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An Atmospheric Tritium Release Database for Model Comparisons

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AN ATMOSPHERIC TRITIUM RELEASE DATABASE FOR MODEL COMPARISONS

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ABSTRACT

A database of vegetation, soil, and air tritium concentrations at gridded coordinate locations following nine accidental atmospheric release is described. While none of the releases caused a significant dose to the public, the data collected are valuable for comparison with the results of tritium transport models used for risk assessment. The largest, potential, individual off-site dose from any of the releases was calculated to be 1.6 mrem. The population dose from this same release was 46 person-rem which represents 0.04% of the natural background radiation dose to the population in the path of the release.

INTRODUCTION

This paper will describe a database made up of environmental tritium concentrations measurements after nine atmospheric releases at the Savannah River Site. The database was assembled to provide environmental scientists with data which can be used in verifying the tritium transport and cycling computer codes that are used in assessing the potential effects from inadvertant releases from tritium handling facilities. This effort was stimulated by the new interest in assessing tritium effects from fusion reactors.[1] The information should also be of value to the Department of Energy's New Production Reactors Program.[2]

The Savannah River Site is a U.S. Department of Energy facility, near Aiken, S.C. which produces and processes tritium for National Defense needs. During the 35 years of tritium production, beginning in 1953, there have been releases of tritium from the five heavy water production reactors and the tritium processing facilites. These releases have been documented in the Annual Monitoring Reports and Summarized in a recent assessment of SRS releases.[3]

During this period there have been chronic releases related to normal manufacturing of tritium which have led to a background tritium concentration which decreases with distance from the sources of release. There have also been short-term releases from inadvertant process failures and leaks which have led to short-term increases in the tritium concentration in the environment in the path of the releases. It is these latter releases that will be documented here.

None of the releases caused a significant dose to the public. The largest, potential, individual off-site dose from any of the releases was calculated to be 1.6 mrem. The population dose from this same release was 46 person-rem which represents 0.04% of the natural background radiation dose to the population in the path of the release.

All of the releases documented here entered the environment from a 60-meter, tritium-facility stack. The composition of the releases varied from nearly 100% tritiated hydrogen to 100% tritiated water.

DISCUSSION

Data Collection

The available technology and methodology for making measurements after detection of a tritium release have evolved over the period from the first release in 1974 until the present. However, the chronology of events has remained the same. Initial measurements are made in the 60-meter stack where all of the releases entered the environment. After the release has been verified, sampling crews are sent to the field. Field measurement methodolgy was originally based on experience gained from measurement of chronic releases. Typically samples are taken of vegetation, air, surface water, and milk.

Stack Measurements

The tritium concentration of a flowing sample of stack gas is measured with a Kanne ionization chamber. The amount of tritium in the release is calculated by multiplying the air flow in the stack by the integral, average tritium concentration during the time interval of the release.

In recent years the stack sampling system has been modified to allow measurement of the chemical form of tritium in a release. Two Kanne chambers are used. In one chamber the moisture is removed from the air before measurement. In the other chamber the air is not dried. The amount of tritiated water in the release is measured by subtracting the tritium remaining in the dried air from the total tritium measured by the Kanne chamber receiving undried air. Under SRS conditions most of the tritium measured in the chamber receiving dry air is in the form of molecular hydrogen.

Field Air Samples

The portable, field tritium air sampler used at SRS uses molecular sieve which removes a sample of air moisture followed by a second sieve trap where tritiated hydrogen is oxidized and collected by palladium coated sieve. Air flow rates and sampling periods are carefully set before placement in the field. The water from the sieve is collected after heating under vacuum. The tritium is counted by proportional counting after dissociation of the water to hydrogen.

One of the initial uses of this sampler was during the May 1974 release when a sampling crew was able to catch up with the plume and measure the concentration of water vapor and hydrogen in the release. SRS continues to rely on this

technique and the number of samplers available for deployment has increased. Only following the July, 1987 release, when eighteen samplers were used, is there enough air monitoring data to be useful for modeling studies.

Vegetation Samples
Vegetation samples are cut and stored in plastic bags. The samples are processed as soon as practical after collection. The samples are vacuum distilled to remove an aliquot of water. The water is then counted by liquid scintillation.

Vegetation sampling does not require special field equipment and can be done quickly by field crews. Samples often number in the hundreds and transects across a plume path can have fifty samples. Vegetation sampling has proved to be very effective in post-release evaluation of the plume path and will provide the majority of data in the database described here.

Other Samples
Milk samples are vacuum distilled and the water is counted by liquid scintillation. Milk samples are made only in those cases when the release of the plume passes over a farm where cows are present. Surface water samples are directly counted by liquid scintillation unless they are discolored, in which case they are vacuum distilled. After a few of the releases, the tritiated water content of the soil was measured. Soil samples were vacuum distilled in the same manner as vegetation samples. Soil samples were taken because of evidence that tritiated hydrogen is oxidized by soil microorganisms.[4,5]

Description of Atmospheric Tritium Releases

The following section will provide a brief description of the characteristics of the nine atmospheric releases included in the database. Because of the complex factors determining the spread and uptake of tritium by vegetation and soil from a short-term release, it is necessary to treat each release as a special case.

May 2, 1974.
A valve failure resulted in a 479,000-Ci release from a 60-m stack located in the Separations Area. The release occurred over a 4-min period beginning at 0755 hours eastern standard time (EST). The tritium form was estimated to be primarily tritiated hydrogen gas with less than 1% tritiated water.
At the time of the release, light winds carried the tritium in a northeasterly direction (azimuth 210-225 deg) at 6.4 to 9.7 km/hr. Cloud cover at Bush Field in Augusta, GA, was 90%-100%. The atmospheric stability was judged to be neutral. The trajectory of the release carried the tritium north of Columbia, SC, beyond which point it was difficult to predict because of complex weather patterns.

Extensive measurements were made of the tritiated water content of vegetation, soils, and surface water. A single air sample collected about 5 hr after the release had a 30-min average concentration of 390,000 pCi/m^3, of which less than 1% was in the form of tritiated water. The highest vegetation, surface water, and soil water concentrations were 4630, 10,000, and 138 pCi/mL, respectively. Milk collected from a beef cow was found to have an

elevated tritium concentration of 375 pCi/mL.

December 31, 1975

At 2000 hours EST, 182,000 Ci of tritium gas was released from a stack in the Separations Area. Ninety percent of the tritium was released in the first 1.5 min. Air samples indicated that 0.6% of the release was in the form of tritiated water with the rest in the hydrogen form.

The cloud cover was about 30% and the wind speed 35 km/hr at the time of the release. The atmospheric stability was neutral. The wind carried the release in an easterly direction (azimuth 270-289 deg). The trajectory of the release carried the tritium north of Charleston, SC, where it passed over the ocean between 0500 and 0600 hours on January 1.

Maximum air moisture, surface water, and soil tritium concentrations were 687, 27, and 242 Ci/mL, respectively. Air, water, and milk samples collected after the release were within the values routinely measured at other times.

March 27, 1981

At approximately 0845 hours EST, 33,000 Ci of tritium were released to the atmosphere from a separations area processing facility. The duration of the release was about 2.5 hr. Analyses of stack samples taken during the incident indicated that 99.7% of the tritium was released as tritiated water vapor.

The sky was sunny during the day, with scattered cumulus clouds forming in the afternoon. The temperature was between 24^{o} and 27^{o}C. The surface wind at the time of the release was blowing at 18 km/hr toward the east. Later in the day this increased to 21 to 26 km/hr. The trajectory carried the release northeastward where it crossed the coastline at approximately the North Carolina-South Carolina boundary.

Maximum tritiated water concentrations were 270, 9, and 39 pCi/mL for vegetation, surface water, and soil water samples, respectively, collected outside the boundary of SRS. A vegetation sample inside the SRS boundary was found to have a tritiated water concentration of 4860 pCi/mL. Milk and foodstuff samples were within the values measured at other times.

July 16, 1983

At 2213 hours EST, 56,000 Ci of tritium were released from the Separations Area. The release took place over a period of approximately 3 min. Analysis of samples of the released gases indicated that about 1% of the release was tritiated water vapor and the remaining 99% was in the hydrogen form.

The sky was 75% to 100% covered with clouds at the time of the release, with rain and thundershowers early in the evening. The cloud cover dissipated by 0200 hours of the following day. Surface winds were 18 km/hr around the time of the release, blowing toward the northeast. The trajectory carried the release offshore north of Charleston, SC.

Maximum vegetation, surface water, and rainwater tritium concentrations were 150, 23, and 18 pCi/mL, respectively. Milk and air moisture samples were within the concentration range routinely measured in samples in the vicinity of SRS.

March 23, 1984

At 0440 EST, a leak in a process line led to a release of 7500 Ci from a stack in the Separation Area. The majority of the release occurred in the first 2 hr and 20 min. Approximately 70% of the release was in the tritiated water vapor form; the remaining 30% was in the hydrogen form.

During the morning of the release, the winds were blowing toward the east-southeast (azimuth of 280 deg) at 21 km/hr. Skies were clear with a 10% cloud cover. There was a low-level inversion at the time of the release, indicating stable atmospheric conditions. The inversion dissipated by 0930 hours, and unstable atmospheric condition prevailed from that time forward. The release trajectory moved to the south-southeast for the first 2 hours then swung to the southeast for the next 8 hours before turning to the northeast and moving over the ocean near Charleston, SC.

Maximum vegetation and surface water tritiated water concentrations were 1380 and 120 pCi/mL, respectively. Two sampling teams measured tritium forms in atmospheric samples. The highest concentration was found to be 6170 pCi/m^3, with about 90% of the sample in the water vapor form. The maximum tritium concentration in milk was 69 pCi/mL.

September 2, 1984

Beginning at 1900 hours EST, a release of 57,900 Ci of tritium occurred from a stack in the Separations Area. Approximately 43,800 Ci were released in the first 5 hours of the period, with the remainder slowly entering the environment over the next 5 days. The release consisted of 99% tritiated water vapor.

At the beginning of the release, the wind was blowing in the direction of Aiken, SC (azimuth 170 deg). The wind speed remained steady at 16 km/hr during the first 5 hours after the release. The wind later shifted toward the east carrying the tritium near Lexington, SC. Temperature profiles from the instruments on the WJBF television tower indicated an inversion existed, and the stable atmospheric conditions kept the plume in a narrow band as it moved away from the source.

Sampling teams measured atmospheric tritium along the path of the release. Because the release path was narrow, it was difficult to obtain samples in the center of the release. The highest tritium concentration measured was 15,871 pCi/m^3 at Blythewood, SC, about 124 km from the release source. Vegetation samples from this location indicated that this may have been very close to the center of the path. Vegetation and milk samples were collected by SRS and South Carolina Department of Health and Environmental Control (SCDHEC) sampling teams. The highest concentration of tritiated water in vegetation was 9800 pCi/mL, measured at a location 40 km from the release point. The highest concentration near the SRS boundary was 2500 pCi/mL. The highest concentration found in milk was 47 pCi/mL near Windsor, SC.

January 31, 1985

A total of 9285 Ci of tritium was released from a stack in the Separations Area. The release took place from 1400

to 1700 hours EST. The majority of the tritium, 7400 Ci, was released in the first 15 min. Of the total release, 54% was in the tritiated water form and the remaining 46% was in the hydrogen form.

At the time of the release, the wind was blowing toward the north-northeast at 21 km/hr. The cloud cover at Bush Field, Augusta, GA, was 100%. The atmospheric stability ranged from mildly unstable to neutral during the release period. The release trajectory passed Windsor, SC, and could be tracked, with substantially decreased concentration, to the southwest of Columbia, SC.

Measurements were taken of vegetation, surface water, and milk following the release. The highest concentrations were, respectively, 7600, 140, and 4.3 pCi/mL. Milk tritium concentrations were within the concentrations normally measured by the SRS Environmental Survey. The air tritiated water vapor content at Windsor was measured at 576 pCi/m^3.

March 27, 1985

The release, from the Separations Area stack, began at 1353 hours EST and averaged about 90 Ci/minute until 1830 hours when the released ceased. Stack sampling indicated that of the 19,422 Ci in the release, 99.9% was tritiated water vapor.

Meteorological observations at Bush Field, Augusta, GA, showed that the cloud cover was 70% and the wind speed from 16 to 23 km/hr. The atmospheric stability varied from slightly unstable to neutral during the period when the release was passing though South Carolina. The trajectory of the release initially carried the tritium in a northeasterly direction, passing southeast of Columbia, SC. The release crossed into North Carolina before moving over the ocean.

The highest vegetation and surface water concentrations measured within the SRS boundary were 61,800 and 384 pCi/mL, respectively. These values had decreased to 971 and 1.4 pCi/mL by the time the tritium reached the SRS boundary. Milk samples collected after the release showed levels that were within the range normally measured by SRS surveys. Air sampling was done by the TRAC mobile laboratory and sampling teams with mobile tritium forms samplers. The highest concentration of tritium measured in the air was 21,689 pCi/m^3. The tritium form of this sample was greater than 99% tritiated water vapor.

July 31, 1987

The release occurred from the Separations Area stack between 0817 and 0855 hours EST. The estimated total amount released, based on the tritium forms monitor, was 172,000 Ci. The oxide fraction, based on the stack air monitor, was 2.7%. The remaining 97.8% was in the hydrogen form.

The weather on July 31 was characterized by very weak wind (8 km/hr) blowing toward the northeast and very unstable atmospheric temperature stratification. The height of the atmospheric mixing zone was 200 m at 0830 hours and 2200 m by midafternoon. Afternoon showers and the associated wind further dispersed the tritium as it moved beyond Blackville,

SC. Traces of the tritium were found from Swansea to Orangeburg, SC.

SRS Environmental Monitoring teams collected vegetation, water, and milk samples on and off the site, while SCDHEC collected vegetation samples offsite. The highest concentrations were 5760 and 47 pCi/mL for vegetation and surface water, respectively. The concentration in milk was within the range normally found by SRS Environmental Surveys. Extensive measurements were made of the air concentration with tritium forms samplers. The highest concentration was about 12.4 million pCi/m^3. Samples collected near the release point showed a fairly uniform concentration of tritiated water vapor, averaging around 3%. Farther from the SRS boundary, the fraction of tritiated water vapor ranged from 0.3% to 84% (in a sample with a total tritium concentration of 3300 pCi/m^3). The separation of the forms of tritium is thought to be the result of differences in uptake at the surface or from washout of tritium in the vicinity of the rain storms.

Table 1 summarizes the characteristics of the release and the meteorological conditions immediately after each releases described above. The releases have taken place under a wide range of meteorological conditions, during different seasons of the year and beginning at different times of the day.

Table 1. Summary of Tritium Release Characteristics.

Date	Time	Release Curies	% HTO	HTO Curies	Wind Speed, m/s	Atmospheric Stability Class
5/2/74	755	479000	1.0	4790	3	Neutral
12/31/75	2000	182000	0.6	1092	10	Neutral
3/27/81	845	32934	100.0	32934	7	Unstable
7/16/83	2013	56000	1.0	560	6	Neutral
3/23/84	440	7500	70.0	5250	5	Stable
9/2/84	1900	43800	100.0	43800	5	Stable
1/31/85	1400	9300	50.0	4650	5	Neutral
3/27/85	1353	19422	99.9	19403	7	Neutral
7/31/87	855	172000	2.7	4644	2	Unstable

Results

Preliminary Data Analysis

A simple guassian model was compared to the maximum vegetation concentration at each transect of the release plumes where enough data points existed to indicate the maximum location.[6] The maximum concentrations in the vegetation, as well as other environmental media that were not associated with a location are shown in Table 2.

Table 2. Maximum Environmental Concentrations Following Tritium Releases, pCi/mL.

Date	Vegetation				Surface Water	Milk	Data Source
	On Site	Perimeter	~40km	~80km			
5/2/74	25	4630	310	41	138	375	7
12/31/75	687	92	8		3	9	8
3/27/81	4860	270			9	11	9
7/16/83	150	110	80	27	23	4	10
3/23/84	89	500	1380	190	120	69	11
9/2/84	500	2500	9900	240		47	12
1/31/85	7600	450	380	180	140	2	13
3/27/85	61800	970	590	143	384	6	13
7/31/87	5760	4690	34	8	47	4	14

Figure 1 shows the relationship between the maximum tritiated water content at the 40 km transects and the predictions of the model. The results are very encouraging, in that they indicate that some of the variation in vegetation concentration is accounted for by the meteorology during the releases.

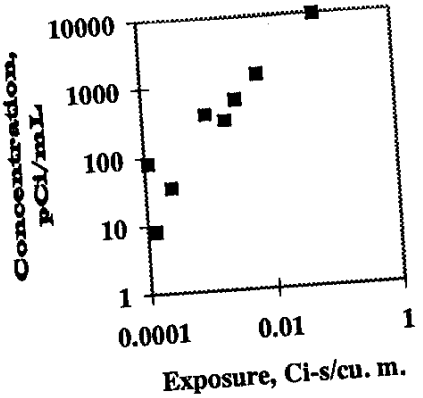

Figure 1. Calculated Exposure to HTO from a Simple Gaussian Model Compared to Water from the Vegetation.

Environmental Tritium Database

The database is presented in Appendices A and B. Appendix A lists the tritium concentration in vegetation, soil, and/or air collected on the day of the release (unless otherwise indicated). Each concentration value is identified with a location. The location is a gridded distance from the point of release. The distances are increasing west to east and south to north. The units are meters. When available, the counting error of the measurements is included.

Appendix B lists the meteorological measurement from the U.S. NOAA weather station at Bushfield Airport in Augusta, GA, the nearest NOAA weather station to the release site. These databases are also available as IBM DOS, ASCII files.

Appendix B also contains added information that is used by many existing meteorological models. The stability class is calculated using the criteria suggested by Turner.[15] The numerical values in the table refer to the input from the UFOTRI model[16] where the most stable case, Pasquill F, is designated by 5 and the most unstable case, Pasquill A is designated by 0. The soil moisture has been calculated using the model described in Appendix C.

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APPENDIX A
Gridded Tritium Release Data

Tritium Release of 5/2/74 - Vegetation

East meters	North meters	Tritium Concentration, pCi/mL on Date Collected 5/2	5/3	5/6	5/7	5/8	5/9
31893	28293	119					
32092	28193	10					
25724	38492	4					
43423	56569	2					
52590	77298	11					
3485	-464		43				
12440	-5737		25				
16669	5407		12				
13684	4760					13	
11396	4860					14	
8460	5457					14	
7664	4064					10	
5177	4959					8	
5873	8193					7	
3177	7099					5	
600	1676					20	
1142	1178					24	
1685	681					62	
2228	183					27	
2770	-314					12	
2988	-513						
-3182	11477		1				
-2933	10631		1		5		
-2684	9785		1				
-614	10103		3				
1455	10422		2				
3525	10740		4				
5595	11059		15				
7664	11377		3				
8958	9074		4				
10898	12372		6				
11595	11974		244		43		
12759	10844		1620		345		
14040	9600		4630		242		
15204	8470		309		118		
15903	7791		4				
17067	6661		2				
17664	4661		5				
17767	3105		4				
17870	1549		5				
17972	-6		3				

Tritium Release of 5/2/74 - Vegetation (continued)

East	North	Tritium Concentration, pCi/mL on Date Collected					
meters	meters	5/2	5/3	5/6	5/7	5/8	5/9
18075	-1562		4				
18177	-3118		5				
18301	-4985		4				
18311	-5140		6				
17465	-5140		5				
17266	-9916		2				
14580	-15887		3				
10500	-23001		2				
22391	13765				616		
22639	15382				1197		
22888	16999				209		
23137	18616		2200		190		
23386	20233				182		
23634	21850				57		
23883	23467		31		42		
24480	18293				31		
23187	21775				59		
26192	25569		221				
26150	25556				24		
27806	25105				210		
29462	24655				120		
31119	24204				5		
32775	23754				83		
34431	23303				36		
34928	23168				9		
34878	22273		27				
12789	20979				4		
13505	19616				3		
14221	18253				8		
14938	16890				45		
15654	15526				10		
16371	14163				47		
17167	13865				538		
18641	13195				652		
20853	12191				395		283
21590	11857				85		
23064	11187				9		
24539	10518				6		
25276	10183				5		
8759	11974			4			

Tritium Release of 5/2/74 - Vegetation (continued)

East	North	Tritium Concentration, pCi/mL on Date Collected					
meters	meters	5/2	5/3	5/6	5/7	5/8	5/9
11660	17691			2			
12490	21974			2			
14934	29094			4			
15177	31477			2			
21694	37895			2			
26922	40164			2			
41197	69686						3
54381	77895						1
56769	89004						3
92315	63185						1
92962	50185						2
81120	41606						1
73911	22381						17
43286	-12006		2				
45257	4215		3				
46890	17655		10				
47979	26615		8				
49105	35884		4				
50232	45153		41				
51170	52877		9				
52297	62146		23				
53423	71415		14				
13684	5158		291				
21296	12472		39	4			
21495	12571		129				
26868	17895				41		
33731	24800				29		
33491	26236				70		
33252	27672				63		
33013	29108				85		
32654	31262				64		
32415	32697				33		
32175	34133				47		
31936	35569				39		
31697	37005				22		
31577	37723				20		
30896	38075				7		
29533	38778				5		
28170	39481				4		
26808	40185				3		

Release of December 31, 1975

Vegetation

East meters	North meters	Tritium pCi/mL
2590	-245	11
2938	-464	687
4231	581	7
2142	10681	3
15376	7994	4
16393	6778	0
17664	5258	0
17653	3694	2
17641	2130	3
17630	567	27
17619	-997	92
17607	-2560	8
17596	-4124	9
17587	-5297	13
17576	-6860	17
17565	-8424	9
11700	200	6
11400	-300	91
11200	-700	72
11000	-1100	9
3100	-800	9
2968	-494	17
3485	-464	36

Soil

11700	200	13
11400	-300	186
11200	-700	242
11000	-1100	8
3100	-800	10
2968	-494	13
3485	-464	10

Release March 27, 1981 - Vegetation

West meters	North meters	Tritium pCi/mL	Error pCi/mL
10002	-2155	42	4
12490	2074	29	4
13169	3490	76	4
13916	5048	4858	146
14527	6323	4564	137
15206	7739	2114	63
15376	8094	268	8
16300	6700	278	14
17400	5500	56	11

Release of July 16, 1983 - Vegetation

East meters	North meters	Tritium pCi/mL	error pCi/mL	East meters	North meters	Tritium pCi/mL	error pCi/mL
12789	21477	8	1	75693	10674	6	1
14281	18143	8	1	75693	10674	27	2
15774	14810	13	1	75946	8685	9	1
15376	7994	23	1	78731	-13200	6	1
13734	5158	30	2	78558	-17546	3	1
12590	2123	29	2	78385	-21892	22	2
13704	5755	50	2	78212	-26238	5	1
18361	5506	110	3	78038	-30585	7	1
17167	2133	108	3	77577	-4892	2	1
17237	1729	63	3	43187	-20016	2	1
17518	111	101	3	41187	-21459	3	1
17799	-1507	13	2	31595	-31309	2	1
18080	-3124	8	1	25475	-27329	7	1
18361	-4742	8	1	26371	-4941	25	2
16669	-5240	8	1	33087	-9618	3	1
17465	-5240	8	1	40600	-11210	6	1
18361	-3548	6	1	43286	-12006	25	2
18361	-5240	8	1	45724	-16135	4	1
17988	-6832	4	1	52241	-20016	3	1
17614	-8424	2	1	64654	-25815	3	1
12291	-21110	3	1	95885	-27200	9	1
8833	-19916	3	1	699	482	150	4
5376	-18722	3	1	3485	-812	13	2
34480	22969	9	1	5276	-1608	22	2
27565	11924	52	2	9356	-2404	15	2
25276	10084	44	2	9803	-2404	19	2
47316	4163	80	3	12391	-5737	7	1
66808	44646	2	1	5175	-8523	11	2
69985	37608	2	1	4928	-13200	2	1
73162	30569	2	1	-5619	-8125	3	1
74427	20622	1	1				

Tritium Release of 3/23/84 -Vegetation

East meters	North meters	Tritium pCi/mL	Error pCi/mL	East meters	North meters	Tritium pCi/mL	Error pCi/mL
2092	-414	87	4	16337	-11575	2	1
3684	-314	95	2	15823	-12205	2	1
15356	7944	5	1	15276	-12901	1	1
16570	6501	3	1	35575	21029	2	0
17067	5855	7	1	34132	17994	2	0
17565	5208	12	2	34513	14793	1	1
17067	3317	12	1	34895	11593	3	1
17022	2539	21	1	35276	8392	6	0
16999	2151	40	1	38958	6651	-1	1
16977	1762	116	3	42192	6054	2	0
16954	1373	311	7	47316	4113	4	0
16931	984	186	4	47067	2472	6	1
16909	595	95	2	46586	904	2	0
16886	206	130	3	46105	-663	2	0
16864	-183	110	2	45913	-1290	2	1
16841	-572	208	4	45624	-2230	9	1
16818	-961	500	10	45143	-3797	110	8
16796	-1350	247	5	44663	-5364	280	9
16773	-1739	240	5	44182	-6931	1120	20
16751	-2128	280	4	43916	-8490	1380	20
16728	-2517	561	11	43651	-10049	500	10
16705	-2906	249	5	43386	-11608	560	11
16683	-3295	470	9	43386	-18374	14	2
16660	-3684	490	9	41296	-21309	1	0
16637	-4073	217	4	36371	-25605	2	1
16615	-4462	240	5	34381	-28606	-0	1
16592	-4851	152	5	32391	-31608	-0	1
16570	-5240	118	2	73885	22338	3	1
17963	-9966	11	1	74136	19112	4	1
17899	-9565	15	1	74388	15886	1	1
17836	-9165	12	1	74640	12660	4	1
17773	-8764	12	1	74892	9434	2	0
17709	-8363	10	1	75143	6208	5	1
17646	-7963	5	1	75395	2982	-0	1
17583	-7562	7	1	75647	-244	4	1
17519	-7161	8	1	75773	-1857	-0	1
17456	-6760	4	1	75899	-3470	2	0
17393	-6360	9	1	76024	-5083	2	1
17266	-5558	5	1	76150	-6697	14	1
17366	-10314	6	0	76276	-8310	140	3
16852	-10945	3	1	76402	-9923	190	4

Tritium Release of 3/23/84 - Vegetation (continued)

East meters	North meters	Tritium pCi/mL	Error pCi/mL
76528	-11536	60	2
76654	-13149	90	3
76780	-14762	70	2
77031	-17988	90	3
77283	-21214	80	3
77535	-24440	40	2
77787	-27666	12	1
78038	-30892	0	1

Release of September 3, 1984 - Vegetation

East meters	North meters	Tritium pCi/mL
-744	2641	25
-1739	4014	7
-2386	5556	5
-3032	7099	4
-3132	10094	3
-3231	13089	3
-147	12074	16
-3052	11497	12
-2811	12101	167
-2087	13914	481
-2521	12826	1399
-2328	13310	349
-2087	13914	330
-3034	16492	830
-3982	19069	1911
-4929	21646	119
-5877	24223	10
-6824	26800	7
-4148	33375	55
-3695	34959	4
-3242	36544	3
-2789	38128	28
-2336	39713	1
-1883	41297	1
-1430	42882	1
-977	44466	2
-524	46051	115
-21938	15755	2
-20047	17596	2
-18505	18094	2
-17560	21178	53
-15520	23666	2
-13154	24965	2
-11396	26571	1
-7696	23895	6
-4454	27029	379
-2084	28406	303
806	27029	2192
3833	25974	9859
6922	25118	4059
10011	24124	2226
11575	21875	1249
-11988	4362	46
-11174	5634	2
-10361	6906	17
-9548	8178	5
-8734	9450	3
-7921	10722	6
-7311	11676	9
-3948	11775	19
-2587	11158	500
-1906	10850	1331
-545	10233	2522
1130	10520	1380
2805	10807	168
4479	11095	198
6154	11382	110
7829	11669	406
11346	12273	978
-2784	11327	327
-2070	11012	22
-1357	10697	29
-1001	10540	68
-644	10382	34
130	10486	64
517	10538	49
904	10590	54
1679	10694	71
2066	10745	49
2453	10797	53
3228	10901	16
3615	10953	21
4002	11005	16
4776	11109	10
5164	11161	13
5551	11213	25
6325	11317	9
6712	11368	7
7100	11420	7
7874	11524	7
8261	11576	14
-18812	49782	3

Release of September 3, 1984 - Vegetation (continued)

East meters	North meters	Tritium pCi/mL
-8200	38941	5
-2436	41617	88
3329	44292	209
11570	51311	352
15546	46127	233
23940	41387	197
26998	40011	331
31570	37412	284
32304	30623	206
34323	23283	152
44628	24354	49
48986	27024	30
-10632	44751	1
-8965	49858	1
-13843	58635	1
-14607	64751	4
-13154	72305	1
-10784	79858	1
-6213	30622	127
-4152	37587	129
-2092	44552	256
-31	51517	208
2029	58482	165
7297	63864	172
12564	69246	89
20508	72763	75
28451	76280	80
11112	66953	3
12144	65753	7
13176	64552	6
14208	63352	13
15240	62152	29
8543	68584	4
7258	69399	6
5974	70215	6
4690	71030	1
3405	71846	1
11396	12322	504
12490	11145	297
13585	9968	54
14679	8790	165
15326	7994	31
12789	21477	17
14381	18118	173
15973	14760	484
15973	14760	279
17963	13765	257
21047	12571	331
22107	11995	140
24933	10460	23
25993	9885	20
35893	22591	72
33252	26785	79
32335	20699	67

Release of January 31, 1985 - Vegetation

East meters	North meters	Tritium pCi/mL	Error pCi/mL	East meters	North meters	Tritium pCi/mL	Error pCi/mL
2938	-513	44	2	12659	10880	55	2
2291	-248	33	2	12988	10531	12	1
1644	17	35	2	13316	10183	13	1
998	283	48	2	13644	9835	12	1
351	548	61	2	13973	9487	10	1
-296	813	190	4	14301	9138	10	1
-943	1079	7600	15	14629	8790	12	1
-1590	1344	590	12	14978	8442	10	1
-2236	1609	230	5	15575	7646	7	1
-2883	1875	78	2	16595	6427	4	1
-3530	2140	72	2	17614	5208	3	1
-4177	2405	84	3	17167	3467	3	1
-4823	2671	46	2	17117	2074	4	1
-3162	11427	10	1	17167	1626	4	1
-1614	10830	12	1	8757	24506	2	1
-67	10233	4	1	9124	24328	3	1
1535	10457	5	1	9491	24150	4	1
3137	10681	5	1	9858	23971	3	1
3548	10744	6	1	10225	23793	7	1
3960	10807	13	1	10592	23614	12	1
4372	10871	32	1	10959	23436	14	1
4783	10934	43	2	11166	23087	11	1
5195	10997	42	2	11372	22738	23	2
5606	11061	42	2	11579	22389	22	2
6018	11124	49	2	11786	22040	19	1
6429	11187	54	2	11993	21691	27	2
6841	11250	51	2	12200	21342	27	2
7253	11314	65	2	12407	20993	29	2
7664	11377	76	2	12613	20644	39	2
8037	11546	100	3	12820	20295	44	2
8410	11546	150	13	13027	19946	84	2
8784	11546	220	5	13234	19596	180	3
9157	11546	340	7	13441	19247	200	4
9530	11546	450	9	13648	18898	250	5
9903	12392	370	8	13854	18549	380	8
10384	12352	210	4	14061	18200	240	5
10865	12312	420	9	14268	17851	380	8
11346	12273	180	3	14475	17502	210	4
11674	11924	250	3	14682	17153	150	3
12002	11576	70	2	14889	16804	110	3
12331	11228	130	2	15096	16455	77	2

Release of January 31, 1985 - Vegetation (continued)

East meters	North meters	Tritium pCi/mL	Error pCi/mL
15302	16106	52	2
15509	15757	38	2
15716	15408	14	1
15923	15059	9	1
11647	51387	-0	1
13762	48946	0	1
15877	46504	1	1
17992	44063	2	1
20969	42712	12	1
23945	41362	10	1
24690	41024	140	3
25434	40686	120	2
26178	40349	160	3
26922	40011	180	4
27614	39608	87	2
28306	39204	64	2
28998	38801	51	1
29690	38398	24	2
32457	36785	3	1
35225	35172	8	1
37992	33558	0	1
40760	31945	1	1
43528	30332	2	1
46295	28719	3	1
49063	27106	-0	1
33940	43681	15	1
36960	51158	66	2
39980	58635	33	1
44980	64935	1	1
49980	71234	1	1

Release of March 27, 1985 - Vegetation

East meters	North meters	Tritium pCi/mL	Error pCi/mL	East meters	North meters	Tritium pCi/mL	Error pCi/mL
-200	1000	96	3	13447	10253	482	10
14	843	164	4	14059	9641	243	5
229	686	4010	80	14671	9029	131	3
443	529	61800	1240	15282	8418	17	2
657	371	22100	440	15894	7806	7	1
871	214	161	3	16506	7194	5	1
1086	57	74	2	17118	6582	8	1
1300	-100	59	2	17729	5971	7	1
-600	2900	68	2	18341	5359	5	1
-325	2650	47	2	18953	4747	5	1
-50	2400	34	2	19565	4135	6	1
225	2150	136	3	20176	3524	6	1
500	1900	2380	48	20788	2912	6	1
775	1650	27200	540	21400	2300	2	1
1050	1400	15900	318	2200	29500	0	1
1325	1150	8950	179	3787	29357	2	1
1600	900	48	2	5375	29214	1	1
1875	650	57	2	6962	29071	1	1
2150	400	30	2	8549	28929	2	1
2425	150	32	2	9025	28886	0	1
2700	-100	38	2	9819	28814	3	1
3300	11100	4	1	10613	28743	1	1
4070	11260	6	1	11406	28671	1	1
4840	11420	7	1	12200	28600	1	1
5610	11580	6	1	13152	28514	1	1
6380	11740	4	1	13946	28443	3	1
7150	11900	16	1	15057	28343	2	1
7920	12060	53	2	15533	28300	3	1
8690	12220	57	2	16327	28229	4	1
9075	12300	68	2	17438	28129	11	1
9460	12380	93	3	18390	28043	17	1
9845	12460	59	2	19502	27943	39	2
10230	12540	145	3	20295	27871	42	2
10615	12620	169	3	21248	27786	99	3
11000	12700	208	4	22200	27700	142	3
11306	12394	290	6	22994	27629	241	5
11612	12088	971	20	23787	27557	492	10
11918	11782	790	16	24740	27471	477	10
12224	11476	834	17	25692	27386	589	11
12529	11171	533	11	27121	27257	372	8
12835	10865	484	10	28708	27114	257	5

Release of March 27, 1985 (continued)

East meters	North meters	Tritium pCi/mL	Error pCi/mL
30613	26943	68	2
32200	26800	12	1
50500	48400	143	3
50629	50100	127	3
50757	51800	34	2
50886	53500	9	1
51014	55200	3	1
51143	56900	2	1
51271	58600	1	1
51400	60300	1	1
40500	60300	-0	1
38618	64909	0	1
36736	69518	0	1
34855	74127	-0	1
33600	77200	0	1

Release of July 31, 1987 - Vegetation

East meters	North meters	Tritium pCi/mL	Error pCi/mL
600	1676	14	2
898	1402	19	1
1197	1128	43	4
1495	855	2350	13
1794	581	2350	25
2092	307	17	3
2391	34	32	7
2689	-240	39	3
2988	-513	33	7
1296	-513	60	4
1197	-115	72	5
1197	133	384	10
699	482	5760	39
3485	-464	38	3
3465	-882	39	4
3445	-1300	32	3
3425	-1717	18	2
3405	-2135	76	5
3386	-2553	19	3
17565	5725	15	5
17453	4812	52	4
17341	3900	23	3
17229	2987	527	12
17117	2074	1270	19
17565	1377	2190	24
18012	681	2940	47
18055	-57	4690	35
18097	-795	2860	28
18139	-1532	2230	24
18182	-2270	527	12
18224	-3007	216	8
18266	-3745	56	4
18308	-4482	9	2
18351	-5220	8	2
18112	-5240	4	1
17813	-6882	4	2
17664	-7702	16	5
17515	-8523	3	2
42258	31311	1	2
43601	30457	2	2
44943	29604	2	2
46286	28751	0	2
47628	27898	3	4
48971	27045	0	19
48842	25428	1	2
48713	23811	1	2
48584	22195	1	2
48455	20578	1	2
48327	18962	0	2
48198	17345	1	2
48069	15728	0	2
47940	14112	0	2
47811	12495	3	20
47682	10878	1	2
47553	9262	0	2
47424	7645	1	2
47296	6029	1	1
47167	4412	1	1
46923	2452	1	1
46215	-360	1	1
45862	-1766	1	1
45508	-3172	8	5
45154	-4578	1	1
44801	-5984	1	1
44447	-7390	0	1
44093	-8796	1	1
43739	-10202	1	1
43386	-11608	2	1
40882	32457	8	1
39494	27542	5	1
38106	22626	4	1
36717	17710	6	1
35329	12794	2	1
33940	7878	2	1
32552	2962	4	1
31164	-1954	3	1
29775	-6870	4	1
28387	-11786	1	1
26999	-16702	4	1

Release of July 31, 1987 - Air

East meters	North meters	Time	HTO pCi/cu m	HT pCi/cu m
12900	12900	10:35	318	534
17200	1600	10:30	43000	1920000
17200	1600	11:20	175000	8460000
18100	-1400	11:04	56000	2350000
18100	-1400	12:10	286000	12100000
17700	5200	11:00	916	18600
17700	5200	11:30	1040	3120
24400	3300	12:45	3440	13200
24400	3300	13:20	45100	1250000
26500	8200	12:45	5270	1720000
26500	8200	13:20	5580	32700
17500	-5300	12:10	743	19500
17500	-5300	13:10	220	5850
25200	10000	14:05	4420	195000
25200	10000	14:40	21400	909000
34800	7200	14:15	451	8790
34800	7200	14:47	4170	539000
34800	7200	15:20	455	1120
25900	-4900	13:00	423	7240
25900	-4900	13:30	1170	5830
25900	-4900	14:00	191	1020
32300	30600	16:35	102	231
32300	30600	17:05	1280	3090
39600	15300	16:55	2840	523
27100	18000	15:15	435	131000
27100	18000	15:55	2150	769000
34500	22900	15:15	2430	5970
34500	22900	15:45	165	2720
40500	23800	16:37	36	12300
40500	23800	17:10	0	234
50500	36200	17:00	138	1060
51300	49600	17:50	66	1130
51300	49600	18:25	20	1510
15900	54600	18:20	637	1950
15900	54600	18:50	0	1890
72700	20300	18:22	0	3590
72700	20300	18:55	15	0

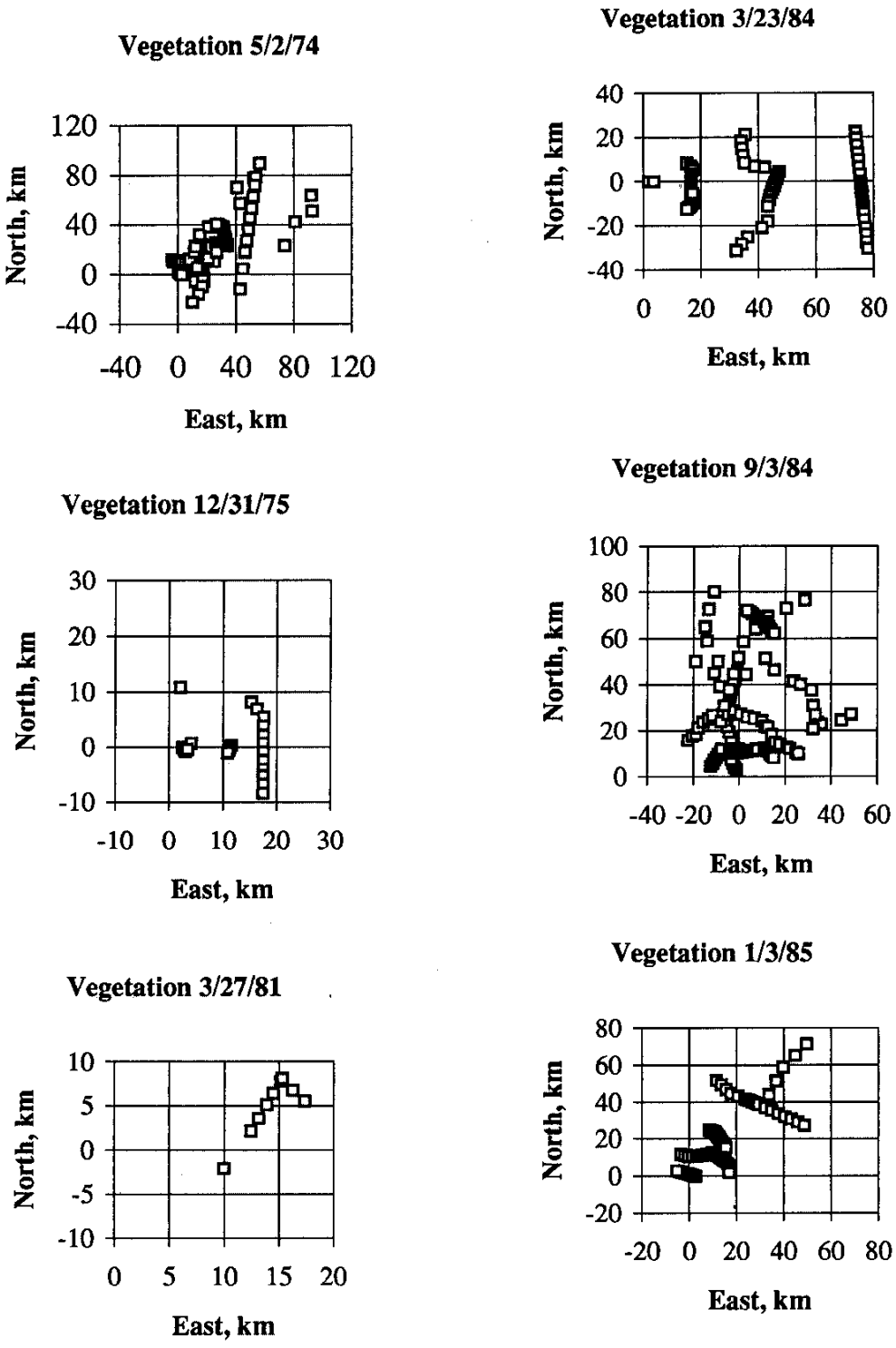

Figure 2. Sample Coverage for the Eight Atmospheric Tritium Releases.

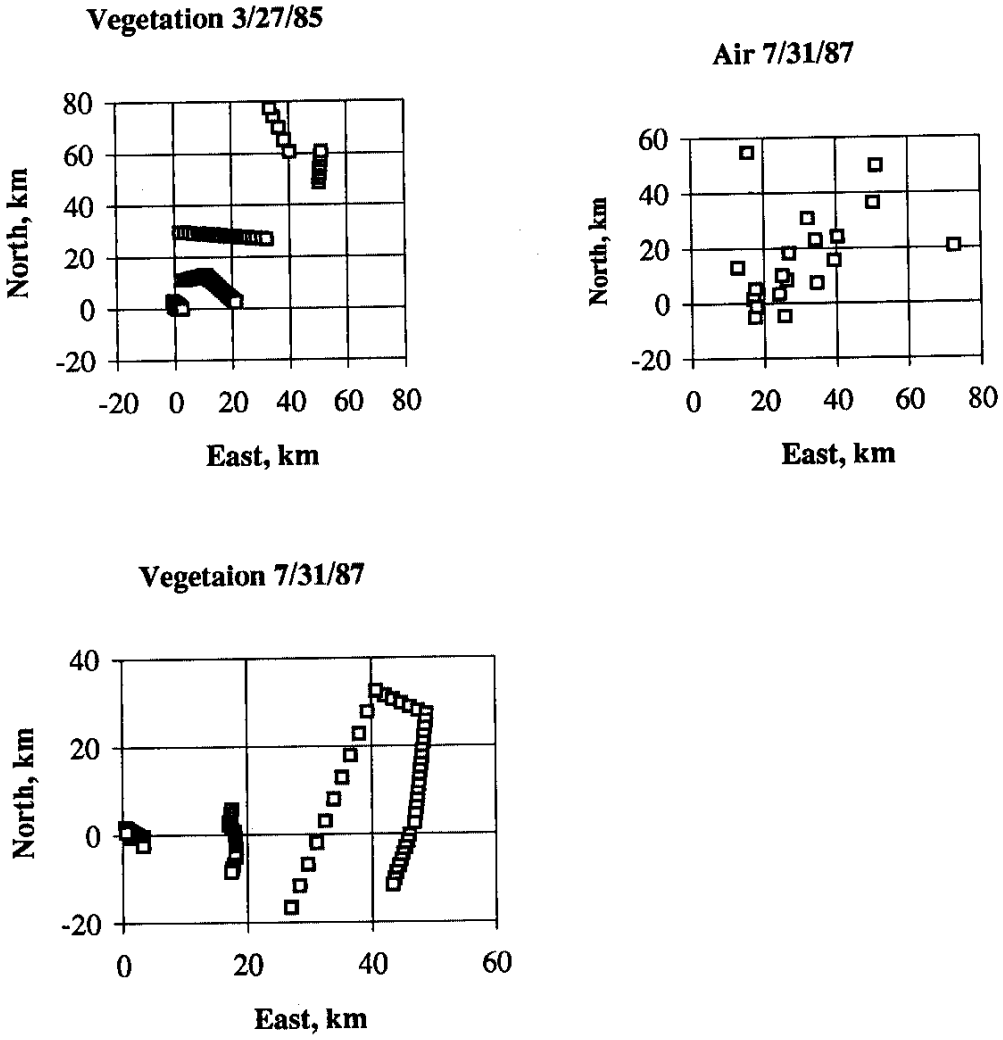

Figure 2. Sample Coverage for the Eight Atmospheric Tritium Releases (continued).

APPENDIX B
BUSH FIELD METEOROLOGICAL DATA FOR THE RELEASE PERIODS

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
5/2/74	0:00	200	0	0	1.55	17.8	0	81.8	0.258	0.359	0.411
5/2/74	1:00	170	5	0	1.55	17.8	0	81.8	0.257	0.358	0.410
5/2/74	2:00	320	5	0	1.55	17.2	0	87.4	0.257	0.358	0.410
5/2/74	3:00	180	5	0	2.06	15.6	0	87.3	0.257	0.357	0.410
5/2/74	4:00	200	5	0	1.55	15.0	0	90.3	0.257	0.357	0.410
5/2/74	5:00	0	0	0	0.00	15.0	0	90.3	0.256	0.356	0.410
5/2/74	6:00	150	0	0	2.06	15.0	6	90.3	0.256	0.356	0.410
5/2/74	7:00	100	0	0	1.55	16.7	121	87.4	0.256	0.355	0.410
5/2/74	8:00	140	0	0	1.55	18.9	303	79.2	0.255	0.354	0.409
5/2/74	9:00	140	0	0	2.06	21.1	484	71.9	0.255	0.353	0.409
5/2/74	10:00	270	3	0	1.55	25.0	622	59.6	0.253	0.352	0.408
5/2/74	11:00	210	0	0	2.58	26.7	714	56.1	0.252	0.351	0.406
5/2/74	12:00	240	0	0	3.09	26.7	748	54.3	0.251	0.349	0.405
5/2/74	13:00	190	0	0	6.70	28.3	707	46.3	0.249	0.347	0.404
5/2/74	14:00	200	2	0	3.61	27.8	612	44.6	0.248	0.345	0.402
5/2/74	15:00	180	2	0	5.15	28.9	457	43.4	0.246	0.344	0.401
5/2/74	16:00	200	2	0	6.18	27.8	278	44.6	0.245	0.343	0.400
5/2/74	17:00	190	2	0	6.18	27.8	102	44.6	0.245	0.342	0.400
5/2/74	18:00	180	4	0	5.67	27.2	4	46.0	0.244	0.341	0.399
5/2/74	19:00	200	5	0	4.12	25.6	0	48.7	0.244	0.341	0.399
5/2/74	20:00	190	6	0	3.09	23.3	0	55.3	0.244	0.340	0.399
5/2/74	21:00	180	5	0	3.09	21.7	0	60.8	0.244	0.340	0.399
5/2/74	22:00	210	5	0	3.61	21.7	0	62.9	0.243	0.339	0.399
5/2/74	23:00	200	5	3	4.12	21.7	0	67.3	0.243	0.339	0.398
5/3/74	0:00	250	5	0	1.55	18.3	0	84.7	0.299	0.338	0.398
5/3/74	1:00	140	0	0	1.55	17.8	0	87.5	0.298	0.338	0.398
5/3/74	2:00	210	0	0	2.58	17.8	0	87.5	0.298	0.337	0.398
5/3/74	3:00	230	0	0	4.12	18.9	0	84.7	0.298	0.337	0.398
5/3/74	4:00	220	5	0	4.64	19.4	0	82.0	0.298	0.337	0.398
5/3/74	5:00	220	5	0	3.61	18.9	0	84.7	0.297	0.336	0.397
5/3/74	6:00	240	3	0	3.09	18.3	6	84.7	0.297	0.336	0.397
5/3/74	7:00	240	2	0	4.64	19.4	118	82.0	0.297	0.335	0.397
5/3/74	8:00	270	2	0	6.18	21.1	299	79.5	0.296	0.335	0.397
5/3/74	9:00	240	2	0	6.18	24.4	474	70.2	0.295	0.334	0.396
5/3/74	10:00	250	2	0	7.21	26.1	620	64.0	0.294	0.333	0.395
5/3/74	11:00	270	1	0	7.21	27.8	712	56.4	0.293	0.331	0.394
5/3/74	12:00	270	2	0	7.21	28.9	741	53.1	0.291	0.330	0.392
5/3/74	13:00	270	2	0	7.73	30.6	603	45.4	0.288	0.326	0.390
5/3/74	15:00	280	2	0	6.70	31.1	452	41.2	0.287	0.325	0.389
5/3/74	16:00	270	2	0	6.18	30.0	275	43.7	0.286	0.324	0.388
5/3/74	17:00	280	2	0	6.70	29.4	102	45.1	0.285	0.323	0.387
5/3/74	18:00	270	3	0	6.18	28.9	4	46.5	0.285	0.322	0.387
5/3/74	19:00	280	5	0	5.15	27.8	0	46.1	0.285	0.322	0.386
5/3/74	20:00	250	5	0	3.61	25.6	0	52.2	0.284	0.322	0.386
5/3/74	21:00	250	5	0	2.58	23.9	0	55.4	0.284	0.321	0.386
5/3/74	22:00	260	5	0	2.06	22.8	0	57.0	0.284	0.321	0.386
5/3/74	23:00	270	5	0	3.09	21.1	0	62.8	0.284	0.320	0.386
5/4/74	0:00	270	6	0	3.09	19.4	0	66.9	0.283	0.320	0.386
5/4/74	1:00	190	5	0	1.03	18.9	0	66.7	0.283	0.320	0.385
5/4/74	2:00	270	0	0	1.55	18.9	0	69.1	0.283	0.319	0.385
5/4/74	3:00	270	5	0	1.55	18.9	0	66.7	0.282	0.319	0.385

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
5/4/74	4:00	310	6	0	2.06	16.7	0	76.2	0.282	0.318	0.385
5/4/74	5:00	20	6	0	1.55	14.4	0	87.2	0.282	0.318	0.385
5/4/74	6:00	0	3	0	0.00	14.4	8	84.2	0.282	0.318	0.385
5/4/74	7:00	320	2	0	1.55	16.7	125	81.6	0.281	0.317	0.384
5/4/74	8:00	340	2	0	2.06	20.0	305	71.7	0.281	0.317	0.384
5/4/74	9:00	50	2	0	3.61	23.3	481	59.2	0.280	0.316	0.383
5/4/74	10:00	90	2	0	5.15	25.0	627	48.6	0.279	0.315	0.382
5/4/74	11:00	140	1	0	2.58	26.1	721	47.3	0.278	0.313	0.381
5/4/74	12:00	110	1	0	2.58	26.7	752	45.8	0.276	0.312	0.380
5/4/74	13:00	140	1	0	3.09	27.8	714	44.6	0.275	0.310	0.378
5/4/74	14:00	130	2	0	3.09	29.4	609	43.6	0.273	0.308	0.377
5/4/74	15:00	10	2	0	2.06	30.0	458	42.3	0.272	0.307	0.376
5/4/74	16:00	40	2	0	2.06	28.9	280	43.4	0.271	0.306	0.375
5/4/74	17:00	90	2	0	2.58	28.3	105	46.3	0.270	0.305	0.374
5/4/74	18:00	100	3	37	3.09	26.7	0	52.5	0.270	0.304	0.374
5/4/74	19:00	340	0	2	7.73	18.9	0	76.6	0.500	0.500	0.500
5/4/74	20:00	140	0	0	3.09	17.8	0	76.4	0.500	0.499	0.500
5/4/74	21:00	100	5	0	4.12	17.2	0	81.7	0.499	0.499	0.500
5/4/74	22:00	40	0	0	3.61	17.2	0	87.4	0.499	0.498	0.500
5/4/74	23:00	120	0	0	2.06	16.7	0	90.4	0.498	0.498	0.500
5/5/74	0:00	140	0	0	2.58	17.2	0	90.4	0.498	0.497	0.500
5/5/74	1:00	180	0	0	2.06	17.2	0	90.4	0.497	0.497	0.500
5/5/74	2:00	30	0	0	1.03	17.2	0	90.4	0.497	0.496	0.500
5/5/74	3:00	340	0	0	2.06	17.2	0	90.4	0.496	0.495	0.500
5/5/74	5:00	300	0	0	2.06	17.2	0	90.4	0.495	0.494	0.500
5/5/74	6:00	50	0	0	1.55	17.2	8	90.4	0.495	0.494	0.499
5/5/74	7:00	40	0	0	2.06	17.8	125	90.5	0.494	0.493	0.499
5/5/74	8:00	100	0	0	3.09	17.8	314	90.5	0.493	0.493	0.499
5/5/74	9:00	80	0	0	3.09	17.8	504	90.5	0.492	0.492	0.499
5/5/74	10:00	100	0	0	2.58	18.3	656	87.6	0.491	0.490	0.498
5/5/74	11:00	250	0	0	2.06	19.4	751	82.0	0.489	0.489	0.496
5/5/74	12:00	160	2	0	2.06	21.7	776	72.0	0.488	0.487	0.495
5/5/74	13:00	160	0	4	2.06	22.8	683	65.4	0.486	0.485	0.494
5/5/74	14:00	330	0	0	2.06	18.9	651	87.6	0.498	0.498	0.499
5/5/74	15:00	30	0	0	4.12	16.1	511	90.4	0.498	0.498	0.499
5/5/74	16:00	20	0	0	5.15	15.6	322	87.3	0.497	0.497	0.498
5/5/74	17:00	20	0	0	5.15	15.0	131	87.2	0.496	0.496	0.497
5/5/74	18:00	30	0	0	3.61	13.9	9	90.2	0.495	0.495	0.497
5/5/74	19:00	20	0	0	4.12	13.3	0	90.2	0.495	0.495	0.497
5/5/74	20:00	30	0	0	4.12	12.2	0	90.1	0.494	0.494	0.497
5/5/74	21:00	30	0	0	5.15	11.7	0	86.9	0.494	0.493	0.497
5/5/74	22:00	30	0	0	5.15	11.1	0	86.8	0.493	0.493	0.497
5/5/74	23:00	40	0	0	2.58	11.1	0	86.8	0.493	0.492	0.497
5/6/74	0:00	10	5	0	3.09	11.1	0	86.8	0.492	0.492	0.497
5/6/74	1:00	10	0	0	3.09	11.1	0	83.8	0.492	0.491	0.497
5/6/74	2:00	350	0	0	5.15	11.1	0	83.8	0.491	0.491	0.497
5/6/74	3:00	30	0	0	3.61	10.6	0	83.7	0.491	0.490	0.497
5/6/74	4:00	350	0	0	3.09	10.6	0	83.7	0.490	0.490	0.497
5/6/74	5:00	350	0	0	2.58	10.6	0	83.7	0.490	0.489	0.496
5/6/74	6:00	360	0	0	2.06	10.0	11	86.7	0.489	0.489	0.496

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
5/6/74	7:00	340	0	0	3.09	10.0	143	86.7	0.489	0.488	0.496
5/6/74	8:00	340	0	0	3.09	10.6	340	83.7	0.488	0.487	0.496
5/6/74	9:00	30	0	0	4.12	12.2	528	78.2	0.487	0.486	0.495
5/6/74	10:00	340	2	0	4.64	13.3	680	75.6	0.486	0.485	0.494
5/6/74	11:00	340	0	0	2.58	16.1	768	63.8	0.484	0.483	0.493
5/6/74	12:00	330	0	0	2.58	17.8	795	62.0	0.482	0.481	0.492
5/6/74	13:00	330	0	0	2.58	20.0	652	52.5	0.479	0.477	0.489
5/6/74	15:00	330	0	0	1.55	21.1	494	45.8	0.477	0.476	0.488
5/6/74	16:00	330	0	0	1.55	21.1	307	41.1	0.476	0.474	0.487
5/6/74	17:00	170	0	0	1.55	20.6	122	39.5	0.475	0.473	0.486
5/6/74	18:00	190	0	0	2.06	20.0	8	47.2	0.474	0.473	0.486
5/6/74	19:00	190	5	0	2.06	17.8	0	66.5	0.474	0.472	0.486
5/6/74	20:00	190	5	0	1.55	15.0	0	75.9	0.473	0.472	0.486
5/6/74	21:00	180	5	0	1.55	13.3	0	81.2	0.473	0.471	0.486
5/6/74	22:00	0	5	0	0.00	12.2	0	83.9	0.472	0.471	0.486
5/6/74	23:00	160	5	0	1.55	11.1	0	86.8	0.472	0.470	0.486
5/7/74	0:00	130	5	0	1.55	10.6	0	89.9	0.472	0.470	0.486
5/7/74	1:00	200	5	0	1.55	10.0	0	89.9	0.471	0.469	0.486
5/7/74	2:00	0	6	0	0.00	9.4	0	89.8	0.471	0.469	0.486
5/7/74	3:00	180	5	0	1.03	8.9	0	93.1	0.470	0.468	0.486
5/7/74	4:00	200	6	0	1.55	8.9	0	93.1	0.470	0.468	0.485
5/7/74	5:00	330	6	0	1.55	8.3	0	93.1	0.469	0.467	0.485
5/7/74	6:00	280	3	0	2.06	8.3	12	93.1	0.469	0.466	0.485
5/7/74	7:00	350	2	0	2.06	11.1	142	90.0	0.468	0.466	0.485
5/7/74	8:00	360	2	0	2.06	13.9	331	78.4	0.468	0.465	0.485
5/7/74	9:00	60	2	0	4.12	17.2	510	59.7	0.467	0.464	0.484
5/7/74	10:00	30	2	0	4.64	18.3	660	52.0	0.465	0.463	0.483
5/7/74	11:00	30	1	0	3.61	20.0	753	47.2	0.464	0.461	0.482
5/7/74	12:00	50	1	0	3.61	21.1	782	44.2	0.462	0.459	0.481
5/7/74	13:00	330	1	0	1.55	22.2	743	43.0	0.460	0.458	0.479
5/7/74	14:00	320	2	0	2.58	22.8	642	40.2	0.458	0.456	0.478
5/7/74	15:00	320	2	0	2.06	23.9	486	36.4	0.457	0.454	0.477
5/7/74	16:00	30	2	0	3.09	23.9	301	35.1	0.456	0.453	0.476
5/7/74	17:00	20	2	0	2.58	24.4	117	34.0	0.455	0.452	0.475
5/7/74	18:00	40	3	0	2.58	23.3	7	36.2	0.454	0.451	0.475
5/7/74	19:00	30	6	0	2.58	19.4	0	54.2	0.454	0.451	0.475
5/7/74	20:00	200	6	0	1.55	16.7	0	66.2	0.453	0.450	0.475
5/7/74	21:00	340	6	0	1.55	13.9	0	75.7	0.453	0.450	0.475
5/7/74	22:00	210	6	0	1.55	12.8	0	78.3	0.452	0.449	0.475
5/7/74	23:00	200	6	0	1.55	12.2	0	81.0	0.452	0.449	0.474
5/8/74	0:00	210	6	0	1.55	11.1	0	83.8	0.451	0.448	0.474
5/8/74	1:00	180	6	0	1.55	11.1	0	83.8	0.451	0.448	0.474
5/8/74	2:00	220	6	0	1.03	11.7	0	83.9	0.450	0.447	0.474
5/8/74	3:00	160	6	0	1.55	12.2	0	87.0	0.450	0.447	0.474
5/8/74	4:00	0	6	0	0.00	11.7	0	90.0	0.450	0.446	0.474
5/8/74	5:00	0	6	0	0.00	11.1	0	93.2	0.449	0.446	0.474
5/8/74	6:00	10	3	0	1.03	10.0	12	93.2	0.449	0.445	0.474
5/8/74	7:00	0	2	0	0.00	13.3	140	84.1	0.448	0.445	0.474
5/8/74	8:00	140	2	0	3.09	15.6	328	87.3	0.448	0.444	0.473
5/8/74	9:00	130	2	0	4.12	18.3	508	81.8	0.447	0.443	0.473

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	Soil Moisture 5-10cm	Soil Moisture 10-15cm
5/8/74	10:00	150	2	0	4.12	21.7	649	69.7	0.445	0.442	0.472
5/8/74	11:00	160	2	0	4.64	23.9	738	57.3	0.444	0.440	0.471
5/8/74	12:00	170	2	0	4.12	25.0	767	48.6	0.442	0.438	0.469
5/8/74	13:00	140	2	0	4.12	25.6	731	47.1	0.440	0.437	0.468
5/8/74	14:00	140	2	0	4.12	25.0	635	43.8	0.439	0.435	0.466
5/8/74	15:00	150	2	0	4.12	25.6	482	42.4	0.437	0.433	0.465
5/8/74	16:00	140	3	0	5.15	25.0	300	45.3	0.436	0.432	0.464
5/8/74	17:00	130	3	0	4.12	24.4	119	46.8	0.435	0.431	0.464
5/8/74	18:00	140	4	0	5.67	23.9	8	51.7	0.434	0.430	0.463
5/8/74	19:00	150	5	0	5.15	22.2	0	60.9	0.434	0.430	0.463
5/8/74	20:00	140	5	0	4.12	21.1	0	65.0	0.433	0.429	0.463
5/8/74	21:00	150	5	0	3.61	20.0	0	71.7	0.433	0.429	0.463
5/8/74	22:00	150	5	0	4.12	19.4	0	71.6	0.433	0.428	0.463
5/8/74	23:00	140	5	0	3.61	18.9	0	76.6	0.432	0.428	0.463

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
12/31/75	20:00	250	6	0	7.21	11.1	0	69.7	0.482	0.486	0.478
12/31/75	21:00	270	6	0	7.725	10.0	0	69.5	0.481	0.486	0.478
12/31/75	22:00	270	6	0	7.725	8.9	0	71.9	0.480	0.486	0.478
12/31/75	23:00	250	6	0	7.725	7.8	0	74.5	0.480	0.486	0.478
1/1/76	0:00	270	5	0	7.21	7.2	0	74.5	0.479	0.486	0.478
1/1/76	1:00	260	6	0	6.18	6.7	0	74.4	0.479	0.486	0.478
1/1/76	2:00	230	6	0	6.695	6.1	0	77.2	0.478	0.486	0.478
1/1/76	3:00	290	6	0	5.665	5.6	0	80.0	0.477	0.486	0.478
1/1/76	4:00	280	6	0	5.665	5.6	0	80.0	0.477	0.486	0.478
1/1/76	5:00	310	6	0	3.605	5.0	0	86.2	0.476	0.486	0.478
1/1/76	6:00	290	6	0	3.09	4.4	0	89.4	0.475	0.486	0.478
1/1/76	7:00	280	6	0	2.06	3.9	0	89.4	0.475	0.486	0.478
1/1/76	8:00	230	3	0	2.575	3.3	20	96.3	0.474	0.486	0.478
1/1/76	9:00	300	2	0	2.06	7.2	121	83.3	0.474	0.485	0.478
1/1/76	10:00	320	2	0	3.605	10.0	230	72.3	0.473	0.485	0.479
1/1/76	11:00	320	2	0	5.15	12.2	305	62.9	0.472	0.485	0.479
1/1/76	12:00	340	2	0	4.635	13.9	328	58.8	0.472	0.485	0.480
1/1/76	13:00	360	2	0	4.635	16.1	293	53.3	0.471	0.485	0.480
1/1/76	14:00	310	2	0	2.575	16.7	213	51.5	0.471	0.484	0.480
1/1/76	15:00	340	2	0	2.06	17.8	102	48.2	0.470	0.484	0.481
1/1/76	16:00	320	3	0	1.545	17.8	13	48.2	0.470	0.484	0.481
1/1/76	17:00	310	6	0	1.03	17.2	0	49.9	0.469	0.484	0.481
1/1/76	18:00	260	6	0	1.545	11.7	0	80.9	0.468	0.484	0.481
1/1/76	19:00	230	6	0	1.545	9.4	0	89.8	0.468	0.484	0.481
1/1/76	20:00	0	6	0	0	7.2	0	96.4	0.467	0.484	0.481
1/1/76	21:00	0	6	0	0	6.1	0	96.4	0.467	0.484	0.481
1/1/76	22:00	0	6	0	0	5.0	0	96.4	0.466	0.484	0.481
1/1/76	23:00	190	6	0	1.545	4.4	0	100.0	0.465	0.484	0.481
1/2/76	0:00	0	6	0	0	4.4	0	96.4	0.465	0.484	0.481
1/2/76	1:00	0	6	0	0	3.3	0	100.0	0.464	0.484	0.481
1/2/76	2:00	150	6	0	1.03	2.2	0	100.0	0.464	0.484	0.481
1/2/76	3:00	260	0	0	1.03	3.3	0	100.0	0.463	0.484	0.481
1/2/76	4:00	240	5	0	1.03	2.2	0	100.0	0.462	0.484	0.481
1/2/76	5:00	0	5	0	0	1.1	0	100.0	0.462	0.483	0.481
1/2/76	6:00	0	6	0	0	1.1	0	100.0	0.461	0.483	0.481
1/2/76	7:00	350	0	0	1.03	1.1	0	100.0	0.461	0.483	0.481
1/2/76	8:00	220	3	0	1.03	1.1	22	100.0	0.460	0.483	0.481
1/2/76	9:00	0	2	0	1.545	8.3	236	93.1	0.459	0.483	0.481
1/2/76	11:00	120	2	0	2.06	11.1	310	83.8	0.458	0.483	0.482
1/2/76	12:00	130	2	0	4.12	13.9	330	70.5	0.458	0.483	0.482
1/2/76	13:00	120	2	0	4.12	16.1	294	61.6	0.457	0.482	0.483
1/2/76	14:00	120	2	0	3.605	17.2	212	57.6	0.457	0.482	0.483
1/2/76	15:00	120	2	0	3.605	17.8	102	53.8	0.456	0.482	0.483
1/2/76	16:00	120	3	0	4.12	16.7	13	61.7	0.455	0.482	0.483
1/2/76	17:00	120	0	0	3.605	15.6	0	68.4	0.455	0.482	0.483
1/2/76	18:00	120	0	0	4.12	14.4	0	73.2	0.454	0.481	0.483
1/2/76	19:00	110	5	0	3.09	12.2	0	78.2	0.454	0.481	0.483
1/2/76	20:00	120	0	0	2.06	10.6	0	83.7	0.453	0.481	0.483
1/2/76	21:00	160	0	0	1.545	9.4	0	93.1	0.452	0.481	0.483
1/2/76	22:00	240	0	0	1.03	9.4	0	93.1	0.452	0.481	0.483

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
1/2/76	23:00	160	5	0	2.575	8.9	0	93.1	0.451	0.481	0.483
1/3/76	0:00	140	5	0	1.545	8.9	0	93.1	0.451	0.481	0.483
1/3/76	1:00	110	6	0	1.545	7.8	0	100.0	0.450	0.481	0.483
1/3/76	2:00	140	6	0	2.575	6.1	0	100.0	0.450	0.481	0.483
1/3/76	3:00	100	6	0	1.03	5.6	0	100.0	0.449	0.481	0.483
1/3/76	4:00	0	6	0	0	5.0	0	100.0	0.448	0.481	0.483
1/3/76	5:00	0	6	0	0	5.6	0	100.0	0.448	0.481	0.483
1/3/76	6:00	0	0	0	0	5.0	0	100.0	0.447	0.480	0.483
1/3/76	7:00	140	0	0	2.06	7.8	0	100.0	0.447	0.480	0.483
1/3/76	8:00	120	0	0	1.545	8.9	17	100.0	0.446	0.480	0.483
1/3/76	9:00	200	0	0	2.575	11.1	115	93.2	0.446	0.480	0.483
1/3/76	10:00	160	3	0	4.12	12.8	225	93.3	0.445	0.480	0.483
1/3/76	11:00	230	3	1	3.09	15.6	293	81.5	0.444	0.480	0.484
1/3/76	12:00	180	0	0	3.605	15.6	326	90.3	0.444	0.480	0.484
1/3/76	13:00	220	0	0	3.605	17.2	292	81.7	0.444	0.479	0.484
1/3/76	14:00	220	0	0	4.12	18.3	210	76.5	0.443	0.479	0.485
1/3/76	15:00	270	0	0	5.665	18.3	102	79.1	0.442	0.479	0.485
1/3/76	16:00	270	0	0	6.695	17.2	13	84.5	0.442	0.479	0.485
1/3/76	17:00	300	0	0	6.18	16.7	0	84.5	0.441	0.478	0.485
1/3/76	18:00	290	0	0	5.665	14.4	0	87.2	0.441	0.478	0.485
1/3/76	19:00	290	0	0	5.15	13.3	0	84.1	0.440	0.478	0.485
1/3/76	20:00	300	0	0	6.18	12.2	0	67.7	0.440	0.478	0.485
1/3/76	21:00	300	0	0	6.18	10.6	0	64.8	0.439	0.478	0.485
1/3/76	22:00	290	0	0	5.15	8.3	0	57.4	0.438	0.478	0.485
1/4/76	0:00	290	0	0	5.665	7.8	0	64.2	0.437	0.478	0.485
1/4/76	1:00	280	0	0	6.695	7.2	0	61.6	0.437	0.478	0.485
1/4/76	2:00	280	0	0	8.24	6.7	0	56.9	0.436	0.478	0.485
1/4/76	3:00	290	5	0	7.725	6.1	0	56.7	0.436	0.477	0.485
1/4/76	4:00	300	6	0	6.695	4.4	0	63.4	0.435	0.477	0.484
1/4/76	5:00	290	6	0	7.21	2.8	0	68.1	0.434	0.477	0.484
1/4/76	7:00	300	6	0	5.665	0.6	0	73.2	0.433	0.477	0.484
1/4/76	8:00	310	3	0	3.605	-0.6	24	76.0	0.433	0.477	0.484
1/4/76	9:00	320	2	0	4.12	2.2	134	62.8	0.432	0.477	0.484
1/4/76	10:00	320	2	0	7.725	3.9	251	51.8	0.432	0.477	0.484
1/4/76	11:00	310	2	0	5.15	5.0	332	48.1	0.431	0.476	0.485
1/4/76	12:00	320	2	0	4.635	6.1	358	44.7	0.431	0.476	0.485
1/4/76	13:00	310	2	0	5.15	7.2	325	38.3	0.430	0.475	0.486
1/4/76	14:00	340	2	0	8.24	8.3	238	35.7	0.430	0.475	0.486
1/4/76	15:00	350	2	0	6.18	8.3	121	34.3	0.429	0.475	0.486
1/4/76	16:00	340	3	0	5.665	7.8	18	34.1	0.429	0.475	0.486
1/4/76	17:00	330	6	0	3.605	7.2	0	36.8	0.428	0.474	0.486
1/4/76	18:00	320	5	0	3.605	3.9	0	47.8	0.427	0.474	0.486
1/4/76	19:00	300	5	0	2.575	2.2	0	55.7	0.427	0.474	0.486
1/4/76	20:00	320	5	0	2.06	-0.6	0	67.3	0.426	0.474	0.486
1/4/76	21:00	350	6	0	1.545	-1.1	0	70.0	0.426	0.474	0.486
1/4/76	22:00	310	6	0	2.575	-2.2	0	72.7	0.425	0.474	0.486
1/4/76	23:00	330	6	0	2.575	-2.2	0	69.8	0.425	0.474	0.486
1/5/76	0:00	330	6	0	2.575	-3.9	0	78.5	0.424	0.474	0.486
1/5/76	1:00	350	6	0	3.605	-3.3	0	75.5	0.424	0.473	0.486
1/5/76	2:00	350	6	0	3.09	-3.3	0	69.5	0.423	0.473	0.486
1/5/76	3:00	360	6	0	2.575	-3.9	0	75.4	0.423	0.473	0.486

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
1/5/76	4:00	10	6	0	2.575	-3.9	0	72.3	0.422	0.473	0.485
1/5/76	5:00	40	6	0	3.09	-3.3	0	69.5	0.421	0.473	0.485
1/5/76	6:00	50	6	0	3.09	-3.3	0	66.7	0.421	0.473	0.485
1/5/76	7:00	50	6	0	3.09	-3.9	0	66.5	0.420	0.473	0.485
1/5/76	8:00	60	4	0	4.12	-2.8	26	64.1	0.420	0.473	0.485
1/5/76	9:00	50	4	0	4.635	-1.7	144	56.9	0.419	0.472	0.485
1/5/76	10:00	60	2	0	3.09	1.1	347	43.1	0.418	0.472	0.485
1/5/76	12:00	10	3	0	5.15	3.3	370	38.7	0.418	0.471	0.486
1/5/76	13:00	10	3	0	4.12	3.9	338	37.3	0.417	0.471	0.486
1/5/76	14:00	20	3	0	5.15	4.4	251	37.5	0.417	0.471	0.487
1/5/76	15:00	10	3	0	3.605	5.0	129	34.6	0.416	0.470	0.487
1/5/76	16:00	20	3	0	4.635	5.6	20	34.8	0.416	0.470	0.487
1/5/76	17:00	70	5	0	3.09	3.3	0	40.3	0.415	0.470	0.487
1/5/76	18:00	80	5	0	3.09	-0.6	0	54.9	0.415	0.470	0.487
1/5/76	19:00	60	5	0	2.575	-1.1	0	59.4	0.414	0.470	0.487
1/5/76	20:00	40	5	0	2.06	-1.7	0	64.4	0.414	0.469	0.487
1/5/76	21:00	50	5	0	2.06	-2.8	0	72.5	0.413	0.469	0.486
1/5/76	22:00	60	5	0	3.09	-3.3	0	72.4	0.413	0.469	0.486
1/5/76	23:00	70	5	0	3.09	-3.9	0	72.3	0.412	0.469	0.486
1/6/76	0:00	20	5	0	1.545	-2.8	0	64.1	0.411	0.469	0.486
1/6/76	1:00	20	6	0	1.545	-3.3	0	72.4	0.411	0.469	0.486
1/6/76	2:00	20	6	0	1.545	-3.9	0	72.3	0.410	0.469	0.486
1/6/76	3:00	360	5	0	3.605	-3.9	0	81.8	0.410	0.468	0.486
1/6/76	4:00	360	0	0	2.575	-3.9	0	81.8	0.409	0.468	0.486
1/6/76	5:00	20	0	0	2.06	-2.8	0	78.7	0.409	0.468	0.486
1/6/76	6:00	360	0	0	3.605	-2.8	0	78.7	0.408	0.468	0.485
1/6/76	7:00	40	0	0	2.575	-1.1	0	67.2	0.408	0.468	0.485
1/6/76	8:00	40	0	0	3.09	-0.6	25	54.9	0.407	0.468	0.485
1/6/76	9:00	30	0	0	3.09	0.6	140	52.9	0.407	0.467	0.485
1/6/76	10:00	60	0	0	3.605	1.1	262	48.9	0.406	0.467	0.485
1/6/76	11:00	10	0	0	3.605	2.2	345	45.3	0.406	0.467	0.486
1/6/76	12:00	20	0	0	4.12	2.8	373	47.4	0.405	0.466	0.486
1/6/76	13:00	60	0	0	4.635	3.3	341	47.6	0.405	0.466	0.486
1/6/76	14:00	30	0	0	5.15	3.3	256	49.6	0.404	0.466	0.487
1/6/76	15:00	30	0	0	4.635	3.9	133	53.9	0.404	0.465	0.487
1/6/76	16:00	10	0	0	3.605	3.9	22	53.9	0.403	0.465	0.487
1/6/76	17:00	30	0	0	4.12	3.9	0	53.9	0.403	0.465	0.487
1/6/76	18:00	30	0	0	3.605	3.9	0	53.9	0.402	0.465	0.487
1/6/76	19:00	20	0	0	3.605	3.3	0	56.0	0.402	0.464	0.486
1/6/76	20:00	20	0	0	3.605	3.3	0	58.3	0.401	0.464	0.486
1/6/76	21:00	20	0	0	3.605	3.3	0	56.0	0.401	0.464	0.486
1/6/76	22:00	20	0	0	4.635	3.3	0	56.0	0.400	0.464	0.486
1/6/76	23:00	40	0	0	3.09	2.8	0	68.1	0.400	0.464	0.486

Date Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/27/81 7:00	60	3	0	2.06	5.6	50	89.5	0.367	0.437	0.449
3/27/81 8:00	123	2	0	3.43	9.8	212	70.5	0.366	0.437	0.449
3/27/81 9:00	187	2	0	4.81	14.1	385	56.1	0.365	0.436	0.448
3/27/8110:00	250	2	0	6.18	18.3	525	45.0	0.364	0.435	0.448
3/27/8111:00	250	2	0	6.52	19.4	621	42.1	0.362	0.434	0.448
3/27/8112:00	250	2	0	6.87	20.6	652	39.5	0.361	0.433	0.447
3/27/8113:00	250	2	0	7.21	21.7	612	37.0	0.359	0.432	0.447
3/27/8114:00	250	2	0	6.52	22.4	510	33.0	0.358	0.431	0.447
3/27/8115:00	250	2	0	5.84	23.1	356	29.3	0.357	0.430	0.447
3/27/8116:00	250	2	0	5.15	23.9	179	26.1	0.356	0.430	0.446
3/27/8117:00	243	4	0	4.12	21.7	35	31.1	0.356	0.430	0.446
3/27/8118:00	237	4	0	3.09	19.4	0	37.3	0.355	0.429	0.446
3/27/8119:00	230	0	0	2.06	17.2	0	44.7	0.355	0.429	0.446
3/27/8120:00	153	5	0	1.37	15.0	0	52.3	0.355	0.429	0.446
3/27/8121:00	77	5	0	0.69	12.8	0	61.5	0.354	0.428	0.446
3/27/8122:00	0	6	0	0.00	10.6	0	72.4	0.354	0.428	0.446
3/27/8123:00	0	6	0	0.00	10.2	0	75.1	0.354	0.428	0.446
3/28/81 0:00	0	6	0	0.00	9.8	0	77.8	0.353	0.428	0.446
3/28/81 1:00	0	6	0	0.00	9.4	0	80.6	0.353	0.427	0.446
3/28/81 2:00	20	6	0	0.86	10.2	0	74.1	0.353	0.427	0.446
3/28/81 3:00	40	6	0	1.72	10.9	0	68.2	0.352	0.427	0.445
3/28/81 4:00	60	6	0	2.58	11.7	0	62.7	0.352	0.427	0.445
3/28/81 5:00	60	5	0	2.75	11.1	0	63.4	0.352	0.426	0.445
3/28/81 6:00	60	4	0	2.92	10.6	0	64.0	0.351	0.426	0.445
3/28/81 7:00	60	4	0	3.09	10.0	47	64.7	0.351	0.426	0.445
3/28/81 8:00	67	3	0	4.12	11.9	210	59.0	0.350	0.425	0.445
3/28/81 9:00	73	2	0	5.15	13.7	391	53.9	0.349	0.425	0.445
3/28/8110:00	80	2	0	6.18	15.6	540	49.4	0.347	0.424	0.444
3/28/8111:00	93	2	0	5.15	17.2	635	43.0	0.346	0.423	0.444
3/28/8112:00	107	2	0	4.12	18.9	663	37.6	0.344	0.422	0.444
3/28/8113:00	120	2	0	3.09	20.6	621	32.8	0.343	0.421	0.443
3/28/8114:00	113	2	0	4.12	21.1	519	32.2	0.341	0.420	0.443
3/28/8115:00	107	2	0	5.15	21.7	365	31.5	0.340	0.419	0.443
3/28/8116:00	100	2	0	6.18	22.2	186	30.9	0.339	0.419	0.443
3/28/8117:00	120	4	0	6.35	20.9	37	34.6	0.339	0.418	0.443
3/28/8118:00	140	4	0	6.52	19.6	0	38.7	0.339	0.418	0.442
3/28/8119:00	160	0	0	6.70	18.3	0	43.4	0.338	0.418	0.442
3/28/8120:00	147	5	0	4.64	15.7	0	55.8	0.338	0.417	0.442
3/28/8122:00	140	5	0	3.61	14.4	0	63.4	0.337	0.417	0.442
3/28/8123:00	133	5	0	3.26	13.3	0	64.7	0.337	0.417	0.442
3/29/81 0:00	127	5	0	2.92	12.2	0	66.0	0.337	0.417	0.442
3/29/81 1:00	120	5	0	2.58	11.1	0	67.4	0.336	0.416	0.442
3/29/81 2:00	80	5	0	1.72	10.4	0	70.6	0.336	0.416	0.442
3/29/81 3:00	40	5	0	0.86	9.6	0	74.0	0.336	0.416	0.442
3/29/81 4:00	0	5	0	0.00	8.9	0	77.6	0.335	0.416	0.442
3/29/81 5:00	0	5	0	0.00	8.3	0	82.4	0.335	0.415	0.441
3/29/81 6:00	0	4	0	0.00	7.8	0	87.6	0.335	0.415	0.441
3/29/81 7:00	0	4	0	0.00	7.2	52	93.0	0.334	0.415	0.441
3/29/81 8:00	53	4	0	1.20	10.6	217	84.7	0.333	0.414	0.441
3/29/81 9:00	107	3	0	2.40	13.9	394	77.5	0.332	0.414	0.441
3/29/8110:00	160	0	0	3.61	17.2	538	71.2	0.331	0.413	0.441

Date Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/29/8111:00	160	0	0	4.64	18.9	632	65.2	0.329	0.412	0.440
3/29/8112:00	160	0	0	5.67	20.6	661	59.8	0.328	0.411	0.440
3/29/8113:00	160	0	0	6.70	22.2	619	55.0	0.326	0.410	0.440
3/29/8114:00	157	0	0	6.87	22.6	518	53.2	0.325	0.409	0.439
3/29/8115:00	153	0	0	7.04	23.0	365	51.5	0.324	0.408	0.439
3/29/8116:00	150	0	0	7.21	23.3	187	49.8	0.323	0.408	0.439
3/29/8117:00	147	0	0	7.04	22.6	38	52.6	0.323	0.407	0.439
3/29/8118:00	143	0	0	6.87	21.9	0	55.5	0.322	0.407	0.439
3/29/8119:00	140	0	0	6.70	21.1	0	58.6	0.322	0.407	0.439
3/29/8120:00	143	0	0	6.52	20.2	0	62.6	0.322	0.407	0.438
3/29/8121:00	147	0	0	6.35	19.3	0	66.8	0.321	0.406	0.438
3/29/8122:00	150	0	0	6.18	18.3	0	71.4	0.321	0.406	0.438
3/29/8123:00	153	0	0	6.70	18.3	0	71.4	0.321	0.406	0.438
3/30/81 0:00	157	0	0	7.21	18.3	0	71.4	0.320	0.406	0.438
3/30/81 1:00	160	0	0	7.73	18.3	0	71.4	0.320	0.405	0.438
3/30/81 2:00	163	0	0	7.55	18.5	0	73.1	0.319	0.405	0.438
3/30/81 3:00	167	0	0	7.38	18.7	0	74.8	0.319	0.405	0.438
3/30/81 4:00	170	0	0	7.21	18.9	0	76.6	0.318	0.405	0.438
3/30/81 5:00	167	0	0	7.90	18.9	0	77.4	0.318	0.405	0.438
3/30/81 6:00	163	0	0	8.58	18.9	0	78.3	0.317	0.405	0.438
3/30/81 7:00	160	0	2	9.27	18.9	38	79.2	0.347	0.412	0.441
3/30/81 8:00	207	0	7	7.55	17.6	161	83.6	0.462	0.439	0.455
3/30/81 9:00	253	0	2	5.84	16.3	374	88.4	0.490	0.445	0.458
3/30/8110:00	300	0	1	4.12	15.0	541	93.4	0.505	0.449	0.460
3/30/8111:00	273	2	0	5.15	17.4	643	79.9	0.502	0.448	0.459
3/30/8112:00	247	2	0	6.18	19.8	668	68.5	0.499	0.447	0.459
3/30/8113:00	220	2	0	7.21	22.2	624	58.9	0.496	0.447	0.459
3/30/8114:00	223	2	0	7.04	23.1	520	56.5	0.493	0.446	0.458
3/30/8115:00	227	2	0	6.87	24.1	366	54.2	0.491	0.446	0.458
3/30/8116:00	230	2	0	6.70	25.0	186	52.0	0.490	0.445	0.458
3/30/8117:00	230	3	0	5.49	23.9	39	53.5	0.489	0.445	0.458
3/30/8118:00	230	3	0	4.29	22.8	0	55.1	0.488	0.445	0.458
3/30/8119:00	230	6	0	3.09	21.7	0	56.8	0.487	0.445	0.458
3/30/8120:00	223	6	0	2.92	20.0	0	63.3	0.486	0.445	0.457
3/30/8121:00	217	6	0	2.75	18.3	0	70.6	0.485	0.444	0.457
3/30/8122:00	210	6	0	2.58	16.7	0	78.9	0.484	0.444	0.457
3/30/8123:00	213	6	0	2.92	16.1	0	80.6	0.484	0.444	0.457
3/31/81 0:00	217	6	0	3.26	15.6	0	82.4	0.483	0.444	0.457
3/31/81 1:00	220	6	0	3.61	15.0	0	84.3	0.482	0.444	0.457
3/31/81 2:00	150	6	0	2.92	14.4	0	85.2	0.481	0.444	0.457
3/31/81 3:00	80	6	0	2.23	13.9	0	86.1	0.480	0.444	0.457
3/31/81 4:00	10	6	0	1.55	13.3	0	87.1	0.479	0.444	0.457
3/31/81 5:00	60	6	0	1.89	12.2	0	90.1	0.478	0.444	0.457
3/31/81 6:00	110	3	0	2.23	11.1	0	93.2	0.477	0.444	0.457
3/31/81 7:00	160	3	0	2.58	10.0	54	96.5	0.476	0.444	0.456
3/31/81 8:00	187	2	0	2.58	14.1	215	81.3	0.474	0.443	0.456
3/31/81 9:00	213	2	0	2.58	18.1	388	68.9	0.472	0.443	0.456
3/31/8110:00	240	2	0	2.58	22.2	527	58.9	0.468	0.443	0.456
3/31/8111:00	243	2	0	2.40	23.7	622	50.5	0.465	0.443	0.455
3/31/8112:00	247	2	0	2.23	25.2	650	43.3	0.462	0.443	0.455

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/31/81	13:00	250	2	0	2.06	26.7	610	37.2	0.458	0.443	0.455
3/31/81	14:00	240	2	0	2.75	27.2	509	36.1	0.455	0.442	0.454
3/31/81	15:00	230	2	0	3.43	27.8	358	35.0	0.453	0.442	0.454
3/31/81	16:00	220	2	0	4.12	28.3	182	33.9	0.451	0.442	0.454
3/31/81	17:00	210	3	0	3.61	26.5	38	36.3	0.450	0.442	0.454
3/31/81	18:00	200	3	0	3.09	24.6	0	38.8	0.449	0.442	0.454
3/31/81	19:00	190	6	0	2.58	22.8	0	41.6	0.448	0.442	0.454
3/31/81	20:00	127	6	0	1.72	20.4	0	50.2	0.447	0.442	0.454
3/31/81	21:00	63	6	0	0.86	18.0	0	60.6	0.447	0.442	0.454
3/31/81	22:00	0	6	0	0.00	15.6	0	73.4	0.446	0.442	0.453
3/31/81	23:00	47	5	0	0.69	15.6	0	76.9	0.445	0.442	0.453
4/1/81	0:00	93	5	0	1.37	15.6	0	80.5	0.444	0.442	0.453
4/1/81	1:00	140	0	0	2.06	15.6	0	84.3	0.444	0.442	0.453
4/1/81	2:00	147	0	0	1.89	16.9	0	87.4	0.444	0.442	0.453
4/1/81	3:00	153	0	1	1.72	18.1	0	90.5	0.444	0.442	0.453
4/1/81	4:00	160	0	3	1.55	19.4	0	93.7	0.447	0.446	0.455
4/1/81	5:00	150	0	5	2.58	18.9	0	93.6	0.453	0.452	0.457
4/1/81	6:00	140	0	4	3.61	18.3	0	93.6	0.457	0.456	0.459
4/1/81	7:00	130	0	1	4.64	17.8	45	93.6	0.458	0.457	0.460
4/1/81	8:00	137	0	5	5.32	17.6	180	93.6	0.463	0.463	0.462
4/1/81	9:00	143	0	6	6.01	17.4	341	93.6	0.470	0.470	0.465
4/1/81	10:00	150	0	3	6.70	17.2	524	93.5	0.472	0.473	0.466
4/1/81	11:00	177	0	0	5.67	17.6	648	92.5	0.472	0.473	0.466
4/1/81	12:00	203	0	0	4.64	18.0	685	91.5	0.472	0.473	0.466
4/1/81	13:00	230	0	0	3.61	18.3	648	90.5	0.472	0.472	0.466
4/1/81	14:00	213	3	0	3.61	19.4	543	86.7	0.472	0.472	0.466
4/1/81	15:00	197	3	0	3.61	20.6	385	83.1	0.472	0.472	0.466
4/1/81	16:00	180	4	0	3.61	21.7	201	79.6	0.472	0.472	0.466
4/1/81	17:00	197	4	0	3.43	20.9	45	82.2	0.471	0.472	0.466
4/1/81	18:00	213	4	0	3.26	20.2	0	84.9	0.471	0.472	0.466
4/1/81	19:00	230	5	0	3.09	19.4	0	87.7	0.471	0.472	0.466
4/1/81	20:00	237	5	0	3.78	18.0	0	82.7	0.471	0.472	0.466
4/1/81	21:00	243	6	0	4.46	16.5	0	77.9	0.471	0.472	0.466
4/1/81	22:00	250	6	0	5.15	15.0	0	73.3	0.471	0.472	0.466
4/1/81	23:00	270	6	0	5.15	15.0	0	60.6	0.471	0.472	0.466
4/2/81	0:00	290	6	0	5.15	15.0	0	49.8	0.471	0.472	0.466
4/2/81	1:00	310	6	0	5.15	15.0	0	40.8	0.470	0.472	0.466
4/2/81	2:00	223	6	0	4.29	11.9	0	51.4	0.469	0.471	0.466
4/2/81	3:00	137	6	0	3.43	8.7	0	65.2	0.468	0.471	0.466
4/2/81	4:00	50	6	0	2.58	5.6	0	83.1	0.467	0.471	0.466
4/2/81	5:00	117	6	0	2.23	5.9	0	81.1	0.466	0.471	0.466
4/2/81	6:00	183	3	0	1.89	6.3	0	79.1	0.465	0.471	0.465
4/2/81	7:00	250	3	0	1.55	6.7	63	77.3	0.464	0.471	0.465
4/2/81	8:00	180	2	0	2.06	10.9	231	60.3	0.462	0.471	0.465
4/2/81	9:00	110	2	0	2.58	15.2	407	47.5	0.460	0.471	0.465
4/2/81	10:00	40	2	0	3.09	19.4	546	37.7	0.457	0.471	0.465
4/2/81	11:00	123	2	0	2.58	20.6	643	34.9	0.453	0.471	0.465
4/2/81	12:00	207	1	0	2.06	21.7	673	32.3	0.450	0.470	0.465
4/2/81	13:00	290	2	0	1.55	22.8	634	30.0	0.446	0.470	0.465
4/2/81	14:00	297	2	0	1.55	23.9	530	27.1	0.443	0.470	0.465

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
4/2/81	15:00	303	2	0	1.55	25.0	374	24.5	0.441	0.470	0.465
4/2/81	16:00	310	2	0	1.55	26.1	194	22.2	0.439	0.470	0.465
4/2/81	17:00	273	3	0	2.06	24.3	44	26.2	0.438	0.470	0.465
4/2/81	18:00	237	3	0	2.58	22.4	0	31.0	0.437	0.470	0.465
4/2/81	19:00	200	6	0	3.09	20.6	0	36.7	0.436	0.469	0.465
4/2/81	20:00	180	6	0	2.58	17.2	0	47.5	0.436	0.469	0.465
4/2/81	21:00	160	6	0	2.06	13.9	0	61.8	0.435	0.469	0.465
4/2/81	22:00	140	6	0	1.55	10.6	0	80.8	0.434	0.469	0.465
4/2/81	23:00	140	6	0	1.55	10.6	0	80.8	0.433	0.469	0.465

Date Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
7/16/8320:00	0	5	0	0.00	26.1	0	75	0.419	0.429	0.439
7/16/8321:00	180	5	0	2.06	25.6	0	73	0.418	0.429	0.438
7/16/8322:00	80	5	0	2.06	25.6	0	75	0.418	0.429	0.438
7/16/8323:00	0	6	0	0.00	25.0	0	75	0.417	0.429	0.438
7/17/83 0:00	210	6	0	3.09	24.4	0	75	0.416	0.428	0.438
7/17/83 1:00	160	6	0	1.55	25.0	0	73	0.415	0.428	0.438
7/17/83 2:00	160	6	0	2.06	23.3	0	77	0.415	0.428	0.438
7/17/83 3:00	180	6	0	1.55	23.3	0	75	0.414	0.428	0.438
7/17/83 4:00	0	6	0	0.00	22.8	0	77	0.413	0.428	0.438
7/17/83 5:00	190	3	0	2.06	22.8	0	75	0.413	0.428	0.438
7/17/83 6:00	0	3	0	0.00	22.2	22	77	0.412	0.428	0.438
7/17/83 7:00	0	3	0	0.00	24.4	151	73	0.411	0.428	0.437
7/17/83 8:00	330	2	0	3.09	26.1	331	66	0.409	0.428	0.437
7/17/83 9:00	360	2	0	2.06	29.4	501	59	0.406	0.427	0.437
7/17/8310:00	0	1	0	0.00	31.1	640	55	0.404	0.427	0.437
7/17/8311:00	170	1	0	2.06	33.9	723	53	0.400	0.427	0.436
7/17/8312:00	130	1	0	2.06	34.4	753	53	0.397	0.426	0.436
7/17/8313:00	110	1	0	3.61	34.4	721	51	0.394	0.426	0.435
7/17/8314:00	190	1	0	3.09	36.1	621	45	0.391	0.425	0.435
7/17/8315:00	270	2	0	3.61	36.1	477	47	0.389	0.425	0.435
7/17/8316:00	360	2	0	4.12	32.8	311	51	0.387	0.425	0.435
7/17/8317:00	0	3	0	0.00	32.2	136	52	0.386	0.425	0.435
7/17/8318:00	360	4	0	2.06	31.1	17	54	0.385	0.425	0.434
7/17/8319:00	0	5	0	0.00	31.1	0	54	0.385	0.425	0.434
7/17/8320:00	0	6	0	0.00	28.3	0	64	0.384	0.425	0.434
7/17/8321:00	0	6	0	0.00	26.7	0	73	0.383	0.425	0.434
7/17/8322:00	300	5	0	1.55	25.6	0	78	0.383	0.424	0.434
7/17/8323:00	320	0	0	4.64	27.8	0	64	0.382	0.424	0.434
7/18/83 0:00	350	0	0	3.09	26.7	0	62	0.382	0.424	0.434
7/18/83 1:00	30	0	0	2.06	25.0	0	68	0.381	0.424	0.434
7/18/83 2:00	0	5	0	0.00	24.4	0	68	0.381	0.424	0.434
7/18/83 3:00	280	0	0	2.58	23.9	0	68	0.381	0.424	0.434
7/18/83 4:00	300	5	0	2.06	23.3	0	68	0.381	0.424	0.434
7/18/83 5:00	0	5	0	0.00	22.8	0	70	0.381	0.424	0.433
7/18/83 6:00	0	4	0	0.00	22.2	21	70	0.380	0.424	0.433
7/18/83 7:00	0	3	0	0.00	23.3	153	70	0.380	0.424	0.433
7/18/83 8:00	280	2	0	1.55	26.7	329	62	0.379	0.423	0.433
7/18/83 9:00	260	2	0	1.55	30.0	644	61	0.378	0.423	0.432
7/18/8311:00	330	2	0	2.06	32.2	729	58	0.377	0.422	0.432
7/18/8312:00	0	2	0	0.00	33.3	757	53	0.376	0.422	0.432
7/18/8313:00	110	0	0	2.58	32.8	727	54	0.375	0.422	0.431
7/18/8314:00	310	0	0	2.06	33.9	628	49	0.374	0.421	0.431
7/18/8315:00	230	2	0	3.61	34.4	482	48	0.374	0.421	0.431
7/18/8316:00	240	2	0	3.09	35.0	304	45	0.373	0.421	0.430
7/18/8317:00	230	2	0	4.12	34.4	131	45	0.373	0.421	0.430
7/18/8318:00	250	3	0	4.64	34.4	15	44	0.373	0.421	0.430
7/18/8319:00	240	5	0	3.61	32.2	0	47	0.373	0.420	0.430
7/18/8320:00	360	0	0	7.21	30.0	0	50	0.372	0.420	0.430
7/18/8321:00	10	0	1	2.06	26.7	0	60	0.375	0.421	0.431
7/18/8322:00	280	0	0	1.55	24.4	0	75	0.374	0.421	0.431

Date Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
7/18/8323:00	360	0	0	2.06	23.9	0	77	0.374	0.421	0.431
7/19/83 0:00	140	0	0	2.06	23.9	0	77	0.374	0.421	0.431
7/19/83 1:00	350	5	0	2.58	23.3	0	77	0.374	0.421	0.431
7/19/83 2:00	350	0	0	2.58	23.3	0	77	0.373	0.421	0.430
7/19/83 3:00	0	0	0	0.00	23.3	0	75	0.373	0.420	0.430
7/19/83 4:00	0	0	0	0.00	23.3	0	77	0.373	0.420	0.430
7/19/83 5:00	180	0	0	2.06	23.3	0	77	0.372	0.420	0.430
7/19/83 6:00	0	4	0	0.00	22.8	20	77	0.372	0.420	0.430
7/19/83 7:00	0	4	0	0.00	23.3	151	77	0.371	0.419	0.430
7/19/83 8:00	0	0	0	0.00	25.6	331	70	0.370	0.419	0.430
7/19/83 9:00	330	0	0	2.06	27.2	507	64	0.369	0.418	0.429
7/19/8310:00	10	2	0	3.09	30.0	643	59	0.367	0.417	0.429
7/19/8311:00	30	1	0	2.58	32.2	729	49	0.365	0.416	0.429
7/19/8312:00	40	1	0	2.06	33.3	757	48	0.363	0.415	0.428
7/19/8313:00	230	1	0	2.06	33.9	722	46	0.362	0.415	0.428
7/19/8314:00	170	1	0	1.55	35.6	621	45	0.360	0.414	0.428
7/19/8315:00	120	2	0	2.58	35.6	477	44	0.359	0.413	0.427
7/19/8316:00	130	2	0	3.09	35.6	301	45	0.358	0.412	0.427
7/19/8317:00	140	2	0	3.61	35.6	128	45	0.357	0.412	0.427
7/19/8318:00	180	3	0	3.09	35.0	14	45	0.357	0.412	0.427
7/19/8319:00	180	6	0	3.61	32.8	0	49	0.356	0.412	0.427
7/19/8320:00	180	5	0	2.58	29.4	0	59	0.356	0.412	0.427
7/19/8321:00	0	6	0	0.00	27.8	0	64	0.356	0.411	0.427
7/19/8322:00	140	6	0	1.55	26.1	0	71	0.355	0.411	0.427
7/19/8323:00	50	6	0	2.06	25.0	0	73	0.355	0.411	0.426
7/20/83 1:00	0	6	0	0.00	24.4	0	73	0.354	0.410	0.426
7/20/83 2:00	130	6	0	2.06	24.4	0	73	0.354	0.410	0.426
7/20/83 3:00	0	6	0	0.00	22.8	0	77	0.354	0.410	0.426
7/20/83 4:00	180	5	0	1.55	22.8	0	77	0.353	0.410	0.426
7/20/83 5:00	170	5	0	1.55	22.8	0	75	0.353	0.410	0.426
7/20/83 6:00	0	3	0	0.00	22.2	20	77	0.352	0.409	0.426
7/20/83 7:00	150	2	0	1.55	23.3	150	75	0.352	0.409	0.426
7/20/83 8:00	0	2	0	0.00	26.1	328	68	0.351	0.409	0.426
7/20/83 9:00	0	2	0	0.00	28.9	499	63	0.349	0.408	0.425
7/20/8310:00	70	1	0	2.06	31.1	638	57	0.348	0.407	0.425
7/20/8311:00	340	1	0	1.55	33.9	721	51	0.346	0.406	0.425
7/20/8312:00	220	1	0	1.55	35.0	749	48	0.344	0.405	0.424
7/20/8313:00	170	1	0	2.06	36.1	712	47	0.342	0.404	0.424
7/20/8314:00	120	1	0	3.61	35.6	620	48	0.341	0.403	0.423
7/20/8315:00	120	2	0	3.61	36.7	472	44	0.340	0.403	0.423
7/20/8316:00	90	2	0	3.09	36.7	297	44	0.339	0.402	0.423
7/20/8317:00	130	2	0	4.12	36.1	126	45	0.338	0.402	0.423
7/20/8318:00	240	3	0	5.15	33.3	15	49	0.338	0.402	0.423
7/20/8319:00	210	5	0	1.55	31.1	0	54	0.337	0.401	0.423
7/20/8320:00	150	0	0	3.61	29.4	0	57	0.337	0.401	0.423
7/20/8321:00	170	0	0	3.61	28.3	0	60	0.337	0.401	0.423
7/20/8322:00	170	0	0	3.09	27.8	0	62	0.336	0.401	0.422
7/20/8323:00	170	0	0	2.58	26.7	0	66	0.336	0.401	0.422
7/21/83 0:00	0	0	0	0.00	26.1	0	68	0.336	0.400	0.422
7/21/83 1:00	130	0	0	1.55	24.4	0	75	0.335	0.400	0.422

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
7/21/83	2:00	90	0	0	1.55	23.9	0	77	0.335	0.400	0.422
7/21/83	3:00	0	5	0	0.00	23.3	0	77	0.335	0.400	0.422
7/21/83	4:00	0	5	0	0.00	23.3	0	77	0.334	0.400	0.422
7/21/83	5:00	190	0	0	2.06	22.8	0	77	0.334	0.399	0.422
7/21/83	6:00	170	0	0	1.55	23.3	19	75	0.334	0.399	0.422
7/21/83	7:00	180	2	0	1.55	24.4	147	73	0.333	0.399	0.422
7/21/83	8:00	210	2	0	2.06	26.7	325	68	0.332	0.398	0.421
7/21/83	9:00	190	2	0	3.61	28.3	500	64	0.331	0.398	0.421
7/21/8310:00		200	1	0	4.12	30.6	639	57	0.329	0.397	0.421
7/21/8311:00		290	1	0	2.06	32.8	725	54	0.327	0.396	0.420
7/21/8312:00		250	1	0	2.06	34.4	750	51	0.325	0.395	0.420
7/21/8313:00		240	1	0	2.06	36.1	711	48	0.324	0.394	0.420
7/21/8314:00		220	1	0	3.61	37.2	613	43	0.322	0.393	0.419
7/21/8315:00		230	2	0	6.18	37.8	467	42	0.321	0.393	0.419
7/21/8316:00		260	2	0	4.12	37.8	293	42	0.320	0.392	0.419
7/21/8317:00		190	2	0	4.12	37.8	122	40	0.319	0.392	0.419
7/21/8318:00		240	3	0	3.61	36.7	13	43	0.319	0.392	0.419
7/21/8319:00		180	6	0	3.61	35.6	0	45	0.319	0.391	0.419
7/21/8320:00		200	6	0	4.64	32.8	0	52	0.318	0.391	0.418
7/21/8321:00		210	6	0	4.64	31.7	0	54	0.318	0.391	0.418
7/21/8322:00		210	6	0	4.64	30.6	0	59	0.318	0.391	0.418
7/21/8323:00		230	5	0	4.12	30.0	0	61	0.317	0.391	0.418
7/22/83	0:00	230	5	0	4.12	29.4	0	59	0.317	0.390	0.418
7/22/83	1:00	240	5	0	4.64	29.4	0	59	0.317	0.390	0.418
7/22/83	2:00	240	0	0	3.61	28.9	0	61	0.317	0.390	0.418
7/22/83	3:00	250	0	0	2.58	28.3	0	62	0.316	0.390	0.418
7/22/83	4:00	240	5	0	2.58	27.8	0	64	0.316	0.390	0.418
7/22/83	5:00	0	5	0	0.00	26.7	0	68	0.316	0.389	0.418
7/22/83	6:00	130	0	0	1.55	26.1	17	71	0.316	0.389	0.418
7/22/83	7:00	240	0	0	1.55	27.8	139	66	0.315	0.389	0.417
7/22/83	8:00	250	2	0	4.12	28.9	317	63	0.315	0.388	0.417
7/22/83	9:00	240	2	0	3.09	31.1	489	59	0.314	0.388	0.417
7/22/8310:00		230	1	0	3.09	33.3	627	56	0.313	0.387	0.417
7/22/8311:00		220	1	0	4.12	35.6	712	50	0.311	0.386	0.416
7/22/8312:00		230	1	0	1.55	37.2	738	47	0.310	0.385	0.416
7/22/8313:00		20	1	0	4.12	37.8	703	44	0.309	0.384	0.416
7/22/8314:00		180	1	0	3.09	39.4	603	41	0.308	0.383	0.415
7/22/8315:00		220	2	0	5.15	40.0	458	37	0.307	0.383	0.415
7/22/8316:00		240	2	0	6.18	40.0	286	39	0.306	0.382	0.415
7/22/8317:00		230	2	0	4.12	40.0	117	36	0.306	0.382	0.415
7/22/8318:00		230	3	0	5.15	37.2	12	44	0.306	0.382	0.415
7/22/8319:00		250	6	0	5.15	36.1	0	47	0.306	0.382	0.414
7/22/8320:00		240	6	0	4.12	34.4	0	50	0.305	0.381	0.414
7/22/8321:00		250	6	0	4.64	32.8	0	52	0.305	0.381	0.414
7/22/8322:00		250	6	0	6.18	32.2	0	54	0.305	0.381	0.414
7/22/8323:00		240	6	0	4.64	31.1	0	57	0.305	0.381	0.414

Date Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/23/84 0:00	10	6	0	2.06	11.1	0	63	0.411	0.453	0.460
3/23/84 1:00	0	6	0	0.00	8.9	0	78	0.410	0.452	0.460
3/23/84 2:00	200	6	0	1.55	7.8	0	83	0.410	0.452	0.460
3/23/84 3:00	0	6	0	0.00	7.8	0	83	0.409	0.452	0.460
3/23/84 4:00	160	6	0	1.55	8.9	0	69	0.408	0.452	0.460
3/23/84 5:00	0	6	0	0.00	7.8	0	83	0.408	0.452	0.460
3/23/84 6:00	170	3	0	1.55	6.1	0	83	0.407	0.452	0.460
3/23/84 7:00	50	3	0	2.06	5.6	43	90	0.406	0.451	0.459
3/23/84 8:00	0	3	0	0.00	10.0	200	84	0.405	0.451	0.459
3/23/84 9:00	10	0	0	1.55	13.9	373	63	0.403	0.451	0.459
3/23/8410:00	350	0	0	1.55	17.8	513	37	0.401	0.450	0.459
3/23/8411:00	100	2	0	2.58	20.0	605	31	0.399	0.449	0.458
3/23/8412:00	350	2	0	2.06	22.8	629	29	0.396	0.449	0.458
3/23/8413:00	230	2	0	4.64	24.4	588	28	0.394	0.448	0.458
3/23/8414:00	220	2	0	6.18	25.6	485	31	0.392	0.447	0.457
3/23/8415:00	270	2	0	6.18	25.6	336	28	0.390	0.447	0.457
3/23/8416:00	230	2	0	2.58	25.6	165	28	0.389	0.447	0.457
3/23/8417:00	250	3	0	3.09	25.6	27	30	0.389	0.446	0.457
3/23/8418:00	290	3	0	1.55	25.0	0	31	0.388	0.446	0.457
3/23/8419:00	0	6	0	0.00	21.1	0	43	0.387	0.446	0.457
3/23/8420:00	0	6	0	0.00	16.1	0	55	0.387	0.446	0.457
3/23/8421:00	0	6	0	0.00	13.9	0	71	0.386	0.446	0.457
3/23/8422:00	0	6	0	0.00	12.8	0	70	0.386	0.446	0.457
3/23/8423:00	0	6	0	0.00	11.7	0	75	0.385	0.445	0.456
3/24/84 0:00	0	6	0	0.00	11.7	0	73	0.385	0.445	0.456
3/24/84 1:00	0	6	0	0.00	10.0	0	81	0.385	0.445	0.456
3/24/84 2:00	0	6	0	0.00	8.9	0	84	0.385	0.445	0.456
3/24/84 3:00	0	6	0	0.00	8.3	0	87	0.385	0.445	0.456
3/24/84 4:00	0	6	0	0.00	7.8	0	86	0.385	0.445	0.456
3/24/84 5:00	0	6	0	0.00	7.2	0	90	0.385	0.445	0.456
3/24/84 6:00	0	3	0	0.00	7.2	0	86	0.385	0.445	0.456
3/24/84 7:00	310	3	0	1.55	6.7	44	90	0.385	0.445	0.456
3/24/84 8:00	0	2	0	0.00	10.6	202	87	0.385	0.445	0.456
3/24/84 9:00	120	2	0	3.09	14.4	375	66	0.385	0.445	0.456
3/24/8410:00	140	2	0	2.58	18.3	516	52	0.385	0.445	0.456
3/24/8411:00	90	2	0	2.06	21.1	605	53	0.385	0.445	0.456
3/24/8412:00	150	2	0	5.15	23.9	629	48	0.385	0.445	0.456
3/24/8413:00	230	2	0	2.06	24.4	592	47	0.385	0.445	0.456
3/24/8414:00	140	2	0	7.21	26.1	339	44	0.385	0.445	0.456
3/24/8416:00	170	2	0	7.21	26.7	166	43	0.385	0.445	0.456
3/24/8417:00	170	4	0	7.21	25.6	28	41	0.385	0.445	0.456
3/24/8418:00	160	0	0	6.70	24.4	0	44	0.385	0.445	0.456
3/24/8419:00	150	0	0	4.64	22.8	0	48	0.385	0.445	0.456
3/24/8420:00	140	0	0	5.15	21.7	0	53	0.385	0.445	0.456
3/24/8421:00	160	0	0	6.18	21.1	0	61	0.385	0.445	0.456
3/24/8422:00	150	0	0	6.18	20.6	0	65	0.385	0.445	0.456
3/24/8423:00	160	0	0	4.12	20.0	0	69	0.385	0.445	0.456
3/25/84 0:00	160	0	6	4.12	18.9	0	77	0.385	0.445	0.457
3/25/84 1:00	280	0	23	4.12	18.3	0	85	0.418	0.452	0.459
3/25/84 2:00	0	0	12	0.00	17.2	0	94	0.437	0.456	0.460

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/25/84	3:00	290	0	14	1.55	17.2	0	94	0.457	0.460	0.461
3/25/84	4:00	360	0	20	4.12	17.8	0	79	0.487	0.466	0.463
3/25/84	5:00	350	0	1	4.12	15.0	0	87	0.488	0.466	0.463
3/25/84	6:00	150	0	0	3.09	14.4	0	93	0.488	0.466	0.463
3/25/84	7:00	160	4	0	3.09	14.4	38	90	0.488	0.466	0.463
3/25/84	8:00	160	3	0	4.12	15.6	192	87	0.488	0.466	0.463
3/25/84	9:00	110	0	0	2.06	16.1	374	90	0.488	0.466	0.463
3/25/84	10:00	190	0	0	3.61	18.9	518	85	0.488	0.466	0.463
3/25/84	11:00	220	0	0	6.18	20.6	612	77	0.487	0.466	0.463
3/25/84	12:00	230	0	0	4.64	21.1	645	74	0.487	0.466	0.463
3/25/84	13:00	280	0	0	5.15	21.7	608	74	0.487	0.466	0.463
3/25/84	14:00	270	2	0	5.67	24.4	498	64	0.487	0.466	0.463
3/25/84	15:00	240	2	0	8.76	25.0	346	50	0.486	0.466	0.463
3/25/84	16:00	250	2	0	6.18	25.6	171	52	0.486	0.466	0.463
3/25/84	17:00	230	3	0	7.73	25.0	30	49	0.486	0.466	0.463
3/25/84	18:00	250	3	0	6.70	24.4	0	44	0.486	0.466	0.463
3/25/84	19:00	260	6	0	5.15	21.7	0	44	0.486	0.466	0.463
3/25/84	20:00	280	6	0	5.15	20.0	0	47	0.486	0.466	0.463
3/25/84	21:00	280	6	0	5.15	18.3	0	47	0.486	0.465	0.463
3/25/84	22:00	300	6	0	7.21	16.7	0	50	0.486	0.465	0.463
3/25/84	23:00	310	6	0	5.15	15.0	0	53	0.486	0.465	0.463
3/26/84	0:00	280	6	0	4.64	12.8	0	61	0.486	0.465	0.463
3/26/84	1:00	300	6	0	5.15	12.8	0	59	0.485	0.465	0.463
3/26/84	2:00	300	6	0	5.67	11.7	0	63	0.484	0.465	0.463
3/26/84	3:00	300	6	0	5.15	10.6	0	65	0.483	0.464	0.463
3/26/84	4:00	300	6	0	3.09	9.4	0	70	0.482	0.464	0.463
3/26/84	5:00	290	6	0	3.09	8.9	0	72	0.481	0.463	0.463
3/26/84	6:00	0	3	0	0.00	7.2	0	77	0.480	0.463	0.463
3/26/84	7:00	0	3	0	0.00	7.8	47	77	0.479	0.462	0.463
3/26/84	8:00	290	2	0	1.55	10.6	210	72	0.477	0.461	0.463
3/26/84	9:00	300	2	0	4.12	12.2	392	63	0.474	0.460	0.463
3/26/84	10:00	300	0	0	1.55	14.4	540	55	0.471	0.458	0.463
3/26/84	11:00	300	0	0	2.06	15.6	637	48	0.468	0.457	0.463
3/26/84	12:00	230	0	0	2.58	16.7	668	46	0.464	0.455	0.463
3/26/84	13:00	280	0	0	5.15	17.2	631	43	0.461	0.453	0.463
3/26/84	14:00	310	0	0	2.58	18.9	523	40	0.458	0.452	0.463
3/26/84	15:00	280	2	0	2.58	19.4	368	42	0.455	0.451	0.463
3/26/84	16:00	260	3	0	3.61	20.0	187	42	0.454	0.450	0.463
3/26/84	17:00	230	0	0	3.09	19.4	37	45	0.453	0.449	0.463
3/26/84	18:00	220	0	0	2.58	18.9	0	45	0.452	0.449	0.463
3/26/84	19:00	170	0	0	1.55	17.2	0	58	0.451	0.448	0.463
3/26/84	20:00	0	0	0	0.00	15.0	0	66	0.450	0.448	0.463
3/26/84	21:00	0	0	0	0.00	13.9	0	73	0.449	0.447	0.463
3/26/84	22:00	0	5	0	0.00	12.8	0	81	0.448	0.447	0.463
3/26/84	23:00	0	5	0	0.00	11.7	0	84	0.447	0.446	0.463
3/27/84	0:00	0	5	0	0.00	10.6	0	90	0.446	0.446	0.463
3/27/84	1:00	0	5	0	0.00	10.0	0	87	0.446	0.445	0.462
3/27/84	2:00	0	6	0	0.00	10.0	0	87	0.445	0.445	0.462
3/27/84	3:00	0	6	0	0.00	8.9	0	90	0.445	0.444	0.462
3/27/84	4:00	0	5	0	0.00	9.4	0	93	0.445	0.443	0.462

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/27/84	5:00	0	5	0	0.00	8.9	0	93	0.444	0.443	0.461
3/27/84	6:00	0	0	0	0.00	9.4	0	93	0.444	0.442	0.461
3/27/84	7:00	0	4	0	0.00	10.0	47	93	0.443	0.441	0.461
3/27/84	8:00	260	0	0	1.55	11.1	212	90	0.442	0.440	0.460
3/27/84	9:00	130	0	0	1.55	12.8	394	87	0.441	0.438	0.459
3/27/84	10:00	150	0	0	3.09	15.6	540	79	0.440	0.436	0.458
3/27/84	11:00	150	0	0	3.09	17.2	635	69	0.438	0.433	0.457
3/27/84	12:00	140	0	0	6.18	19.4	661	67	0.436	0.431	0.456
3/27/84	13:00	170	0	0	5.67	19.4	626	69	0.434	0.428	0.455
3/27/84	14:00	130	0	1	3.09	18.3	522	69	0.441	0.437	0.459
3/27/84	15:00	130	0	0	3.09	18.3	376	85	0.439	0.436	0.458
3/27/84	16:00	60	0	0	1.55	18.9	194	74	0.438	0.434	0.458
3/27/84	17:00	150	0	0	4.12	18.3	40	76	0.438	0.434	0.457
3/27/84	18:00	160	0	0	3.61	18.3	0	82	0.438	0.433	0.457
3/27/84	19:00	110	0	0	3.09	17.2	0	85	0.437	0.432	0.457
3/27/84	21:00	130	0	0	2.06	17.2	0	85	0.436	0.431	0.456
3/27/84	22:00	100	0	2	2.58	17.2	0	87	0.451	0.453	0.465
3/27/84	23:00	60	0	2	4.12	16.7	0	90	0.466	0.475	0.474
3/28/84	0:00	130	0	0	5.15	16.7	0	87	0.465	0.475	0.474
3/28/84	1:00	130	0	0	3.09	16.7	0	90	0.465	0.475	0.474
3/28/84	2:00	130	0	1	4.64	16.7	0	94	0.465	0.475	0.474
3/28/84	3:00	140	0	0	5.15	16.7	0	97	0.465	0.475	0.474
3/28/84	4:00	140	0	0	6.18	17.8	0	90	0.465	0.475	0.474
3/28/84	5:00	150	0	0	7.73	17.8	0	90	0.465	0.475	0.474
3/28/84	6:00	150	0	1	5.15	17.8	0	90	0.465	0.476	0.475
3/28/84	7:00	170	0	5	5.15	18.3	29	91	0.466	0.480	0.478
3/28/84	8:00	250	0	0	10.30	18.3	196	91	0.466	0.480	0.478
3/28/84	9:00	210	2	0	3.61	19.4	376	82	0.466	0.480	0.478
3/28/84	10:00	230	2	0	4.64	22.8	517	72	0.466	0.480	0.478
3/28/84	11:00	230	0	0	7.73	23.9	612	70	0.466	0.480	0.478
3/28/84	12:00	230	3	0	6.70	26.1	638	64	0.466	0.479	0.477
3/28/84	13:00	240	3	0	7.21	27.8	597	53	0.466	0.479	0.477
3/28/84	14:00	220	2	0	7.21	28.3	497	50	0.466	0.479	0.477
3/28/84	15:00	200	2	0	9.27	28.9	346	50	0.466	0.479	0.477
3/28/84	16:00	180	2	0	11.33	28.3	176	57	0.466	0.479	0.477
3/28/84	17:00	180	3	0	11.33	28.3	33	55	0.466	0.479	0.477
3/28/84	18:00	190	3	0	10.30	27.2	0	56	0.466	0.479	0.477
3/28/84	19:00	300	5	0	12.88	19.4	0	67	0.466	0.479	0.477
3/28/84	20:00	290	5	0	8.24	16.7	0	79	0.466	0.479	0.477
3/28/84	21:00	270	0	1	5.15	16.1	0	82	0.466	0.479	0.477
3/28/84	22:00	230	0	0	5.15	15.0	0	84	0.466	0.480	0.478
3/28/84	23:00	230	0	0	4.12	14.4	0	87	0.466	0.480	0.478
3/29/84	0:00	240	6	0	6.70	14.4	0	84	0.466	0.480	0.477
3/29/84	1:00	270	0	0	9.27	15.0	0	71	0.465	0.479	0.477
3/29/84	2:00	240	0	0	9.79	14.4	0	76	0.464	0.479	0.477
3/29/84	3:00	260	0	0	10.30	13.3	0	76	0.463	0.479	0.477
3/29/84	4:00	250	0	0	9.27	12.8	0	65	0.462	0.479	0.477
3/29/84	5:00	250	0	0	8.24	12.2	0	68	0.461	0.479	0.477
3/29/84	6:00	240	0	0	8.76	11.7	0	70	0.460	0.479	0.477

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/29/84	7:00	250	0	0	8.76	11.7	50	68	0.459	0.479	0.477
3/29/84	8:00	240	0	0	10.82	12.2	217	63	0.457	0.478	0.477
3/29/84	9:00	250	0	0	8.76	12.8	403	59	0.455	0.478	0.476
3/29/84	10:00	280	0	0	13.39	13.3	558	55	0.452	0.477	0.476
3/29/84	11:00	300	0	0	11.33	12.8	663	59	0.448	0.477	0.476
3/29/84	12:00	280	0	0	10.82	12.2	701	56	0.445	0.476	0.475
3/29/84	13:00	280	0	0	8.76	13.3	661	57	0.441	0.476	0.475
3/29/84	14:00	290	2	0	12.36	15.0	552	47	0.438	0.475	0.475
3/29/84	15:00	290	2	0	9.27	15.0	396	47	0.435	0.475	0.474
3/29/84	16:00	290	3	0	9.79	14.4	212	49	0.434	0.475	0.474
3/29/84	17:00	320	4	0	5.67	14.4	48	49	0.433	0.474	0.474
3/29/84	18:00	300	3	0	6.70	12.8	0	52	0.432	0.474	0.474
3/29/84	19:00	300	6	0	7.21	11.7	0	56	0.431	0.474	0.474
3/29/84	20:00	310	6	0	9.27	10.6	0	52	0.430	0.474	0.474
3/29/84	21:00	300	6	0	7.21	8.9	0	62	0.429	0.474	0.474
3/29/84	22:00	300	6	0	6.18	8.3	0	62	0.428	0.474	0.474
3/29/84	23:00	290	6	0	5.15	7.8	0	67	0.428	0.474	0.474

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
9/2/84	0:00	0	6	0	0.00	20.6	0	85	0.272	0.369	0.408
9/2/84	1:00	0	6	0	0.00	20.6	0	79	0.272	0.369	0.408
9/2/84	2:00	0	6	0	0.00	19.4	0	85	0.272	0.369	0.408
9/2/84	3:00	0	6	0	0.00	19.4	0	85	0.271	0.369	0.408
9/2/84	4:00	0	6	0	0.00	18.9	0	85	0.271	0.369	0.408
9/2/84	5:00	0	6	0	0.00	18.9	0	82	0.271	0.368	0.408
9/2/84	6:00	340	4	0	1.55	18.9	0	85	0.271	0.368	0.408
9/2/84	7:00	0	3	0	0.00	19.4	70	85	0.271	0.368	0.408
9/2/84	8:00	0	0	0	0.00	21.7	237	80	0.270	0.368	0.407
9/2/84	9:00	0	2	0	0.00	23.3	416	80	0.270	0.367	0.407
9/2/84	10:00	0	2	0	0.00	26.7	556	71	0.269	0.367	0.407
9/2/84	11:00	80	1	0	2.06	29.4	644	65	0.268	0.366	0.406
9/2/84	12:00	30	1	0	1.55	31.7	670	52	0.268	0.365	0.406
9/2/84	13:00	150	1	0	3.09	32.2	633	46	0.267	0.365	0.406
9/2/84	14:00	80	2	0	3.61	32.8	533	46	0.266	0.364	0.405
9/2/84	15:00	160	2	0	2.58	32.2	386	49	0.266	0.364	0.405
9/2/84	16:00	120	2	0	5.15	32.2	210	44	0.265	0.363	0.405
9/2/84	17:00	140	2	0	3.09	32.2	54	49	0.265	0.363	0.405
9/2/84	18:00	170	3	0	2.58	31.7	0	49	0.265	0.363	0.405
9/2/84	19:00	170	6	0	2.58	27.2	0	64	0.265	0.363	0.405
9/2/84	20:00	160	6	0	2.58	25.0	0	68	0.265	0.363	0.405
9/2/84	21:00	0	6	0	0.00	22.8	0	80	0.265	0.363	0.405
9/2/84	22:00	0	6	0	0.00	22.8	0	77	0.264	0.362	0.405
9/2/84	23:00	170	6	0	1.55	22.2	0	77	0.264	0.362	0.405
9/3/84	0:00	0	6	0	0.00	22.2	0	77	0.264	0.362	0.404
9/3/84	1:00	210	6	0	2.58	23.3	0	72	0.264	0.362	0.404
9/3/84	2:00	220	6	0	3.09	22.8	0	75	0.264	0.362	0.404
9/3/84	3:00	60	6	0	1.55	21.7	0	80	0.264	0.362	0.404
9/3/84	4:00	0	6	0	0.00	20.0	0	79	0.264	0.362	0.404
9/3/84	5:00	160	6	0	1.55	20.0	0	82	0.263	0.361	0.403
9/3/84	6:00	0	3	0	0.00	19.4	0	85	0.263	0.361	0.403
9/3/84	7:00	0	2	0	0.00	20.0	67	82	0.263	0.361	0.403
9/3/84	8:00	0	2	0	0.00	23.3	229	75	0.263	0.361	0.403
9/3/84	9:00	210	2	0	2.06	26.7	401	64	0.262	0.360	0.402
9/3/84	10:00	230	2	0	2.58	29.4	542	59	0.261	0.360	0.401
9/3/84	11:00	260	1	0	1.55	31.1	634	54	0.260	0.359	0.400
9/3/84	12:00	240	1	0	4.12	32.2	664	47	0.259	0.359	0.399
9/3/84	13:00	200	1	0	4.64	33.3	625	43	0.258	0.358	0.399
9/3/84	14:00	180	2	0	5.15	33.9	525	42	0.258	0.358	0.398
9/3/84	15:00	170	2	0	5.67	33.9	377	42	0.257	0.357	0.397
9/3/84	16:00	220	2	0	5.15	33.9	203	42	0.257	0.357	0.397
9/3/84	17:00	190	2	0	5.15	33.3	51	43	0.256	0.357	0.397
9/3/84	18:00	180	3	0	3.61	31.1	0	50	0.256	0.357	0.396
9/3/84	19:00	170	5	0	2.58	28.3	0	60	0.256	0.357	0.396
9/3/84	20:00	170	5	0	3.09	27.2	0	62	0.256	0.357	0.396
9/3/84	21:00	190	5	0	3.61	27.2	0	60	0.256	0.356	0.396
9/3/84	22:00	30	0	0	2.06	26.7	0	62	0.256	0.356	0.396
9/3/84	23:00	280	0	0	3.09	25.0	0	68	0.255	0.356	0.396
9/4/84	0:00	340	5	0	2.06	23.9	0	70	0.255	0.356	0.395

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
9/4/84	1:00	180	0	0	1.55	22.8	0	75	0.255	0.356	0.395
9/4/84	2:00	220	5	0	1.55	22.2	0	75	0.255	0.356	0.395
9/4/84	3:00	240	5	0	2.06	22.2	0	77	0.255	0.356	0.395
9/4/84	4:00	260	5	0	4.12	22.2	0	72	0.255	0.356	0.395
9/4/84	5:00	170	5	0	1.55	21.7	0	74	0.255	0.356	0.395
9/4/84	6:00	280	3	0	2.06	21.1	0	74	0.255	0.356	0.395
9/4/84	7:00	230	2	0	1.55	21.1	64	77	0.255	0.356	0.395
9/4/84	8:00	240	2	0	2.58	23.3	226	70	0.255	0.356	0.395
9/4/84	9:00	270	2	0	2.06	25.6	401	64	0.255	0.356	0.395
9/4/84	10:00	300	3	0	3.61	27.8	545	55	0.255	0.356	0.395
9/4/84	11:00	250	0	0	4.12	27.8	644	53	0.254	0.356	0.395
9/4/84	12:00	310	0	0	3.09	28.3	676	53	0.254	0.356	0.395
9/4/84	13:00	330	0	0	2.58	30.0	635	47	0.254	0.356	0.395
9/4/84	14:00	300	0	0	4.12	28.9	540	51	0.254	0.356	0.395
9/4/84	15:00	300	0	0	5.15	27.8	393	55	0.253	0.356	0.395
9/4/84	16:00	300	0	0	5.15	26.1	218	62	0.253	0.356	0.395
9/4/84	17:00	310	0	0	3.09	25.0	58	66	0.253	0.356	0.395
9/4/84	18:00	350	0	0	3.09	24.4	0	73	0.253	0.356	0.395
9/4/84	19:00	0	0	0	0.00	24.4	0	75	0.254	0.356	0.395
9/4/84	20:00	220	0	0	1.55	23.3	0	75	0.254	0.356	0.395
9/4/84	21:00	0	0	0	0.00	22.8	0	80	0.254	0.356	0.395
9/4/84	22:00	150	0	0	1.55	22.2	0	82	0.254	0.356	0.395
9/4/84	23:00	0	0	0	0.00	22.2	0	85	0.254	0.356	0.395
9/5/84	0:00	0	0	0	0.00	21.7	0	80	0.254	0.356	0.395
9/5/84	1:00	60	0	0	3.61	20.6	0	77	0.254	0.356	0.395
9/5/84	2:00	70	0	0	3.61	20.6	0	69	0.253	0.355	0.395
9/5/84	3:00	90	0	0	2.58	20.0	0	69	0.253	0.355	0.395
9/5/84	4:00	50	0	0	1.55	19.4	0	77	0.253	0.355	0.395
9/5/84	6:00	0	0	0	0.00	19.4	0	79	0.253	0.355	0.395
9/5/84	7:00	360	0	0	2.06	19.4	63	79	0.252	0.354	0.395
9/5/84	8:00	10	0	0	3.09	20.0	232	69	0.252	0.354	0.395
9/5/84	9:00	20	0	0	3.61	20.6	415	65	0.251	0.353	0.395
9/5/84	10:00	50	0	0	3.09	21.7	565	61	0.250	0.353	0.395
9/5/84	11:00	30	0	0	3.61	22.2	663	59	0.248	0.352	0.395
9/5/84	12:00	40	2	0	3.09	23.9	691	57	0.247	0.351	0.395
9/5/84	13:00	70	2	0	3.61	26.1	647	52	0.246	0.350	0.395
9/5/84	14:00	60	2	0	3.09	26.7	545	47	0.245	0.349	0.395
9/5/84	15:00	40	2	0	3.09	26.1	395	51	0.244	0.349	0.395
9/5/84	16:00	50	3	0	3.61	25.6	216	50	0.243	0.348	0.395
9/5/84	17:00	70	2	0	2.58	26.1	55	47	0.243	0.348	0.395
9/5/84	18:00	60	4	0	1.55	25.6	0	50	0.243	0.348	0.395
9/5/84	19:00	50	5	0	1.55	22.2	0	67	0.243	0.348	0.395
9/5/84	20:00	0	5	0	0.00	19.4	0	77	0.243	0.348	0.395
9/5/84	21:00	310	6	0	2.06	18.3	0	79	0.242	0.348	0.395
9/5/84	22:00	0	6	0	0.00	17.8	0	76	0.242	0.347	0.395
9/5/84	23:00	0	6	0	0.00	17.2	0	79	0.242	0.347	0.395
9/6/84	0:00	0	6	0	0.00	16.1	0	82	0.242	0.347	0.395
9/6/84	1:00	0	6	0	0.00	15.6	0	81	0.242	0.347	0.395
9/6/84	2:00	0	6	0	0.00	15.0	0	84	0.242	0.347	0.395

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
9/6/84	3:00	0	6	0	0.00	15.0	0	81	0.241	0.346	0.394
9/6/84	4:00	0	6	0	0.00	14.4	0	81	0.241	0.346	0.394
9/6/84	5:00	320	6	0	2.06	13.9	0	84	0.241	0.346	0.394
9/6/84	6:00	330	3	0	2.06	13.3	0	84	0.241	0.346	0.394
9/6/84	7:00	350	2	0	2.06	15.0	67	81	0.241	0.346	0.393
9/6/84	8:00	350	2	0	1.55	18.3	232	76	0.241	0.345	0.393
9/6/84	9:00	360	2	0	2.06	21.1	409	65	0.240	0.345	0.392
9/6/84	10:00	60	2	0	2.06	24.4	550	57	0.239	0.344	0.391
9/6/84	11:00	40	2	0	4.12	26.1	643	41	0.239	0.343	0.390
9/6/84	12:00	40	1	0	4.12	26.1	677	43	0.238	0.342	0.389
9/6/84	13:00	80	2	0	4.12	28.3	634	36	0.237	0.342	0.388
9/6/84	14:00	100	2	0	4.12	28.3	535	35	0.236	0.341	0.387
9/6/84	15:00	50	2	0	4.12	27.8	386	36	0.236	0.340	0.387
9/6/84	16:00	70	2	0	4.12	28.3	206	34	0.236	0.340	0.386
9/6/84	17:00	130	2	0	2.58	27.2	52	40	0.235	0.340	0.386
9/6/84	18:00	130	3	0	2.58	26.1	0	44	0.235	0.340	0.386
9/6/84	19:00	90	6	0	2.06	21.7	0	65	0.235	0.339	0.385
9/6/84	20:00	330	6	0	2.58	19.4	0	72	0.235	0.339	0.385
9/6/84	21:00	0	5	0	0.00	18.3	0	74	0.235	0.339	0.385
9/6/84	22:00	180	6	0	1.55	17.2	0	76	0.235	0.339	0.385
9/6/84	23:00	0	6	0	0.00	16.7	0	76	0.235	0.339	0.384
9/7/84	0:00	0	6	0	0.00	15.6	0	79	0.235	0.339	0.384
9/7/84	1:00	0	6	0	0.00	14.4	0	79	0.235	0.338	0.384
9/7/84	2:00	0	6	0	0.00	14.4	0	79	0.235	0.338	0.384
9/7/84	3:00	350	6	0	2.58	13.3	0	81	0.235	0.338	0.384
9/7/84	4:00	0	6	0	0.00	13.3	0	78	0.235	0.338	0.384
9/7/84	5:00	310	6	0	2.58	12.8	0	78	0.235	0.338	0.384
9/7/84	6:00	320	3	0	2.58	11.7	0	81	0.235	0.338	0.384
9/7/84	7:00	330	2	0	2.58	13.3	67	78	0.235	0.338	0.384
9/7/84	8:00	360	2	0	2.06	17.8	231	69	0.235	0.338	0.384
9/7/84	9:00	70	2	0	3.09	21.1	405	59	0.235	0.338	0.384
9/7/84	10:00	80	2	0	4.12	23.9	548	50	0.235	0.338	0.384
9/7/84	11:00	50	2	0	5.15	25.6	642	40	0.235	0.338	0.384
9/7/84	12:00	80	1	0	6.70	26.1	674	37	0.235	0.338	0.384
9/7/84	13:00	100	2	0	6.18	26.7	637	37	0.235	0.338	0.383
9/7/84	14:00	100	2	0	5.15	27.2	535	35	0.234	0.338	0.383
9/7/84	15:00	60	2	0	5.15	27.2	384	35	0.234	0.337	0.383
9/7/84	16:00	60	2	0	4.12	27.2	206	34	0.234	0.337	0.383
9/7/84	17:00	80	2	0	4.64	26.1	51	37	0.234	0.337	0.383
9/7/84	18:00	80	3	0	3.09	24.4	0	42	0.234	0.337	0.383
9/7/84	19:00	60	6	0	2.58	20.0	0	56	0.234	0.337	0.383
9/7/84	20:00	80	6	0	1.55	17.8	0	64	0.234	0.337	0.383
9/7/84	21:00	0	6	0	0.00	16.7	0	66	0.234	0.337	0.383
9/7/84	22:00	0	6	0	0.00	14.4	0	73	0.234	0.337	0.383
9/7/84	23:00	0	6	0	0.00	14.4	0	73	0.234	0.337	0.383
9/8/84	0:00	0	6	0	0.00	13.3	0	76	0.234	0.337	0.383
9/8/84	1:00	340	6	0	2.58	12.8	0	78	0.234	0.337	0.383
9/8/84	2:00	320	6	0	3.09	12.8	0	78	0.234	0.336	0.383
9/8/84	3:00	330	6	0	3.09	12.8	0	76	0.234	0.336	0.383

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
9/8/84	4:00	330	6	0	2.58	12.2	0	78	0.234	0.336	0.383
9/8/84	5:00	320	6	0	2.58	12.2	0	78	0.233	0.335	0.383
9/8/84	6:00	330	3	0	3.09	12.8	0	76	0.233	0.335	0.383
9/8/84	7:00	320	2	0	2.58	13.9	63	76	0.233	0.335	0.382
9/8/84	8:00	330	2	0	2.06	18.3	226	64	0.232	0.334	0.382
9/8/84	9:00	70	2	0	4.12	21.7	399	53	0.231	0.333	0.382
9/8/84	10:00	70	2	0	4.64	23.9	545	50	0.230	0.331	0.382
9/8/84	11:00	60	2	0	5.15	25.6	638	47	0.228	0.330	0.381
9/8/84	12:00	90	1	0	4.12	27.2	665	40	0.227	0.328	0.381
9/8/84	13:00	70	2	0	5.15	28.3	626	39	0.225	0.326	0.381
9/8/84	14:00	30	2	0	3.61	27.8	529	39	0.224	0.325	0.380
9/8/84	15:00	120	2	0	6.18	28.3	377	38	0.223	0.324	0.380
9/8/84	16:00	80	2	0	5.15	28.3	200	35	0.222	0.323	0.380
9/8/84	17:00	100	3	0	5.15	28.3	46	38	0.222	0.323	0.380
9/8/84	18:00	70	4	0	2.06	25.6	0	47	0.222	0.323	0.380
9/8/84	19:00	40	5	0	2.06	21.7	0	61	0.221	0.322	0.380
9/8/84	20:00	320	5	0	1.55	19.4	0	69	0.221	0.322	0.380
9/8/84	21:00	0	5	0	0.00	19.4	0	69	0.221	0.322	0.380
9/8/84	22:00	340	5	0	1.03	19.4	0	69	0.221	0.321	0.380
9/8/84	23:00	330	5	0	1.03	18.3	0	71	0.221	0.321	0.380

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
1/31/85	14:00	140	4	0	2.58	19.4	273	91	0.447	0.366	0.405
1/31/85	15:00	210	4	0	5.15	23.3	143	75	0.446	0.366	0.405
1/31/85	16:00	200	0	0	8.24	23.3	31	72	0.446	0.366	0.405
1/31/85	17:00	200	0	0	4.64	23.3	0	72	0.446	0.366	0.405
1/31/85	18:00	200	5	0	3.61	22.2	0	77	0.446	0.366	0.405
1/31/85	19:00	170	0	0	3.61	20.6	0	85	0.446	0.366	0.405
1/31/85	20:00	170	5	0	4.12	18.9	0	91	0.446	0.366	0.405
1/31/85	21:00	180	5	0	4.12	18.3	0	88	0.446	0.366	0.405
1/31/85	22:00	180	5	0	4.12	19.4	0	82	0.446	0.366	0.405
1/31/85	23:00	200	5	0	4.64	20.6	0	79	0.446	0.366	0.405
2/1/85	0:00	200	5	0	6.18	20.6	0	79	0.446	0.366	0.405
2/1/85	1:00	170	0	0	4.12	18.9	0	88	0.446	0.366	0.405
2/1/85	2:00	180	0	0	5.15	18.3	0	91	0.446	0.366	0.405
2/1/85	3:00	170	0	0	5.15	18.9	0	88	0.446	0.366	0.405
2/1/85	4:00	180	0	0	6.18	18.9	0	91	0.446	0.366	0.405
2/1/85	5:00	180	0	0	5.67	19.4	0	85	0.446	0.366	0.405
2/1/85	6:00	190	0	0	5.15	19.4	0	85	0.446	0.366	0.405
2/1/85	7:00	190	0	0	4.64	18.9	0	88	0.446	0.366	0.405
2/1/85	8:00	180	0	0	6.18	18.9	36	88	0.446	0.366	0.405
2/1/85	9:00	170	0	0	6.70	19.4	153	88	0.446	0.366	0.405
2/1/85	10:00	180	0	0	7.21	20.0	274	82	0.446	0.365	0.404
2/1/85	11:00	190	0	0	5.67	20.6	358	82	0.445	0.365	0.404
2/1/85	12:00	210	2	0	8.76	23.3	379	68	0.445	0.364	0.403
2/1/85	13:00	210	0	0	8.24	23.9	348	66	0.444	0.364	0.403
2/1/85	14:00	210	0	1	7.73	23.3	257	70	0.444	0.363	0.402
2/1/85	15:00	210	0	0	3.09	20.6	151	88	0.463	0.363	0.402
2/1/85	16:00	180	0	4	6.70	23.3	24	70	0.463	0.362	0.401
2/1/85	17:00	330	0	0	5.67	16.7	0	94	0.500	0.402	0.401
2/1/85	18:00	40	5	1	2.06	16.7	0	94	0.500	0.402	0.401
2/1/85	19:00	0	0	6	0.00	16.1	0	97	0.500	0.412	0.401
2/1/85	20:00	350	0	7	5.15	16.1	0	97	0.500	0.500	0.435
2/1/85	21:00	340	0	3	4.12	15.6	0	100	0.500	0.500	0.500
2/1/85	22:00	350	0	6	3.61	14.4	0	93	0.500	0.500	0.500
2/1/85	23:00	10	0	7	3.09	13.3	0	100	0.500	0.500	0.500
2/2/85	0:00	0	0	2	0.00	13.3	0	97	0.500	0.500	0.500
2/2/85	1:00	0	0	2	0.00	13.3	0	97	0.500	0.500	0.500
2/2/85	2:00	340	0	1	1.55	13.3	0	97	0.500	0.500	0.500
2/2/85	3:00	0	0	1	0.00	13.3	0	97	0.500	0.500	0.500
2/2/85	4:00	0	0	0	0.00	13.3	0	100	0.500	0.500	0.500
2/2/85	5:00	0	0	0	0.00	13.3	0	100	0.500	0.500	0.500
2/2/85	6:00	160	0	1	2.06	13.3	0	97	0.500	0.500	0.500
2/2/85	7:00	170	0	5	1.55	13.9	0	100	0.500	0.500	0.500
2/2/85	8:00	220	0	3	3.09	16.7	32	97	0.500	0.500	0.500
2/2/85	9:00	350	0	0	2.06	15.6	163	100	0.500	0.500	0.500
2/2/85	10:00	0	0	0	0.00	16.1	289	100	0.500	0.500	0.500
2/2/85	11:00	0	2	0	0.00	20.0	364	91	0.499	0.499	0.499
2/2/85	12:00	250	2	0	5.15	22.2	387	77	0.499	0.499	0.499
2/2/85	13:00	270	0	0	5.15	22.2	357	72	0.498	0.498	0.498

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
2/2/85	14:00	250	2	0	8.24	23.3	269	59	0.497	0.497	0.497
2/2/85	15:00	280	2	0	8.24	23.3	148	57	0.497	0.497	0.497
2/2/85	16:00	280	4	0	6.70	21.7	35	59	0.497	0.497	0.497
2/2/85	17:00	300	3	0	5.67	20.0	0	67	0.497	0.497	0.497
2/2/85	18:00	300	6	0	7.21	17.2	0	74	0.497	0.497	0.497
2/2/85	19:00	290	6	0	4.12	15.0	0	81	0.497	0.497	0.497
2/2/85	20:00	280	6	0	2.58	13.9	0	81	0.497	0.497	0.497
2/2/85	21:00	310	0	0	7.73	13.3	0	78	0.497	0.497	0.497
2/2/85	22:00	290	6	0	4.64	10.6	0	78	0.497	0.497	0.497
2/2/85	23:00	310	6	0	5.15	8.3	0	83	0.497	0.497	0.497
2/3/85	0:00	300	5	0	6.18	7.2	0	83	0.497	0.497	0.497
2/3/85	1:00	310	5	0	1.55	5.6	0	90	0.497	0.497	0.497
2/3/85	2:00	310	5	0	2.58	5.0	0	93	0.497	0.497	0.497
2/3/85	3:00	320	0	0	5.15	5.6	0	90	0.497	0.497	0.497
2/3/85	4:00	310	0	0	3.09	5.0	0	89	0.497	0.497	0.497
2/3/85	5:00	300	0	0	4.64	4.4	0	89	0.497	0.497	0.497
2/3/85	6:00	310	0	0	4.12	5.0	0	86	0.497	0.497	0.497
2/3/85	7:00	320	0	0	3.09	5.0	0	86	0.497	0.497	0.497
2/3/85	8:00	330	0	0	4.12	5.0	53	86	0.497	0.497	0.497
2/3/85	9:00	340	0	0	3.61	5.0	193	86	0.497	0.497	0.497
2/3/85	10:00	320	0	0	3.61	5.0	328	83	0.496	0.496	0.496
2/3/85	11:00	320	0	0	3.61	5.6	418	86	0.496	0.496	0.496
2/3/85	12:00	350	0	0	3.09	6.1	448	90	0.495	0.495	0.495
2/3/85	13:00	340	0	0	3.09	6.7	415	90	0.494	0.494	0.494
2/3/85	14:00	10	0	0	1.03	7.2	322	86	0.493	0.493	0.493
2/3/85	15:00	70	0	0	3.09	7.2	188	90	0.493	0.493	0.493
2/3/85	16:00	70	0	0	2.58	7.8	51	86	0.493	0.493	0.493
2/3/85	17:00	70	0	0	2.06	8.3	0	78	0.493	0.493	0.493
2/3/85	18:00	60	0	0	4.64	7.8	0	77	0.493	0.493	0.493
2/3/85	19:00	70	0	0	3.61	7.2	0	77	0.493	0.493	0.493
2/3/85	20:00	50	0	0	4.12	7.2	0	80	0.493	0.493	0.493
2/3/85	21:00	60	0	0	3.09	6.7	0	77	0.493	0.493	0.493
2/3/85	22:00	50	0	0	3.61	6.1	0	80	0.493	0.493	0.493
2/3/85	23:00	60	0	0	4.12	6.1	0	77	0.493	0.493	0.493
2/4/85	0:00	60	0	0	4.12	5.6	0	80	0.493	0.493	0.493
2/4/85	1:00	60	0	0	3.61	5.6	0	77	0.493	0.493	0.493
2/4/85	2:00	50	0	0	3.09	5.0	0	77	0.493	0.493	0.493
2/4/85	3:00	30	0	0	2.06	5.0	0	74	0.493	0.493	0.493
2/4/85	4:00	30	0	0	2.58	5.0	0	74	0.493	0.493	0.493
2/4/85	5:00	30	0	0	5.15	4.4	0	71	0.493	0.493	0.493
2/4/85	6:00	20	0	0	4.12	4.4	0	71	0.493	0.493	0.493
2/4/85	7:00	30	0	0	4.64	3.9	0	77	0.493	0.493	0.493
2/4/85	8:00	40	0	0	3.09	3.3	58	80	0.493	0.493	0.493
2/4/85	9:00	30	0	0	4.12	3.9	199	74	0.492	0.492	0.492
2/4/85	10:00	360	0	0	4.64	4.4	334	71	0.492	0.492	0.492
2/4/85	11:00	10	0	0	5.15	5.6	423	64	0.492	0.492	0.492
2/4/85	12:00	20	0	0	4.64	6.7	451	59	0.491	0.491	0.491
2/4/85	13:00	60	0	0	4.64	7.8	415	53	0.490	0.490	0.490

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
2/4/85	14:00	70	3	0	4.64	8.9	320	49	0.489	0.489	0.489
2/4/85	15:00	40	3	0	5.15	9.4	186	48	0.489	0.489	0.489
2/4/85	16:00	70	3	0	3.09	10.0	50	48	0.489	0.489	0.489
2/4/85	17:00	50	4	0	4.64	10.0	0	46	0.488	0.488	0.488
2/4/85	18:00	90	5	0	4.64	7.8	0	55	0.488	0.488	0.488
2/4/85	19:00	90	5	0	3.61	5.6	0	64	0.488	0.488	0.488
2/4/85	20:00	60	0	0	3.09	5.6	0	61	0.488	0.488	0.488
2/4/85	21:00	60	0	0	3.61	4.4	0	66	0.488	0.488	0.488
2/4/85	22:00	70	0	0	4.12	5.0	0	61	0.488	0.488	0.488
2/4/85	23:00	90	0	0	3.09	5.0	0	61	0.488	0.488	0.488
2/5/85	0:00	20	0	0	4.12	5.6	0	64	0.488	0.488	0.488
2/5/85	1:00	80	0	0	2.58	4.4	0	71	0.488	0.488	0.488
2/5/85	2:00	40	0	0	3.61	3.9	0	71	0.494	0.488	0.488
2/5/85	3:00	30	0	0	4.12	3.9	0	71	0.499	0.488	0.488
2/5/85	4:00	40	0	1	3.61	3.3	0	77	0.500	0.492	0.488
2/5/85	5:00	40	0	6	4.12	2.8	0	83	0.500	0.500	0.491
2/5/85	6:00	10	0	2	3.09	1.7	0	93	0.500	0.500	0.500
2/5/85	7:00	40	0	3	4.12	1.7	0	93	0.500	0.500	0.500
2/5/85	8:00	60	0	8	3.09	1.7	46	93	0.500	0.500	0.500
2/5/85	9:00	350	0	3	2.58	1.1	197	96	0.500	0.500	0.500
2/5/85	10:00	30	0	4	2.58	1.7	329	96	0.500	0.500	0.500
2/5/85	11:00	50	0	4	2.58	1.7	417	96	0.499	0.499	0.499
2/5/85	12:00	10	0	8	4.12	1.7	430	96	0.499	0.499	0.499
2/5/85	13:00	130	0	2	4.12	1.7	429	96	0.499	0.499	0.499
2/5/85	14:00	130	0	9	2.58	3.3	295	96	0.499	0.499	0.499
2/5/85	15:00	0	0	5	0.00	3.3	183	100	0.500	0.500	0.500
2/5/85	16:00	0	0	2	0.00	3.9	55	96	0.500	0.500	0.500
2/5/85	17:00	0	0	7	0.00	3.9	0	96	0.500	0.500	0.500
2/5/85	18:00	160	0	1	3.61	3.9	0	96	0.500	0.500	0.500
2/5/85	19:00	170	0	2	3.09	4.4	0	96	0.500	0.500	0.500
2/5/85	20:00	10	0	6	4.12	3.3	0	96	0.500	0.500	0.500
2/5/85	21:00	350	0	7	3.61	3.9	0	100	0.500	0.500	0.500
2/5/85	22:00	340	0	5	3.09	3.3	0	96	0.500	0.500	0.500
2/5/85	23:00	120	0	4	2.58	3.3	0	96	0.500	0.500	0.500
2/6/85	0:00	30	0	2	1.55	3.9	0	100	0.500	0.500	0.500
2/6/85	1:00	360	0	1	2.06	3.9	0	100	0.500	0.500	0.500
2/6/85	2:00	340	0	2	3.61	3.9	0	96	0.500	0.500	0.500
2/6/85	3:00	360	0	1	2.58	3.3	0	96	0.500	0.500	0.500
2/6/85	4:00	310	0	1	3.61	3.3	0	96	0.500	0.500	0.500
2/6/85	5:00	300	0	0	2.58	3.3	0	96	0.500	0.500	0.500
2/6/85	6:00	250	0	0	2.06	3.9	0	96	0.500	0.500	0.500
2/6/85	7:00	300	0	0	4.12	3.9	0	96	0.500	0.500	0.500
2/6/85	8:00	150	0	0	2.06	4.4	60	96	0.500	0.500	0.500
2/6/85	9:00	130	0	0	3.09	4.4	205	100	0.500	0.500	0.500
2/6/85	10:00	160	0	0	5.67	5.6	339	86	0.500	0.500	0.500
2/6/85	11:00	290	0	0	2.06	6.1	429	90	0.499	0.499	0.499
2/6/85	12:00	300	0	0	4.12	6.7	460	93	0.498	0.498	0.498
2/6/85	13:00	290	0	0	2.06	7.2	425	93	0.497	0.497	0.497
2/6/85	14:00	220	0	0	4.12	7.8	332	86	0.497	0.497	0.497

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
2/6/85	15:00	320	0	0	2.58	7.8	197	90	0.496	0.496	0.496
2/6/85	16:00	230	0	0	3.61	8.9	55	84	0.496	0.496	0.496
2/6/85	17:00	280	3	0	4.12	10.6	0	75	0.496	0.496	0.496
2/6/85	18:00	240	6	0	2.58	10.0	0	75	0.496	0.496	0.496
2/6/85	19:00	240	6	0	2.58	8.3	0	83	0.496	0.496	0.496
2/6/85	20:00	250	6	0	1.55	6.7	0	90	0.496	0.496	0.496
2/6/85	21:00	260	6	0	3.61	6.7	0	86	0.496	0.496	0.496
2/6/85	22:00	280	6	0	4.12	6.1	0	86	0.496	0.496	0.496
2/6/85	23:00	270	6	0	3.61	5.6	0	86	0.496	0.496	0.496

Date Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/27/8513:00	240	2	0	7.21	24.4	601	35.2	0.353	0.426	0.444
3/27/8514:00	210	0	0	8.24	24.4	502	35.2	0.351	0.424	0.443
3/27/8515:00	190	0	0	9.27	24.4	352	34.0	0.350	0.423	0.442
3/27/8516:00	230	0	0	6.18	25.0	176	34.1	0.349	0.422	0.442
3/27/8517:00	220	0	0	5.67	24.4	33	35.2	0.348	0.422	0.442
3/27/8518:00	210	0	0	4.12	23.9	0	37.7	0.347	0.421	0.443
3/27/8519:00	190	0	0	3.61	21.7	0	44.4	0.347	0.421	0.443
3/27/8520:00	200	0	0	3.61	17.8	0	55.7	0.346	0.421	0.443
3/27/8521:00	200	5	0	3.61	19.4	0	50.5	0.346	0.421	0.444
3/27/8522:00	210	0	0	2.06	20.0	0	48.9	0.345	0.421	0.444
3/27/8523:00	190	0	0	3.61	20.6	0	49.0	0.344	0.420	0.444
3/28/85 0:00	200	0	0	4.64	21.1	0	49.2	0.344	0.420	0.445
3/28/85 1:00	220	0	0	4.64	20.6	0	50.8	0.343	0.420	0.445
3/28/85 2:00	210	0	0	3.61	20.0	0	52.5	0.343	0.420	0.446
3/28/85 3:00	220	5	0	4.12	18.9	0	58.0	0.342	0.419	0.446
3/28/85 4:00	230	5	0	4.64	18.3	0	60.0	0.342	0.419	0.446
3/28/85 5:00	230	6	0	3.09	17.2	0	64.1	0.341	0.419	0.447
3/28/85 6:00	230	3	0	3.09	16.7	0	68.6	0.341	0.419	0.447
3/28/85 7:00	240	3	0	2.06	16.1	41	71.0	0.340	0.418	0.447
3/28/85 8:00	250	2	0	4.64	18.3	194	66.6	0.339	0.418	0.448
3/28/85 9:00	280	2	0	6.18	20.6	368	64.9	0.339	0.417	0.448
3/28/8510:00	270	2	0	4.64	23.3	510	59.2	0.337	0.417	0.447
3/28/8511:00	250	0	0	3.61	22.8	612	63.2	0.336	0.415	0.447
3/28/8512:00	220	0	0	5.67	22.8	647	63.2	0.334	0.414	0.446
3/28/8513:00	200	2	0	6.70	25.0	604	55.7	0.333	0.413	0.446
3/28/8514:00	200	0	0	6.18	24.4	507	57.5	0.331	0.412	0.445
3/28/8515:00	210	0	0	5.15	25.6	353	54.0	0.330	0.410	0.444
3/28/8516:00	210	3	0	6.18	27.2	175	49.2	0.329	0.410	0.444
3/28/8517:00	210	4	0	6.18	27.2	32	49.2	0.328	0.409	0.444
3/28/8518:00	220	4	0	5.15	26.1	0	52.3	0.327	0.409	0.444
3/28/8519:00	220	0	0	3.61	25.0	0	55.7	0.327	0.409	0.445
3/28/8520:00	210	6	0	3.61	22.8	0	63.2	0.326	0.408	0.445
3/28/8521:00	210	6	0	4.12	22.8	0	59.0	0.326	0.408	0.446
3/28/8522:00	220	6	0	5.15	22.8	0	57.0	0.325	0.408	0.446
3/28/8523:00	220	6	0	5.67	22.2	0	58.9	0.325	0.407	0.446
3/29/85 0:00	210	6	0	5.67	21.7	0	60.8	0.324	0.407	0.447
3/29/85 1:00	240	6	0	6.18	21.1	0	62.8	0.324	0.407	0.447
3/29/85 2:00	230	6	0	5.15	20.6	0	64.9	0.323	0.407	0.447
3/29/85 3:00	240	5	0	4.64	18.9	0	76.6	0.322	0.406	0.448
3/29/85 5:00	220	5	0	3.09	18.3	0	79.1	0.321	0.406	0.448
3/29/85 6:00	190	4	0	2.58	17.2	0	81.7	0.321	0.406	0.449
3/29/85 7:00	200	4	0	3.09	16.7	42	87.4	0.320	0.405	0.449
3/29/85 8:00	240	4	0	4.12	18.9	196	81.9	0.320	0.405	0.449
3/29/85 9:00	250	0	0	5.67	20.0	374	79.4	0.319	0.405	0.449
3/29/8510:00	250	0	0	5.15	20.6	525	79.5	0.318	0.404	0.449
3/29/8511:00	250	0	0	5.15	22.2	619	72.1	0.316	0.403	0.448
3/29/8512:00	250	3	0	6.70	25.0	642	59.6	0.315	0.401	0.448
3/29/8513:00	220	2	0	5.67	26.7	601	50.8	0.313	0.400	0.447
3/29/8514:00	230	2	0	7.21	27.8	499	49.4	0.312	0.399	0.446
3/29/8515:00	250	2	0	5.15	28.3	348	46.3	0.310	0.398	0.446

Date Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/29/8516:00	250	4	0	5.67	29.4	173	40.7	0.309	0.397	0.445
3/29/8517:00	180	4	0	4.64	28.9	33	44.9	0.308	0.396	0.445
3/29/8518:00	200	4	0	7.21	27.8	0	47.7	0.308	0.396	0.446
3/29/8519:00	210	5	0	4.12	25.0	0	53.8	0.307	0.396	0.446
3/29/8520:00	200	6	0	2.06	21.7	0	65.1	0.307	0.395	0.446
3/29/8521:00	0	6	0	0.00	19.4	0	74.1	0.306	0.395	0.447
3/29/8522:00	0	6	0	0.00	17.8	0	81.8	0.306	0.395	0.447
3/29/8523:00	0	6	0	0.00	17.2	0	84.5	0.305	0.395	0.447
3/30/85 0:00	190	6	0	3.09	20.6	0	71.8	0.305	0.394	0.448
3/30/85 1:00	0	6	0	0.00	17.2	0	84.5	0.304	0.394	0.448
3/30/85 2:00	200	5	0	2.06	16.1	0	90.4	0.304	0.394	0.448
3/30/85 3:00	230	5	0	2.06	16.7	0	84.5	0.303	0.393	0.449
3/30/85 4:00	170	5	0	2.58	13.9	0	96.6	0.303	0.393	0.449
3/30/85 5:00	160	0	0	2.58	13.9	0	96.6	0.302	0.393	0.449
3/30/85 6:00	190	0	0	2.06	14.4	0	93.4	0.302	0.393	0.449
3/30/85 7:00	0	0	0	0.00	14.4	47	93.4	0.302	0.392	0.450
3/30/85 8:00	0	0	0	0.00	16.7	205	90.4	0.301	0.392	0.450
3/30/85 9:00	270	0	0	4.12	21.1	374	71.9	0.300	0.392	0.450
3/30/8510:00	280	0	0	4.12	24.4	515	61.5	0.299	0.391	0.450
3/30/8511:00	250	0	0	4.64	26.7	605	54.3	0.298	0.389	0.449
3/30/8512:00	220	0	0	5.15	27.8	636	49.4	0.296	0.388	0.448
3/30/8513:00	250	0	0	6.18	28.9	597	44.9	0.295	0.387	0.448
3/30/8514:00	200	0	0	6.70	30.0	495	43.7	0.293	0.386	0.447
3/30/8515:00	220	0	0	7.73	30.6	345	39.7	0.292	0.385	0.446
3/30/8516:00	190	0	0	6.18	30.6	174	39.7	0.291	0.384	0.446
3/30/8517:00	200	0	0	6.18	29.4	0	39.3	0.289	0.383	0.446
3/30/8519:00	220	0	0	4.64	27.2	0	42.9	0.289	0.383	0.447
3/30/8520:00	190	5	0	3.09	22.8	0	57.0	0.288	0.382	0.447
3/30/8521:00	220	5	0	2.58	20.6	0	64.9	0.288	0.382	0.447
3/30/8522:00	200	6	0	2.06	18.3	0	73.9	0.288	0.382	0.448
3/30/8523:00	190	6	0	3.09	17.8	0	76.4	0.287	0.381	0.448
3/31/85 0:00	190	6	0	4.12	18.3	0	73.9	0.287	0.381	0.448
3/31/85 1:00	200	6	0	4.12	18.3	0	76.5	0.286	0.381	0.448
3/31/85 2:00	200	6	0	3.09	17.8	0	73.8	0.286	0.381	0.449
3/31/85 3:00	240	6	0	1.55	15.6	0	81.5	0.285	0.380	0.449
3/31/85 4:00	180	6	0	4.12	15.6	0	81.5	0.285	0.380	0.449
3/31/85 5:00	180	6	0	3.61	15.0	0	87.2	0.284	0.380	0.450
3/31/85 6:00	180	3	0	2.58	13.9	0	90.2	0.284	0.380	0.450
3/31/85 7:00	180	3	0	3.61	12.8	51	93.3	0.283	0.379	0.450
3/31/85 8:00	180	2	0	4.12	17.8	206	84.6	0.283	0.379	0.450
3/31/85 9:00	210	2	0	5.15	21.7	376	74.5	0.282	0.378	0.450
3/31/8510:00	220	2	0	6.18	23.9	521	65.6	0.281	0.377	0.450
3/31/8511:00	190	2	0	8.24	26.1	612	52.3	0.280	0.376	0.449
3/31/8512:00	180	2	0	8.76	27.8	640	47.7	0.278	0.375	0.449
3/31/8513:00	190	2	0	7.21	27.8	606	46.1	0.277	0.374	0.448
3/31/8514:00	230	2	0	9.27	28.9	503	48.0	0.275	0.372	0.447
3/31/8515:00	200	2	0	6.18	28.9	354	46.5	0.274	0.371	0.446
3/31/8516:00	220	0	0.762	6.18	27.8	178	51.1	0.273	0.370	0.446
3/31/8517:00	270	0	0.254	6.18	18.9	44	90.6	0.287	0.370	0.446

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
3/31/85	18:00	220	0	0	1.55	18.9	0	87.6	0.292	0.370	0.446
3/31/85	19:00	0	5	0	0.00	18.3	0	90.5	0.291	0.369	0.447
3/31/85	20:00	0	5	0	0.00	17.8	0	93.6	0.291	0.369	0.447
3/31/85	21:00	250	6	0	3.61	16.7	0	93.5	0.290	0.369	0.447
3/31/85	22:00	260	5	0	3.09	16.7	0	93.5	0.290	0.369	0.447
3/31/85	23:00	240	6	0	2.58	15.6	0	87.3	0.289	0.368	0.448
4/1/85	0:00	260	6	0	3.61	15.0	0	87.2	0.289	0.368	0.448
4/1/85	1:00	260	6	0	4.64	13.9	0	84.1	0.288	0.368	0.448
4/1/85	2:00	270	6	0	4.64	12.8	0	72.9	0.288	0.368	0.448
4/1/85	3:00	260	6	0	5.15	11.1	0	78.0	0.288	0.367	0.449
4/1/85	4:00	280	6	0	5.67	11.1	0	75.2	0.287	0.367	0.449
4/1/85	5:00	280	6	0	4.64	11.1	0	65.0	0.287	0.367	0.449
4/1/85	6:00	270	3	0	4.64	9.4	0	72.2	0.286	0.367	0.449
4/1/85	7:00	280	3	0	4.64	9.4	57	69.6	0.286	0.367	0.450
4/1/85	8:00	300	2	0	6.18	11.7	225	58.3	0.285	0.366	0.450
4/1/85	9:00	310	2	0	8.76	13.9	407	45.3	0.284	0.366	0.450
4/1/85	10:00	300	2	0	8.76	15.6	557	39.4	0.283	0.365	0.449
4/1/85	11:00	300	2	0	7.73	17.8	650	33.2	0.282	0.363	0.449
4/1/85	12:00	260	1	0	8.24	18.9	681	26.6	0.280	0.362	0.448
4/1/85	13:00	310	2	0	8.76	20.0	641	29.1	0.279	0.361	0.447
4/1/85	14:00	260	2	0	7.73	21.1	536	29.5	0.277	0.359	0.446
4/1/85	15:00	260	2	0	8.24	21.7	381	24.5	0.276	0.358	0.445
4/1/85	16:00	290	3	0	5.15	22.2	200	23.7	0.275	0.357	0.445
4/1/85	17:00	270	4	0	6.70	21.7	44	25.4	0.274	0.357	0.445
4/1/85	18:00	280	4	0	5.67	20.6	0	26.1	0.273	0.357	0.445
4/1/85	19:00	270	5	0	5.67	18.9	0	27.7	0.273	0.356	0.445
4/1/85	20:00	260	5	0	3.61	16.7	0	31.6	0.272	0.356	0.446
4/1/85	21:00	280	5	0	5.15	16.7	0	29.3	0.272	0.356	0.446
4/1/85	22:00	290	6	0	5.15	15.0	0	29.9	0.272	0.356	0.446
4/1/85	23:00	290	6	0	4.64	13.9	0	29.6	0.271	0.355	0.446
4/2/85	0:00	290	6	0	3.61	12.8	0	31.7	0.271	0.355	0.447
4/2/85	1:00	290	6	0	4.64	12.2	0	34.1	0.270	0.355	0.447
4/2/85	2:00	290	6	0	4.64	11.1	0	38.0	0.270	0.355	0.447
4/2/85	3:00	290	6	0	3.61	8.9	0	45.6	0.269	0.354	0.447
4/2/85	4:00	310	6	0	3.61	8.3	0	49.1	0.269	0.354	0.448
4/2/85	5:00	300	6	0	4.12	7.8	0	50.9	0.268	0.354	0.448
4/2/85	6:00	300	3	0	4.12	6.7	0	54.7	0.268	0.354	0.448
4/2/85	7:00	290	3	0	4.12	7.2	62	54.9	0.268	0.353	0.448
4/2/85	8:00	310	2	0	4.12	11.1	231	44.5	0.267	0.353	0.448
4/2/85	9:00	340	2	0	5.67	13.3	413	38.7	0.266	0.352	0.448
4/2/85	10:00	350	2	0	4.64	14.4	566	34.8	0.265	0.351	0.448
4/2/85	11:00	260	2	0	4.64	15.6	664	32.5	0.264	0.350	0.447
4/2/85	12:00	330	1	0	6.70	16.7	695	28.1	0.262	0.349	0.446
4/2/85	13:00	300	2	0	7.21	17.8	655	25.3	0.261	0.348	0.445
4/2/85	14:00	290	2	0	4.64	17.8	554	24.3	0.259	0.346	0.444
4/2/85	15:00	280	3	0	6.70	18.3	397	22.6	0.258	0.345	0.444
4/2/85	16:00	300	2	0	8.76	18.3	213	24.5	0.257	0.344	0.443
4/2/85	17:00	290	3	0	6.70	18.3	50	24.5	0.256	0.343	0.443
4/2/85	18:00	290	3	0	6.70	17.2	0	26.2	0.255	0.343	0.443
4/2/85	19:00	280	6	0	4.12	15.6	0	28.9	0.255	0.343	0.443

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
4/2/85	20:00	280	6	0	3.61	13.3	0	33.1	0.254	0.343	0.444
4/2/85	21:00	280	6	0	5.15	13.3	0	31.8	0.254	0.342	0.444
4/2/85	22:00	290	6	0	5.67	12.8	0	33.0	0.254	0.342	0.444
4/2/85	23:00	290	6	0	4.64	11.1	0	38.0	0.253	0.342	0.444

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
7/31/87	8:00	250	2	0	3.09	26.7	310	78	0.347	0.387	0.382
7/31/87	9:00	260	2	0	3.61	28.9	484	69	0.347	0.386	0.380
7/31/87	10:00	260	2	0	2.06	31.7	622	57	0.346	0.385	0.379
7/31/87	11:00	160	1	0	2.06	32.8	713	51	0.346	0.384	0.377
7/31/87	12:00	120	1	0	2.06	34.4	739	50	0.345	0.383	0.375
7/31/87	13:00	50	1	0	2.06	33.9	708	49	0.344	0.381	0.373
7/31/87	14:00	70	2	0	2.06	34.4	611	48	0.343	0.380	0.371
7/31/87	15:00	110	2	0	4.64	35.6	461	45	0.342	0.379	0.369
7/31/87	16:00	130	2	0	4.64	35.0	286	47	0.341	0.378	0.368
7/31/87	17:00	160	2	0	5.15	34.4	114	50	0.341	0.377	0.366
7/31/87	18:00	180	3	0	5.15	33.9	9	48	0.341	0.377	0.365
7/31/87	19:00	150	6	0	3.61	32.2	0	56	0.342	0.377	0.365
7/31/87	20:00	130	6	0	3.09	29.4	0	69	0.342	0.377	0.364
7/31/87	21:00	190	5	0	4.12	29.4	0	67	0.342	0.377	0.363
7/31/87	22:00	190	6	0	4.12	28.3	0	71	0.342	0.377	0.362
7/31/87	23:00	190	6	0	3.61	27.2	0	75	0.343	0.377	0.361
8/1/87	0:00	150	6	0	2.58	26.1	0	83	0.343	0.377	0.361
8/1/87	1:00	160	6	0	2.06	25.0	0	88	0.343	0.376	0.360
8/1/87	2:00	170	6	0	2.58	24.4	0	88	0.343	0.376	0.359
8/1/87	3:00	170	6	0	2.58	23.9	0	91	0.344	0.376	0.358
8/1/87	4:00	140	6	0	1.55	23.3	0	94	0.344	0.376	0.358
8/1/87	5:00	180	5	0	2.58	23.3	0	94	0.344	0.376	0.357
8/1/87	6:00	140	3	0	2.06	22.8	12	97	0.345	0.376	0.356
8/1/87	7:00	210	2	0	1.55	23.3	133	97	0.345	0.376	0.355
8/1/87	8:00	220	0	0	3.09	25.0	313	91	0.345	0.375	0.354
8/1/87	9:00	180	2	0	2.58	27.2	489	80	0.345	0.375	0.353
8/1/87	10:00	350	2	0	1.55	30.6	625	67	0.344	0.374	0.352
8/1/87	11:00	150	1	0	2.06	32.8	712	58	0.343	0.373	0.350
8/1/87	12:00	70	1	0	1.55	35.6	733	50	0.342	0.371	0.348
8/1/87	13:00	110	1	0	3.09	34.4	705	53	0.341	0.370	0.346
8/1/87	14:00	90	2	0	2.58	36.1	603	45	0.340	0.369	0.344
8/1/87	15:00	150	2	0	4.12	35.6	459	48	0.340	0.368	0.342
8/1/87	16:00	130	2	0	3.09	35.6	283	48	0.339	0.367	0.341
8/1/87	17:00	130	2	0	4.12	34.4	113	51	0.339	0.366	0.340
8/1/87	18:00	160	4	0	6.18	33.9	8	54	0.339	0.366	0.339
8/1/87	19:00	150	5	0	4.12	31.7	0	63	0.339	0.366	0.338
8/1/87	20:00	190	5	4	4.12	31.1	0	67	0.340	0.366	0.337
8/1/87	21:00	40	0	45	5.67	26.1	0	88	0.426	0.366	0.337
8/1/87	22:00	80	5	0	4.64	24.4	0	97	0.500	0.500	0.499
8/2/87	0:00	170	0	0	3.09	25.0	0	94	0.500	0.500	0.498
8/2/87	1:00	130	0	0	1.55	24.4	0	97	0.500	0.500	0.498
8/2/87	2:00	120	0	0	3.09	23.9	0	100	0.500	0.500	0.497
8/2/87	3:00	130	5	0	2.06	23.9	0	97	0.500	0.500	0.496
8/2/87	4:00	60	5	0	1.55	23.3	0	100	0.500	0.500	0.496
8/2/87	5:00	230	5	0	1.55	23.9	0	97	0.500	0.500	0.495
8/2/87	6:00	0	4	0	0.00	23.3	11	97	0.500	0.500	0.495
8/2/87	7:00	0	0	0	0.00	23.9	130	100	0.500	0.500	0.494
8/2/87	8:00	60	0	0	2.58	23.9	314	100	0.500	0.500	0.493
8/2/87	9:00	60	0	0	1.55	25.6	493	94	0.500	0.499	0.492

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
8/2/87	10:00	60	0	0	1.55	27.8	634	83	0.499	0.498	0.490
8/2/87	11:00	110	1	0	2.58	28.9	726	78	0.499	0.497	0.488
8/2/87	12:00	150	2	0	3.61	31.1	750	74	0.498	0.495	0.485
8/2/87	13:00	140	0	0	3.09	31.7	715	72	0.497	0.494	0.483
8/2/87	14:00	150	2	0	5.15	32.2	616	70	0.496	0.493	0.481
8/2/87	15:00	140	2	0	4.64	32.8	467	68	0.496	0.491	0.479
8/2/87	16:00	120	2	0	4.12	32.8	288	68	0.495	0.490	0.477
8/2/87	17:00	170	3	0	2.58	31.7	116	65	0.495	0.490	0.476
8/2/87	18:00	160	3	0	4.12	30.6	9	65	0.495	0.489	0.474
8/2/87	19:00	180	6	0	3.61	28.9	0	71	0.496	0.489	0.473
8/2/87	20:00	0	6	0	0.00	26.7	0	83	0.496	0.489	0.472
8/2/87	21:00	150	5	0	2.06	26.1	0	86	0.497	0.489	0.472
8/2/87	22:00	150	5	0	1.55	25.6	0	91	0.497	0.489	0.471
8/2/87	23:00	0	0	0	0.00	25.6	0	94	0.497	0.489	0.470
8/3/87	0:00	130	0	0	2.58	25.6	0	91	0.498	0.488	0.469
8/3/87	1:00	0	0	0	0.00	25.0	0	94	0.498	0.488	0.468
8/3/87	2:00	0	0	0	0.00	25.0	0	94	0.498	0.488	0.467
8/3/87	3:00	140	0	0	2.06	24.4	0	97	0.499	0.488	0.466
8/3/87	4:00	350	0	0	2.58	24.4	0	97	0.499	0.488	0.465
8/3/87	5:00	0	0	0	0.00	24.4	0	97	0.500	0.487	0.464
8/3/87	6:00	0	0	0	0.00	23.9	11	100	0.500	0.487	0.463
8/3/87	7:00	0	0	0	0.00	25.0	127	94	0.500	0.487	0.462
8/3/87	8:00	210	0	0	1.55	25.6	308	91	0.500	0.487	0.461
8/3/87	9:00	190	2	0	1.55	28.3	481	78	0.500	0.487	0.460
8/3/87	10:00	360	0	0	3.09	30.6	622	69	0.499	0.486	0.458
8/3/87	11:00	0	2	0	0.00	31.7	713	65	0.499	0.484	0.456
8/3/87	12:00	60	2	0	2.58	32.2	744	65	0.498	0.483	0.454
8/3/87	13:00	190	2	0	3.09	33.3	706	60	0.497	0.482	0.452
8/3/87	14:00	190	2	0	3.09	34.4	606	56	0.496	0.480	0.449
8/3/87	15:00	260	2	0	3.61	35.0	458	55	0.496	0.479	0.447
8/3/87	16:00	250	2	0	4.12	35.0	281	53	0.495	0.478	0.446
8/3/87	17:00	20	2	0	5.15	32.8	112	61	0.495	0.477	0.444
8/3/87	18:00	170	4	0	5.15	31.1	8	69	0.495	0.477	0.443
8/3/87	19:00	190	5	0	3.09	28.9	0	71	0.496	0.477	0.442
8/3/87	20:00	220	5	0	5.67	27.8	0	76	0.496	0.477	0.441
8/3/87	21:00	210	5	0	3.09	27.2	0	80	0.497	0.477	0.440
8/3/87	22:00	230	0	0	3.09	27.2	0	83	0.497	0.476	0.439
8/3/87	23:00	260	5	0	3.61	26.7	0	80	0.497	0.476	0.438
8/4/87	0:00	240	5	0	2.06	26.1	0	83	0.498	0.476	0.438
8/4/87	1:00	0	5	0	0.00	25.6	0	85	0.498	0.476	0.437
8/4/87	2:00	150	5	0	2.06	24.4	0	94	0.499	0.476	0.436
8/4/87	3:00	200	5	0	2.06	24.4	0	94	0.499	0.475	0.435
8/4/87	4:00	210	5	0	2.58	24.4	0	91	0.499	0.475	0.434
8/4/87	5:00	220	5	0	2.58	23.9	0	94	0.500	0.475	0.433
8/4/87	6:00	200	3	0	3.09	23.9	10	94	0.500	0.475	0.432
8/4/87	7:00	220	2	0	3.09	24.4	126	94	0.500	0.475	0.431
8/4/87	8:00	220	2	0	4.12	26.1	304	86	0.500	0.475	0.431
8/4/87	9:00	220	2	0	2.58	28.3	479	76	0.500	0.474	0.429
8/4/87	10:00	250	2	0	4.12	30.6	620	67	0.499	0.473	0.428

Date	Time	Wind Direction Azmith	Stability Class *	Rain mm/hr	Wind Speed m/s	Air Temp oC	Solar Rad. W/m2	Relative Humid.	Soil Moisture 0-5cm	5-10cm	10-15cm
8/4/87	11:00	220	0	0	3.09	31.7	712	61	0.499	0.472	0.426
8/4/87	12:00	220	2	0	5.67	32.8	740	60	0.498	0.471	0.424
8/4/87	13:00	250	2	0	3.61	32.8	707	58	0.497	0.469	0.421
8/4/87	14:00	250	2	0	5.67	34.4	605	55	0.496	0.468	0.419
8/4/87	15:00	230	2	0	5.15	34.4	458	55	0.496	0.467	0.417
8/4/87	16:00	270	3	0	4.64	34.4	280	55	0.495	0.466	0.416
8/4/87	17:00	240	2	0	4.64	34.4	108	55	0.495	0.465	0.414
8/4/87	18:00	240	3	0	3.61	33.9	7	54	0.496	0.465	0.413
8/4/87	19:00	250	6	0	4.12	31.7	0	63	0.496	0.465	0.412
8/4/87	20:00	320	5	0	8.24	29.4	0	69	0.496	0.464	0.412
8/4/87	21:00	320	0	1	4.12	26.7	0	80	0.497	0.464	0.411
8/4/87	22:00	350	0	0	1.55	25.6	0	88	0.500	0.471	0.410
8/4/87	23:00	300	0	0	2.58	25.0	0	94	0.500	0.471	0.409
8/5/87	0:00	170	0	0	2.06	24.4	0	97	0.500	0.471	0.409
8/5/87	1:00	170	0	0	2.58	24.4	0	97	0.500	0.472	0.408
8/5/87	2:00	0	5	0	0.00	24.4	0	97	0.500	0.472	0.408
8/5/87	3:00	310	5	0	2.58	23.9	0	97	0.500	0.472	0.407
8/5/87	4:00	330	5	0	1.55	23.9	0	97	0.500	0.472	0.407
8/5/87	5:00	0	6	0	0.00	23.9	0	94	0.500	0.472	0.407
8/5/87	6:00	0	3	0	0.00	23.3	9	97	0.500	0.473	0.406
8/5/87	7:00	0	2	0	0.00	23.9	125	97	0.500	0.473	0.406
8/5/87	8:00	280	2	0	2.58	25.6	304	88	0.500	0.473	0.405
8/5/87	9:00	240	2	0	4.12	27.2	481	83	0.500	0.472	0.404
8/5/87	10:00	230	2	0	3.61	30.0	620	71	0.499	0.471	0.402
8/5/87	11:00	240	1	0	5.15	31.7	710	67	0.499	0.470	0.400
8/5/87	12:00	260	1	0	4.12	33.3	736	62	0.498	0.469	0.398
8/5/87	13:00	230	1	0	4.12	33.9	701	58	0.497	0.467	0.396
8/5/87	14:00	220	2	0	6.18	35.0	601	51	0.496	0.466	0.394
8/5/87	15:00	250	2	0	2.06	35.0	454	53	0.496	0.465	0.392
8/5/87	16:00	230	2	0	4.12	35.6	275	50	0.495	0.464	0.390
8/5/87	17:00	250	2	0	5.15	35.0	106	51	0.495	0.463	0.389
8/5/87	18:00	240	3	0	5.15	34.4	6	53	0.496	0.463	0.388
8/5/87	19:00	200	6	0	3.61	32.8	0	58	0.496	0.463	0.387
8/5/87	20:00	230	6	0	2.58	30.6	0	65	0.496	0.462	0.386
8/5/87	21:00	240	6	0	2.58	28.9	0	71	0.497	0.462	0.386
8/5/87	22:00	250	6	0	3.09	28.3	0	76	0.497	0.462	0.385
8/5/87	23:00	250	6	0	3.09	27.8	0	78	0.498	0.462	0.384

APPENDIX C
METHOD FOR CALCULATION OF SOIL MOISTURE CONTENT

The water balance equation can be expressed as:

$$E_t + S_f + I + D_r = P + \Delta S$$

where:
E_t = the evapo-transpiration
S_f = Surface runoff
I = interception of precipitation by the canopy
D_r = drainage of water from a soil layer
P = precipitation
ΔS = change in the soil water content

Evaporation
Evaporation is estimated from the energy balance

$$\lambda E_t = (\alpha S - \Delta L - C + G)$$

where:
λ = the latent heat of evaporation
α = the absorption coefficient of the surface
S = the incoming solar radiation
ΔL = the net long-wave radiation
C = sensible heat exchange with the atmosphere
G = soil heat exchange.

Evaporation is largely due to movement of water from the soil through the vegetation where it evaporates from the leaves of the plant canopy. The "big leaf" model has been used successfully to estimate evaporation from vegetated land areas.[17]

$$\lambda E_t = [\Delta (R_n - G) + \rho c_p \rho_{as} (1 - RH)/r_a]/\{\Delta + \rho c_p [(r_a + r_s)/r_a]/l\}$$

where:

$R_n = aS + \Delta L$ r = air density
c_p = air specific heat
ρ_{as} = saturation vapor density of water in air
RH = relative humidity
Δ = the slope of the saturation vapor density versus temperature curve
r_s = stomatal (leaf) diffusion resistance
r_a = leaf surface resistance.

The critical parameter in the "big leaf" formulation of the canopy energy balance is the stomatal resistance. This resistance caused by the diffusion of water vapor from the wet, interior cells of the leaf through stoma in the water impervious leaf cuticle. Each stoma is surrounded by guard cells which can alter the size of the stoma. The guard cells respond to the environment of the leaf. The most important responses, from the point of the water balance, are to plant water stress and light. Normally stoma are open during the day and close at night. As the soil water content decreases the tension that water is held in the soil increases and this increasing tension is transmitted through the plant conductive system to the leaves. Ultimately, the leaves will wilt. But even before wilting occurs, the guard cells will close the stoma in an adaptive response to decrease water loss from the leaves. This provides an negative feedback that decreases evaporation as soil water decreases.

Plant Stomatal Resistance
There are a number of schemes to simulate the effect of soil moisture on stomatal resistance. The simplest approach assumes that there is a linear relationship between the maximum resistance that a plant can maintain and

the soil water content.[18] This is shown diagramatical in the figure. The actual evaporation is the lowest of either the evaporation as defined by the energy balance for no stress (open stoma, minimum stomatal resistance) or the soil water limited value from the relationship shown in the diagram. Notice that the evaporation never quite reaches zero because the stoma never quite close completely. This approach has been shown to be successful for forest vegetation.

Solar Radiation

This approach must be supplemented by further estimation of some of the parameters if only standard meteorological observations are available. Clear day solar radiation at the surface of the earth can be estimated from the solar radiation above the atmosphere, determined by the earth-sun geometry at a given location at a particular time of the year and and the average or seasonal atmospheric attenuation constant as defined by Beer's Law.[19]

$$S=S_o e^{-\alpha \csc \theta}$$

S_o = solar radiation above the atmosphere
α = absorption coefficient of the atmosphere
θ = solar zenith angle.

The attentuation during a cloudy day is increased by the presence of the clouds, both by the cloud cover and the density of the clouds. Observation made at the Savannah River Site and elsewhere suggest that cloud cover, as recorded at the Bush Field Airport, is linearly related to solar radiation attenuation until cloud cover approaches 100%.[20] At 100% cloud cover, the cloud type becomes very important. One possible surrogate for cloud type is rainfall. Significant rainfall comes only from thick clouds such as cumulus of nimbo-cumulus clouds which produce high radiation attenuation. This is the approach taken in the estimates of solar radiation made in climatic tables in Appendix B.

Infrared Radiation

Infrared radiation is produced by both the surface of the earth (including the vegetative cover) and the atmosphere. At the surface, the infrared radiation balance is the difference between the radiation from these two sources. van Wijk and Scholte Ubing, following Brunt, has expressed this radiation balance in terms of the air temperature, air humidity, and cloud cover.[21]

$$\Delta L = \sigma\{T_s^4 - T_a^4 [(0.44 - 0.061 e^{1/2})(1 - 0.8 c_c) + 0.2]\}$$

σ = Stefan-Boltzman constant
T_s = surface (leaf) temperature
T_a = air temperature
e = vapor pressure of water in the air (mb)
c_c = cloud cover fraction.

For a surface with a closed vegetative canopy, the leaf temperature which can be determined from the "big leaf" evaporation model is a good estimate of the surface temperature, Ts.

Drainage

The description of drainage from the soil, as expressed in the Richard's equation, is extremely complex. Simplifications can be made to solve for some ideal conditions. One of these that has been used to simulate the drainage assumes that a volume of soil at a initial condition of constant moisture content where the unsaturated hydraulic conductivity is an exponential function of moisture content.[22] Hydraulic gradients due to water content can be ignored under these conditions and the drainage is due to gravity. Under these, idealized conditions, the drainage from a layer of soil can be estimated as:

$$D_f = K_o (1 + \beta K_o/d)^{-1}$$

K_o = saturation soil water conductivity
d = depth of soil layer
β = constant.

The simulation used four soil layers. The water balance for each layer included the drainage from the layer and the input from drainage leave the layer immediately above. Only upper three layers are provided in the data in Appendix B. The lowest layer was used as a lower boundary for the soil profile.

Interception

The retention of water on the canopy of thevegetation results in less water reaching the soil. This term is actually a specialized evaporation process. In this case the evaporation takes place from the surface of the vegetation and the stomatal resistance is not involved. In spite of some feedback from an increase in the humidity in the canopy, intercepted precipitation evaporates faster than transpiration from within the plant and does cause net decrease in the available precipitation. The amount of interception can be approximated as a fraction of the rainfall.[23] The fraction is very high when the precipitation begins but approaches a constant saturation capacity of the canopy as the precipitation continues. This can be calculated using the relationship

$$I = I_o (1 - e^{-\gamma P})$$

I_o = saturation water capacity of the canopy
γ = constant

Surface runoff is small for many of the sandy, forested soils of the SRS. It is calculated as the precipitation that falls when the surface layer of soil is saturated.

Parameter Estimation This model contains a great many parameters which must be estimated before an estimation of the soil water content can. For the sandy, well-drained soils of the SRS, the estimation of drainage is critical to calculating soil moisture. For this reason, all the parameters related to evaporation (the energy balance) were estimated from literature values for a pine forest, the dominant vegetation type. The saturation moisture content was estimated from the value obtained on a single soil type where evaporation and soil moisture content had been monitored over several years.[24] The parameters b and K_O were varied until agreement was reached between the partitioning of the water balance between evaporation and drainage and the soil moistures agreed with that measured on a year felt to have

the best data. Then the water balance was calculated for all the years which had tritium releases for daily changes in soil moisture.

Hourly changes in soil moisture are normally very small. The exception is during and immediately after precipitation events. The hourly soil moisture content was estimated by interpolating between the values at the beginning of each day. The interpolation scheme is a simplification of the soil water balance.

$$\theta_{t+1} = \theta_t + I_f - c_1 S - c_2 (1 + \beta K_o/d)^{-1}$$

θ_{t+1} = soil water content predicted for the next hour
θ_t = soil water content for the last estimated hour
I_f = infiltration into a soil layer
c_1 , c_2 = constants fit to force the time series to a known final value.

The infiltration into any layer is the water coming from the layer above it. This is the precipitation for the top layer. The balance is limited by not allowing any layer to have a water content higher than the saturation water content for the soil of that layer. The constants c_1 and c_2 are solved so that the moisture content is extrapolated to the value predicted by the water balance model.

The soil moisture content in the area surrounding the SRS can not actually be estimated by one concentration for each soil layer. The soil types and conditions of drainage vary from location to location. A distribution of soil concentration arranged spatially over the Site would be closer to the actual situation. However, the information to calculate the distribution is not available, and in any case could not be used by most existing models. The values calculated by this model should be interpreted as reasonable estimates of the average moisture content for most soil of the Site that are not adjacent to water bodies or have very poor drainage.