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SOIL MOISTURE TRANSPORT
DURING THE 1974-1975 AND 1975-1976
WATER YEARS

G. V. Last
P. G. Easley
D. J. Brown

Environmental Engineering Section
Research Department
Research and Engineering Division

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ATLANTIC RICHFIELD HANFORD COMPANY
RICHLAND, WASHINGTON 99352

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ABSTRACT

The rate and direction of soil moisture movement in Hanford sediments was determined for the 1974-1975 and 1975-1976 water years. The data for these determinations was obtained from two large lysimeters located on the 200 Area plateau near the center of the Hanford Reservation.

During the 1974-75 water year, meteoric moisture percolated to a depth of 2.5 meters with a peak moisture content of 10.5 volume-percent. This percolation envelope was eliminated by evaporation during the hot dry summer of 1975. The 1975-76 water year had only 70 percent of the normal precipitation, thus the percolation envelope was small and penetrated to a depth of only two meters. However, in spite of this shallow depth and low volume of moisture, the percolation envelope was not eliminated by the end of the water year because of lower seasonal temperatures and higher humidity during the drying season. Moisture content of sediments in the 4-18 meter depth range showed no relative change throughout the two water years, and no moisture accumulated at the bottom of the lysimeters, which indicates there is no deep percolation of meteoric moisture at this site, and no recharge to the groundwater.

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INTRODUCTION

There is a concern about the potential for meteoric water to move the radionuclides stored in Hanford sediments either down to the ground water or up to the ground surface. Therefore, it is important to observe the seasonal pattern of meteoric moisture movement in the upper Hanford sediments. The rate and direction of movement of this moisture is primarily a function of the amount of precipitation, other climatic parameters such as temperature and humidity, the pore size of the sediments, and the degree of stratification of the sediments.

To better understand the behavior of moisture in the Hanford sediments, two lysimeters were constructed approximately one mile south of 200 East Area. The purpose of this report is to summarize the lysimeter data for the 1974-75 and 1975-76 water years and evaluate the observed moisture movement.

SUMMARY

The rate and direction of moisture movement in Hanford sediment within the Vadose Zone was studied during the 1974-1975 and 1975-1976 water years. Measurements of moisture content were obtained using a neutron probe to record moisture content in a homogeneous sand mixture within two large lysimeters constructed south of the 200 East Area on the Hanford Reservation.

On the basis of past climatological data, the 1974-1975 water year could be considered typical of the annual cycle of meteoric moisture in the upper sediments of the 200 Areas plateau.

Precipitation, accumulated since the beginning of the 1974-1975 water year, percolated downward to a maximum depth of 2.5 meters with a peak moisture content of 10.5 volume percent by mid April.

With the onset of summer, air temperatures increased significantly and there was very little precipitation. This caused partial desiccation of the upper most sediments. By late September, 1975, the percolation envelopes had disappeared, leaving a residual moisture content of less than six percent by volume in the upper four meters.

The 1975-1976 water year did not follow the normal annual cycle of meteoric moisture. Instead, the wetting period was much dryer (only 70 percent of the normal precipitation occurred), and as a result, the moisture did not percolate as far downward into the sediments. This percolation envelope penetrated to a depth of only 2.0 meters by mid May with a peak moisture content of 10.5 volume percent.

The drying period was also not typical of the normal summer climatic conditions; the summer of 1975 brought lower than average temperatures and much higher relative humidities. So, in spite of the shallow depth and low volume of moisture, the percolation envelope was not removed and still had a peak moisture content of over nine volume percent at the end of the water year.

Sediment in the 4-18 meter depth range showed relatively no change in its moisture content during these two water years. Moisture did not accumulate at the bottom of the lysimeters, indicating that there is no deep percolation of meteoric water at this site, and substantiating the premise that precipitation does not recharge the groundwater in the region of the 200 Areas.

BACKGROUND

The two ARHCO lysimeters are 3 meters in diameter and 18 meters in depth. One lysimeter is closed at the bottom to collect any precipitation that would percolate to the 18 meter depth, while the other lysimeter (open at the bottom) provides a control. The open-bottom lysimeter also supplies data for evaluating such factors as soil breathing and vapor migration.

The sediment removed during installation of the caissons was determined to be of such uniform particle size that it was used to refill the lysimeters. These sediments were taken to the 200 Area Batch Plant, where they were thoroughly mixed and brought to a uniform moisture content. The soil was to be placed back in the lysimeters as soon as possible, to avoid any significant change in moisture content. However, a delay in receiving instrumentation for these facilities held up the back filling operation until after the fall rains started. As a consequence, the moisture content of the mixed lysimeter sediment was no longer uniform throughout and required remixing. This was accomplished in a surface hopper at the site. The sediment was then placed in the lysimeter and firmly compacted. The closed-bottom lysimeter was filled during December 1971, the open-bottom lysimeter was filled in January 1972. The sediment placed in the open-bottom lysimeter had accumulated considerable moisture during the added exposure time to rain and snow. This resulted in a residual moisture profile which varies markedly in the upper half of the lysimeter from that measured in the closed-bottom lysimeter.

The precipitation entering the open-bottom lysimeter during the 1973-74 water year combined with the high residual moisture to create an anomalous moisture envelope in the zone between four and seven meters. (Refer to

ARHC0 Document ARH-ST-123.) The total moisture in this envelope has decreased somewhat over the years, presumably by evaporation to the atmosphere.

Three sets of instrumentation are used to obtain data from the lysimeters. One set consists of thermocouple psychrometers for measuring matric potential or capillary pressure, and temperature of the lysimeter soil. The second system (not yet instrumented) will read and record the local air pressure in the soil pores as a function of time and depth. The purpose of this is to obtain data for evaluating the effects of soil breathing. The third set of instrumentation consists of 4.09 centimeter inner diameter aluminum tubes which provide access for a neutron moisture probe. The moisture content of the lysimeter sediment at various depths is determined with this neutron probe, and this data is used to make moisture profiles. The presentation and interpretation of these profiles is the primary purpose of this document.

In the soil moisture measurements, the zero point in the depth measurement is not the surface of the soil but a zero reference point on the top of the neutron probe shield. (See Figure 1, Appendix A.) This was a convenient reference point that could be used no matter where the probe was used. The actual distance from the top of the probe shield to the ground surface has varied with time, depending on how much sand blows on top of the lysimeter. On the average, the reference point is about 54 centimeters above the ground surface. (Refer to ARHC0 document ARH-ST-123.)

Measurements were made on the average of twice a month during the wetting period (October through February) and once a month during the drying period (March through September). However, beginning in January 1976, measurements were taken once a week, until mid May 1976. These measurements were taken to better define the position of the moisture front with time. Since movement of moisture through sediments occurs

predominantly in the upper seven meters of the lysimeter, most of the moisture determinations for the 1975-1976 water year were taken in that depth range.

The moisture data for the 1974-1975 and 1975-1976 water years is discussed below in the context of a zone of seasonal variation (from the surface to a depth of four meters) and a seasonally stable zone (below the four meter depth).

ZONE OF SEASONAL VARIATION

1974-75 Water Year (September 1, 1974 through August 31, 1975)

Data for this water year, including figures illustrating the moisture profiles in the two lysimeters, are given in Appendix B.

The Wetting Period

A partially desiccated zone (defined as a zone where the moisture content is less than 6 percent by volume) was present in both lysimeters at the start of the water year. As of September 9-12, 1974, the desiccated zone had reached a depth of 3.5 meters. (See Appendix B, Figures 1 and 2.) By October 14-18 the zone of desiccation had progressed to the 4.0 meter depth, and remained at about 4 meters into November as shown in Figures 7 and 8, Appendix B. This is considered to be indicative of the cooling trend in late autumn and the termination of the period of rapid upward transport of water that occurs at the end of the hot dry summers.

The new percolation front for the 1974-75 water year was first apparent at a depth of one meter in December 1974. By mid January, 1975 the percolation front was well established, and the peak moisture content (11.5 Volume percent) was at about the one meter depth. During the

month of February the moisture front was at about the 2 meter depth in both lysimeters. (See Appendix B, Figure 13 and 14.) This increase in the rate of downward movement is attributed to precipitation and the melting of winter snow during the latter part of February. A partly desiccated zone still persisted between the two- to four- meter depths in the two lysimeters during this period.

By mid April, the percolation envelope reached a depth of 2.1 meters with a peak moisture content of about 11.0 volume percent. By early June 1975, it reached a depth of 2.3 meters, and did not percolate further downward. The percolation envelope was essentially the same in both lysimeters. The partially desiccated zone from the previous water year persisted between the 2.5 to 4.0 meter depths.

The Drying Period

A new partially desiccated zone started developing at the surface of both lysimeters by mid May (Appendix B, Figures 23 and 24). Hot weather during June and July further desiccated the surface, and significantly reduced the moisture in the 1974-1975 percolation envelope. By mid August the percolation envelope in both lysimeters had disappeared (except for a small spike of 6.4 volume percent moisture at the 2.5 meter depth of the closed-bottom lysimeter). See Appendix B, Figures 31 and 32. The figures from July 11, 1975 to March 26, 1976 are about 0.6 volume percent high because of a voltage change in the neutron probe. In April 1976, the probe was recalibrated and this positive deviation was corrected.

1975-76 Water Year (September 1, 1975 through August 31, 1976)

The 1975-76 water year, like the 1973-74 water year, (refer to ARH-ST-123) varied considerably from normal. Data and figures showing moisture profiles for the 1975-76 water year are given in Appendix C.

The Wetting Period

The 1975-76 water year started out normally with both lysimeters indicating a partially desiccated zone in the top three meters of sediment, see Appendix C, Figures 1 and 2. The first appearance of the 1975-76 percolation front was observed from the data obtained on November 5-6 (Appendix C, Figures 5 and 6). Additional measurements taken on November 18-19 showed an increase in moisture content at the 0.75 meter depth of the open-bottom lysimeter from 6.4 to 8.2 volume percent moisture. During this same interval, the closed-bottom lysimeter's uppermost value increased from 7.1 to 9.1 volume percent. The moisture content increased, both because 0.94 inches of precipitation fell during this time, and because little evaporation occurred due to the below-normal temperatures. The partly desiccated zone from September 1975 was still evident, between the 1.25 and 3 meter depths.

The 1975-76 percolation front was well established in late December with the new front moving down at a rate of approximately one centimeter per day in the closed-bottom lysimeter, and slightly less than that in the open-bottom lysimeter. (This velocity essentially doubled in both lysimeters during the third week in January 1976.)

The percolation envelope reached its peak moisture concentration of 14 volume percent in the closed-bottom lysimeter by January 15, 1976, at a depth of approximately one meter, (Appendix C, Figure 16). By January 21 the peak moisture content had decreased and the well defined percolation envelope began moving downward at a slower rate while increasing in thickness. As the front continued downward the peak moisture value was reduced, until mid May when the envelope stopped just above the two meter depth, see Appendix C, Figures 39 and 40.

The Drying Period

The partially desiccated zone, persisting from the previous water year and located below the 1975-1976 percolation envelope, did not change during February, March, and April, and then slightly increased in moisture again during May and June. The moisture content of the partially desiccated zone then remained essentially constant until September 1976.

Desiccation of the surface began in mid May and continued through June, July and August. Throughout these summer months moisture was removed from the ground causing a decrease in thickness of the percolation envelope. By mid September 1976 the moisture peak had decreased only slightly, leaving peak values of 9.1 and 8.2 volume percent in the closed-bottom and open-bottom lysimeters, respectively.

The 1975-1976 Drying Period was not as effective as normal in removing the soil moisture because the 1976 summer was much cooler and the humidity was higher than normal. The average temperatures for June, July and August were from 1.5 to 3.8 degrees below normal. The relative humidity averaged 3.7 percent higher than normal in July and 10.1 percent higher than normal in August. These conditions significantly affected the evaporation rates, and account for the fact that the moisture was not removed from the ground prior to the start of the 1976 - 1977 water year.

MOISTURE MOVEMENT BELOW THE ZONE OF SEASONAL VARIATIONS

At the start of the 1974-75 water year, the percolation envelope of higher moisture from the 1973-74 water year was still present at a depth of 4 meters in the closed-bottom lysimeter. A residual blip of the envelope is apparent in Figure 2, Appendix B, for the closed-bottom

lysimeter. However, as may be observed in Figure 4, Appendix B, this envelope was completely removed by October in the closed-bottom lysimeter. Thus, in spite of a much heavier than average precipitation for the 1973-74 water year, the soil moisture from precipitation was completely removed from the closed-bottom lysimeter during the dry period at the beginning of the 74-75 water year.

This was not the case with the open-bottom lysimeter. The percolation envelope combined with the high residual moisture of the open-bottom lysimeter (Refer to ARH-ST-123) and was not eliminated by evaporation. This moisture envelope is unusual because it was not, for the most part, caused by precipitation falling on the ground surface. It is not affected as strongly by surface evaporation because of its depth. It is referred here as the anomalous moisture envelope because it resembles a subsurface leak of moisture more than a percolation envelope. By mid-October it had a thickness of about 2.5 meters; (Appendix B, Figure 3) with a peak of 11.2 percent at 5.5 meters. There was very slow percolation downward after October 18, 1974 as may be observed from (Appendix B, Figures 3, 6 and 8).

Two opposing temperature related driving forces were acting on the anomalous moisture envelope during the summer besides the gravitational force responsible for percolation. The higher temperature at the surface tends to drive moisture in the liquid phase downward. Also, at the peak of the anomalous moisture envelope, there are moisture gradients acting in both the upward and downward directions. However, the capillary pressure has a much greater negative value at the surface than below the residual moisture envelope. The way the moisture profiles change shape in the upper portion of the envelope indicate that moisture from this zone is moving almost entirely up to the atmosphere. Calculations indicate that the moisture gradient driving force upward is significantly greater than the combination of the downward forcing moisture gradient,

temperature gradient, and gravity. The driving forces, both upward and downward, on the November 14, 1974 moisture peak, were calculated in ARHCO document ARH-ST-123 to give a 13.5/1 ratio of the isothermal upward force to the isothermal downward force. This shows that the soil water potential moves moisture upward in the summer.

A "partially desiccated zone" with a minimum moisture content less than 5 percent by volume has persisted in both lysimeters since June 1974. Moisture transport, either up in the summer or down in the winter, through this desiccated zone, appears to be all in the vapor phase.

Since September 1974, the peak moisture content of the anomalous moisture envelope has gone down and the mean effective depth has increased. The mean effective depth (defined as the centroid of the moisture envelope in excess of residual saturation, 6 volume percent), descended from 5.2 meters in September 1974, to 5.75 meters in March 1976. The downward movement seems to have ceased since November 1975, indicating the moisture envelope will descend no further. The total moisture in the envelope has continually decreased, and the peak moisture content went from nearly 13 percent in early 1974 to 9.5 volume percent in March, 1976. It appears that in this moisture envelope moisture transport occurs over the long run by percolation downward and vapor phase transport upwards.

The anomalous moisture envelope remained essentially unchanged throughout the 1975-76 water year. Comparison of the November 1975 and August 1976 moisture profiles does indicate a slight flattening out of the moisture peak. (Appendix C, Figures 8 and 43).

The moisture content below the anomalous moisture envelope is somewhat variable (ranging from 5.5 to 6.6 volume percent) because backfilling of this lysimeter took place during the wet season and work was interrupted at 4 meter intervals for installation of pressure sensing equipment. The small moisture peaks at four meter intervals have since smoothed

out, but this has created a slightly wavy moisture profile in the bottom 12 meters of the lysimeter. The moisture content averages about 6.2 volume percent and has remained essentially unchanged since November 1974. The September and October, 1974 moisture profiles (Appendix B, Figures 1 and 3) reflect a slight decrease in moisture content through November.

The closed-bottom lysimeter has a slightly lower moisture content than does the open-bottom lysimeter below the six-meter depth. The moisture content is approximately 6.0 volume percent throughout the 4-18 meter depth range in the closed-bottom lysimeter. (See Appendix C, Figure 34 for March, 1976 Moisture Profile.) This 6.0 volume percent moisture has been consistent for the past three water years and is considered to be approximately equal to the residual saturation of the lysimeter sediments. The bottom of this lysimeter was closed to intercept and collect any water that would otherwise percolate toward the water table. This was to demonstrate beyond all doubt whether or not precipitation falling on the ground surface in the 200 Areas is percolating to and recharging the ground water. Since its construction in 1972, the closed-bottom lysimeter has shown no increase in moisture at its greatest depth and remains at about 5.7 volume percent. The moisture content at the bottom of the open-bottom lysimeter also has remained constant, but at a slightly lower moisture content of 5.6 volume percent.

DISCUSSION

These data indicate that in spite of the abnormal moisture content caused by the unusually wet 1973-1974 water year (See ARH-ST-123) and the especially cool-humid 1976 drying season, that meteoric water does not percolate downward and constitute recharge to the ground water at this locality.

It has long been known that seasonal changes affect the moisture movement in the upper sediments. During the wet seasons at Hanford (fall and winter), moisture accumulates in the upper sediments to form a downward moving moisture front. During the dry-warm seasons (spring, summer, and early fall), this moisture front stops moving downward and is removed as the moisture evaporates from the soil into the atmosphere.

In the 1973-1974 water year, abnormal climatic conditions during the wetting season produced a large percolation envelope which could not be removed by the relatively normal drying season. This raised the concern that a percolation envelope from another heavy wetting season may combine with the old percolation envelope and transport it down even farther, providing a mechanism of transport to the groundwater. However, this did not occur, because the 1974-1975 water year climate was normal during wetting and drying seasons, so the percolation envelope stopped and was removed before it reached the old percolation envelope. Moisture was also removed from the old percolation envelope during the 1975 drying season.

In the 1975-1976 water year, abnormal climatic conditions (slightly cooler and more humid than average) during the drying season prevented the removal of the percolation envelope, even though that envelope was abnormally small and at shallow depths.

Abnormal climatic conditions have caused, at different times, an increased moisture content in the sediments from: 1) higher than normal precipitation during the wetting season or 2) lower evaporation rates (caused by high humidity and low temperatures) during the drying season.

Conceivably then, meteoric water could accumulate from several abnormal moisture cycles and slowly percolate downward. The greatest possibility of moisture moving downward to any appreciable depth would be from

lasting changes in climatic conditions which would cause higher precipitation rates and/or lower evaporation rates.

During the period of record, precipitation has not reached the ground water table, because the precipitation which infiltrates the ground surface during the wetting period is completely removed by the drying-out period. In fact, the net result of the drying-out is a zone of partial desiccation to a depth of four to six meters. If the climatic conditions remained normal for an extended period, then one might observe an increased drying out of the sediments below the zone of annual cyclic flow.

CONCLUSIONS

Soil moisture data for the 1974-1975 and 1975-1976 water years confirm the ability of the semi-arid Hanford environment to prevent percolation of meteoric water down to the water table on the 200 Area plateau.

This property of the Hanford sediments and climate provides an additional safeguard against any possible moisture transport of waste materials stored in these dry sediments.

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APPENDIX A

FIGURE 1

DEFINITION OF ZERO DEPTH REFERENCE FOR NEUTRON PROBE

APPENDIX B

TABLE 1

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL IN SEPTEMBER 1974

Depth Meters	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	9/9/74	9/10/74			9/10/74	9/13/74		
0.00	2.0	---	2.0	2.0	2.0	---	2.0	2.0
0.50	2.5	---	2.5	2.5	2.5	---	2.5	2.5
1.00	3.8	---	4.1	3.95	5.0	---	5.0	5.0
1.50	5.0	---	5.2	5.1	5.3	---	5.1	5.2
2.00	4.4	---	4.7	4.55	5.3	---	5.1	5.2
2.50	4.7	---	5.0	4.85	5.1	---	5.2	5.15
3.00	5.2	---	5.2	5.2	5.3	---	5.5	5.4
3.50	5.3	---	5.8	5.55	5.1	---	6.1	5.6
4.00	6.9	---	7.5	7.2	6.2	---	8.0	7.1
4.50	10.9	---	10.5	10.7	6.0	---	6.2	6.1
5.00	11.2	---	11.8	11.5	6.1	---	5.9	6.0
5.50	11.8	---	11.4	11.6	6.1	---	6.1	6.1
6.00	7.4	---	8.5	7.95	5.9	---	6.2	6.05
6.50	6.4	---	6.5	6.45	6.4	---	5.8	6.1
7.00	6.5	---	6.9	6.7	6.0	---	5.7	5.85
7.50	---	---	(6.43)	---	---	---	(5.93)	---
8.00	5.9	---	6.4	6.15	6.1	---	5.9	6.0
8.50	---	---	(6.29)	---	---	---	(5.9)	---
9.00	6.3	---	6.5	6.4	5.7	---	5.9	6.8
9.50	---	---	(6.55)	---	---	---	(6.0)	---
10.00	6.5	---	6.9	6.7	6.2	---	6.2	6.2
10.50	---	---	(6.33)	---	---	---	(6.15)	---
11.00	5.7	---	6.2	5.95	6.2	---	6.0	6.1
11.50	---	---	(5.90)	---	---	---	(5.95)	---
12.00	5.7	---	6.0	5.85	5.8	---	5.8	5.8
12.50	---	---	(6.1)	---	---	---	(5.9)	---
13.00	6.2	---	6.5	6.35	5.7	---	6.3	6.0
13.50	---	---	(6.23)	---	---	---	(6.08)	---
14.00	5.6	---	6.6	6.1	6.3	---	6.0	6.15
14.50	---	---	(5.95)	---	---	---	(5.85)	---
15.00	5.8	---	5.8	5.8	5.5	---	5.6	5.55
15.50	---	---	(5.93)	---	---	---	(5.85)	---
16.00	5.9	---	6.2	6.05	6.2	---	6.1	6.15
16.50	---	---	(5.9)	---	---	---	(6.18)	---
17.00	5.8	---	5.7	5.75	6.3	---	6.1	6.2
17.50	---	---	(5.95)	---	---	---	(5.9)	---
18.00	6.2	---	6.1	6.15	5.7	---	5.5	5.6
Avg				6.28				5.63

Parens indicate a value from a previous measurement included to provide 37 values required for computer average program.

TABLE 2

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL IN OCTOBER 1974

Depth Meters	Open-Bottom Lysimeter				Closed-Bottom Lysimeter		
	Tube #1	#2	#3	Avg (1&2)	#4	#6	Avg (4&6)
	10/18/74	10/11/74	10/18/74		10/18/74	10/11/74	
0.00	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)
0.05	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)
1.00	3.7	3.8	3.7	3.75	4.8	4.9	4.85
1.50	4.8	5.3	5.1	5.05	4.9	4.9	4.9
2.00	4.4	4.6	4.8	4.6	5.1	5.1	5.1
2.50	4.7	4.9	4.9	4.8	4.8	5.2	5.0
3.00	5.1	5.0	5.1	5.05	5.2	5.3	5.25
3.50	5.1	5.2	5.2	5.15	5.4	5.4	5.4
4.00	5.4	5.8	5.6	5.6	5.2	6.9	6.05
4.25	7.1	---	7.3	7.2	5.4	---	5.4
4.50	9.3	8.5	9.1	8.9	5.7	6.4	6.05
4.75	10.4	---	11.5	10.95	5.6	---	5.6
5.00	10.4	11.0	11.1	10.7	5.8	6.2	6.0
5.25	10.9	---	11.4	11.15	6.0	---	6.0
5.50	11.7	10.9	12.2	11.2	6.2	6.1	6.15
5.75	10.8	---	10.4	10.6	5.7	---	5.7
6.00	8.8	10.0	8.5	9.4	6.3	6.2	6.25
6.50	6.6	6.5	6.7	6.55	6.3	5.9	6.05
7.00	6.6	7.0	6.6	6.8	6.1	5.8	6.05
7.50	(6.4)	6.6	---	(6.5)	(6.0)	(5.7)	(5.85)
8.0	6.2	6.4	6.3	6.3	6.0	6.1	6.05
8.5	(6.0)	(6.3)	---	(6.15)	(6.0)	(5.7)	(5.85)
9.00	6.4	6.6	6.3	6.5	5.6	5.9	5.75
9.50	(6.1)	(6.2)	---	(6.15)	(5.8)	(5.9)	(5.8)
10.00	6.8	6.9	6.5	6.85	6.3	5.1	6.2
10.05	(7.1)	(6.3)	---	(6.7)	(5.8)	(5.7)	(5.75)
11.00	5.9	6.2	6.1	6.05	6.1	5.9	6.0
11.50	(6.0)	(6.1)	---	(6.05)	(5.8)	(6.4)	(6.1)
12.00	6.0	6.0	6.1	6.0	6.0	5.8	5.9
12.50	(5.7)	(6.0)	---	(5.85)	(5.8)	(5.9)	(5.85)
13.00	6.4	6.5	6.4	6.45	5.8	6.3	6.05
13.50	(6.1)	(6.1)	---	(6.1)	(5.6)	(5.9)	(5.75)
14.00	5.9	6.6	6.5	6.25	6.3	5.0	6.15
14.50	(5.8)	(6.1)	---	(5.95)	(5.7)	(5.8)	(5.75)
15.00	6.0	5.9	6.4	5.95	5.5	5.8	5.65
15.50	(5.7)	(6.0)	---	(5.85)	(5.7)	(5.5)	(5.6)
16.00	6.0	6.3	6.1	6.15	5.9	6.1	6.0
16.50	(6.0)	(6.0)	---	(6.0)	(5.9)	(6.0)	(5.95)
17.00	6.1	5.8	6.0	5.95	6.5	6.2	6.35
17.50	(6.6)	(6.5)	---	(6.55)	(5.9)	(6.0)	(5.95)
18.00	6.4	6.3	6.5	6.35	5.7	5.8	5.75

Parens indicate value from previous measurement included to provide 37 values required for computer average program.

TABLE 3

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL IN OCTOBER-NOVEMBER 1974

Depth Meters	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Reference Point .7 M Above Ground				Reference Point .6 M Above Ground			
	Tube #1	#2	#3	Average	Tube #4	#5	#6	Average
		10/31/74				11/1/74		
0.75	----	----	----	----	3.72	---	4.36	4.04
1.00	3.89	4.21	---	4.05	5.24	---	5.28	5.26
1.50	4.86	5.49	---	5.17	5.70	---	5.47	5.59
2.00	4.47	4.55	---	4.51	5.81	---	5.40	5.61
2.50	4.85	5.09	---	4.97	5.84	---	5.55	5.70
3.00	5.17	5.18	---	5.18	5.82	---	5.79	5.80
3.50	5.16	5.28	---	5.22	5.64	---	5.81	5.73
3.75	5.69	5.98	---	5.84	6.15	---	5.69	5.92
4.00	5.40	5.99	---	5.70	6.09	---	7.27	6.68
4.25	6.89	8.31	---	7.59	6.14	---	7.98	7.06
4.50	9.35	8.73	---	9.04	6.60	---	6.86	6.73
4.75	10.06	10.93	---	10.49	6.41	---	6.66	6.53
5.00	9.92	11.18	---	10.55	6.80	---	6.28	6.54
5.25	10.59	10.72	---	10.65	6.52	---	6.13	6.32
5.50	11.38	10.81	---	11.09	7.02	---	6.61	6.82
5.75	10.64	10.53	---	10.59	6.44	---	5.95	6.20
6.00	9.03	10.61	---	9.82	6.66	---	6.46	6.56
6.25	7.67	8.12	---	7.89	6.85	---	6.22	6.54
6.50	6.68	6.94	---	6.81	7.03	---	6.28	6.66
6.75	7.01	7.28	---	7.15	6.56	---	6.05	6.30
7.00	6.89	7.08	---	6.98	6.79	---	5.79	6.29
7.25	6.73	7.01	---	6.87	6.11	---	5.96	6.04
7.50	6.63	6.80	---	6.71	6.50	---	6.49	6.50
7.75	6.83	7.05	---	6.94	6.85	---	6.34	6.59
8.00	6.26	6.60	---	6.43	6.75	---	6.18	6.46
8.50	6.39	6.64	---	6.52	6.61	---	6.15	6.38
9.00	6.73	6.80	---	6.76	6.30	---	6.29	6.30
9.50	6.49	6.63	---	6.56	6.71	---	6.43	6.57
10.00	6.88	6.72	---	6.80	6.83	---	6.27	6.55
10.50	6.88	6.42	---	6.65	6.34	---	6.10	6.22
11.00	6.10	6.32	---	6.21	6.84	---	6.18	6.51
11.50	6.44	6.17	---	6.30	6.76	---	6.62	6.69
12.00	6.07	6.16	---	6.11	6.51	---	6.18	6.34
12.50	6.30	6.22	---	6.26	6.51	---	6.04	6.28
13.00	6.62	6.32	---	6.47	6.22	---	6.51	6.37
13.50	6.57	6.54	---	6.56	6.21	---	6.30	6.26
14.00	6.24	6.61	---	6.42	6.61	---	6.22	6.41
14.50	6.29	6.28	---	6.29	6.34	---	6.27	6.30
15.00	6.23	6.28	---	6.31	6.17	---	5.89	6.03
15.50	6.11	6.23	---	6.20	6.06	---	6.12	6.09
16.00	6.23	6.18	---	6.21	6.32	---	6.27	6.30
16.50	6.20	6.08	---	6.14	6.32	---	6.30	6.31
17.00	6.12	5.85	---	5.99	6.61	---	6.62	6.62
17.50	6.77	6.72	---	6.75	6.20	---	6.10	6.15
18.00	6.44	6.25	---	6.34	6.12	---	5.95	6.04
18.50	6.26	6.10	---	6.18	6.72	---	5.91	6.31
19.00	5.37	5.60	---	5.49	5.83	---	5.66	5.74
19.20	5.22	5.53	---	5.37	---	---	---	---

TABLE 4

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR NOVEMBER 1975

	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Reference Point .7 M Above Ground				Reference Point .6 M Above Ground			
Depth Meters	Tube #1	#2	#3	Average	Tube #4	#5	#6	Average
	11/14/74				11/18/74			
0.75	---	---	---	3.49	---	---	---	4.65
1.00	---	---	---	4.25	---	---	---	5.05
1.50	---	---	---	5.31	---	---	---	5.30
2.00	---	---	---	4.76	---	---	---	5.30
2.50	---	---	---	5.02	---	---	---	5.45
3.00	---	---	---	5.28	---	---	---	5.45
3.50	---	---	---	5.33	---	---	---	5.60
3.75	---	---	---	6.03	---	---	---	5.60
4.00	---	---	---	5.87	---	---	---	6.50
4.25	---	---	---	7.55	---	---	---	6.70
4.50	---	---	---	8.89	---	---	---	6.40
4.75	---	---	---	10.77	---	---	---	6.55
5.00	---	---	---	10.59	---	---	---	6.25
5.25	---	---	---	10.79	---	---	---	6.15
5.50	---	---	---	11.49	---	---	---	6.35
5.75	---	---	---	10.69	---	---	---	6.15
6.00	---	---	---	9.82	---	---	---	6.35
6.25	---	---	---	7.84	---	---	---	6.10
6.50	---	---	---	6.89	---	---	---	6.25
6.75	---	---	---	7.10	---	---	---	6.10
7.00	---	---	---	6.89	---	---	---	6.20
7.25	---	---	---	6.94	---	---	---	5.80
7.50	---	---	---	6.65	---	---	---	6.15
8.00	---	---	---	6.53	---	---	---	6.20
8.50	---	---	---	6.52	---	---	---	6.20
9.00	---	---	---	6.61	---	---	---	5.80
9.50	---	---	---	6.79	---	---	---	6.30
10.00	---	---	---	6.92	---	---	---	6.40
10.50	---	---	---	6.59	---	---	---	5.90
11.00	---	---	---	6.15	---	---	---	6.30
11.50	---	---	---	6.37	---	---	---	6.30
12.00	---	---	---	6.09	---	---	---	6.50
12.50	---	---	---	6.09	---	---	---	6.15
13.00	---	---	---	6.56	---	---	---	6.25
13.50	---	---	---	6.39	---	---	---	6.20
14.00	---	---	---	6.38	---	---	---	6.30
14.50	---	---	---	6.30	---	---	---	6.05
15.00	---	---	---	6.26	---	---	---	5.75
15.50	---	---	---	6.20	---	---	---	6.00
16.00	---	---	---	6.29	---	---	---	6.30
16.50	---	---	---	6.30	---	---	---	6.18
17.00	---	---	---	6.40	---	---	---	6.09
17.50	---	---	---	6.35	---	---	---	6.82
18.00	---	---	---	6.25	---	---	---	6.56
18.50	---	---	---		---	---	---	
19.00	---	---	---		---	---	---	

TABLE 5

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL IN DECEMBER 1974

Depth Meters	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	12/6/74				12/21/74			
0.75	8.2	7.5	---	7.85	9.5	11.0	11.2	10.56
1.00	5.0	4.8	---	4.90	6.9	6.8	6.7	6.80
1.50	4.9	5.3	---	5.10	5.1	5.6	5.3	5.33
2.00	4.7	4.4	---	4.55	5.2	5.1	5.3	5.20
2.50	5.0	4.8	---	4.90	5.2	5.4	5.5	5.36
3.00	5.1	5.2	---	5.15	5.4	5.4	5.6	5.46
3.50	5.7	5.7	---	5.70	5.2	6.1	6.0	5.76
3.75	5.8	6.1	---	5.95	5.7	6.6	6.0	6.10
4.00	7.3	7.6	---	7.45	5.7	7.7	7.2	6.86
4.25	8.7	8.5	---	8.60	5.8	6.9	7.6	6.76
4.50	9.3	10.0	---	9.65	5.9	6.6	6.8	6.43
4.75	---	---	---	---	5.9	6.8	6.3	6.33
5.00	9.6	10.2	---	9.90	6.2	6.4	6.1	6.23
5.25	10.4	10.0	---	10.20	5.9	6.2	6.0	6.03
5.50	11.0	10.6	---	10.80	6.3	6.2	6.4	6.30
5.75	10.0	9.9	---	9.95	6.0	5.8	5.8	5.86
6.00	9.0	10.6	---	10.20	6.2	6.3	6.4	6.30
6.25	7.7	8.9	---	8.30	6.2	6.5	6.2	6.30
6.50	6.8	6.8	---	6.80	6.4	6.3	5.8	6.16
6.75	7.0	6.8	---	6.90	6.0	6.3	6.1	6.13
7.00	6.7	6.9	---	6.80	6.3	6.2	5.8	6.10
7.25	6.7	6.8	---	6.75	5.9	5.9	5.9	5.90
7.50	6.4	6.9	---	6.65	6.3	6.6	6.1	6.33
7.75	6.5	6.7	---	6.60	5.9	6.2	6.1	6.06
8.00	6.1	6.4	---	6.25	6.2	6.2	6.1	6.16
8.50	6.2	6.2	---	6.20	6.1	6.4	6.2	6.23
9.00	6.3	6.3	---	6.30	5.8	6.2	6.0	6.00
9.50	6.4	6.2	---	6.30	6.2	6.5	6.5	6.40
10.00	6.8	6.9	---	6.85	6.3	6.4	6.2	6.30
10.50	6.9	6.3	---	6.60	6.0	6.4	5.8	6.06
11.00	6.0	6.1	---	6.05	6.3	6.4	6.3	6.33
11.50	5.9	6.1	---	6.00	6.2	6.7	6.4	6.43
12.00	6.0	5.9	---	5.95	6.2	6.4	6.0	6.20
12.50	5.9	6.1	---	6.00	---	---	---	---
13.00	6.5	6.3	---	6.40	6.0	6.5	6.5	6.33
13.50	6.2	6.3	---	6.25	---	---	---	---
14.00	6.15	6.4	---	6.28	6.3	6.4	6.2	6.30
14.50	6.1	6.2	---	6.15	---	---	---	---
15.00	6.15	6.0	---	6.08	5.7	6.1	5.9	5.90
15.50	6.25	6.2	---	6.23	---	---	---	---
16.00	6.2	6.4	---	6.30	6.2	6.7	6.3	6.40
16.50	6.1	6.0	---	6.15	---	---	---	---
17.00	6.1	5.8	---	5.95	6.5	6.3	6.4	6.40
17.50	6.7	6.6	---	6.65	---	---	---	---
18.00	6.4	6.4	---	6.40	5.9	6.4	5.8	6.03
18.50	6.2	5.9	---	6.05	---	---	---	---
19.00	6.2	6.6	---	6.35	6.0	5.7	5.6	5.76
19.20	5.2	5.5	---	5.35	---	---	---	---

TABLE 6

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR JANUARY 1975

Depth Meters	<u>Open-Bottom Lysimeter</u>			<u>Closed-Bottom Lysimeter</u>		
	Tube #1	#2	Avg	#4	#5	#6
	1/8/75			1/20/75		
0.75	11.5	11.3	11.4	10.3	11.6	11.8
1.00	9.8	9.9	9.8	9.7	10.5	10.0
1.50	5.1	5.3	5.2	5.3	5.5	5.2
2.00	4.6	4.6	4.6	5.3	5.1	5.2
2.50	5.1	5.1	5.1	5.3	5.3	5.4
3.00	5.3	4.9	5.1	5.5	5.3	5.5
3.50	5.1	5.5	5.3	5.7	6.0	5.6
3.75	5.9	6.1	6.0	5.6	6.4	5.7
4.00	5.9	6.2	6.1	5.8	7.8	6.9
4.25	7.6	7.7	7.7	5.6	6.9	7.4
4.50	8.7	8.4	8.6	5.9	6.5	6.8
4.75	9.5	10.0	9.8	6.0	6.8	6.3
5.00	9.7	10.0	9.8	6.4	6.5	6.2
5.25	10.0	9.8	9.9	6.1	6.1	5.9
5.50	11.0	10.3	10.6	6.3	6.2	6.2
5.75	10.3	10.0	10.2	6.0	6.0	5.9
6.00	10.0	10.7	10.3	6.2	6.4	6.4
6.25	8.4	9.4	8.9	---	---	---
6.50	6.9	7.2	7.1	6.2	6.3	6.1
6.75	7.2	7.1	7.1	---	---	---
7.00	6.8	7.0	6.9	6.2	6.2	5.9
7.25	6.8	6.7	6.8	---	---	---
7.50	6.8	6.9	6.9	6.3	6.3	6.0
7.75	6.7	6.7	6.7	---	---	---
8.00	6.3	6.5	6.4	6.0	6.1	6.2
8.50	6.2	6.7	6.5	---	---	---
9.00	6.6	6.4	6.5	5.5	6.0	6.1
9.50	6.6	6.5	6.5	---	---	---
10.00	6.8	7.2	7.0	6.2	6.5	6.2
10.50	7.1	6.5	6.8	---	---	---
11.00	6.0	6.3	6.2	6.3	6.2	6.2
11.50	6.1	6.2	6.2	---	---	---
12.00	6.1	6.3	6.2	6.0	6.4	6.0
12.50	6.3	6.1	6.2	---	---	---
13.00	6.6	6.6	6.6	5.9	6.4	6.3
13.50	6.4	6.6	6.5	---	---	---
14.00	6.1	6.7	6.4	6.4	6.4	6.1
15.00	6.2	6.2	6.2	5.8	6.1	6.0
15.50	---	---	---	6.0	6.0	6.0
16.00	6.1	6.5	6.3	6.5	6.5	6.3
16.50	---	---	---	6.1	6.3	6.3
17.00	6.2	6.1	6.2	6.3	6.3	6.3
17.50	---	---	---	6.2	6.3	6.2
18.00	6.5	6.6	6.5	5.9	6.2	5.9
18.50	---	---	---	6.6	5.9	5.9
19.00	5.5	5.6	5.6	5.9	5.5	5.5
19.20	5.3	5.8	5.5	---	---	---

TABLE 7

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER FOR FEBRUARY 1975

<u>Depth Meters</u>	<u>Oper.-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	2/26/75				2/25/75			
0.75	9.0	8.7	11.3	9.7	7.0	9.6	10.0	8.9
1.00	10.9	11.3	11.1	11.1	11.0	11.4	12.0	11.5
1.50	12.6	12.7	12.3	12.5	12.8	13.6	11.6	12.7
2.00	6.1	5.0	5.7	5.6	6.2	5.2	5.0	5.5
2.50	5.1	4.9	5.0	5.0	5.3	5.0	5.1	5.2
3.00	5.5	4.8	5.2	5.2	5.3	5.2	5.1	5.2
3.50	5.3	5.1	5.3	5.2	5.1	5.0	5.6	5.2
3.75	6.1	5.8	5.1	5.7	5.5	6.0	5.8	5.8
4.00	5.8	6.0	6.0	5.9	5.7	6.3	6.8	6.3
4.25	7.5	7.7	6.0	7.1	5.6	6.5	6.8	6.3
4.50	8.2	8.0	7.5	7.9	5.9	6.4	6.5	6.3
4.75	8.9	9.3	8.5	8.9	5.9	6.4	6.2	6.2
5.00	9.4	9.6	10.1	9.7	6.2	6.2	6.0	6.1
5.25	9.5	9.3	10.0	9.6	5.8	6.2	5.7	5.9
5.50	10.6	10.2	11.2	10.7	6.2	6.0	6.1	6.1
5.75	9.7	9.6	10.0	9.8	5.9	6.0	5.7	5.9
6.00	10.0	10.2	9.8	10.0	6.1	6.2	6.1	6.1
6.25	8.8	9.6	8.4	8.9	5.8	6.1	5.8	5.9
6.50	7.0	7.3	7.0	7.1	6.2	6.1	5.8	6.0
6.75	7.0	7.1	6.8	7.0	5.8	6.2	5.8	5.9
7.00	6.6	7.0	6.7	6.8	5.8	5.9	5.8	5.8
7.25	6.8	6.6	6.7	6.7	5.4	5.8	5.4	5.5
7.50	6.5	6.7	6.6	6.6	6.1	6.1	6.0	6.1
7.75	6.6	6.8	7.0	6.8	5.8	6.1	6.0	6.0
8.00	6.1	6.4	6.4	6.3	5.8	5.9	5.9	5.9
8.50	6.4	6.4	6.4	6.4	6.1	5.9	5.9	6.0
9.00	6.5	6.3	6.5	6.5	5.5	5.6	5.7	5.5
9.50	6.3	6.4	6.4	6.4	5.9	6.0	6.1	6.0
10.00	6.6	6.7	6.6	6.6	6.1	6.2	6.0	6.1
10.50	7.1	6.4	6.5	6.7	5.5	---	6.2	5.9
11.00	5.9	6.1	6.0	6.0	6.1	---	5.8	6.0
11.50	6.1	6.1	6.2	6.2	6.1	---	6.2	6.2
12.00	6.0	5.9	5.9	5.9	5.7	---	5.2	5.4
12.50	6.1	6.1	6.0	6.1	5.8	---	5.8	5.8
13.00	6.4	6.4	6.5	6.4	5.8	---	6.1	6.0
13.50	6.3	6.5	6.4	6.4	5.6	---	5.7	5.6
14.00	6.0	6.1	6.2	6.1	6.0	---	5.9	6.0
14.50	6.2	6.0	6.2	6.1	5.7	---	6.0	5.9
15.00	5.9	6.1	6.3	6.1	5.6	---	5.7	5.6
15.50	5.8	6.1	6.1	6.0	5.5	---	5.7	5.6
16.00	6.1	6.0	6.2	6.1	6.0	---	5.8	5.9
16.50	6.0	5.9	6.2	6.0	5.8	---	6.0	5.9
17.00	6.1	6.0	6.0	6.0	6.1	---	6.0	6.0
17.50	6.5	6.6	6.7	6.6	5.9	---	6.0	6.0
18.00	6.3	6.5	6.5	6.4	5.7	---	5.6	5.6
18.50	5.9	5.8	5.8	5.8	5.8	---	6.4	6.1
19.00	5.3	5.4	5.5	5.4	5.6	---	5.4	5.5

TABLE 8

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR MARCH 1975

	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Reference Point .7 M Above Ground				Reference Point .6 M Above Ground			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	3/12/75				3/13/75			
Depth Meters								
0.75	7.9	8.1	8.9	8.3	---	9.5	9.5	9.5
1.00	10.0	11.1	10.8	10.6	10.9	11.6	11.2	11.2
1.25	10.2	11.4	11.4	11.0	11.4	11.7	11.4	11.5
1.50	11.4	12.3	12.0	11.9	12.3	13.4	12.2	12.6
2.00	8.7	7.3	8.3	8.1	---	7.6	6.1	7.0
2.50	4.8	4.8	4.8	4.8	5.5	5.3	5.5	5.4
3.00	5.2	4.9	5.1	5.1	5.1	5.3	5.4	5.5
3.50	5.2	5.1	5.4	5.2	5.4	6.0	5.3	5.7
3.75	6.2	5.9	6.0	6.0	5.9	---	---	5.9
4.00	5.7	5.9	6.2	6.0	5.9	7.5	6.8	6.7
4.25	7.1	8.2	7.7	7.7	5.9	---	---	5.9
4.50	8.0	7.9	8.4	8.1	6.2	6.6	6.7	6.5
4.75	8.6	9.4	9.9	9.3	6.0	---	---	6.0
5.00	8.7	9.4	9.7	9.4	6.4	6.6	6.2	6.4
5.25	9.4	9.0	10.0	9.5	6.2	---	---	6.2
5.50	10.5	9.7	11.0	10.4	6.0	6.3	6.3	6.2
6.00	9.8	10.4	10.1	10.1	6.0	6.5	6.3	6.3
6.25	8.7	9.6	8.2	8.8	6.2	---	---	6.2
6.50	7.1	7.7	7.1	7.3	6.4	6.6	6.0	6.4
6.75	7.0	7.1	6.8	7.0	6.0	---	---	6.0
7.00	6.7	6.9	6.8	6.8	6.4	6.1	5.7	6.1
7.25	6.6	6.5	6.6	6.6	5.8	---	---	5.8
7.50	6.5	6.9	6.7	6.7	---	6.6	6.0	6.3
7.75	6.7	6.2	7.1	6.7	6.0	---	---	6.0
8.00	6.0	6.6	6.4	6.4	---	6.0	---	6.0
8.50	6.2	6.3	6.7	6.4	---	---	6.1	6.1
9.00	6.4	6.4	6.3	6.4	6.0	6.1	---	6.1
9.50	6.6	6.3	6.6	6.5	---	---	6.4	6.4
10.00	6.5	6.8	6.8	6.7	6.3	6.5	---	6.4
10.50	7.4	6.2	6.2	6.6	---	---	5.9	5.9
11.00	5.8	6.0	6.0	5.9	6.5	6.5	---	6.5
11.50	6.0	6.1	6.3	6.2	---	---	6.5	6.5
12.00	5.8	5.9	6.0	5.9	6.2	6.4	---	6.3
12.50	5.9	6.2	6.1	6.1	---	---	6.2	6.2
13.00	6.3	6.4	6.4	6.4	6.2	6.5	---	6.3
13.50	6.1	6.2	6.3	6.2	---	---	6.2	6.2
14.00	6.0	6.5	6.5	6.4	6.2	6.5	---	6.3
14.50	6.0	6.1	6.2	6.1	---	---	6.2	6.2
15.00	5.9	6.1	6.4	6.1	5.8	6.1	---	6.0
15.50	5.7	6.1	6.0	6.0	---	---	6.1	6.1
16.00	5.6	6.2	6.2	6.0	6.0	6.6	---	6.3
16.50	6.0	6.0	6.3	6.1	---	---	6.4	6.4
17.00	5.9	5.6	6.0	5.9	6.4	6.3	---	6.4
17.50	6.6	6.6	6.4	6.5	---	---	6.2	6.2
18.00	6.3	6.3	6.3	6.3	5.8	6.3	---	6.0
18.50	5.9	5.9	6.0	5.9	---	---	6.6	6.6
19.00	5.2	5.5	5.3	5.3	5.8	5.6	---	5.7

TABLE 9

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL IN MARCH 1975

	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Reference Point .7 M Above Ground				Reference Point .6 M Above Ground			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	3/27/75				3/26/75			
Depth Meters								
0.75	7.4	8.3	8.3	8.0	6.3	9.0	9.4	8.2
1.00	9.4	10.6	10.1	10.0	10.3	11.0	11.0	10.8
1.25	9.8	10.9	10.7	10.2	10.5	11.1	10.8	10.8
1.50	11.4	11.7	11.2	11.4	11.6	12.7	11.6	12.0
2.00	10.3	9.7	10.4	10.1	11.3	9.8	7.6	9.6
2.50	4.7	4.8	4.9	4.8	4.9	5.1	5.2	5.1
3.00	5.0	4.8	5.3	5.0	5.3	5.2	5.4	5.3
3.50	5.0	5.2	5.1	5.1	5.1	5.9	5.6	5.5
3.75	5.8	5.8	6.0	5.9	5.3	6.6	5.7	5.9
4.00	5.7	6.5	6.0	6.1	6.0	7.6	6.8	6.8
4.25	6.9	7.7	7.4	7.3	5.7	6.8	7.0	6.5
4.50	8.4	7.9	8.4	8.2	6.0	6.5	6.8	6.4
4.75	9.2	9.1	10.0	9.4	5.9	6.8	6.3	6.3
5.00	8.7	9.4	9.6	9.2	6.1	6.3	6.2	6.2
5.25	9.4	9.3	10.0	6.6	5.5	6.1	5.9	5.8
5.50	10.2	10.0	10.7	10.3	6.2	6.1	6.2	6.2
5.75	9.5	9.2	9.7	9.5	5.7	5.7	5.7	5.7
6.00	9.7	9.8	9.9	9.8	6.0	6.4	6.5	6.3
6.25	8.9	8.9	8.3	8.7	6.3	6.3	6.0	6.2
6.50	7.1	7.7	7.1	7.3	6.3	6.3	5.8	6.1
6.75	6.8	6.7	6.6	6.7	5.8	6.4	6.0	6.1
7.00	6.5	6.7	6.8	6.7	5.9	6.0	5.8	5.9
7.25	6.7	6.4	6.5	6.5	5.5	5.7	5.6	5.6
7.50	6.3	6.4	6.3	6.3	6.1	6.3	6.1	6.1
7.75	6.3	6.6	6.9	6.6	5.7	6.0	6.1	5.9
8.00	6.2	6.2	6.3	6.2	6.0	5.8	5.8	5.9
8.50	6.2	6.3	6.5	6.3	5.9	6.1	5.9	6.0
9.00	6.4	6.2	6.2	6.3	5.5	5.8	5.7	5.7
9.50	6.2	6.1	6.5	6.3	5.9	6.3	6.1	6.1
10.00	6.6	6.8	6.7	6.7	6.3	6.1	6.1	6.2
10.50	6.9	6.0	6.3	6.4	5.7	6.3	5.6	5.9
11.00	5.8	6.1	5.9	5.9	6.3	6.1	6.0	6.1
11.50	6.1	6.2	6.2	6.2	6.0	6.1	6.3	6.1
12.00	5.8	5.8	5.8	5.8	5.9	6.2	5.8	6.0
12.50	5.9	6.0	5.6	5.8	5.9	6.1	6.1	6.0
13.00	6.4	6.3	6.4	6.4	5.8	6.1	6.1	6.0
13.50	6.1	5.9	6.0	6.0	5.8	6.0	5.9	5.9
14.00	5.8	6.0	6.2	6.0	6.2	5.9	6.0	6.0
14.50	6.0	6.1	6.0	6.0	5.9	6.2	5.8	6.0
15.00	5.9	6.0	6.4	6.1	5.5	5.7	5.5	5.6
15.50	5.8	6.0	5.7	5.8	5.6	5.8	5.7	5.7
16.00	6.0	6.2	6.0	6.1	6.0	6.4	6.2	6.2
16.50	6.2	5.7	6.4	6.1	5.9	6.2	6.0	6.0
17.00	6.0	5.8	5.9	5.9	6.3	6.2	6.1	6.2
17.50	6.4	6.5	6.4	6.4	5.9	6.1	5.9	6.0
18.00	6.3	6.3	6.5	6.4	5.7	6.0	5.9	5.9
18.50	5.8	5.7	5.5	5.7	5.8	5.8	6.2	5.9
19.00	5.2	5.3	5.4	5.3	5.5	5.4	5.4	5.4

TABLE 10

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL IN APRIL 1975

	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Reference Point .7 M Above Ground				Reference Point .6 M Above Ground			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	4/11/75				4/12/75			
Depth Meters								
0.75	6.7	6.8	7.7	7.1	6.9	7.4	7.3	7.2
1.00	8.9	9.9	9.6	9.5	9.6	10.0	10.3	10.0
1.25	9.3	10.7	10.2	10.1	10.1	10.6	10.3	10.3
1.50	10.6	11.1	10.9	10.9	11.1	12.0	11.1	11.4
2.00	10.1	9.9	10.7	10.2	11.5	10.7	9.6	10.6
2.50	4.7	4.7	4.8	4.7	5.4	5.2	5.0	5.2
3.00	5.1	4.7	4.9	4.9	5.2	5.1	5.3	5.2
3.50	5.2	5.2	5.3	5.2	4.9	5.2	4.9	5.0
3.75	5.9	5.7	5.1	5.6	5.2	6.0	5.7	5.6
4.00	5.7	5.8	6.0	5.8	5.4	6.2	5.6	5.7
4.25	6.9	7.4	6.1	6.8	5.6	6.4	6.6	6.2
4.50	7.8	7.7	7.2	7.6	5.8	6.3	6.9	6.3
4.75	8.6	9.1	8.1	8.6	6.0	6.5	6.5	6.3
5.00	8.7	9.3	9.6	9.2	6.1	6.3	5.9	6.1
5.25	9.2	8.9	9.9	9.3	5.8	5.9	5.7	5.8
5.50	10.3	9.3	10.5	10.0	6.2	6.1	5.8	6.0
5.75	9.4	9.5	9.7	9.5	5.8	5.6	5.4	5.6
6.00	9.8	10.2	9.7	9.9	5.9	6.1	6.1	6.0
6.25	9.0	9.6	8.4	9.0	6.1	6.1	6.0	6.1
6.50	7.2	7.7	6.9	7.3	6.2	6.2	5.7	6.0
6.75	7.0	7.0	6.7	6.9	5.9	5.9	5.6	5.8
7.00	6.4	6.6	6.5	6.5	6.0	5.8	5.5	5.8
7.25	6.6	6.5	6.4	6.5	5.4	5.6	5.9	5.6
7.50	6.4	6.5	6.5	6.5	6.1	5.1	5.7	6.0
7.75	6.2	6.8	6.8	6.6	5.6	6.0	5.5	5.7
8.00	6.2	6.4	6.3	6.3	5.9	6.1	5.8	5.9
8.50	6.2	6.2	6.7	6.4	5.8	5.9	5.9	5.9
9.00	6.4	6.3	6.1	6.3	5.6	5.6	5.9	5.7
9.50	6.4	6.3	6.3	6.3	5.7	6.1	6.0	5.9
10.00	6.9	6.7	6.6	6.7	6.4	6.1	6.0	6.2
10.50	6.8	6.3	6.1	6.4	5.9	6.0	5.6	5.8
11.00	5.7	5.9	5.7	5.8	6.2	6.3	5.9	6.1
11.50	5.9	6.1	6.1	6.0	5.9	6.3	6.1	6.1
12.00	5.7	5.7	5.5	5.6	5.7	6.1	5.7	5.8
12.50	5.8	5.9	5.7	5.8	5.9	6.1	6.1	6.0
13.00	6.2	6.0	6.3	6.2	5.8	6.4	6.2	6.1
13.50	6.1	6.0	5.9	6.0	5.7	6.0	5.8	5.8
14.00	5.7	6.1	6.3	6.0	5.9	6.1	5.7	5.9
14.50	5.9	5.8	5.8	5.8	5.7	6.1	5.9	5.9
15.00	5.8	6.0	6.2	6.0	5.3	5.8	5.7	5.6
15.50	5.9	6.1	5.7	5.9	5.6	5.7	5.6	5.6
16.00	5.7	5.7	6.0	5.8	6.0	6.3	5.8	6.0
16.50	5.8	5.8	6.1	5.9	5.7	6.2	5.7	5.9
17.00	6.0	5.9	5.8	5.9	6.0	6.3	6.2	6.2
17.50	6.5	6.4	6.5	6.5	5.8	6.0	5.7	5.8
18.00	6.0	6.2	6.3	6.2	5.8	6.1	5.5	5.8
18.50	5.9	5.7	5.6	5.7	6.0	6.1	5.8	6.0
19.00	5.0	5.1	5.2	5.1	5.6	5.4	5.5	5.5

TABLE 11

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL IN APRIL 1975

	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point .7 M Above Ground				Reference Point .6 M Above Ground			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	4/26/75				4/25/75			
<u>Depth</u>								
<u>Meters</u>								
0.75	8.3	6.5	7.4	7.4	8.2	8.7	8.6	8.5
1.00	8.6	10.0	9.7	9.4	9.4	10.0	9.8	9.7
1.25	9.1	10.0	9.6	9.6	9.8	10.2	9.8	9.9
1.50	10.6	11.0	10.5	10.7	10.7	11.9	10.6	11.1
2.00	10.1	10.0	10.3	10.1	11.2	10.9	9.5	10.5
2.50	5.0	5.2	5.1	5.1	5.7	5.2	5.0	5.3
3.00	5.3	5.0	4.8	5.0	5.3	5.2	5.1	5.2
3.50	5.3	5.0	5.3	5.2	5.1	5.8	5.6	5.5
3.75	5.8	6.0	5.9	5.9	5.5	6.3	5.6	5.8
4.00	5.7	5.9	6.1	5.9	5.5	7.1	6.7	6.4
4.25	7.1	7.6	7.4	7.4	5.5	6.5	6.9	6.3
4.50	8.3	7.8	8.1	8.1	5.6	6.3	6.4	6.1
4.75	8.4	9.3	9.6	9.1	5.7	6.4	6.2	6.1
5.00	8.6	9.2	9.4	9.1	6.3	6.2	5.9	6.1
5.25	9.1	9.2	9.8	9.4	5.7	6.0	6.1	5.9
5.50	10.5	9.7	10.1	10.1	6.0	6.0	5.8	5.9
5.75	9.8	9.2	9.1	9.4	5.9	5.6	5.6	5.7
6.00	9.7	10.1	10.0	9.9	5.8	6.2	5.9	6.0
6.25	9.4	9.2	8.5	9.0	6.2	6.2	6.0	6.2
6.50	7.4	8.5	6.9	7.6	6.3	6.3	6.1	6.2
6.75	7.1	8.2	7.0	7.4	5.9	6.0	5.8	5.9
7.00	6.8	7.1	6.7	6.9	6.1	6.0	5.9	6.0
7.25	6.7	7.0	6.5	6.7	5.5	5.5	5.6	5.5
7.50	6.7	6.5	6.5	6.6	6.0	6.0	5.7	5.9
7.75	6.6	6.4	6.9	6.6	5.9	6.0	5.8	5.9
8.00	6.1	6.3	6.3	6.2	6.0	5.9	5.9	5.9
8.50	6.4	6.7	6.5	6.5	5.7	6.0	5.8	5.8
9.00	6.6	6.4	6.3	6.4	5.7	5.8	5.9	5.8
9.50	6.7	6.5	6.1	6.4	5.9	6.3	6.0	6.1
10.00	6.8	6.9	6.2	6.6	6.1	6.0	6.2	6.1
10.50	7.1	6.0	6.3	6.5	5.6	6.1	5.9	5.9
11.00	6.2	6.2	5.6	6.0	6.2	6.0	5.9	6.0
11.50	6.1	6.2	6.3	6.2	6.1	6.4	6.1	6.2
12.00	5.8	6.0	6.4	6.1	6.0	6.3	5.8	6.0
12.50	5.9	6.1	6.0	6.0	6.0	6.1	6.0	6.0
13.00	6.4	6.2	6.2	6.3	5.6	6.0	6.0	5.9
13.50	6.0	6.2	6.1	6.2	5.6	6.1	5.9	5.9
14.00	6.0	6.3	5.9	6.1	6.1	6.2	6.0	6.1
14.50	6.2	6.0	5.9	6.0	5.9	6.3	6.1	6.1
15.00	6.2	6.1	6.0	6.1	5.4	5.7	5.8	5.6
15.50	5.8	6.1	5.8	5.9	5.5	6.3	5.9	5.9
16.00	6.0	5.9	6.2	6.0	6.1	6.3	6.0	6.1
16.50	6.0	6.0	6.1	6.0	6.0	6.2	6.1	6.1
17.00	6.2	6.1	6.0	6.1	6.2	6.1	6.1	6.1
17.50	6.8	6.6	6.6	6.7	6.0	5.9	6.1	6.0
18.00	6.5	6.4	6.2	6.4	5.7	5.8	5.8	5.8
18.50	6.1	5.7	6.0	5.9	7.0	6.5	5.9	6.5
19.00	5.3	5.4	5.5	5.5	5.8	5.9	5.7	5.8

TABLE 12

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR MAY 1975

	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point .7 M Above Ground				Reference Point .6 M Above Ground			
Depth Meters	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	5/16/75				5/15/75			
0.75	5.9	5.9	7.9	6.6	4.6	8.3	7.8	6.9
1.00	8.0	9.6	9.5	9.0	9.5	10.1	9.9	9.8
1.25	8.4	10.4	10.1	9.6	9.7	10.1	9.5	9.8
1.50	10.0	10.9	10.6	10.5	10.5	11.3	10.3	10.7
2.00	9.6	9.8	10.5	10.0	10.8	10.4	9.8	10.3
2.50	5.6	5.5	6.2	5.8	6.4	5.6	5.5	5.8
3.00	4.9	5.0	5.0	5.0	5.0	5.0	5.2	5.1
3.50	5.0	5.2	5.0	5.0	5.0	5.6	5.4	5.3
3.75	5.7	5.7	6.1	5.8	5.4	6.3	5.9	5.9
4.00	5.5	6.0	6.1	5.9	5.6	6.9	6.7	6.4
4.25	7.1	7.4	7.3	7.3	5.3	6.3	6.7	6.1
4.50	8.0	7.7	8.3	8.0	5.7	6.4	6.2	6.1
4.75	8.4	9.1	9.5	9.0	5.7	6.3	6.1	6.0
5.00	9.0	9.0	9.5	9.2	5.9	6.1	5.7	5.9
5.25	9.0	8.7	9.9	9.2	5.5	6.0	5.5	5.7
5.50	10.1	9.8	10.5	10.1	6.0	5.8	6.0	5.9
5.75	9.5	9.1	9.7	9.4	5.7	5.5	5.4	5.5
6.00	9.6	10.1	10.0	9.9	6.0	6.3	5.9	6.1
6.25	8.8	9.8	8.6	9.1	5.8	6.3	5.8	6.0
6.50	7.2	8.1	7.2	7.5	6.2	6.0	5.8	6.0
6.75	6.9	7.3	7.1	7.1	5.6	6.0	5.7	5.8
7.00	6.5	6.9	6.6	6.7	5.9	5.9	5.6	5.8
7.25	6.6	6.4	6.8	6.6	5.4	5.6	5.6	5.5
7.50	6.4	6.5	6.7	6.5	6.0	6.2	5.7	6.0
7.75	6.5	6.7	6.9	6.7	5.8	6.0	5.9	5.9
8.00	6.0	6.4	6.3	6.2	5.9	5.9	5.9	5.9
8.50	6.2	6.5	6.4	6.4	5.7	6.0	5.7	5.8
9.00	6.3	6.2	6.4	6.3	5.4	5.9	5.8	5.7
9.50	6.1	6.3	6.3	6.2	5.9	6.0	6.1	6.0
10.00	6.6	6.7	6.6	6.6	6.1	6.0	5.8	6.0
10.50	7.1	6.2	6.1	6.5	5.6	6.1	5.7	5.8
11.00	5.9	6.1	5.7	5.9	5.9	6.1	5.8	5.9
11.50	6.0	6.2	6.4	6.2	6.1	6.4	6.1	6.2
12.00	5.8	5.7	5.9	5.8	5.7	6.1	5.7	5.8
12.50	5.9	5.9	6.0	5.9	5.7	5.9	5.9	5.8
13.00	6.0	6.1	6.1	6.1	5.6	6.1	6.2	6.0
13.50	6.3	6.2	6.3	6.3	5.5	5.9	5.9	5.8
14.00	5.5	6.2	6.3	6.0	6.1	6.1	5.6	5.9
14.50	6.1	5.9	5.8	5.9	5.9	6.1	5.8	5.9
15.00	5.8	6.0	6.4	6.1	5.4	5.9	5.7	5.7
15.50	5.9	6.0	5.6	5.8	5.4	5.8	5.5	5.6
16.00	6.0	5.9	6.1	6.0	6.2	6.2	5.9	6.1
16.50	5.8	5.8	6.2	5.9	5.8	---	6.1	6.0
17.00	6.0	5.7	6.1	5.9	6.1	---	6.0	6.1
17.50	6.5	6.5	6.6	6.5	5.8	---	5.9	5.9
18.00	6.4	6.3	6.6	6.4	5.6	---	5.4	5.5
18.50	5.8	5.6	5.6	5.7	6.0	---	5.8	5.9
19.00	5.2	5.4	5.3	5.3	5.5	---	5.3	5.4

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TABLE 13

NEUTRON LOG IN WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR JUNE 1975

	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point .7 M Above Ground				Reference Point .6 M Above Ground			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	6/11/75				6/12/75			
<u>Depth</u> <u>Meters</u>								
0.75	4.0	3.8	4.3	4.0	5.6	5.2	6.1	6.0
1.00	5.9	6.3	6.9	6.4	7.7	8.9	9.0	8.5
1.25	6.5	7.9	8.3	7.6	8.7	9.5	9.0	9.0
1.50	7.9	8.9	9.0	8.6	9.7	10.9	10.0	10.2
2.00	7.8	9.2	9.5	8.8	10.6	10.3	9.9	10.3
2.50	6.6	6.8	7.4	6.9	8.3	6.4	6.0	6.9
3.00	5.2	4.6	5.0	4.9	5.0	5.0	5.0	5.0
3.50	4.9	5.1	5.3	5.1	4.8	5.8	5.4	5.3
3.75	5.6	5.6	5.0	5.4	5.0	6.3	5.6	5.6
4.00	5.5	5.8	5.7	5.7	5.3	6.9	6.5	6.2
4.25	6.9	7.2	7.1	7.1	5.5	6.4	6.6	6.2
4.50	7.9	7.7	7.8	7.8	5.4	6.4	6.2	6.0
4.75	8.1	8.7	8.8	8.5	5.7	6.8	6.2	6.2
5.00	8.4	8.8	9.2	8.8	5.5	6.1	5.7	5.8
5.25	8.9	9.2	9.5	9.2	5.9	6.1	5.7	5.9
5.50	9.8	9.3	10.3	9.8	5.5	6.0	6.1	5.9
5.75	9.3	9.2	9.0	9.2	6.0	5.4	5.6	5.7
6.00	9.5	9.8	9.8	9.7	5.7	6.2	6.1	6.0
6.25	8.5	8.5	8.4	8.5	5.8	6.2	5.7	5.9
6.50	7.2	7.3	7.0	7.2	6.0	6.1	5.6	5.9
6.75	7.1	6.8	6.8	6.9	5.8	6.1	5.9	5.9
7.00	6.4	6.4	6.6	6.5	5.8	5.8	5.5	5.7
7.25	6.5	6.3	6.4	6.4	6.1	5.6	5.5	5.7
7.50	6.4	6.4	6.7	6.5	5.5	6.1	5.7	5.8
7.75	6.3	6.4	6.7	6.5	5.9	6.3	5.9	6.0
8.00	5.8	6.2	6.3	6.1	5.7	5.8	5.8	5.8
8.50	6.1	6.2	6.5	6.3	5.9	6.1	5.8	5.9
9.00	6.0	6.2	6.3	6.2	5.9	5.7	5.8	5.8
9.50	5.8	6.1	6.3	6.1	5.5	6.1	6.0	5.9
10.00	6.5	6.5	6.4	6.5	5.9	6.1	6.0	6.0
10.50	6.9	6.2	5.9	6.3	6.0	5.9	5.5	5.8
11.00	5.8	5.7	5.6	5.7	5.7	5.9	5.8	5.8
11.50	6.0	6.0	6.1	6.0	6.0	6.2	6.1	6.1
12.00	5.6	5.8	5.8	5.7	5.9	6.0	5.7	5.8
12.50	5.6	5.9	5.7	5.7	5.8	5.9	5.8	5.8
13.00	6.2	6.1	6.2	6.2	5.7	6.0	6.1	5.9
13.50	6.0	6.0	6.1	6.0	5.7	6.1	5.8	5.9
14.00	5.6	5.7	5.9	5.7	5.9	5.9	5.6	5.8
14.50	5.8	5.7	5.8	5.8	5.7	6.2	5.9	5.9
15.00	5.8	5.9	6.0	5.9	5.7	5.8	5.7	5.7
15.50	5.7	5.8	5.6	5.7	5.3	6.0	5.5	5.6
16.00	5.8	5.9	5.8	5.8	5.8	6.3	6.2	6.1
16.50	5.9	5.9	6.0	5.9	5.8	6.0	5.9	5.9
17.00	6.0	6.0	6.2	6.1	5.9	6.0	5.9	5.9
17.50	6.5	6.5	6.6	6.5	5.8	5.9	5.6	5.8
18.00	5.9	6.0	6.1	6.0	5.5	5.9	5.4	5.6
18.50	5.7	5.6	5.5	5.6	5.9	4.8	5.3	5.3
19.00	4.9	5.2	5.3	5.1	5.5	5.5	5.3	5.4

TABLE 14

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR JULY 1975

Depth Meters	Open-Bottom Lysimeter Reference Point .7 M Above Ground				Closed-Bottom Lysimeter Reference Point .6 M Above Ground		
	Tube #1	#2	#3	Avg	#4	#5	Avg
	7/11/75				7/8/75		
0.75	3.7	3.5	4.2	3.8	3.9	5.9	4.9
1.00	4.8	4.9	4.8	4.8	6.9	8.3	7.6
1.25	5.1	5.4	5.2	5.3	7.4	7.6	7.5
1.50	5.5	5.7	5.4	5.5	8.2	9.7	8.5
2.00	5.0	4.8	5.1	4.9	9.8	10.1	10.0
2.50	5.3	5.8	5.7	5.6	9.3	6.6	8.0
3.00	5.5	5.4	5.3	5.4	5.1	5.0	5.1
3.50	5.7	5.7	5.6	5.7	5.1	5.7	5.4
3.75	6.5	6.3	6.4	6.4	5.4	6.4	5.9
4.00	6.2	6.6	6.3	6.4	5.5	6.7	6.1
4.25	7.4	8.1	7.7	7.7	---	---	---
4.50	8.3	8.2	8.6	8.4	5.7	6.2	6.0
4.75	8.7	9.2	8.9	8.8	---	---	---
5.00	9.0	9.4	9.7	9.4	5.9	6.0	6.0
5.25	9.5	9.5	9.8	9.6	---	---	---
5.50	10.5	10.0	10.6	10.4	5.9	5.7	5.8
5.75	9.5	9.2	9.8	9.5	---	---	---
6.00	10.2	10.5	10.4	10.4	6.0	6.2	6.1
6.25	9.7	10.2	9.3	9.7	---	---	---
6.50	8.1	8.1	7.9	8.0	---	---	---
6.75	7.5	7.9	7.2	7.5	---	---	---
7.00	7.2	7.5	7.3	7.3	6.0	5.7	5.9
7.50	7.0	6.9	7.2	7.0	6.0	6.1	6.0
8.00	6.4	6.6	6.5	6.5	5.7	5.7	5.7
9.00	7.0	6.8	6.9	6.9	5.6	5.8	5.7
10.00	7.4	7.4	7.0	7.3	6.2	6.1	6.1
11.00	6.3	6.4	6.3	6.3	6.1	6.0	6.1
12.00	6.5	6.3	6.7	6.5	5.9	6.1	6.0
13.00	7.0	6.8	6.5	6.8	5.8	6.3	6.0
14.00	6.6	7.0	6.8	6.8	6.0	5.6	5.8
15.00	6.4	6.4	6.1	6.3	5.5	5.8	5.6
16.00	6.4	6.7	6.5	6.5	5.9	6.3	6.1
17.00	6.5	6.5	6.2	6.4	6.4	5.6	6.0
18.00	6.7	6.8	6.2	6.6	5.5	6.1	5.8
19.00	5.7	5.6	5.1	5.5	5.6	5.3	5.5

TABLE 15

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR JULY 1975

Depth Meters	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point Tube #1	Point #2 7/23/75	Point #3 7/23/75	Average	Reference Point Tube #4	Point #5 7/24/75	Point #6 7/24/75	Average
0.75	3.7	3.2	3.5	3.5	3.5	5.1	5.7	4.8
1.00	4.9	5.0	4.7	4.8	6.4	7.0	7.9	7.2
1.25	5.3	5.5	5.3	5.4	6.6	7.0	6.9	6.8
1.50	5.6	5.6	5.2	5.5	7.3	8.6	7.8	7.8
2.00	5.2	4.9	5.1	5.1	10.4	9.5	10.4	10.1
2.50	5.5	5.2	5.2	5.3	9.6	8.6	8.3	8.8
3.00	6.0	5.3	5.5	5.6	6.1	5.6	5.5	5.7
3.50	5.9	5.9	5.6	5.8	5.7	6.4	5.9	6.0
3.75	6.7	6.4	6.4	6.5	6.2	6.6	6.3	6.4
4.00	6.4	6.6	6.4	6.5	6.4	7.3	7.1	6.9
4.25	7.7	7.9	7.7	7.8	---	---	---	---
4.50	8.5	8.3	8.6	8.5	6.6	6.9	6.7	6.7
4.75	8.9	9.2	9.7	9.3	---	---	---	---
5.00	9.1	9.2	9.7	9.3	6.9	6.8	6.4	6.7
5.25	9.6	9.2	10.1	9.6	---	---	---	---
5.50	10.7	10.0	10.8	10.5	6.7	6.5	6.2	6.5
5.75	10.1	9.6	9.8	9.8	---	---	---	---
6.00	10.2	9.9	10.4	10.2	6.4	6.9	6.3	6.5
6.25	9.8	10.2	9.1	9.7	---	---	---	---
6.50	8.2	8.6	7.8	8.2	---	---	---	---
6.75	8.0	8.1	7.6	7.9	---	---	---	---
7.00	7.3	7.6	7.2	7.4	7.0	6.5	6.2	6.6
7.50	7.3	7.0	7.2	7.2	6.8	6.7	6.3	6.6
8.00	6.8	6.8	6.6	6.7	6.8	6.5	6.4	6.6
9.00	7.0	6.8	7.0	6.9	6.1	6.5	6.3	6.3
10.00	7.4	7.3	7.1	7.3	6.9	6.8	6.5	7.7
11.00	6.6	6.6	6.4	6.5	6.7	6.6	6.5	6.6
12.00	6.4	6.5	6.4	6.4	6.8	6.8	6.2	6.6
13.00	7.1	6.7	6.9	6.9	6.4	6.8	6.7	6.6
14.00	6.7	7.0	6.7	6.8	6.9	6.7	6.2	6.6
15.00	6.6	6.5	6.9	6.7	6.0	6.6	6.3	6.3
16.00	6.5	6.3	6.4	6.4	6.6	6.7	6.8	6.7
17.00	6.7	6.3	6.5	6.5	6.8	6.6	6.4	6.6
18.00	7.0	6.9	7.0	7.0	6.2	6.5	6.0	6.2
19.00	5.7	5.8	5.9	5.8	6.3	5.8	6.0	6.0

TABLE 16

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR AUGUST 1975

Depth Meters	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Reference Point Tube #1	.7 M Above Ground #2	8/13/75 #3	Average	Reference Point Tube #4	.6 M Above Ground #5	8/12/75 #6	Average
0.75	1.9	3.5	2.6	2.2	2.2	4.3	4.5	3.3
1.00	4.2	4.6	4.6	4.5	5.7	6.4	6.1	6.1
1.25	4.8	5.2	5.1	5.0	5.8	6.1	5.9	5.9
1.50	5.1	5.2	5.2	5.2	6.0	6.6	6.2	6.3
2.00	4.7	4.6	5.2	4.8	6.1	6.0	6.3	6.1
2.50	5.1	5.2	5.0	5.1	6.6	6.9	8.5	7.3
3.00	5.5	5.2	5.5	5.4	6.0	5.7	5.9	5.9
3.50	5.7	5.8	5.7	5.7	5.6	6.1	5.9	5.9
3.75	6.2	6.4	6.8	6.5	6.0	6.7	6.3	6.3
4.00	6.3	6.4	6.5	6.4	6.1	7.5	6.8	6.8
4.25	7.2	7.8	7.6	7.5	---	---	---	---
4.50	7.8	7.8	8.1	7.9	6.3	7.1	7.2	6.9
4.75	8.9	9.4	9.9	9.4	---	---	---	---
5.00	8.5	9.5	9.5	9.2	6.7	7.0	6.9	6.9
5.25	9.6	9.4	10.4	9.8	---	---	---	---
5.50	9.9	9.4	10.1	9.8	6.6	6.8	6.5	6.6
5.75	10.1	9.6	10.5	10.1	---	---	---	---
6.00	9.4	9.9	10.1	9.8	6.3	6.7	6.7	6.6
6.25	10.0	10.5	9.9	10.1	---	---	---	---
6.50	8.4	9.5	8.5	8.8	---	---	---	---
6.75	7.8	8.3	7.8	8.0	---	---	---	---
7.00	7.3	7.6	7.5	7.5	6.7	6.9	6.6	6.7
7.50	6.9	7.0	7.2	7.0	6.4	6.9	6.4	6.6
8.00	6.8	7.0	7.2	7.0	6.7	7.0	6.6	6.8
9.00	7.3	7.2	7.3	7.3	6.2	6.1	6.0	6.1
10.00	7.6	7.5	7.5	7.5	6.5	6.8	6.5	6.6
11.00	6.4	6.5	6.6	6.5	6.8	7.0	6.4	6.7
12.00	6.4	6.4	6.8	6.6	6.5	6.8	6.5	6.6

FIGURE 1

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF SEPTEMBER 9 AND 10, 1974 FOR AVERAGE OF TUBES 1 AND 2

FIGURE 2

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF SEPTEMBER 10 AND 13, 1974 FOR AVERAGE OF TUBES 4 AND 6

FIGURE 3

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF OCTOBER 11 AND 18, 1974 FOR AVERAGE OF TUBES 1 AND 2

FIGURE 4

SEDIMENT MOISTURE PROFILE FOR THE CLOSED BOTTOM LYSIMETER
AS OF OCTOBER 11 AND 18, 1974 FOR AVERAGE OF TUBES 4 AND 6

FIGURE 5

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF OCTOBER 31, 1974 FOR AVERAGE OF TUBES 1 AND 2

FIGURE 6

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF NOVEMBER 1, 1974 FOR AVERAGE OF TUBES 4 AND 6

FIGURE 7

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF NOVEMBER 14, 1974 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 8

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF NOVEMBER 15 AND 18, 1974 FOR AVERAGE OF TUBES 4, 5, AND 6

FIGURE 9

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF DECEMBER 6, 1974 FOR AVERAGE OF TUBES 1 AND 2

FIGURE 10

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF DECEMBER 21, 1974 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 11

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF JANUARY 8, 1975 AND AVERAGE OF TUBES 1 AND 2

FIGURE 12

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF JANUARY 20, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 13

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF FEBRUARY 25, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6
(AVERAGE OF TUBES 4 AND 6 ONLY BELOW TEN METERS)

FIGURE 14

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF FEBRUARY 26, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 15

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF MARCH 12, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 16

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF MARCH 13, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 17

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF MARCH 26, 1975 FOR AVERAGE OF TUBES 4, 5, AND 6

FIGURE 18

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF MARCH 27, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE -19

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF APRIL 11, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 20

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF APRIL 12, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 21

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF APRIL 25, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 22

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF APRIL 26, 1975 FOR AVERAGE OF TUBES 1, 2 and 3

FIGURE 23

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF MAY 15, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 24

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF MAY 16, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 25

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF JUNE 11, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 26

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF JUNE 12, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 27

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF JULY 8, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 28

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF JULY 11, 1975 FOR AVERAGE OF TUBES 1 AND 2

FIGURE 29

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF JULY 23, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 30

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF JULY 24, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 31

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF AUGUST 12, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 32

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF AUGUST 13, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

APPENDIX C

TABLE 1

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR SEPTEMBER 1975

	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point 7. M Above Ground				Reference Point 6. M Above Ground			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	9/24/75				9/25/75			
<u>Depth</u> <u>Meters</u>								
0.75	3.8	4.2	4.1	4.1	4.8	5.0	4.9	4.9
1.00	4.7	5.1	5.0	4.9	5.8	5.7	5.6	5.7
1.25	4.9	5.3	5.0	5.1	5.7	5.6	5.4	5.6
1.50	5.4	5.5	5.3	5.4	5.9	5.7	5.8	5.8
2.00	4.9	4.7	5.0	4.9	5.7	5.4	5.6	5.6
3.00	5.8	5.3	5.4	5.5	5.8	5.8	6.0	5.9
4.00	6.4	6.3	6.4	6.4	6.5	7.3	6.7	6.9
4.50	8.0	8.0	8.3	8.1	6.5	7.0	7.0	6.8
5.00	8.2	9.3	9.3	8.9	6.8	7.0	6.9	6.9
5.25	9.4	9.2	10.4	9.7	---	---	---	---
5.50	9.9	9.5	10.4	9.9	---	---	---	---
5.75	10.0	9.5	10.3	9.9	---	---	---	---
6.00	9.6	9.8	10.0	9.9	6.4	6.4	6.3	6.4
6.25	10.3	10.7	10.2	10.4	---	---	---	---
6.50	8.6	9.5	8.3	8.8	---	---	---	---
6.75	8.0	8.4	7.9	8.1	---	---	---	---
7.00	7.4	7.8	7.4	7.5	6.9	6.7	6.4	6.6
7.50	7.2	7.1	7.2	7.2	---	---	---	---
8.00	6.8	7.3	7.2	7.1	6.7	7.0	6.6	6.8
9.00	7.1	7.1	7.4	7.2	6.1	6.1	6.0	6.1
10.00	7.6	7.4	7.4	7.5	6.8	6.6	6.5	6.6
11.00	6.8	6.8	6.5	6.7	6.5	6.7	6.6	6.6
12.00	6.7	6.6	6.6	6.6	6.4	6.6	6.2	6.4
13.00	7.0	7.0	7.1	7.0	6.5	6.7	6.6	6.6
14.00	6.6	7.2	6.9	6.9	6.8	6.7	6.4	6.6
15.00	6.8	6.6	7.1	6.9	6.2	6.4	6.2	6.3
16.00	6.8	7.0	6.7	6.8	6.8	6.8	6.4	6.7
17.00	6.8	6.5	6.7	6.7	6.6	6.7	6.6	6.6
18.00	6.6	6.8	7.0	6.8	6.2	6.6	6.1	6.3
19.00	6.1	6.4	6.3	6.3	5.8	5.6	5.7	5.7

TABLE 2

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR OCTOBER 1975

Depth Meters	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point Tube #1	.7 M Above Ground #2	10/22/75 #3	Average	Reference Point Tube #4	.6 M Above Ground #5	10/23/75 #6	Average
0.75	4.9	5.2	5.5	5.2	5.7	5.9	6.1	5.9
1.00	5.1	5.1	5.0	5.1	6.2	6.0	5.9	6.0
1.25	5.3	5.3	5.0	5.2	5.8	5.6	5.2	5.5
1.50	5.7	5.5	5.3	5.5	5.5	5.8	5.7	5.7
2.00	5.2	4.7	5.0	4.9	5.9	5.6	5.8	5.8
3.00	5.4	5.2	5.4	5.3	5.9	5.9	6.0	5.9
4.00	6.5	6.3	6.3	6.4	6.3	7.4	7.0	6.9
4.50	8.0	7.9	8.0	8.0	6.3	7.0	6.9	6.7
5.00	8.6	9.2	9.3	9.1	6.8	7.1	6.7	6.9
5.25	9.5	9.0	10.0	9.5	---	---	---	---
5.50	10.0	9.4	9.5	9.7	---	---	---	---
5.75	10.2	9.5	10.5	10.1	---	---	---	---
6.00	9.4	9.5	9.8	9.6	6.5	6.8	6.5	6.6
6.25	10.5	10.5	10.3	10.4	---	---	---	---
6.50	8.7	9.4	8.7	8.9	---	---	---	---
6.75	8.2	8.5	7.8	8.1	---	---	---	---
7.00	7.4	8.0	7.6	7.7	6.8	6.9	6.7	6.8
7.50	7.1	6.8	7.0	6.9	---	---	---	---
8.00	6.9	6.9	7.1	7.0	6.6	6.8	6.8	6.7
9.00	7.4	7.3	7.6	7.4	6.3	6.3	6.3	6.3
10.00	7.4	7.1	7.2	7.2	6.5	6.8	6.7	6.7
11.00	6.4	6.6	6.4	6.5	6.8	6.8	6.4	6.7
12.00	6.5	6.7	6.5	6.6	6.6	6.8	6.3	6.6
13.00	7.1	6.8	7.0	7.0	6.3	6.7	7.0	6.7
14.00	6.7	7.0	7.1	6.9	6.7	7.0	6.6	6.8
15.00	6.7	6.7	6.9	6.9	6.4	6.4	6.1	6.3
16.00	6.5	6.8	6.8	6.7	6.6	6.9	6.5	6.7
17.00	6.8	6.5	6.7	6.6	6.7	6.9	6.8	6.8
18.00	6.9	6.8	6.7	6.9	6.5	6.8	6.4	6.6
19.00	5.9	6.0	6.4	6.1	6.2	5.9	5.8	6.0

TABLE 3

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR NOVEMBER 1975

Depth Meters	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Reference Point Tube #1	Point #2 11/6/75	.7 M Above Ground #3	Average	Reference Point Tube #4	Point #5 11/5/75	.6 M Above Ground #6	Average
0.75	6.2	6.4	6.6	6.4	6.9	7.3	7.0	7.1
1.00	5.3	5.6	5.8	5.6	6.2	6.1	6.0	6.1
1.25	5.1	5.2	5.4	5.2	5.8	5.7	5.5	5.7
1.50	5.4	5.5	5.4	5.4	5.7	6.2	5.8	5.9
2.00	4.9	4.9	5.3	5.0	5.7	5.7	5.8	5.7
2.50	5.2	5.2	5.5	5.3	5.9	6.0	6.0	6.0
3.00	5.9	5.4	6.0	5.8	5.9	6.0	5.9	5.9
4.00	6.6	6.5	6.8	6.6	6.3	7.6	6.9	6.9
4.50	7.7	8.2	8.5	8.1	6.6	7.1	7.1	6.9
5.00	8.8	9.5	9.5	9.3	7.0	7.2	6.5	6.9
5.25	9.2	9.2	10.5	9.6	---	---	---	---
5.50	9.5	9.4	10.8	9.9	---	---	---	---
5.75	10.1	9.9	10.5	10.2	---	---	---	---
6.00	9.2	9.8	10.2	9.7	6.7	6.7	6.7	6.7
6.25	10.2	10.5	10.3	10.3	---	---	---	---
6.50	8.5	9.5	8.9	9.0	---	---	---	---
6.75	8.3	8.7	8.2	8.4	---	---	---	---
7.00	7.4	8.1	7.7	7.7	6.9	6.9	6.7	6.8
7.50	6.9	7.1	7.4	7.1	---	---	---	---
8.00	6.9	7.3	7.3	7.1	6.6	7.3	6.5	6.8
9.00	7.2	7.4	7.6	7.4	6.3	6.1	6.5	6.3
10.00	7.7	7.4	7.5	7.5	6.7	6.6	6.6	6.6
11.00	6.5	6.8	6.6	6.6	7.1	7.1	6.6	6.9
12.00	6.4	6.6	6.8	6.6	6.7	6.8	6.8	6.8
13.00	7.1	7.3	7.4	7.3	6.6	6.6	6.4	6.5
14.00	6.6	7.2	7.1	7.0	6.9	7.1	6.6	6.9
15.00	6.9	6.6	7.2	6.9	6.2	6.7	6.4	6.4
16.00	6.8	7.2	7.1	7.0	6.6	7.0	6.8	6.8
17.00	6.8	6.7	6.7	6.7	7.0	7.1	6.9	7.0
18.00	6.8	6.9	7.3	7.0	6.8	7.0	6.7	6.8
19.00	6.1	6.6	6.4	6.4	6.1	6.0	5.8	5.9

TABLE 4

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR NOVEMBER 1975

Depth Meters	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point Tube #1	.7 M Above Ground #2 11/19/75	.7 M Above Ground #3 11/19/75	Average	Reference Point Tube #4	.6 M Above Ground #5 11/18/75	.6 M Above Ground #6 11/18/75	Average
0.75	7.6	8.8	8.9	8.2	9.0	9.2	9.1	9.1
1.00	6.6	5.8	6.3	6.2	7.5	6.3	6.3	6.9
1.25	5.2	5.1	5.2	5.2	5.9	5.6	5.5	5.7
1.50	5.6	5.6	5.6	5.6	5.8	6.0	5.7	5.8
2.00	5.0	5.2	5.2	5.1	5.8	5.5	5.8	5.7
2.50	5.2	5.4	5.6	5.4	5.7	5.7	6.0	5.8
3.00	5.3	6.0	5.8	5.7	6.1	6.1	5.9	6.0
4.00	6.6	6.5	6.8	6.6	6.3	7.4	7.1	6.9
4.25	8.0	7.6	8.2	7.9	---	---	---	---
4.50	8.0	7.9	8.6	8.2	6.5	7.1	7.3	6.9
5.00	9.3	8.7	9.4	9.1	6.9	7.0	6.9	6.9
5.25	9.2	9.3	10.3	9.6	---	---	---	---
5.50	9.3	10.1	10.4	9.9	---	---	---	---
5.75	9.6	9.9	10.2	9.9	---	---	---	---
6.00	10.0	9.6	10.3	10.0	6.6	6.5	6.6	6.6
6.25	10.9	10.6	10.0	10.5	---	---	---	---
6.50	9.5	8.8	8.9	9.1	---	---	---	---
6.75	8.6	8.5	8.0	8.4	---	---	---	---
7.00	8.1	7.6	7.7	7.8	6.6	6.9	6.7	6.7
7.50	7.1	7.3	7.4	7.3	---	---	---	---
8.00	7.1	6.9	7.5	7.2	6.6	7.1	6.7	6.8
9.00	7.4	7.5	7.5	7.4	6.1	6.1	6.4	6.2
10.00	7.6	7.8	7.6	7.7	6.6	6.7	6.8	6.7
11.00	6.8	6.7	6.8	6.8	6.7	6.8	6.7	6.6
12.00	6.6	6.5	6.7	6.6	6.5	6.8	6.5	6.6
13.00	7.0	7.0	7.3	7.1	6.3	6.7	6.8	6.6
14.00	7.6	6.9	7.3	7.3	6.9	6.8	6.5	6.7
15.00	6.8	6.8	7.4	7.0	6.1	6.3	6.3	6.2
16.00	7.0	6.9	7.1	7.0	6.6	7.0	6.8	6.8
17.00	6.4	6.9	6.8	6.7	6.7	7.1	7.0	6.9
18.00	7.1	7.2	7.4	7.2	6.5	6.9	6.6	6.7
19.00	6.4	6.3	6.4	6.4	5.9	5.8	5.9	5.9

TABLE 5

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR DECEMBER 1975

	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point 0.7 M Above Ground				Reference Point 0.6 M Above Ground			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	12/9/75				12/8/75			
<u>Depth</u> <u>Meters</u>								
0.75	10.4	9.9	9.8	10.0	11.3	11.8	11.4	11.5
1.00	8.0	9.1	9.0	8.7	7.2	7.2	7.1	7.2
1.25	5.2	5.5	5.5	5.4	6.1	5.7	5.6	5.8
1.50	5.2	5.6	5.6	5.5	5.9	6.3	5.9	6.0
2.00	5.0	5.0	5.2	5.1	6.1	5.9	6.0	6.0
2.50	5.6	5.3	5.3	5.4	6.0	6.0	6.0	6.0
3.00	5.6	5.4	5.8	5.6	6.3	6.1	6.2	6.2
3.50	5.9	6.0	5.8	5.9	6.1	6.2	6.2	6.2
3.75	6.5	6.8	6.8	6.8	6.4	7.1	6.7	6.7
4.00	6.4	6.5	7.0	6.6	6.4	7.9	7.1	7.2
4.25	7.4	8.1	7.8	7.8	---	---	---	---
4.50	8.1	8.0	8.3	8.1	6.6	7.3	7.3	7.0
4.75	8.9	9.2	10.0	9.4	---	---	---	---
5.00	8.5	9.5	9.3	9.1	7.3	7.5	7.1	7.3
5.25	9.4	9.2	10.1	9.6	---	---	---	---
5.50	9.7	9.4	10.1	9.7	7.0	7.1	7.0	7.0
5.75	9.9	9.7	10.4	10.0	---	---	---	---
6.00	9.1	9.8	10.2	9.7	6.5	6.8	6.8	6.7
6.25	10.6	10.6	10.4	10.5	---	---	---	---
6.50	8.6	9.7	8.8	9.0	---	---	---	---
6.75	8.4	9.1	8.1	8.5	---	---	---	---
7.00	7.8	8.4	7.7	7.9	6.9	7.2	6.7	6.9
7.50	7.3	7.3	7.3	7.3	6.6	7.0	6.6	7.7
8.00	7.0	7.4	7.6	7.3	6.7	7.3	7.1	7.0
9.00	7.0	7.4	7.5	7.3	6.4	6.4	6.5	6.4
10.00	7.3	7.4	7.5	7.4	6.9	6.8	6.9	6.9
11.00	6.6	7.0	6.8	6.8	7.3	7.1	6.8	7.1
12.00	6.7	6.6	6.7	6.7	6.6	6.9	6.6	6.7
13.00	7.1	7.3	7.3	7.2	6.5	6.9	7.1	6.8
14.00	6.7	7.2	7.2	7.0	7.0	7.1	6.8	7.0
15.00	6.9	6.9	7.2	7.0	6.2	6.6	6.4	6.4
16.00	6.6	7.0	7.0	6.9	6.9	7.1	6.9	7.0
17.00	6.7	6.6	6.8	6.7	7.0	7.0	7.1	7.0
18.00	6.8	6.9	7.3	7.0	6.7	7.0	6.7	6.8
19.00	6.2	6.3	6.3	6.3	6.2	6.0	5.9	6.0

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR DECEMBER 1975

	<u>Open-Bottom Lysimeter</u>					<u>Closed-Bottom Lysimeter</u>			
	Reference Point	.7 M Above Ground				Reference Point	.6 M Above Ground		
Depth Meters	Tube #1	#2	#3	Average		Tube #4	#5	#6	Average
		12/17/75					12/18/75		
0.75	11.0	8.9	10.0	10.0		10.1	11.0	10.2	10.4
0.85	10.8	11.2	11.3	11.1		10.9	12.1	11.4	11.5
0.95	10.4	11.0	11.0	10.8		10.6	10.8	9.8	10.4
1.00	9.0	9.6	9.9	9.5		8.6	9.2	8.2	8.7
1.10	7.1	7.4	7.4	7.3		6.9	6.7	6.5	6.7
1.25	---	---	---	---		---	---	---	---
1.50	---	---	---	---		---	---	---	---
2.00	---	---	---	---		---	---	---	---
2.50	---	---	---	---		---	---	---	---
3.00	---	---	---	---		---	---	---	---
3.50	---	---	---	---		---	---	---	---
3.75	---	---	---	---		---	---	---	---
4.00	---	---	---	---		---	---	---	7.2
4.25	---	---	---	---		---	---	---	---
4.50	---	---	---	---		---	---	---	---
4.75	---	---	---	---		---	---	---	---
5.00	---	9.5	---	---		---	---	---	7.0
5.25	---	9.4	---	---		---	---	---	---
5.50	10.0	9.7	10.5	10.1		---	---	---	---
5.75	10.3	9.8	10.3	10.1		---	---	---	---
6.00	9.7	9.9	10.0	9.9		---	---	---	---
6.10	10.6	10.9	10.9	10.8		---	---	---	---
6.15	10.7	10.9	10.8	10.8		---	---	---	---
6.20	11.0	11.2	10.8	11.0		---	---	---	---
6.25	10.5	11.0	10.1	10.5		---	---	---	---
6.50	9.2	9.6	9.1	9.3		---	---	---	---
6.75	---	9.0	---	---		---	---	---	---
7.00	---	---	---	---		---	---	---	---
7.50	---	---	---	---		---	---	---	---
8.00	---	---	---	---		---	---	---	---

TABLE 7

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR DECEMBER 1975

Depth Meters	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Reference Point Tube #1	Point #2 12/30/75	.7 M Above Ground #3	Average	Reference Point Tube #4	Point #5 12/31/75	.6 M Above Ground #6	Average
0.75	13.4	13.4	14.2	13.7	11.3			
1.00	10.8	12.2	11.2	11.4				
1.25	5.8	6.1	6.0	6.0	6.1	5.9	5.8	5.9
1.50	5.9	5.7	5.8	5.8	5.9	6.1	5.9	6.0
2.00	5.4	5.1	5.3	5.3	5.7	5.9	5.7	5.8
2.50	5.7	5.4	5.7	5.6	5.9	5.9	5.9	5.9
3.00	6.2	5.6	6.1	6.0	6.1	6.0	6.2	6.1
3.50	6.0	6.2	6.1	6.1	5.9	6.3	6.1	6.1
3.75	6.9	6.7	7.1	6.9	6.3	7.0	6.6	6.6
4.00	6.8	7.0	7.0	6.9	6.4	7.5	7.1	6.9
4.25	7.9	8.3	9.2	8.1	---	---	---	---
4.50	8.1	9.0	8.9	8.6	6.5	7.2	7.1	6.9
4.75	8.9	9.6	9.9	9.5	---	---	---	---
5.00	8.8	9.3	9.6	9.2	7.0	7.5	7.1	7.2
5.25	9.5	9.5	10.3	9.8	---	---	---	---
5.50	8.7	9.7	10.6	9.7	6.9	7.0	7.1	7.0
5.75	10.2	9.7	10.4	10.1	---	---	---	---
6.00	9.7	10.0	10.4	10.0	6.5	7.0	6.8	6.8
6.25	10.4	10.7	10.4	10.5	---	---	---	---
6.50	8.9	9.9	9.2	9.3	---	---	---	---
6.75	8.5	8.9	8.3	8.6	---	---	---	---
7.00	7.8	8.2	8.1	8.0	7.0	6.9	6.7	6.9
7.50	7.3	7.4	7.6	7.4	6.7	7.0	6.4	6.7
8.00	7.1	7.5	7.5	7.4	6.6	7.0	6.8	6.8
9.00	7.4	7.5	7.6	7.5	6.2	6.8	6.2	6.4
10.00	7.1	7.6	7.5	7.4	6.7	6.7	6.8	6.7
11.00	6.8	7.0	6.7	6.8	6.8	6.9	6.8	6.8
12.00	6.9	7.0	6.8	6.9	6.8	6.7	7.0	6.8
13.00	7.1	7.2	7.4	7.2	6.8	6.8	7.0	6.9
14.00	7.1	7.5	7.3	7.3	6.8	7.0	6.6	6.8
15.00	7.0	7.0	7.2	7.1	6.2	6.6	6.3	6.4
16.00	7.0	7.1	7.2	7.1	6.7	6.9	7.0	6.9
17.00	7.0	6.7	7.0	6.9	7.0	6.9	7.0	7.0
18.00	7.2	7.3	7.6	7.3	6.5	6.7	6.5	6.6
19.0	6.3	6.7	6.7	6.5	6.2	5.8	5.9	6.0
0.85	13.4	---	---	---	---	---	---	---
0.9	12.9	13.5	13.6	13.3	---	---	---	---
0.15	12.3	---	---	---	---	---	---	---
6.05	9.9	---	---	---	---	---	---	---
6.1	10.6	10.8	10.7	10.7	---	---	---	---
6.2	10.7	10.8	10.3	10.6	---	---	---	---

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR JANUARY 1976

[illegible]

TABLE 9

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR JANUARY 1976

Depth Meters	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point .7 M Above Ground				Reference Point .6 M Above Ground			
	Tube #1	#2	#3	Avg	#4	#5	#6	Avg
	1/14/76				1/15/76			
0.75	---	11.1	---	11.2	---	---	---	12.3
0.90	---	---	---	12.9	---	---	---	13.4
1.00	---	---	---	12.4	---	---	---	12.95
1.10	11.1	---	---	11.4	---	---	---	11.4
1.20	8.7	10.2	9.0	9.3	8.2	9.0	8.5	8.6
1.30	5.9	7.3	6.2	6.5	6.0	6.4	5.7	6.0
1.40	5.4	5.7	5.4	5.5	5.6	5.6	5.4	5.5
1.50	5.3	5.5	5.3	5.5	5.5	5.7	5.5	5.6
1.75	5.4	5.1	5.1	5.2	5.9	5.6	5.5	5.7
2.00	5.0	4.8	4.9	4.9	5.4	5.4	5.6	5.5
2.50	5.2	5.0	5.1	5.1	5.3	5.7	5.7	5.6
3.00	5.7	5.3	5.3	5.4	5.9	5.7	5.7	5.8
3.50	5.6	5.7	5.4	5.6	5.7	6.2	6.1	6.0
4.00	6.3	6.4	6.2	6.3	6.1	7.4	6.8	6.8
4.25	7.3	7.8	7.4	6.5	6.0	6.8	6.8	6.5
4.50	7.7	7.7	7.7	7.7	6.5	7.0	6.9	6.8
4.75	8.6	8.7	9.1	8.8	---	---	---	---
5.00	8.1	8.8	8.7	8.5	6.5	6.9	6.9	6.8
5.25	9.0	8.9	9.1	9.0	---	---	---	---
5.50	9.3	9.0	9.7	9.3	6.5	6.5	6.8	6.6
5.75	9.8	9.1	9.6	9.5	---	---	---	---
6.00	9.2	9.3	9.4	9.3	6.4	6.6	6.4	6.5
6.25	10.2	10.1	9.7	10.0	---	---	---	---
6.50	8.6	9.3	8.6	8.8	6.9	6.6	6.3	6.6
6.75	8.2	8.5	8.3	8.3	---	---	---	---
7.00	7.4	7.8	7.3	7.5	6.7	6.5	6.4	6.5
8.00	6.6	6.8	6.9	6.8	6.6	6.7	6.6	6.6
9.00	7.1	7.1	7.1	7.1	5.9	5.9	6.0	5.9
10.00	7.1	7.2	7.1	7.1	6.5	6.4	6.4	6.4
11.00	6.6	6.5	6.3	6.5	6.7	6.7	6.4	6.6
12.00	6.4	6.3	6.3	6.3	6.4	6.5	6.3	6.4
13.00	6.8	6.8	6.7	6.8	6.4	6.7	6.7	6.6
14.00	6.4	7.0	6.7	6.7	6.5	6.6	6.4	6.5
15.00	6.7	6.4	6.8	6.6	5.8	6.4	5.9	6.0
16.00	6.5	6.5	6.5	6.5	6.4	6.8	6.5	6.6
17.00	6.4	6.1	6.3	6.3	6.5	6.5	6.5	6.5
18.00	6.5	6.8	6.7	6.7	6.2	6.6	6.1	6.3
19.00	5.8	6.0	5.9	5.9	5.8	5.7	5.6	5.7

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR JANUARY 1976

	<u>Open-Bottom Lysimeter</u>					<u>Closed-Bottom Lysimeter</u>			
	Reference Point 7. M Above Ground.					Reference Point 6. M Above Ground			
	Tube #1	#2	#3	Average		Tube #4	#5	#6	Average
	1/22/76					1/21/76			
<u>Depth Meters</u>									
0.75	10.4	9.7	10.6	10.2		10.4	11.4	10.9	10.9
0.90	1.3	12.6	13.1	12.7		12.6	13.3	13.4	13.1
1.00	12.1	12.7	12.5	12.4		13.3	13.6	13.9	13.6
1.10	12.0	12.8	12.1	12.3		13.1	13.1	13.0	13.1
1.20	10.4	12.7	12.0	11.7		12.0	12.3	11.5	12.3
1.30	10.7	11.2	10.2	10.7		8.9	9.9	8.5	8.8
1.40	7.1	8.7	7.2	7.7		6.7	7.1	6.0	6.6
1.50	5.3	6.4	5.7	5.8		5.4	6.1	5.7	5.7
1.75	5.4	5.1	5.3	5.3		5.7	5.8	5.8	5.8
2.00	5.0	4.5	4.9	4.8		5.4	5.5	5.5	5.5
2.50	5.2	4.9	5.0	5.0		5.5	5.6	5.8	5.8
3.00	5.5	5.0	5.4	5.3		6.1	6.0	6.2	6.1
3.50	5.6	5.7	5.6	5.6		5.9	5.8	6.0	5.9
4.00	6.2	6.3	6.3	6.3		6.2	6.0	6.3	6.2
4.25	7.1	7.7	7.3	7.4		6.6	6.2	6.7	6.5
4.50	7.8	7.6	8.0	7.8		6.8	6.9	7.1	6.9
4.75	8.6	8.6	9.4	8.9		---	---	---	---
5.00	8.2	8.8	8.9	8.6		6.8	6.6	6.8	6.7
5.25	9.0	8.7	9.7	9.1		---	---	---	---
5.50	9.3	8.8	9.7	8.9		6.7	6.9	6.8	6.8
5.75	9.3	9.0	9.8	9.4		---	---	---	---
6.00	8.8	9.2	9.4	9.1		6.3	6.5	6.6	6.5
6.25	10.0	10.3	9.7	10.0		---	---	---	---
6.50	8.5	9.2	8.4	8.7		6.3	6.5	6.4	6.4
6.75	8.1	8.5	7.8	8.1		---	---	---	---
7.00	7.1	7.6	7.5	7.4		6.3	6.3	6.3	6.3
8.00	---	6.9	---	---		---	---	---	---
9.00	---	---	---	---		---	---	---	---

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR JANUARY 1976

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NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR FEBRUARY 1976

[illegible]

NEUTRON LCG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR FEBRUARY 1976

[illegible]

TABLE 14

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR FEBRUARY 1976

	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point 7. M Above Ground				Reference Point 6. M Above Ground			
	Tube #1	#2	#3	Average	Tube #4	#5	#6	Average
	2/18/76				2/19/76			
<u>Depth</u>								
<u>Meters</u>								
0.75	7.5	6.9	7.8	7.4	8.1	9.8	8.5	8.8
1.00	10.5	10.7	10.8	10.7	12.0	12.1	11.8	12.0
1.25	10.6	11.5	11.1	11.1	11.6	11.9	11.1	11.5
1.40	9.0	11.2	10.3	10.2	9.9	10.9	8.5	9.8
1.50	7.1	10.2	8.3	8.5	7.8	8.4	6.4	7.5
1.60	6.3	7.4	6.5	6.7	6.8	5.9	5.8	6.2
1.75	5.5	5.7	5.5	5.6	6.2	5.6	5.7	5.8
2.00	4.9	4.6	4.9	4.8	5.6	5.7	5.6	5.6
2.25	5.2	5.0	5.0	5.1	5.4	5.8	5.6	5.6
2.50	5.5	5.0	5.0	5.2	5.6	5.8	5.6	5.7
2.75	5.3	5.1	5.2	5.2	5.5	6.0	5.7	5.7
3.00	5.9	5.0	5.2	5.4	5.9	6.0	5.8	5.9
3.50	5.7	5.7	5.5	5.6	6.0	6.4	6.0	6.1
4.00	6.4	6.3	6.3	6.3	6.3	7.4	6.8	6.8
4.25	7.5	7.9	7.5	7.6	6.2	6.9	7.1	6.7
4.50	7.7	7.6	7.9	7.7	6.8	6.9	7.0	6.9
4.75	8.5	8.7	9.0	8.7	---	---	---	---
5.00	8.3	9.0	8.8	8.7	6.7	7.1	6.7	6.8
5.25	8.1	8.9	9.6	8.9	---	---	---	---
5.50	9.3	8.8	9.8	9.3	6.8	6.7	6.9	6.8
5.75	9.8	9.1	9.8	9.6	---	---	---	---
6.00	9.0	9.1	9.6	9.2	6.7	6.5	6.7	6.6
6.25	10.0	10.3	4.8	10.0	---	---	---	---
6.50	8.3	9.0	8.6	8.6	7.0	6.9	6.5	6.8
6.75	8.3	8.5	8.3	8.4	---	---	---	---
7.00	7.6	7.7	7.4	7.6	6.8	6.9	6.5	6.7
8.00	6.8	6.9	7.0	6.9	6.7	6.8	6.6	6.7
9.00	7.0	7.1	7.3	7.1	6.6	6.1	6.1	6.3
10.00	7.2	7.3	7.4	7.3	6.7	6.6	6.6	6.6
11.00	6.5	6.5	6.6	6.5	6.8	6.7	6.5	6.7
12.00	6.3	6.4	6.6	6.4	6.6	6.6	6.5	6.6
13.00	6.9	6.7	7.0	6.9	6.6	6.8	6.9	6.8
14.00	6.3	7.0	7.0	6.8	6.9	6.9	6.8	6.9
15.00	6.6	6.3	6.8	6.6	6.5	6.3	6.2	6.3
16.00	6.5	6.3	6.6	6.5	6.7	6.7	6.6	6.7
17.00	6.4	6.2	6.4	6.3	6.7	6.7	6.8	6.7
18.00	6.7	6.6	6.6	6.6	6.7	6.5	6.6	6.6
19.00	5.7	6.1	5.8	5.9	6.0	5.7	5.8	5.8

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR FEBRUARY 1976

[illegible]

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR MARCH 1976

[illegible]

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR MARCH 1976

	<u>Open-Bottom Lysimeter</u>					<u>Closed-Bottom Lysimeter</u>			
	Reference Point 7. M Above Ground					Reference Point 6. M Above Ground			
	Tube #1	#2	#3	Average		Tube #4	#5	#6	Average
	3/10/76					3/11/76			
<u>Depth Meters</u>									
0.75	7.7	5.6	6.9	6.7		9.0	9.7	8.7	9.1
1.00	10.1	10.6	10.3	10.3		11.4	11.2	11.4	11.3
1.10	9.9	10.9	10.3	10.4		11.6	11.6	11.0	11.4
1.25	9.9	11.0	10.7	10.5		11.2	11.4	10.5	11.0
1.40	9.1	10.8	10.3	10.1		10.3	11.0	9.3	10.2
1.50	7.6	10.3	9.2	9.0		8.7	9.8	7.4	8.6
1.60	6.5	8.5	7.6	7.5		7.5	7.5	6.1	7.0
1.75	5.7	7.3	6.1	6.4		6.4	6.4	5.6	6.1
2.00	4.7	4.5	4.7	4.6		5.1	5.3	5.2	5.2
2.25	5.0	4.8	4.0	4.9		5.3	5.4	5.5	5.4
2.50	4.9	4.8	5.0	4.9		5.2	5.6	5.6	5.5
2.75	5.3	5.2	4.9	5.1		5.1	5.5	5.6	5.4
3.00	5.8	5.1	5.2	5.4		5.7	5.4	5.8	5.6
3.50	6.0	5.8	5.4	5.8		5.7	6.0	5.9	5.9
4.00	6.2	6.4	6.2	6.3		6.1	7.1	6.8	6.7
4.25	7.2	7.8	7.4	7.5		6.0	6.6	7.0	6.5
4.50	7.7	7.7	8.0	7.8		6.3	6.8	7.0	6.7
4.75	8.4	8.7	8.9	8.7		---	---	---	---
5.00	8.1	8.9	9.0	8.7		6.5	6.8	6.9	6.7
5.25	8.7	8.5	9.6	8.9		---	---	---	---
5.50	9.1	9.0	9.4	9.2		6.5	6.5	6.7	6.6
5.75	9.4	9.0	9.7	9.4		---	---	---	---
6.00	8.8	9.2	9.4	9.1		6.3	6.3	6.3	6.3
6.25	10.1	10.4	9.6	10.0		---	---	---	---
6.50	8.4	9.0	8.5	8.6		6.6	6.4	6.4	6.5
6.75	8.3	8.5	8.0	8.3		---	---	---	---
7.00	7.5	7.9	7.1	7.5		6.5	6.5	6.5	6.5
8.00	---	---	---	---		---	---	---	---
9.00	---	---	---	---		---	---	---	---
10.00	---	---	---	---		---	---	---	---
11.00	---	---	---	---		---	---	---	---
12.00	---	---	---	---		---	---	---	---
13.00	---	---	---	---		---	---	---	---
14.00	---	---	---	---		---	---	---	---
15.00	---	---	---	---		---	---	---	---
16.00	---	---	---	---		---	---	---	---
17.00	---	---	---	---		---	---	---	---
18.00	---	---	---	---		---	---	---	---
19.00	---	---	---	---		---	---	---	---

TABLE 18

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR MARCH 1976

Depth Meters	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point 7. M Above Ground				Reference Point 6. M Above Ground			
	Tube #1	#2	#3	Average	Tube #4	#5	#6	Average
	3/24/76				3/25/76			
0.75	8.0	5.8	11701	6.9	8.3	8.8	14946	8.55
1.00	10.0	10.2	14950	10.1	11.2	11.1	16335	11.15
1.10	9.9	10.6	15661	10.25	11.3	11.2	16493	11.25
1.25	9.8	11.1	16254	10.45	10.9	10.8	16804	10.85
1.40	9.3	11.1	15922	10.2	10.6	11.3	16015	10.95
1.50	8.1	10.7	19846	9.4	9.8	10.5	13663	10.15
1.60	6.8	9.4	12980	8.1	7.9	8.7	10645	8.3
1.75	5.7	7.9	8063	6.8	6.9	7.2	8584	7.05
2.00	4.6	4.6	6809	4.6	5.3	5.2	8177	5.25
2.25	4.9	4.9	7656	4.9	5.1	5.3	8421	5.2
2.50	4.9	4.9	7538	4.9	5.6	5.5	8423	5.55
2.75	5.3	---	---	---	5.3	5.6	8712	5.45
3.00	5.6	5.1	8001	5.35	5.5	5.5	8305	5.5
3.50	5.5	5.6	8786	5.55	5.7	5.9	9672	5.8
4.00	6.1	6.3	10405	6.2	6.2	6.9	10728	6.55
4.25	7.1	7.9	11932	7.5	6.0	6.4	10080	6.2
4.50	7.5	7.8	12176	7.65	6.2	6.8	10218	6.5
4.75	8.4	8.7	13133	8.55	---	---	---	---
5.00	8.0	8.8	12782	8.4	6.4	7.0	9749	6.7
5.25	8.7	8.5	12617	8.6	---	---	---	---
5.50	9.3	8.9	13478	9.1	6.6	6.6	9701	6.6
5.75	9.6	9.1	12763	9.35	---	---	---	---
6.00	9.0	9.2	15025	9.1	6.2	6.3	10106	6.25
6.25	10.0	10.2	14019	10.1	---	---	---	---
6.50	8.7	9.2	12749	8.95	6.5	6.6	9992	6.55
6.75	8.1	8.9	12335	8.5	---	---	---	---
7.00	7.5	8.0	11763	7.75	6.5	6.6	9445	6.55
8.00	6.7	6.9	10310	6.8	6.4	6.8	9175	6.6
9.00	6.9	7.1	---	7.0	5.7	5.8	9896	5.75
10.00	7.2	7.3	10393	7.25	6.5	6.6	10144	6.55
11.00	6.4	6.7	---	6.55	6.4	6.6	9970	6.5
12.00	6.3	6.3	9330	6.3	6.4	6.6	9977	6.5
13.00	6.9	6.9	---	6.9	6.4	6.5	10124	6.45
14.00	6.4	6.9	9874	6.6	6.4	6.6	9831	6.5
15.00	6.5	6.6	---	6.6	5.9	6.1	9786	6.0
16.00	6.4	6.4	9768	6.4	6.4	6.7	10055	6.55
17.00	6.5	6.4	---	6.45	6.5	6.5	9686	6.5
18.00	6.6	6.6	10459	6.6	5.9	6.4	9653	6.15
19.00	5.8	5.9	8825	5.85	5.9	5.7	8975	5.8

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR APRIL 1976

[illegible]

TABLE 20

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR APRIL 1976

Depth Meters	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point Tube #1	7. M Above Ground #2	Average #3		Reference Point Tube #4	6. M Above Ground #5	Average #6	
	4/28/76				4/29/76			
0.75	---	---	---	6.0	---	---	---	9.3
1.00	---	---	---	8.7	---	---	---	10.2
1.10	---	---	---	9.4	---	---	---	10.2
1.25	---	---	---	9.5	---	---	---	10.2
1.40	---	---	---	9.3	---	---	---	9.8
1.50	---	---	---	8.8	---	---	---	8.9
1.60	---	---	---	7.5	---	---	---	7.3
1.75	---	---	---	5.1	---	---	---	5.5
2.00	---	---	---	4.1	---	---	---	4.8
2.25	---	---	---	4.5	---	---	---	5.2
2.50	---	---	---	4.4	---	---	---	4.9
2.75	---	---	---	4.6	---	---	---	5.1
3.00	---	---	---	5.0	---	---	---	5.1
3.50	---	---	---	5.3	---	---	---	5.8
4.00	---	---	---	6.2	---	---	---	6.4
4.25	---	---	---	7.3	---	---	---	6.1
4.50	---	---	---	7.8	---	---	---	6.1
4.75	---	---	---	8.0	---	---	---	---
5.00	---	---	---	8.4	---	---	---	5.9
5.25	---	---	---	8.2	---	---	---	---
5.50	---	---	---	9.1	---	---	---	6.0
5.75	---	---	---	8.4	---	---	---	---
6.00	---	---	---	9.7	---	---	---	6.3
6.25	---	---	---	8.6	---	---	---	---
6.50	---	---	---	7.8	---	---	---	5.9
6.75	---	---	---	7.5	---	---	---	---
7.00	---	---	---	7.0	---	---	---	5.7
8.00	---	---	---	6.3	---	---	---	5.7
9.00	---	---	---	6.4	---	---	---	6.0
10.00	---	---	---	6.5	---	---	---	6.1
11.00	---	---	---	6.0	---	---	---	6.1
12.00	---	---	---	5.8	---	---	---	6.2
13.00	---	---	---	6.1	---	---	---	6.2
14.00	---	---	---	6.0	---	---	---	5.8
15.00	---	---	---	6.1	---	---	---	6.0
16.00	---	---	---	6.0	---	---	---	6.1
17.00	---	---	---	5.8	---	---	---	6.0
18.00	---	---	---	6.4	---	---	---	5.8
19.00	---	---	---	5.3	---	---	---	5.5

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR MAY 1976

[illegible]

TABLE 22

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR JUNE 1976

Depth Meters	<u>Open-Bottom Lysimeter</u>				<u>Closed-Bottom Lysimeter</u>			
	Reference Point 7. M Above Ground				Reference Point 6. M Above Ground			
	Tube #1	#2	#3	Average	Tube #4	#5	#6	Average
	6/29/76				6/30/76			
0.75	---	---	---	3.86	---	---	---	7.60
1.00	---	---	---	7.7	---	---	---	9.30
1.10	---	---	---	8.3	---	---	---	9.30
1.25	---	---	---	9.0	---	---	---	9.65
1.40	---	---	---	9.1	---	---	---	10.03
1.50	---	---	---	8.5	---	---	---	8.97
1.60	---	---	---	7.1	---	---	---	7.79
1.75	---	---	---	5.4	---	---	---	6.13
2.00	---	---	---	4.5	---	---	---	4.98
2.25	---	---	---	4.7	---	---	---	5.09
2.50	---	---	---	4.6	---	---	---	5.06
2.75	---	---	---	4.8	---	---	---	5.17
3.00	---	---	---	5.2	---	---	---	5.17
3.50	---	---	---	5.5	---	---	---	6.07
4.00	---	---	---	6.4	---	---	---	6.26
4.25	---	---	---	7.25	---	---	---	6.05
4.50	---	---	---	8.01	---	---	---	6.26
4.75	---	---	---	8.18	---	---	---	---
5.00	---	---	---	8.39	---	---	---	6.07
5.25	---	---	---	8.23	---	---	---	---
5.50	---	---	---	9.13	---	---	---	5.96
5.75	---	---	---	8.34	---	---	---	---
6.00	---	---	---	9.68	---	---	---	6.35
6.25	---	---	---	8.48	---	---	---	---
6.50	---	---	---	7.98	---	---	---	6.02
6.75	---	---	---	7.71	---	---	---	---
7.00	---	---	---	7.22	---	---	---	5.77
8.00	---	---	---	6.46	---	---	---	5.88
9.00	---	---	---	6.51	---	---	---	6.21
10.00	---	---	---	6.62	---	---	---	6.29
11.00	---	---	---	5.96	---	---	---	6.18
12.00	---	---	---	5.88	---	---	---	6.26
13.00	---	---	---	6.29	---	---	---	6.29
14.00	---	---	---	6.13	---	---	---	6.02
15.00	---	---	---	6.13	---	---	---	6.02
16.00	---	---	---	6.10	---	---	---	6.40
17.00	---	---	---	6.02	---	---	---	5.99
18.00	---	---	---	6.59	---	---	---	5.83
19.00	---	---	---	5.39	---	---	---	5.80

TABLE 23

NEUTRON LOG OF WATER IN PERCENT BY VOLUME
IN LYSIMETER SOIL FOR AUGUST 1976

Depth Meters	Open-Bottom Lysimeter				Closed-Bottom Lysimeter			
	Reference Point 7. M Above Ground				Reference Point 6. M Above Ground			
	Tube #1	#2	#3	Average	Tube #4	#5	#6	Average
	8/11/76				8/12/76			
0.75	---	---	---	4.2	---	---	---	7.2
1.00	---	---	---	7.0	---	---	---	8.6
1.10	---	---	---	7.8	---	---	---	8.6
1.25	---	---	---	8.2	---	---	---	9.0
1.40	---	---	---	8.4	---	---	---	9.4
1.50	---	---	---	8.4	---	---	---	8.9
1.60	---	---	---	7.7	---	---	---	8.4
1.75	---	---	---	6.1	---	---	---	6.8
2.00	---	---	---	4.6	---	---	---	5.1
2.25	---	---	---	4.7	---	---	---	5.1
2.50	---	---	---	4.5	---	---	---	4.9
2.75	---	---	---	4.7	---	---	---	5.1
3.00	---	---	---	5.1	---	---	---	5.0
3.50	---	---	---	5.4	---	---	---	5.7
4.00	---	---	---	6.3	---	---	---	6.0
4.25	---	---	---	7.0	---	---	---	6.0
4.50	---	---	---	7.8	---	---	---	6.0
4.75	---	---	---	7.8	---	---	---	---
5.00	---	---	---	8.0	---	---	---	6.1
5.25	---	---	---	7.9	---	---	---	---
5.50	---	---	---	8.8	---	---	---	5.9
5.75	---	---	---	8.1	---	---	---	---
6.00	---	---	---	9.4	---	---	---	6.1
6.25	---	---	---	8.5	---	---	---	---
6.50	---	---	---	7.9	---	---	---	5.8
6.75	---	---	---	7.6	---	---	---	---
7.00	---	---	---	7.2	---	---	---	5.6
8.00	---	---	---	6.2	---	---	---	5.7
9.00	---	---	---	6.4	---	---	---	5.9
10.00	---	---	---	6.4	---	---	---	6.1
11.00	---	---	---	5.8	---	---	---	6.0
12.00	---	---	---	5.7	---	---	---	6.0
13.00	---	---	---	6.1	---	---	---	6.1
14.00	---	---	---	5.9	---	---	---	6.0
15.00	---	---	---	6.0	---	---	---	5.9
16.00	---	---	---	5.9	---	---	---	6.2
17.00	---	---	---	5.9	---	---	---	5.8
18.00	---	---	---	6.4	---	---	---	5.7
19.00	---	---	---	5.2	---	---	---	5.6

FIGURE 1

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF SEPTEMBER 24, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 2

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF SEPTEMBER 25, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 3

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF OCTOBER 22, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 4

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF OCTOBER 23, 1975. FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 5

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF NOVEMBER 5, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 6

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER.
AS OF NOVEMBER 6, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 7

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF NOVEMBER 18, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

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FIGURE 8

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF NOVEMBER 19, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 9

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF DECEMBER 8, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 10

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF DECEMBER 9, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 11

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF DECEMBER 30, 1975 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 12

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF DECEMBER 31, 1975 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 13

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF JANUARY 7, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 14

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF JANUARY 8, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 15

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER.
AS OF JANUARY 14, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 16

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF JANUARY 15, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 17

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF JANUARY 21, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

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FIGURE 18

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF JANUARY 22, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 19

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF JANUARY 28, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 20

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF JANUARY 29, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

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FIGURE 21

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF FEBRUARY 4, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 22

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF FEBRUARY 5, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 23

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF FEBRUARY 11, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

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FIGURE 24

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF FEBRUARY 12, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 25

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF FEBRUARY 18, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 26

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF FEBRUARY 19, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

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FIGURE 27

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF FEBRUARY 25, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 28

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF FEBRUARY 26, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 29

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF MARCH 4, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 30

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF MARCH 5, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 31

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF MARCH 10, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 32

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF MARCH 11, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 33

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF MARCH 24, 1976 FOR AVERAGE OF TUBES 1 AND 2

FIGURE 34

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF MARCH 25, 1976 FOR AVERAGE OF TUBES 4 AND 5

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FIGURE 35

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF APRIL 14, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 36

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF APRIL 15, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 37

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF APRIL 28, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

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FIGURE 38

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF APRIL 29, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 39

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF MAY 12, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

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FIGURE 40

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF MAY 13, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 41

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER-
AS OF JUNE 29, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

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FIGURE 42

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF JUNE 30, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

FIGURE 43

SEDIMENT MOISTURE PROFILE FOR THE OPEN-BOTTOM LYSIMETER
AS OF AUGUST 11, 1976 FOR AVERAGE OF TUBES 1, 2 AND 3

FIGURE 44

SEDIMENT MOISTURE PROFILE FOR THE CLOSED-BOTTOM LYSIMETER
AS OF AUGUST 12, 1976 FOR AVERAGE OF TUBES 4, 5 AND 6

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