0.01	15.51	-0.01

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	9.27	4.45	9.27	4.45	9.27	4.45	9.27	4.45
2	6.25	3.43	6.26	3.44	6.26	3.44	6.26	3.44

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	-0.00	-0.00	-0.00	-0.00	0.00	0.00	0.00	0.00
R(N)	0.04	XXXX	0.03	XXXX	0.03	XXXX	0.04	XXXX
Q(C,0)	-0.96	XXXX	-0.95	XXXX	-0.95	XXXX	-0.96	XXXX
Q(E,0)	1.46	XXXX	1.46	XXXX	1.46	XXXX	1.46	XXXX
Q(S,0)	-0.47	XXXX	-0.47	XXXX	-0.47	XXXX	-0.47	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	41.16	XXXX	41.20	XXXX	41.20	XXXX	41.18	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	0.90	XXXX	0.90	XXXX	1.10	XXXX	1.00	XXXX

ROOT MEAN SQUARES OF THE DIFFERENCES BETWEEN
THE PREDICTED AND OBSERVED ATMOSPHERIC COLUMNS

CASE III 12.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		4.04	8.38	10.59	10.64	13.84
PERSIST DIFF		3.10	7.68	1.88	2.48	0.23
GPAC DIFF	730.	7.01	13.69	2.30	0.92	0.57
GPAC DIFF	731.	5.67	12.19	2.39	1.08	0.53
GPAC DIFF	732.	4.99	11.52	2.45	1.17	0.51
GPAC DIFF	733.	4.60	11.16	2.49	1.23	0.50
GPAC DIFF	734.	4.35	10.94	2.52	1.27	0.50
GPAC DIFF	735.	4.18	10.78	2.54	1.30	0.48

CASE III 6.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		3.83	12.93	10.15	9.74	13.69
PERSIST DIFF		3.86	2.05	2.41	1.69	0.52
GPAC DIFF	736.	10.59	6.02	1.50	0.87	0.10
GPAC DIFF	737.	9.64	5.62	1.55	0.88	0.10
GPAC DIFF	738.	9.14	5.39	1.58	0.91	0.09
GPAC DIFF	739.	8.84	5.26	1.60	0.92	0.09
GPAC DIFF	740.	8.64	5.17	1.62	0.93	0.09
GPAC DIFF	741.	8.49	5.11	1.63	0.93	0.09

ROOT MEAN SQUARES OF THE DIFFERENCES BETWEEN
THE PREDICTED AND OBSERVED ATMOSPHERIC COLUMNS

CASE III 2.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		1.61	14.18	11.23	8.67	13.86
PERSIST DIFF		1.28	0.54	1.18	0.57	0.14
GPAC DIFF	742.	4.26	2.42	1.57	0.58	0.16
GPAC DIFF	743.	4.05	2.49	1.58	0.58	0.16
GPAC DIFF	744.	3.92	2.53	1.58	0.58	0.16
GPAC DIFF	745.	3.83	2.54	1.58	0.58	0.16
GPAC DIFF	746.	3.77	2.55	1.58	0.56	0.16
GPAC DIFF	747.	3.72	2.54	1.59	0.58	0.16

CASE III 1.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		1.77	13.46	11.47	8.40	13.90
PERSIST DIFF		0.92	1.33	0.94	0.28	0.07
GPAC DIFF	748.	2.21	2.17	1.54	0.44	0.07
GPAC DIFF	749.	2.14	2.25	1.54	0.43	0.07
GPAC DIFF	750.	2.09	2.31	1.54	0.44	0.07
GPAC DIFF	751.	2.05	2.35	1.54	0.44	0.07
GPAC DIFF	752.	2.02	2.39	1.54	0.44	0.07
GPAC DIFF	753.	2.00	2.41	1.54	0.44	0.07

CASE IV-A TAPE LOG

TAPE NO.	FCST INT	SM	KM8 D8	SCG	ADV	GEO	REMARKS
781.	12.00	A	V	A	N	O	
782.	12.00	A	V	A	N	I	GEO=0.20
783.	12.00	A	V	A	N	I	GEO=0.40
784.	12.00	A	V	A	N	I	GEO=0.60
785.	12.00	A	V	A	N	I	GEO=0.80
786.	12.00	A	V	A	N	I	GEO=1.00
787.	6.00	A	V	A	N	O	
788.	6.00	A	V	A	N	I	GEO=0.20
789.	6.00	A	V	A	N	I	GEO=0.40
790.	6.00	A	V	A	N	I	GEO=0.60
791.	6.00	A	V	A	N	I	GEO=0.80
792.	6.00	A	V	A	N	I	GEO=1.00
793.	2.00	A	V	A	N	O	
794.	2.00	A	V	A	N	I	GEO=0.20
795.	2.00	A	V	A	N	I	GEO=0.40
796.	2.00	A	V	A	N	I	GEO=0.60
797.	2.00	A	V	A	N	I	GEO=0.80
798.	2.00	A	V	A	N	I	GEO=1.00
799.	1.00	A	V	A	N	O	
800.	1.00	A	V	A	N	I	GEO=0.20
801.	1.00	A	V	A	N	I	GEO=0.40
802.	1.00	A	V	A	N	I	GEO=0.60
803.	1.00	A	V	A	N	I	GEO=0.80
804.	1.00	A	V	A	N	I	GEO=1.00

CASE IV-A INITIAL CONDITIONS - 0000L 26 FEBRUARY 1962
(PAGE 1 OF 2 PAGES)

SOIL PARAMETERS

LEVEL (M)	TEMP (DEG C)		
0.000	14.50	LAMBDA	= 0.59 CAL/CM^3 DEG
-0.125	13.40	MU/LAMBDA	= 0.0037 CM^2/SEC
-0.250	12.85	$(MU \times LAMBDA)^{1/2}$	= 0.036 CAL^2/CM^4 DEG^2 SEC
-0.500	13.08	Z(0)	= 2.0 CM
-1.000	13.90	S(0)	= 0.0004 CAL/CM^2 SEC MB
-2.000	15.63	G	= 3500 CM^2 SEC DEG/CAL

RADIATION PARAMETERS

LOCAL TIME	= 0000	TURBIDITY	= 0.38
DELTA	= -8.80 DEG	PSI	= 1.020
$R \times 10^5$	= 2.20 DEG C/SEC	F(C)	= 0.20
CLOUD CLASS	= 3	ALBEDO	= 0.25
E'(8)	= 15.62 MB	M	= 0.750
EPSILON	= 0.950	N	= 0.0270 $MB^{-1/2}$
PHI	= 32.5 DEG	H	= -180.0 DEG

HORIZONTAL GRADIENTS

LEVEL (M)	DE/DX (MB/100-KM)	DE/DY (MB/100-KM)	DT/DX (DEG C/100-KM)	DT/DY (DEG C/100-KM)
200	1.83	-2.05	1.44	-2.51
600	1.83	-1.27	1.30	-2.12
1000	1.83	-0.50	1.15	-1.72

CASE IV-A INITIAL CONDITIONS - 0000L 26 FEBRUARY 1962
(PAGE 2 OF 2 PAGES)

LEVEL (M)	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
1000	8.28	5.20	13.34	6.94
900	8.20	7.32	14.07	7.18
800	8.15	9.45	14.80	7.64
700	8.09	11.59	15.53	8.32
600	7.95	13.70	16.27	8.99
500	7.65	15.85	17.00	13.25
400	7.13	17.90	17.56	13.72
300	6.10	18.45	18.00	14.21
200	4.40	17.30	18.52	14.69
100	1.90	13.70	18.40	15.17
32	-0.10	9.20	18.45	15.49
8	-0.25	5.10	18.35	15.62

ADVECTION TERMS
$(SEC^{-1} \times 10^{5})$

LEVEL (M)	ALPHA(1)	BETA(1)	ALPHA(2)	BETA(2)
200	-2.35	1.48	0.00	1.80
600	-0.43	1.75	0.00	1.51
1000	1.48	2.02	0.00	1.23

SURFACE CONTOUR GRADIENTS

PREDICTION INTERVAL (HR)	AZIMUTH (DEG FROM NORTH)	MAGNITUDE (FT/100-KM)
0	112.90	14.91
1	66.80	9.13
2	33.10	16.74
6	336.00	49.31
12	323.00	53.26

CASE IV-A COMPARISON DATA FROM DALLAS (1 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	-1.39	3.25		
1000	8.25	4.25	13.50	6.09
900	8.30	6.45	14.36	6.29
800	8.39	8.65	15.24	6.76
700	8.44	10.85	16.10	7.48
600	8.50	13.05	16.97	8.18
500	8.59	15.30	17.85	13.08
400	8.07	16.87	18.47	13.56
300	6.60	16.42	18.70	14.06
200	4.80	14.45	19.03	14.54
100	2.60	11.45	19.12	15.03
32	1.08	8.30	19.28	15.36
8	0.30	5.40	19.43	15.48
2	XXXX	XXXX	19.50	15.51
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

C.000	14.95
-0.125	13.46
-C.250	12.92
-0.500	13.08
-1.000	13.90
-2.000	15.63

WIND SPEED (M/SEC)

8	5.41
2	1.45

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.00	Q(E,0)=	XXXX
R(N)=	XXXX	Q(S,0)=	XXXX
Q(C,0)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE IV-A COMPARISON DATA FROM DALLAS (2 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	-5.34	3.48		
1000	8.30	2.90	13.55	5.23
900	8.46	5.00	14.50	5.41
800	8.63	7.05	15.45	5.87
700	8.80	9.10	16.40	6.63
600	8.96	11.08	17.35	7.38
500	9.08	13.25	18.31	12.91
400	8.35	14.84	18.96	13.40
300	6.80	14.60	19.00	13.91
200	5.00	12.65	19.15	14.40
100	3.18	9.65	19.38	14.89
32	1.95	6.80	19.60	15.23
8	1.00	3.70	19.70	15.35
2	XXXX	XXXX	19.73	15.38
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	15.38
-0.125	13.58
-0.250	12.97
-0.500	13.07
-1.000	13.90
-2.000	15.63

WIND SPEED (M/SEC)

8	3.83
2	0.42

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.00	Q(E,0)=	XXXX
R(N)=	XXXX	Q(S,0)=	XXXX
Q(C,0)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

CASE IV-A COMPARISON DATA FROM DALLAS (6 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	-17.17	-7.66		
1000	7.00	-6.71	12.09	1.80
900	7.08	-7.15	12.61	1.85
800	7.13	-7.55	13.14	2.33
700	7.22	-7.98	13.65	3.25
600	7.29	-8.39	14.19	4.16
500	7.36	-8.80	14.71	12.24
400	7.49	-9.15	15.15	12.76
300	7.65	-8.32	15.52	13.29
200	7.40	-6.50	16.10	13.81
100	6.10	-4.49	16.41	14.34
32	4.00	-2.70	15.07	14.69
8	1.75	-1.45	14.63	14.82
2	XXXX	XXXX	14.55	14.85
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	15.07
-0.125	14.10
-0.250	13.20
-0.500	13.13
-1.000	13.90
-2.000	15.63

WIND SPEED (M/SEC)

8	2.27
2	0.90

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	0.00	Q(E,0)=	XXXX
R(N)=	XXXX	Q(S,0)=	XXXX
Q(C,0)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

F= XXXX

CASE IV-A COMPARISON DATA FROM DALLAS (12 HOUR)

	WIND COMPONENTS U (M/SEC)	V	TEMPERATURE (DEG C)	VAPOR PRESSURE (MB)
GEO	-16.36	-12.06		
1000	1.85	-4.18	8.70	4.12
900	1.43	-5.80	7.70	3.49
800	1.00	-7.45	6.66	3.50
700	0.58	-9.10	5.65	3.91
600	0.14	-10.70	4.65	4.43
500	-0.40	-12.35	3.63	8.55
400	-0.10	-13.25	1.89	8.88
300	0.90	-12.80	1.62	9.22
200	1.70	-11.90	1.71	9.56
100	2.10	-10.90	1.93	9.89
32	1.89	-9.30	2.53	10.12
8	0.80	-5.40	2.87	10.20
2	XXXX	XXXX	3.00	10.22
0	XXXX	XXXX	XXXX	XXXX

SOIL TEMPERATURE (DEG C)

0.000	10.50
-0.125	13.22
-0.250	13.41
-0.500	13.22
-1.000	13.88
-2.000	15.63

WIND SPEED (M/SEC)

8	5.46
2	1.92

SURFACE SHEAR STRESS (DYNES/CM SQ.)X10

TAU= XXXX

SURFACE ENERGY TERMS (LY/SEC)X1000

S(D)=	3.00	Q(E,C)=	XXXX
R(N)=	XXXX	Q(S,O)=	XXXX
Q(C,O)=	XXXX		

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ.)X100

E= XXXX

C'SE IV-A GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	21459	20484	20109	19974
TAPE NO.	781.	782.	783.	784.
INTERVAL	12.00HR	12.00HR	12.00HR	12.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-16.34	0.02	-16.33	0.03	-16.33	0.03	-16.33	0.03
1000	-6.56	-8.41	-9.07	-10.92	-10.93	-12.78	-12.09	-13.94
900	-6.59	-8.02	-6.88	-8.31	-7.38	-8.81	-7.70	-9.14
800	-6.42	-7.42	-6.29	-7.29	-6.48	-7.48	-6.60	-7.60
700	-6.21	-6.79	-5.93	-6.51	-6.01	-6.59	-6.05	-6.63
600	-5.99	-6.13	-5.64	-5.78	-5.67	-5.81	-5.67	-5.81
500	-5.74	-5.34	-5.36	-4.96	-5.35	-4.95	-5.33	-4.9[illegible]
400	-5.47	-5.37	-5.08	-4.98	-5.04	-4.94	-5.01	-4.9[illegible]
300	-5.17	-6.07	-4.77	-5.67	-4.72	-5.62	-4.67	-5.57
200	-4.79	-6.49	-4.39	-6.09	-4.34	-6.04	-4.28	-5.98
100	-4.25	-6.35	-3.88	-5.98	-3.82	-5.92	-3.76	-5.86
32	-3.55	-5.44	-3.22	-5.11	-3.16	-5.06	-3.11	-5.01
8	-2.84	-3.64	-2.57	-3.37	-2.52	-3.32	-2.48	-3.28

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-12.05	0.01	-12.05	0.01	-12.05	0.01	-12.05	0.01
1000	-12.70	-8.52	-10.01	-5.83	-9.54	-5.36	-9.57	-5.39
900	-14.11	-8.31	-12.31	-6.51	-11.69	-5.89	-11.42	-5.62
800	-14.72	-7.27	-13.31	-5.86	-12.78	-5.33	-12.48	-5.03
700	-15.04	-5.94	-13.86	-4.76	-13.35	-4.25	-13.12	-4.02
600	-15.19	-4.49	-14.16	-3.46	-13.74	-3.04	-13.48	-2.78
500	-15.21	-2.86	-14.29	-1.94	-13.92	-1.57	-13.67	-1.32
400	-15.12	-1.87	-14.30	-1.05	-13.96	-0.71	-13.73	-0.48
300	-14.88	-2.08	-14.14	-1.34	-13.84	-1.04	-13.63	-0.83
200	-14.43	-2.53	-13.77	-1.87	-13.49	-1.59	-13.31	-1.41
100	-13.49	-2.59	-12.92	-2.02	-12.67	-1.77	-12.52	-1.62
32	-11.82	-2.52	-11.36	-2.06	-11.14	-1.84	-11.01	-1.71
8	-9.63	-4.23	-9.26	-3.86	-9.09	-3.69	-8.98	-3.58

CASE IV-A GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	781.		782.		783.		784.	
INTERVAL	12.00HR		12.00HR		12.00HR		12.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	10.55	1.85	11.99	3.29	12.58	3.88	12.90	4.20
900	10.26	2.56	11.45	3.75	11.95	4.25	12.21	4.51
800	10.11	3.45	11.21	4.55	11.66	5.00	11.90	5.24
700	10.04	4.39	11.06	5.41	11.50	5.85	11.72	6.07
600	9.96	5.31	10.95	6.30	11.37	6.72	11.59	6.94
500	9.95	6.32	10.90	7.27	11.31	7.68	11.52	7.89
400	9.93	8.04	10.86	8.97	11.26	9.37	11.47	9.58
300	9.94	8.32	10.84	9.22	11.24	9.62	11.44	9.82
200	9.[illegible]	8.22	10.83	9.12	11.21	9.50	11.41	9.70
100	10.00	8.07	10.86	8.93	11.25	9.32	11.45	9.52
32	9.98	7.45	10.84	8.31	11.22	8.69	11.42	8.89
8	10.04	7.17	10.91	8.04	11.29	8.42	11.49	8.62
2	10.05	7.05	10.91	7.91	11.29	8.29	11.48	8.48
0	10.07	XXXX	10.89	XXXX	11.27	XXXX	11.46	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	6.83	2.71	8.14	4.02	8.85	4.73	9.25	5.13
900	6.71	3.22	7.86	4.37	8.46	4.97	8.81	5.32
800	6.68	3.18	7.76	4.26	8.32	4.82	8.65	5.15
700	6.74	2.83	7.77	3.86	8.32	4.41	8.63	4.72
600	6.76	2.33	7.77	3.34	8.31	3.88	8.61	4.18
500	6.83	-1.72	7.84	-0.71	8.36	-0.19	8.65	0.10
400	6.90	-1.98	7.90	-0.98	8.41	-0.47	8.71	-0.17
300	6.99	-2.23	7.99	-1.23	8.52	-0.70	8.80	-0.42
200	7.11	-2.45	8.09	-1.47	8.61	-0.95	8.90	-0.66
100	7.31	-2.58	8.31	-1.58	8.83	-1.06	9.12	-0.77
32	7.44	-2.68	8.43	-1.69	8.95	-1.17	9.24	-0.88
8	7.61	-2.59	8.60	-1.60	9.11	-1.09	9.41	-0.79
2	7.74	-2.48	8.73	-1.49	9.24	-0.98	9.53	-0.69
0	8.17	XXXX	9.14	XXXX	9.66	XXXX	9.94	XXXX

CASE IV-A GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	781.	782.	783.	784.
INTERVAL	12.00HR	12.00HR	12.00HR	12.00HR

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	11.79	1.29	12.13	1.63	12.29	1.79	12.39	1.89
-0.125	13.03	-0.19	13.10	-0.12	13.12	-0.10	13.14	-0.08
-0.250	13.15	-0.26	13.16	-0.25	13.16	-0.25	13.16	-0.25
-0.500	13.12	-0.10	13.13	-0.09	13.12	-0.10	13.13	-0.09
-1.000	13.25	-0.63	13.25	-0.63	13.24	-0.64	13.25	-0.63
-2.000	-15.64	-31.27	-15.64	-31.27	-15.64	-31.27	-15.64	-31.27

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	10.06	4.60	9.62	4.16	9.44	3.98	9.33	3.87
2	7.77	5.85	7.38	5.46	7.23	5.31	7.15	5.23

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	3.18	0.18	3.18	0.18	3.18	0.18	3.18	0.18
R(N)	1.20	XXXX	1.19	XXXX	1.18	XXXX	1.18	XXXX
Q(C,O)	0.03	XXXX	-0.01	XXXX	-0.02	XXXX	-0.02	XXXX
Q(E,O)	1.65	XXXX	1.55	XXXX	1.49	XXXX	1.46	XXXX
Q(S,O)	-0.48	XXXX	-0.35	XXXX	-0.29	XXXX	-0.26	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	49.30	XXXX	45.02	XXXX	43.38	XXXX	42.38	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	8.90	XXXX	8.50	XXXX	8.50	XXXX	8.20	XXXX

CASE IV-A GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	19750	19669	18125	17609
TAPE NO.	785.	786.	787.	788.
INTERVAL	12.00HR	12.00HR	6.00HR	6.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-16.33	0.03	-16.33	0.03	-17.18	-0.01	-17.18	-0.01
1000	-12.89	-14.74	-13.43	-15.28	6.99	-0.01	-1.14	-8.14
900	-7.99	-9.42	-8.15	-9.58	7.29	0.21	4.98	-2.10
800	-6.77	-7.77	-6.83	-7.83	7.39	0.26	6.28	-0.85
700	-6.17	-6.75	-6.19	-6.77	7.45	0.23	6.77	-0.45
600	-5.75	-5.89	-5.76	-5.90	7.45	0.16	6.97	-0.32
500	-5.39	-4.99	-5.39	-4.99	7.41	0.06	7.07	-0.29
400	-5.06	-4.96	-5.04	-4.94	7.34	-0.15	7.07	-0.41
300	-4.71	-5.61	-4.70	-5.60	7.21	-0.44	7.01	-0.64
200	-4.32	-6.02	-4.30	-6.00	6.98	-0.42	6.82	-0.58
100	-3.79	-5.89	-3.77	-5.87	6.53	0.43	6.40	0.30
32	-3.13	-5.02	-3.11	-5.01	5.72	1.72	5.63	1.63
8	-2.50	-3.30	-2.48	-3.28	4.65	2.90	4.57	2.82

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-12.05	0.01	-12.05	0.01	-7.66	-0.01	-7.66	-0.01
1000	-9.74	-5.56	-9.92	-5.74	-8.45	-1.74	-5.70	1.01
900	-11.29	-5.49	-11.22	-5.42	-10.07	-2.92	-8.43	-1.28
800	-12.33	-4.88	-12.24	-4.79	-10.88	-3.32	-9.70	-2.15
700	-12.97	-3.87	-12.89	-3.79	-11.36	-3.38	-10.47	-2.49
600	-13.34	-2.64	-13.26	-2.56	-11.64	-3.25	-10.93	-2.54
500	-13.54	-1.19	-13.47	-1.12	-11.80	-3.00	-11.21	-2.41
400	-13.61	-0.36	-13.54	-0.29	-11.86	-2.71	-11.34	-2.19
300	-13.52	-0.72	-13.45	-0.65	-11.77	-3.45	-11.33	-3.01
200	-13.20	-1.30	-13.15	-1.25	-11.49	-4.99	-11.12	-4.62
100	-12.42	-1.52	-12.37	-1.47	-10.79	-6.30	-10.47	-5.98
32	-10.93	-1.63	-10.89	-1.59	-9.46	-6.76	-9.21	-6.51
8	-8.92	-3.52	-8.88	-3.48	-7.69	-6.24	-7.49	-6.05

CASE IV-A GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	785.		786.		787.		788.	
INTERVAL	12.00HR		12.00HR		6.00HR		6.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	13.03	4.33	13.14	4.44	15.17	3.08	16.03	3.94
900	12.34	4.64	12.43	4.73	14.83	2.22	15.43	2.82
800	12.03	5.37	12.11	5.45	14.60	1.46	15.06	1.92
700	11.84	6.19	11.92	6.27	14.44	0.79	14.83	1.18
600	11.71	7.06	11.79	7.14	14.31	0.12	14.63	0.44
500	11.63	8.00	11.72	8.09	14.21	-0.50	14.51	-0.20
400	11.58	9.69	11.66	9.77	14.12	-1.03	14.38	-0.77
300	11.55	9.93	11.63	10.01	14.03	-1.49	14.27	-1.25
200	11.52	9.81	11.60	9.89	13.92	-2.18	14.14	-1.96
100	11.56	9.63	11.64	9.71	13.82	-2.59	14.03	-2.38
32	11.53	9.00	11.61	9.08	13.55	-1.52	13.74	-1.33
8	11.59	8.72	11.67	8.80	13.31	-1.32	13.49	-1.14
2	11.59	8.59	11.66	8.66	12.79	-1.76	12.96	-1.59
0	11.57	XXXX	11.64	XXXX	11.94	XXXX	12.10	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	9.49	5.37	9.66	5.54	8.37	6.57	9.47	7.67
900	9.02	5.53	9.16	5.67	8.62	6.77	9.37	7.52
800	8.84	5.34	8.98	5.48	8.76	6.43	9.36	7.03
700	8.82	4.91	8.94	5.03	8.94	5.69	9.43	6.18
600	8.78	4.35	8.91	4.48	9.06	4.90	9.48	5.32
500	8.84	0.29	8.96	0.41	9.24	-3.00	9.60	-2.64
400	8.90	0.02	9.01	0.13	9.38	-3.38	9.71	-3.05
300	8.99	-0.23	9.11	-0.11	9.54	-3.75	9.86	-3.43
200	9.08	-0.48	9.21	-0.35	9.72	-4.09	10.02	-3.79
100	9.29	-0.60	9.41	-0.48	10.04	-4.30	10.31	-4.03
32	9.41	-0.71	9.53	-0.59	10.19	-4.50	10.47	-4.22
8	9.58	-0.62	9.69	-0.51	10.30	-4.52	10.64	-4.18
2	9.70	-0.52	9.82	-0.40	10.52	-4.33	10.83	-4.02
0	10.11	XXXX	10.23	XXXX	10.87	XXXX	11.14	XXXX

CASE IV-A GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	785.	786.	787.	788.
INTERVAL	12.00HR	12.00HR	6.00HR	6.00HR

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	12.44	1.94	12.47	1.97	13.30	-1.77	13.34	-1.73
-0.125	13.15	-0.07	13.16	-0.06	13.47	-0.63	13.47	-0.63
-0.250	13.16	-0.25	13.19	-0.22	13.08	-0.12	13.08	-0.12
-0.500	13.12	-0.10	13.13	-0.09	13.09	-0.04	13.11	-0.02
-1.000	13.24	-0.64	13.24	-0.64	13.57	-0.33	13.57	-0.33
-2.000	-15.64	-31.27	-15.64	-31.27	-15.64	-31.27	-15.64	-31.27

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	9.28	3.82	9.24	3.78	9.00	6.73	8.78	6.51
2	7.11	5.19	7.09	5.17	5.59	4.69	5.41	4.51

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	3.18	0.18	3.18	0.18	0.00	0.00	-0.01	-0.01
R(N)	1.17	XXXX	1.17	XXXX	-1.06	XXXX	-1.06	XXXX
Q(C,O)	-0.02	XXXX	-0.01	XXXX	-1.94	XXXX	-1.93	XXXX
Q(E,O)	1.43	XXXX	1.42	XXXX	1.27	XXXX	1.22	XXXX
Q(S,O)	-0.24	XXXX	-0.23	XXXX	-0.38	XXXX	-0.35	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	41.88	XXXX	41.50	XXXX	38.16	XXXX	36.24	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	8.20	XXXX	8.10	XXXX	3.90	XXXX	3.90	XXXX

CASE IV-A GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	17284	17064	16959	16875
TAPE NO.	789.	790.	791.	792.
INTERVAL	6.00HR	6.00HR	6.00HR	6.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-17.17	-0.00	-17.17	-0.00	-17.18	-0.01	-17.17	-0.00
1000	-5.45	-12.45	-8.02	-15.02	-9.68	-16.68	-10.83	-17.83
900	3.69	-3.39	2.89	-4.19	2.36	-4.72	1.98	-5.10
800	5.63	-1.50	5.21	-1.92	4.93	-2.20	4.73	-2.40
700	6.36	-0.86	6.10	-1.12	5.91	-1.31	5.78	-1.44
600	6.69	-0.60	6.51	-0.78	6.36	-0.93	6.27	-1.02
500	6.85	-0.51	6.71	-0.65	6.60	-0.76	6.53	-0.83
400	6.91	-0.58	6.80	-0.69	6.72	-0.77	6.65	-0.84
300	6.88	-0.77	6.78	-0.86	6.71	-0.94	6.66	-0.98
200	6.71	-0.69	6.64	-0.76	6.59	-0.81	6.55	-0.85
100	6.32	0.22	6.26	0.16	6.22	0.12	6.19	0.09
32	5.55	1.55	5.51	1.51	5.48	1.48	5.46	1.46
8	4.51	2.76	4.49	2.74	4.46	2.71	4.43	2.68

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-7.66	-0.01	-7.66	-0.01	-7.67	-0.01	-7.66	-0.01
1000	-5.11	1.60	-5.10	1.61	-5.25	1.46	-5.40	1.31
900	-7.75	-0.60	-7.41	-0.26	-7.24	-0.10	-7.14	0.01
800	-9.15	-1.60	-8.83	-1.28	-8.67	-1.12	-8.54	-0.99
700	-10.02	-2.04	-9.72	-1.74	-9.59	-1.61	-9.48	-1.50
600	-10.55	-2.16	-10.29	-1.90	-10.19	-1.80	-10.09	-1.70
500	-10.88	-2.08	-10.65	-1.85	-10.57	-1.77	-10.48	-1.68
400	-11.07	-1.92	-10.86	-1.71	-10.78	-1.63	-10.70	-1.55
300	-11.08	-2.76	-10.90	-2.58	-10.83	-2.51	-10.76	-2.44
200	-10.90	-4.40	-10.75	-4.25	-10.68	-4.18	-10.62	-4.12
100	-10.25	-5.76	-10.16	-5.67	-10.11	-5.62	-10.05	-5.56
32	-9.06	-6.36	-8.95	-6.25	-8.91	-6.21	-8.86	-6.16
8	-7.38	-5.93	-7.28	-5.84	-7.25	-5.80	-7.21	-5.76

CASE IV-A GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	789.	790.	791.	792.
INTERVAL	6.00HR	6.00HR	6.00HR	6.00HR

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	16.43	4.34	16.63	4.54	16.76	4.67	16.84	4.75
900	15.71	3.10	15.87	3.26	15.96	3.35	16.03	3.42
800	15.30	2.16	15.42	2.28	15.51	2.37	15.56	2.42
700	15.03	1.38	15.14	1.49	15.21	1.56	15.26	1.61
600	14.81	0.62	14.90	0.71	14.97	0.78	15.02	0.83
500	14.66	-0.05	14.74	0.03	14.81	0.10	14.86	0.15
400	14.53	-0.62	14.61	-0.54	14.66	-0.49	14.71	-0.44
300	14.41	-1.11	14.49	-1.03	14.54	-0.98	14.59	-0.93
200	14.27	-1.83	14.34	-1.76	14.39	-1.71	14.45	-1.65
100	14.15	-2.26	14.22	-2.19	14.26	-2.15	14.32	-2.09
32	13.85	-1.22	13.92	-1.15	13.97	-1.10	14.02	-1.05
8	13.59	-1.04	13.66	-0.97	13.71	-0.92	13.76	-0.87
2	13.05	-1.50	13.11	-1.44	13.16	-1.39	13.22	-1.33
0	12.19	XXXX	12.24	XXXX	12.29	XXXX	12.36	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	10.09	8.29	10.45	8.65	10.71	8.91	10.98	9.18
900	9.81	7.96	10.06	8.21	10.25	8.40	10.49	8.64
800	9.71	7.38	9.92	7.59	10.07	7.74	10.29	7.96
700	9.74	6.49	9.92	6.67	10.04	6.79	10.25	7.00
600	9.75	5.59	9.91	5.75	10.03	5.87	10.22	6.06
500	9.85	-2.39	10.00	-2.24	10.11	-2.13	10.29	-1.95
400	9.93	-2.83	10.09	-2.67	10.17	-2.59	10.37	-2.39
300	10.08	-3.21	10.20	-3.09	10.31	-2.98	10.50	-2.79
200	10.24	-3.57	10.37	-3.44	10.45	-3.36	10.64	-3.17
100	10.52	-3.82	10.64	-3.70	10.72	-3.62	10.91	-3.43
32	10.68	-4.01	10.79	-3.90	10.88	-3.81	11.07	-3.62
8	10.85	-3.97	10.95	-3.87	11.04	-3.78	11.23	-3.59
2	11.04	-3.81	11.14	-3.71	11.23	-3.62	11.41	-3.44
0	11.34	XXXX	11.45	XXXX	11.53	XXXX	11.70	XXXX

CASE IV-A GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	789.	790.	791.	792.
INTERVAL	6.00HR	6.00HR	6.00HR	6.00HR

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	13.36	-1.71	13.39	-1.68	13.39	-1.68	13.42	-1.65
-0.125	13.47	-0.63	13.47	-0.63	13.47	-0.63	13.48	-0.62
-0.250	13.07	-0.13	13.08	-0.12	13.08	-0.12	13.08	-0.12
-0.500	13.10	-0.03	13.10	-0.03	13.10	-0.03	13.11	-0.02
-1.000	13.50	-0.40	13.57	-0.33	13.57	-0.33	13.57	-0.33
-2.000	-15.64	-31.27	-15.64	-31.27	-15.64	-31.27	-15.63	-31.26

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	8.65	6.38	8.56	6.29	8.51	6.24	8.47	6.20
2	5.30	4.40	5.23	4.33	5.20	4.30	5.17	4.27

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.00	0.00	-0.00	-0.00	0.00	0.00	0.00	0.00
R(N)	-1.06	XXXX	-1.06	XXXX	-1.06	XXXX	-1.06	XXXX
Q(C,0)	-1.91	XXXX	-1.89	XXXX	-1.89	XXXX	-1.86	XXXX
Q(E,0)	1.17	XXXX	1.15	XXXX	1.14	XXXX	1.10	XXXX
Q(S,0)	-0.33	XXXX	-0.32	XXXX	-0.31	XXXX	-0.29	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	35.08	XXXX	34.28	XXXX	33.92	XXXX	33.60	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	3.90	XXXX	3.70	XXXX	3.70	XXXX	3.60	XXXX

CASE IV-A GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	13859	13859	13849	13834
TAPE NO.	793.	794.	795.	796.
INTERVAL	2.00HR	2.00HR	2.00HR	2.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-5.34	0.00	-5.33	0.01	-5.34	0.00	-5.34	0.00
1000	7.52	-0.78	4.41	-3.89	2.32	-5.98	0.88	-7.42
900	8.81	0.35	8.14	-0.32	7.66	-0.80	7.31	-1.15
800	9.26	0.63	8.99	0.36	8.79	0.16	8.64	0.01
700	9.45	0.65	9.31	0.51	9.20	0.40	9.12	0.32
600	9.48	0.52	9.40	0.44	9.33	0.37	9.28	0.32
500	9.43	0.35	9.38	0.30	9.33	0.25	9.29	0.21
400	9.29	0.94	9.25	0.90	9.22	0.87	9.19	0.84
300	9.06	2.26	9.03	2.23	9.01	2.21	8.99	2.19
200	8.67	3.67	8.65	3.65	8.63	3.63	8.61	3.61
100	7.95	4.77	7.95	4.77	7.92	4.74	7.91	4.73
32	6.83	4.88	6.82	4.87	6.81	4.86	6.79	4.84
8	5.49	4.49	5.47	4.47	5.46	4.46	5.45	4.45

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	3.49	0.01	3.49	0.01	3.48	0.01	3.48	0.01
1000	6.85	3.95	6.76	3.86	6.53	3.64	6.28	3.38
900	8.40	3.40	8.55	3.55	8.63	3.63	8.68	3.68
800	8.82	1.77	8.93	1.88	9.01	1.96	9.05	2.00
700	8.89	-0.21	8.97	-0.13	9.03	-0.07	9.07	-0.03
600	8.86	-2.22	8.91	-2.17	8.95	-2.13	8.98	-2.10
500	8.72	-4.53	8.76	-4.49	8.79	-4.46	8.82	-4.43
400	8.51	-6.33	8.54	-6.30	8.56	-6.28	8.58	-6.26
300	8.21	-6.39	8.24	-6.36	8.25	-6.35	8.27	-6.33
200	7.77	-4.88	7.78	-4.86	7.80	-4.85	7.81	-4.84
100	7.07	-2.57	7.10	-2.55	7.10	-2.55	7.11	-2.54
32	6.02	-0.78	6.04	-0.76	6.05	-0.75	6.06	-0.74
8	4.83	1.13	4.84	1.14	4.84	1.14	4.85	1.15

CASE IV-A GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	793.		794.		795.		796.	
INTERVAL	2.00HR		2.00HR		2.00HR		2.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	15.76	2.21	15.86	2.31	15.92	2.37	15.97	2.42
900	16.63	2.13	16.70	2.20	16.75	2.25	16.77	2.27
800	16.93	1.48	16.98	1.53	17.02	1.57	17.03	1.58
700	17.09	0.69	17.12	0.72	17.14	0.74	17.16	0.76
600	17.14	-0.21	17.17	-0.18	17.19	-0.16	17.19	-0.16
500	17.18	-1.13	17.19	-1.12	17.21	-1.10	17.22	-1.09
400	17.16	-1.80	17.16	-1.80	17.18	-1.78	17.19	-1.77
300	17.01	-1.99	17.12	-1.88	17.13	-1.87	17.13	-1.87
200	16.98	-2.17	16.99	-2.16	17.01	-2.14	17.01	-2.14
100	16.81	-2.57	16.82	-2.56	16.82	-2.56	16.83	-2.55
32	16.42	-3.18	16.43	-3.17	16.44	-3.16	16.44	-3.16
8	16.05	-3.65	16.05	-3.65	16.07	-3.63	16.07	-3.63
2	15.28	-4.45	15.28	-4.45	15.30	-4.43	15.29	-4.44
0	14.24	XXXX	14.24	XXXX	14.25	XXXX	14.24	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	8.70	3.47	8.87	3.64	8.98	3.75	9.06	3.83
900	9.95	4.54	10.06	4.65	10.13	4.72	10.19	4.78
800	10.57	4.70	10.64	4.77	10.69	4.82	10.73	4.86
700	11.03	4.40	11.08	4.45	11.12	4.49	11.15	4.52
600	11.36	3.98	11.40	4.02	11.42	4.04	11.45	4.07
500	11.69	-1.22	11.71	-1.20	11.73	-1.18	11.75	-1.16
400	11.95	-1.45	11.97	-1.43	11.99	-1.41	12.01	-1.39
300	12.22	-1.69	12.23	-1.68	12.25	-1.66	12.26	-1.65
200	12.47	-1.93	12.48	-1.92	12.51	-1.89	12.51	-1.89
100	12.79	-2.10	12.81	-2.08	12.81	-2.08	12.82	-2.07
32	12.96	-2.27	12.98	-2.25	12.99	-2.24	13.01	-2.22
8	13.14	-2.21	13.15	-2.20	13.16	-2.19	13.17	-2.18
2	13.36	-2.02	13.37	-2.01	13.38	-2.00	13.39	-1.99
0	13.66	XXXX	13.67	XXXX	13.67	XXXX	13.69	XXXX

CASE IV-A GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	793.		794.		795.		796.	
INTERVAL	2.00HR		2.00HR		2.00HR		2.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	14.40	-0.98	14.40	-0.98	14.41	-0.97	14.41	-0.97
-0.125	13.49	-0.09	13.49	-0.09	13.49	-0.09	13.49	-0.09
-0.250	12.94	-0.03	12.94	-0.03	12.94	-0.03	12.95	-0.02
-0.500	13.08	0.01	13.08	0.01	13.07	0.00	13.07	0.00
-1.000	13.81	-0.09	13.81	-0.09	13.81	-0.09	13.80	-0.10
-2.000	-15.64	-31.27	-15.64	-31.27	-15.64	-31.27	-15.64	-31.27

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	7.31	3.48	7.31	3.48	7.31	3.48	7.30	3.47
2	4.21	3.79	4.21	3.79	4.21	3.79	4.21	3.79

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	-0.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00
R(N)	-1.05	XXXX	-1.05	XXXX	-1.05	XXXX	-1.05	XXXX
Q(C,0)	-2.04	XXXX	-2.03	XXXX	-2.03	XXXX	-2.03	XXXX
Q(E,0)	1.03	XXXX	1.03	XXXX	1.02	XXXX	1.02	XXXX
Q(S,0)	-0.04	XXXX	-0.04	XXXX	-0.04	XXXX	-0.04	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	24.36	XXXX	24.32	XXXX	24.30	XXXX	24.28	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	1.50	XXXX	1.20	XXXX	1.30	XXXX	1.30	XXXX

CASE IV-A GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	13844	13839	18029	18024
TAPE NO.	797.	798.	799.	800.
INTERVAL	2.00HR	2.00HR	1.00HR	1.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-5.34	0.00	-5.34	0.00	-1.38	0.01	-1.38	0.01
1000	-0.14	-8.44	-0.90	-9.20	7.56	-0.69	6.00	-2.25
900	7.04	-1.[illegible]	6.83	-1.63	8.45	0.15	8.17	-0.13
800	8.51	-0.12	8.41	-0.22	8.75	0.36	8.65	0.26
700	9.04	0.24	8.98	0.18	8.82	0.38	8.78	0.34
600	9.23	0.27	9.19	0.23	8.76	0.26	8.74	0.24
500	9.25	0.17	9.23	0.15	8.61	0.02	8.60	0.01
400	9.17	0.82	9.15	0.80	8.40	0.33	8.35	0.28
300	8.97	2.17	8.95	2.15	8.11	1.51	8.11	1.51
200	8.55	3.55	8.59	3.59	7.70	2.90	7.70	2.90
100	7.90	4.72	7.89	4.71	7.01	4.41	7.01	4.41
32	6.80	4.85	6.79	4.84	6.00	4.92	6.00	4.92
8	5.45	4.45	5.45	4.45	4.83	4.53	4.83	4.53

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	3.48	0.01	3.48	0.01	3.24	-0.01	3.24	-0.01
1000	6.03	3.13	5.79	2.89	6.83	2.58	6.63	2.38
900	8.69	3.69	8.70	3.70	9.71	3.26	9.74	3.29
800	9.09	2.04	9.11	2.06	11.06	2.41	11.08	2.43
700	9.10	-0.00	9.12	0.02	11.79	0.94	11.80	0.95
600	9.00	-2.08	9.02	-2.06	12.15	-0.90	12.21	-0.84
500	8.83	-4.42	8.84	-4.41	12.38	-2.92	12.36	-2.92
400	8.59	-6.25	8.60	-6.24	12.38	-4.49	12.38	-4.49
300	8.28	-6.32	8.28	-6.32	12.21	-4.21	12.21	-4.21
200	7.82	-4.83	7.82	-4.82	11.78	-2.67	11.78	-2.67
100	7.11	-2.53	7.13	-2.52	10.95	-0.50	10.94	-0.51
32	6.06	-0.74	6.06	-0.74	9.47	1.17	9.47	1.17
8	4.85	1.15	4.86	1.16	7.66	2.26	7.66	2.26

CASE IV-A GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	797.		798.		799.		800.	
INTERVAL	2.00HR		2.00HR		1.00HR		1.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	16.01	2.46	16.02	2.47	14.61	1.11	14.62	1.12
900	16.79	2.29	16.81	2.31	15.91	1.55	15.91	1.55
800	17.06	1.61	17.06	1.61	16.49	1.25	16.51	1.27
700	17.19	0.79	17.19	0.79	16.87	0.77	16.87	0.77
600	17.21	-0.14	17.21	-0.14	17.09	0.12	17.09	0.12
500	17.22	-1.09	17.25	-1.08	17.24	-0.61	17.25	-0.60
400	17.20	-1.76	17.20	-1.76	17.33	-1.14	17.34	-1.13
300	17.14	-1.86	17.14	-1.86	17.37	-1.33	17.36	-1.34
200	17.02	-2.13	17.02	-2.13	17.33	-1.70	17.33	-1.70
100	16.84	-2.54	16.84	-2.54	17.22	-1.90	17.22	-1.90
32	16.45	-3.17	16.44	-3.16	16.90	-2.38	16.90	-2.38
8	16.07	-3.63	16.07	-3.63	16.58	-2.85	16.58	-2.85
2	15.30	-4.43	15.30	-4.43	15.94	-3.56	15.94	-3.56
0	14.25	XXXX	14.25	XXXX	14.94	XXXX	14.94	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	9.11	3.88	9.17	3.94	7.73	1.64	7.74	1.65
900	10.21	4.80	10.25	4.84	9.31	3.02	9.29	3.00
800	10.74	4.87	10.77	4.90	10.21	3.45	10.18	3.42
700	11.16	4.53	11.19	4.56	10.91	3.43	10.89	3.41
600	11.45	4.07	11.47	4.09	11.41	3.23	11.39	3.21
500	11.75	-1.16	11.76	-1.15	11.96	-1.22	11.84	-1.24
400	11.91	-1.49	12.01	-1.39	12.25	-1.31	12.22	-1.34
300	12.26	-1.65	12.29	-1.62	12.61	-1.45	12.59	-1.47
200	12.51	-1.89	12.51	-1.89	12.93	-1.61	12.92	-1.62
100	12.81	-2.08	12.83	-2.06	13.32	-1.71	13.29	-1.74
32	12.99	-2.24	13.01	-2.22	13.51	-1.85	13.49	-1.87
8	13.17	-2.18	13.17	-2.18	13.67	-1.81	13.65	-1.83
2	13.39	-1.99	13.39	-1.99	13.85	-1.66	13.83	-1.68
0	13.68	XXXX	13.68	XXXX	14.12	XXXX	14.11	XXXX

CASE IV-A GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	797.		798.		799.		800.	
INTERVAL	2.00HR		2.00HR		1.00HR		1.00HR	

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	14.41	-0.97	14.41	-0.97	14.56	-0.39	14.56	-0.39
-0.125	13.49	-0.09	13.49	-0.09	13.45	-0.01	13.45	-0.01
-0.250	12.94	-0.03	12.94	-0.03	12.91	-0.01	12.91	-0.01
-0.500	13.07	0.00	13.08	0.01	13.07	-0.01	13.07	-0.01
-1.000	13.81	-0.09	13.81	-0.09	13.85	-0.05	13.86	-0.04
-2.000	-15.64	-31.27	-15.65	-31.28	-15.64	-31.27	-15.64	-31.27

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	7.31	3.48	7.30	3.47	9.06	3.65	9.06	3.65
2	4.21	3.79	4.21	3.79	5.52	4.07	5.51	4.06

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
R(N)	-1.05	XXXX	-1.05	XXXX	-1.08	XXXX	-1.08	XXXX
Q(C,O)	-2.03	XXXX	-2.03	XXXX	-2.31	XXXX	-2.34	XXXX
Q(E,O)	1.02	XXXX	1.02	XXXX	1.13	XXXX	1.13	XXXX
Q(S,O)	-0.04	XXXX	-0.04	XXXX	0.12	XXXX	0.11	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	24.32	XXXX	24.32	XXXX	38.40	XXXX	38.38	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	1.30	XXXX	1.20	XXXX	0.70	XXXX	0.60	XXXX

CASE IV-A GPAC OUTPUT DATA

VELOCITY COMPONENTS

K(CM SQ/SEC)	18024	18029	18024	18024
TAPE NO.	801.	802.	803.	804.
INTERVAL	1.00HR	1.00HR	1.00HR	1.00HR

U COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	-1.38	0.01	-1.38	0.01	-1.38	0.01	-1.38	0.01
1000	4.78	-3.47	3.84	-4.41	3.10	-5.15	2.51	-5.74
900	7.95	-0.35	7.75	-0.55	7.60	-0.70	7.47	-0.83
800	8.57	0.18	8.51	0.12	8.45	0.06	8.41	0.02
700	8.74	0.30	8.71	0.27	8.68	0.24	8.66	0.22
600	8.72	0.22	8.70	0.20	8.69	0.19	8.68	0.18
500	8.59	0.00	8.58	-0.01	8.58	-0.01	8.57	-0.02
400	8.39	0.32	8.38	0.31	8.38	0.31	8.38	0.31
300	8.11	1.51	8.11	1.51	8.10	1.50	8.10	1.50
200	7.69	2.89	7.69	2.89	7.69	2.89	7.69	2.89
100	7.01	4.41	7.01	4.41	7.01	4.41	7.01	4.41
32	6.00	4.92	6.00	4.92	6.00	4.92	6.00	4.92
8	4.83	4.53	4.83	4.53	4.82	4.52	4.83	4.53

V COMPONENT (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
GEO	3.24	-0.01	3.24	-0.01	3.24	-0.01	3.24	-0.01
1000	6.45	2.20	6.24	1.99	6.05	1.80	5.88	1.63
900	9.76	3.31	9.76	3.31	9.76	3.31	9.76	3.31
800	11.11	2.46	11.12	2.47	11.13	2.48	11.14	2.49
700	11.82	0.97	11.83	0.98	11.83	0.98	11.84	0.99
600	12.22	-0.83	12.22	-0.83	12.22	-0.83	12.23	-0.82
500	12.39	-2.91	12.39	-2.91	12.39	-2.91	12.39	-2.91
400	12.38	-4.49	12.38	-4.49	12.38	-4.49	12.39	-4.48
300	12.21	-4.21	12.21	-4.21	12.21	-4.21	12.21	-4.21
200	11.78	-2.67	11.78	-2.67	11.78	-2.67	11.79	-2.66
100	10.94	-0.51	10.94	-0.51	10.94	-0.51	10.94	-0.51
32	9.47	1.17	9.47	1.17	9.47	1.17	9.47	1.17
8	7.66	2.27	7.66	2.26	7.66	2.26	7.66	2.26

CASE IV-A GPAC OUTPUT DATA

AIR TEMPERATURE AND VAPOR PRESSURE

TAPE NO.	801.		802.		803.		804.	
INTERVAL	1.00HR		1.00HR		1.00HR		1.00HR	

AIR TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	14.65	1.15	14.66	1.16	14.67	1.17	14.69	1.19
900	15.93	1.57	15.94	1.58	15.94	1.58	15.95	1.59
800	16.51	1.27	16.52	1.28	16.53	1.29	16.53	1.29
700	16.87	0.77	16.90	0.80	16.90	0.80	16.90	0.80
600	17.09	0.12	17.09	0.12	17.09	0.12	17.10	0.13
500	17.25	-0.60	17.25	-0.60	17.26	-0.59	17.26	-0.59
400	17.34	-1.13	17.34	-1.13	17.34	-1.13	17.34	-1.13
300	17.37	-1.33	17.37	-1.33	17.37	-1.33	17.38	-1.32
200	17.33	-1.70	17.34	-1.69	17.33	-1.70	17.34	-1.69
100	17.21	-1.91	17.22	-1.90	17.22	-1.90	17.21	-1.91
32	16.90	-2.38	16.91	-2.37	16.90	-2.38	16.90	-2.38
8	16.59	-2.84	16.59	-2.84	16.59	-2.84	16.59	-2.84
2	15.94	-3.56	15.95	-3.55	15.95	-3.55	15.95	-3.55
0	14.94	XXXX	14.95	XXXX	14.95	XXXX	14.95	XXXX

VAPOR PRESSURE (MB)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
1000	7.81	1.72	7.85	1.76	7.87	1.78	7.87	1.78
900	9.36	3.07	9.39	3.10	9.41	3.12	9.37	3.08
800	10.25	3.49	10.27	3.51	10.27	3.51	10.23	3.47
700	10.92	3.44	10.94	3.46	10.95	3.47	10.92	3.44
600	11.42	3.24	11.44	3.26	11.43	3.25	11.42	3.24
500	11.89	-1.19	11.91	-1.17	11.91	-1.17	11.90	-1.18
400	12.27	-1.29	12.28	-1.28	12.26	-1.30	12.27	-1.29
300	12.62	-1.44	12.63	-1.43	12.62	-1.44	12.62	-1.44
200	12.94	-1.60	12.96	-1.58	12.95	-1.59	12.95	-1.59
100	13.32	-1.71	13.33	-1.70	13.32	-1.71	13.33	-1.70
32	13.51	-1.85	13.53	-1.83	13.52	-1.84	13.52	-1.84
8	13.69	-1.79	13.69	-1.79	13.69	-1.79	13.69	-1.79
2	13.86	-1.65	13.87	-1.64	13.86	-1.65	13.86	-1.65
0	14.12	XXXX	14.14	XXXX	14.13	XXXX	14.13	XXXX

CASE IV-A GPAC OUTPUT DATA

MISCELLANEOUS VARIABLES

TAPE NO.	801.	802.	803.	804.
INTERVAL	1.00HR	1.00HR	1.00HR	1.00HR

SOIL TEMPERATURE (DEG C)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
0.000	14.57	-0.38	14.56	-0.39	14.56	-0.39	14.56	-0.39
-0.125	13.45	-0.01	13.45	-0.01	13.45	-0.01	13.45	-0.01
-0.250	12.91	-0.01	12.91	-0.01	12.91	-0.01	12.91	-0.01
-0.500	13.06	-0.02	13.07	-0.01	13.07	-0.01	13.07	-0.01
-1.000	13.86	-0.04	13.86	-0.04	13.86	-0.04	13.85	-0.05
-2.000	-15.64	-31.27	-15.64	-31.27	-15.64	-31.27	-15.64	-31.27

WIND SPEED (M/SEC)

LEVEL(M)	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
8	9.06	3.65	9.06	3.65	9.06	3.65	9.06	3.65
2	5.52	4.07	5.52	4.07	5.52	4.07	5.52	4.07

SURFACE ENERGY TERMS (LY/SEC)X1000

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
S(D)	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-0.00
R(N)	-1.08	XXXX	-1.08	XXXX	-1.08	XXXX	-1.08	XXXX
Q(C,0)	-2.33	XXXX	-2.33	XXXX	-2.33	XXXX	-2.33	XXXX
Q(E,0)	1.13	XXXX	1.13	XXXX	1.13	XXXX	1.13	XXXX
Q(S,0)	0.12	XXXX	0.12	XXXX	0.12	XXXX	0.12	XXXX

SURFACE SHEAR STRESS (DYNES/CM SQ)X10

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
TAU	38.40	XXXX	38.40	XXXX	38.40	XXXX	38.42	XXXX

INTEGRATED EVAPOTRANSPIRATION (GM/CM SQ)X100

PARAMETER	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF	GPAC	DIFF
E	0.60	XXXX	0.60	XXXX	0.60	XXXX	-0.60	XXXX

ROOT MEAN SQUARES OF THE DIFFERENCES [illegible]
THE PREDICTED AND OBSERVED ATMOSPHERIC COLUMNS

CASE IV-A 12.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		4.70	10.07	4.66	7.91	13.40
PERSIST DIFF		5.86	22.77	13.23	4.67	1.65
GPAC DIFF	781.	6.16	4.83	6.40	2.57	12.78
GPAC DIFF	782.	6.26	3.71	7.30	2.70	12.79
GPAC DIFF	783.	6.58	3.35	7.69	2.92	12.79
GPAC DIFF	784.	6.79	3.20	7.90	3.09	12.79
GPAC DIFF	785.	6.99	3.14	8.01	3.20	12.79
GPAC DIFF	786.	7.10	3.12	8.09	3.28	12.79

CASE IV-A 6.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		7.99	7.06	14.50	11.03	14.20
PERSIST DIFF		2.14	19.68	2.36	3.39	0.40
GPAC DIFF	787.	0.97	4.14	1.74	4.93	12.79
GPAC DIFF	788.	2.53	3.68	1.88	5.12	12.79
GPAC DIFF	789.	3.74	3.49	1.97	5.25	12.79
GPAC DIFF	790.	4.48	3.37	2.01	5.32	12.79
GPAC DIFF	791.	4.96	3.31	2.05	5.38	12.79
GPAC DIFF	792.	5.30	3.26	2.06	5.44	12.78

ROOT MEAN SQUARES OF THE DIFFERENCES BETWEEN
THE PREDICTED AND OBSERVED ATMOSPHERIC COLUMNS

CASE IV-A 2.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		7.01	9.70	17.89	11.97	14.13
PERSIST DIFF		1.06	2.97	0.99	1.13	0.37
GPAC DIFF	793.	2.61	3.61	2.40	3.02	12.77
GPAC DIFF	794.	2.79	3.60	2.41	3.06	12.77
GPAC DIFF	795.	3.06	3.58	2.41	3.09	12.77
GPAC DIFF	796.	3.29	3.55	2.42	3.11	12.77
GPAC DIFF	797.	3.48	3.53	2.42	3.12	12.77
GPAC DIFF	798.	3.63	3.51	2.42	3.14	12.78

CASE IV-A 1.00 HOUR

	TAPE NO.	U (M/SEC)	V (M/SEC)	T(AIR) (DEG C)	E (MB)	T(SOIL) (DEG C)
RMS MAGNITUDE		6.60	11.30	17.62	12.25	14.02
PERSIST DIFF		0.64	1.38	0.69	0.56	0.19
GPAC DIFF	799.	2.42	2.56	1.80	2.26	12.77
GPAC DIFF	800.	2.49	2.55	1.80	2.26	12.77
GPAC DIFF	801.	2.59	2.54	1.80	2.27	12.77
GPAC DIFF	802.	2.70	2.52	1.80	2.28	12.77
GPAC DIFF	803.	2.80	2.51	1.81	2.28	12.77
GPAC DIFF	804.	2.89	2.50	1.81	2.27	12.77

II. RELATIONSHIPS BETWEEN THE ALTERNATE EXCHANGE COEFFICIENTS, THE TEMPERATURE GRADIENT IN THE SURFACE LAYER, AND THE WIND SPEED AT THE HEIGHT OF EIGHT METERS

In order to illustrate the relationship between the alternate exchange coefficients and gradients of atmospheric variables in the surface layer, temporal plots of the temperature difference between the surface and 8-m height and the associated wind speed at 8-m height for Case I-B will be shown. This case has been chosen for illustration primarily because a large diurnal temperature change is in evidence and, consequently, the effects of atmospheric stability are accentuated. Two sets of curves are shown, one for a 12 hr period and the other for a 48 hr period.

Figures II.1 through II.4 are 12 hr solutions for the most general conditions (Tape No. 755) for Case I-B. Inspection of these four figures simultaneously will show the interrelationships of the variables. At the initial time the surface of the soil is approximately 2.95 deg C cooler than the air temperature and the wind speed at 8-m height is 1.98 m/sec. Correspondingly, the values of the exchange coefficients $K_{m,8}$ and D_8 are, respectively, 1700 cm^2/sec and 0.46 cm/sec. The sun is above the horizon at this time and heat is being added to the surface.

When the computer is placed in the compute mode, there is a sudden increase in the wind speed at 8-m height as the computer adjusts the input conditions to conform to the meteorological equations. Accompanying the increase in S_8 are corresponding rapid increases in $K_{m,8}$ and D_8. After this sudden acceleration, the wind

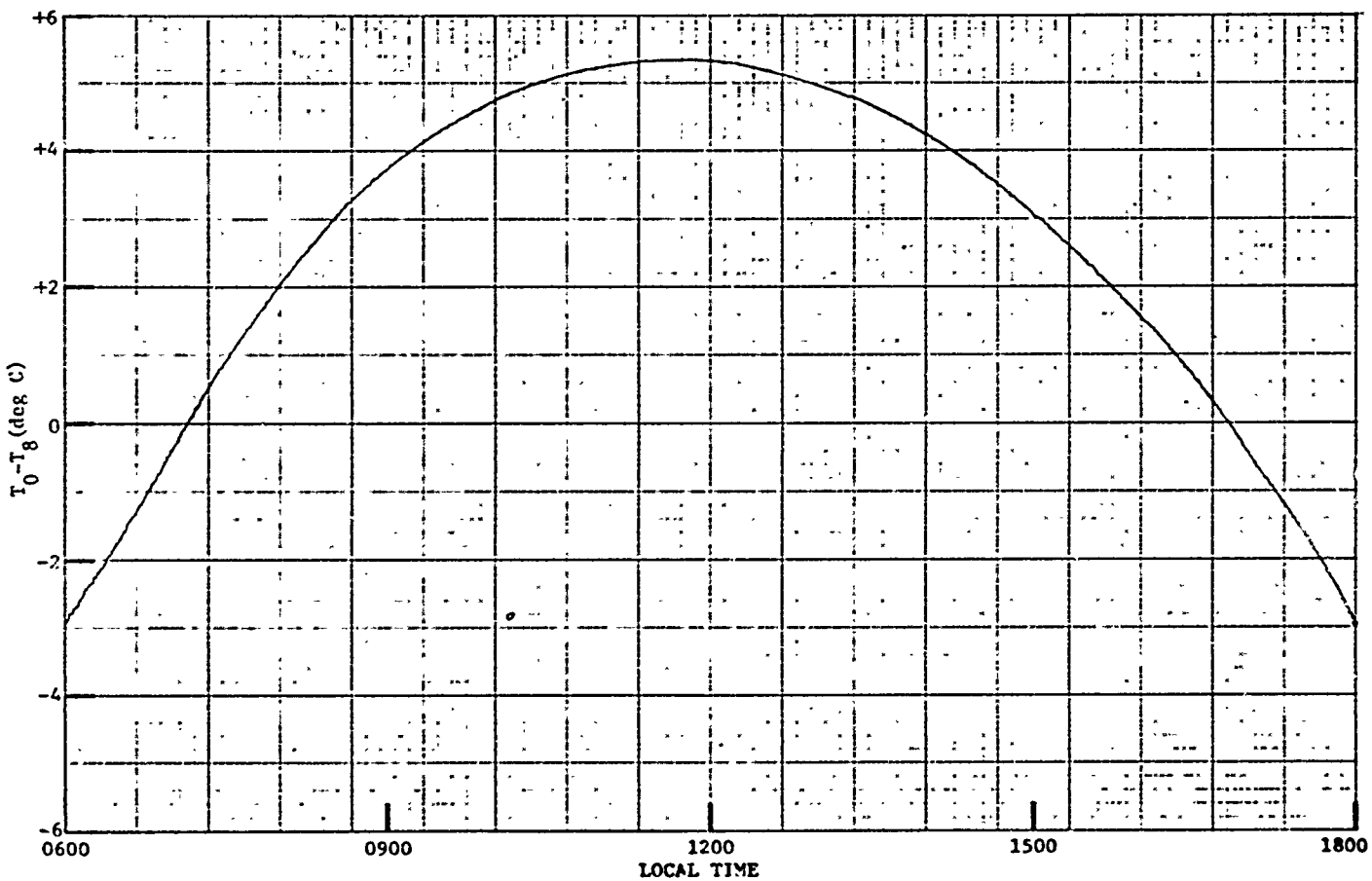

Figure II.1 Twelve hour simulation of the difference in temperature between the surface and 8-m height, T_0-T_8, for Case I-B.

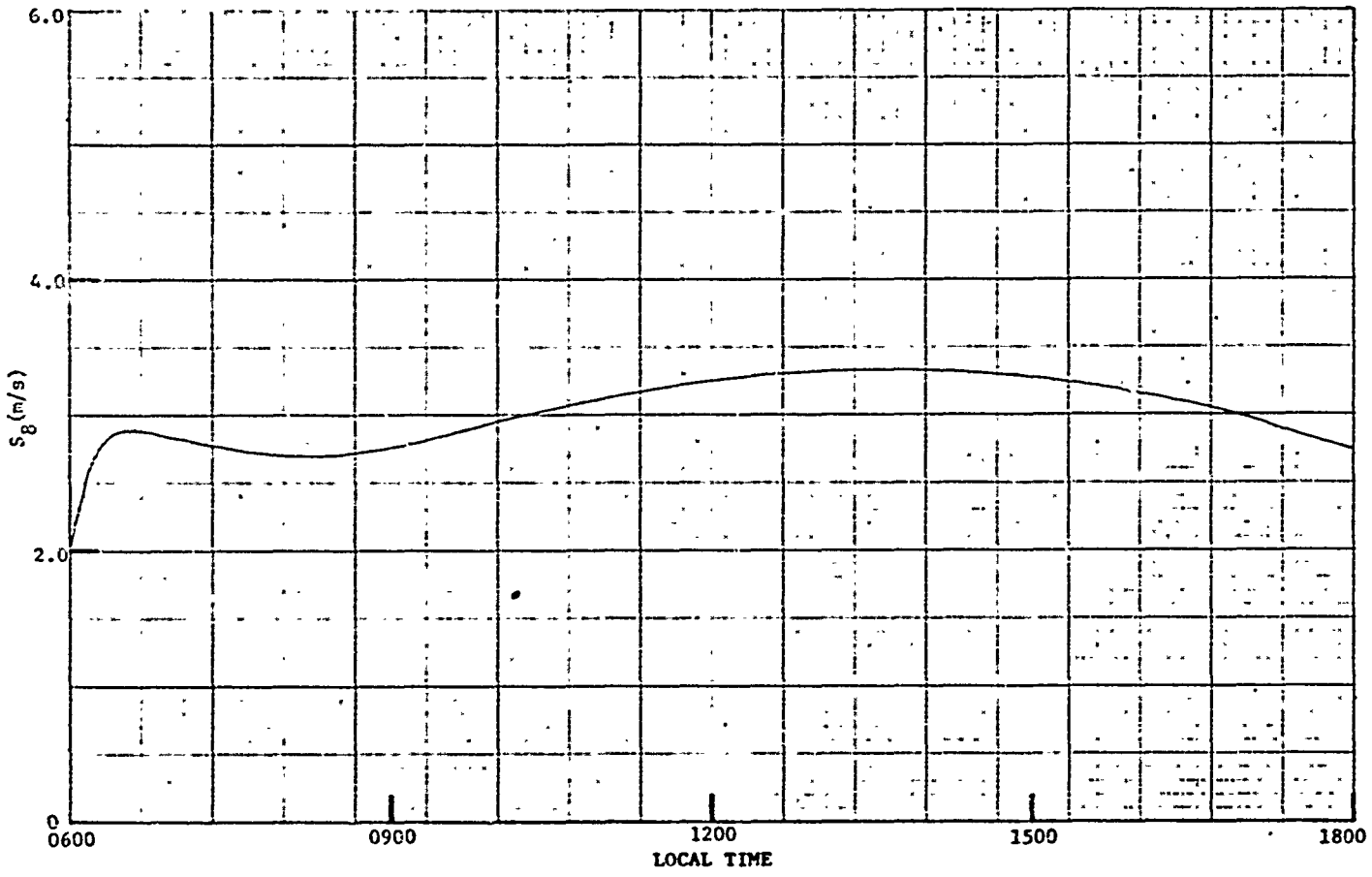

Figure II.2 Twelve hour simulation of the wind speed, S_8 at 8-m height for Case I-B.

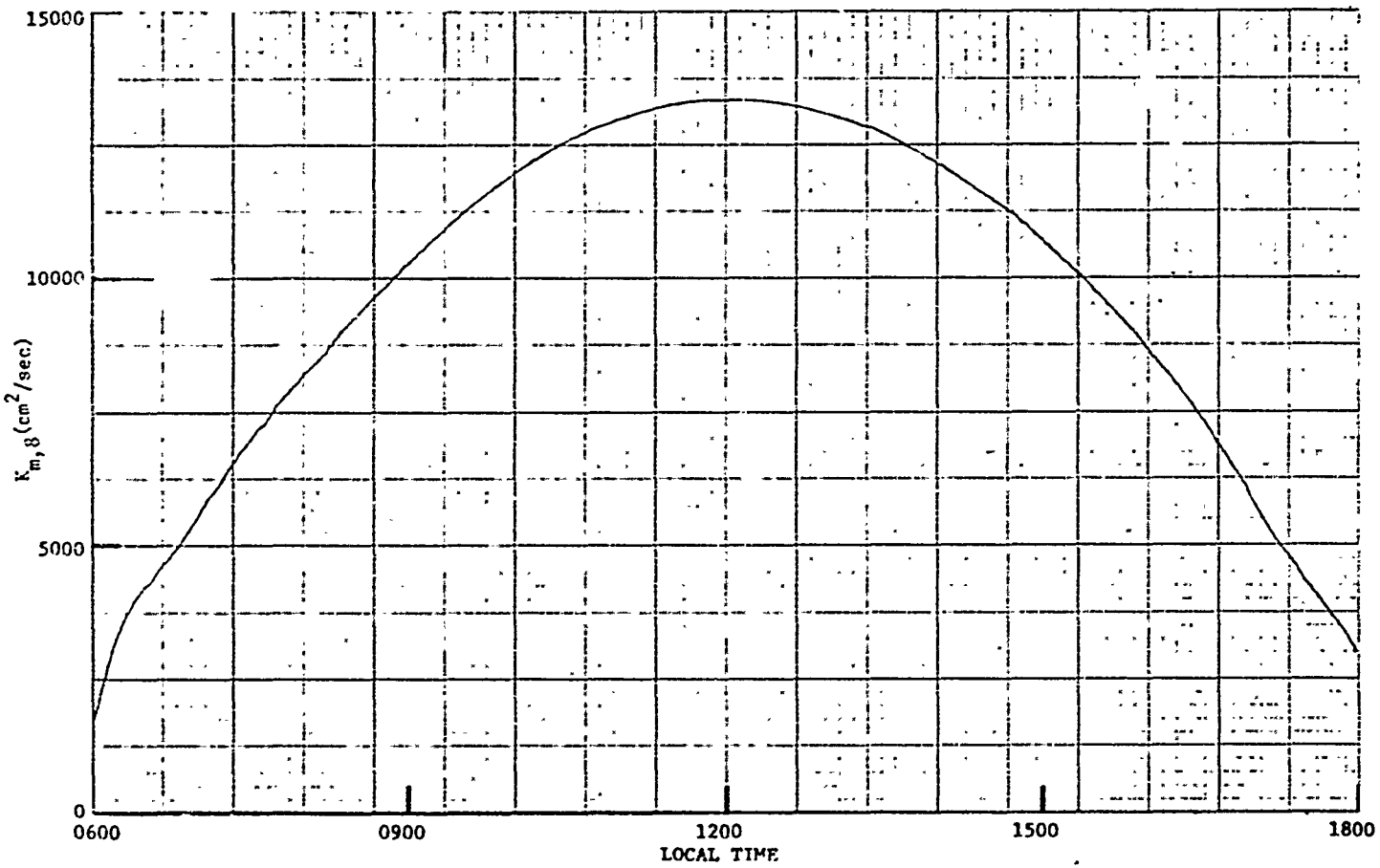

Figure II.3 Twelve hour simulation of the exchange coefficient for momentum at 8-m height, $K_{m,8}$, for Case I-B.

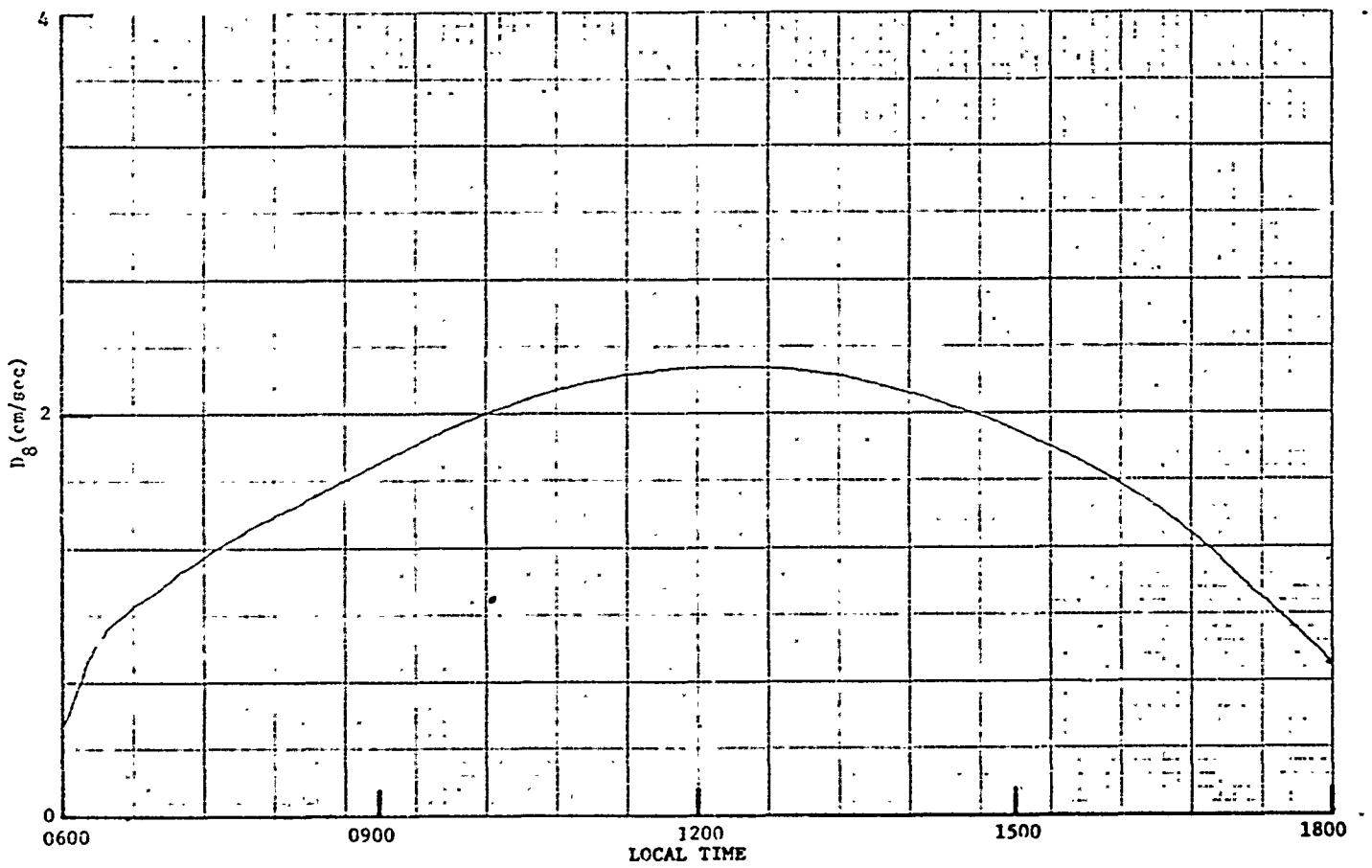

Figure II.4 Twelve hour simulation of the integral exchange coefficient, D_8, for Case I-B.

speed decreases slowly as the loss of momentum to the surface exceeds the increase in momentum due to advection and vertical transport from the layers above 8 m. As the temperature gradient increases and approaches the maximum value of 5.34 deg C at approximately 1145C there is a corresponding increase in $K_{m,8}$ and D_8. At 0800C $K_{m,8}$ has increased in value to the point that more momentum is being transferred down to the 8-m level than is being taken from it. Consequently, the wind increases and attains a maximum of 3.32 m/sec at approximately 1330C when the process begins to reverse as the temperature gradient decreases in the afternoon. The result is an increase in the surface wind during the morning and a decrease in the evening.

In order to examine the relationships over a full 24 hr period and at the same time avoid the initial accelerations, solutions were plotted for a time period of 48 hrs. Advection was set to zero so as not to mask the results and the surface contour gradient was held constant. The resulting solutions for T_0-T_8, S_8, $K_{m,8}$ and D_8 appear in Figures II.5 through II.8. From 0600 to 1800, T_0-T_8 follows the normal daytime heating cycle and from 1800 to 0600 approaches a rather constant value. In conjunction with these changes $K_{m,8}$ and D_8 increase in the morning reaching a maximum value shortly after noon, thence decrease sharply toward sunset, and then further decrease at a decreasing rate until sunrise when the process is repeated. In a similar manner the wind speed at 8-m height increases during the daylight hours and decreases at night.

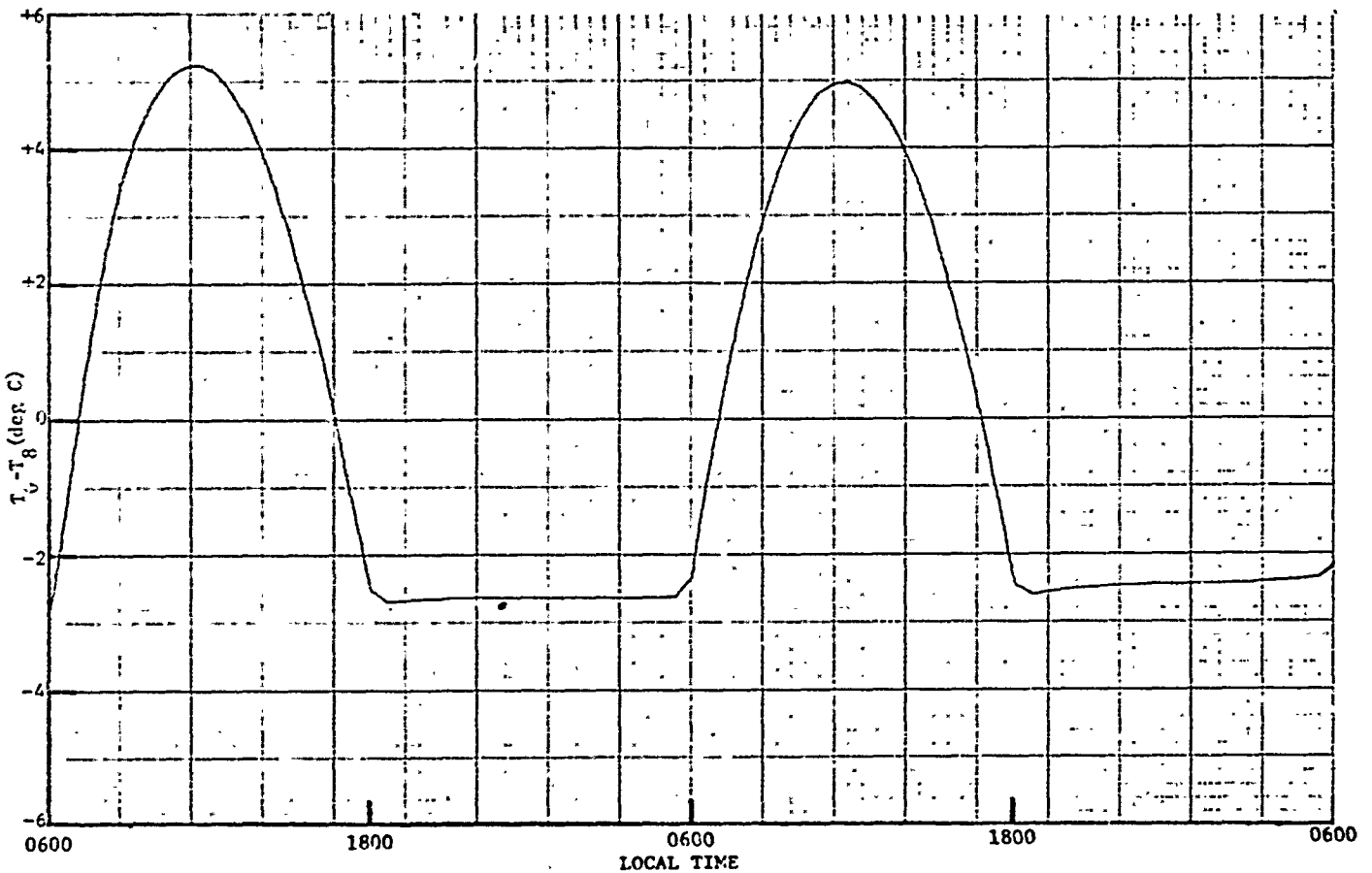

Figure II.5 Forty-eight hour simulation of the difference in temperature between the surface and 8-m height, T_0-T_8, for Case I-B with the surface contour gradient held constant and advection of wind, temperature, and vapor pressure equal to zero.

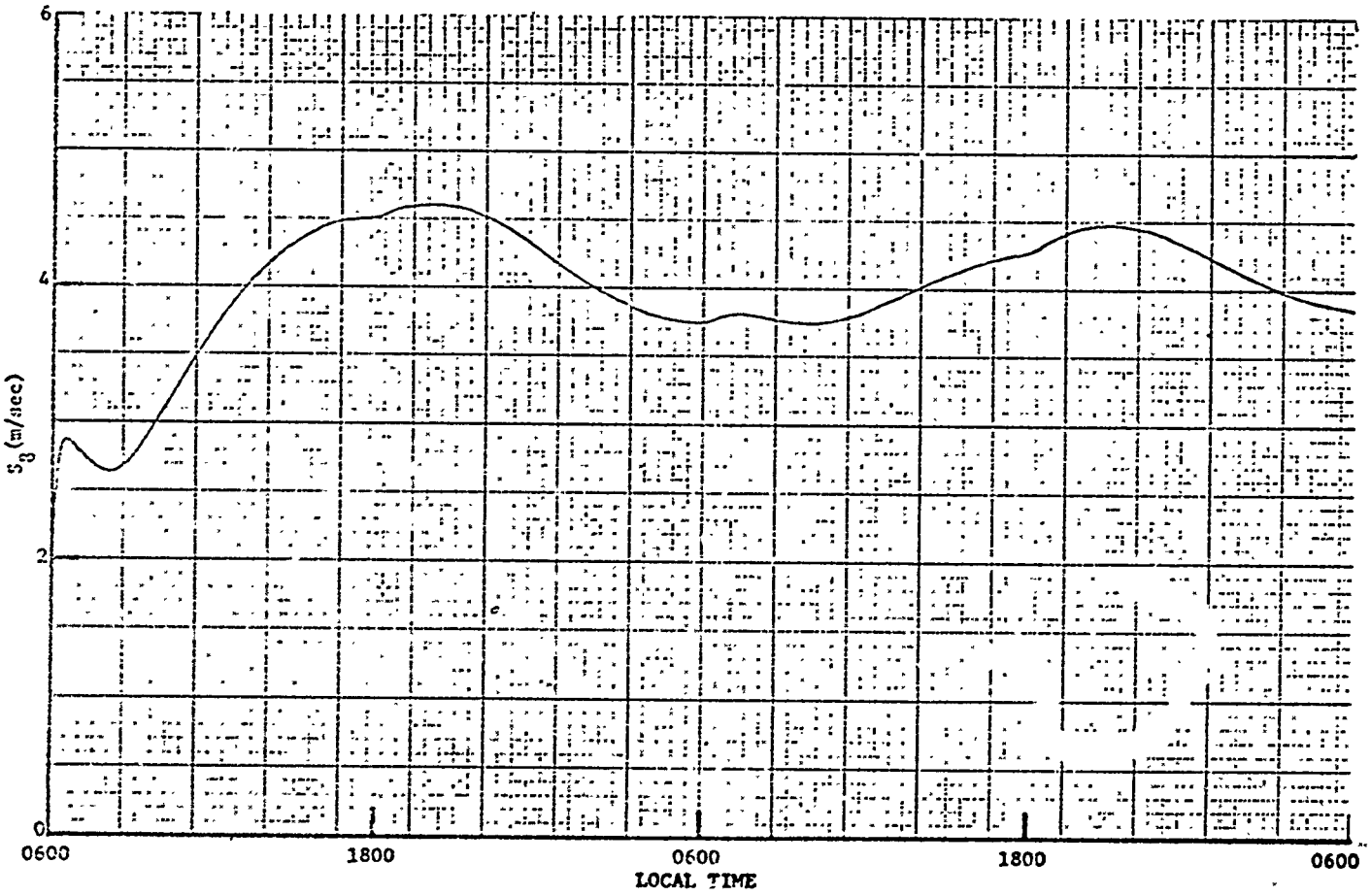

Figure II.6 Forty-eight hour simulation of the wind speed at 8-m height, S_8, for Case I-B with the surface contour gradient constant and advection of wind, temperature, and moisture equal to zero.

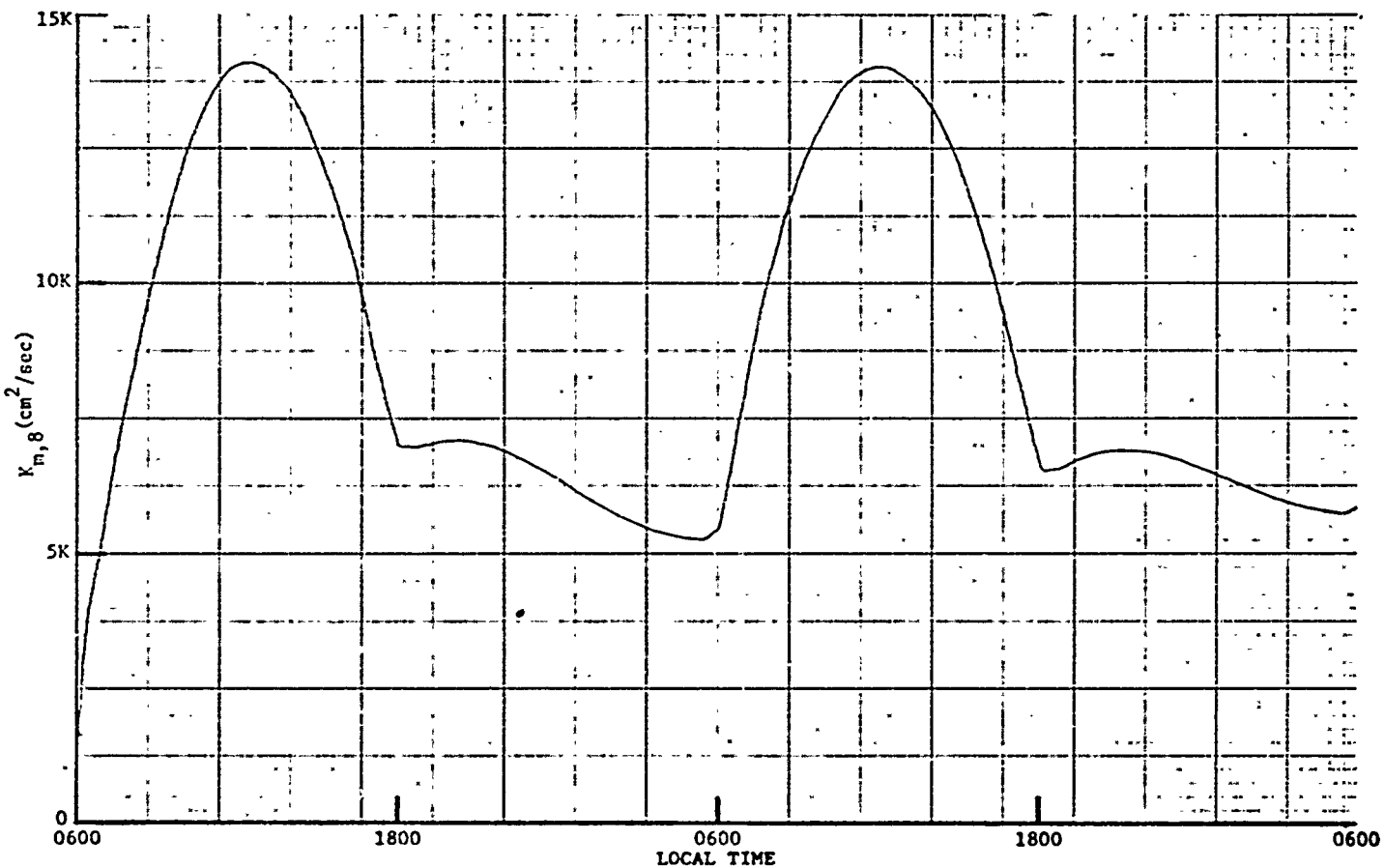

Figure II.7 Forty-eight hour simulation of the exchange coefficient for momentum at 8-m height, $K_{m,8}$, for Case I-B with the surface contour gradient held constant and advection of wind, temperature, and vapor pressure equal to zero.

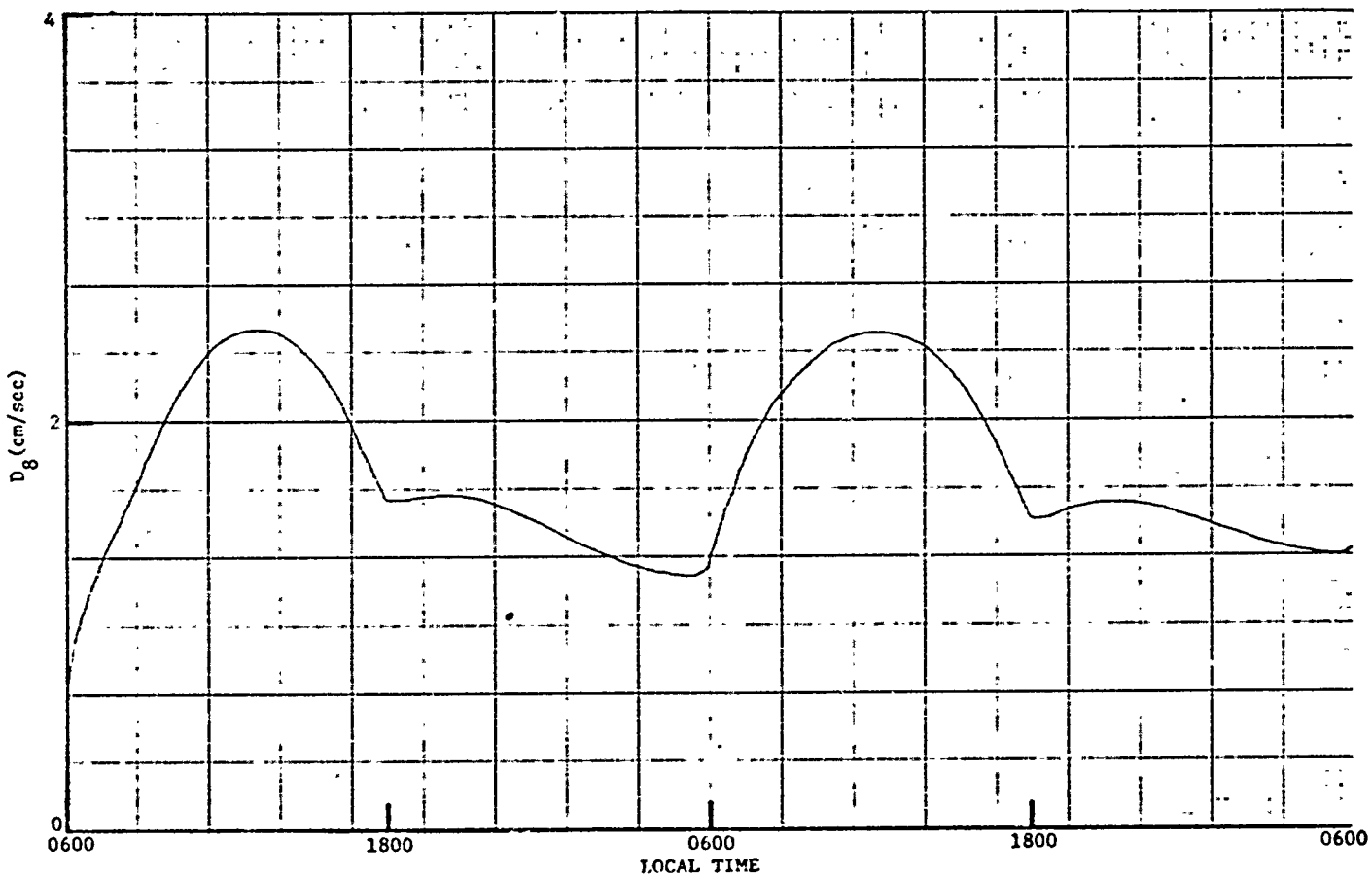

Figure II.8 Forty-eight hour simulation of the integral exchange coefficient, D_8, for Case I-B with the surface contour gradient held constant and advection of wind, temperature, and vapor pressure equal to zero.

These results are more nearly in agreement with observations of the diurnal cycle of winds and, consequently, would be expected to simulate wind patterns more accurately than winds simulated by incorporation of the log-square-root wind profile.

III. COMPARISON OF SOLUTIONS OBTAINED WITH THE ALTERNATE EXCHANGE COEFFICIENT AND SOLUTIONS OBTAINED PREVIOUSLY BY USE OF THE LOG-SQUARE-ROOT WIND PROFILE

The effects on the solutions of the meteorological equations employing the two exchange coefficient relationships are revealed largely by examination of the winds at the height of 8 m. The results for Case I-B are shown in the following table. The data for this case were taken under typical summer conditions in Texas on 15 August 1962 during the hours of 0600C through 1800C. Synoptic conditions were quite stagnant so that changes are primarily diurnal.

Table III.1 Differences in Predictions of the Wind at Eight Meters Height for Case I-B Obtained by Use of the Alternate Exchange Coefficients and the Coefficients Derived from the Log-Square-Root Wind Profile

Tape Number	Prediction Interval (hr)	Surface to 8-m Wind Profile	Magnitude of Vector Wind Difference (m/sec)	Wind Direction Difference (deg)
511.1	12	Log-Square-Root	5.12	36
755	12	Modified Deacon	2.15	51
516.1	6	Log-Square-Root	3.37	2
761	6	Modified Deacon	3.03	50
521.1	2	Log-Square-Root	2.02	51
767	2	Modified Deacon	2.36	41
526.1	1	Log-Square-Root	0.65	5
773	1	Modified Deacon	1.41	16

In this table as in subsequent tables, comparisons are shown for four time intervals of prediction, 1, 2, 6, and 12 hr. Solutions

obtained for the log-square-root wind profile have been reproduced from Final Report, Report No. 12, Signal Corps Contract DA 36-039-AMC-02195(E) and Technical Report ECOM-02286-2. The data may be referenced through the tape numbers which occur in the first column of the table. The time interval for each prediction appears in the second column of the table, and the third column signifies the wind profile used. The fourth column contains the absolute value of the differences of the magnitudes of the vector winds predicted for the height of 8 m and magnitudes of the vector winds resulting from observations and analyses for this height. The last column contains the absolute value of the differences in the directions of these winds.

Examination of the values in the table for a prediction of 12 hr shows that for Case I-B a difference of 5.12 m/sec in the magnitude of the vector wind and a difference of 36 deg in wind direction were obtained for the wind at 8-m height by use of the log-square-root profile. By use of the alternate exchange coefficient the difference in the magnitude of the vector wind was reduced to 2.15 m/sec; however, the difference in wind direction increased to 51 deg. A similar result, a slight reduction in the difference in the magnitude of the vector wind accompanied by an increase in the difference in wind direction, was obtained for a prediction interval of 6 hrs.

Results for a prediction interval of 2 hrs indicate that a larger difference in vector wind magnitude occurred with a smaller difference in wind direction, and for a 1 hr prediction a larger difference in both the magnitude of the vector wind and wind direction occurred when

the alternate exchange coefficient was employed rather than the log-square-root profile.

Table III.2 contains the results for Case II which represents a

Table III.2 Differences in Predictions of the Wind at Eight Meters Height for Case II Obtained by Use of the Alternate Exchange Coefficients and the Coefficients Derived from the Log-Square-Root Wind Profile

Tape Number	Prediction Interval (hr)	Surface to 8-m Wind Profile	Magnitude of Vector Wind Difference (m/sec)	Wind Direction Difference (deg)
60.1	12	Log-Square-Root	5.48	36
678	12	Modified Deacon	3.95	6
68	6	Log-Square-Root	1.95	23
691	6	Modified Deacon	1.38	15
75.1	2	Log-Square-Root	5.15	43
704	2	Modified Deacon	4.74	35
83.1	1	Log-Square-Root	5.42	30
717	1	Modified Deacon	5.35	28

radiational fog situation that occurred from 0000C through 1200C on 8 February 1962. These results indicate that employment of the alternate exchange coefficient expression yielded a reduction of the difference in predicted vector wind magnitude for each of the four simulation intervals. The largest reduction, 1.53 m/sec, was obtained for a prediction interval of 12 hr. Correspondingly smaller reductions were obtained for the shorter time periods. For each of the four prediction intervals the wind direction prediction was improved. The difference

for a 1 hr prediction of wind direction was reduced from 30 deg to 28 deg, an insignificant decrease; however, the 12 hr prediction difference was decreased from 36 deg to 6 deg.

The data for Case III were collected under conditions of steady rain between the hours of 0000C and 1200C on 4 April 1962. The results for Case III are found in Table III.3 where one can see a reduction in

Table III.3 Differences in Predictions of the Wind at Eight Meters Height for Case III Obtained by Use of the Alternate Exchange Coefficients and the Coefficients Derived from the Log-Square-Root Wind Profile

Tape Number	Prediction Interval (hr)	Surface to 8-m Wind Profile	Magnitude of Vector Wind Difference (m/sec)	Wind Direction Difference (deg)
114.3	12	Log-Square-Root	12.55	35
730	12	Modified Deacon	11.17	39
122.1	6	Log-Square-Root	9.12	4
736	6	Modified Deacon	8.02	9
129.1	2	Log-Square-Root	5.79	10
742	2	Modified Deacon	5.47	7
136.1	1	Log-Square-Root	4.58	4
748	1	Modified Deacon	4.44	3

the difference in the magnitude of the vector wind obtained by use of the alternate exchange coefficient for each of the four time intervals and a slight improvement in wind direction for the 1 hr and 2 hr prediction intervals. Being less than 1.5 m/sec in each case, these reductions again are small and the improvement in wind direction is less than 5 deg.

The last case presented here, Case IV-A, is that of a frontal passage which occurred on 26 February 1962 between the hours of 0000C and 1200C. The results for this case appear in Table III.4.

Table III.4 Differences in Predictions of the Wind at Eight Meters Height for Case IV-A Obtained by Use of the Alternate Exchange Coefficients and the Coefficients Derived from the Log-Square-Root Wind Profile

Tape Number	Prediction Interval (hr)	Surface to 8-m Wind Profile	Magnitude of Vector Wind Difference (m/sec)	Wind Direction Difference (deg)
332.1	12	Log-Square-Root	10.18	46
781	12	Modified Deacon	5.58	25
340.1	6	Log-Square-Root	12.02	47
787	6	Modified Deacon	6.88	19
348	2	Log-Square-Root	5.14	50
793	2	Modified Deacon	4.63	34
356	1	Log-Square-Root	5.15	34
799	1	Modified Deacon	5.06	29

The differences in wind speed were reduced from 12.02 m/sec to 6.88 m/sec for the 6 hr prediction interval and from 10.18 m/sec to 5.58 m/sec for the 12 hr prediction interval by use of the alternate exchange coefficient. In addition, the wind direction differences were reduced considerably for each of the four prediction intervals. The 1 hr difference was reduced by 5 deg, the 2 hr difference by 16 deg, the 6 hr difference by 28 deg, and the 12 hr difference by 21 deg.

The results obtained from these four cases and from Case I-A (see Technical Report FCOM-0280-6) suggest that the alternate exchange

coefficient will improve prediction capability; however, to conclude that such an improvement will be realized is premature and presumptive until a sufficient number of sets of data have been analyzed.

IV. DETERMINATION OF THE DEGREE OF COUPLING OF THE WIND AT 1000-M HEIGHT TO THE GEOSTROPHIC WIND

For some time, coupling the wind at 1000-m height to the geostrophic wind has been known to yield solutions of the winds more in agreement with observed values than those obtained with no coupling present; however, the degree of coupling required to yield values most nearly in agreement with observed values has not been determined. If the direction and magnitude of the pressure gradients were known exactly and the wind flow was weak and essentially straight, the maximum coupling would yield the best result. Unfortunately, this situation is not the case; consequently, maximum coupling may not be assumed a priori to yield the best result. In order to determine the most suitable coupling coefficient, a series of solutions was obtained for coupling coefficients ranging from 0.000 to 0.002 gm $cm^{-2}sec^{-1}$. The effects of these solutions are best seen in the winds at 1000-m height which are shown in the following tables.

Table IV.1 contains the results for Case I-B. In this and the following three tables, the tape number is recorded in the first column for reference purposes, the coupling coefficient appears in the second column, the third contains the prediction interval, the fourth the difference in the magnitude of the vector wind at 1000-m height predicted by the CMC and the magnitude of the vector wind at that level as determined by analysis of observations, and the last column contains the difference in the direction of the predicted wind at 1000-m height and the wind direction determined from analysis of observations.

Table IV.1 Differences in Predictions of the Wind at 1000-Meters Height Obtained for Various Degrees of Geostrophic Coupling for Case I-B

Tape Number	Coupling Coefficient ($gm\ cm^{-2}sec^{-1}$)	Prediction Interval (hr)	Magnitude of Vector Wind Difference (m/sec)	Wind Direction Difference (deg)
755	0.0000	12	4.86	54
760	0.0020	12	2.57	8
761	0.0000	6	6.87	61
766	0.0020	6	4.16	54
767	0.0000	2	1.12	0
772	0.0020	2	4.37	12
773	0.0000	1	.64	1
778	0.0020	1	3.49	7

Examination of Table IV.1 shows that the difference in magnitude of the vector wind for a prediction interval of 12 hr obtained with the coupling coefficient set to 0.0000 was 4.86 m/sec and the difference in wind direction was 54 deg, to the nearest degree. Application of maximum coupling reduced these values to 2.57 m/sec and 8 deg respectively. Similarily, the solutions for 6 hr show reductions from 6.87 m/sec and 61 deg to 4.16 m/sec and 54 deg. The 2 hr and 1 hr solutions, on the contrary, resulted in increases in both magnitude and direction.

The results for Case II appear in Table IV.2 and show reductions in differences of the magnitude of the vector wind for the 12 hr simulation interval only. The wind directions, also, are improved for the 12 hr time interval only.

The tabulation for Case III, which appears in Table IV.3 shows a reduction in the difference in wind speed for the 2, 6, and 12 hr

Table IV.2 Differences in Predictions of the Wind at 1000-Meters Height Obtained for Various Degrees of Geostrophic Coupling for Case II

Tape Number	Coupling Coefficient (gm $cm^{-2}sec^{-1}$)	Prediction Interval (hr)	Magnitude of Vector Wind Difference (m/sec)	Wind Direction Difference (deg)
678	0.0000	12	16.28	37
686	0.0020	12	11.17	29
691	0.0000	6	6.41	15
699	0.0020	6	8.41	45
704	0.0000	2	4.09	3
712	0.0020	2	6.47	30
717	0.0000	1	3.08	3
725	0.0020	1	5.32	22

time intervals and a reduction in the difference in wind direction for all four time intervals. The largest reduction in difference of the

Table IV.3 Differences in Predictions of the Wind at 1000-Meters Height Obtained for Various Degrees of Geostrophic Coupling for Case III

Tape Number	Coupling Coefficient (gm $cm^{-2}sec^{-1}$)	Prediction Interval (hr)	Magnitude of Vector Wind Difference (m/sec)	Wind Direction Difference (deg)
730	0.0000	12	21.93	23
735	0.0020	12	10.46	8
736	0.0000	6	18.19	47
741	0.0020	6	9.97	29
742	0.0000	2	7.24	21
747	0.0020	2	4.85	10
748	0.0000	1	4.12	12
753	0.0020	1	4.25	6

vector wind magnitude amounted to 11.47 m/sec, which was associated with the 12 hr prediction, and the largest reduction in wind direction difference amounted to 18 deg which was associated with the 6 hr time interval. In each of these three cases if coupling the geostrophic wind to the wind at 1000-m height improved the prediction, maximum coupling produced the maximum reduction in the difference between the wind for 1000-m height as computed by the GPAC and the wind at 1000-m height derived from analysis of observed data.

Case IV-A appears in Table IV.4. For this case zero coupling yielded the best results for each of the four prediction intervals. For

Table IV.4 Differences in Predictions of the Wind at 1000-Meters Height Obtained for Various Degrees of Geostrophic Coupling for Case IV-A

Tape Number	Coupling Coefficient (gm $cm^{-2}sec^{-1}$)	Prediction Interval (hr)	Magnitude of Vector Wind Difference (m/sec)	Wind Direction Difference (deg)
781	0.0000	12	11.97	51
786	0.0020	12	16.32	77
787	0.0000	6	1.74	7
792	0.0020	6	17.88	110
793	0.0000	2	4.03	23
798	0.0020	2	9.64	80
799	0.0000	1	2.67	15
804	0.0020	1	5.97	40

each prediction interval increasing the coupling resulted in increased differences in both direction and vector magnitude between the predicted winds and winds obtained from data analyses.

Three of the four cases studied here resulted in best predictions of the winds at 1000-m height for a 12 hr prediction interval when the geostrophic coupling coefficient was set to the maximum value studied. On the other hand, greater differences resulted for a 1 hr prediction interval for all cases. Results obtained for the four cases considered thus far suggest that significant improvement in wind predictions may not be obtained by strong coupling of the wind at 1000 m height to the geostrophic wind for time intervals up to 2 hr but that increased coupling yields winds more nearly in agreement with observed winds for prediction intervals of 6 hr or more. Of course, no definite conclusions may be drawn until all available cases have been investigated.