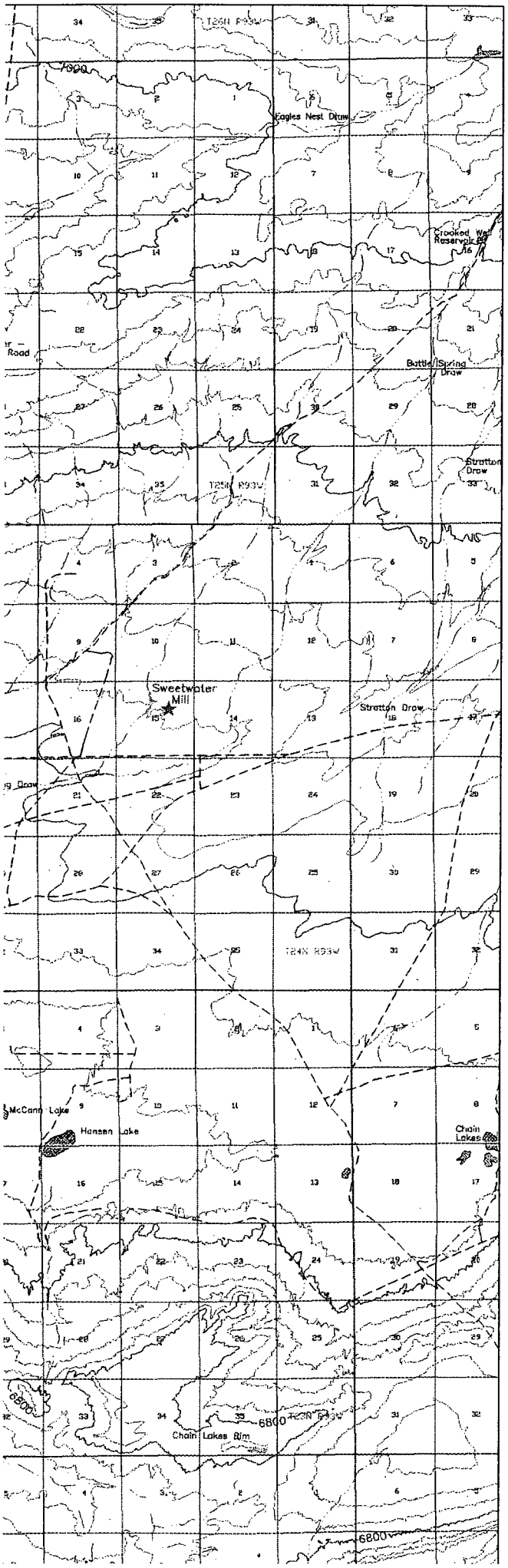


# EVALUATION OF AQUIFER TEST DATA

## For the SWEETWATER URANIUM PROJECT Sweetwater County, Wyoming

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**Prepared For:**
**Kennecott Uranium Company**
**P.O. Box 1500**
**Rawlins, Wyoming 82301**

**Prepared By:**
**Shepherd Miller, Inc.**
**3801 Automation Way**
**Fort Collins, Colorado 80525**

**February 1997**

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# SWEETWATER URANIUM PROJECT

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**Diskette Attached - Aquifer Test Data**

## 1.0 INTRODUCTION

A pumping test was conducted in December 1996 at the Kennecott Sweetwater Uranium Facility located northwest of Rawlins, Wyoming (Figure 1). The 1996 aquifer test was one element of the field data collection program conducted in support of final design efforts for an evaporation pond, reclamation of the existing tailings impoundment, and a new tailings impoundment at the site. Data from this program will be used directly in final design or will be available for future analyses or modeling efforts, such as geochemical and ground water modeling. Additionally, the aquifer test results are descriptive of the current conditions in the upper portion of the Battle Spring Aquifer, where ongoing pumping is occurring as part of the site's Corrective Action Program, and are included in the 1996 Corrective Action Program Review.

## 2.0 SITE GEOLOGY & GROUND WATER HYDROLOGY

### 2.1 Site Geology

The geology of the area surrounding the Sweetwater Uranium Facility has been defined in previous submittals to the Nuclear Regulatory Commission, originally in the Environmental Report (Woodward-Clyde, 1976), and in subsequent design reports (Dames & Moore, 1977, 1981). The site geology was summarized in the Revised Environmental Report (Shepherd Miller, Inc., 1994) based on review of these documents and is summarized below.

#### 2.1.1 Physiography and Topography

Regional

The site is located in south-central Wyoming in the Red Desert area of the Great Divide Basin. This basin is part of the Wyoming Basin physiographic province as defined by Fenneman (1931). The floor of the Wyoming Basin is a plateau marked by elongated ridges and isolated mountains. The altitude of the plateau surface ranges from 6500 to 7500 feet above sea level.

The Great Divide Basin is an internally drained basin bounded on most sides by major structural uplifts - the Sweetwater Uplift to the north and northeast, the Rawlins Uplift to the east and southeast, the Rock Springs Uplift to the west and the Wind River Uplift to the northwest. To the south the Great Divide Basin is separated from the Washakie Basin by Laney Rim and Cathedral Bluffs (Bradley, 1945).

Local

The site is located in the east-central portion of the Great Divide Basin in an area generally north of the playa and alkali lakes that occupy the topographically lowest part of the basin. The relatively flat surface is broken by a few low ridges. Elevations in the immediate project area

range from approximately 6500 to 6700 feet above sea level. The surface slopes to the southwest about 40 feet per mile (less than one degree).

### 2.1.2 Stratigraphy and Tectonic History

Approximately 23,000 feet of Paleozoic, Mesozoic, and Cenozoic sediments underlie the site. These sediments comprise one of the thickest rock sequences of the Great Divide Basin.

In addition to the Laramide orogeny of Late Cretaceous age, several gentle epeirogenic movements have occurred throughout geologic time. Deposition of the Cambrian sandstones occurred during Early Paleozoic downwarping. This deposition was followed by a period of nondeposition and/or erosion, which continued until the Mississippian carbonates and the sandstones and carbonates of Pennsylvanian and Permian time were deposited during another period of downwarping. Periods of transgression and regression were common during the Late Paleozoic and Mesozoic, when an abundance of fine clastics interspersed with thin carbonates and sandstones were deposited.

The present configuration of the Great Divide Basin was initiated as a result of tectonic activity associated with the Laramide orogeny in Late Cretaceous time. In Early Cenozoic time, erosion of the Sweetwater, Rawlins, Rock Springs, and Wind River Uplifts supplied sediments to the basin. The coarser clastics were supplied to the basin from the north and east as movement of the uplifts continued into Middle Cenozoic time. In late Middle Cenozoic time, volcanic debris consisting of tufts and tuffaceous material was introduced into the basin. Subsequent regional uplift caused erosion and exhumation of the basin, which defined its present form.

The Tertiary sequence of rocks that were deposited following the Laramide orogeny consist of conglomerates, sandstones, siltstones, mudstones, and lignitic and subbituminous coals. All of these rocks are of continental origin and were deposited under fluvial, lacustrine, and paludal conditions. The Tertiary rocks in the Great Divide Basin have been divided into six formations by Pipiringos (1955). The oldest formation, the Fort Union Formation of Paleocene age, does not crop out and is known only from deep drilling records. This formation is unconformably

overlain by interfingering sediments of Eocene age that Pipiringos assigned to Green River, Wasatch, and Battle Spring Formations. These beds are conformably overlain by the Eocene Bridger Formation, which in turn is unconformably overlain by the Brown's Park Formation of Oligocene to Miocene age. Holocene alluvium, consisting of sands, silts, and gravels, covers much of the present surface.

In the project area, only a portion of the Battle Spring Formation is exposed or immediately underlies the alluvium. This formation was deposited as a typical deltaic fanglomerate and consists of intercalated and interfingered beds of arkosic sandstone, siltstone, and mudstone. The sandstones are generally fine- to coarse-grained, poorly sorted, and slightly clayey. These sandstones are lenticular, often grading laterally into interchannel deposits of siltstone and mudstone. Although the siltstones and mudstones are also somewhat lenticular, their lateral extent is greater and they are more continuous than the sandstones. The sandstones of the Battle Spring Formation are host rocks for uranium mineralization in the area.

### 2.1.3 Detailed Site Geology

The surface at the site is covered by thin Holocene alluvium derived from the immediately underlying Battle Spring Formation. At this locality, the Battle Spring Formation consists of interbedded and interfingered mudstones, siltstones, and sandstones. The beds are nearly horizontal, and dip northwestward at an angle of less than one degree (approximately 40 feet to the mile).

The sandstones generally form lenses or channels that are enclosed by finer clastics. Fairly continuous beds of impermeable, finer clastics are present throughout the stratigraphic interval underlying the mill and tailings impoundment sites.

Geologic Cross Section

Figure 2 shows the location of boreholes near the existing site tailings impoundment and differentiates between exploration borings, geotechnical borings, original tailings monitor wells,

water source wells, deep aquifer wells, shallow aquifer wells, and perched aquifer wells. Geophysical data consisting of gamma, spontaneous potential (SP), and resistivity were collected from several of these boreholes to distinguish stratigraphic layering in the vicinity of the tailings impoundment.

Four cross section lines were selected to comprise as many of the borings with geophysical data as possible (Shepherd Miller, Inc., 1995). Geologic cross sections were then created based on interpretation of the geophysical data, cross-referenced to lithologic logs. Lithologic logs were generated based on cuttings and are not considered to be as accurate as the geophysical logs. Figure 2 provides a plan view showing the locations of the cross sections relative to the tailings impoundment and boring locations. The portion of cross Section B-B' that extends through the area affected by the 1996 aquifer test is depicted in Figure 3. Geophysical logs from the boreholes in this portion of Cross Section B-B' are included in Appendix A.

Correlations between borings were also based on an understanding of the general site geology and a review of the geologic record available in observation of the pit wall. The observation that the fine layers are discontinuous was used in interpolating between boreholes. The cross sections verify previous observations that the Battle Spring Formation in the site vicinity is composed of interfingered layers of sandstone and silt- or claystone.

## 2.2 Ground Water Hydrology

### 2.2.1 Regional Hydrology

The Great Divide Basin is an internally drained basin defined by a bifurcation of the Continental Divide. The site lies in the east-central portion of this basin in the ephemeral Battle Spring Draw watershed. Aquifers beneath the site, from the surface downward, are located in the alluvial, Battle Spring, Fort Union and Lance Formations.

There is very little surface water in the Great Divide Basin. Some shallow perennial lakes are located a few miles south of the site in Chain Lakes Flat, which is near the center of the basin.

Heavy precipitation can cause some surface water flow in draws; however, these flows are infrequent, since average annual precipitation is only about 5 to 6 inches (site precipitation data, 1978 to 1990). There are a few intermittent springs in the lower portions of the basin that discharge into draws, but this water seeps into the ground a short distance downstream.

Descriptions of the geologic formations of the Great Divide Basin and their hydrologic properties have been discussed in numerous publications (Welder and McGreevy, 1966; Berry, 1960; Wyant, and others, 1956; Masursky, 1962; Root and others, 1973). Hydrogeologic units that occur beneath the site and vicinity include the following: recent alluvial, windblown, and lake deposits; the Eocene Battle Spring Formation; and the Paleocene Fort Union Formation. These units are classified as aquifers and, depending on their hydrologic characteristics, yield ground water to wells and springs.

Alluvium. The alluvial aquifer in the area of the site consists of thin, unconsolidated, poorly stratified clays, silts, sands, and gravels. Precipitation infiltrates the aquifer during the year, and any intermittent streams flowing across the alluvium also provide recharge. However, most of the recharge flows through the alluvium to lower aquifers, where the water table, in the vicinity of the site, is located at depths of approximately 100 feet below the surface. Consequently, there is no potential for the development of alluvial ground water supplies.

Windblown Sand and Lake Deposits. Many scattered and relatively thin windblown sand and lake deposits consisting of sands, silts, and clays overlie the Battle Spring Formation in the vicinity of the site. The dune sands primarily cover the upland slopes adjacent to Battle Spring and Chain Lakes flats, which lie to the southwest and south of the site, respectively. Lake deposits border or underlie the large playa lakes within these flats. Although the potential for producing ground water yields of more than 10 gallons per minute (gpm) from these deposits is poor, they do serve as recharge areas to the underlying aquifers.

Battle Spring Formation. The Battle Spring Formation consists of a fine- to coarse-grained arkosic sandstone, with lenticular interbeds of silts and shales. This formation underlies the site and extensive areas to the north and east to depths as great as approximately 5000 feet.

Approximately 5 to 10 miles southwest of the site, the formation interfingers with the Wasatch Formation of equivalent age. The Battle Spring and Wasatch Formations are the two most important aquifers in the Great Divide Basin.

Large reserves of water are believed to be present in the Battle Spring Aquifer, but knowledge of its hydrologic characteristics is not adequate to assess the amount of available ground water (Welder and McGreevy, 1966).

Ground Water Occurrence and Movement

Based on local well data, the Battle Spring Formation does not appear to be a single, continuous, and homogeneous aquifer. Water in the aquifer is generally under artesian pressure, but it may be locally unconfined.

The site is located within a closed ground water system. The low point of this ground water basin lies within the 6500-foot contour located south and southwest of the site. Ground water moves toward the center of the basin and discharge occurs principally in the playa lakes to the south (Chain Lakes) and southwest (Battle Spring Flat) of the site. Since the basin is also closed topographically, the discharged water is ponded, and most of this water is lost to evaporation. In addition, there is some discharge from springs near Battle Spring and Chain Lakes flats. This water is also subject to evaporation.

The Battle Spring Aquifer is recharged mainly by infiltration of precipitation in its outcrop area near the perimeter of the Great Divide Basin. Precipitation may also seep into the aquifer in smaller amounts throughout the basin, especially in areas where sand dunes directly overlie the surface.

Hydrologic Testing

Minerals Exploration Company collected detailed pumping test data in the project area from a number of different tests (Shepherd Miller, Inc., 1994). Table 2.1 lists the pumping tests and other studies of the Battle Spring Aquifer conducted by Minerals Exploration Company and their consultants from 1976 through 1987. More detail is provided in the Revised Environmental Report (Shepherd Miller, Inc., 1994). The results of the 1996 aquifer test are compared in Table 2.2 to results from these previous tests.

Test #1 was conducted in May and June of 1976 in preparation of the 1976 Environmental Report using wells approximately three to four miles southwest of the mill. The well depths varied from 100 to 424 feet and the distances of the observation wells from the pumping wells were 50 to 100 feet. Aquifer transmissivity calculated for the Test #1 wells pumping at different rates were in relatively close agreement at an approximate range of 400 to 2,000 gpd/ft.

**Table 2.1 Aquifer Tests and Studies Relating to the Battle Spring Aquifer in the Vicinity of the Sweetwater Uranium Project**

| Test # | Date | Area Tested | Type of Test | Tester |
|---|---|---|---|---|
| 1 | May/June 1976 | Sec 20 T24N R93W | Pumping Test | Woodward-Clyde |
| 2 | August 1976 | Sec 10 T24N R93W | Pumping Test | R.W. Davis |
| 3 | March 1977 | Sec 9 T24N R93W | Pumping Test | WDC* |
| 4 | May 1981 | Sec 9 & 10 T24N R93W | Falling Head | Golder Associates |
| 5 | December 1981 | Sec 3 T23N R94W | Pumping Test | MEC* |
| 6 | November 1987 | Sec 9 & 10 T23N R94W | Rebound | WWL* |
| 7a - 7e | September/October 1979 and August 1980 | Sec 1 T24n R94W | Pumping Test | MEC |
| 8 | December 1996 | Sec 14 T24N R93W | Pumping Test | SMI* |

* WDC is Water Development Corporation; MEC is Minerals Exploration Company; WWL is Water Waste and Land; SMI is Shepherd Miller, Inc.

**Table 2.2 Comparison of Aquifer Test Results**

| Test # | Reported Transmissivities, gpd/ft | Comment |
|---|---|---|
| 1 | 400 - 2,000 | Regional observation wells |
| 2 | 23,000 - 330,000 | Pit vicinity, 200 - 250 feet |
| 3 | 16,000 - 35,000 | Same wells as #2 |
| 4 | not available | Horizontal conductivity = 15 ft/day |
| 5 | 27,000 - 46,000 | Battle Spring Flat |
| 6 | 16,000 | Pit vicinity |
| 7 | 1,000 | Northwest of mill |
| 8 | 3,200 - 13,800 | Just north of tailings impoundment, horizontal conductivity = 12 - 53 ft/day |

Test #2, conducted in August 1976 (R. W. Davis, 1976), was performed to estimate the magnitude of dewatering problems to be encountered during operation of the Sweetwater pit. Six wells (one pumping well and five observation wells) were installed for this test. The pumping well, RDW-1, was drilled to 340 feet and operated at flows of 288 to 380 gallons per minute. The observation wells were completed over a depth interval of 200 to 250 feet. Transmissivities and storage coefficients were computed using the Theis curve method. The results of the test show transmissivities ranging from about 23,000 to 106,000 gpd/ft in the drawdown portion of the test, but mostly in the 30,000 to 70,000 gpd/ft range.

Test #3 was conducted in March 1977 (Water Development Corporation, 1977) to determine aquifer properties around the proposed pit area. The results of the test were reinterpreted by Golder Associates (1982). Well RDW-8 was pumped at a rate of 609 gallons per minute for 174 hours with wells RDW-1, RDW-6 and RDW-7 used as observation wells. Test #3 resulted in estimated transmissivities of 16,000 to 35,000 gpd/ft.

A fourth test of the Battle Spring Aquifer was conducted by Minerals Exploration Company and the data interpreted by Golder Associates. Golder Associates stated that the results of this falling head test indicated that the sandstone aquifers of the Battle Spring Formation behave as a multiple leaky confined aquifer system with the drawdown in each aquifer in response to pumping being more or less independent of the head in overlying or underlying aquifers. Golder Associates concluded that the average horizontal conductivity of the sandstone aquifers is probably on the order of $1 \times 10^{-2}$ ft/min and vertical conductivity is probably on the order of $1 \times 10^{-6}$ ft/min. They also stated that the aquifers respond to pumping as a confined system (with the exception of the uppermost saturated sand with a specific storage of about $1.5 \times 10^{-6}$/ft [Golder Associates, 1982]).

The fifth pumping test was conducted by Minerals Exploration Company in December 1981 around a pumping well. The test involved pumping REB-1081W, approximately 10 miles southwest of the mill, at an average rate of 399 gallons per minute for 477 hours. Drawdown was observed in eleven surrounding wells. Drawdown data for four of the eleven observation wells exhibited too much variation to be analyzed by either the Theis or delayed yield from storage curve matching methods (Dames & Moore, 1982). The results of the test indicate transmissivities ranging from 27,000 to 46,000 gpd/ft.

The sixth study of the properties of the Battle Spring Aquifer was conducted in November 1987 by Water, Waste and Land. They studied the Sweetwater pit water levels in response to the cessation of pit dewatering on April 25, 1983. Water, Waste and Land concluded that the rate of recovery of the water level in the pit most closely matched the recovery one would get if the Battle Spring Aquifer had a transmissivity of 15,700 gpd/ft (Water Waste and Land, 1987).

Pumping test numbers 7a through 7e were conducted to the northwest of the facility to evaluate the Battle Spring Aquifer around Well WW-2. Test #7a was conducted by pumping WW-2 at an average rate of 51.4 gpm for 11 hours; Test #7b at an average rate of 48.6 gpm for 269 minutes; Test #7c at an average rate of 37.9 gpm for 90 minutes; Test #7d at an average rate of 59.1 gpm for over 72 hours; and Test #7e was conducted by pumping WW-1 at an average

rate of 39.7 gpm for over 5 hours (unpublished data from Minerals Exploration Company). The results of these five pumping tests show transmissivities ranging from 700 to 1,200 gpd/ft.

Summary and Comparison of Aquifer Test Results

The transmissivity estimated from the December 1996 aquifer test, 400 to 1,900 $ft^2$/day (3,200 to 13,800 gpd/ft) and discussed in Section 3.2 below, is within the range of transmissivities reported from other pumping tests, which typically varied from 1,000 to 100,000 gpd/ft. Tests in the vicinity of the Sweetwater pit typically show transmissivities on the order of 15,000 to 70,000. These wells are completed in a deeper portion of the Battle Spring Aquifer than are the tailings monitor wells evaluated in the 1996 aquifer test. Regional wells show aquifer transmissivities to be as low as 1,000 gpd/ft and as high as 45,000 gpd/ft. Iron and calcite were observed during the 1996 drilling program and it may be that shallower portions of the aquifer have lower transmissivities due to precipitates in the oxygenated zone at the top of the aquifer.

### 2.2.2 Site Hydrology

The Battle Spring Aquifer is located immediately beneath the Sweetwater tailings impoundment, at a depth of approximately 100 feet. As described above, the Battle Spring Formation is composed of discontinuous layers of alluvial sandstones and finer clastics (siltstone and claystone). The sandstone units of the Battle Spring Formation may behave as a multiple leaky confined aquifer system, with the drawdown in each aquifer in response to pumping being more or less independent of the head in the overlying or underlying aquifers (Golder Associates, 1982). This behavior results from the layers of clay materials, which inhibit vertical movement of water.

On a localized basis, a number of separated water-storing units exist within the Battle Spring Aquifer. Additionally, the presence of claystone layers above the Battle Spring Aquifer allows seepage to be perched in certain locations.

As documented in the Revised Environmental Report (Shepherd Miller, Inc., 1994), an incursion from the tailings impoundment occurred in 1984, allowing tailings fluid to seep into the ground adjacent to the impoundment. In the vicinity of the tailings impoundment, two claystone layers create three localized water-storing units. Each of the three units is identified where appropriate on the cross section in Figure 3. The first, located to the north and west of the impoundment, is a perched aquifer. This perched layer is situated above a fairly continuous claystone layer located approximately 50 to 70 feet below the ground surface. The approximate areal extent of the perched aquifer is estimated as shown in Figure 2. As of September 1989 available fluid present in the perched aquifer had been pumped out and returned to the tailings impoundment. Therefore, the perched aquifer is no longer saturated.

The other two localized aquifer units are within saturated sands of the Battle Spring Aquifer, separated by another fairly continuous claystone layer approximately 150 to 200 feet below the ground surface (see Figure 3). The upper saturated sand of the Battle Spring Aquifer is approximately 50 feet thick. The lower saturated sand of the aquifer exists below 150 feet from the ground surface. Water quality sampling of three wells completed within the lower saturated sand, TMW's 8, 24 and 47, shows it to be unaffected by seepage from the cell, indicating that flow from the upper to lower saturated sands is retarded by the claystone layer. These three wells have been completed at depths of approximately 200 to 240 feet.

The December 1996 piezometric surface, with the pumpback system shut off, for the Battle Spring Aquifer is shown in blue on the cross section in Figure 3. Additionally, the perimeter of the tailings impoundment, the approximate tailings surface, and the current tailings fluid level (6,620 feet above mean sea level) are depicted in Figures 2 and 3.

The average horizontal conductivity of the Battle Spring Aquifer, as stated above, is probably on the order of $1 \times 10^{-2}$ ft/min and vertical conductivity probably on the order of $1 \times 10^{-6}$ ft/min. Potable water wells, Drake-1, PWW-1 and PWW-2, have been drilled in the Battle Spring Aquifer to provide water to the site. Water quality in these wells is good, with water quality data provided in the Revised Environmental Report (Shepherd Miller, Inc., 1994). Pumpback

wells, as part of the ground water Corrective Action Program, have historically pumped at annualized average rates of up to 11 gpm.

Monitor Well Completion and Elevation Data

Monitor wells around the tailings impoundment have been completed in each of the three localized aquifer units discussed above (perched aquifer and upper and lower saturated sands of the Battle Spring Aquifer). Table 2.3 summarizes for each well the zone in which it was completed and the depth of the screened interval. Additionally, Figure 4 displays the locations of each of these monitor wells and denotes the zone of completion by symbol color. The completion zones for TMWs -17, -75 and are also shown on the cross section in Figure 3. TMW-17 (the pumping well in the 1996 aquifier test) was drilled and completed by Drilling Enterprises located in Casper, Wyoming. A Gardner Denver 1000 utilizing rotary drilling techniques was used to drill the 9-inch borehole. TMW-17 was completed with nominal 5-inch Schedule-80 PVC. The screened interval is 50 feet long with a slot size of 0.03 inches wide by 2 inches long and with approximately 1800 slots. A 3/8-inch pea gravel pack was installed over the length of the screened interval. Approximately 44 feet of bentonite pellets were installed above the filter pack (assuming that the one pail noted in the completion log is equal to 5 gallons). Cement was installed from the top of the bentonite to ground surface.

In November 1996 a survey was conducted to determine the accurate casing and ground surface elevations for each of the tailings monitor wells using the recently corrected elevation of the southwest corner of Section 14, R93W, T24N as the starting point. The 1996 survey corrects errors made in previous surveys that were based on incorrect base elevations. The casings were also cut level and notched in November 1996 to provide a consistent point from which to measure water surface elevations. Table 2.3 lists the casing and ground surface elevations from the 1996 survey for each of the tailings monitor wells.

## Table 2.3 Monitor Well Completion and Elevation Data

| Well Number (TMW- ) | Completion Zone | Screen Interval (Feet from ground surface) | Casing Elevation (1) | Ground Surface Elevation (1) |
|---|---|---|---|---|
| 1 | Aquifer | 160 - 260, 280 - 300 | 6648.22 | 6648.22 |
| 2 | Aquifer | 135 - 295, 295 - 300 | 6627.09 | 6626.32 |
| 3 | Aquifer | 100 - 267 | 6626.27 | 6624.74 |
| 4 | Aquifer | 100 - 267 | 6626.89 | 6625.74 |
| 5 | Aquifer | 100 - 267 | 6658.59 | 6656.49 |
| 6 | Aquifer | 100 - 267 | 6641.66 | 6640.26 |
| 8 | Deep Aquifer | 220 - 240 | 6646.47 | 6645.64 |
| 15 | Aquifer | 78 - 128 | 6643.26 | 6642.09 |
| 16 | Aquifer | 120 - 145 | 6655.62 | 6654.35 |
| 17 | Aquifer | 100 - 150 | 6660.87 | 6660.19 |
| 18 | Aquifer | 96 - 146 | 6655.98 | 6654.91 |
| 19 | Perched | 20 - 38 | 6661.54 | 6660.36 |
| 20 | Perched | 39 - 59 | 6661.29 | 6659.62 |
| 21 | Perched | 33 - 53 | 6659.40 | 6658.05 |
| 22 | Perched | 28 - 48 | 6659.68 | 6658.27 |
| 23 | Perched | 15 - 44.5 | 6659.28 | 6658.32 |
| 24 | Deep Aquifer | 215 - 235 | 6661.21 | 6659.20 |
| 29 | Aquifer | 100 - 150 | 6656.64 | 6655.98 |
| 30 | Perched | 18.5 - 38.5 | 6659.22 | 6658.41 |
| 31 | Aquifer | 99.5 - 149.5 | 6661.09 | 6660.04 |
| 34 | Perched | 24.7 - 35.7 | 6657.92 | 6656.35 |
| 35 | Aquifer | 97 - 147 | 6657.75 | 6656.54 |
| 36 | Aquifer | 96 - 146 | 6657.75 | 6656.48 |
| 37 | Aquifer | 88.5 - 138.5 | 6650.73 | 6649.39 |
| 44 | Aquifer | 85 - 135 | 6637.52 | 6636.84 |
| 45 | Aquifer | 85 - 135 | 6641.00 | 6640.37 |
| 47 | Deep Aquifer | 197 - 217 | 6640.35 | 6638.73 |
| 48 | Aquifer | 100 - 150 | 6639.72 | 6638.50 |
| 49 | Aquifer | 100 - 150 | 6640.19 | 6639.23 |
| 50 | Aquifer | 100 - 150 | 6647.80 | 6646.76 |
| 51 | Aquifer | 110 - 160 | 6650.00 | 6648.40 |
| 52 | Aquifer | 100 - 150 | 6644.70 | 6643.25 |
| 53 | Aquifer | 100 - 150 | 6641.47 | 6640.03 |

## Table 2.3 Monitor Well Completion and Elevation Data (Cont'd)

| Well Number (TMW- ) | Completion Zone | Screen Interval (Feet from ground surface) | Casing Elevation (1) | Ground Surface Elevation (1) |
|---|---|---|---|---|
| 54 | Perched | 49 - 75 | 6652.06 | 6650.73 |
| 55 | Perched | 43.5 - 58.5 | 6649.48 | 6648.10 |
| 56 | Aquifer | 87 - 137 | 6647.72 | 6646.15 |
| 57 | Aquifer | 87 - 137 | 6649.86 | 6647.74 |
| 58 | Aquifer | 87 - 137 | 6646.96 | 6645.75 |
| 59 | Aquifer | 90 - 138 | 6648.15 | 6647.46 |
| 61 | Aquifer | 100 - 150 | 6649.36 | 6648.30 |
| 62 | Aquifer | 100 - 150 | 6646.13 | 6645.12 |
| 63 | Aquifer | 110 - 130 | 6654.77 | 6653.83 |
| 64 | Aquifer | 97 -147 | 6652.25 | 6651.55 |
| 65 | Perched | 54.7 - 77.7 | 6654.88 | 6653.48 |
| 66 | Perched | 58 - 68 | 6658.05 | 6656.76 |
| 67 | Perched | 54 - 72 | 6656.63 | 6655.02 |
| 68 | Perched | 76 - 91 | 6655.04 | 6653.60 |
| 69 | Aquifer | 100 - 150 | 6654.47 | 6653.46 |
| 70 | Aquifer | 100 - 150 | 6651.06 | 6649.83 |
| 71 | Aquifer | 100 - 150 | 6654.52 | 6652.59 |
| 74 | Perched | 42.5 - 62.5 | 6660.18 | 6659.23 |
| 75 | Aquifer | 97 - 147 | 6660.18 | 6658.93 |
| 76 | Perched | 46 - 76 | 6658.48 | 6657.24 |
| 77 | Perched | 15.5 - 30.5 | 6658.28 | 6656.93 |
| 78 | Aquifer | 99 - 149 | 6658.50 | 6657.66 |
| 79 | Perched | 48 - 60 | 6661.52 | 6659.70 |
| 80 | Perched | 57 - 82 | 6661.52 | 6660.04 |
| 81 | Perched | 37.5 - 47.5 | 6659.96 | 6658.50 |
| 82 | Aquifer | 100 - 150 | 6660.64 | 6659.56 |
| 83 | Perched | 40 - 65 | 6658.87 | 6657.86 |
| 84 | Aquifer | 97 - 147 | 6661.86 | 6660.36 |
| 85 | Perched | 50 - 90 | 6659.12 | 6657.31 |
| 86 | Perched | 71.5 - 89.5 | 6660.08 | 6658.16 |
| 87 | Perched | 64 - 88 | 6660.60 | 6658.49 |
| 88 | Perched | 62.5 - 85.5 | 6660.49 | 6658.71 |
| 89 | Aquifer | 100 - 150 | 6660.75 | 6659.33 |

(1) Elevations are based on the November 1996 survey, with an elevation of 6626.64 feet at SE15, T24N, R93W.

## 3.0 AQUIFER TESTING

The December 1996 pumping test was conducted in the vicinity of the existing tailings impoundment. Figure 5 shows the wells used in the test. The pumping well was TMW-17, which lies just north of the tailings impoundment in section 14 (T24N, R93W), Sweetwater County, Wyoming. A total of 14 wells were monitored during the pumping and recovery portions of the aquifer test. A history of the aquifer test including flow rates and the starting and ending times is presented in Table 3.1.

**Table 3.1 History of Aquifer Test**

| Activity | Date | Time | Time Since Start of Test (min) | Flow Rate (gpm) | Flow Meter reading (gallons) |
|---|---|---|---|---|---|
| Start Pumping Portion of Test | 12/7/96 | 11:05 | 0 | 7.9 | 737.63 |
| | 12/7/96 | 13:50 | 165 | 7.5 | |
| | 12/7/96 | 15:05 | 240 | 7.5 | |
| | 12/8/96 | 09:52 | 1367 | 7.5 | |
| | 12/8/96 | 12:15 | 1510 | 7.5 | |
| | 12/8/96 | 16:04 | 1739 | 7.7 | |
| | 12/9/96 | 08:35 | 2730 | 7.5 | |
| | 12/9/96 | 11:52 | 2927 | 7.7 | |
| | 12/9/96 | 16:20 | 3195 | 7.1 | |
| | 12/10/96 | 11:50 | 4365 | 7.5 | |
| End Pumping Portion of Test | 12/10/96 | 13:21 | 4456 | | 34121.23 |
| Start Recovery Portion of Test | 12/10/96 | 13:21 | 0 | | |
| End Recovery Portion of Test | 12/12/96 | 09:05 | 2624 | | |

The wells were monitored using a Solinst water level probe or an In-Situ Inc. Hermit 2000 eight-channel data logger with pressure transducers, or a combination of both methods. Monitoring wells TMW-17, 75, 82, 24, 29, 35, 78, and 16 were monitored using the data logger; monitoring wells TMW-82, 24, 29, 35, 36, 37, 45, 59, 18, 16, 64, and 78 were monitored using the water level probe. Hand water levels were not taken on TMW-17 and TMW-75 because of the possibility of hanging up the water level probe on wiring downhole. The original Hermit data is presented in Appendix B. The original hand water level data is presented in Appendix C. Barometric pressure readings were taken during the aquifer test using a recording barometer located at the site office and are presented in Appendix D. The original Hermit, hand water level, and barometric data is included in electronic format on the 3.5-inch computer disk at the back of the report (Microsoft Excel spreadsheet).

The pumping portion of the aquifer test was run for 4,456 minutes using a submersible pump that pumped at an average rate of 7.5 gallons/minute (gpm). Flow rates were monitored using a flow meter with a totalizer, and periodically checking the flow meter rate with a calibrated five-gallon bucket and a stop watch. The recovery portion of the aquifer test was run for 2,624 minutes which allowed enough time for over 99% recovery.

During the aquifer test several storm fronts passed through the area causing significant fluctuations in the barometric pressure and, correspondingly, in aquifer levels. Corrections for the changes in water levels due to changes in barometric pressure are discussed in Section 3.1.

## 3.1 Aquifer Test Analysis and Methodology

Of the 13 observation wells that were monitored only TMW-75 and TMW-78 showed a response to pumping. TMW-35 and TMW-24 initially appeared to show a response, but review of the data indicates that the pressure transducer in TMW-35 malfunctioned and the water level changes in TMW-24 were solely in response to barometric pressure changes.

Pumping well TMW-17 is screened in the upper saturated sand aquifer, as are all the monitor wells that were monitored, except for TMW-24, which is screened in the lower saturated sand

aquifer. Because TMW-24 did not show a response to pumping, the aquifer evaluation conducted by this pumping test is limited to the upper saturated sand aquifer. For the pumping well evaluated, the pumping rate, and the length of pumping for this aquifer test, no conclusion can be made regarding hydrologic connection of the upper and lower saturated sands. TMW-17, -75 and -78, are all screened from approximately 100-150 feet below ground surface. Therefore, the pumping well and the monitor wells were treated as fully penetrating wells for the purpose of aquifer parameter estimation.

The pumping test data were analyzed using the University of Waterloo aquifer test program, Aquifer Test for Windows (Waterloo Hydrogeologic). Data were compiled from the data logger and hand water level measurements into a spreadsheet before analysis was performed. The data were analyzed by type-curve matching on a computer screen for all data sets. Because the geology of the upper saturated sand aquifer consists of sand with extensive interbedded claystone layers, the type curves for a leaky-confined aquifer (Hantush curves) and for an unconfined aquifer (Neuman curves) were used in the type-curve matching. The actual data plots with type curves used in matching are given in Appendix E.

Several different methods for correcting the data were used to determine which would best adjust for the changes in barometric pressure. Corrections to the data were made as follows:

1. Correction for barometric pressure changes using a single correction for an entire day of pumping. Corrections came from water levels at TMW-45, which were measured by hand and were not affected by aquifer drawdown ("TMW-45 corrected" entries in Table E-1). Appendix F contains a graph of the hand water level data, original pressure transducer data, and corrected pressure transducer data. Signs were changed on the data for graphing purposes.

2. No correction for barometric pressure ("uncorrected" entries in Table E-1).

3. Correction for barometric pressure changes using data from the pressure transducer in TMW-16 for barometric pressure changes and a correction for initial (before the pumping

test began) transducer drift ("TMW-16 corrected" entries in Table 3.2 and Table E-1). Appendix G contains graphs of the hand water level data, original pressure transducer data (corrected for initial drift), and corrected pressure transducer data. Signs were changed on the data for graphing purposes.

4. Correction for barometric pressure changes using data from the pressure transducer in TMW-29 for barometric pressure changes and a correction for initial (before the pumping test began) transducer drift ("TMW-29 corrected" entries in Table 3.2 and Table E-1). Appendix G contains graphs of the hand water level data, original pressure transducer data (corrected for initial drift), and corrected pressure transducer data. Signs were changed on the data for graphing purposes.

5. Correction for barometric pressure changes using the site barometer ("kencot bar. corr" entries in Table E-1). The site's barometer is altitude-corrected. Depending on the type of aquifer, water levels will respond at some percentage of barometric changes (aquifer efficiency). The aquifer efficiency was determined by applying various factors to the original data until the data plot curve was smoothed out. For analysis of data from the pumping well and the two monitoring wells that showed drawdown, 50% aquifer efficiency seemed to be the optimal correction factor. This correction factor did not completely smooth out the end of the data plots, but the aquifer analysis is based on an earlier part of the curve and is not affected by the late-time data. Appendix D contains graphs of the barometric changes and corrected pressure transducer data. The corrected transducer data are shown in Appendix H using 0%, 50%, and 100% aquifer efficiency factors. Signs were changed on the data for graphing purposes.

The recovery data were not analyzed. A check valve in the discharge pipe of the pumping well did not work properly and allowed the volume of water in the discharge pipe (approximately 4.8 gallons) to drain down into the well. Review of the recovery data indicates that the "slug" of water drained back over some period of time, which does not allow analysis of the recovery. Drawdown in TMW-75 and TMW-78 was deemed insufficient to allow analysis of recovery.

## Table 3.2 Pumping Test Results for TMW-16 and TMW-29 Corrections

| WELL NAME | RADIAL DISTANCE (feet) | HANTUSH METHOD | | | NEUMAN METHOD | | |
|---|---|---|---|---|---|---|---|
| | | TRANSMISSIVITY (feet*2/day) | K (35 FT) (feet/day) | STORATIVITY | TRANSMISSIVITY (feet*2/day) | K (35 FT) (feet/day) | STORATIVITY |
| **PUMPING WELL** | | | | | | | |
| TMW-17 (TMW-16 corrected) (2) | .3(1) | 32.98 | 0.94 | | 33.70 | 0.96 | |
| TMW-17 (TMW-29 corrected) (3) | .3(1) | 32.98 | 0.94 | | 30.82 | 0.88 | |
| **OBSERVATION WELLS** | | | | | | | |
| TMW-78 (TMW-16 corrected) (2) | 450 | 2779.20 | 79.50 | 1.81E-04 | 1872.00 | 53.71 | 1.65E-04 |
| TMW-78 (TMW-29 corrected) (3) | 450 | 2836.80 | 81.05 | 1.42E-04 | 1828.80 | 52.30 | 1.46E-04 |
| | | | | | | | |
| TMW-75 (TMW-16 corrected) (2) | 200 | 763.20 | 21.74 | 1.37E-04 | 439.20 | 12.50 | 1.09E-04 |
| TMW-75 (TMW-29 corrected) (3) | 200 | 721.44 | 20.60 | 1.08E-04 | 424.80 | 12.15 | 9.90E-05 |

note (1) radius is radius of well. Required for software to complete calculations. No storativity calc.

note (2) (TMW-16 correction) means corrected for initial transducer drift; and for barometric pressure changes using the pressure transducer data from TMW-16.

note (3) (TMW-29 correction) means corrected for initial transducer drift; and for barometric pressure changes using the pressure transducer data from TMW-29.

## 3.2 Results

The results of the type-curve matching are summarized in Table 1 and Table E-1. The data that were corrected using the barometric pressure changes from TMW-16 and TMW-29 and an initial drift correction produced the most uniform curves and were deemed to be the most reliable; therefore, only this data set (TMW-16 and TMW-29 corrected) is addressed in the results and conclusions and is presented in Table 3.2. A comparison of all the correction factors is contained in Table E-1. Figure 5 shows the cone of depression in plan view and Figure 3 shows the water level before the start of pumping and the cone of depression in cross-sectional view.

Overall, the data appear to match the Neuman (unconfined aquifer) curves somewhat better than the Hantush (leaky-confined aquifer) curves, but the data do not allow for a definitive distinction as to which aquifer response is representative. The high barometric response and the presence of abundant claystone layers suggests that the leaky-confined aquifer response might be the more appropriate response; however, there is no aquifer above the upper saturated sand aquifer (as is assumed in the Hantush method) and thus the aquifer itself would have to be divided into subaquifers by the claystone layers for the leaky-confined response to be the correct response. Thus, the upper saturated sand aquifer may behave as an unconfined aquifer despite the claystone layers. For this reason, the Neuman method results for transmissivity and hydraulic conductivity are preferred; but both the Neuman and Hantush methods resulted in similar transmissivities and hydraulic conductivities.

The pumping well TMW-17 had a low transmissivity, ranging from approximately 31 to 33 feet squared per day ($ft^2$/day). Using an effective transmissive thickness of 35 feet for the 50 feet of screened interval in each well (because of the claystone layers), a hydraulic conductivity range of approximately 0.9 to 1.0 feet/day is obtained. This is quite tight for a sand and lower than the conductivity found at the other monitor wells that showed a response during the aquifer test.

The two monitor wells that exhibited useable responses to pumping, TMW-78 and TMW-75, had considerably higher transmissivities than the pumping well. For example, TMW-75 is 200 feet from the pumping well to the north and had transmissivities in the range of approximately

425 to 440 $ft^2$/day (3,180 to 3,290 gpd/ft), giving a hydraulic conductivity for a 35-foot saturated thickness of approximately 12 to 13 feet/day. Storativity values for this well ranged from 1.1E-4 to 9.9E-5 for the barometric corrections used.

Well TMW-78 is 450 feet from the pumping well and showed transmissivities in the range of 1829 to 1872 $ft^2$/day (13,700 to 14,000 gpd/ft) and hydraulic conductivities of 52 to 54 feet per day for TMW-29 and TMW-16 barometric corrections. Storativity values for this well ranged from 1.7E-4 to 1.5E-4.

## 4.0 CONCLUSIONS

The following conclusions were reached based on the aquifer test data from the pumping test conducted on well TMW-17 during December 1996:

1. The upper saturated sand aquifer responds to pumping like an unconfined aquifer, although the leaky-confined response may also be appropriate.

2. Based on the plotted curves, the best correction factors are those derived from TMW-16 and TMW-29 data.

3. The transmissivity of the upper saturated sand aquifer is approximately 430 $ft^2$/day (3,200 gpd/ft) for distances in the range of 200 feet from the tailings (TMW-75). The resulting hydraulic conductivity is approximately 12 feet/day.

4 The transmissivity of the upper saturated sand aquifer is approximately 1850 $ft^2$/day (13,800 gpd/ft) for distances in the range of 450 feet from the tailings (TMW-78). The resulting hydraulic conductivity is approximately 53 feet/day.

5. The pumping well, TMW-17, had a transmissivity of approximately 30 $ft^2$/day (220 gpd/ft), and a hydraulic conductivity of approximately 1.0 feet/day, considerably lower than that of TMW-16 or TMW-29.

6. The transmissivity of the upper saturated sand aquifer may increase with distance away from the tailings.

7. The storativity of the upper saturated sand aquifer is in the range of 1.7E-4 to 9.9E-5.

8. For the pumping well evaluated, the pumping rate, and the length of pumping in this aquifer test, no conclusion can be made regarding the hydrologic connection of the upper and lower saturated sands.

## 5.0 REFERENCES


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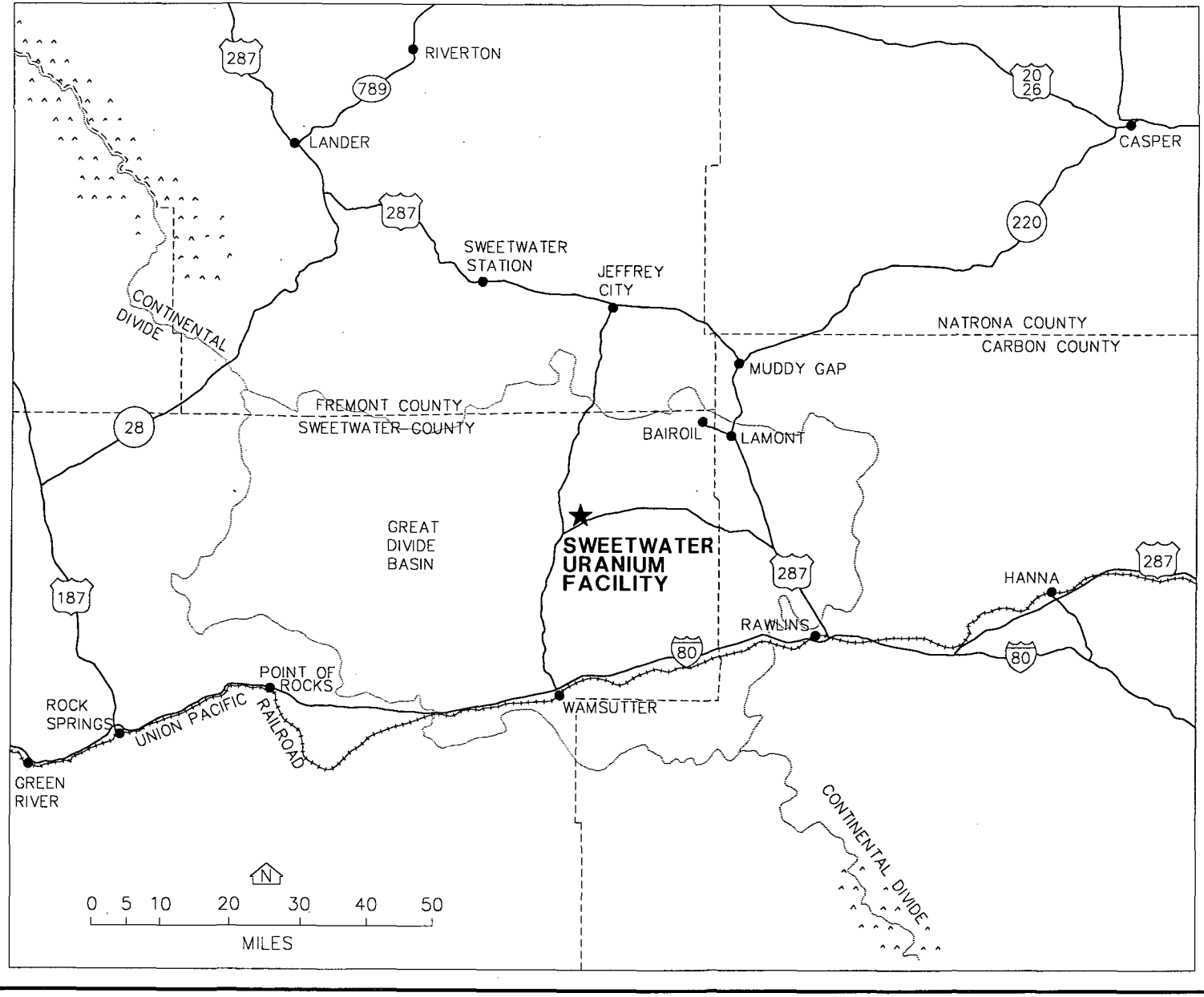
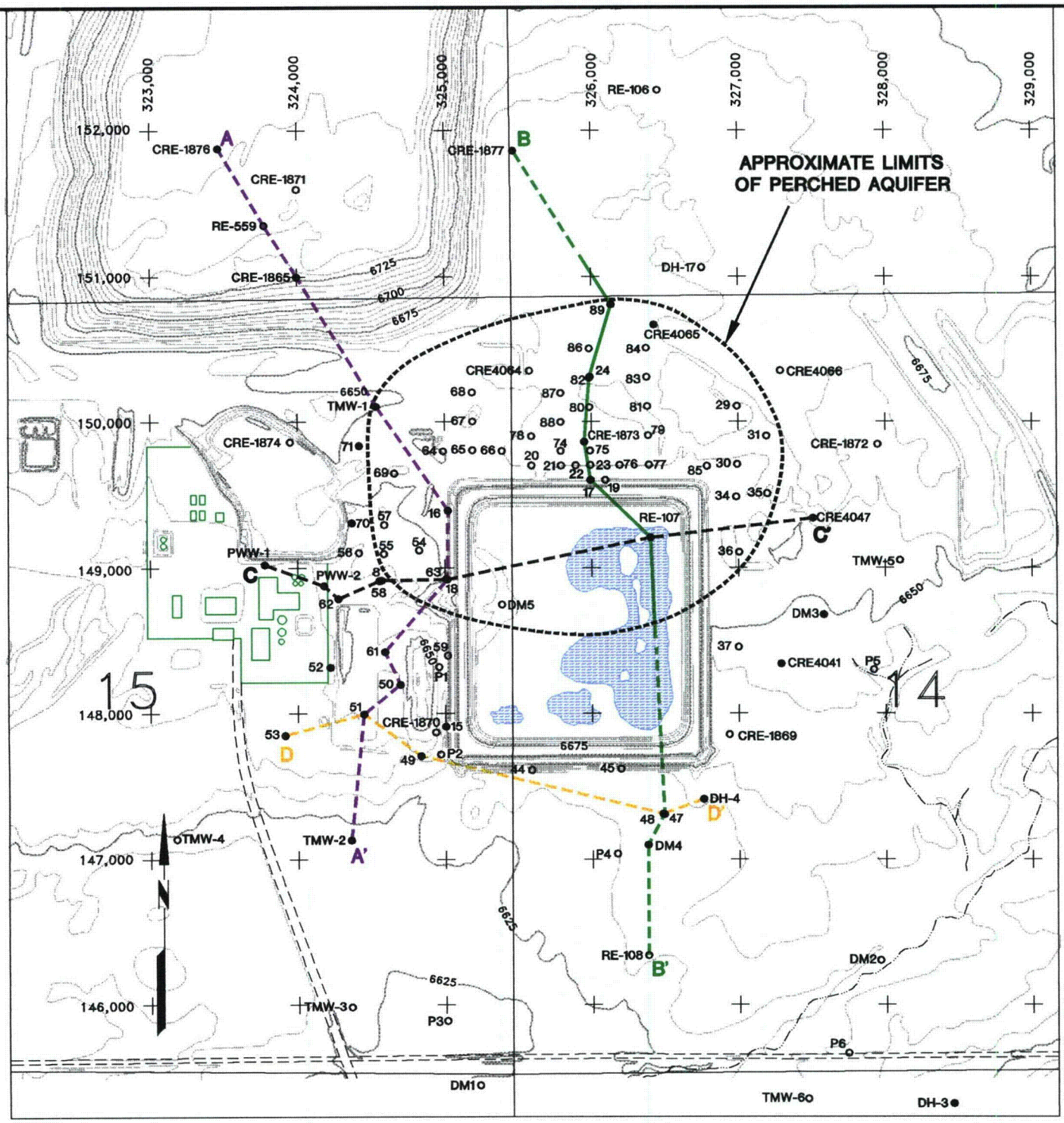



SHEPHERD MILLER
INCORPORATED

FIGURE 1
LOCATION OF
SWEETWATER PROJECT SITE

| | |
|---|---|
| Date: | NOV. 1996 |
| Project: | 06-442 |
| File: | PROSITE |




NOTES:

ALL WELLS HAVE A TMW PREFIX (UNLESS OTHERWISE NOTED)

| | |
|---|---|
| TMW-1 TO 89: | TAILINGS MONITOR WELLS |
| P1 – P6: | BORINGS FROM 1976 DAMES & MOORE STUDY |
| DM1 – DM5: | PRELIMINARY BORINGS FROM 1976 DAMES & MOORE STUDY |
| RE: | EXPLORATION HOLES |
| CRE: | EXPLORATION HOLES |
| PWW-1 & 2 | WATER WELLS |
| DH: | EXPLORATION HOLES |

SOLID LINE INDICATES PORTION OF CROSS SECTION INCLUDED IN FIGURE 3.

DASHED LINES INDICATES CROSS SECTIONS INCLUDED IN SHEPHERD MILLER, INC. (1995).

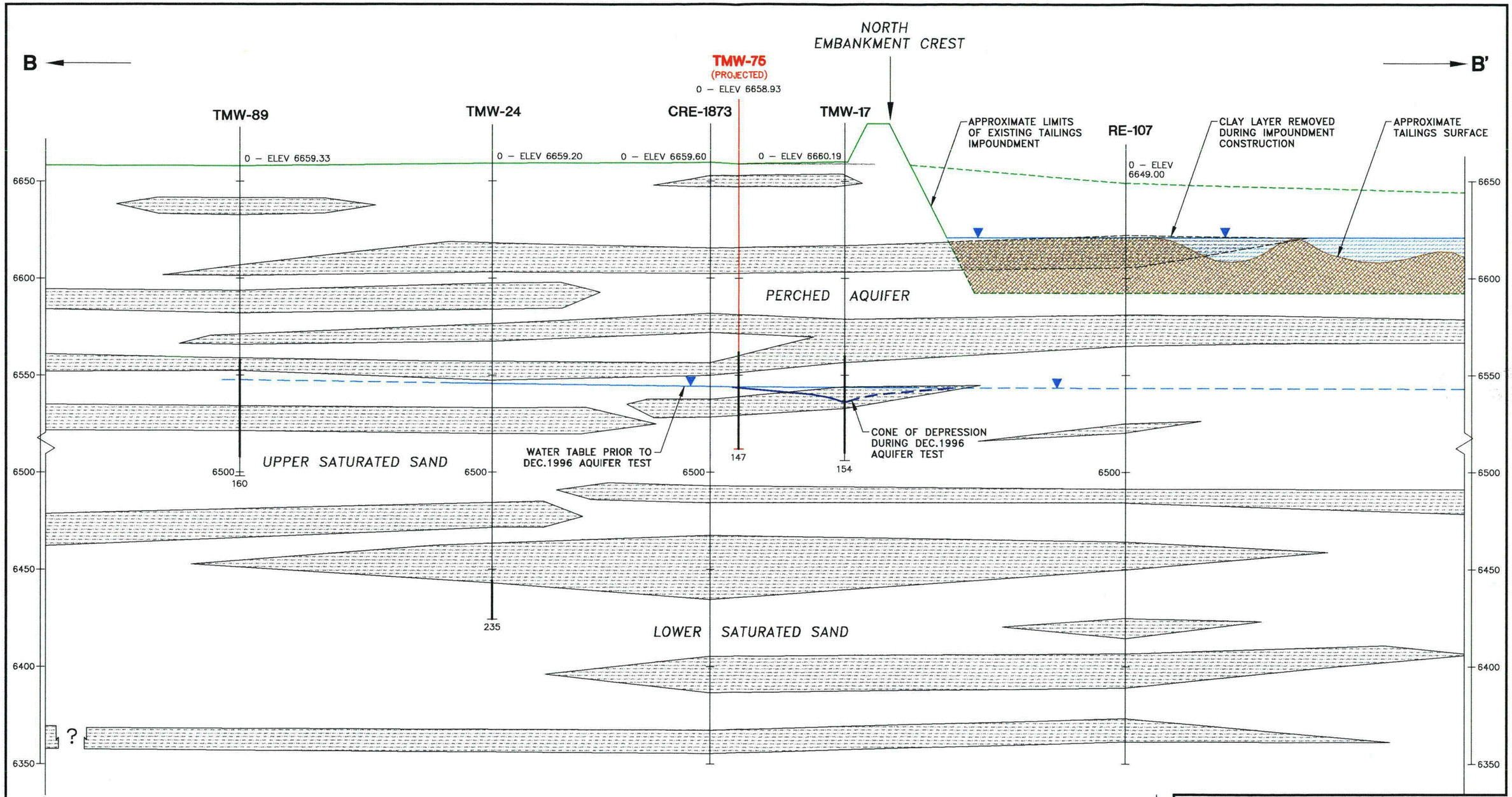
SCALE IN FEET

1000 0 2000

SHEPHERD MILLER INCORPORATED

FIGURE 2
LOCATION OF BOREHOLES AND GEOLOGIC CROSS SECTIONS

| | |
|---|---|
| Date: | JAN. 1997 |
| Project: | 06-302 |
| File: | XSEC-LOC |




LEGEND:

CLAY OR CLAYSTONE

SAND OR SANDSTONE

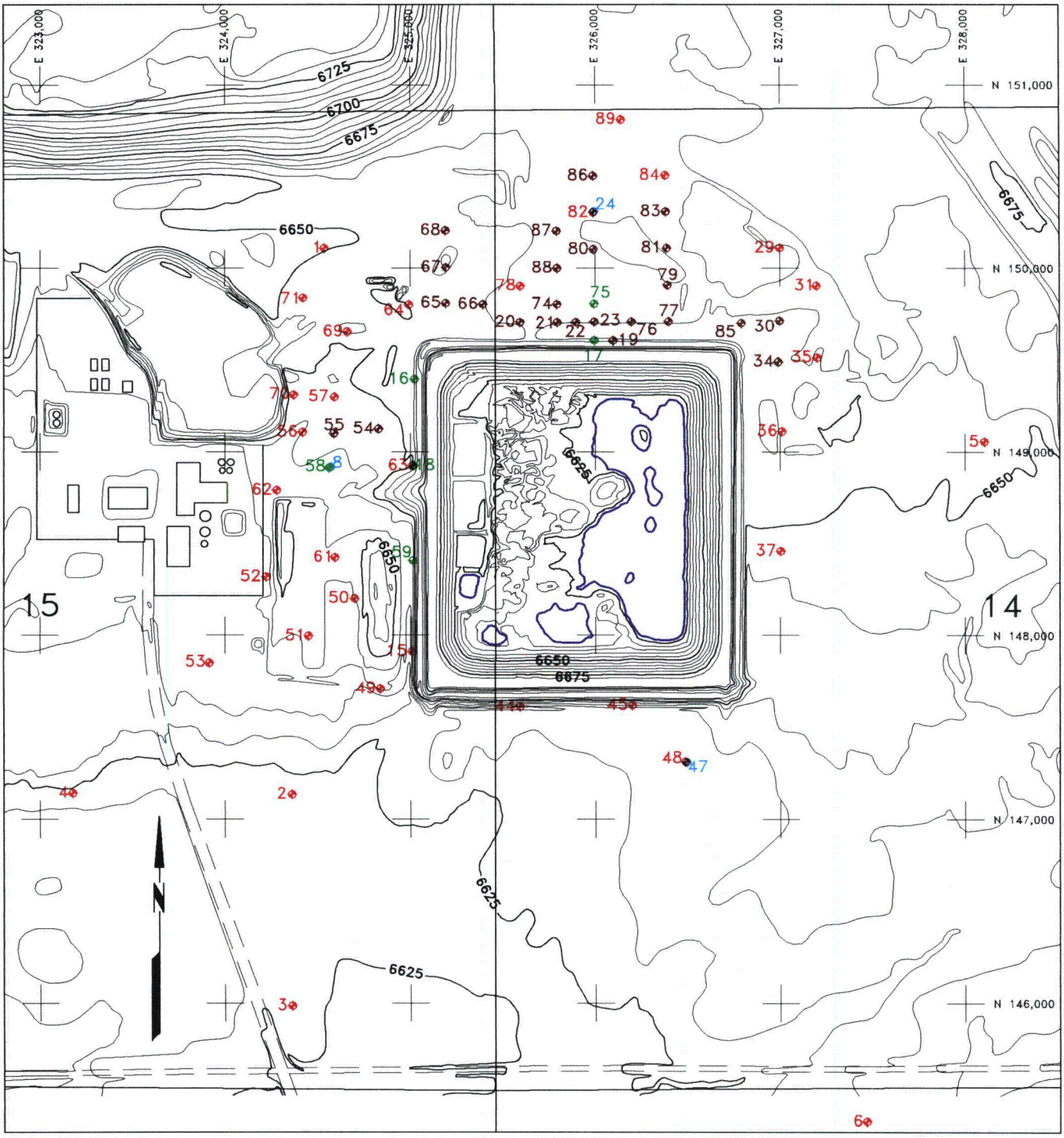
SCALE: HORIZONTAL: 1"=200'
VERTICAL: 1"=50'

N

FIGURE 3
GEOLOGIC CROSS SECTION IN VICINITY OF 1996 AQUIFER TEST

SHEPHERD MILLER INCORPORATED

| | |
|---|---|
| Date: | JAN. 1997 |
| Project: | 06-302 |
| File: | XSEC-BB |




SCALE IN FEET

800 0 1600

TOPOGRAPHY FROM 7-4-83 AERIAL PHOTOGRAPHY,
TAILINGS CONTOURS FROM 11-3-96 AERIAL PHOTOGRAPHY

LEGEND

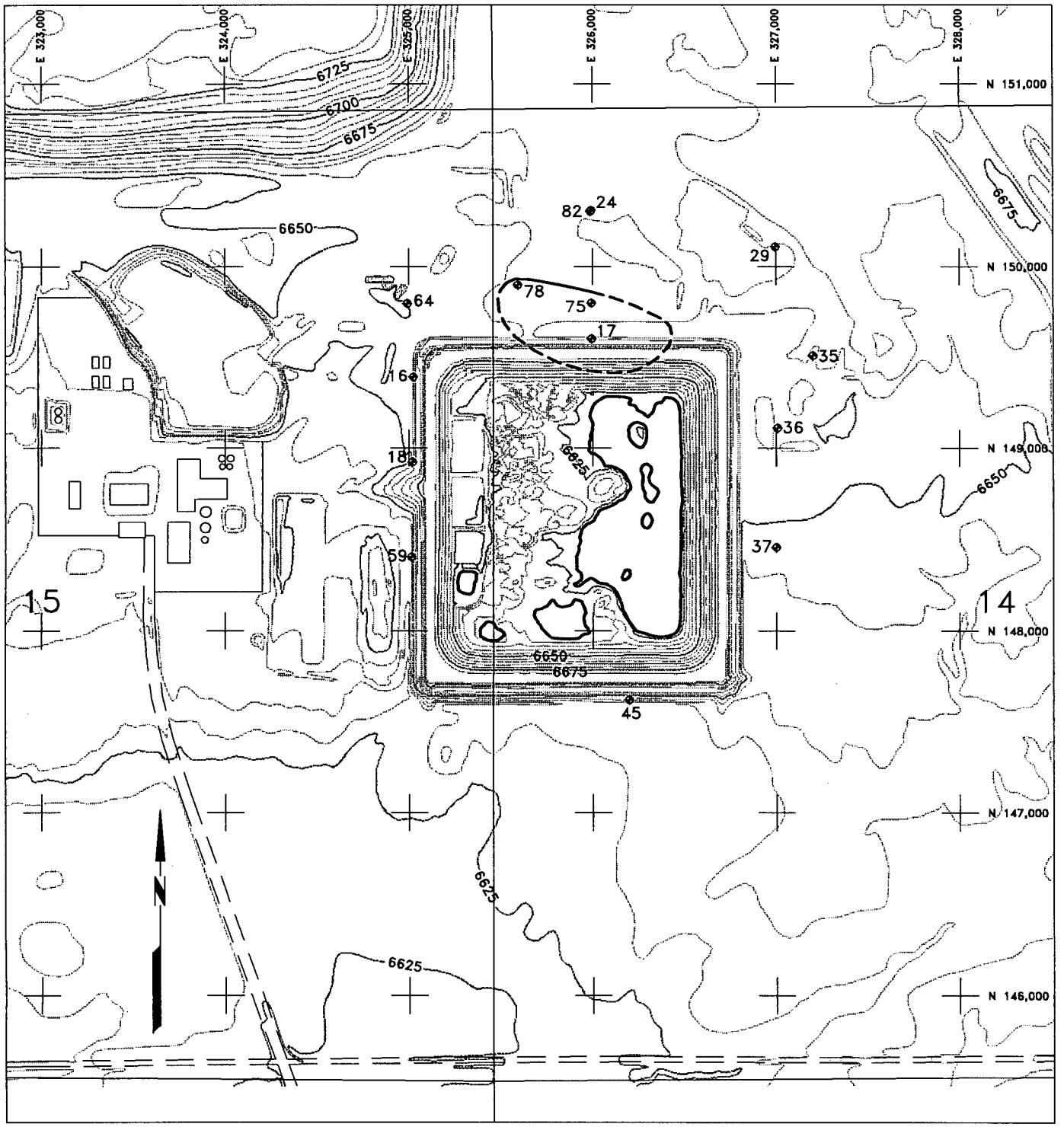
- SHALLOW WELLS (PERCHED)
- DEEP AQUIFER WELLS
- AQUIFER WELLS
- PUMPBACK WELLS, AQUIFER

NOTE: ALL WELLS HAVE A TMW PREFIX (TYP.)

SHEPHERD MILLER INCORPORATED

FIGURE 4
TAILINGS CELL MONITOR WELL MAP

| | |
|---|---|
| Date: | JAN. 1997 |
| Project: | 06-442 |
| File: | CELLMAP |




SCALE IN FEET

800 0 1600

EXTENT OF DRAWDOWN

POSSIBLE EXTENT OF DRAWDOWN

TOPOGRAPHY FROM 7-4-83 AERIAL PHOTOGRAPHY,
TAILINGS CONTOURS FROM 11-3-96 AERIAL PHOTOGRAPHY

NOTE: ALL WELLS HAVE A TMW PREFIX (TYP.)

SHEPHERD MILLER INCORPORATED

FIGURE 5
WELLS USED IN 1996 AQUIFER TEST

| | |
|---|---|
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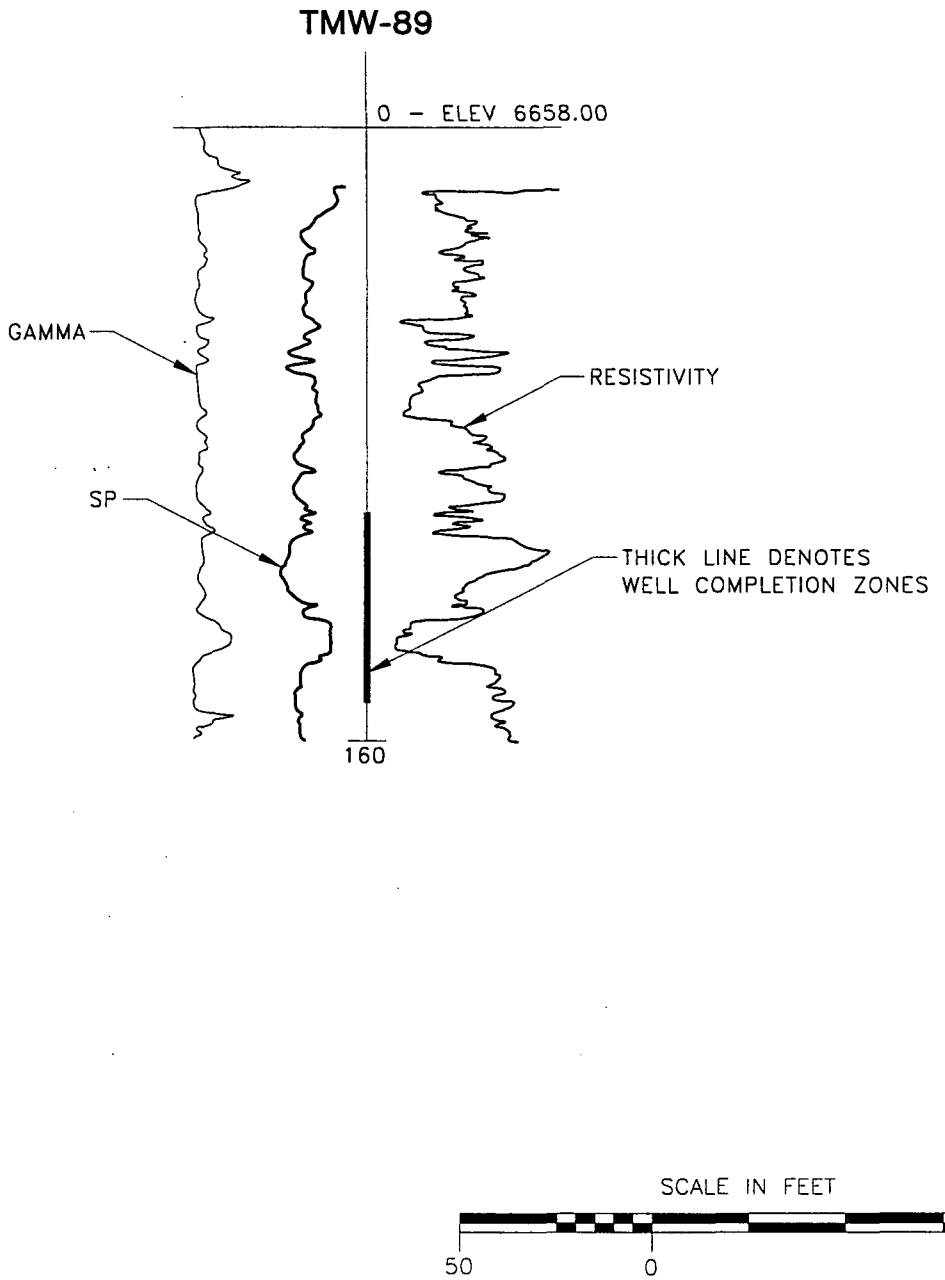
| Project: | 06-302 |
| File: | AQ-TST |

# APPENDIX A

# DATA PLOTS AND TYPE-CURVES




SHEPHERD MILLER
INCORPORATED

TMW-89
GEOPHYSICAL LOG

| | |
|---|---|
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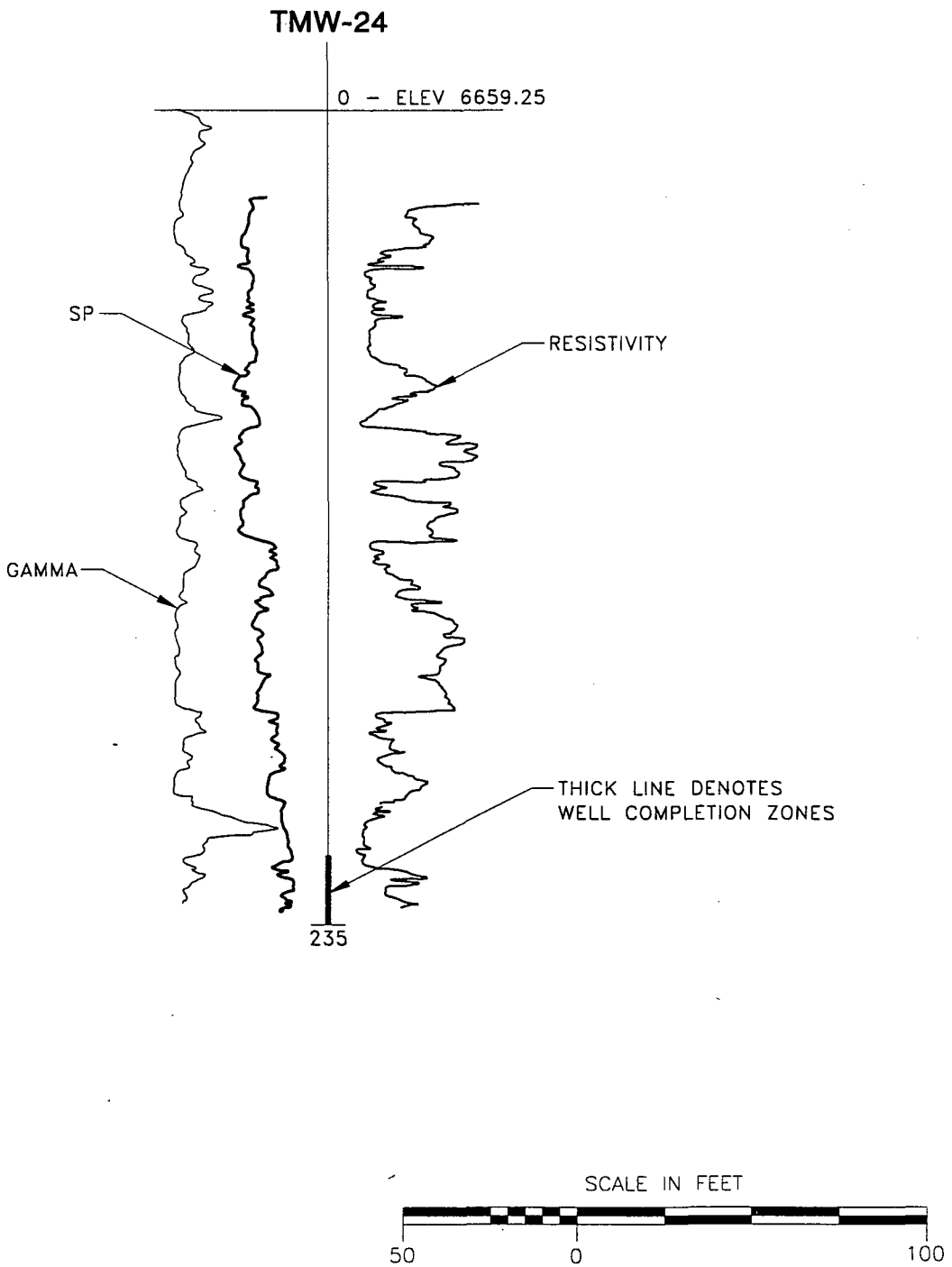
| Project: | 06-442 |
| File: | TMW89C |




SHEPHERD MILLER
INCORPORATED

TMW-24
GEOPHYSICAL LOG

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|---|---|
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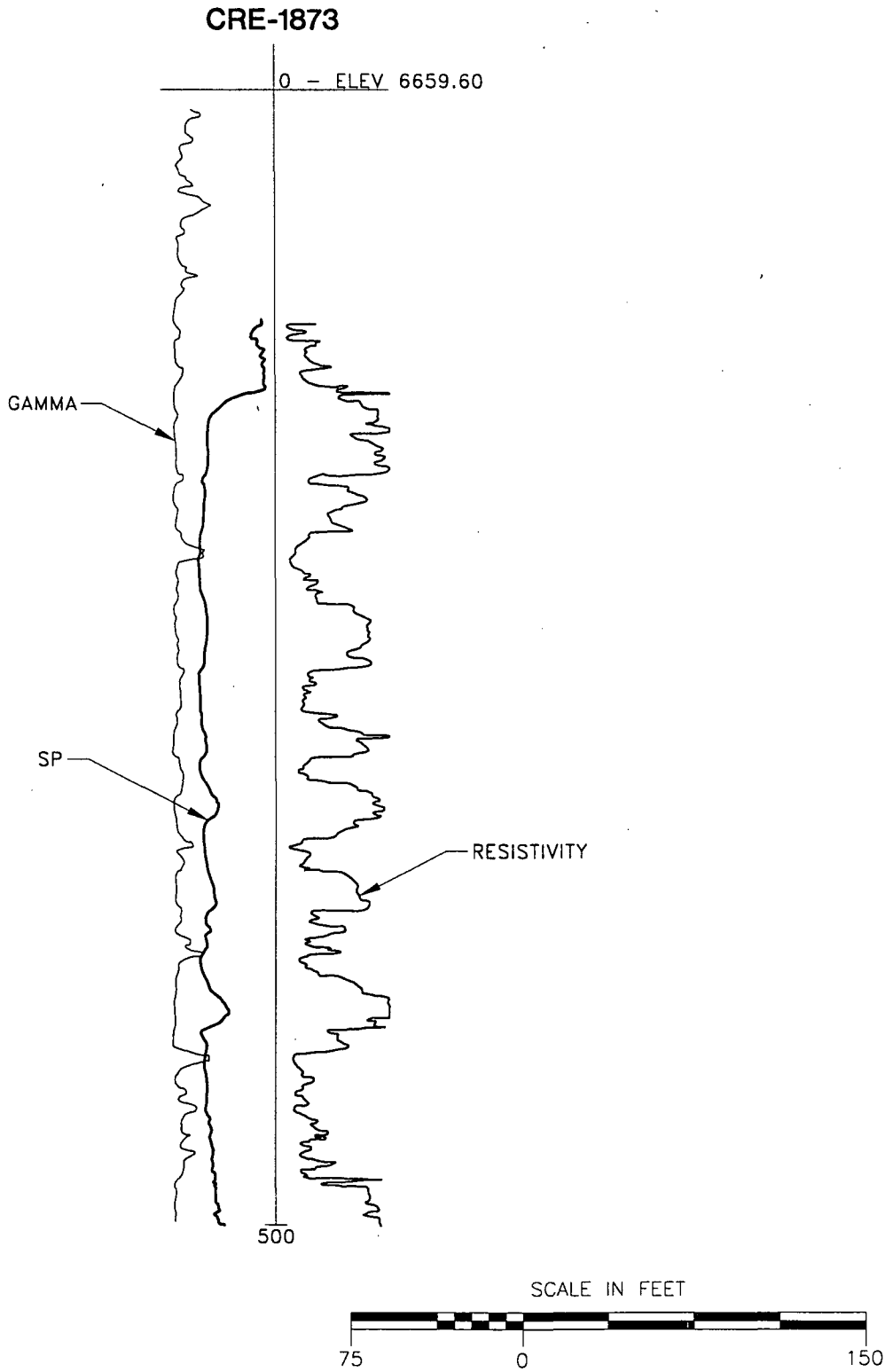
| Project: | 06-442 |
| File: | TMW24C_5 |




SHEPHERD MILLER INCORPORATED

CRE-1873
GEOPHYSICAL LOG

| | |
|---|---|
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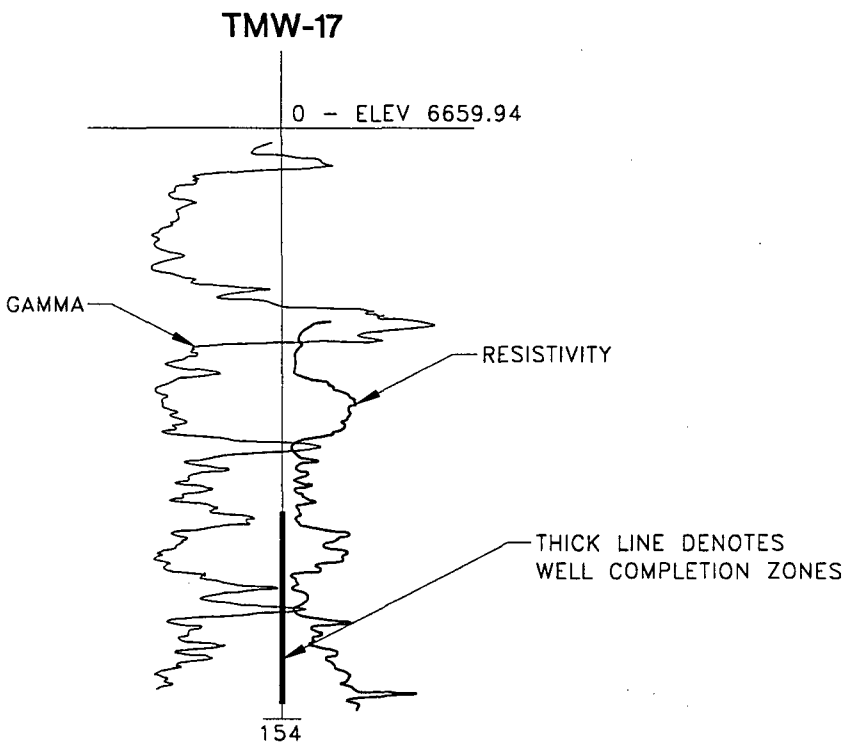
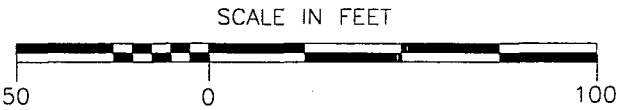
| Project: | 06-442 |
| File: | CRE1873C |




SHEPHERD MILLER
INCORPORATED

TMW-17
GEOPHYSICAL LOG

| | |
|---|---|
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| Project: | 06-442 |
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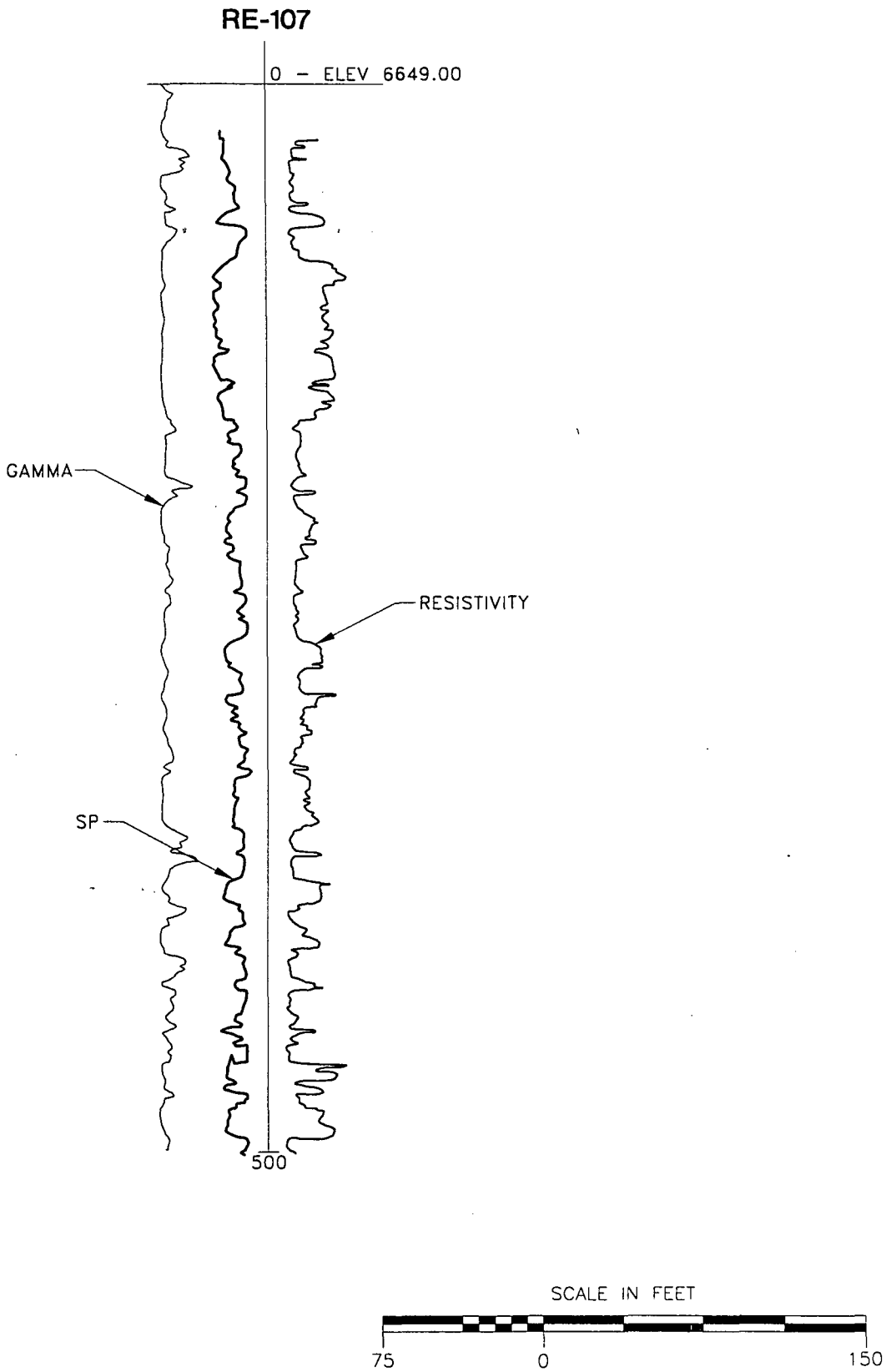


SHEPHERD MILLER INCORPORATED

RE-107
GEOPHYSICAL LOG

| | |
|---|---|
| Date: | AUG. 1995 |
| Project: | 06-442 |
| File: | RE107C |

# APPENDIX B

# TMW-45 CORRECTED DATA

RECOVERY PORTION OF THE AQUIFER TEST

SE2000
Environmental Logger
12/12/96 11:07

Unit# 6 12 Test 0

| Setups: | INPUT 1 | INPUT 2 | INPUT 3 | INPUT 4 | INPUT 5 | INPUT 6 | INPUT 7 | INPUT 8 |
|---|---|---|---|---|---|---|---|---|
| Type | Level (F) | Level (F) | Level (F) | Level (F) | Level (F) | Level (F) | Level (F) | Level (F) |
| Mode | TOC | TOC | TOC | TOC | TOC | TOC | TOC | TOC |
| I.D. | TMW16 | TMW78 | TMW24 | TMW82 | TMW75 | TMW17 | TMW29 | TMW35 |
| Reference | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PSI at Ref. | 4.283 | 4.29 | 4.596 | 4.595 | 5.034 | 6.281 | 5.319 | 4.669 |
| SG | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Linearity | 0.039 | 0.086 | 0.002 | 0.014 | 0.142 | -0.028 | 0.008 | 0.012 |
| Scale factor | 19.94 | 19.857 | 29.84 | 19.977 | 19.799 | 19.985 | 19.978 | 19.961 |
| Offset | 0.036 | -0.019 | -0.072 | 0.001 | 0.026 | 0.013 | -0.017 | -0.046 |
| Delay mSEC | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |

Step 1 12/10/96 1:21 PM 9:39 PM

| Elapsed Time | INPUT 1 | INPUT 2 | INPUT 3 | INPUT 4 | INPUT 5 | INPUT 6 | INPUT 7 | INPUT 8 |
|---|---|---|---|---|---|---|---|---|
| 0 | -0.483 | -0.262 | -0.206 | -0.465 | -0.1 | 7.66 | -0.46 | -0.031 |
| 0.0083 | -0.489 | -0.269 | -0.206 | -0.465 | -0.106 | 7.565 | -0.46 | -0.037 |
| 0.0166 | -0.495 | -0.269 | -0.206 | -0.465 | -0.106 | 7.445 | -0.46 | -0.037 |
| 0.025 | -0.495 | -0.269 | -0.206 | -0.465 | -0.112 | 7.47 | -0.46 | -0.037 |
| 0.0333 | -0.495 | -0.269 | -0.206 | -0.465 | -0.106 | 7.458 | -0.46 | -0.037 |
| 0.0416 | -0.502 | -0.269 | -0.206 | -0.465 | -0.112 | 7.433 | -0.46 | -0.037 |
| 0.05 | -0.502 | -0.262 | -0.206 | -0.465 | -0.112 | 7.401 | -0.46 | -0.044 |
| 0.0583 | -0.495 | -0.269 | -0.206 | -0.465 | -0.106 | 7.37 | -0.46 | -0.037 |
| 0.0666 | -0.495 | -0.269 | -0.206 | -0.471 | -0.106 | 7.332 | -0.46 | -0.037 |
| 0.075 | -0.495 | -0.269 | -0.206 | -0.465 | -0.106 | 7.288 | -0.46 | -0.037 |
| 0.0833 | -0.495 | -0.269 | -0.206 | -0.471 | -0.112 | 7.237 | -0.46 | -0.044 |
| 0.0916 | -0.495 | -0.269 | -0.206 | -0.465 | -0.112 | 7.193 | -0.46 | -0.044 |
| 0.1 | -0.495 | -0.269 | -0.206 | -0.465 | -0.112 | 7.149 | -0.46 | -0.037 |
| 0.1083 | -0.502 | -0.269 | -0.206 | -0.465 | -0.112 | 7.105 | -0.46 | -0.037 |
| 0.1166 | -0.495 | -0.275 | -0.206 | -0.465 | -0.106 | 7.067 | -0.46 | -0.037 |
| 0.125 | -0.495 | -0.269 | -0.206 | -0.471 | -0.106 | 7.029 | -0.46 | -0.044 |
| 0.1333 | -0.495 | -0.262 | -0.206 | -0.465 | -0.106 | 6.998 | -0.46 | -0.044 |
| 0.1416 | -0.495 | -0.269 | -0.206 | -0.471 | -0.112 | 6.96 | -0.46 | -0.044 |
| 0.15 | -0.495 | -0.275 | -0.206 | -0.465 | -0.112 | 6.928 | -0.46 | -0.044 |
| 0.1583 | -0.495 | -0.275 | -0.206 | -0.465 | -0.106 | 6.884 | -0.466 | -0.044 |
| 0.1666 | -0.495 | -0.275 | -0.206 | -0.471 | -0.112 | 6.84 | -0.46 | -0.044 |
| 0.175 | -0.495 | -0.275 | -0.206 | -0.471 | -0.106 | 6.796 | -0.46 | -0.044 |
| 0.1833 | -0.502 | -0.275 | -0.206 | -0.465 | -0.106 | 6.752 | -0.46 | -0.044 |
| 0.1916 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 6.707 | -0.466 | -0.037 |

| Elapsed Time | INPUT_1 | INPUT_2 | INPUT_3 | INPUT_4 | INPUT_5 | INPUT_6 | INPUT_7 | INPUT_8 |
|---|---|---|---|---|---|---|---|---|
| 0.2 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 6.663 | -0.46 | -0.037 |
| 0.2083 | -0.495 | -0.275 | -0.206 | -0.465 | -0.112 | 6.625 | -0.46 | -0.037 |
| 0.2166 | -0.495 | -0.275 | -0.197 | -0.465 | -0.112 | 6.588 | -0.46 | -0.037 |
| 0.225 | -0.495 | -0.275 | -0.206 | -0.465 | -0.106 | 6.55 | -0.46 | -0.044 |
| 0.2333 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 6.512 | -0.466 | -0.044 |
| 0.2416 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 6.474 | -0.46 | -0.037 |
| 0.25 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 6.436 | -0.46 | -0.044 |
| 0.2583 | -0.502 | -0.269 | -0.206 | -0.465 | -0.106 | 6.392 | -0.46 | -0.044 |
| 0.2666 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 6.354 | -0.46 | -0.037 |
| 0.275 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 6.31 | -0.46 | -0.037 |
| 0.2833 | -0.502 | -0.269 | -0.206 | -0.471 | -0.112 | 6.272 | -0.46 | -0.037 |
| 0.2916 | -0.502 | -0.275 | -0.206 | -0.471 | -0.106 | 6.235 | -0.46 | -0.044 |
| 0.3 | -0.502 | -0.275 | -0.206 | -0.465 | -0.106 | 6.19 | -0.46 | -0.044 |
| 0.3083 | -0.502 | -0.275 | -0.206 | -0.465 | -0.106 | 6.146 | -0.46 | -0.044 |
| 0.3166 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 6.108 | -0.46 | -0.044 |
| 0.325 | -0.502 | -0.275 | -0.206 | -0.471 | -0.106 | 6.064 | -0.46 | -0.044 |
| 0.3333 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 6.026 | -0.46 | -0.044 |
| 0.35 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 5.944 | -0.46 | -0.044 |
| 0.3666 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 5.875 | -0.46 | -0.044 |
| 0.3833 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 5.806 | -0.46 | -0.044 |
| 0.4 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 5.743 | -0.46 | -0.044 |
| 0.4166 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 5.686 | -0.46 | -0.044 |
| 0.4333 | -0.502 | -0.275 | -0.206 | -0.465 | -0.106 | 5.629 | -0.46 | -0.044 |
| 0.45 | -0.502 | -0.275 | -0.206 | -0.465 | -0.106 | 5.579 | -0.46 | -0.05 |
| 0.4666 | -0.502 | -0.275 | -0.206 | -0.465 | -0.106 | 5.528 | -0.46 | -0.044 |
| 0.4833 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 5.484 | -0.46 | -0.044 |
| 0.5 | -0.502 | -0.269 | -0.215 | -0.471 | -0.112 | 5.434 | -0.46 | -0.037 |
| 0.5166 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 5.396 | -0.46 | -0.044 |
| 0.5333 | -0.502 | -0.269 | -0.206 | -0.465 | -0.112 | 5.358 | -0.466 | -0.044 |
| 0.55 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 5.333 | -0.46 | -0.05 |
| 0.5666 | -0.502 | -0.269 | -0.206 | -0.471 | -0.106 | 5.301 | -0.46 | -0.044 |
| 0.5833 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 5.264 | -0.46 | -0.037 |
| 0.6 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 5.219 | -0.466 | -0.037 |
| 0.6166 | -0.502 | -0.269 | -0.206 | -0.471 | -0.112 | 5.175 | -0.466 | -0.037 |
| 0.6333 | -0.502 | -0.269 | -0.206 | -0.471 | -0.112 | 5.125 | -0.46 | -0.044 |
| 0.65 | -0.502 | -0.269 | -0.206 | -0.465 | -0.106 | 5.081 | -0.46 | -0.044 |
| 0.6666 | -0.502 | -0.269 | -0.206 | -0.465 | -0.106 | 5.037 | -0.46 | -0.044 |
| 0.6833 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 4.992 | -0.46 | -0.044 |
| 0.7 | -0.502 | -0.275 | -0.206 | -0.471 | -0.106 | 4.942 | -0.46 | -0.044 |
| 0.7166 | -0.502 | -0.275 | -0.206 | -0.465 | -0.106 | 4.898 | -0.466 | -0.044 |
| 0.7333 | -0.502 | -0.275 | -0.206 | -0.465 | -0.106 | 4.847 | -0.466 | -0.044 |
| 0.75 | -0.502 | -0.269 | -0.206 | -0.465 | -0.106 | 4.803 | -0.466 | -0.05 |
| 0.7666 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 4.753 | -0.46 | -0.044 |
| 0.7833 | -0.502 | -0.275 | -0.206 | -0.465 | -0.106 | 4.709 | -0.46 | -0.05 |
| 0.8 | -0.502 | -0.275 | -0.206 | -0.471 | -0.106 | 4.658 | -0.46 | -0.044 |
| 0.8166 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 4.608 | -0.466 | -0.044 |
| 0.8333 | -0.502 | -0.275 | -0.197 | -0.465 | -0.106 | 4.557 | -0.466 | -0.044 |
| 0.85 | -0.502 | -0.275 | -0.206 | -0.471 | -0.106 | 4.513 | -0.46 | -0.044 |

| Elapsed Time | INPUT_1 | INPUT_2 | INPUT_3 | INPUT_4 | INPUT_5 | INPUT_6 | INPUT_7 | INPUT_8 |
|---|---|---|---|---|---|---|---|---|
| 0.8666 | -0.502 | -0.281 | -0.206 | -0.465 | -0.106 | 4.463 | -0.466 | -0.05 |
| 0.8833 | -0.502 | -0.275 | -0.206 | -0.465 | -0.112 | 4.419 | -0.46 | -0.044 |
| 0.9 | -0.502 | -0.275 | -0.206 | -0.471 | -0.112 | 4.374 | -0.46 | -0.044 |
| 0.9166 | -0.502 | -0.281 | -0.206 | -0.471 | -0.112 | 4.33 | -0.46 | -0.044 |
| 0.9333 | -0.502 | -0.281 | -0.206 | -0.471 | -0.112 | 4.286 | -0.46 | -0.044 |
| 0.95 | -0.502 | -0.281 | -0.206 | -0.465 | -0.112 | 4.242 | -0.46 | -0.044 |
| 0.9666 | -0.502 | -0.281 | -0.206 | -0.471 | -0.112 | 4.198 | -0.46 | -0.044 |
| 0.9833 | -0.502 | -0.281 | -0.206 | -0.465 | -0.112 | 4.148 | -0.466 | -0.044 |
| 1 | -0.502 | -0.281 | -0.206 | -0.465 | -0.112 | 4.11 | -0.46 | -0.044 |
| 1.2 | -0.495 | -0.287 | -0.206 | -0.471 | -0.106 | 3.605 | -0.46 | -0.044 |
| 1.4 | -0.495 | -0.287 | -0.215 | -0.471 | -0.106 | 3.17 | -0.46 | -0.044 |
| 1.6 | -0.495 | -0.281 | -0.215 | -0.471 | -0.112 | 2.798 | -0.46 | -0.05 |
| 1.8 | -0.495 | -0.275 | -0.215 | -0.465 | -0.112 | 2.471 | -0.46 | -0.05 |
| 2 | -0.495 | -0.269 | -0.206 | -0.465 | -0.119 | 2.187 | -0.46 | -0.05 |
| 2.2 | -0.495 | -0.262 | -0.206 | -0.465 | -0.125 | 1.935 | -0.46 | -0.05 |
| 2.4 | -0.495 | -0.262 | -0.206 | -0.458 | -0.125 | 1.708 | -0.46 | -0.044 |
| 2.6 | -0.495 | -0.262 | -0.206 | -0.465 | -0.131 | 1.5 | -0.46 | -0.044 |
| 2.8 | -0.495 | -0.262 | -0.206 | -0.465 | -0.131 | 1.317 | -0.46 | -0.044 |
| 3 | -0.495 | -0.262 | -0.206 | -0.465 | -0.144 | 1.153 | -0.46 | -0.044 |
| 3.2 | -0.495 | -0.269 | -0.206 | -0.465 | -0.144 | 1.008 | -0.46 | -0.044 |
| 3.4 | -0.495 | -0.275 | -0.206 | -0.465 | -0.15 | 0.876 | -0.46 | -0.05 |
| 3.6 | -0.495 | -0.275 | -0.206 | -0.471 | -0.156 | 0.762 | -0.46 | -0.044 |
| 3.8 | -0.495 | -0.269 | -0.206 | -0.471 | -0.156 | 0.661 | -0.46 | -0.044 |
| 4 | -0.495 | -0.275 | -0.206 | -0.471 | -0.169 | 0.567 | -0.46 | -0.05 |
| 4.2 | -0.502 | -0.281 | -0.206 | -0.465 | -0.175 | 0.485 | -0.46 | -0.044 |
| 4.4 | -0.495 | -0.281 | -0.206 | -0.465 | -0.181 | 0.416 | -0.46 | -0.044 |
| 4.6 | -0.495 | -0.275 | -0.206 | -0.458 | -0.181 | 0.352 | -0.46 | -0.05 |
| 4.8 | -0.495 | -0.281 | -0.206 | -0.465 | -0.188 | 0.296 | -0.46 | -0.044 |
| 5 | -0.495 | -0.287 | -0.206 | -0.465 | -0.194 | 0.245 | -0.46 | -0.05 |
| 5.2 | -0.495 | -0.281 | -0.206 | -0.465 | -0.2 | 0.201 | -0.46 | -0.044 |
| 5.4 | -0.495 | -0.294 | -0.206 | -0.465 | -0.2 | 0.163 | -0.46 | -0.05 |
| 5.6 | -0.502 | -0.3 | -0.206 | -0.465 | -0.207 | 0.126 | -0.46 | -0.05 |
| 5.8 | -0.502 | -0.3 | -0.206 | -0.465 | -0.207 | 0.094 | -0.46 | -0.05 |
| 6 | -0.495 | -0.306 | -0.215 | -0.465 | -0.213 | 0.069 | -0.46 | -0.05 |
| 6.2 | -0.502 | -0.306 | -0.215 | -0.465 | -0.219 | 0.044 | -0.466 | -0.05 |
| 6.4 | -0.495 | -0.306 | -0.215 | -0.471 | -0.225 | 0.018 | -0.46 | -0.05 |
| 6.6 | -0.502 | -0.3 | -0.206 | -0.471 | -0.225 | 0 | -0.46 | -0.05 |
| 6.8 | -0.495 | -0.287 | -0.215 | -0.471 | -0.225 | -0.018 | -0.466 | -0.05 |
| 7 | -0.495 | -0.287 | -0.206 | -0.465 | -0.232 | -0.037 | -0.46 | -0.05 |
| 7.2 | -0.495 | -0.287 | -0.206 | -0.471 | -0.232 | -0.05 | -0.46 | -0.044 |
| 7.4 | -0.502 | -0.294 | -0.206 | -0.471 | -0.238 | -0.063 | -0.46 | -0.05 |
| 7.6 | -0.495 | -0.3 | -0.215 | -0.471 | -0.244 | -0.075 | -0.46 | -0.05 |
| 7.8 | -0.495 | -0.306 | -0.215 | -0.465 | -0.244 | -0.088 | -0.46 | -0.05 |
| 8 | -0.495 | -0.306 | -0.215 | -0.465 | -0.244 | -0.094 | -0.46 | -0.05 |
| 8.2 | -0.495 | -0.306 | -0.215 | -0.471 | -0.25 | -0.107 | -0.466 | -0.05 |
| 8.4 | -0.502 | -0.3 | -0.215 | -0.471 | -0.25 | -0.113 | -0.46 | -0.05 |
| 8.6 | -0.495 | -0.287 | -0.215 | -0.471 | -0.257 | -0.119 | -0.46 | -0.05 |
| 8.8 | -0.502 | -0.287 | -0.206 | -0.471 | -0.257 | -0.126 | -0.46 | -0.05 |

| Elapsed Time | INPUT 1 | INPUT 2 | INPUT 3 | INPUT 4 | INPUT 5 | INPUT 6 | INPUT 7 | INPUT 8 |
|---|---|---|---|---|---|---|---|---|
| 9 | -0.502 | -0.294 | -0.206 | -0.471 | -0.257 | -0.132 | -0.46 | -0.05 |
| 9.2 | -0.502 | -0.294 | -0.206 | -0.471 | -0.257 | -0.132 | -0.46 | -0.05 |
| 9.4 | -0.502 | -0.294 | -0.206 | -0.471 | -0.263 | -0.138 | -0.466 | -0.044 |
| 9.6 | -0.495 | -0.3 | -0.206 | -0.471 | -0.263 | -0.144 | -0.466 | -0.05 |
| 9.8 | -0.502 | -0.306 | -0.206 | -0.471 | -0.269 | -0.151 | -0.466 | -0.044 |
| 10 | -0.502 | -0.312 | -0.206 | -0.471 | -0.269 | -0.151 | -0.46 | -0.056 |
| 12 | -0.489 | -0.3 | -0.206 | -0.465 | -0.276 | -0.176 | -0.46 | -0.044 |
| 14 | -0.489 | -0.312 | -0.206 | -0.471 | -0.288 | -0.195 | -0.46 | -0.044 |
| 16 | -0.489 | -0.337 | -0.206 | -0.471 | -0.301 | -0.208 | -0.46 | -0.05 |
| 18 | -0.495 | -0.331 | -0.206 | -0.471 | -0.313 | -0.22 | -0.466 | -0.05 |
| 20 | -0.495 | -0.344 | -0.206 | -0.484 | -0.319 | -0.226 | -0.466 | -0.05 |
| 22 | -0.502 | -0.356 | -0.215 | -0.484 | -0.332 | -0.239 | -0.466 | -0.05 |
| 24 | -0.495 | -0.369 | -0.206 | -0.477 | -0.332 | -0.239 | -0.466 | -0.05 |
| 26 | -0.502 | -0.362 | -0.206 | -0.484 | -0.338 | -0.252 | -0.473 | -0.05 |
| 28 | -0.502 | -0.369 | -0.206 | -0.484 | -0.345 | -0.258 | -0.473 | -0.05 |
| 30 | -0.502 | -0.375 | -0.206 | -0.49 | -0.351 | -0.264 | -0.473 | -0.056 |
| 32 | -0.502 | -0.381 | -0.215 | -0.484 | -0.357 | -0.271 | -0.473 | -0.05 |
| 34 | -0.502 | -0.381 | -0.206 | -0.477 | -0.363 | -0.271 | -0.473 | -0.056 |
| 36 | -0.502 | -0.387 | -0.206 | -0.484 | -0.363 | -0.277 | -0.473 | -0.056 |
| 38 | -0.502 | -0.387 | -0.206 | -0.484 | -0.363 | -0.277 | -0.473 | -0.05 |
| 40 | -0.502 | -0.394 | -0.206 | -0.484 | -0.37 | -0.283 | -0.473 | -0.05 |
| 42 | -0.508 | -0.394 | -0.206 | -0.484 | -0.37 | -0.283 | -0.479 | -0.05 |
| 44 | -0.508 | -0.4 | -0.206 | -0.484 | -0.376 | -0.289 | -0.473 | -0.05 |
| 46 | -0.508 | -0.419 | -0.215 | -0.477 | -0.376 | -0.289 | -0.479 | -0.044 |
| 48 | -0.508 | -0.413 | -0.215 | -0.477 | -0.382 | -0.296 | -0.473 | -0.05 |
| 50 | -0.508 | -0.413 | -0.215 | -0.477 | -0.382 | -0.296 | -0.479 | -0.044 |
| 52 | -0.508 | -0.406 | -0.206 | -0.477 | -0.382 | -0.296 | -0.473 | -0.05 |
| 54 | -0.502 | -0.406 | -0.206 | -0.477 | -0.382 | -0.296 | -0.479 | -0.037 |
| 56 | -0.508 | -0.419 | -0.206 | -0.484 | -0.382 | -0.302 | -0.473 | -0.037 |
| 58 | -0.508 | -0.419 | -0.206 | -0.484 | -0.388 | -0.302 | -0.479 | -0.037 |
| 60 | -0.508 | -0.425 | -0.206 | -0.477 | -0.388 | -0.308 | -0.479 | -0.037 |
| 62 | -0.508 | -0.413 | -0.206 | -0.484 | -0.395 | -0.308 | -0.479 | -0.037 |
| 64 | -0.508 | -0.413 | -0.206 | -0.477 | -0.395 | -0.308 | -0.479 | -0.037 |
| 66 | -0.508 | -0.425 | -0.206 | -0.477 | -0.395 | -0.315 | -0.479 | -0.037 |
| 68 | -0.502 | -0.425 | -0.206 | -0.477 | -0.395 | -0.315 | -0.479 | -0.037 |
| 70 | -0.508 | -0.431 | -0.215 | -0.484 | -0.401 | -0.315 | -0.479 | -0.037 |
| 72 | -0.502 | -0.431 | -0.206 | -0.477 | -0.401 | -0.321 | -0.479 | -0.037 |
| 74 | -0.508 | -0.431 | -0.206 | -0.484 | -0.401 | -0.321 | -0.479 | -0.031 |
| 76 | -0.508 | -0.438 | -0.215 | -0.484 | -0.401 | -0.321 | -0.479 | -0.031 |
| 78 | -0.502 | -0.45 | -0.215 | -0.484 | -0.401 | -0.321 | -0.479 | -0.037 |
| 80 | -0.508 | -0.425 | -0.206 | -0.484 | -0.407 | -0.327 | -0.479 | -0.031 |
| 82 | -0.508 | -0.438 | -0.206 | -0.484 | -0.401 | -0.327 | -0.479 | -0.037 |
| 84 | -0.508 | -0.444 | -0.215 | -0.477 | -0.401 | -0.327 | -0.479 | -0.037 |
| 86 | -0.508 | -0.438 | -0.206 | -0.477 | -0.407 | -0.327 | -0.479 | -0.031 |
| 88 | -0.508 | -0.438 | -0.206 | -0.484 | -0.407 | -0.327 | -0.479 | -0.031 |
| 90 | -0.508 | -0.444 | -0.215 | -0.484 | -0.407 | -0.334 | -0.479 | -0.037 |
| 92 | -0.508 | -0.444 | -0.215 | -0.484 | -0.414 | -0.334 | -0.479 | -0.037 |
| 94 | -0.508 | -0.45 | -0.215 | -0.484 | -0.414 | -0.34 | -0.479 | -0.044 |

| Elapsed Time | INPUT_1 | INPUT_2 | INPUT_3 | INPUT_4 | INPUT_5 | INPUT_6 | INPUT_7 | INPUT_8 |
|---|---|---|---|---|---|---|---|---|
| 96 | -0.508 | -0.45 | -0.215 | -0.484 | -0.414 | -0.34 | -0.479 | -0.037 |
| 98 | -0.508 | -0.45 | -0.215 | -0.484 | -0.414 | -0.34 | -0.479 | -0.037 |
| 100 | -0.508 | -0.45 | -0.215 | -0.484 | -0.42 | -0.34 | -0.485 | -0.037 |
| 120 | -0.508 | -0.456 | -0.215 | -0.484 | -0.407 | -0.352 | -0.479 | -0.025 |
| 140 | -0.508 | -0.463 | -0.215 | -0.484 | -0.414 | -0.359 | -0.479 | -0.018 |
| 160 | -0.502 | -0.469 | -0.225 | -0.484 | -0.407 | -0.365 | -0.479 | 0 |
| 180 | -0.502 | -0.475 | -0.225 | -0.477 | -0.407 | -0.378 | -0.479 | 0 |
| 200 | -0.495 | -0.475 | -0.225 | -0.471 | -0.407 | -0.378 | -0.479 | 0 |
| 220 | -0.489 | -0.475 | -0.215 | -0.477 | -0.407 | -0.384 | -0.473 | 0.006 |
| 240 | -0.489 | -0.475 | -0.225 | -0.471 | -0.407 | -0.39 | -0.473 | 0.012 |
| 260 | -0.483 | -0.475 | -0.225 | -0.465 | -0.401 | -0.39 | -0.473 | 0.012 |
| 280 | -0.483 | -0.475 | -0.215 | -0.465 | -0.401 | -0.384 | -0.466 | 0.018 |
| 300 | -0.47 | -0.469 | -0.215 | -0.458 | -0.395 | -0.378 | -0.46 | 0.031 |
| 320 | -0.464 | -0.463 | -0.215 | -0.446 | -0.388 | -0.378 | -0.454 | 0.037 |
| 340 | -0.458 | -0.456 | -0.206 | -0.446 | -0.382 | -0.371 | -0.454 | 0.044 |
| 360 | -0.458 | -0.456 | -0.206 | -0.446 | -0.382 | -0.378 | -0.454 | 0.05 |
| 380 | -0.458 | -0.456 | -0.206 | -0.446 | -0.388 | -0.378 | -0.447 | 0.044 |
| 400 | -0.464 | -0.456 | -0.206 | -0.452 | -0.388 | -0.384 | -0.454 | 0.044 |
| 420 | -0.47 | -0.463 | -0.206 | -0.465 | -0.395 | -0.39 | -0.46 | 0.031 |
| 440 | -0.47 | -0.463 | -0.206 | -0.465 | -0.401 | -0.397 | -0.46 | 0.031 |
| 460 | -0.47 | -0.463 | -0.206 | -0.465 | -0.401 | -0.397 | -0.46 | 0.025 |
| 480 | -0.477 | -0.469 | -0.197 | -0.471 | -0.407 | -0.409 | -0.466 | 0.025 |
| 500 | -0.477 | -0.475 | -0.197 | -0.465 | -0.407 | -0.409 | -0.466 | 0.031 |
| 520 | -0.47 | -0.469 | -0.197 | -0.465 | -0.407 | -0.403 | -0.466 | 0.031 |
| 540 | -0.477 | -0.469 | -0.187 | -0.471 | -0.407 | -0.409 | -0.466 | 0.031 |
| 560 | -0.477 | -0.475 | -0.187 | -0.471 | -0.414 | -0.409 | -0.466 | 0.025 |
| 580 | -0.477 | -0.475 | -0.187 | -0.471 | -0.414 | -0.416 | -0.473 | 0.031 |
| 600 | -0.47 | -0.475 | -0.187 | -0.465 | -0.414 | -0.416 | -0.466 | 0.031 |
| 620 | -0.477 | -0.475 | -0.187 | -0.465 | -0.414 | -0.416 | -0.466 | 0.031 |
| 640 | -0.483 | -0.481 | -0.187 | -0.477 | -0.42 | -0.422 | -0.473 | 0.018 |
| 660 | -0.489 | -0.488 | -0.187 | -0.49 | -0.426 | -0.434 | -0.485 | 0.012 |
| 680 | -0.495 | -0.494 | -0.187 | -0.484 | -0.432 | -0.434 | -0.485 | 0.018 |
| 700 | -0.495 | -0.488 | -0.187 | -0.484 | -0.432 | -0.441 | -0.485 | 0.018 |
| 720 | -0.495 | -0.5 | -0.187 | -0.49 | -0.432 | -0.441 | -0.492 | 0.012 |
| 740 | -0.502 | -0.506 | -0.197 | -0.49 | -0.439 | -0.441 | -0.492 | 0.012 |
| 760 | -0.495 | -0.506 | -0.197 | -0.49 | -0.432 | -0.441 | -0.492 | 0.025 |
| 780 | -0.495 | -0.506 | -0.206 | -0.49 | -0.439 | -0.441 | -0.498 | 0.018 |
| 800 | -0.514 | -0.506 | -0.206 | -0.49 | -0.439 | -0.441 | -0.498 | 0.018 |
| 820 | -0.508 | -0.506 | -0.206 | -0.484 | -0.439 | -0.441 | -0.498 | 0.025 |
| 840 | -0.514 | -0.513 | -0.215 | -0.496 | -0.445 | -0.453 | -0.504 | 0.012 |
| 860 | -0.514 | -0.513 | -0.215 | -0.496 | -0.445 | -0.447 | -0.504 | 0.012 |
| 880 | -0.514 | -0.519 | -0.225 | -0.496 | -0.451 | -0.453 | -0.51 | 0.012 |
| 900 | -0.521 | -0.525 | -0.225 | -0.509 | -0.457 | -0.46 | -0.51 | 0.006 |
| 920 | -0.521 | -0.525 | -0.234 | -0.509 | -0.457 | -0.46 | -0.517 | 0.006 |
| 940 | -0.527 | -0.531 | -0.234 | -0.509 | -0.457 | -0.466 | -0.517 | 0 |
| 960 | -0.514 | -0.525 | -0.234 | -0.496 | -0.457 | -0.453 | -0.517 | 0.018 |
| 980 | -0.508 | -0.519 | -0.244 | -0.49 | -0.451 | -0.453 | -0.51 | 0.025 |
| 1000 | -0.495 | -0.519 | -0.234 | -0.471 | -0.439 | -0.434 | -0.498 | 0.037 |

| Elapsed Time | INPUT 1 | INPUT 2 | INPUT 3 | INPUT 4 | INPUT 5 | INPUT 6 | INPUT 7 | INPUT 8 |
|---|---|---|---|---|---|---|---|---|
| 1200 | -0.401 | -0.431 | -0.225 | -0.389 | -0.357 | -0.352 | -0.416 | 0.144 |
| 1400 | -0.395 | -0.413 | -0.206 | -0.396 | -0.351 | -0.346 | -0.403 | 0.132 |
| 1600 | -0.32 | -0.369 | -0.178 | -0.308 | -0.288 | -0.277 | -0.328 | 0.233 |
| 1800 | -0.301 | -0.331 | -0.168 | -0.289 | -0.257 | -0.252 | -0.296 | 0.252 |
| 2000 | -0.32 | -0.331 | -0.14 | -0.308 | -0.269 | -0.264 | -0.302 | 0.22 |
| 2200 | -0.376 | -0.381 | -0.14 | -0.358 | -0.319 | -0.315 | -0.353 | 0.17 |
| 2400 | -0.376 | -0.394 | -0.159 | -0.352 | -0.326 | -0.321 | -0.365 | 0.176 |
| 2600 | -0.313 | -0.331 | -0.159 | -0.276 | -0.257 | -0.252 | -0.302 | 0.252 |

PUMPING PORTION OF THE AQUIFER TEST

SE2000
Environmental Logger
12/12/96 10:55

Unit# 6 12 Test 0

| Setups: | INPUT 1 | INPUT 2 | INPUT 3 | INPUT 4 | INPUT 5 | INPUT 6 | INPUT 7 | INPUT 8 |
|---|---|---|---|---|---|---|---|---|
| Type | Level (F) | Level (F) | Level (F) | Level (F) | Level (F) | Level (F) | Level (F) | Level (F) |
| Mode | TOC | TOC | TOC | TOC | TOC | TOC | TOC | TOC |
| I.D. | TMW16 | TMW78 | TMW24 | TMW82 | TMW75 | TMW17 | TMW29 | TMW35 |
| Reference | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PSI at Ref. | 4.283 | 4.29 | 4.596 | 4.595 | 5.034 | 6.281 | 5.319 | 4.669 |
| SG | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Linearity | 0.039 | 0.086 | 0.002 | 0.014 | 0.142 | -0.028 | 0.008 | 0.012 |
| Scale factor | 19.94 | 19.857 | 29.84 | 19.977 | 19.799 | 19.985 | 19.978 | 19.961 |
| Offset | 0.036 | -0.019 | -0.072 | 0.001 | 0.026 | 0.013 | -0.017 | -0.046 |
| Delay mSEC | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |

Step 0 12/7/96 11:05 AM 4:59 AM

| Elapsed Time | INPUT 1 | INPUT 2 | INPUT 3 | INPUT 4 | INPUT 5 | INPUT 6 | INPUT 7 | INPUT 8 |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.006 | -0.012 | 0 | 0 | 0 | 0 | 0 | 0.012 |
| 0.0083 | 0 | -0.012 | 0 | 0 | -0.006 | 0 | 0 | 0.012 |
| 0.0166 | -0.006 | -0.012 | 0 | 0 | -0.006 | 0 | 0 | 0.012 |
| 0.025 | -0.006 | -0.012 | 0 | 0 | -0.006 | 0 | 0 | 0.012 |
| 0.0333 | -0.006 | -0.012 | 0 | 0 | -0.006 | 0.264 | 0 | 0.012 |
| 0.0416 | -0.012 | -0.012 | 0 | 0 | -0.012 | -0.182 | 0 | 0.006 |
| 0.05 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.239 | 0 | 0.012 |
| 0.0583 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.308 | 0 | 0.006 |
| 0.0666 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.334 | 0 | 0.012 |
| 0.075 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.403 | 0 | 0.012 |
| 0.0833 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.491 | 0 | 0.012 |
| 0.0916 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.579 | 0 | 0.012 |
| 0.1 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.617 | 0 | 0.012 |
| 0.1083 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.661 | 0 | 0.012 |
| 0.1166 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.712 | 0 | 0.018 |
| 0.125 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.813 | 0 | 0.012 |
| 0.1333 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.901 | 0 | 0.012 |
| 0.1416 | -0.012 | -0.012 | 0 | 0 | -0.018 | 0.932 | 0 | 0.012 |
| 0.15 | -0.012 | -0.012 | 0 | 0 | -0.012 | 0.977 | 0 | 0.012 |
| 0.1583 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.014 | 0 | 0.018 |
| 0.1666 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.096 | 0 | 0.018 |
| 0.175 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.159 | 0 | 0.018 |
| 0.1833 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.26 | 0 | 0.018 |
| 0.1916 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.311 | -0.006 | 0.018 |

| Elapsed Time | INPUT_1 | INPUT_2 | INPUT_3 | INPUT_4 | INPUT_5 | INPUT_6 | INPUT_7 | INPUT_8 |
|---|---|---|---|---|---|---|---|---|
| 0.2 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.361 | -0.006 | 0.018 |
| 0.2083 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.43 | 0 | 0.018 |
| 0.2166 | -0.012 | -0.012 | 0 | 0 | -0.012 | 1.43 | -0.006 | 0.018 |
| 0.225 | -0.012 | -0.012 | 0 | 0 | -0.012 | 1.512 | 0 | 0.018 |
| 0.2333 | -0.012 | -0.012 | 0 | 0 | -0.012 | 1.525 | -0.006 | 0.018 |
| 0.2416 | -0.012 | -0.012 | 0 | 0 | -0.012 | 1.582 | -0.006 | 0.018 |
| 0.25 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.594 | -0.006 | 0.018 |
| 0.2583 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.72 | -0.006 | 0.018 |
| 0.2666 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.752 | -0.006 | 0.025 |
| 0.275 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.809 | -0.006 | 0.018 |
| 0.2833 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.853 | -0.006 | 0.025 |
| 0.2916 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.941 | -0.006 | 0.025 |
| 0.3 | -0.012 | -0.012 | 0 | 0 | -0.018 | 1.973 | -0.006 | 0.025 |
| 0.3083 | -0.012 | -0.012 | 0 | 0 | -0.018 | 2.042 | -0.006 | 0.025 |
| 0.3166 | -0.012 | -0.012 | 0 | 0 | -0.018 | 2.061 | 0 | 0.025 |
| 0.325 | -0.012 | -0.012 | 0 | 0 | -0.018 | 2.118 | 0 | 0.025 |
| 0.3333 | -0.012 | -0.012 | 0 | 0 | -0.018 | 2.174 | -0.006 | 0.025 |
| 0.35 | -0.012 | -0.012 | 0 | 0 | -0.018 | 2.275 | -0.006 | 0.025 |
| 0.3666 | -0.012 | -0.012 | 0 | 0 | -0.018 | 2.382 | 0 | 0.025 |
| 0.3833 | -0.012 | -0.012 | 0 | 0 | -0.012 | 2.477 | -0.006 | 0.025 |
| 0.4 | -0.012 | -0.012 | 0 | 0 | -0.012 | 2.521 | -0.006 | 0.025 |
| 0.4166 | -0.012 | -0.012 | 0 | 0 | -0.012 | 2.609 | -0.006 | 0.025 |
| 0.4333 | -0.012 | -0.012 | 0 | 0 | -0.012 | 2.647 | -0.006 | 0.025 |
| 0.45 | -0.012 | -0.012 | 0 | 0 | -0.018 | 2.735 | -0.006 | 0.025 |
| 0.4666 | -0.012 | -0.012 | 0 | 0 | -0.012 | 2.811 | -0.006 | 0.025 |
| 0.4833 | -0.012 | -0.012 | 0 | 0 | -0.012 | 2.88 | -0.006 | 0.025 |
| 0.5 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 2.943 | -0.006 | 0.031 |
| 0.5166 | -0.012 | -0.012 | 0 | 0 | -0.012 | 2.987 | 0 | 0.025 |
| 0.5333 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 3.051 | 0 | 0.025 |
| 0.55 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.126 | -0.006 | 0.025 |
| 0.5666 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 3.202 | 0 | 0.025 |
| 0.5833 | -0.012 | -0.012 | 0 | 0 | -0.018 | 3.29 | 0 | 0.031 |
| 0.6 | -0.012 | -0.012 | 0 | 0 | -0.018 | 3.347 | 0 | 0.031 |
| 0.6166 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 3.391 | -0.006 | 0.031 |
| 0.6333 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 3.435 | 0 | 0.031 |
| 0.65 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.511 | -0.006 | 0.031 |
| 0.6666 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.561 | -0.006 | 0.031 |
| 0.6833 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 3.605 | 0 | 0.031 |
| 0.7 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 3.656 | 0 | 0.031 |
| 0.7166 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 3.725 | -0.006 | 0.031 |
| 0.7333 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.82 | 0 | 0.031 |
| 0.75 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.845 | -0.006 | 0.031 |
| 0.7666 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 3.864 | 0 | 0.031 |
| 0.7833 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.914 | 0 | 0.031 |
| 0.8 | -0.012 | -0.012 | 0 | 0 | -0.012 | 4.072 | 0 | 0.031 |
| 0.8166 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.946 | 0 | 0.031 |
| 0.8333 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.952 | 0 | 0.031 |
| 0.85 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 3.984 | 0 | 0.031 |

| Elapsed Time | INPUT_1 | INPUT_2 | INPUT_3 | INPUT_4 | INPUT_5 | INPUT_6 | INPUT_7 | INPUT_8 |
|---|---|---|---|---|---|---|---|---|
| 0.8666 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.971 | 0 | 0.031 |
| 0.8833 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 4.034 | 0 | 0.031 |
| 0.9 | -0.012 | -0.012 | 0 | 0 | -0.012 | 3.99 | 0 | 0.037 |
| 0.9166 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 4.028 | -0.006 | 0.037 |
| 0.9333 | -0.012 | -0.012 | 0 | -0.006 | -0.012 | 4.04 | 0 | 0.037 |
| 0.95 | -0.012 | -0.012 | 0 | 0 | -0.012 | 4.103 | 0 | 0.037 |
| 0.9666 | -0.012 | -0.012 | 0 | 0 | -0.012 | 4.097 | 0 | 0.037 |
| 0.9833 | -0.012 | -0.012 | 0 | -0.006 | -0.006 | 4.141 | 0 | 0.037 |
| 1 | -0.012 | -0.012 | 0 | -0.006 | -0.006 | 4.166 | 0 | 0.037 |
| 1.2 | -0.006 | -0.012 | -0.009 | 0 | -0.006 | 4.532 | 0 | 0.018 |
| 1.4 | -0.006 | -0.012 | 0 | -0.006 | 0 | 4.847 | 0 | 0.018 |
| 1.6 | -0.012 | -0.012 | 0 | 0 | 0 | 5.074 | -0.006 | 0.018 |
| 1.8 | -0.012 | -0.012 | 0 | 0 | 0 | 5.339 | -0.006 | 0.025 |
| 2 | -0.012 | -0.012 | 0 | 0 | 0.006 | 5.478 | -0.006 | 0.025 |
| 2.2 | -0.012 | -0.012 | 0 | -0.006 | 0.012 | 5.642 | -0.006 | 0.031 |
| 2.4 | -0.012 | -0.012 | 0 | 0 | 0.012 | 5.762 | -0.006 | 0.025 |
| 2.6 | -0.006 | -0.018 | 0 | 0 | 0.018 | 5.869 | 0 | 0.031 |
| 2.8 | -0.006 | -0.012 | 0 | -0.006 | 0.025 | 5.957 | -0.006 | 0.031 |
| 3 | -0.006 | -0.012 | 0 | -0.006 | 0.031 | 6.064 | -0.006 | 0.031 |
| 3.2 | -0.006 | -0.012 | 0 | -0.006 | 0.037 | 6.146 | -0.006 | 0.025 |
| 3.4 | -0.012 | -0.012 | 0 | -0.006 | 0.043 | 6.241 | -0.006 | 0.031 |
| 3.6 | -0.012 | -0.012 | 0 | -0.006 | 0.05 | 6.298 | -0.006 | 0.031 |
| 3.8 | -0.006 | -0.012 | 0 | -0.006 | 0.056 | 6.386 | -0.006 | 0.031 |
| 4 | -0.006 | -0.012 | 0 | -0.006 | 0.062 | 6.436 | -0.006 | 0.031 |
| 4.2 | -0.006 | -0.012 | -0.009 | -0.006 | 0.062 | 6.493 | -0.006 | 0.031 |
| 4.4 | -0.006 | -0.012 | -0.009 | -0.006 | 0.068 | 6.537 | -0.006 | 0.031 |
| 4.6 | -0.012 | -0.012 | 0 | -0.006 | 0.068 | 6.562 | -0.006 | 0.025 |
| 4.8 | -0.012 | -0.012 | 0 | -0.006 | 0.068 | 6.625 | -0.006 | 0.031 |
| 5 | -0.018 | -0.012 | 0 | -0.006 | 0.075 | 6.638 | -0.006 | 0.031 |
| 5.2 | -0.018 | -0.012 | 0 | -0.006 | 0.075 | 6.663 | -0.012 | 0.031 |
| 5.4 | -0.018 | -0.012 | -0.009 | -0.006 | 0.081 | 6.682 | -0.006 | 0.037 |
| 5.6 | -0.012 | -0.012 | -0.009 | -0.006 | 0.087 | 6.695 | -0.006 | 0.031 |
| 5.8 | -0.012 | -0.006 | 0 | -0.012 | 0.094 | 6.726 | -0.006 | 0.031 |
| 6 | -0.018 | -0.012 | -0.009 | -0.012 | 0.094 | 6.752 | -0.006 | 0.031 |
| 6.2 | -0.018 | -0.006 | -0.009 | -0.006 | 0.094 | 6.764 | -0.006 | 0.037 |
| 6.4 | -0.018 | -0.006 | -0.009 | -0.006 | 0.1 | 6.745 | -0.006 | 0.037 |
| 6.6 | -0.012 | -0.006 | 0 | -0.006 | 0.106 | 6.783 | -0.006 | 0.037 |
| 6.8 | -0.018 | -0.006 | 0 | -0.006 | 0.106 | 6.802 | -0.006 | 0.037 |
| 7 | -0.012 | -0.006 | -0.009 | -0.006 | 0.106 | 6.796 | -0.006 | 0.037 |
| 7.2 | -0.018 | 0 | -0.009 | -0.012 | 0.112 | 6.802 | -0.006 | 0.031 |
| 7.4 | -0.012 | 0 | -0.009 | -0.006 | 0.112 | 6.821 | -0.006 | 0.031 |
| 7.6 | -0.012 | 0 | -0.009 | -0.006 | 0.119 | 6.821 | -0.006 | 0.037 |
| 7.8 | -0.012 | 0 | -0.009 | -0.006 | 0.112 | 6.808 | -0.006 | 0.037 |
| 8 | -0.018 | 0.006 | -0.009 | -0.006 | 0.119 | 6.84 | -0.006 | 0.037 |
| 8.2 | -0.018 | 0 | -0.009 | -0.006 | 0.119 | 6.852 | -0.006 | 0.037 |
| 8.4 | -0.025 | 0 | -0.009 | -0.006 | 0.112 | 6.846 | -0.006 | 0.044 |
| 8.6 | -0.025 | 0.006 | -0.009 | -0.006 | 0.119 | 6.827 | -0.012 | 0.037 |
| 8.8 | -0.018 | 0.006 | -0.009 | -0.006 | 0.125 | 6.871 | -0.006 | 0.044 |

| Elapsed Time | INPUT_1 | INPUT_2 | INPUT_3 | INPUT_4 | INPUT_5 | INPUT_6 | INPUT_7 | INPUT_8 |
|---|---|---|---|---|---|---|---|---|
| 9 | -0.018 | 0.006 | -0.009 | -0.006 | 0.125 | 6.865 | -0.006 | 0.044 |
| 9.2 | -0.018 | 0.006 | -0.009 | -0.006 | 0.125 | 6.852 | -0.006 | 0.044 |
| 9.4 | -0.012 | 0.006 | -0.009 | -0.006 | 0.131 | 6.84 | -0.006 | 0.037 |
| 9.6 | -0.018 | 0.006 | -0.009 | -0.006 | 0.131 | 6.846 | -0.006 | 0.037 |
| 9.8 | -0.012 | 0.006 | -0.009 | -0.012 | 0.137 | 6.865 | -0.006 | 0.037 |
| 10 | -0.012 | 0.012 | -0.009 | -0.006 | 0.137 | 6.846 | -0.006 | 0.044 |
| 12 | -0.012 | 0.018 | 0 | 0.006 | 0.156 | 6.897 | 0 | 0.05 |
| 14 | -0.012 | 0.025 | -0.009 | 0 | 0.163 | 6.897 | 0 | 0.037 |
| 16 | -0.018 | 0.031 | -0.018 | 0 | 0.163 | 6.928 | -0.006 | 0.037 |
| 18 | 0 | 0.037 | -0.009 | 0.006 | 0.181 | 6.941 | 0 | 0.063 |
| 20 | -0.006 | 0.031 | -0.018 | 0.006 | 0.188 | 6.953 | 0 | 0.056 |
| 22 | 0 | 0.037 | -0.009 | 0.006 | 0.194 | 6.966 | 0 | 0.063 |
| 24 | 0.006 | 0.043 | 0 | 0.012 | 0.206 | 6.991 | 0.006 | 0.063 |
| 26 | 0 | 0.05 | 0 | 0.012 | 0.213 | 7.004 | 0.012 | 0.063 |
| 28 | 0 | 0.05 | 0 | 0.018 | 0.213 | 7.01 | 0.012 | 0.075 |
| 30 | 0 | 0.062 | 0 | 0.018 | 0.219 | 7.029 | 0.012 | 0.075 |
| 32 | 0.006 | 0.062 | 0 | 0.018 | 0.232 | 6.985 | 0.012 | 0.069 |
| 34 | 0.012 | 0.062 | 0 | 0.018 | 0.232 | 7.023 | 0.018 | 0.069 |
| 36 | 0.006 | 0.068 | 0.009 | 0.025 | 0.232 | 7.048 | 0.018 | 0.075 |
| 38 | 0.012 | 0.068 | 0.009 | 0.025 | 0.238 | 7.048 | 0.018 | 0.075 |
| 40 | 0.006 | 0.075 | 0.009 | 0.018 | 0.238 | 7.067 | 0.018 | 0.056 |
| 42 | 0.006 | 0.075 | 0.018 | 0.018 | 0.244 | 7.048 | 0.018 | 0.063 |
| 44 | 0.012 | 0.075 | 0.018 | 0.018 | 0.25 | 7.061 | 0.018 | 0.056 |
| 46 | 0.012 | 0.081 | 0.018 | 0.025 | 0.25 | 7.054 | 0.018 | 0.069 |
| 48 | 0.012 | 0.075 | 0.009 | 0.018 | 0.25 | 7.067 | 0.025 | 0.056 |
| 50 | 0.018 | 0.087 | 0 | 0.025 | 0.25 | 7.086 | 0.018 | 0.056 |
| 52 | 0.012 | 0.087 | 0.009 | 0.025 | 0.257 | 7.067 | 0.025 | 0.063 |
| 54 | 0.006 | 0.087 | 0.009 | 0.018 | 0.257 | 7.08 | 0.025 | 0.05 |
| 56 | 0.018 | 0.087 | 0 | 0.018 | 0.257 | 7.111 | 0.018 | 0.063 |
| 58 | 0.012 | 0.087 | 0.009 | 0.012 | 0.263 | 7.111 | 0.018 | 0.05 |
| 60 | 0.012 | 0.093 | 0.009 | 0.012 | 0.263 | 7.136 | 0.018 | 0.044 |
| 62 | 0.006 | 0.087 | 0.009 | 0.012 | 0.257 | 7.092 | 0.018 | 0.037 |
| 64 | 0.006 | 0.093 | 0.009 | 0.012 | 0.257 | 7.105 | 0.025 | 0.037 |
| 66 | 0.012 | 0.1 | 0.009 | 0.006 | 0.263 | 7.117 | 0.018 | 0.037 |
| 68 | 0.006 | 0.093 | 0 | 0.012 | 0.257 | 7.117 | 0.018 | 0.044 |
| 70 | 0 | 0.093 | 0 | 0.012 | 0.257 | 7.149 | 0.018 | 0.025 |
| 72 | 0.006 | 0.093 | 0.009 | 0.006 | 0.263 | 7.13 | 0.012 | 0.037 |
| 74 | 0.006 | 0.093 | 0 | 0 | 0.263 | 7.124 | 0.018 | 0.018 |
| 76 | 0.006 | 0.093 | 0 | 0.006 | 0.263 | 7.136 | 0.012 | 0.031 |
| 78 | 0.006 | 0.093 | 0 | 0 | 0.263 | 7.098 | 0.012 | 0.031 |
| 80 | 0.006 | 0.1 | 0 | 0.006 | 0.263 | 7.117 | 0.012 | 0.031 |
| 82 | 0 | 0.1 | -0.009 | 0.006 | 0.263 | 7.124 | 0.012 | 0.031 |
| 84 | 0 | 0.093 | -0.009 | 0 | 0.269 | 7.124 | 0.012 | 0.018 |
| 86 | 0 | 0.093 | -0.018 | 0.006 | 0.263 | 7.124 | 0.012 | 0.031 |
| 88 | 0 | 0.1 | -0.018 | 0.006 | 0.269 | 7.143 | 0.018 | 0.025 |
| 90 | 0 | 0.1 | -0.018 | 0.012 | 0.263 | 7.124 | 0.012 | 0.031 |
| 92 | 0.006 | 0.1 | -0.018 | 0.006 | 0.275 | 7.117 | 0.012 | 0.031 |
| 94 | 0 | 0.1 | -0.009 | 0.012 | 0.269 | 7.136 | 0.018 | 0.031 |

| Elapsed Time | INPUT_1 | INPUT_2 | INPUT_3 | INPUT_4 | INPUT_5 | INPUT_6 | INPUT_7 | INPUT_8 |
|---|---|---|---|---|---|---|---|---|
| 96 | 0 | 0.106 | -0.009 | 0.018 | 0.269 | 7.13 | 0.018 | 0.037 |
| 98 | 0 | 0.1 | 0 | 0.018 | 0.269 | 7.136 | 0.018 | 0.025 |
| 100 | 0 | 0.1 | -0.009 | 0.012 | 0.275 | 7.136 | 0.018 | 0.031 |
| 120 | 0.012 | 0.112 | 0 | 0.025 | 0.301 | 7.149 | 0.031 | 0.069 |
| 140 | 0.025 | 0.118 | -0.009 | 0.031 | 0.319 | 7.161 | 0.037 | 0.094 |
| 160 | 0.025 | 0.131 | 0.009 | 0.037 | 0.326 | 7.161 | 0.044 | 0.088 |
| 180 | 0.031 | 0.137 | 0 | 0.044 | 0.344 | 7.193 | 0.05 | 0.094 |
| 200 | 0.031 | 0.137 | 0 | 0.044 | 0.363 | 7.225 | 0.056 | 0.094 |
| 220 | 0.037 | 0.156 | 0.009 | 0.05 | 0.37 | 7.218 | 0.063 | 0.138 |
| 240 | 0.025 | 0.156 | 0 | 0.037 | 0.363 | 7.225 | 0.05 | 0.157 |
| 260 | 0.037 | 0.156 | 0 | 0.037 | 0.37 | 7.237 | 0.05 | 0.163 |
| 280 | 0.043 | 0.156 | 0.018 | 0.037 | 0.382 | 7.25 | 0.056 | 0.182 |
| 300 | 0.037 | 0.162 | 0.018 | 0.031 | 0.382 | 7.243 | 0.05 | 0.39 |
| 320 | 0.037 | 0.168 | 0.018 | 0.044 | 0.388 | 7.237 | 0.056 | 0.409 |
| 340 | 0.025 | 0.168 | 0.018 | 0.031 | 0.376 | 7.256 | 0.05 | 0.403 |
| 360 | 0.025 | 0.168 | 0.018 | 0.025 | 0.376 | 7.25 | 0.05 | 0.409 |
| 380 | 0.018 | 0.168 | 0.018 | 0.012 | 0.376 | 7.256 | 0.037 | 0.409 |
| 400 | 0.012 | 0.168 | 0.028 | 0.018 | 0.37 | 7.25 | 0.044 | 0.453 |
| 420 | 0.012 | 0.168 | 0.028 | 0.018 | 0.37 | 7.25 | 0.044 | 0.441 |
| 440 | 0.018 | 0.193 | 0.037 | 0.012 | 0.376 | 7.243 | 0.044 | 0.434 |
| 460 | 0.012 | 0.187 | 0.037 | 0.012 | 0.37 | 7.281 | 0.037 | 0.441 |
| 480 | 0.012 | 0.181 | 0.046 | 0.006 | 0.37 | 7.237 | 0.037 | 0.416 |
| 500 | 0.006 | 0.175 | 0.046 | 0 | 0.37 | 7.237 | 0.031 | 0.397 |
| 520 | 0 | 0.175 | 0.046 | -0.006 | 0.363 | 7.256 | 0.031 | 0.397 |
| 540 | -0.006 | 0.181 | 0.056 | 0 | 0.357 | 7.231 | 0.025 | 0.434 |
| 560 | 0 | 0.187 | 0.056 | 0 | 0.37 | 7.262 | 0.031 | 0.434 |
| 580 | 0 | 0.175 | 0.065 | 0 | 0.37 | 7.269 | 0.031 | 0.384 |
| 600 | -0.006 | 0.168 | 0.065 | 0.006 | 0.357 | 7.275 | 0.031 | 0.352 |
| 620 | -0.006 | 0.168 | 0.075 | 0 | 0.363 | 7.262 | 0.031 | 0.371 |
| 640 | -0.006 | 0.168 | 0.075 | 0.006 | 0.37 | 7.269 | 0.037 | 0.352 |
| 660 | 0.006 | 0.168 | 0.075 | 0 | 0.37 | 7.269 | 0.031 | 0.365 |
| 680 | 0.006 | 0.168 | 0.075 | 0 | 0.37 | 7.275 | 0.031 | 0.378 |
| 700 | 0 | 0.168 | 0.084 | 0 | 0.37 | 7.3 | 0.031 | 0.359 |
| 720 | 0 | 0.168 | 0.075 | 0.006 | 0.37 | 7.319 | 0.031 | 0.359 |
| 740 | 0.006 | 0.168 | 0.084 | 0.006 | 0.37 | 7.281 | 0.031 | 0.327 |
| 760 | -0.006 | 0.168 | 0.084 | 0.012 | 0.363 | 7.256 | 0.037 | 0.327 |
| 780 | 0 | 0.175 | 0.084 | 0.012 | 0.37 | 7.256 | 0.037 | 0.321 |
| 800 | 0 | 0.175 | 0.075 | 0.018 | 0.363 | 7.269 | 0.037 | 0.346 |
| 820 | 0 | 0.168 | 0.075 | 0 | 0.363 | 7.256 | 0.031 | 0.334 |
| 840 | -0.006 | 0.175 | 0.075 | 0.006 | 0.363 | 7.313 | 0.031 | 0.34 |
| 860 | -0.006 | 0.168 | 0.075 | 0.006 | 0.363 | 7.288 | 0.031 | 0.327 |
| 880 | -0.006 | 0.175 | 0.075 | 0.012 | 0.376 | 7.313 | 0.031 | 0.371 |
| 900 | 0.012 | 0.181 | 0.065 | 0.012 | 0.376 | 7.288 | 0.037 | 0.371 |
| 920 | 0.012 | 0.181 | 0.075 | 0.025 | 0.382 | 7.313 | 0.037 | 0.39 |
| 940 | 0.006 | 0.187 | 0.065 | 0.018 | 0.382 | 7.294 | 0.044 | 0.371 |
| 960 | 0 | 0.181 | 0.065 | 0.018 | 0.376 | 7.319 | 0.037 | 0.378 |
| 980 | 0.006 | 0.187 | 0.065 | 0.012 | 0.376 | 7.294 | 0.037 | 0.352 |
| 1000 | -0.006 | 0.181 | 0.056 | 0.012 | 0.363 | 7.275 | 0.031 | 0.346 |

| Elapsed Time | INPUT_1 | INPUT_2 | INPUT_3 | INPUT_4 | INPUT_5 | INPUT_6 | INPUT_7 | INPUT_8 |
|---|---|---|---|---|---|---|---|---|
| 1200 | -0.018 | 0.187 | 0.056 | -0.006 | 0.363 | 7.288 | 0.025 | 0.346 |
| 1400 | -0.05 | 0.156 | 0.065 | -0.037 | 0.332 | 7.25 | -0.006 | 0.056 |
| 1600 | -0.062 | 0.143 | 0.065 | -0.05 | 0.313 | 7.212 | -0.031 | 0.037 |
| 1800 | -0.094 | 0.125 | 0.056 | -0.075 | 0.288 | 7.206 | -0.05 | 0.063 |
| 2000 | -0.119 | 0.1 | 0.065 | -0.1 | 0.269 | 7.206 | -0.069 | 0.063 |
| 2200 | -0.175 | 0.056 | 0.056 | -0.163 | 0.213 | 7.174 | -0.126 | 0.031 |
| 2400 | -0.238 | -0.025 | 0 | -0.226 | 0.15 | 7.098 | -0.189 | 0 |
| 2600 | -0.295 | -0.068 | -0.046 | -0.276 | 0.1 | 7.061 | -0.239 | -0.031 |
| 2800 | -0.313 | -0.093 | -0.056 | -0.301 | 0.081 | 7.023 | -0.271 | -0.069 |
| 3000 | -0.376 | -0.15 | -0.075 | -0.358 | 0.018 | 6.966 | -0.315 | -0.132 |
| 3200 | -0.401 | -0.181 | -0.103 | -0.377 | -0.012 | 6.941 | -0.346 | -0.081 |
| 3400 | -0.426 | -0.206 | -0.112 | -0.414 | -0.031 | 6.859 | -0.378 | -0.069 |
| 3600 | -0.464 | -0.244 | -0.103 | -0.446 | -0.068 | 6.89 | -0.41 | -0.088 |
| 3800 | -0.539 | -0.319 | -0.159 | -0.515 | -0.15 | 6.808 | -0.492 | -0.132 |
| 4000 | -0.539 | -0.344 | -0.215 | -0.515 | -0.156 | 6.752 | -0.504 | -0.107 |
| 4200 | -0.489 | -0.294 | -0.215 | -0.471 | -0.106 | 6.821 | -0.46 | -0.044 |
| 4400 | -0.483 | -0.275 | -0.206 | -0.458 | -0.094 | 6.859 | -0.46 | -0.031 |

# APPENDIX C

# TMW-16 AND TMW-29 CORRECTED DATA

| Water levels taken by hand - Original Data | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TMW-18 | | | TMW-16 | | | TMW-64 | | | TMW-78 | | |
| DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO |
| | | H20 - TOC | | | H20 - TOC | | | H20 - TOC | | | H20 - TOC |
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| | | | 6-Dec | 1100 | 113.52 | | | | 6-Dec | 1045 | 114.62 |
| 7-Dec | 904 | 114.55 | 7-Dec | 1014 | 114.01 | 7-Dec | 909 | 109.59 | 7-Dec | 914 | 115.03 |
| begin aquifer test - pumping portion | | | | | | | | | | | |
| | 1240 | 114.57 | | 1247 | 113.99 | | 1252 | 109.70 | | 1301 | 115.23 |
| | 1520 | 114.59 | | 1525 | 114.01 | | 1529 | 109.71 | | 1536 | 115.28 |
| 8-Dec | 808 | 114.52 | 8-Dec | 815 | 113.92 | 8-Dec | 820 | 109.68 | 8-Dec | 824 | 115.27 |
| | 1217 | 114.48 | | 1227 | 113.89 | | 1222 | 109.66 | | 1230 | 115.24 |
| | 1607 | 114.46 | | 1614 | 113.86 | | 1617 | 109.63 | | 1623 | 115.22 |
| 9-Dec | 900 | 114.22 | 9-Dec | 906 | 113.64 | 9-Dec | 911 | 109.45 | 9-Dec | 928 | 115.00 |
| | 1157 | 114.19 | | 1200 | 113.61 | | 1203 | 109.41 | | 1208 | 114.97 |
| | 1633 | 114.11 | | 1636 | 113.55 | | 1639 | 109.37 | | 1639 | 114.90 |
| 10-Dec | 1200 | 114.08 | 10-Dec | 1204 | 113.51 | 10-Dec | 1208 | 109.32 | 10-Dec | 1211 | 114.85 |
| begin aquifer test - recovery portion | | | | | | | | | | | |
| | 1656 | 114.06 | | 1601 | 113.48 | | 1605 | 109.28 | | 1608 | 114.66 |
| 11-Dec | 903 | 114.17 | 11-Dec | 906 | 113.58 | 11-Dec | 910 | 109.34 | 11-Dec | 914 | 114.70 |
| | 1655 | 114.27 | | 1659 | 113.67 | | 1710 | 109.42 | | 1733 | 114.81 |
| 12-Dec | 759 | 114.25 | 12-Dec | 802 | 113.66 | 12-Dec | 805 | 109.43 | 12-Dec | 809 | 114.80 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| TMW-82 | | | TMW-24 | | | TMW-29 | | | TMW-35 | | |
| DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO |
| | | H20 - TOC | | | H20 - TOC | | | H20 - TOC | | | H20 - TOC |
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| 6-Dec | 1120 | 115.95 | 6-Dec | 1122 | 115.48 | 6-Dec | 1205 | 111.30 | 6-Dec | 1210 | 112.69 |
| 7-Dec | 920 | 116.39 | 7-Dec | 922 | 115.68 | 7-Dec | 929 | 111.71 | 7-Dec | 935 | 113.13 |
| begin aquifer test - pumping portion | | | | | | | | | | | |
| | 1305 | 116.46 | | 1307 | 115.71 | | 1310 | 111.78 | | 1314 | 113.14 |
| | 1540 | 116.47 | | 1542 | 115.73 | | 1555 | 111.81 | | 1602 | 113.14 |
| 8-Dec | 834 | 116.41 | 8-Dec | 840 | 115.78 | 8-Dec | 843 | 111.77 | 8-Dec | 845 | 113.05 |
| | 1236 | 116.40 | | 1238 | 115.78 | | 1247 | 111.75 | | 1246 | 113.03 |
| | 1646 | 116.39 | | 1647 | 115.78 | | 1655 | 111.73 | | 1659 | 113.02 |
| 9-Dec | 934 | 116.16 | 9-Dec | 937 | 115.68 | 9-Dec | 940 | 111.52 | 9-Dec | 943 | 112.79 |
| | 1225 | 116.12 | | 1227 | 115.66 | | 1235 | 111.47 | | 1240 | 112.74 |
| | 1655 | 116.07 | | 1657 | 115.61 | | 1725 | 111.42 | | 1731 | 112.71 |
| 10-Dec | 1215 | 116.01 | 10-Dec | 1216 | 115.55 | 10-Dec | 1223 | 111.35 | 10-Dec | 1226 | 112.67 |
| begin aquifer test - recovery portion | | | | | | | | | | | |
| | 1646 | 116.00 | | 1647 | 115.52 | | 1654 | 111.33 | | 1657 | 112.69 |
| 11-Dec | 922 | 116.09 | 11-Dec | 923 | 115.53 | 11-Dec | 926 | 111.41 | 11-Dec | 929 | 112.81 |
| | 1737 | 116.20 | | 1739 | 115.59 | | 1742 | 111.51 | | 1747 | 112.91 |
| 12-Dec | 813 | 116.21 | 12-Dec | 814 | 115.61 | 12-Dec | 817 | 111.53 | 12-Dec | 820 | 112.92 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| TMW-36 | | | TMW-37 | | | TMW-45 | | | TMW-59 | | |
| DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO |
| | | H20 - TOC | | | H20 - TOC | | | H20 - TOC | | | H20 - TOC |
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| 7-Dec | 950 | 113.74 | | | | 7-Dec | 955 | 98.54 | 7-Dec | 959 | 107.33 |
| begin aquifer test - pumping portion | | | | | | | | | | | |
| | 1320 | 113.75 | | 1324 | 106.85 | | 1330 | 98.54 | | 1332 | 107.32 |
| | 1624 | 113.73 | | 1620 | 106.78 | | 16 | 98.57 | | 1632 | 107.31 |
| 8-Dec | 850 | 113.64 | 8-Dec | 856 | 106.75 | 8-Dec | 900 | 98.47 | 8-Dec | 910 | 107.15 |
| | 1250 | 113.63 | | 1252 | 106.74 | | 1258 | 98.45 | | 1301 | 107.15 |
| | 1902 | 113.59 | | 1708 | 106.70 | | 1734 | 98.41 | | 1740 | 107.10 |
| 9-Dec | 947 | 113.37 | 9-Dec | 951 | 106.47 | 9-Dec | 954 | 98.17 | 9-Dec | 959 | 106.87 |
| | 1248 | 113.33 | | 1252 | 106.41 | | 1255 | 98.11 | | 1258 | 106.79 |
| | 1734 | 113.28 | | 1737 | 106.35 | | 1743 | 98.06 | | 1746 | 106.74 |
| 10-Dec | 1230 | 113.24 | 10-Dec | 1233 | 106.30 | 10-Dec | 1236 | 98.00 | 10-Dec | 1240 | 106.71 |
| begin aquifer test - recovery portion | | | | | | | | | | | |
| | 1702 | 113.26 | | 1707 | 106.34 | | 1712 | 98.03 | | 1718 | 106.75 |
| 11-Dec | 932 | 113.41 | 11-Dec | 934 | 106.48 | 11-Dec | 938 | 98.18 | 11-Dec | 943 | 106.89 |
| | 1748 | 113.49 | | 1750 | 106.57 | | 1754 | 98.29 | | 1757 | 106.97 |
| 12-Dec | 824 | 113.51 | 12-Dec | 827 | 106.62 | 12-Dec | 830 | 98.32 | 12-Dec | 834 | 106.97 |

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|---|---|---|---|---|---|
| TMW-17 | | | TMW-75 | | |
| DATE | TIME | DEPTH TO | DATE | TIME | DEPTH TO |
| | | H20 - TOC | | | H20 - TOC |
| 2-Dec | 1505 | 117.33 | 2-Dec | 1510 | 116.62 |
| 3-Dec | 840 | 117.45 | 3-Dec | 836 | 116.62 |
| | 1512 | 117.31 | | 1515 | 116.51 |
| 4-Dec | 851 | 117.40 | 4-Dec | 849 | 116.49 |
| | 1513 | 117.31 | | 1510 | 116.51 |
| 5-Dec | 816 | 117.00 | 5-Dec | 813 | 116.12 |
| | 1538 | 117.00 | | 1535 | 116.10 |
| 6-Dec | 1150 | 117.21 | 6-Dec | 1140 | 116.30 |
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| begin aquifer test - pumping portion | | | | | |
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| begin aquifer test - recovery portion | | | | | |
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# APPENDIX D

# BAROMETRIC PRESSURE CORRECTED DATA

ORIGINAL BAROMETRIC DATA - PUMPING PORTION OF TEST

KENNECOTT URANIUM COMPANY
SWEETWATER URANIUM PROJECT
BAROMETRIC DATA
01-Dec-96 12-Dec-96

TIME INDEX 0 MIN: 07-Dec-96 11:05:00 AM
DATEVALUE: 35406
TIMEVALUE: 0.461805556
SUM: 35406.4618055556

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | TIME INDEX (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 07-Dec-96 | 11:00:00 AM | 15 | -0.003472222 | -5.0000001 | 1014.499 | 760.939 | 29.96 |
| 07-Dec-96 | 11:15:00 AM | 15 | 0.006944444 | 9.9999999 | 1014.313 | 760.799 | 29.96 |
| 07-Dec-96 | 11:30:00 AM | 15 | 0.017361111 | 25 | 1014.329 | 760.812 | 29.96 |
| 07-Dec-96 | 11:45:00 AM | 15 | 0.027777778 | 40 | 1014.635 | 761.041 | 29.97 |
| 07-Dec-96 | 12:00:00 PM | 15 | 0.038194444 | 55 | 1014.616 | 761.027 | 29.97 |
| 07-Dec-96 | 12:15:00 PM | 15 | 0.048611111 | 70 | 1014.248 | 760.751 | 29.95 |
| 07-Dec-96 | 12:30:00 PM | 15 | 0.059027778 | 85 | 1013.926 | 760.509 | 29.94 |
| 07-Dec-96 | 12:45:00 PM | 15 | 0.069444444 | 100 | 1014.115 | 760.651 | 29.95 |
| 07-Dec-96 | 01:00:00 PM | 15 | 0.079861111 | 115 | 1014.316 | 760.802 | 29.96 |
| 07-Dec-96 | 01:15:00 PM | 15 | 0.090277778 | 130 | 1014.873 | 761.219 | 29.97 |
| 07-Dec-96 | 01:30:00 PM | 15 | 0.100694444 | 145 | 1015.133 | 761.415 | 29.98 |
| 07-Dec-96 | 01:45:00 PM | 15 | 0.111111111 | 160 | 1015.358 | 761.583 | 29.99 |
| 07-Dec-96 | 02:00:00 PM | 15 | 0.121527778 | 175 | 1015.407 | 761.62 | 29.99 |
| 07-Dec-96 | 02:15:00 PM | 15 | 0.131944444 | 190 | 1015.508 | 761.696 | 29.99 |
| 07-Dec-96 | 02:30:00 PM | 15 | 0.142361111 | 205 | 1015.758 | 761.884 | 30.00 |
| 07-Dec-96 | 02:45:00 PM | 15 | 0.152777778 | 220 | 1015.859 | 761.959 | 30.00 |
| 07-Dec-96 | 03:00:00 PM | 15 | 0.163194444 | 235 | 1015.612 | 761.774 | 29.99 |
| 07-Dec-96 | 03:15:00 PM | 15 | 0.173611111 | 250 | 1015.41 | 761.622 | 29.99 |
| 07-Dec-96 | 03:30:00 PM | 15 | 0.184027778 | 265 | 1015.404 | 761.617 | 29.99 |
| 07-Dec-96 | 03:45:00 PM | 15 | 0.194444444 | 280 | 1015.508 | 761.696 | 29.99 |
| 07-Dec-96 | 04:00:00 PM | 15 | 0.204861111 | 295 | 1015.452 | 761.654 | 29.99 |
| 07-Dec-96 | 04:15:00 PM | 15 | 0.215277778 | 310 | 1015.306 | 761.544 | 29.99 |
| 07-Dec-96 | 04:30:00 PM | 15 | 0.225694444 | 325 | 1015.443 | 761.647 | 29.99 |
| 07-Dec-96 | 04:45:00 PM | 15 | 0.236111111 | 340 | 1015.159 | 761.434 | 29.98 |
| 07-Dec-96 | 05:00:00 PM | 15 | 0.246527778 | 355 | 1014.977 | 761.298 | 29.98 |
| 07-Dec-96 | 05:15:00 PM | 15 | 0.256944444 | 370 | 1014.658 | 761.058 | 29.97 |
| 07-Dec-96 | 05:30:00 PM | 15 | 0.267361111 | 385 | 1014.274 | 760.77 | 29.95 |
| 07-Dec-96 | 05:45:00 PM | 15 | 0.277777778 | 400 | 1014.323 | 760.807 | 29.96 |
| 07-Dec-96 | 06:00:00 PM | 15 | 0.288194444 | 415 | 1014.251 | 760.753 | 29.95 |
| 07-Dec-96 | 06:15:00 PM | 15 | 0.298611111 | 430 | 1014.115 | 760.65 | 29.95 |
| 07-Dec-96 | 06:30:00 PM | 15 | 0.309027778 | 445 | 1014.004 | 760.568 | 29.95 |
| 07-Dec-96 | 06:45:00 PM | 15 | 0.319444444 | 460 | 1013.757 | 760.382 | 29.94 |
| 07-Dec-96 | 07:00:00 PM | 15 | 0.329861111 | 475 | 1013.665 | 760.314 | 29.94 |
| 07-Dec-96 | 07:15:00 PM | 15 | 0.340277778 | 490 | 1013.451 | 760.153 | 29.93 |
| 07-Dec-96 | 07:30:00 PM | 15 | 0.350694444 | 505 | 1013.314 | 760.05 | 29.93 |
| 07-Dec-96 | 07:45:00 PM | 15 | 0.361111111 | 520 | 1013.115 | 759.901 | 29.92 |
| 07-Dec-96 | 08:00:00 PM | 15 | 0.371527778 | 535 | 1012.878 | 759.723 | 29.91 |
| 07-Dec-96 | 08:15:00 PM | 15 | 0.381944444 | 550 | 1012.76 | 759.635 | 29.91 |
| 07-Dec-96 | 08:30:00 PM | 15 | 0.392361111 | 565 | 1012.855 | 759.706 | 29.91 |
| 07-Dec-96 | 08:45:00 PM | 15 | 0.402777778 | 580 | 1012.923 | 759.757 | 29.92 |
| 07-Dec-96 | 09:00:00 PM | 15 | 0.413194444 | 595 | 1012.822 | 759.681 | 29.91 |
| 07-Dec-96 | 09:15:00 PM | 15 | 0.423611111 | 610 | 1012.777 | 759.647 | 29.91 |
| 07-Dec-96 | 09:30:00 PM | 15 | 0.434027778 | 625 | 1012.695 | 759.586 | 29.91 |
| 07-Dec-96 | 09:45:00 PM | 15 | 0.444444444 | 640 | 1012.907 | 759.745 | 29.91 |
| 07-Dec-96 | 10:00:00 PM | 15 | 0.454861111 | 655 | 1012.79 | 759.657 | 29.91 |
| 07-Dec-96 | 10:15:00 PM | 15 | 0.465277778 | 670 | 1012.747 | 759.625 | 29.91 |

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 07-Dec-96 | 10:30:00 PM | 15 | 0.475694444 | 685 | 1012.695 | 759.586 | 29.91 |
| 07-Dec-96 | 10:45:00 PM | 15 | 0.486111111 | 700 | 1012.611 | 759.523 | 29.91 |
| 07-Dec-96 | 11:00:00 PM | 15 | 0.496527778 | 715 | 1012.575 | 759.496 | 29.90 |
| 07-Dec-96 | 11:15:00 PM | 15 | 0.506944444 | 730 | 1012.614 | 759.525 | 29.91 |
| 07-Dec-96 | 11:30:00 PM | 15 | 0.517361111 | 745 | 1012.611 | 759.523 | 29.91 |
| 07-Dec-96 | 11:45:00 PM | 15 | 0.527777778 | 760 | 1012.559 | 759.484 | 29.90 |
| 08-Dec-96 | 12:00:00 AM | 15 | 0.538194444 | 775 | 1012.725 | 759.608 | 29.91 |
| 08-Dec-96 | 12:15:00 AM | 15 | 0.548611111 | 790 | 1012.848 | 759.701 | 29.91 |
| 08-Dec-96 | 12:30:00 AM | 15 | 0.559027778 | 805 | 1012.643 | 759.547 | 29.91 |
| 08-Dec-96 | 12:45:00 AM | 15 | 0.569444444 | 820 | 1012.497 | 759.437 | 29.90 |
| 08-Dec-96 | 01:00:00 AM | 15 | 0.579861111 | 835 | 1012.562 | 759.486 | 29.90 |
| 08-Dec-96 | 01:15:00 AM | 15 | 0.590277778 | 850 | 1012.565 | 759.488 | 29.90 |
| 08-Dec-96 | 01:30:00 AM | 15 | 0.600694444 | 865 | 1012.555 | 759.481 | 29.90 |
| 08-Dec-96 | 01:45:00 AM | 15 | 0.611111111 | 880 | 1012.715 | 759.601 | 29.91 |
| 08-Dec-96 | 02:00:00 AM | 15 | 0.621527778 | 895 | 1012.865 | 759.713 | 29.91 |
| 08-Dec-96 | 02:15:00 AM | 15 | 0.631944444 | 910 | 1012.939 | 759.769 | 29.92 |
| 08-Dec-96 | 02:30:00 AM | 15 | 0.642361111 | 925 | 1013.073 | 759.869 | 29.92 |
| 08-Dec-96 | 02:45:00 AM | 15 | 0.652777778 | 940 | 1013.073 | 759.869 | 29.92 |
| 08-Dec-96 | 03:00:00 AM | 15 | 0.663194444 | 955 | 1012.897 | 759.737 | 29.91 |
| 08-Dec-96 | 03:15:00 AM | 15 | 0.673611111 | 970 | 1012.809 | 759.672 | 29.91 |
| 08-Dec-96 | 03:30:00 AM | 15 | 0.684027778 | 985 | 1012.712 | 759.598 | 29.91 |
| 08-Dec-96 | 03:45:00 AM | 15 | 0.694444444 | 1000 | 1012.611 | 759.523 | 29.91 |
| 08-Dec-96 | 04:00:00 AM | 15 | 0.704861111 | 1015 | 1012.441 | 759.396 | 29.90 |
| 08-Dec-96 | 04:15:00 AM | 15 | 0.715277778 | 1030 | 1012.249 | 759.252 | 29.90 |
| 08-Dec-96 | 04:30:00 AM | 15 | 0.725694444 | 1045 | 1012.181 | 759.2 | 29.89 |
| 08-Dec-96 | 04:45:00 AM | 15 | 0.736111111 | 1060 | 1012.093 | 759.134 | 29.89 |
| 08-Dec-96 | 05:00:00 AM | 15 | 0.746527778 | 1075 | 1012.227 | 759.234 | 29.89 |
| 08-Dec-96 | 05:15:00 AM | 15 | 0.756944444 | 1090 | 1012.383 | 759.352 | 29.90 |
| 08-Dec-96 | 05:30:00 AM | 15 | 0.767361111 | 1105 | 1012.36 | 759.335 | 29.90 |
| 08-Dec-96 | 05:45:00 AM | 15 | 0.777777778 | 1120 | 1012.487 | 759.43 | 29.90 |
| 08-Dec-96 | 06:00:00 AM | 15 | 0.788194444 | 1135 | 1012.575 | 759.496 | 29.90 |
| 08-Dec-96 | 06:15:00 AM | 15 | 0.798611111 | 1150 | 1012.435 | 759.391 | 29.90 |
| 08-Dec-96 | 06:30:00 AM | 15 | 0.809027778 | 1165 | 1012.415 | 759.376 | 29.90 |
| 08-Dec-96 | 06:45:00 AM | 15 | 0.819444444 | 1180 | 1012.337 | 759.318 | 29.90 |
| 08-Dec-96 | 07:00:00 AM | 15 | 0.829861111 | 1195 | 1012.23 | 759.237 | 29.89 |
| 08-Dec-96 | 07:15:00 AM | 15 | 0.840277778 | 1210 | 1012.21 | 759.222 | 29.89 |
| 08-Dec-96 | 07:30:00 AM | 15 | 0.850694444 | 1225 | 1012.096 | 759.137 | 29.89 |
| 08-Dec-96 | 07:45:00 AM | 15 | 0.861111111 | 1240 | 1011.904 | 758.993 | 29.88 |
| 08-Dec-96 | 08:00:00 AM | 15 | 0.871527778 | 1255 | 1011.768 | 758.89 | 29.88 |
| 08-Dec-96 | 08:15:00 AM | 15 | 0.881944444 | 1270 | 1011.696 | 758.837 | 29.88 |
| 08-Dec-96 | 08:30:00 AM | 15 | 0.892361111 | 1285 | 1011.452 | 758.653 | 29.87 |
| 08-Dec-96 | 08:45:00 AM | 15 | 0.902777778 | 1300 | 1011.439 | 758.644 | 29.87 |
| 08-Dec-96 | 09:00:00 AM | 15 | 0.913194444 | 1315 | 1011.419 | 758.629 | 29.87 |
| 08-Dec-96 | 09:15:00 AM | 15 | 0.923611111 | 1330 | 1011.611 | 758.773 | 29.88 |
| 08-Dec-96 | 09:30:00 AM | 15 | 0.934027778 | 1345 | 1011.764 | 758.888 | 29.88 |
| 08-Dec-96 | 09:45:00 AM | 15 | 0.944444444 | 1360 | 1011.657 | 758.807 | 29.88 |
| 08-Dec-96 | 10:00:00 AM | 15 | 0.954861111 | 1375 | 1011.54 | 758.719 | 29.87 |
| 08-Dec-96 | 10:15:00 AM | 15 | 0.965277778 | 1390 | 1011.81 | 758.922 | 29.88 |
| 08-Dec-96 | 10:30:00 AM | 15 | 0.975694444 | 1405 | 1011.829 | 758.937 | 29.88 |
| 08-Dec-96 | 10:45:00 AM | 15 | 0.986111111 | 1420 | 1011.888 | 758.981 | 29.88 |
| 08-Dec-96 | 11:00:00 AM | 15 | 0.996527778 | 1435 | 1011.885 | 758.978 | 29.88 |
| 08-Dec-96 | 11:15:00 AM | 15 | 1.006944444 | 1450 | 1011.732 | 758.863 | 29.88 |
| 08-Dec-96 | 11:30:00 AM | 15 | 1.017361111 | 1465 | 1011.641 | 758.795 | 29.88 |

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 08-Dec-96 | 11:45:00 AM | 15 | 1.027777778 | 1480 | 1011.813 | 758.924 | 29.88 |
| 08-Dec-96 | 12:00:00 PM | 15 | 1.038194444 | 1495 | 1012.126 | 759.159 | 29.89 |
| 08-Dec-96 | 12:15:00 PM | 15 | 1.048611111 | 1510 | 1012.184 | 759.203 | 29.89 |
| 08-Dec-96 | 12:30:00 PM | 15 | 1.059027778 | 1525 | 1012.178 | 759.198 | 29.89 |
| 08-Dec-96 | 12:45:00 PM | 15 | 1.069444444 | 1540 | 1012.272 | 759.269 | 29.90 |
| 08-Dec-96 | 01:00:00 PM | 15 | 1.079861111 | 1555 | 1012.148 | 759.176 | 29.89 |
| 08-Dec-96 | 01:15:00 PM | 15 | 1.090277778 | 1570 | 1012.067 | 759.115 | 29.89 |
| 08-Dec-96 | 01:30:00 PM | 15 | 1.100694444 | 1585 | 1012.103 | 759.142 | 29.89 |
| 08-Dec-96 | 01:45:00 PM | 15 | 1.111111111 | 1600 | 1012.174 | 759.195 | 29.89 |
| 08-Dec-96 | 02:00:00 PM | 15 | 1.121527778 | 1615 | 1012.044 | 759.098 | 29.89 |
| 08-Dec-96 | 02:15:00 PM | 15 | 1.131944444 | 1630 | 1012.015 | 759.076 | 29.89 |
| 08-Dec-96 | 02:30:00 PM | 15 | 1.142361111 | 1645 | 1011.888 | 758.981 | 29.88 |
| 08-Dec-96 | 02:45:00 PM | 15 | 1.152777778 | 1660 | 1011.82 | 758.929 | 29.88 |
| 08-Dec-96 | 03:00:00 PM | 15 | 1.163194444 | 1675 | 1011.891 | 758.983 | 29.88 |
| 08-Dec-96 | 03:15:00 PM | 15 | 1.173611111 | 1690 | 1011.904 | 758.993 | 29.88 |
| 08-Dec-96 | 03:30:00 PM | 15 | 1.184027778 | 1705 | 1012.008 | 759.071 | 29.89 |
| 08-Dec-96 | 03:45:00 PM | 15 | 1.194444444 | 1720 | 1011.839 | 758.944 | 29.88 |
| 08-Dec-96 | 04:00:00 PM | 15 | 1.204861111 | 1735 | 1011.826 | 758.934 | 29.88 |
| 08-Dec-96 | 04:15:00 PM | 15 | 1.215277778 | 1750 | 1011.758 | 758.883 | 29.88 |
| 08-Dec-96 | 04:30:00 PM | 15 | 1.225694444 | 1765 | 1011.689 | 758.832 | 29.88 |
| 08-Dec-96 | 04:45:00 PM | 15 | 1.236111111 | 1780 | 1011.628 | 758.785 | 29.88 |
| 08-Dec-96 | 05:00:00 PM | 15 | 1.246527778 | 1795 | 1011.468 | 758.666 | 29.87 |
| 08-Dec-96 | 05:15:00 PM | 15 | 1.256944444 | 1810 | 1011.208 | 758.47 | 29.86 |
| 08-Dec-96 | 05:30:00 PM | 15 | 1.267361111 | 1825 | 1011.058 | 758.358 | 29.86 |
| 08-Dec-96 | 05:45:00 PM | 15 | 1.277777778 | 1840 | 1011.074 | 758.37 | 29.86 |
| 08-Dec-96 | 06:00:00 PM | 15 | 1.288194444 | 1855 | 1010.905 | 758.243 | 29.86 |
| 08-Dec-96 | 06:15:00 PM | 15 | 1.298611111 | 1870 | 1010.771 | 758.143 | 29.85 |
| 08-Dec-96 | 06:30:00 PM | 15 | 1.309027778 | 1885 | 1010.801 | 758.165 | 29.85 |
| 08-Dec-96 | 06:45:00 PM | 15 | 1.319444444 | 1900 | 1010.817 | 758.177 | 29.85 |
| 08-Dec-96 | 07:00:00 PM | 15 | 1.329861111 | 1915 | 1010.671 | 758.067 | 29.85 |
| 08-Dec-96 | 07:15:00 PM | 15 | 1.340277778 | 1930 | 1010.505 | 757.943 | 29.84 |
| 08-Dec-96 | 07:30:00 PM | 15 | 1.350694444 | 1945 | 1010.469 | 757.916 | 29.84 |
| 08-Dec-96 | 07:45:00 PM | 15 | 1.361111111 | 1960 | 1010.322 | 757.806 | 29.84 |
| 08-Dec-96 | 08:00:00 PM | 15 | 1.371527778 | 1975 | 1009.87 | 757.467 | 29.82 |
| 08-Dec-96 | 08:15:00 PM | 15 | 1.381944444 | 1990 | 1009.958 | 757.533 | 29.83 |
| 08-Dec-96 | 08:30:00 PM | 15 | 1.392361111 | 2005 | 1010.088 | 757.63 | 29.83 |
| 08-Dec-96 | 08:45:00 PM | 15 | 1.402777778 | 2020 | 1010.023 | 757.581 | 29.83 |
| 08-Dec-96 | 09:00:00 PM | 15 | 1.413194444 | 2035 | 1010.189 | 757.706 | 29.83 |
| 08-Dec-96 | 09:15:00 PM | 15 | 1.423611111 | 2050 | 1010.075 | 757.62 | 29.83 |
| 08-Dec-96 | 09:30:00 PM | 15 | 1.434027778 | 2065 | 1009.873 | 757.469 | 29.82 |
| 08-Dec-96 | 09:45:00 PM | 15 | 1.444444444 | 2080 | 1009.827 | 757.435 | 29.82 |
| 08-Dec-96 | 10:00:00 PM | 15 | 1.454861111 | 2095 | 1009.743 | 757.371 | 29.82 |
| 08-Dec-96 | 10:15:00 PM | 15 | 1.465277778 | 2110 | 1009.632 | 757.288 | 29.82 |
| 08-Dec-96 | 10:30:00 PM | 15 | 1.475694444 | 2125 | 1009.473 | 757.169 | 29.81 |
| 08-Dec-96 | 10:45:00 PM | 15 | 1.486111111 | 2140 | 1009.29 | 757.032 | 29.81 |
| 08-Dec-96 | 11:00:00 PM | 15 | 1.496527778 | 2155 | 1009.18 | 756.949 | 29.80 |
| 08-Dec-96 | 11:15:00 PM | 15 | 1.506944444 | 2170 | 1008.958 | 756.783 | 29.80 |
| 08-Dec-96 | 11:30:00 PM | 15 | 1.517361111 | 2185 | 1008.571 | 756.492 | 29.79 |
| 08-Dec-96 | 11:45:00 PM | 15 | 1.527777778 | 2200 | 1008.33 | 756.312 | 29.78 |
| 09-Dec-96 | 12:00:00 AM | 15 | 1.538194444 | 2215 | 1008.206 | 756.219 | 29.78 |
| 09-Dec-96 | 12:15:00 AM | 15 | 1.548611111 | 2230 | 1008.135 | 756.165 | 29.77 |
| 09-Dec-96 | 12:30:00 AM | 15 | 1.559027778 | 2245 | 1007.848 | 755.951 | 29.77 |
| 09-Dec-96 | 12:45:00 AM | 15 | 1.569444444 | 2260 | 1007.712 | 755.848 | 29.76 |

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 09-Dec-96 | 01:00:00 AM | 15 | 1.579861111 | 2275 | 1007.484 | 755.677 | 29.75 |
| 09-Dec-96 | 01:15:00 AM | 15 | 1.590277778 | 2290 | 1007.191 | 755.457 | 29.75 |
| 09-Dec-96 | 01:30:00 AM | 15 | 1.600694444 | 2305 | 1007.122 | 755.406 | 29.74 |
| 09-Dec-96 | 01:45:00 AM | 15 | 1.611111111 | 2320 | 1006.914 | 755.25 | 29.74 |
| 09-Dec-96 | 02:00:00 AM | 15 | 1.621527778 | 2335 | 1006.797 | 755.162 | 29.73 |
| 09-Dec-96 | 02:15:00 AM | 15 | 1.631944444 | 2350 | 1006.797 | 755.162 | 29.73 |
| 09-Dec-96 | 02:30:00 AM | 15 | 1.642361111 | 2365 | 1006.742 | 755.12 | 29.73 |
| 09-Dec-96 | 02:45:00 AM | 15 | 1.652777778 | 2380 | 1006.647 | 755.049 | 29.73 |
| 09-Dec-96 | 03:00:00 AM | 15 | 1.663194444 | 2395 | 1006.484 | 754.927 | 29.72 |
| 09-Dec-96 | 03:15:00 AM | 15 | 1.673611111 | 2410 | 1006.396 | 754.862 | 29.72 |
| 09-Dec-96 | 03:30:00 AM | 15 | 1.684027778 | 2425 | 1006.335 | 754.815 | 29.72 |
| 09-Dec-96 | 03:45:00 AM | 15 | 1.694444444 | 2440 | 1005.99 | 754.556 | 29.71 |
| 09-Dec-96 | 04:00:00 AM | 15 | 1.704861111 | 2455 | 1005.729 | 754.361 | 29.70 |
| 09-Dec-96 | 04:15:00 AM | 15 | 1.715277778 | 2470 | 1005.716 | 754.351 | 29.70 |
| 09-Dec-96 | 04:30:00 AM | 15 | 1.725694444 | 2485 | 1005.54 | 754.219 | 29.70 |
| 09-Dec-96 | 04:45:00 AM | 15 | 1.736111111 | 2500 | 1005.521 | 754.205 | 29.70 |
| 09-Dec-96 | 05:00:00 AM | 15 | 1.746527778 | 2515 | 1005.41 | 754.122 | 29.69 |
| 09-Dec-96 | 05:15:00 AM | 15 | 1.756944444 | 2530 | 1005.277 | 754.022 | 29.69 |
| 09-Dec-96 | 05:30:00 AM | 15 | 1.767361111 | 2545 | 1005.208 | 753.97 | 29.69 |
| 09-Dec-96 | 05:45:00 AM | 15 | 1.777777778 | 2560 | 1005.218 | 753.978 | 29.69 |
| 09-Dec-96 | 06:00:00 AM | 15 | 1.788194444 | 2575 | 1005.094 | 753.885 | 29.68 |
| 09-Dec-96 | 06:15:00 AM | 15 | 1.798611111 | 2590 | 1005.088 | 753.88 | 29.68 |
| 09-Dec-96 | 06:30:00 AM | 15 | 1.809027778 | 2605 | 1005.14 | 753.919 | 29.69 |
| 09-Dec-96 | 06:45:00 AM | 15 | 1.819444444 | 2620 | 1005.244 | 753.997 | 29.69 |
| 09-Dec-96 | 07:00:00 AM | 15 | 1.829861111 | 2635 | 1005.381 | 754.1 | 29.69 |
| 09-Dec-96 | 07:15:00 AM | 15 | 1.840277778 | 2650 | 1005.449 | 754.151 | 29.69 |
| 09-Dec-96 | 07:30:00 AM | 15 | 1.850694444 | 2665 | 1005.277 | 754.022 | 29.69 |
| 09-Dec-96 | 07:45:00 AM | 15 | 1.861111111 | 2680 | 1005.068 | 753.865 | 29.68 |
| 09-Dec-96 | 08:00:00 AM | 15 | 1.871527778 | 2695 | 1005.085 | 753.878 | 29.68 |
| 09-Dec-96 | 08:15:00 AM | 15 | 1.881944444 | 2710 | 1005.234 | 753.99 | 29.69 |
| 09-Dec-96 | 08:30:00 AM | 15 | 1.892361111 | 2725 | 1005.452 | 754.153 | 29.69 |
| 09-Dec-96 | 08:45:00 AM | 15 | 1.902777778 | 2740 | 1005.612 | 754.273 | 29.70 |
| 09-Dec-96 | 09:00:00 AM | 15 | 1.913194444 | 2755 | 1005.71 | 754.346 | 29.70 |
| 09-Dec-96 | 09:15:00 AM | 15 | 1.923611111 | 2770 | 1005.905 | 754.493 | 29.71 |
| 09-Dec-96 | 09:30:00 AM | 15 | 1.934027778 | 2785 | 1006.055 | 754.605 | 29.71 |
| 09-Dec-96 | 09:45:00 AM | 15 | 1.944444444 | 2800 | 1006.094 | 754.634 | 29.71 |
| 09-Dec-96 | 10:00:00 AM | 15 | 1.954861111 | 2815 | 1006.172 | 754.693 | 29.72 |
| 09-Dec-96 | 10:15:00 AM | 15 | 1.965277778 | 2830 | 1006.175 | 754.695 | 29.72 |
| 09-Dec-96 | 10:30:00 AM | 15 | 1.975694444 | 2845 | 1006.146 | 754.673 | 29.71 |
| 09-Dec-96 | 10:45:00 AM | 15 | 1.986111111 | 2860 | 1006.038 | 754.593 | 29.71 |
| 09-Dec-96 | 11:00:00 AM | 15 | 1.996527778 | 2875 | 1005.915 | 754.5 | 29.71 |
| 09-Dec-96 | 11:15:00 AM | 15 | 2.006944444 | 2890 | 1005.68 | 754.324 | 29.70 |
| 09-Dec-96 | 11:30:00 AM | 15 | 2.017361111 | 2905 | 1005.313 | 754.049 | 29.69 |
| 09-Dec-96 | 11:45:00 AM | 15 | 2.027777778 | 2920 | 1005.016 | 753.826 | 29.68 |
| 09-Dec-96 | 12:00:00 PM | 15 | 2.038194444 | 2935 | 1004.857 | 753.707 | 29.68 |
| 09-Dec-96 | 12:15:00 PM | 15 | 2.048611111 | 2950 | 1004.635 | 753.541 | 29.67 |
| 09-Dec-96 | 12:30:00 PM | 15 | 2.059027778 | 2965 | 1004.71 | 753.597 | 29.67 |
| 09-Dec-96 | 12:45:00 PM | 15 | 2.069444444 | 2980 | 1004.603 | 753.516 | 29.67 |
| 09-Dec-96 | 01:00:00 PM | 15 | 2.079861111 | 2995 | 1004.303 | 753.292 | 29.66 |
| 09-Dec-96 | 01:15:00 PM | 15 | 2.090277778 | 3010 | 1004.189 | 753.206 | 29.66 |
| 09-Dec-96 | 01:30:00 PM | 15 | 2.100694444 | 3025 | 1004.082 | 753.126 | 29.65 |
| 09-Dec-96 | 01:45:00 PM | 15 | 2.111111111 | 3040 | 1004.01 | 753.072 | 29.65 |
| 09-Dec-96 | 02:00:00 PM | 15 | 2.121527778 | 3055 | 1004.066 | 753.113 | 29.65 |

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 09-Dec-96 | 02:15:00 PM | 15 | 2.131944444 | 3070 | 1003.903 | 752.991 | 29.65 |
| 09-Dec-96 | 02:30:00 PM | 15 | 2.142361111 | 3085 | 1003.896 | 752.986 | 29.65 |
| 09-Dec-96 | 02:45:00 PM | 15 | 2.152777778 | 3100 | 1003.812 | 752.923 | 29.65 |
| 09-Dec-96 | 03:00:00 PM | 15 | 2.163194444 | 3115 | 1003.815 | 752.925 | 29.65 |
| 09-Dec-96 | 03:15:00 PM | 15 | 2.173611111 | 3130 | 1003.688 | 752.83 | 29.64 |
| 09-Dec-96 | 03:30:00 PM | 15 | 2.184027778 | 3145 | 1003.796 | 752.911 | 29.65 |
| 09-Dec-96 | 03:45:00 PM | 15 | 2.194444444 | 3160 | 1003.591 | 752.757 | 29.64 |
| 09-Dec-96 | 04:00:00 PM | 15 | 2.204861111 | 3175 | 1003.327 | 752.559 | 29.63 |
| 09-Dec-96 | 04:15:00 PM | 15 | 2.215277778 | 3190 | 1003.206 | 752.469 | 29.63 |
| 09-Dec-96 | 04:30:00 PM | 15 | 2.225694444 | 3205 | 1003.086 | 752.378 | 29.62 |
| 09-Dec-96 | 04:45:00 PM | 15 | 2.236111111 | 3220 | 1003.021 | 752.33 | 29.62 |
| 09-Dec-96 | 05:00:00 PM | 15 | 2.246527778 | 3235 | 1002.894 | 752.234 | 29.62 |
| 09-Dec-96 | 05:15:00 PM | 15 | 2.256944444 | 3250 | 1002.682 | 752.076 | 29.61 |
| 09-Dec-96 | 05:30:00 PM | 15 | 2.267361111 | 3265 | 1002.536 | 751.966 | 29.61 |
| 09-Dec-96 | 05:45:00 PM | 15 | 2.277777778 | 3280 | 1002.308 | 751.795 | 29.60 |
| 09-Dec-96 | 06:00:00 PM | 15 | 2.288194444 | 3295 | 1002.246 | 751.748 | 29.60 |
| 09-Dec-96 | 06:15:00 PM | 15 | 2.298611111 | 3310 | 1002.279 | 751.773 | 29.60 |
| 09-Dec-96 | 06:30:00 PM | 15 | 2.309027778 | 3325 | 1002.012 | 751.573 | 29.59 |
| 09-Dec-96 | 06:45:00 PM | 15 | 2.319444444 | 3340 | 1001.982 | 751.551 | 29.59 |
| 09-Dec-96 | 07:00:00 PM | 15 | 2.329861111 | 3355 | 1001.777 | 751.397 | 29.59 |
| 09-Dec-96 | 07:15:00 PM | 15 | 2.340277778 | 3370 | 1001.859 | 751.458 | 29.59 |
| 09-Dec-96 | 07:30:00 PM | 15 | 2.350694444 | 3385 | 1001.852 | 751.453 | 29.59 |
| 09-Dec-96 | 07:45:00 PM | 15 | 2.361111111 | 3400 | 1001.514 | 751.199 | 29.58 |
| 09-Dec-96 | 08:00:00 PM | 15 | 2.371527778 | 3415 | 1001.436 | 751.141 | 29.58 |
| 09-Dec-96 | 08:15:00 PM | 15 | 2.381944444 | 3430 | 1001.247 | 750.999 | 29.57 |
| 09-Dec-96 | 08:30:00 PM | 15 | 2.392361111 | 3445 | 1001.006 | 750.818 | 29.56 |
| 09-Dec-96 | 08:45:00 PM | 15 | 2.402777778 | 3460 | 1000.882 | 750.725 | 29.56 |
| 09-Dec-96 | 09:00:00 PM | 15 | 2.413194444 | 3475 | 1000.703 | 750.591 | 29.55 |
| 09-Dec-96 | 09:15:00 PM | 15 | 2.423611111 | 3490 | 1000.641 | 750.545 | 29.55 |
| 09-Dec-96 | 09:30:00 PM | 15 | 2.434027778 | 3505 | 1000.632 | 750.537 | 29.55 |
| 09-Dec-96 | 09:45:00 PM | 15 | 2.444444444 | 3520 | 1000.645 | 750.547 | 29.55 |
| 09-Dec-96 | 10:00:00 PM | 15 | 2.454861111 | 3535 | 1000.654 | 750.555 | 29.55 |
| 09-Dec-96 | 10:15:00 PM | 15 | 2.465277778 | 3550 | 1000.726 | 750.608 | 29.55 |
| 09-Dec-96 | 10:30:00 PM | 15 | 2.475694444 | 3565 | 1000.518 | 750.452 | 29.55 |
| 09-Dec-96 | 10:45:00 PM | 15 | 2.486111111 | 3580 | 1000.332 | 750.313 | 29.54 |
| 09-Dec-96 | 11:00:00 PM | 15 | 2.496527778 | 3595 | 1000.352 | 750.327 | 29.54 |
| 09-Dec-96 | 11:15:00 PM | 15 | 2.506944444 | 3610 | 1000.433 | 750.388 | 29.55 |
| 09-Dec-96 | 11:30:00 PM | 15 | 2.517361111 | 3625 | 1000.28 | 750.274 | 29.54 |
| 09-Dec-96 | 11:45:00 PM | 15 | 2.527777778 | 3640 | 1000.049 | 750.1 | 29.53 |
| 10-Dec-96 | 12:00:00 AM | 15 | 2.538194444 | 3655 | 999.932 | 750.012 | 29.53 |
| 10-Dec-96 | 12:15:00 AM | 15 | 2.548611111 | 3670 | 999.753 | 749.878 | 29.53 |
| 10-Dec-96 | 12:30:00 AM | 15 | 2.559027778 | 3685 | 999.574 | 749.744 | 29.52 |
| 10-Dec-96 | 12:45:00 AM | 15 | 2.569444444 | 3700 | 999.274 | 749.519 | 29.51 |
| 10-Dec-96 | 01:00:00 AM | 15 | 2.579861111 | 3715 | 998.997 | 749.312 | 29.50 |
| 10-Dec-96 | 01:15:00 AM | 15 | 2.590277778 | 3730 | 998.695 | 749.085 | 29.49 |
| 10-Dec-96 | 01:30:00 AM | 15 | 2.600694444 | 3745 | 998.512 | 748.948 | 29.49 |
| 10-Dec-96 | 01:45:00 AM | 15 | 2.611111111 | 3760 | 998.19 | 748.706 | 29.48 |
| 10-Dec-96 | 02:00:00 AM | 15 | 2.621527778 | 3775 | 998.037 | 748.591 | 29.48 |
| 10-Dec-96 | 02:15:00 AM | 15 | 2.631944444 | 3790 | 998.008 | 748.569 | 29.47 |
| 10-Dec-96 | 02:30:00 AM | 15 | 2.642361111 | 3805 | 998.076 | 748.621 | 29.48 |
| 10-Dec-96 | 02:45:00 AM | 15 | 2.652777778 | 3820 | 997.887 | 748.479 | 29.47 |
| 10-Dec-96 | 03:00:00 AM | 15 | 2.663194444 | 3835 | 997.754 | 748.379 | 29.47 |
| 10-Dec-96 | 03:15:00 AM | 15 | 2.673611111 | 3850 | 997.699 | 748.338 | 29.47 |

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 10-Dec-96 | 03:30:00 AM | 15 | 2.684027778 | 3865 | 997.913 | 748.499 | 29.47 |
| 10-Dec-96 | 03:45:00 AM | 15 | 2.694444444 | 3880 | 998.076 | 748.621 | 29.48 |
| 10-Dec-96 | 04:00:00 AM | 15 | 2.704861111 | 3895 | 998.18 | 748.699 | 29.48 |
| 10-Dec-96 | 04:15:00 AM | 15 | 2.715277778 | 3910 | 998.161 | 748.684 | 29.48 |
| 10-Dec-96 | 04:30:00 AM | 15 | 2.725694444 | 3925 | 998.118 | 748.652 | 29.48 |
| 10-Dec-96 | 04:45:00 AM | 15 | 2.736111111 | 3940 | 998.431 | 748.887 | 29.49 |
| 10-Dec-96 | 05:00:00 AM | 15 | 2.746527778 | 3955 | 998.77 | 749.141 | 29.50 |
| 10-Dec-96 | 05:15:00 AM | 15 | 2.756944444 | 3970 | 999.076 | 749.37 | 29.51 |
| 10-Dec-96 | 05:30:00 AM | 15 | 2.767361111 | 3985 | 999.186 | 749.453 | 29.51 |
| 10-Dec-96 | 05:45:00 AM | 15 | 2.777777778 | 4000 | 999.342 | 749.57 | 29.51 |
| 10-Dec-96 | 06:00:00 AM | 15 | 2.788194444 | 4015 | 999.557 | 749.732 | 29.52 |
| 10-Dec-96 | 06:15:00 AM | 15 | 2.798611111 | 4030 | 999.655 | 749.805 | 29.52 |
| 10-Dec-96 | 06:30:00 AM | 15 | 2.809027778 | 4045 | 999.827 | 749.934 | 29.53 |
| 10-Dec-96 | 06:45:00 AM | 15 | 2.819444444 | 4060 | 999.948 | 750.025 | 29.53 |
| 10-Dec-96 | 07:00:00 AM | 15 | 2.829861111 | 4075 | 1000.14 | 750.169 | 29.54 |
| 10-Dec-96 | 07:15:00 AM | 15 | 2.840277778 | 4090 | 1000.339 | 750.318 | 29.54 |
| 10-Dec-96 | 07:30:00 AM | 15 | 2.850694444 | 4105 | 1000.505 | 750.442 | 29.55 |
| 10-Dec-96 | 07:45:00 AM | 15 | 2.861111111 | 4120 | 1000.391 | 750.357 | 29.54 |
| 10-Dec-96 | 08:00:00 AM | 15 | 2.871527778 | 4135 | 1000.397 | 750.362 | 29.55 |
| 10-Dec-96 | 08:15:00 AM | 15 | 2.881944444 | 4150 | 1000.501 | 750.44 | 29.55 |
| 10-Dec-96 | 08:30:00 AM | 15 | 2.892361111 | 4165 | 1000.762 | 750.635 | 29.56 |
| 10-Dec-96 | 08:45:00 AM | 15 | 2.902777778 | 4180 | 1001.081 | 750.874 | 29.57 |
| 10-Dec-96 | 09:00:00 AM | 15 | 2.913194444 | 4195 | 1001.068 | 750.865 | 29.56 |
| 10-Dec-96 | 09:15:00 AM | 15 | 2.923611111 | 4210 | 1001.224 | 750.982 | 29.57 |
| 10-Dec-96 | 09:30:00 AM | 15 | 2.934027778 | 4225 | 1001.436 | 751.141 | 29.58 |
| 10-Dec-96 | 09:45:00 AM | 15 | 2.944444444 | 4240 | 1001.53 | 751.211 | 29.58 |
| 10-Dec-96 | 10:00:00 AM | 15 | 2.954861111 | 4255 | 1001.523 | 751.206 | 29.58 |
| 10-Dec-96 | 10:15:00 AM | 15 | 2.965277778 | 4270 | 1001.546 | 751.224 | 29.58 |
| 10-Dec-96 | 10:30:00 AM | 15 | 2.975694444 | 4285 | 1001.689 | 751.331 | 29.58 |
| 10-Dec-96 | 10:45:00 AM | 15 | 2.986111111 | 4300 | 1001.631 | 751.287 | 29.58 |
| 10-Dec-96 | 11:00:00 AM | 15 | 2.996527778 | 4315 | 1001.494 | 751.184 | 29.58 |
| 10-Dec-96 | 11:15:00 AM | 15 | 3.006944444 | 4330 | 1001.689 | 751.331 | 29.58 |
| 10-Dec-96 | 11:30:00 AM | 15 | 3.017361111 | 4345 | 1001.553 | 751.228 | 29.58 |
| 10-Dec-96 | 11:45:00 AM | 15 | 3.027777778 | 4360 | 1001.514 | 751.199 | 29.58 |
| 10-Dec-96 | 12:00:00 PM | 15 | 3.038194444 | 4375 | 1001.403 | 751.116 | 29.57 |
| 10-Dec-96 | 12:15:00 PM | 15 | 3.048611111 | 4390 | 1001.383 | 751.102 | 29.57 |
| 10-Dec-96 | 12:30:00 PM | 15 | 3.059027778 | 4405 | 1001.478 | 751.172 | 29.58 |
| 10-Dec-96 | 12:45:00 PM | 15 | 3.069444444 | 4420 | 1001.458 | 751.158 | 29.58 |
| 10-Dec-96 | 01:00:00 PM | 15 | 3.079861111 | 4435 | 1001.592 | 751.258 | 29.58 |
| 10-Dec-96 | 01:15:00 PM | 15 | 3.090277778 | 4450 | 1001.641 | 751.294 | 29.58 |
| 10-Dec-96 | 01:30:00 PM | 15 | 3.100694444 | 4465 | 1001.602 | 751.265 | 29.58 |

ORIGINAL BAROMETRIC PRESSURE DATA - RECOVERY PORTION OF TEST

KENNECOTT URANIUM COMPANY
SWEETWATER URANIUM PROJECT
BAROMETRIC DATA
01-Dec-96 12-Dec-96

TIME INDEX 0 MIN: 07-Dec-96 11:05:00 AM
DATEVALUE: 35406
TIMEVALUE: 0.461805556
SUM: 35406.4618055556

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 10-Dec-96 | 01:30:00 PM | 15 | 3.10069444 | 4465 | 1001.602 | 751.265 | 29.58 |
| 10-Dec-96 | 01:45:00 PM | 15 | 3.11111111 | 4480 | 1001.296 | 751.035 | 29.57 |
| 10-Dec-96 | 02:00:00 PM | 15 | 3.12152778 | 4495 | 1001.136 | 750.916 | 29.57 |
| 10-Dec-96 | 02:15:00 PM | 15 | 3.13194444 | 4510 | 1001.351 | 751.077 | 29.57 |
| 10-Dec-96 | 02:30:00 PM | 15 | 3.14236111 | 4525 | 1001.416 | 751.126 | 29.58 |
| 10-Dec-96 | 02:45:00 PM | 15 | 3.15277778 | 4540 | 1001.452 | 751.153 | 29.58 |
| 10-Dec-96 | 03:00:00 PM | 15 | 3.16319444 | 4555 | 1001.403 | 751.116 | 29.57 |
| 10-Dec-96 | 03:15:00 PM | 15 | 3.17361111 | 4570 | 1001.458 | 751.158 | 29.58 |
| 10-Dec-96 | 03:30:00 PM | 15 | 3.18402778 | 4585 | 1001.436 | 751.141 | 29.58 |
| 10-Dec-96 | 03:45:00 PM | 15 | 3.19444444 | 4600 | 1001.478 | 751.172 | 29.58 |
| 10-Dec-96 | 04:00:00 PM | 15 | 3.20486111 | 4615 | 1001.497 | 751.187 | 29.58 |
| 10-Dec-96 | 04:15:00 PM | 15 | 3.21527778 | 4630 | 1001.602 | 751.265 | 29.58 |
| 10-Dec-96 | 04:30:00 PM | 15 | 3.22569444 | 4645 | 1001.673 | 751.319 | 29.58 |
| 10-Dec-96 | 04:45:00 PM | 15 | 3.23611111 | 4660 | 1001.706 | 751.343 | 29.58 |
| 10-Dec-96 | 05:00:00 PM | 15 | 3.24652778 | 4675 | 1001.738 | 751.367 | 29.58 |
| 10-Dec-96 | 05:15:00 PM | 15 | 3.25694444 | 4690 | 1001.722 | 751.355 | 29.58 |
| 10-Dec-96 | 05:30:00 PM | 15 | 3.26736111 | 4705 | 1001.696 | 751.336 | 29.58 |
| 10-Dec-96 | 05:45:00 PM | 15 | 3.27777778 | 4720 | 1001.751 | 751.377 | 29.59 |
| 10-Dec-96 | 06:00:00 PM | 15 | 3.28819444 | 4735 | 1001.859 | 751.458 | 29.59 |
| 10-Dec-96 | 06:15:00 PM | 15 | 3.29861111 | 4750 | 1001.908 | 751.495 | 29.59 |
| 10-Dec-96 | 06:30:00 PM | 15 | 3.30902778 | 4765 | 1002.184 | 751.702 | 29.60 |
| 10-Dec-96 | 06:45:00 PM | 15 | 3.31944444 | 4780 | 1002.305 | 751.792 | 29.60 |
| 10-Dec-96 | 07:00:00 PM | 15 | 3.32986111 | 4795 | 1002.376 | 751.846 | 29.60 |
| 10-Dec-96 | 07:15:00 PM | 15 | 3.34027778 | 4810 | 1002.396 | 751.861 | 29.60 |
| 10-Dec-96 | 07:30:00 PM | 15 | 3.35069444 | 4825 | 1002.36 | 751.834 | 29.60 |
| 10-Dec-96 | 07:45:00 PM | 15 | 3.36111111 | 4840 | 1002.201 | 751.714 | 29.60 |
| 10-Dec-96 | 08:00:00 PM | 15 | 3.37152778 | 4855 | 1002.165 | 751.687 | 29.60 |
| 10-Dec-96 | 08:15:00 PM | 15 | 3.38194444 | 4870 | 1001.973 | 751.543 | 29.59 |
| 10-Dec-96 | 08:30:00 PM | 15 | 3.39236111 | 4885 | 1001.745 | 751.372 | 29.58 |
| 10-Dec-96 | 08:45:00 PM | 15 | 3.40277778 | 4900 | 1001.738 | 751.367 | 29.58 |
| 10-Dec-96 | 09:00:00 PM | 15 | 3.41319444 | 4915 | 1001.761 | 751.385 | 29.59 |
| 10-Dec-96 | 09:15:00 PM | 15 | 3.42361111 | 4930 | 1001.481 | 751.175 | 29.58 |
| 10-Dec-96 | 09:30:00 PM | 15 | 3.43402778 | 4945 | 1001.315 | 751.05 | 29.57 |
| 10-Dec-96 | 09:45:00 PM | 15 | 3.44444444 | 4960 | 1001.322 | 751.055 | 29.57 |
| 10-Dec-96 | 10:00:00 PM | 15 | 3.45486111 | 4975 | 1001.602 | 751.265 | 29.58 |
| 10-Dec-96 | 10:15:00 PM | 15 | 3.46527778 | 4990 | 1001.53 | 751.211 | 29.58 |
| 10-Dec-96 | 10:30:00 PM | 15 | 3.47569444 | 5005 | 1001.396 | 751.111 | 29.57 |
| 10-Dec-96 | 10:45:00 PM | 15 | 3.48611111 | 5020 | 1001.374 | 751.094 | 29.57 |
| 10-Dec-96 | 11:00:00 PM | 15 | 3.49652778 | 5035 | 1001.299 | 751.038 | 29.57 |
| 10-Dec-96 | 11:15:00 PM | 15 | 3.50694444 | 5050 | 1001.488 | 751.18 | 29.58 |
| 10-Dec-96 | 11:30:00 PM | 15 | 3.51736111 | 5065 | 1001.569 | 751.241 | 29.58 |
| 10-Dec-96 | 11:45:00 PM | 15 | 3.52777778 | 5080 | 1001.419 | 751.128 | 29.58 |
| 11-Dec-96 | 12:00:00 AM | 15 | 3.53819444 | 5095 | 1001.257 | 751.006 | 29.57 |
| 11-Dec-96 | 12:15:00 AM | 15 | 3.54861111 | 5110 | 1000.996 | 750.811 | 29.56 |
| 11-Dec-96 | 12:30:00 AM | 15 | 3.55902778 | 5125 | 1000.807 | 750.669 | 29.56 |
| 11-Dec-96 | 12:45:00 AM | 15 | 3.56944444 | 5140 | 1000.739 | 750.618 | 29.56 |

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 11-Dec-96 | 01:00:00 AM | 15 | 3.57986111 | 5155 | 1000.768 | 750.64 | 29.56 |
| 11-Dec-96 | 01:15:00 AM | 15 | 3.59027778 | 5170 | 1000.794 | 750.659 | 29.56 |
| 11-Dec-96 | 01:30:00 AM | 15 | 3.60069444 | 5185 | 1000.794 | 750.659 | 29.56 |
| 11-Dec-96 | 01:45:00 AM | 15 | 3.61111111 | 5200 | 1000.69 | 750.581 | 29.55 |
| 11-Dec-96 | 02:00:00 AM | 15 | 3.62152778 | 5215 | 1000.853 | 750.703 | 29.56 |
| 11-Dec-96 | 02:15:00 AM | 15 | 3.63194444 | 5230 | 1000.758 | 750.633 | 29.56 |
| 11-Dec-96 | 02:30:00 AM | 15 | 3.64236111 | 5245 | 1000.765 | 750.638 | 29.56 |
| 11-Dec-96 | 02:45:00 AM | 15 | 3.65277778 | 5260 | 1000.771 | 750.642 | 29.56 |
| 11-Dec-96 | 03:00:00 AM | 15 | 3.66319444 | 5275 | 1000.859 | 750.708 | 29.56 |
| 11-Dec-96 | 03:15:00 AM | 15 | 3.67361111 | 5290 | 1000.745 | 750.623 | 29.56 |
| 11-Dec-96 | 03:30:00 AM | 15 | 3.68402778 | 5305 | 1000.755 | 750.63 | 29.56 |
| 11-Dec-96 | 03:45:00 AM | 15 | 3.69444444 | 5320 | 1001.006 | 750.818 | 29.56 |
| 11-Dec-96 | 04:00:00 AM | 15 | 3.70486111 | 5335 | 1001.064 | 750.862 | 29.56 |
| 11-Dec-96 | 04:15:00 AM | 15 | 3.71527778 | 5350 | 1001.12 | 750.904 | 29.57 |
| 11-Dec-96 | 04:30:00 AM | 15 | 3.72569444 | 5365 | 1001.143 | 750.921 | 29.57 |
| 11-Dec-96 | 04:45:00 AM | 15 | 3.73611111 | 5380 | 1001.175 | 750.945 | 29.57 |
| 11-Dec-96 | 05:00:00 AM | 15 | 3.74652778 | 5395 | 1001.195 | 750.96 | 29.57 |
| 11-Dec-96 | 05:15:00 AM | 15 | 3.75694444 | 5410 | 1001.409 | 751.121 | 29.57 |
| 11-Dec-96 | 05:30:00 AM | 15 | 3.76736111 | 5425 | 1001.716 | 751.35 | 29.58 |
| 11-Dec-96 | 05:45:00 AM | 15 | 3.77777778 | 5440 | 1002.044 | 751.597 | 29.59 |
| 11-Dec-96 | 06:00:00 AM | 15 | 3.78819444 | 5455 | 1002.409 | 751.87 | 29.60 |
| 11-Dec-96 | 06:15:00 AM | 15 | 3.79861111 | 5470 | 1002.865 | 752.212 | 29.62 |
| 11-Dec-96 | 06:30:00 AM | 15 | 3.80902778 | 5485 | 1002.962 | 752.286 | 29.62 |
| 11-Dec-96 | 06:45:00 AM | 15 | 3.81944444 | 5500 | 1003.278 | 752.522 | 29.63 |
| 11-Dec-96 | 07:00:00 AM | 15 | 3.82986111 | 5515 | 1003.411 | 752.622 | 29.63 |
| 11-Dec-96 | 07:15:00 AM | 15 | 3.84027778 | 5530 | 1003.613 | 752.774 | 29.64 |
| 11-Dec-96 | 07:30:00 AM | 15 | 3.85069444 | 5545 | 1003.835 | 752.94 | 29.65 |
| 11-Dec-96 | 07:45:00 AM | 15 | 3.86111111 | 5560 | 1004.02 | 753.079 | 29.65 |
| 11-Dec-96 | 08:00:00 AM | 15 | 3.87152778 | 5575 | 1004.476 | 753.421 | 29.67 |
| 11-Dec-96 | 08:15:00 AM | 15 | 3.88194444 | 5590 | 1005.098 | 753.887 | 29.68 |
| 11-Dec-96 | 08:30:00 AM | 15 | 3.89236111 | 5605 | 1005.186 | 753.953 | 29.69 |
| 11-Dec-96 | 08:45:00 AM | 15 | 3.90277778 | 5620 | 1005.374 | 754.095 | 29.69 |
| 11-Dec-96 | 09:00:00 AM | 15 | 3.91319444 | 5635 | 1005.146 | 753.924 | 29.69 |
| 11-Dec-96 | 09:15:00 AM | 15 | 3.92361111 | 5650 | 1005.332 | 754.063 | 29.69 |
| 11-Dec-96 | 09:30:00 AM | 15 | 3.93402778 | 5665 | 1005.703 | 754.341 | 29.70 |
| 11-Dec-96 | 09:45:00 AM | 15 | 3.94444444 | 5680 | 1006.097 | 754.637 | 29.71 |
| 11-Dec-96 | 10:00:00 AM | 15 | 3.95486111 | 5695 | 1005.791 | 754.407 | 29.70 |
| 11-Dec-96 | 10:15:00 AM | 15 | 3.96527778 | 5710 | 1005.524 | 754.207 | 29.70 |
| 11-Dec-96 | 10:30:00 AM | 15 | 3.97569444 | 5725 | 1005.547 | 754.224 | 29.70 |
| 11-Dec-96 | 10:45:00 AM | 15 | 3.98611111 | 5740 | 1005.986 | 754.554 | 29.71 |
| 11-Dec-96 | 11:00:00 AM | 15 | 3.99652778 | 5755 | 1005.918 | 754.503 | 29.71 |
| 11-Dec-96 | 11:15:00 AM | 15 | 4.00694444 | 5770 | 1005.625 | 754.283 | 29.70 |
| 11-Dec-96 | 11:30:00 AM | 15 | 4.01736111 | 5785 | 1005.658 | 754.307 | 29.70 |
| 11-Dec-96 | 11:45:00 AM | 15 | 4.02777778 | 5800 | 1005.791 | 754.407 | 29.70 |
| 11-Dec-96 | 12:00:00 PM | 15 | 4.03819444 | 5815 | 1005.879 | 754.473 | 29.71 |
| 11-Dec-96 | 12:15:00 PM | 15 | 4.04861111 | 5830 | 1005.947 | 754.525 | 29.71 |
| 11-Dec-96 | 12:30:00 PM | 15 | 4.05902778 | 5845 | 1005.814 | 754.424 | 29.71 |
| 11-Dec-96 | 12:45:00 PM | 15 | 4.06944444 | 5860 | 1005.732 | 754.363 | 29.70 |
| 11-Dec-96 | 01:00:00 PM | 15 | 4.07986111 | 5875 | 1005.654 | 754.305 | 29.70 |
| 11-Dec-96 | 01:15:00 PM | 15 | 4.09027778 | 5890 | 1005.719 | 754.354 | 29.70 |
| 11-Dec-96 | 01:30:00 PM | 15 | 4.10069444 | 5905 | 1006.051 | 754.603 | 29.71 |
| 11-Dec-96 | 01:45:00 PM | 15 | 4.11111111 | 5920 | 1006.224 | 754.732 | 29.72 |
| 11-Dec-96 | 02:00:00 PM | 15 | 4.12152778 | 5935 | 1006.367 | 754.84 | 29.72 |

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 11-Dec-96 | 02:15:00 PM | 15 | 4.13194444 | 5950 | 1006.595 | 755.01 | 29.73 |
| 11-Dec-96 | 02:30:00 PM | 15 | 4.14236111 | 5965 | 1006.702 | 755.091 | 29.73 |
| 11-Dec-96 | 02:45:00 PM | 15 | 4.15277778 | 5980 | 1006.712 | 755.098 | 29.73 |
| 11-Dec-96 | 03:00:00 PM | 15 | 4.16319444 | 5995 | 1006.611 | 755.023 | 29.73 |
| 11-Dec-96 | 03:15:00 PM | 15 | 4.17361111 | 6010 | 1006.65 | 755.052 | 29.73 |
| 11-Dec-96 | 03:30:00 PM | 15 | 4.18402778 | 6025 | 1006.784 | 755.152 | 29.73 |
| 11-Dec-96 | 03:45:00 PM | 15 | 4.19444444 | 6040 | 1007.347 | 755.574 | 29.75 |
| 11-Dec-96 | 04:00:00 PM | 15 | 4.20486111 | 6055 | 1008.001 | 756.065 | 29.77 |
| 11-Dec-96 | 04:15:00 PM | 15 | 4.21527778 | 6070 | 1008.206 | 756.219 | 29.78 |
| 11-Dec-96 | 04:30:00 PM | 15 | 4.22569444 | 6085 | 1008.197 | 756.212 | 29.78 |
| 11-Dec-96 | 04:45:00 PM | 15 | 4.23611111 | 6100 | 1007.975 | 756.046 | 29.77 |
| 11-Dec-96 | 05:00:00 PM | 15 | 4.24652778 | 6115 | 1007.692 | 755.833 | 29.76 |
| 11-Dec-96 | 05:15:00 PM | 15 | 4.25694444 | 6130 | 1007.966 | 756.038 | 29.77 |
| 11-Dec-96 | 05:30:00 PM | 15 | 4.26736111 | 6145 | 1008.226 | 756.234 | 29.78 |
| 11-Dec-96 | 05:45:00 PM | 15 | 4.27777778 | 6160 | 1008.031 | 756.087 | 29.77 |
| 11-Dec-96 | 06:00:00 PM | 15 | 4.28819444 | 6175 | 1008.047 | 756.099 | 29.77 |
| 11-Dec-96 | 06:15:00 PM | 15 | 4.29861111 | 6190 | 1008.184 | 756.202 | 29.78 |
| 11-Dec-96 | 06:30:00 PM | 15 | 4.30902778 | 6205 | 1008.135 | 756.165 | 29.77 |
| 11-Dec-96 | 06:45:00 PM | 15 | 4.31944444 | 6220 | 1007.832 | 755.938 | 29.76 |
| 11-Dec-96 | 07:00:00 PM | 15 | 4.32986111 | 6235 | 1007.523 | 755.706 | 29.76 |
| 11-Dec-96 | 07:15:00 PM | 15 | 4.34027778 | 6250 | 1007.757 | 755.882 | 29.76 |
| 11-Dec-96 | 07:30:00 PM | 15 | 4.35069444 | 6265 | 1008.115 | 756.151 | 29.77 |
| 11-Dec-96 | 07:45:00 PM | 15 | 4.36111111 | 6280 | 1008.109 | 756.146 | 29.77 |
| 11-Dec-96 | 08:00:00 PM | 15 | 4.37152778 | 6295 | 1007.972 | 756.043 | 29.77 |
| 11-Dec-96 | 08:15:00 PM | 15 | 4.38194444 | 6310 | 1007.907 | 755.995 | 29.77 |
| 11-Dec-96 | 08:30:00 PM | 15 | 4.39236111 | 6325 | 1007.868 | 755.965 | 29.77 |
| 11-Dec-96 | 08:45:00 PM | 15 | 4.40277778 | 6340 | 1007.682 | 755.826 | 29.76 |
| 11-Dec-96 | 09:00:00 PM | 15 | 4.41319444 | 6355 | 1007.331 | 755.562 | 29.75 |
| 11-Dec-96 | 09:15:00 PM | 15 | 4.42361111 | 6370 | 1007.282 | 755.526 | 29.75 |
| 11-Dec-96 | 09:30:00 PM | 15 | 4.43402778 | 6385 | 1007.467 | 755.665 | 29.75 |
| 11-Dec-96 | 09:45:00 PM | 15 | 4.44444444 | 6400 | 1007.376 | 755.597 | 29.75 |
| 11-Dec-96 | 10:00:00 PM | 15 | 4.45486111 | 6415 | 1007.389 | 755.606 | 29.75 |
| 11-Dec-96 | 10:15:00 PM | 15 | 4.46527778 | 6430 | 1007.347 | 755.574 | 29.75 |
| 11-Dec-96 | 10:30:00 PM | 15 | 4.47569444 | 6445 | 1007.191 | 755.457 | 29.75 |
| 11-Dec-96 | 10:45:00 PM | 15 | 4.48611111 | 6460 | 1007.09 | 755.382 | 29.74 |
| 11-Dec-96 | 11:00:00 PM | 15 | 4.49652778 | 6475 | 1006.751 | 755.128 | 29.73 |
| 11-Dec-96 | 11:15:00 PM | 15 | 4.50694444 | 6490 | 1006.54 | 754.969 | 29.73 |
| 11-Dec-96 | 11:30:00 PM | 15 | 4.51736111 | 6505 | 1006.335 | 754.815 | 29.72 |
| 11-Dec-96 | 11:45:00 PM | 15 | 4.52777778 | 6520 | 1006.25 | 754.752 | 29.72 |
| 12-Dec-96 | 12:00:00 AM | 15 | 4.53819444 | 6535 | 1005.817 | 754.427 | 29.71 |
| 12-Dec-96 | 12:15:00 AM | 15 | 4.54861111 | 6550 | 1005.791 | 754.407 | 29.70 |
| 12-Dec-96 | 12:30:00 AM | 15 | 4.55902778 | 6565 | 1005.661 | 754.31 | 29.70 |
| 12-Dec-96 | 12:45:00 AM | 15 | 4:56944444 | 6580 | 1005.745 | 754.373 | 29.70 |
| 12-Dec-96 | 01:00:00 AM | 15 | 4.57986111 | 6595 | 1005.57 | 754.241 | 29.70 |
| 12-Dec-96 | 01:15:00 AM | 15 | 4.59027778 | 6610 | 1005.687 | 754.329 | 29.70 |
| 12-Dec-96 | 01:30:00 AM | 15 | 4.60069444 | 6625 | 1005.286 | 754.029 | 29.69 |
| 12-Dec-96 | 01:45:00 AM | 15 | 4.61111111 | 6640 | 1005.267 | 754.014 | 29.69 |
| 12-Dec-96 | 02:00:00 AM | 15 | 4.62152778 | 6655 | 1005.316 | 754.051 | 29.69 |
| 12-Dec-96 | 02:15:00 AM | 15 | 4.63194444 | 6670 | 1005.479 | 754.173 | 29.70 |
| 12-Dec-96 | 02:30:00 AM | 15 | 4.64236111 | 6685 | 1005.501 | 754.19 | 29.70 |
| 12-Dec-96 | 02:45:00 AM | 15 | 4.65277778 | 6700 | 1005.479 | 754.173 | 29.70 |
| 12-Dec-96 | 03:00:00 AM | 15 | 4.66319444 | 6715 | 1005.417 | 754.127 | 29.69 |
| 12-Dec-96 | 03:15:00 AM | 15 | 4.67361111 | 6730 | 1005.4 | 754.114 | 29.69 |

| DATE | TIME | AVG. DUR. | TIME INDEX (DAYS) | (MINUTES) | PRESSURE (MILLIBARS) | PRESSURE (MM of HG) | PRESSURE (INCHES) |
|---|---|---|---|---|---|---|---|
| 12-Dec-96 | 03:30:00 AM | 15 | 4.68402778 | 6745 | 1005.527 | 754.21 | 29.70 |
| 12-Dec-96 | 03:45:00 AM | 15 | 4.69444444 | 6760 | 1005.615 | 754.276 | 29.70 |
| 12-Dec-96 | 04:00:00 AM | 15 | 4.70486111 | 6775 | 1005.843 | 754.446 | 29.71 |
| 12-Dec-96 | 04:15:00 AM | 15 | 4.71527778 | 6790 | 1006.12 | 754.654 | 29.71 |
| 12-Dec-96 | 04:30:00 AM | 15 | 4.72569444 | 6805 | 1006.335 | 754.815 | 29.72 |
| 12-Dec-96 | 04:45:00 AM | 15 | 4.73611111 | 6820 | 1006.426 | 754.884 | 29.72 |
| 12-Dec-96 | 05:00:00 AM | 15 | 4.74652778 | 6835 | 1006.566 | 754.988 | 29.73 |
| 12-Dec-96 | 05:15:00 AM | 15 | 4.75694444 | 6850 | 1006.787 | 755.155 | 29.73 |
| 12-Dec-96 | 05:30:00 AM | 15 | 4.76736111 | 6865 | 1006.901 | 755.24 | 29.74 |
| 12-Dec-96 | 05:45:00 AM | 15 | 4.77777778 | 6880 | 1006.986 | 755.304 | 29.74 |
| 12-Dec-96 | 06:00:00 AM | 15 | 4.78819444 | 6895 | 1007.207 | 755.469 | 29.75 |
| 12-Dec-96 | 06:15:00 AM | 15 | 4.79861111 | 6910 | 1007.367 | 755.589 | 29.75 |
| 12-Dec-96 | 06:30:00 AM | 15 | 4.80902778 | 6925 | 1007.445 | 755.648 | 29.75 |
| 12-Dec-96 | 06:45:00 AM | 15 | 4.81944444 | 6940 | 1007.536 | 755.716 | 29.76 |
| 12-Dec-96 | 07:00:00 AM | 15 | 4.82986111 | 6955 | 1007.777 | 755.897 | 29.76 |
| 12-Dec-96 | 07:15:00 AM | 15 | 4.84027778 | 6970 | 1008.112 | 756.148 | 29.77 |
| 12-Dec-96 | 07:30:00 AM | 15 | 4.85069444 | 6985 | 1008.372 | 756.344 | 29.78 |
| 12-Dec-96 | 07:45:00 AM | 15 | 4.86111111 | 7000 | 1008.6 | 756.515 | 29.79 |
| 12-Dec-96 | 08:00:00 AM | 15 | 4.87152778 | 7015 | 1008.695 | 756.585 | 29.79 |
| 12-Dec-96 | 08:15:00 AM | 15 | 4.88194444 | 7030 | 1008.978 | 756.798 | 29.80 |
| 12-Dec-96 | 08:30:00 AM | 15 | 4.89236111 | 7045 | 1009.199 | 756.964 | 29.81 |
| 12-Dec-96 | 08:45:00 AM | 15 | 4.90277778 | 7060 | 1009.382 | 757.101 | 29.81 |
| 12-Dec-96 | 09:00:00 AM | 15 | 4.91319444 | 7075 | 1009.561 | 757.235 | 29.82 |
| 12-Dec-96 | 09:15:00 AM | 15 | 4.92361111 | 7090 | 1009.691 | 757.332 | 29.82 |

# APPENDIX E

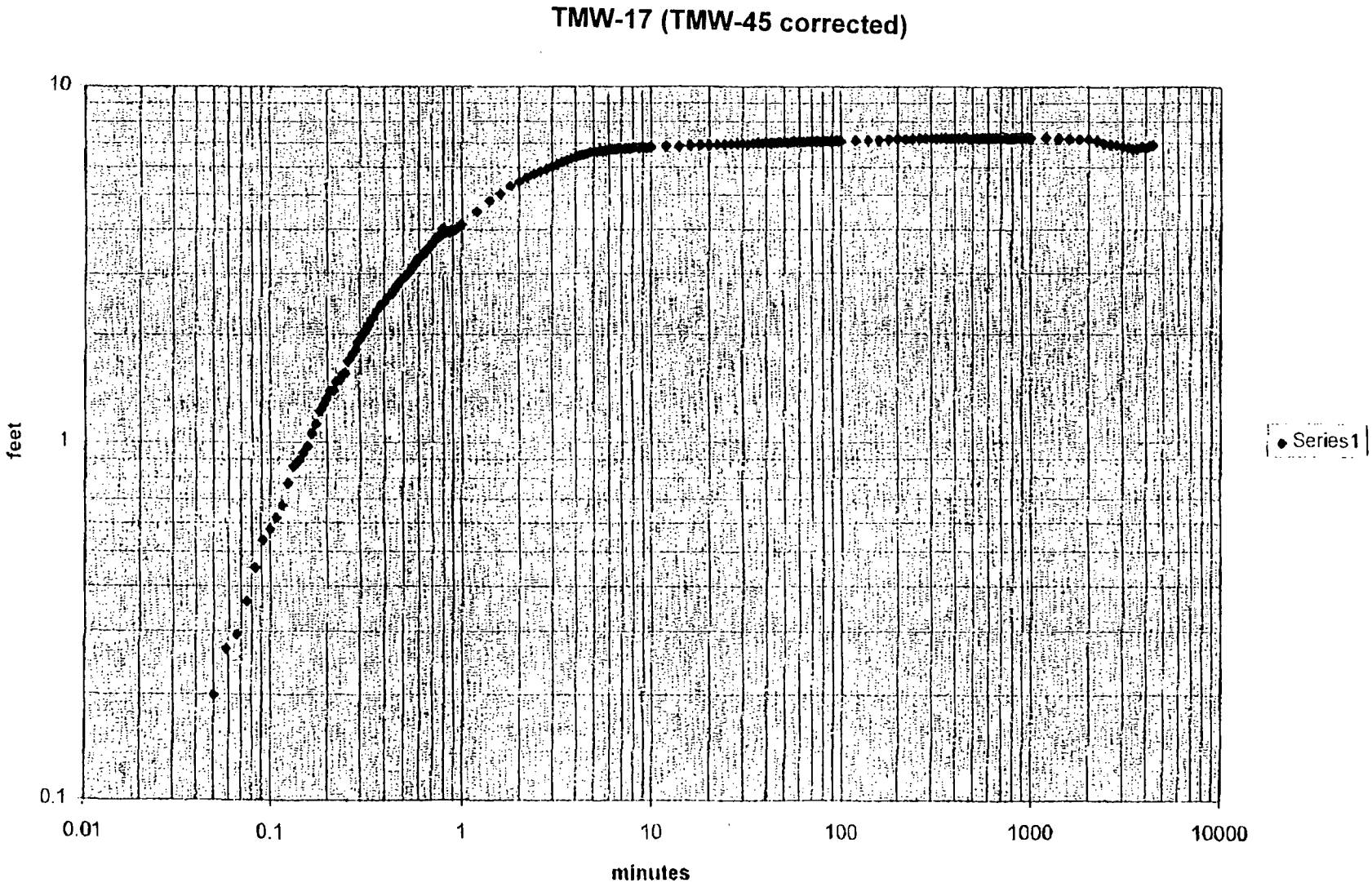
# ORIGINAL HERMIT DATA

## Table E-1 Pumping Test Results for All Correction

| WELL NAME | RADIAL DISTANCE (feet) | HANTUSH METHOD | | | NEUMAN METHOD | | |
|---|---|---|---|---|---|---|---|
| | | TRANSMISSIVITY (feet*2/day) | K (35 FT) (feet/day) | STORATIVITY | TRANSMISSIVITY (feet*2/day) | K (35 FT) (feet/day) | STORATIVITY |
| **PUMPING WELL** | | | | | | | |
| TMW-17 (TMW-45 corrected) (2) | .3(1) | 38.90 | 0.94 | | 31.25 | 0.90 | |
| TMW-17 (uncorrected) (3) | .3(1) | 32.70 | 0.94 | | 53.14 | 1.50 | |
| TMW-17 (TMW-16 corrected) (4) | .3(1) | 32.98 | 0.94 | | 33.70 | 0.96 | |
| TMW-17 (TMW-29 corrected) (5) | .3(1) | 32.98 | 0.94 | | 30.82 | 0.88 | |
| TMW-17 (kencot bar cor) (6) | .3(1) | 31.40 | 0.90 | | 52.30 | 1.44 | |
| **OBSERVATION WELLS** | | | | | | | |
| TMW-78 (TMW-45 corrected) (2) | 450 | 1454.40 | 41.60 | 5.26E-04 | 918.70 | 26.21 | 4.18E-04 |
| TMW-78 (uncorrected) (3) | 450 | 668.20 | 19.00 | 1.53E-04 | 420.50 | 12.04 | 1.24E-04 |
| TMW-78 (TMW-16 corrected) (4) | 450 | 2779.20 | 79.50 | 1.81E-04 | 1872.00 | 53.71 | 1.65E-04 |
| TMW-78 (TMW-29 corrected) (5) | 450 | 2836.80 | 81.05 | 1.42E-04 | 1828.80 | 52.30 | 1.46E-04 |
| TMW-78 (kencot bar cor) (6) | 450 | 1454.40 | 41.60 | 1.58E-04 | 1268.60 | 36.10 | 1.44E-04 |
| | | | | | | | |
| TMW-75 (TMW-45 corrected) (2) | 200 | 781.90 | 22.30 | 2.22E-04 | 1104.50 | 31.50 | 1.98E-04 |
| TMW-75 (uncorrected) (3) | 200 | 384.00 | 11.00 | 1.07E-04 | 401.80 | 11.50 | 1.12E-04 |
| TMW-75 (TMW-16 corrected) (4) | 200 | 763.20 | 21.74 | 1.37E-04 | 439.20 | 12.50 | 1.09E-04 |
| TMW-75 (TMW-29 corrected) (5) | 200 | 721.44 | 20.60 | 1.08E-04 | 424.80 | 12.15 | 9.90E-05 |
| TMW-75 (kencot bar cor) (6) | 200 | 1670.40 | 47.81 | 7.66E-04 | 2001.60 | 57.46 | 8.02E-04 |

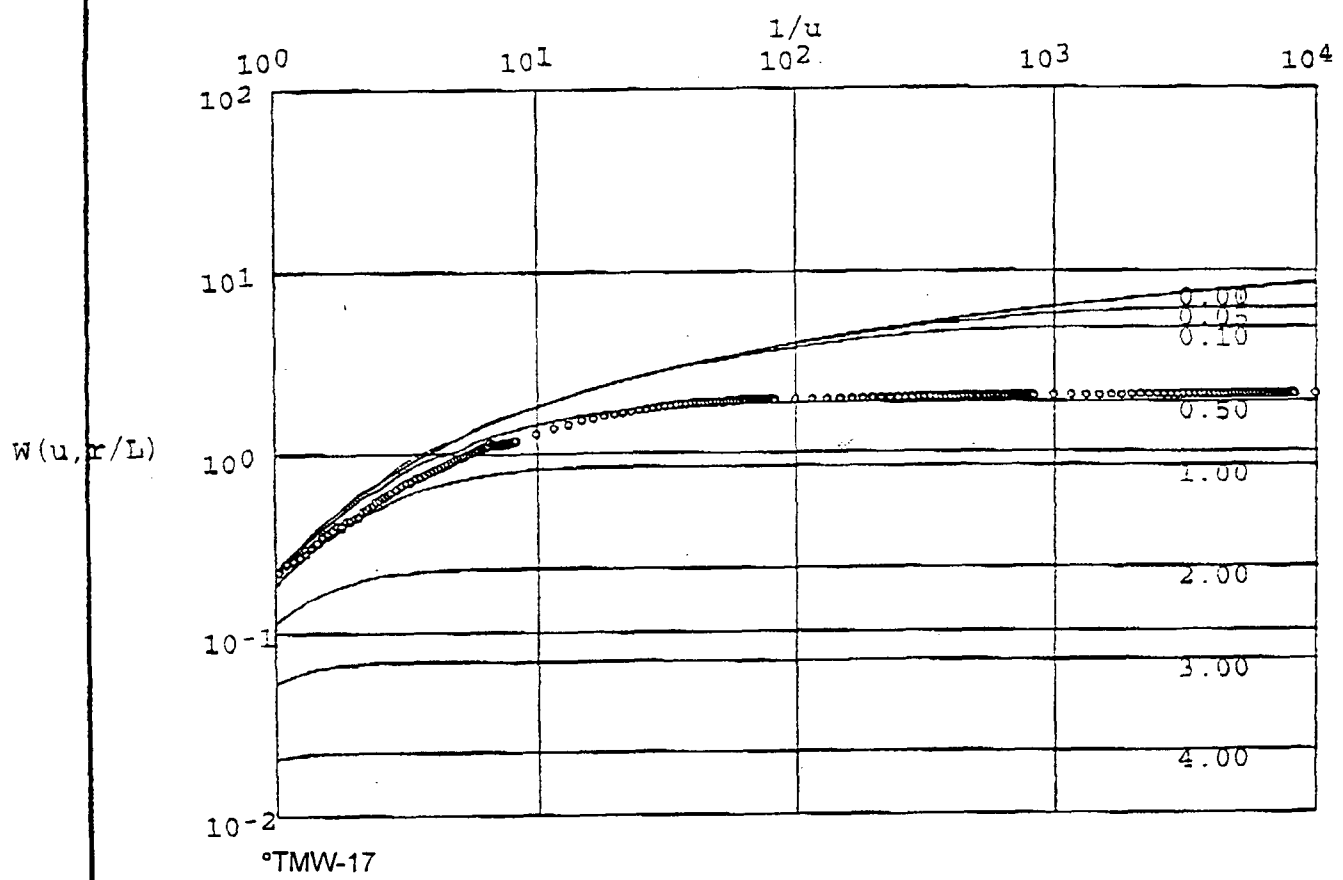
note (1) radius is radius of well. Required for software to complete calculations. No storativity calc.
note (2) (TMW-45 corrected) means one barometric correction for entire day, from TMW-45 hand water level data.
note (3) (uncorrected) means no barometric or transducer corrections.
note (4) (TMW-16 correction) means corrected for initial transducer drift; and for barometric pressure changes using the pressure transducer data from TMW-16.
note (5) (TMW-29 correction) means corrected for initial transducer drift; and for barometric pressure changes using the pressure transducer data from TMW-29.
note (6) (kencot bar. cor) means corrected for barometric pressure measured by kennecott.

E1


TMW-17 (TMW-45 corrected)
10
1
0.1
feet
0.01
0.1
1
10
100
1000
10000
minutes
Series1

| | | |
|---|---|---|
| Shepherd Miller, Inc<br>2460 West 26th Ave, # 43<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project:<br>Evaluated by Date: 20.01 |

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW-17 |
| TMW-17 (TMW-45 corrected) | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $2.27 \times 10^{-2}$ = 38.9 ft²/day

Hydraulic conductivity [ft/min]: $6.50 \times 10^{-4}$ = 0.94 ft/day

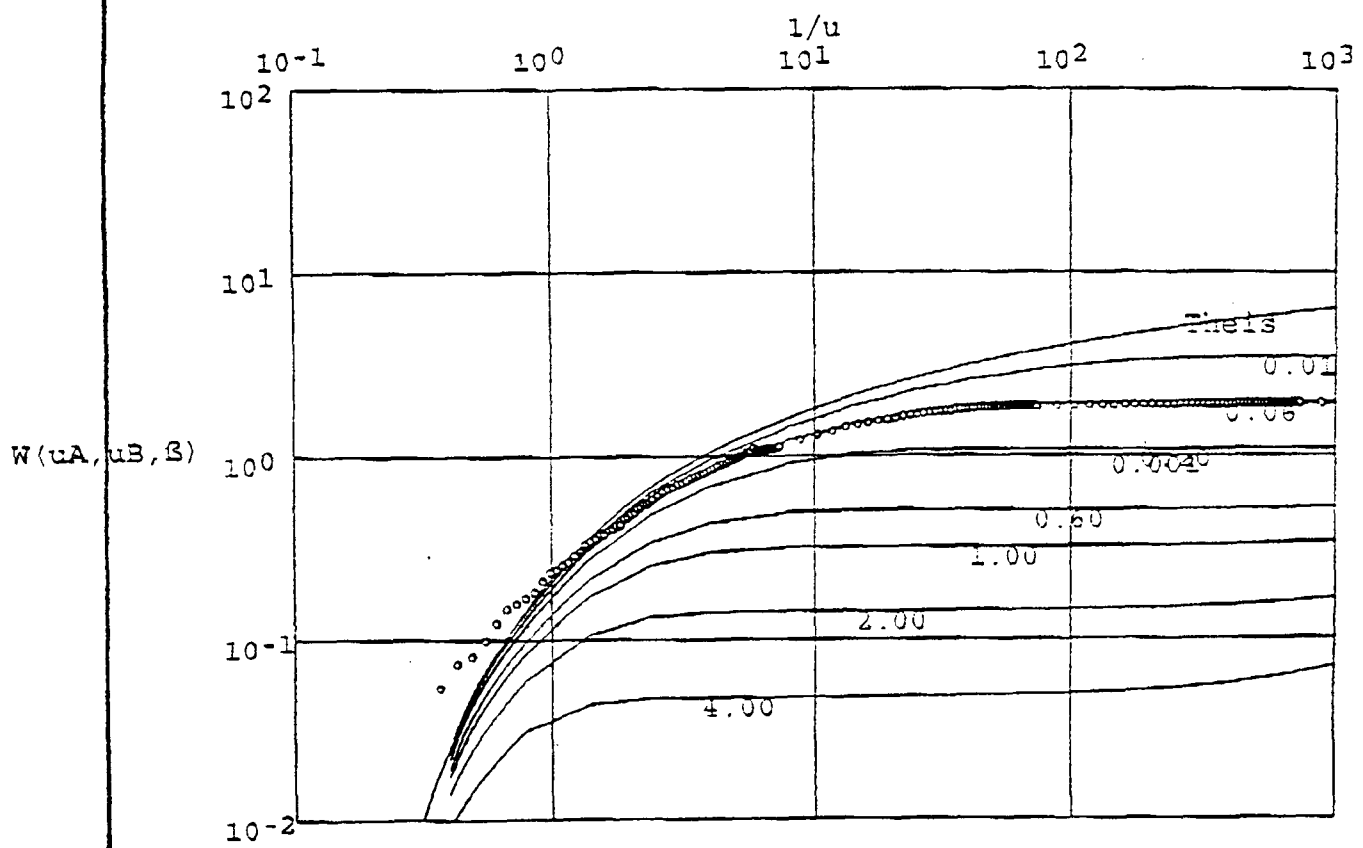
Aquifer thickness [ft]: 35.00

| | | |
|---|---|---|
| Shepherd Miller, Inc<br>2460 West 26th Ave, # 43<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project:<br>Evaluated by Date: 20.01 |

Pumping Test No. Test conducted on: TMW-17

TMW-17 (TMW-45 corrected)

Discharge 7.50 U.S.gal/min




°TMW-17

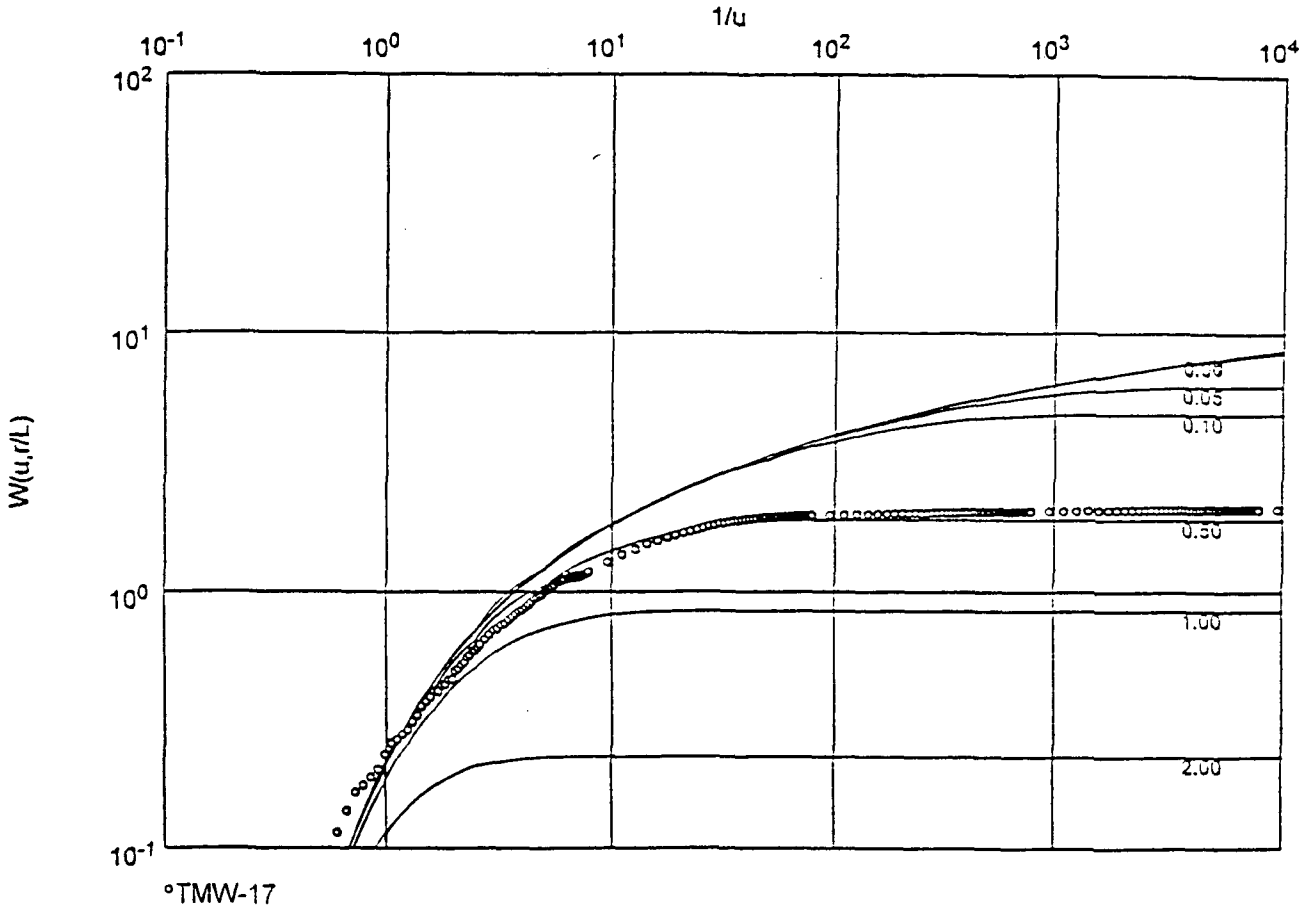
Transmissivity [ft²/min]: $2.17 \times 10^{-2}$ = 31.25 ft²/day

Hydraulic conductivity [ft/min]: $6.21 \times 10^{-4}$ = 0.90 ft/day

Aquifer thickness [ft]: 35.00

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project:<br>Evaluated by: | Date: 08.01.1997 |
|---|---|---|---|

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW-17 |
| TMW-17 (uncorrected) | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $2.27 \times 10^{-2}$ = 32.7 $ft^2$/day

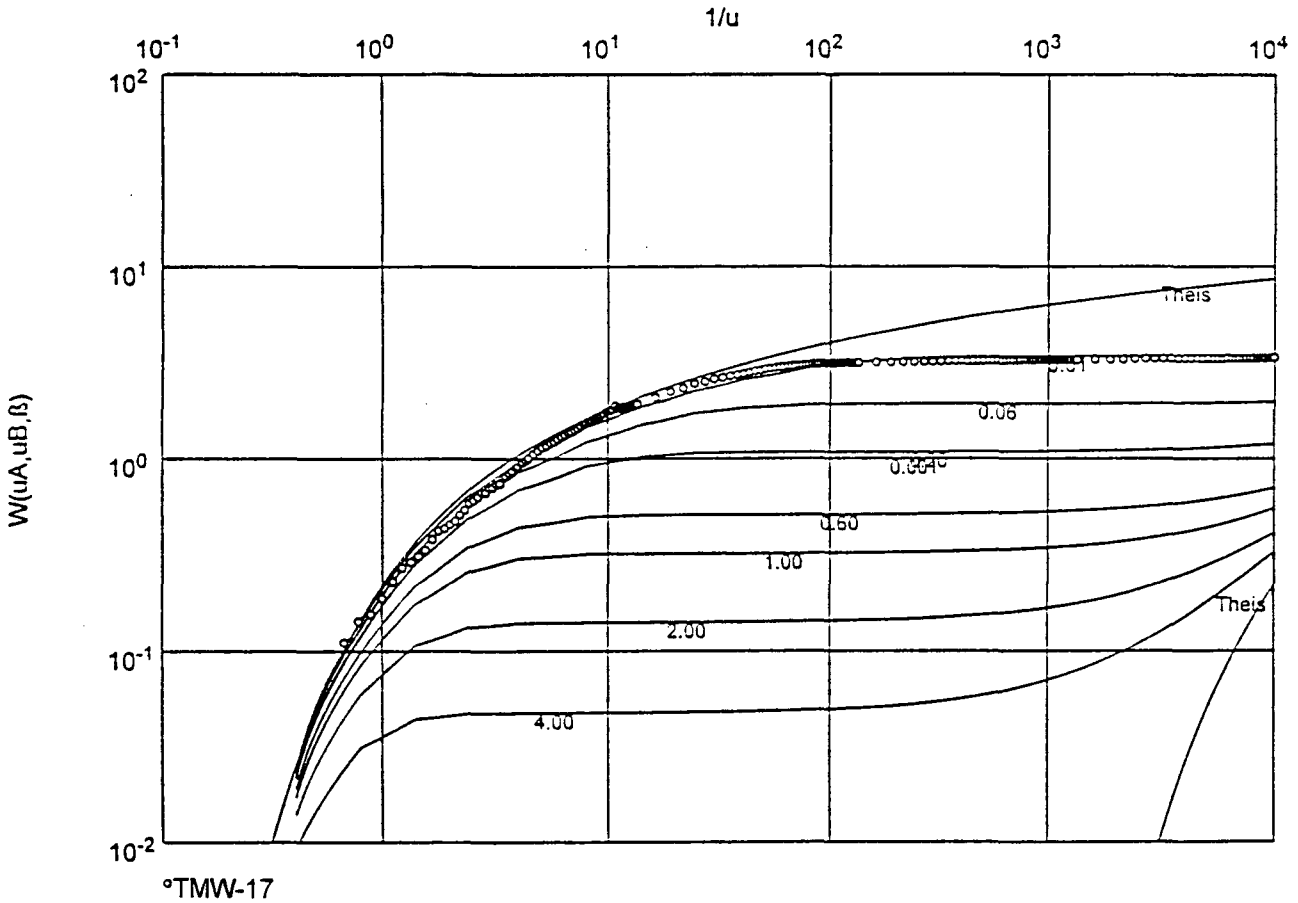
Hydraulic conductivity [ft/min]: $6.51 \times 10^{-4}$ = 0.94 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $1.15 \times 10^{-2}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project:<br>Evaluated by: | Date: 08.01.1997 |
|---|---|---|---|

| Pumping Test No. | Test conducted on: TMW-17 |
|---|---|
| TMW-17 (uncorrected) | |
| Discharge 7.50 U.S.gal/min | |



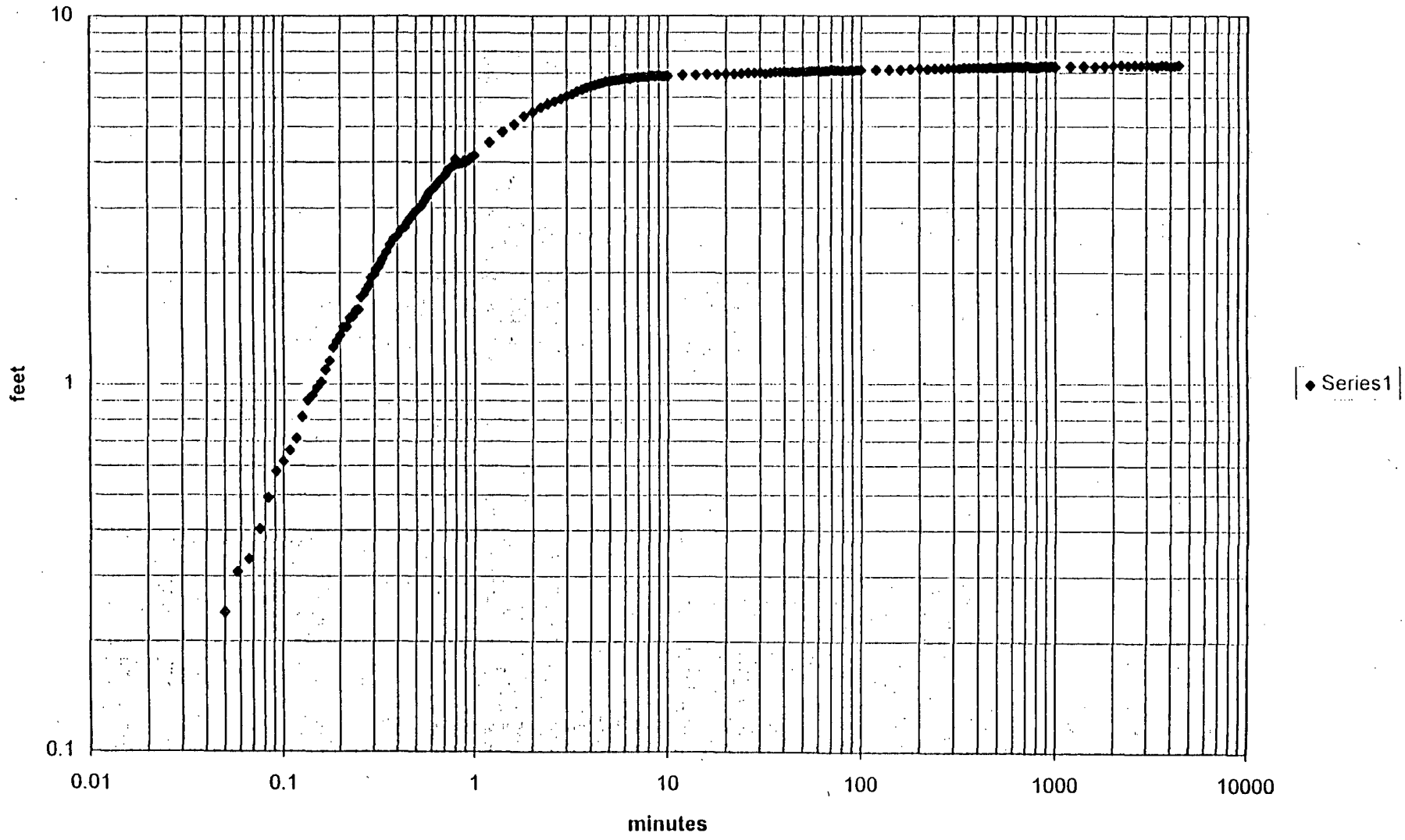

Transmissivity [ft²/min]: $3.69 \times 10^{-2}$ = 53.14 $ft^2$/day

Hydraulic conductivity [ft/min]: $1.05 \times 10^{-3}$ = 1.5 ft/day

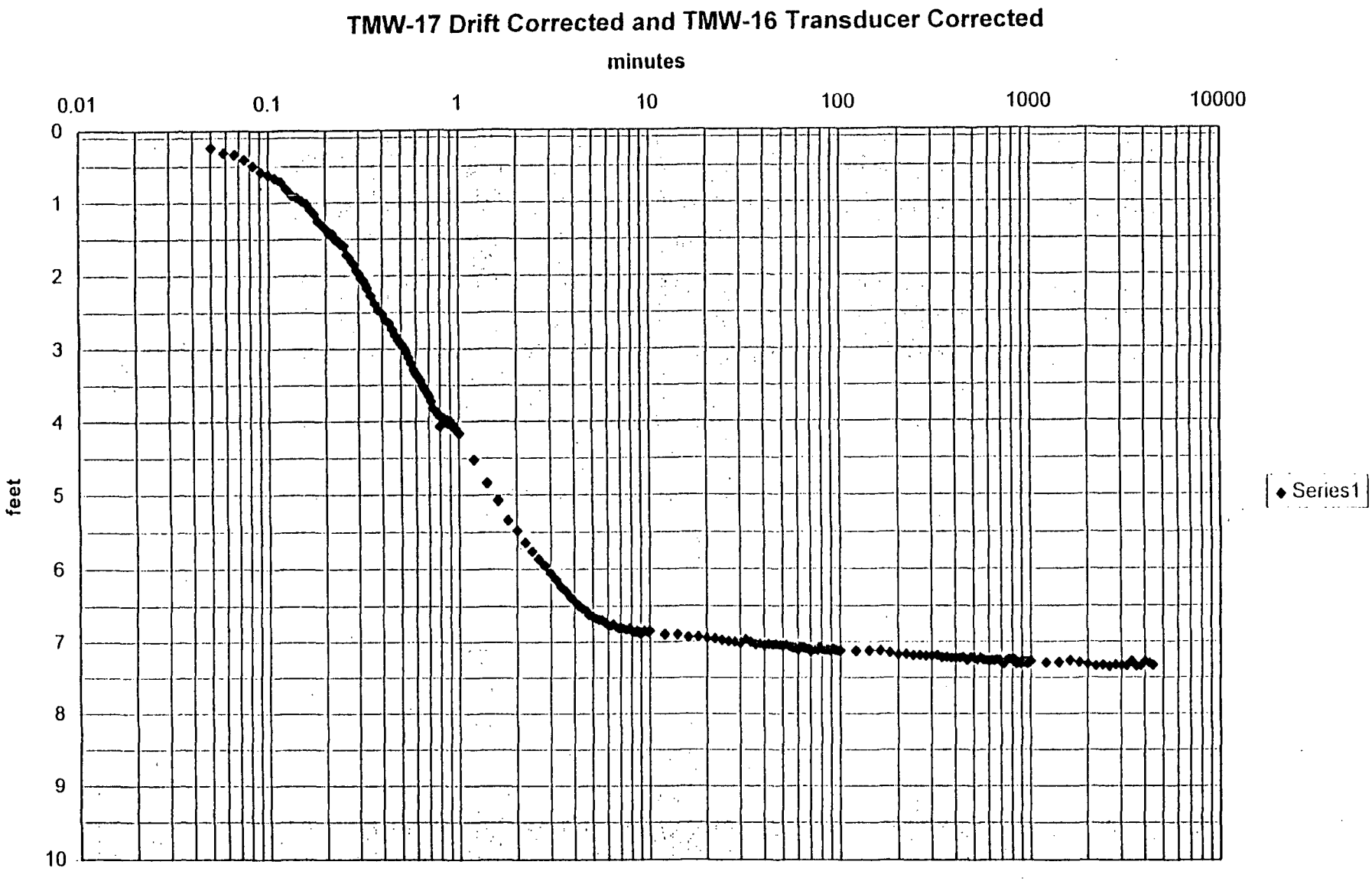
Aquifer thickness [ft]: 35.00

Storativity: $1.10 \times 10^{-2}$

## TMW-17 Drift Corrected and TMW-16 Transducer Corrected

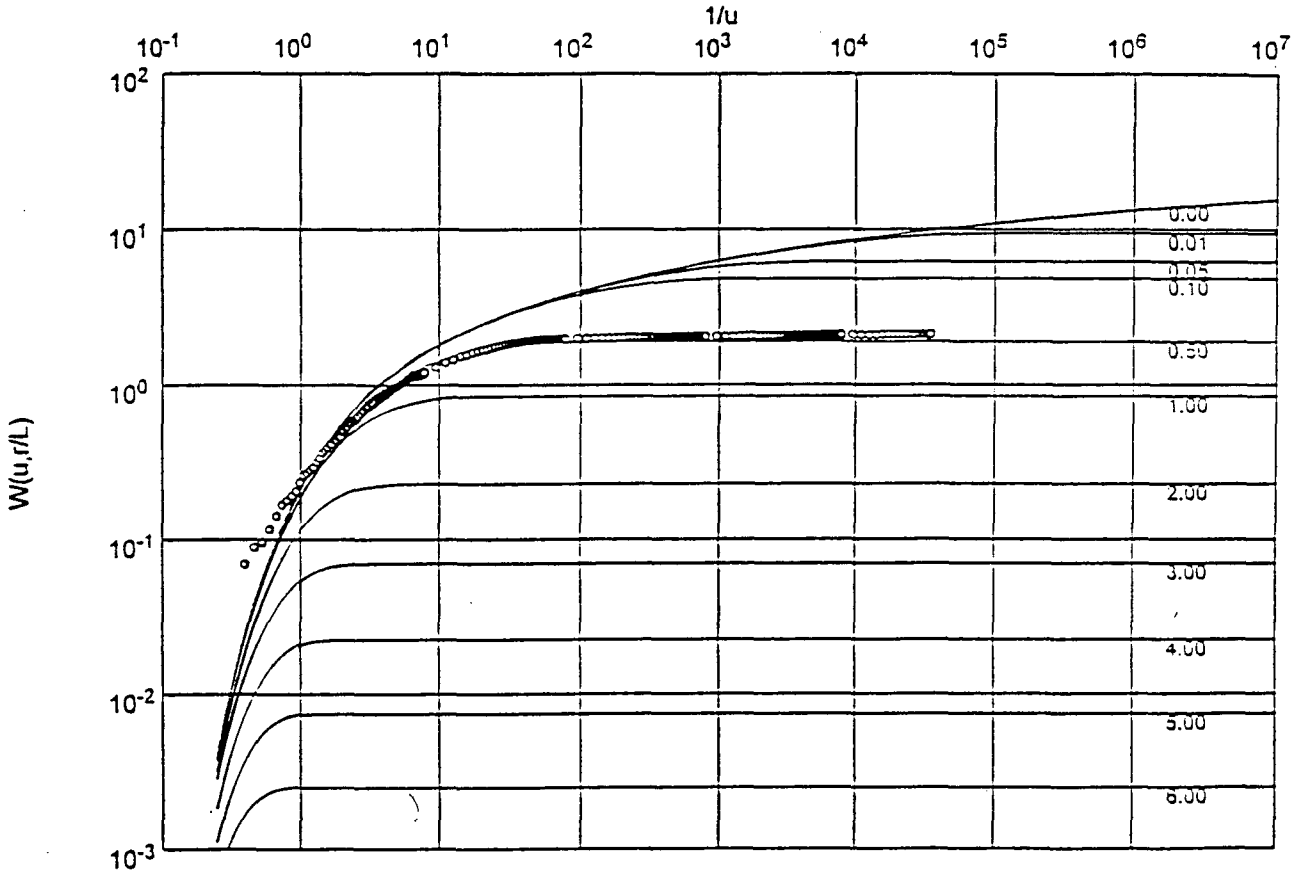



E6


TMW-17 Drift Corrected and TMW-16 Transducer Corrected
minutes
0.01
0.1
1
10
100
1000
10000
feet
0
1
2
3
4
5
6
7
8
9
10
Series1

| | | |
|---|---|---|
| **Shepherd Miller, Inc**<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 09.01.1997 |

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW-17 |
| TMW-17 Drift Corrected and TMW-16 Transducer Corrected | |
| Discharge 7.50 U.S.gal/min | |




°TMW-17

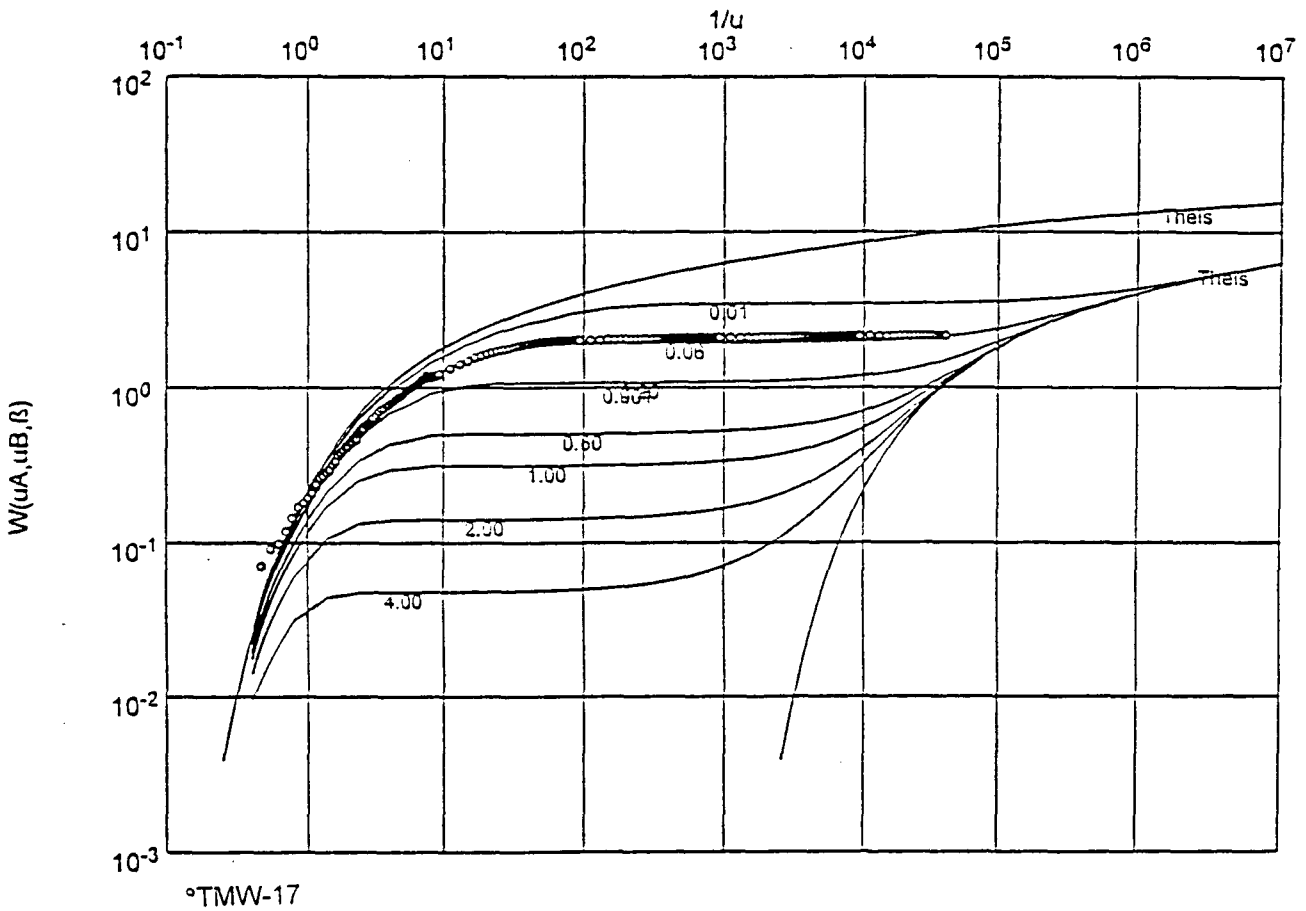
Transmissivity [ft²/min]: $2.29 \times 10^{-2}$ = 32.98 $ft^2$/day

Hydraulic conductivity [ft/min]: $6.54 \times 10^{-4}$ = 0.94 ft/day

Aquifer thickness [ft]: 35.00

| | | |
|---|---|---|
| **Shepherd Miller, Inc**<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 09.01.1997 |

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW-17 |
| TMW-17 Drift Corrected and TMW-16 Transducer Corrected | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $2.34 \times 10^{-2}$ = 33.7 $ft^2$ /day

Hydraulic conductivity [ft/min]: $6.70 \times 10^{-4}$ = 0.96 ft/day

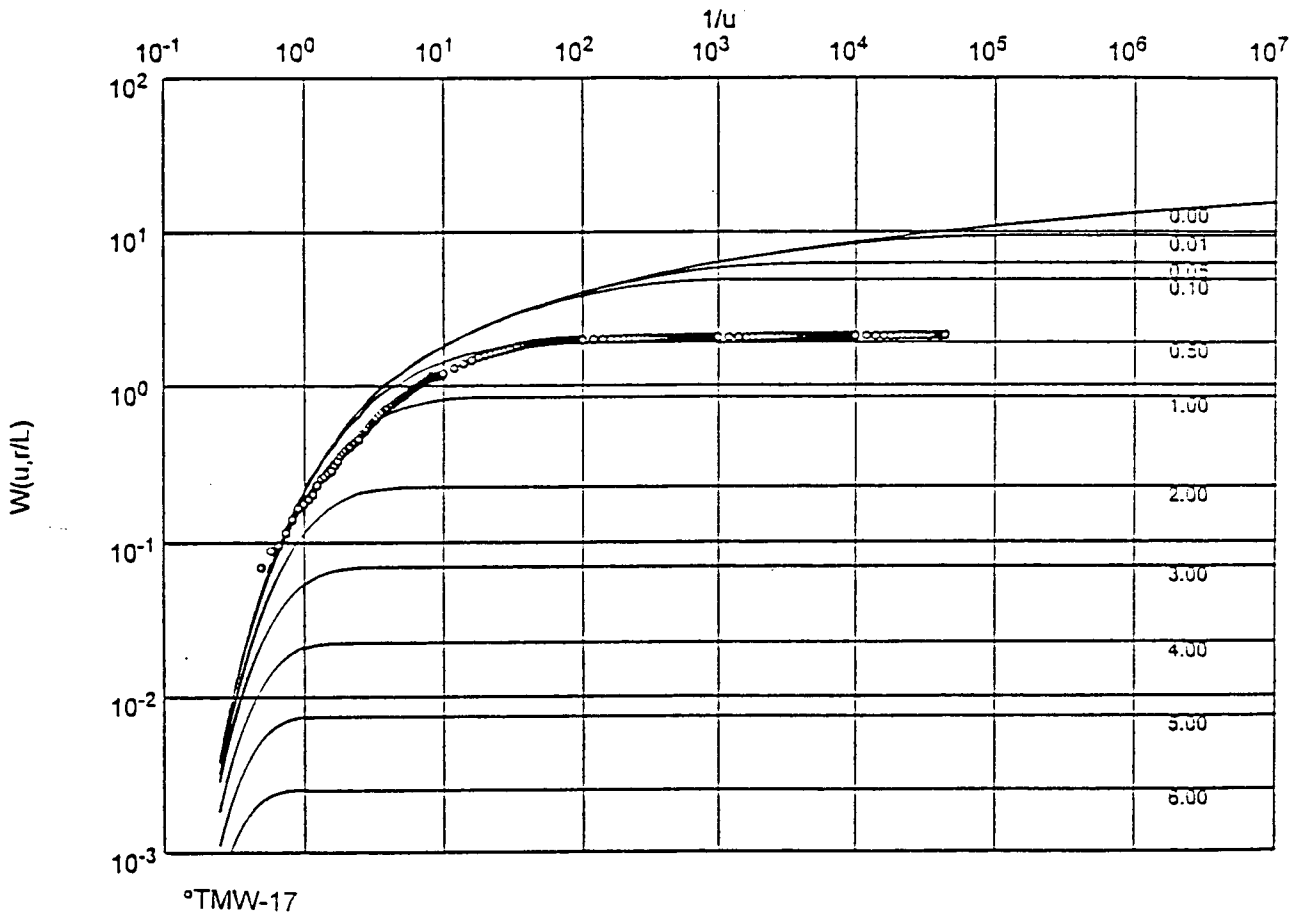
Aquifer thickness [ft]: 35.00

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 09.01.1997 |
|---|---|---|

Pumping Test No. | Test conducted on: TMW-17

TMW-17 Drift Corrected and TMW-29 Transducer Corrected

Discharge 7.50 U.S.gal/min




Transmissivity [ft²/min]: $2.29 \times 10^{-2}$ = 32.98 $ft^2$/day

Hydraulic conductivity [ft/min]: $6.55 \times 10^{-4}$ = 0.94 ft/day

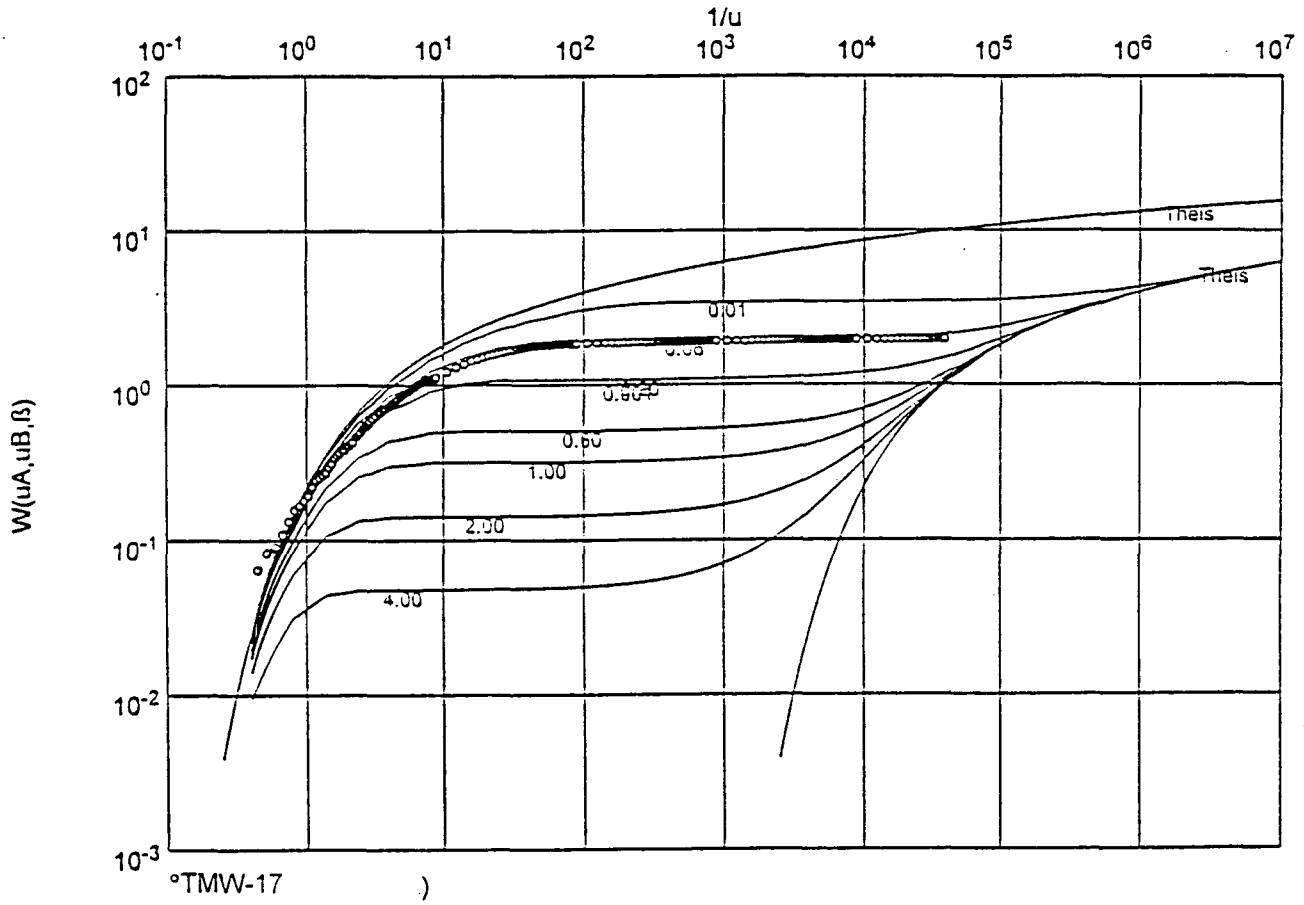
Aquifer thickness [ft]: 35.00

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 09.01.1997 |
|---|---|---|

Pumping Test No. | Test conducted on: TMW-17

TMW-17 Drift Corrected and TMW-29 Transducer Corrected

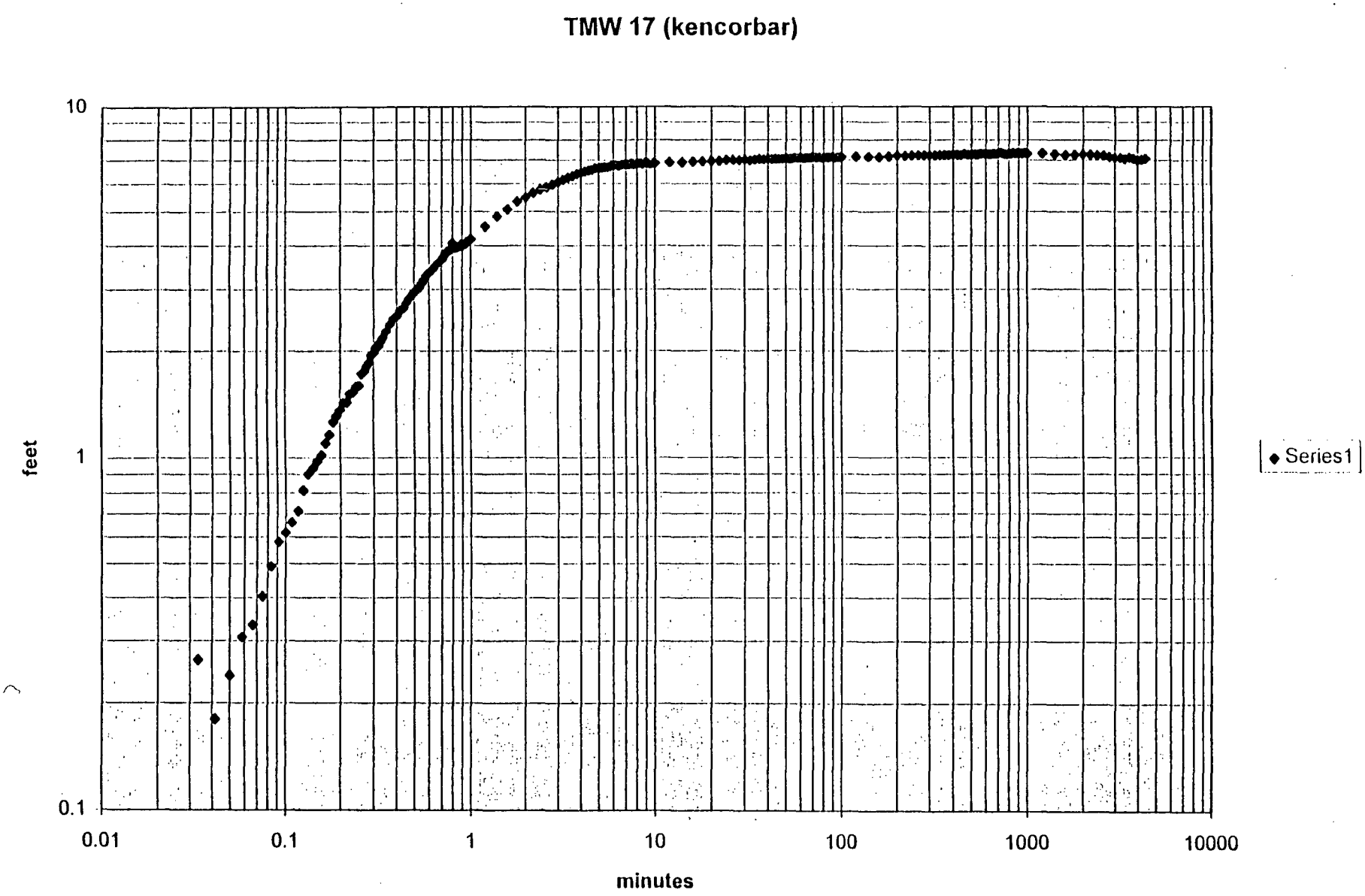
Discharge 7.50 U.S.gal/min




Transmissivity [ft²/min]: $2.14 \times 10^{-2}$ = 30.82 $ft^2$/day

Hydraulic conductivity [ft/min]: $6.11 \times 10^{-4}$ = 0.94 ft/day

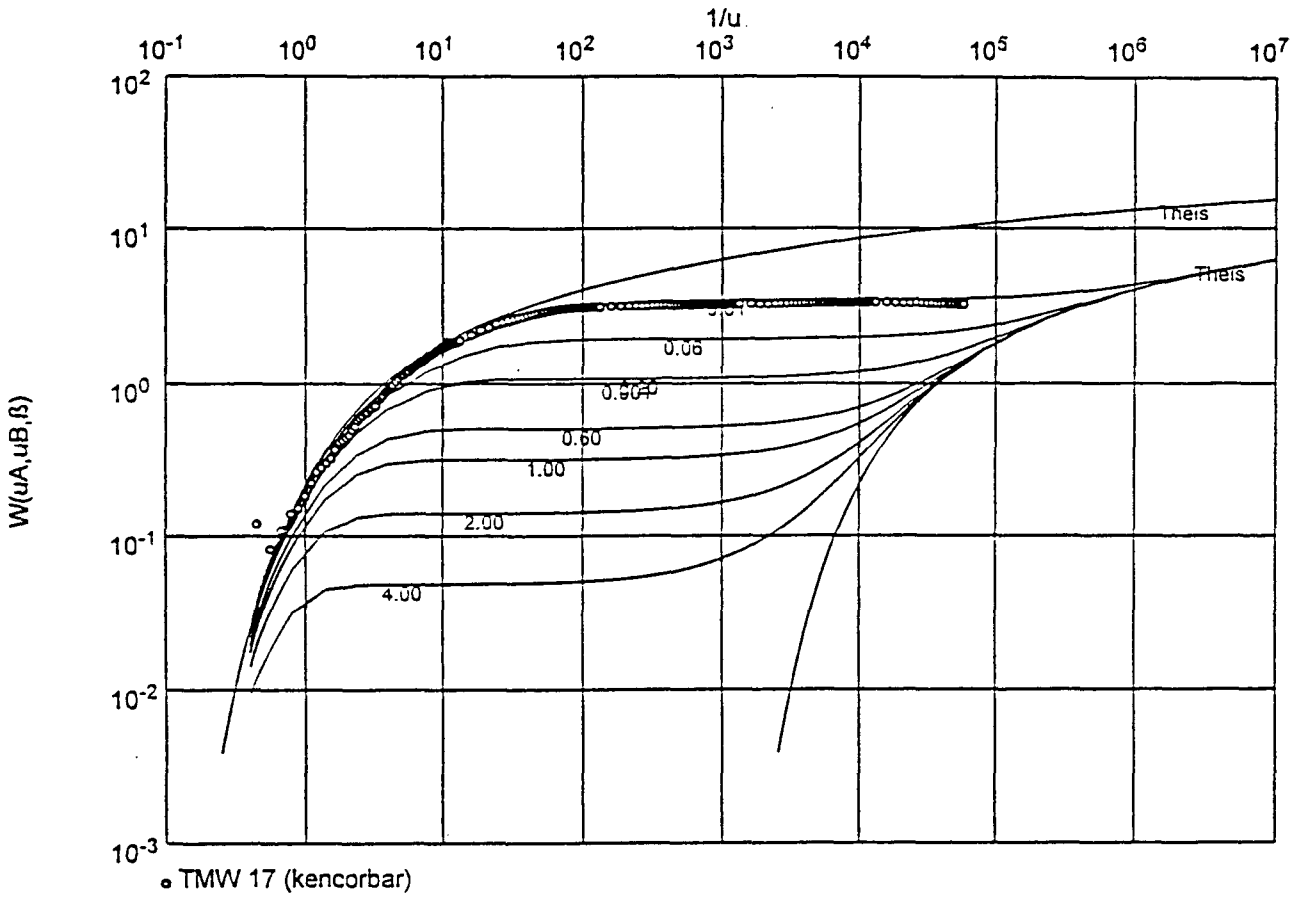
Aquifer thickness [ft]: 35.00


TMW 17 (kencorbar)
10
1
0.1
feet
0.01
0.1
1
10
100
1000
10000
minutes
Series1

E12

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 15.01.1997 |
|---|---|---|

| Pumping Test No. | Test conducted on: TMW 17 |
|---|---|
| TMW 17 (kencorbar) | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $3.63 \times 10^{-2}$ = 52.3 $ft^2$/day

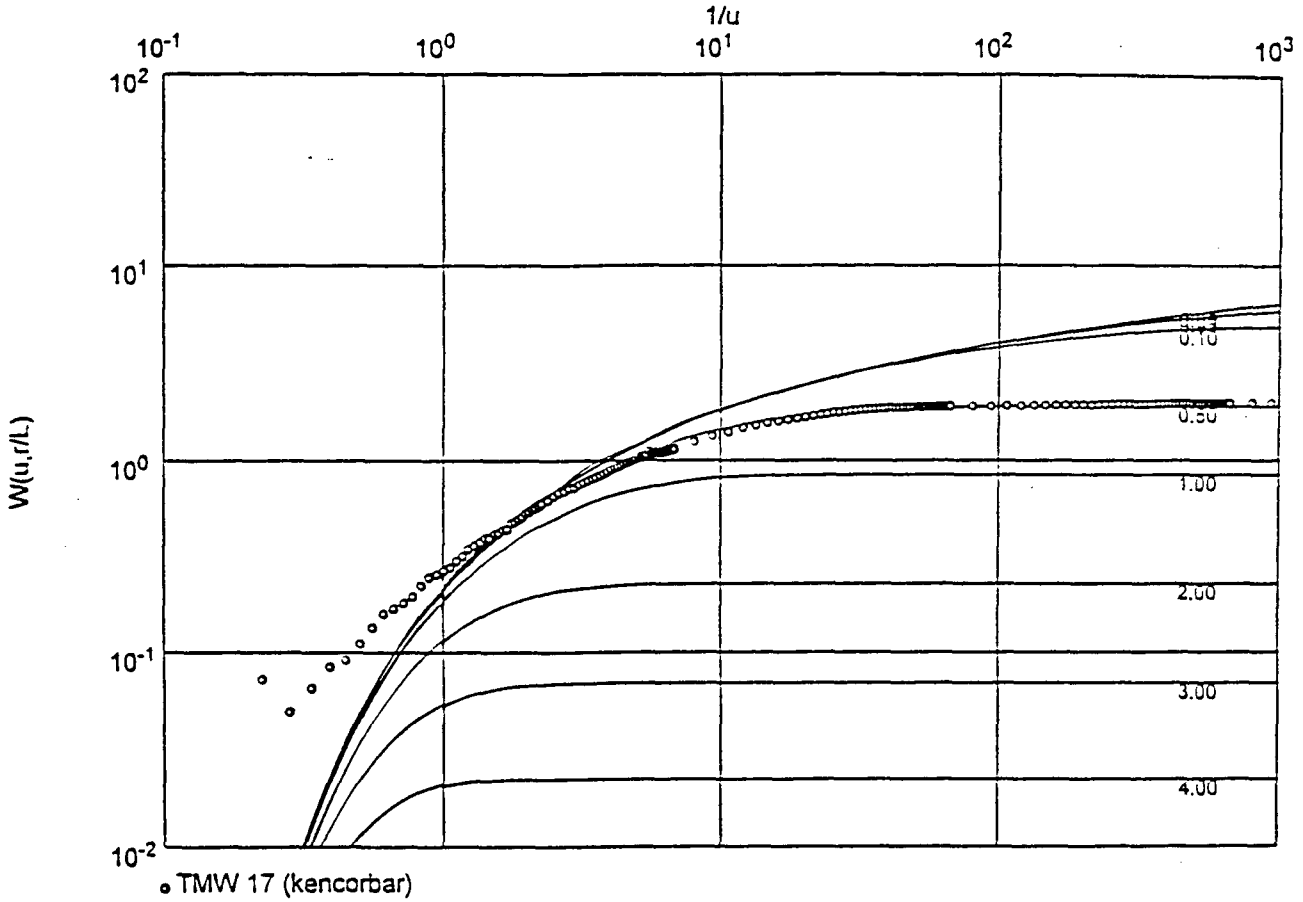
Hydraulic conductivity [ft/min]: $1.03 \times 10^{-3}$ = 1.44 ft/day

Aquifer thickness [ft]: 35.00

r = .3 ft

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB \| Date: 15.01.1997 |
|---|---|---|

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW 17 |
| TMW 17 (kencorbar) | |
| Discharge 7.50 U.S.gal/min | |



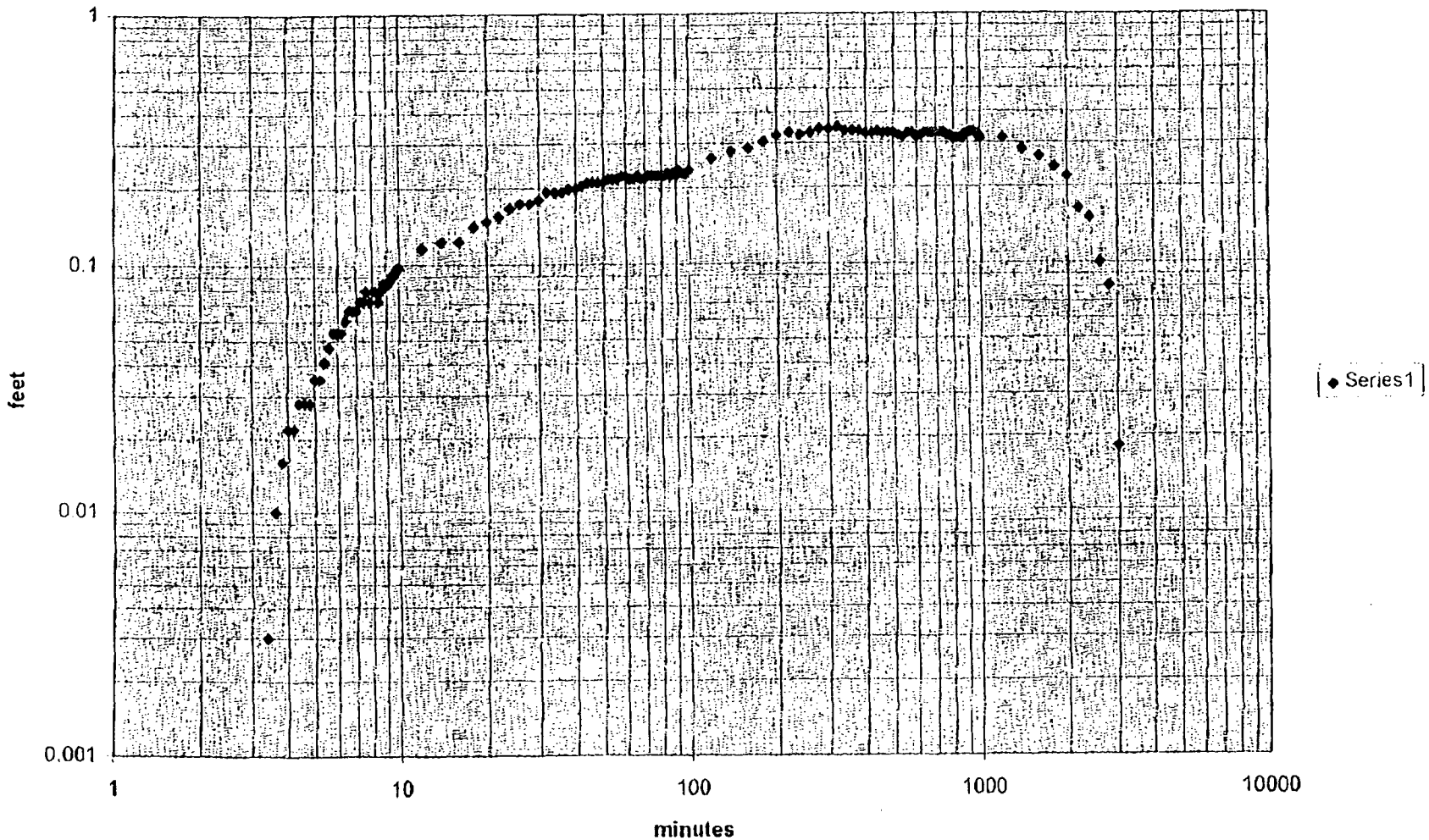

Transmissivity [ft²/min]: $2.18 \times 10^{-2}$ = 31.4 $ft^2$/day

Hydraulic conductivity [ft/min]: $6.25 \times 10^{-4}$ = 0.9 ft/day

Aquifer thickness [ft]: 35.00

r = .3 ft

TMW-75 (TMW-45 Corrected)

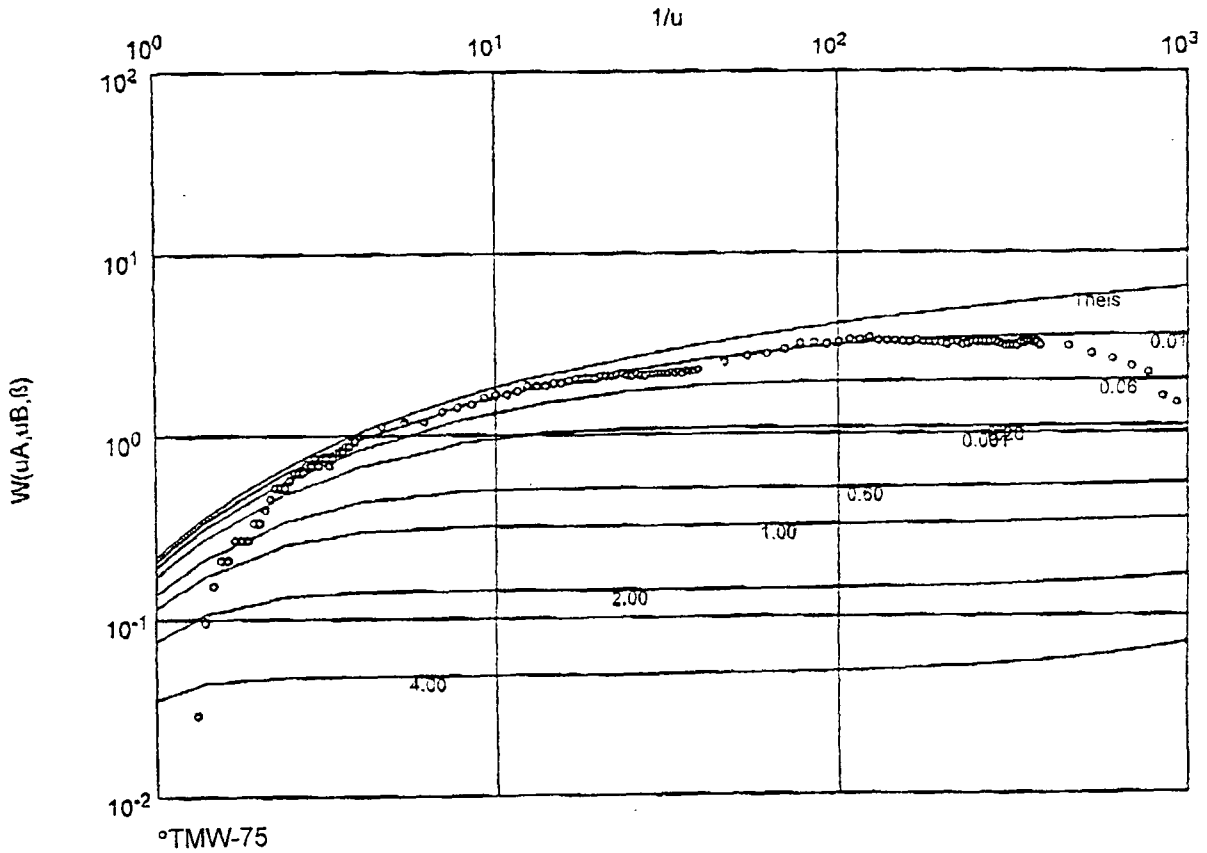


| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project:<br>Evaluated by: | Date: 20.01.1997 |
|---|---|---|---|

Pumping Test No. Test conducted on: TMW-17

TMW-75 (TMW-45 Corrected)

Discharge 7.50 U.S.gal/min




Transmissivity [ft²/min]: $7.67 \times 10^{-1}$ = 1104.5 ft²/day

Hydraulic conductivity [ft/min]: $2.19 \times 10^{-2}$ = 31.5 ft/day

Aquifer thickness [ft]: 35.00

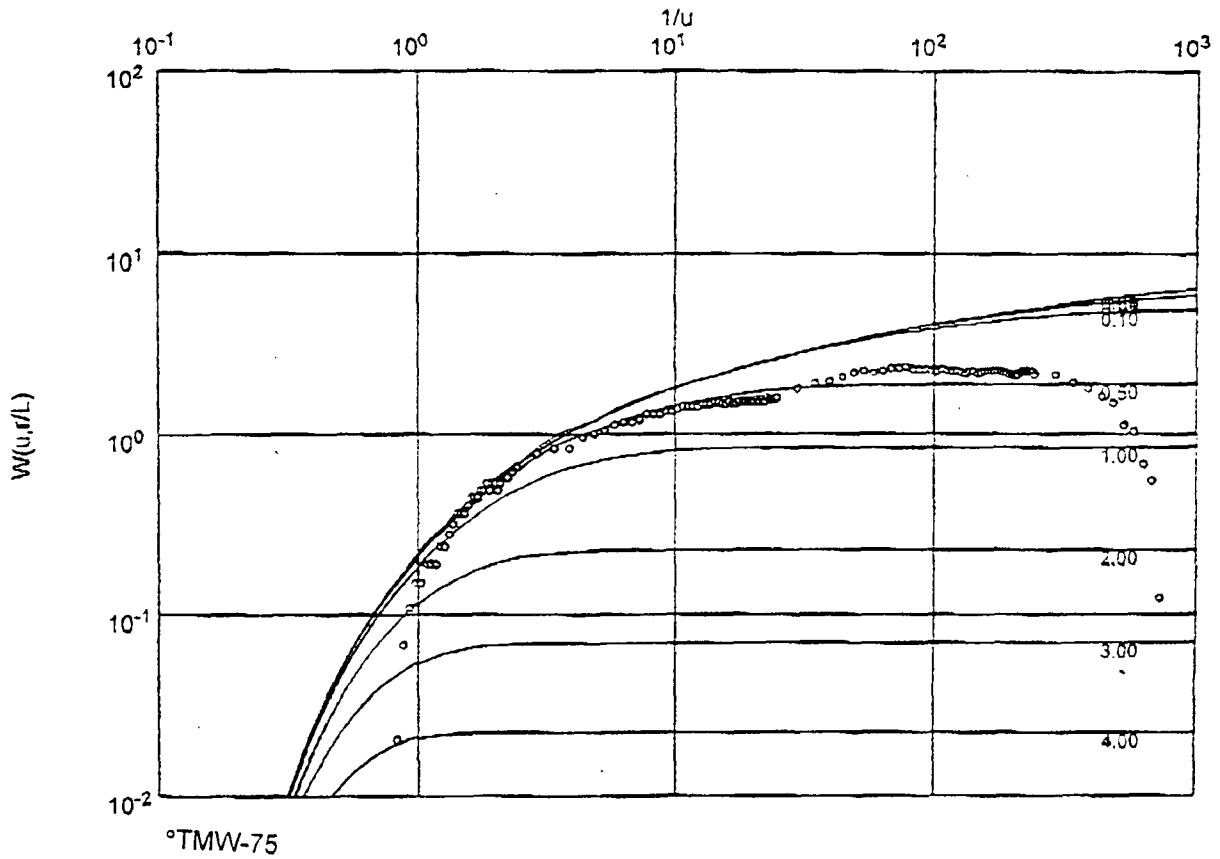
Storativity: $1.98 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project:<br>Evaluated by: | Date: 20.01.1997 |
|---|---|---|---|

Pumping Test No. Test conducted on: TMW-17

TMW-75 (TMW-45 Corrected)

Discharge 7.50 U.S.gal/min




Transmissivity [ft²/min]: $5.43 \times 10^{-1}$ = 781.9 $ft^2$/day

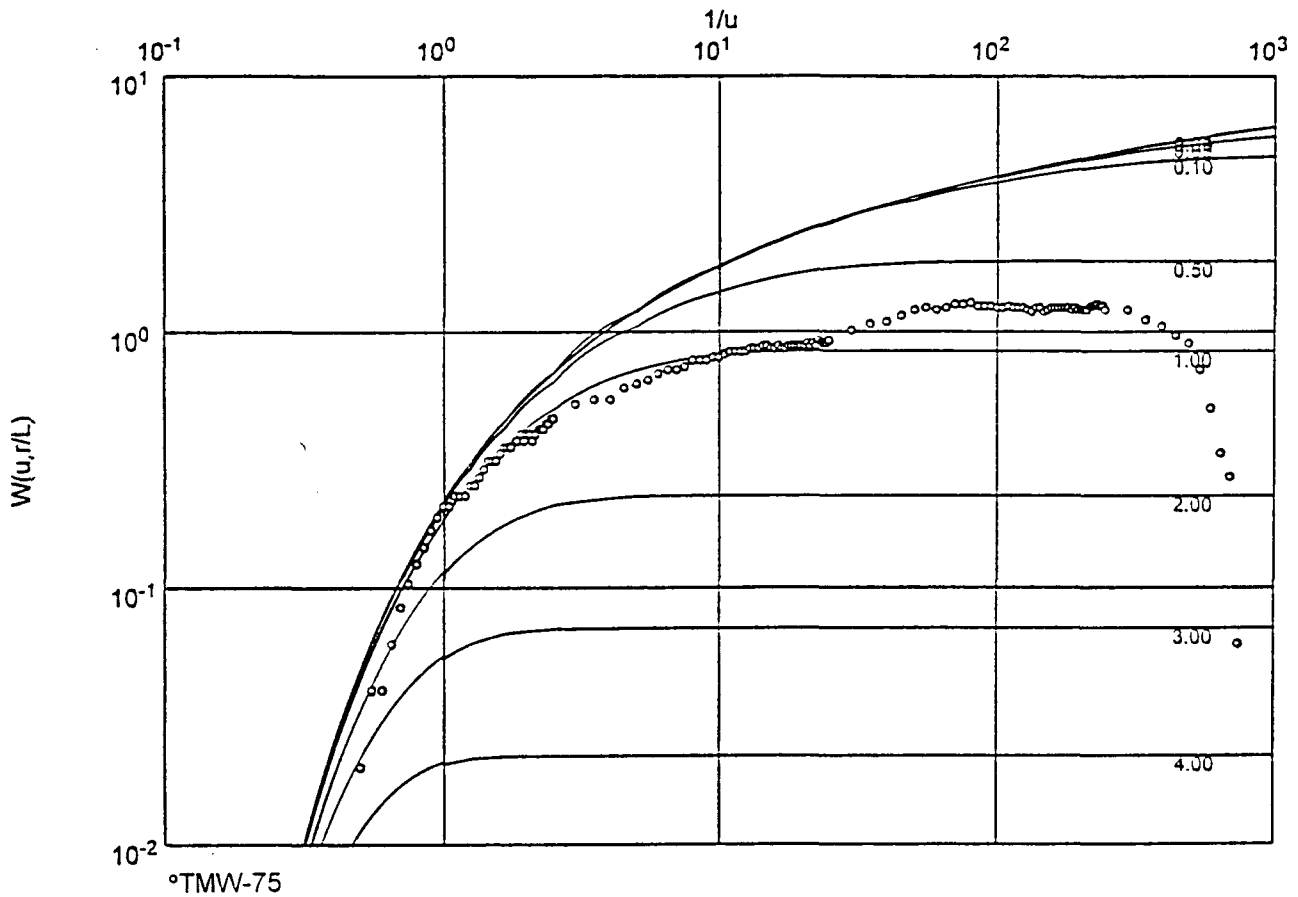
Hydraulic conductivity [ft/min]: $1.55 \times 10^{-2}$ = 22.3 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $2.22 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project:<br>Evaluated by: | Date: 08.01.1997 |
|---|---|---|---|

| Pumping Test No. | Test conducted on: TMW-17 |
|---|---|
| TMW-75 (Uncorrected) | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $2.67 \times 10^{-1}$ = 384 $ft^2$/day

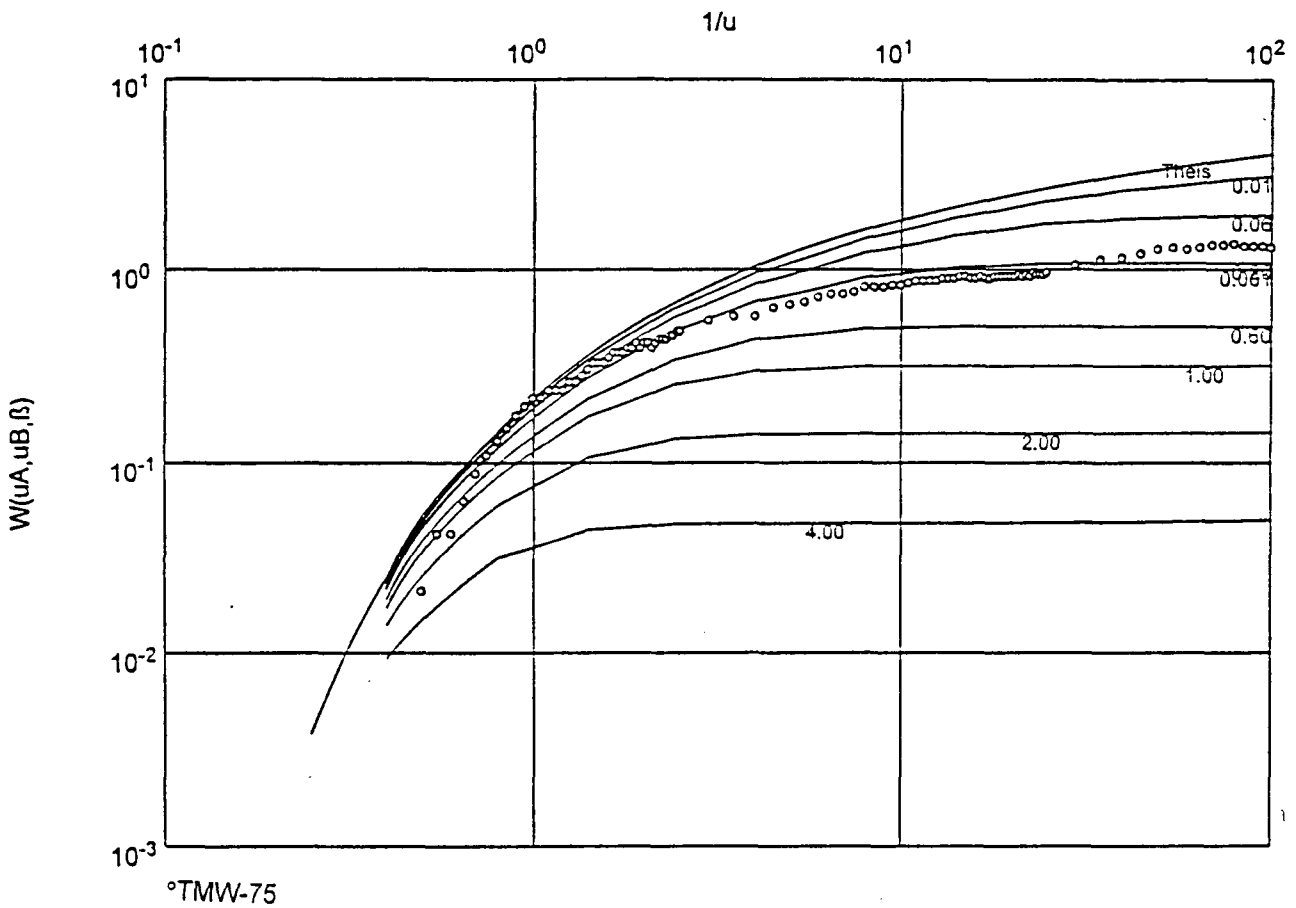
Hydraulic conductivity [ft/min]: $7.63 \times 10^{-3}$ = 11.0 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $1.07 \times 10^{-4}$

| | | | |
|---|---|---|---|
| **Shepherd Miller, Inc**<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project:<br>Evaluated by: | Date: 08.01.1997 |

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW-17 |
| TMW-75 (Uncorrected) | |
| Discharge 7.50 U.S.gal/min | |



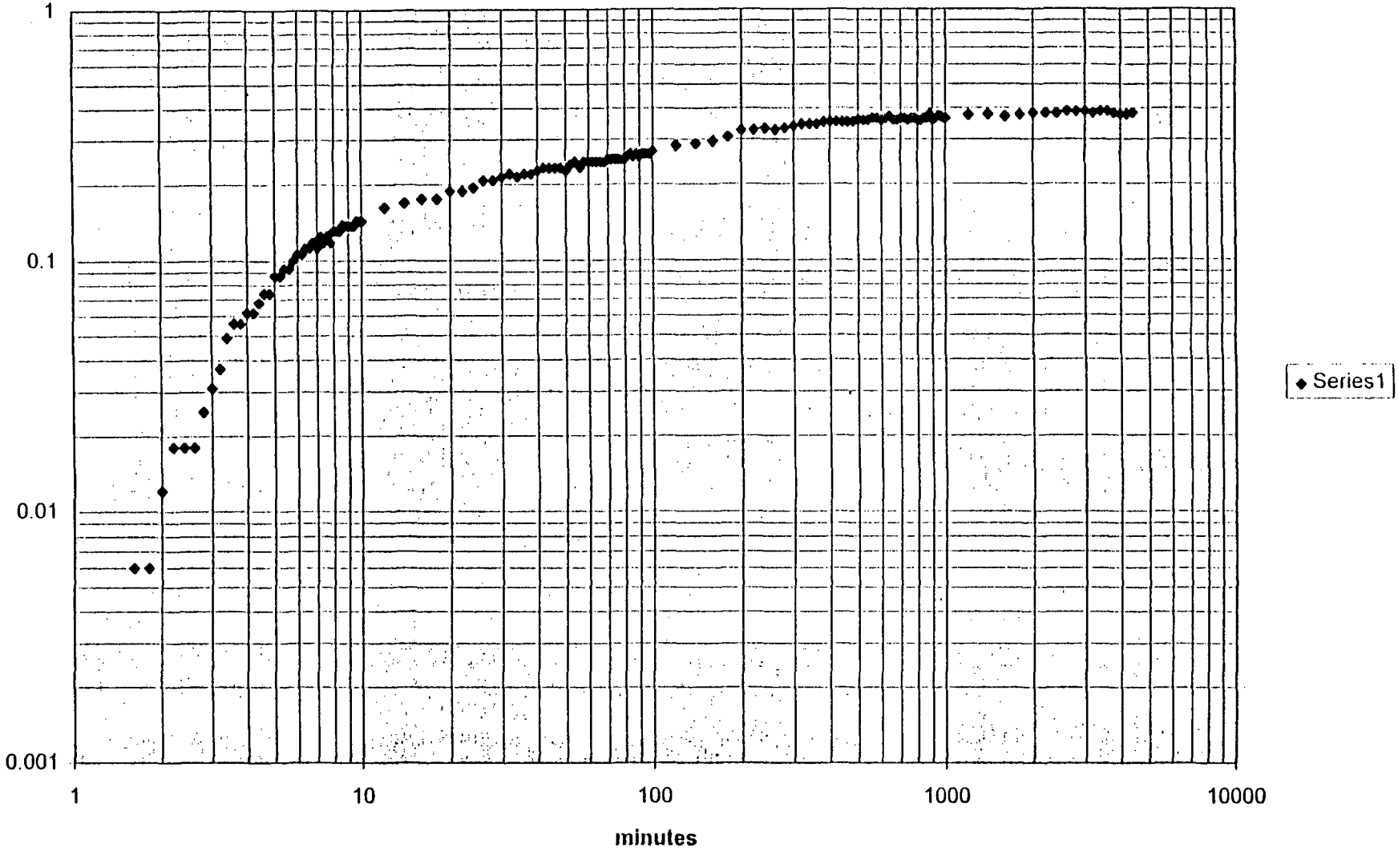

Transmissivity [ft²/min]: $2.79 \times 10^{-1}$ = 401.8 $ft^2$/day

Hydraulic conductivity [ft/min]: $7.99 \times 10^{-3}$ = 11.5 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $1.12 \times 10^{-4}$

## TMW-75 Drift Corrected and TMW-16 Transducer Corrected



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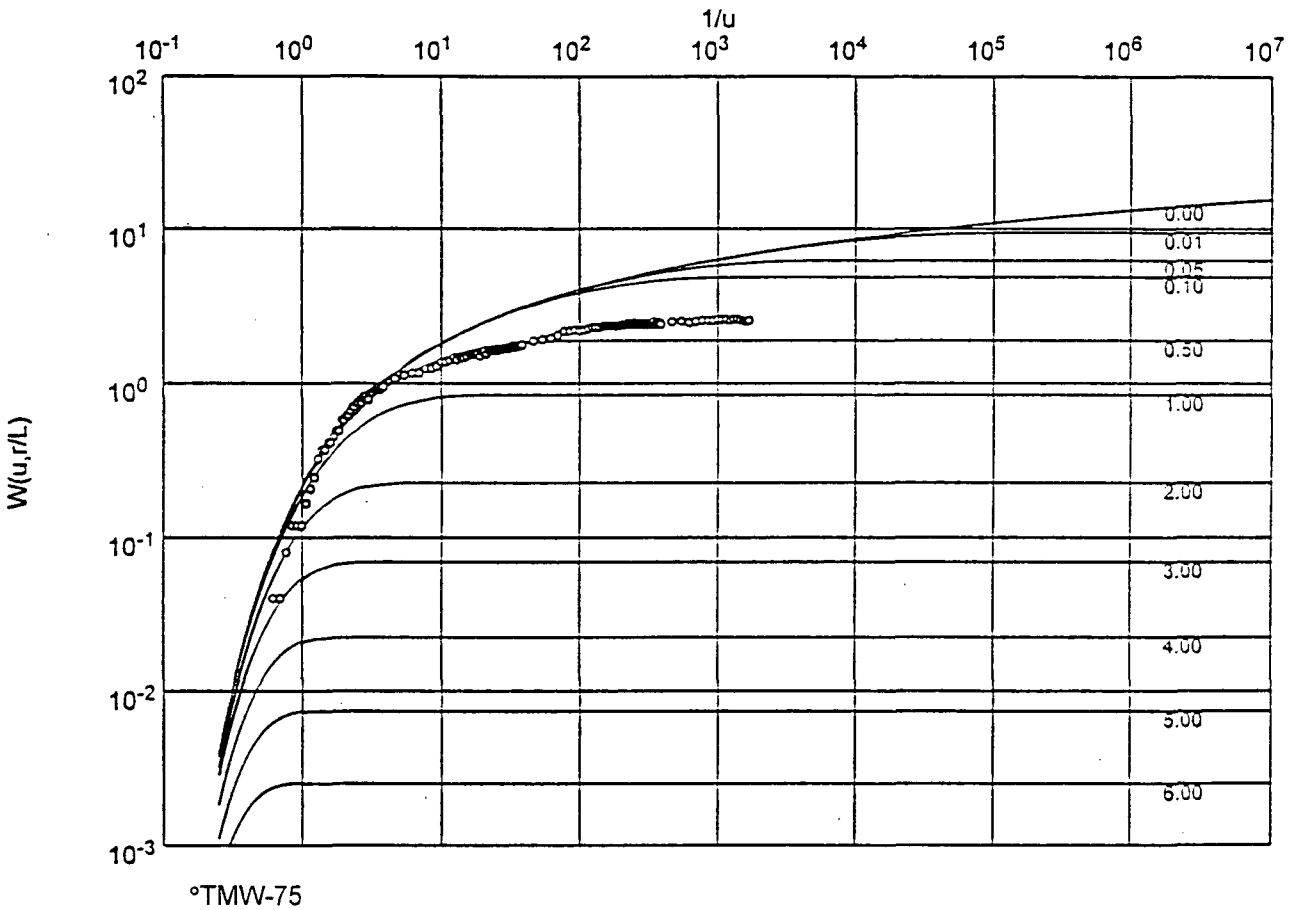
|---|---|---|
| **Shepherd Miller, Inc**<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 09.01.1997 |

Pumping Test No. | Test conducted on: TMW-17

TMW-75 Drift Corrected and TMW-16 Transducer Corrected

Discharge 7.50 U.S.gal/min




Transmissivity [ft²/min]: = 763.2 $ft^2$/day

Hydraulic conductivity [ft/min]: $1.51 \times 10^{-2}$ = 21.74 ft/day

Aquifer thickness [ft]: 35.00

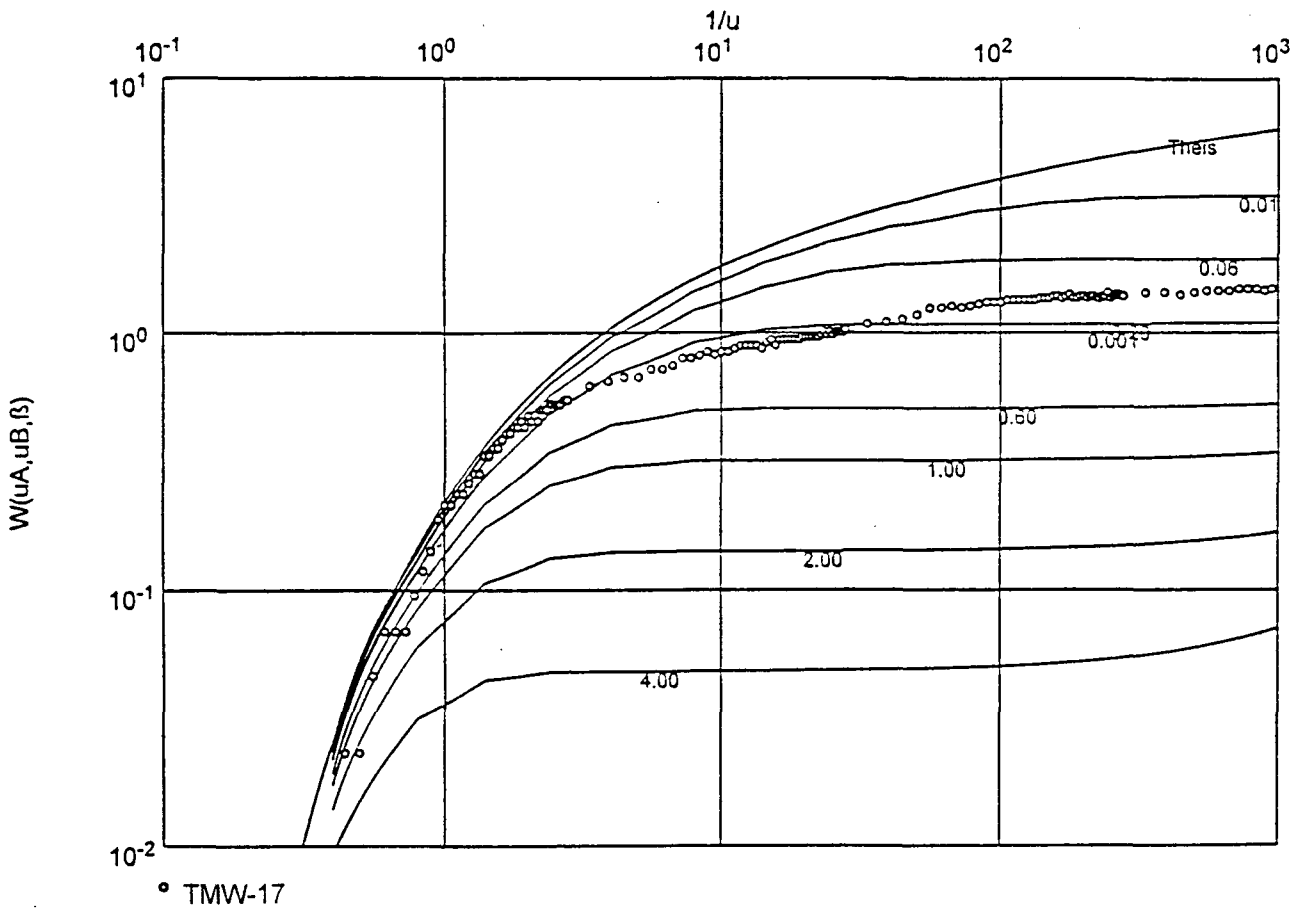
Storativity: $1.37 \times 10^{-4}$

| | | |
|---|---|---|
| **Shepherd Miller, Inc**<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 09.01.1997 |

Pumping Test No. | Test conducted on: TMW-17

TMW-75 Drift Corrected and TMW-16 Transducer Corrected

Discharge 7.50 U.S.gal/min




Transmissivity [ft²/min]: $3.05 \times 10^{-1}$ = 439.2 $ft^2$/day

Hydraulic conductivity [ft/min]: $8.71 \times 10^{-3}$ = 12.5 ft/day

Aquifer thickness [ft]: 35.00

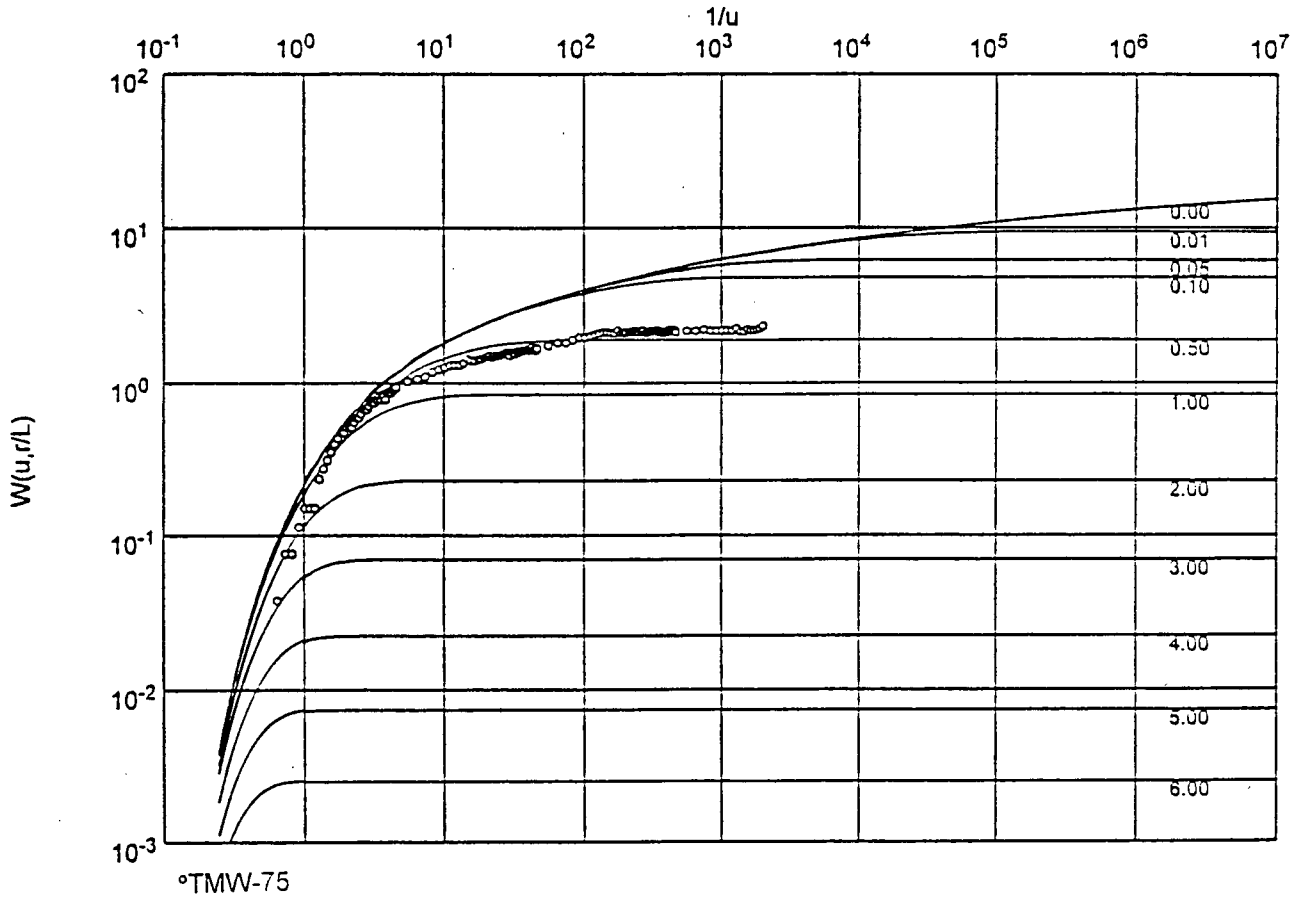
Storativity: $1.09 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB \| Date: 09.01.1997 |
|---|---|---|

Pumping Test No. | Test conducted on: TMW-17

TMW-75 Drift Corrected and TMW-29 Transducer Corrected

Discharge 7.50 U.S.gal/min




Transmissivity [ft²/min]: $5.01 \times 10^{-1}$ = 721.44 $ft^2$/day

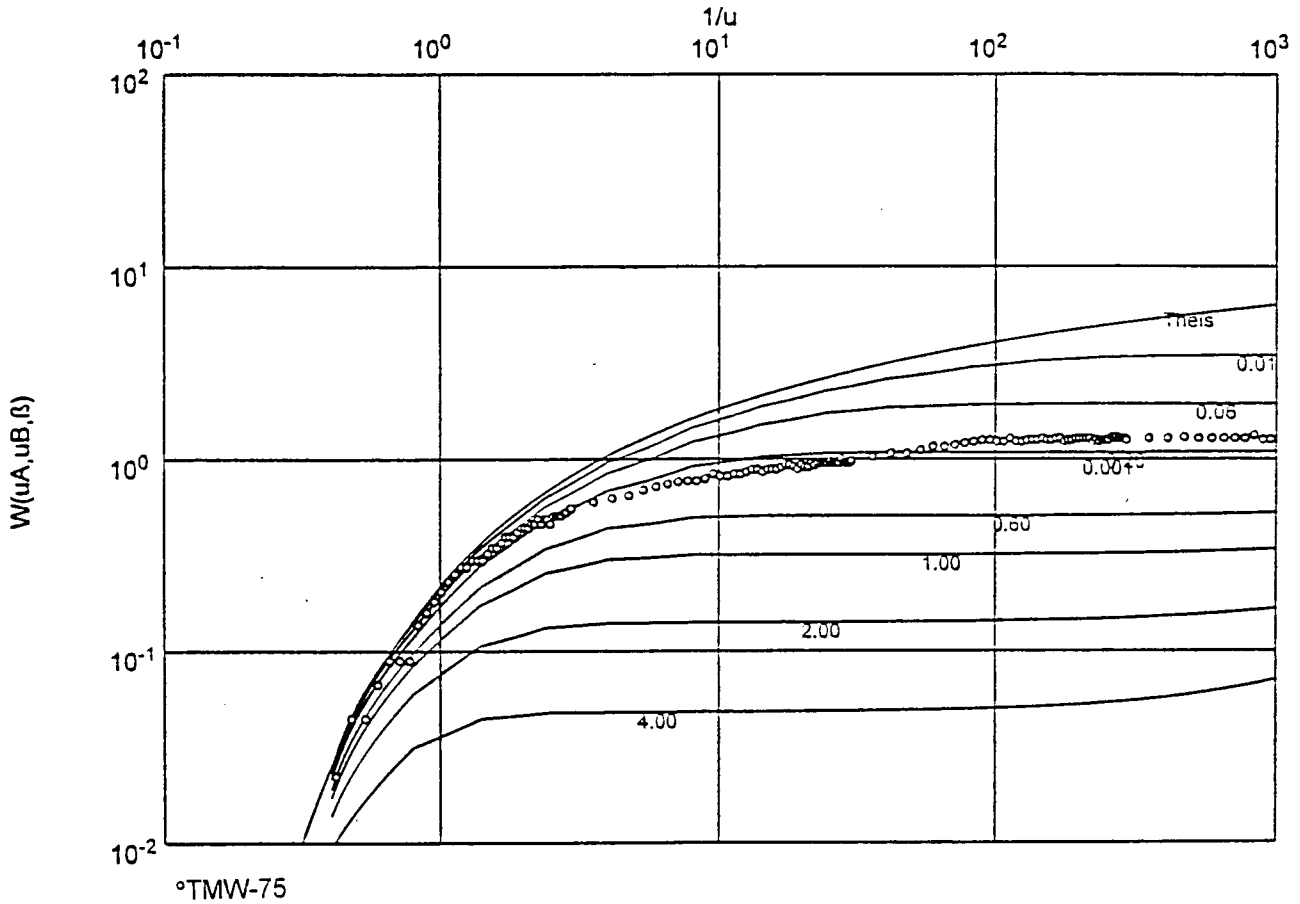
Hydraulic conductivity [ft/min]: $1.43 \times 10^{-2}$ = 20.6 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $1.08 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 09.01.1997 |
|---|---|---|

| Pumping Test No. | Test conducted on: TMW-17 |
|---|---|
| TMW-75 Drift Corrected and TMW-29 Transducer Corrected | |
| Discharge 7.50 U.S.gal/min | |

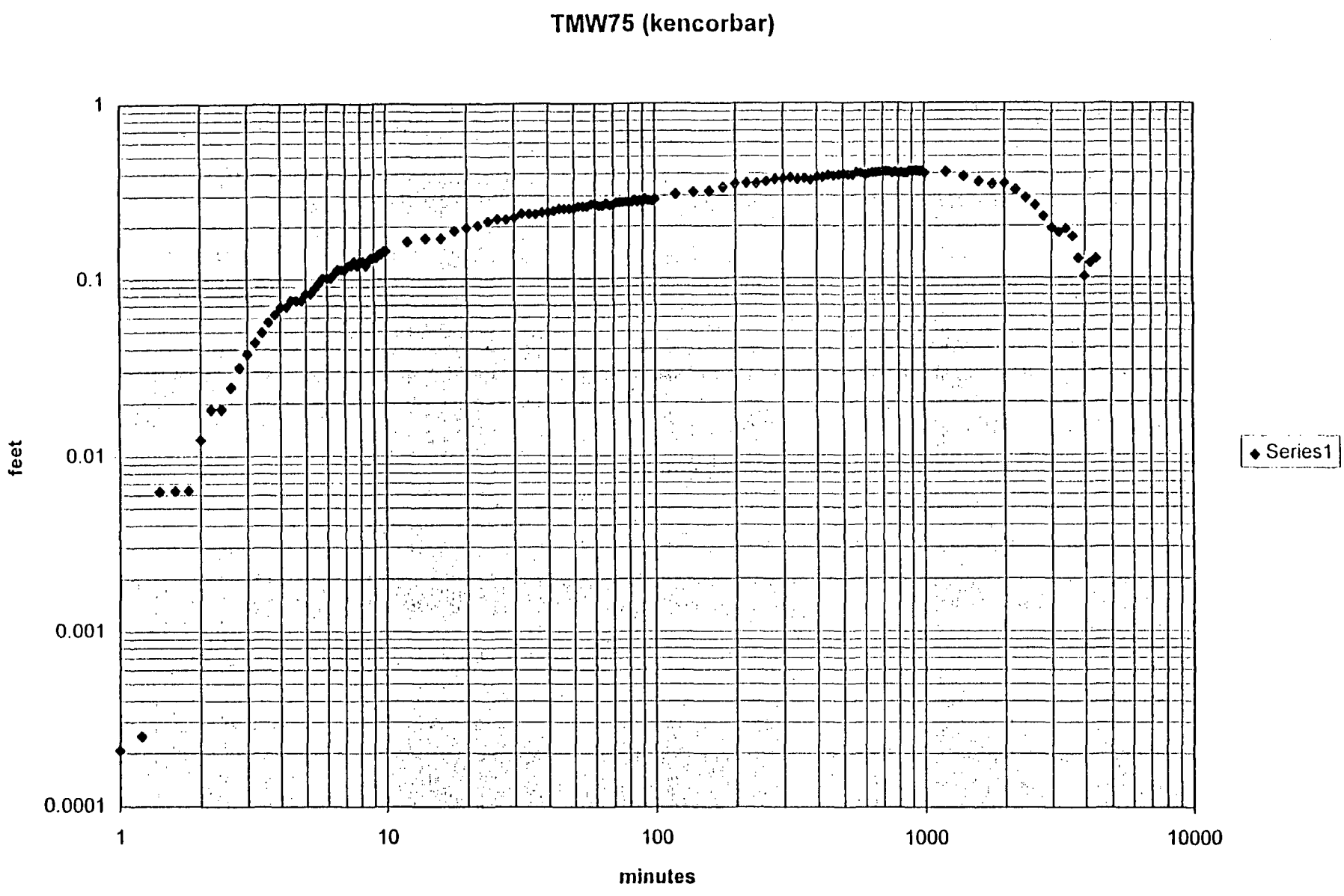



Transmissivity [ft²/min]: $2.95 \times 10^{-1}$ = 424.8 $ft^2$/day

Hydraulic conductivity [ft/min]: $8.44 \times 10^{-3}$ = 12.15 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $9.90 \times 10^{-5}$


TMW75 (kencorbar)
1
0.1
0.01
0.001
0.0001
feet
1
10
100
1000
10000
minutes
Series1

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 15.01.1997 |
|---|---|---|

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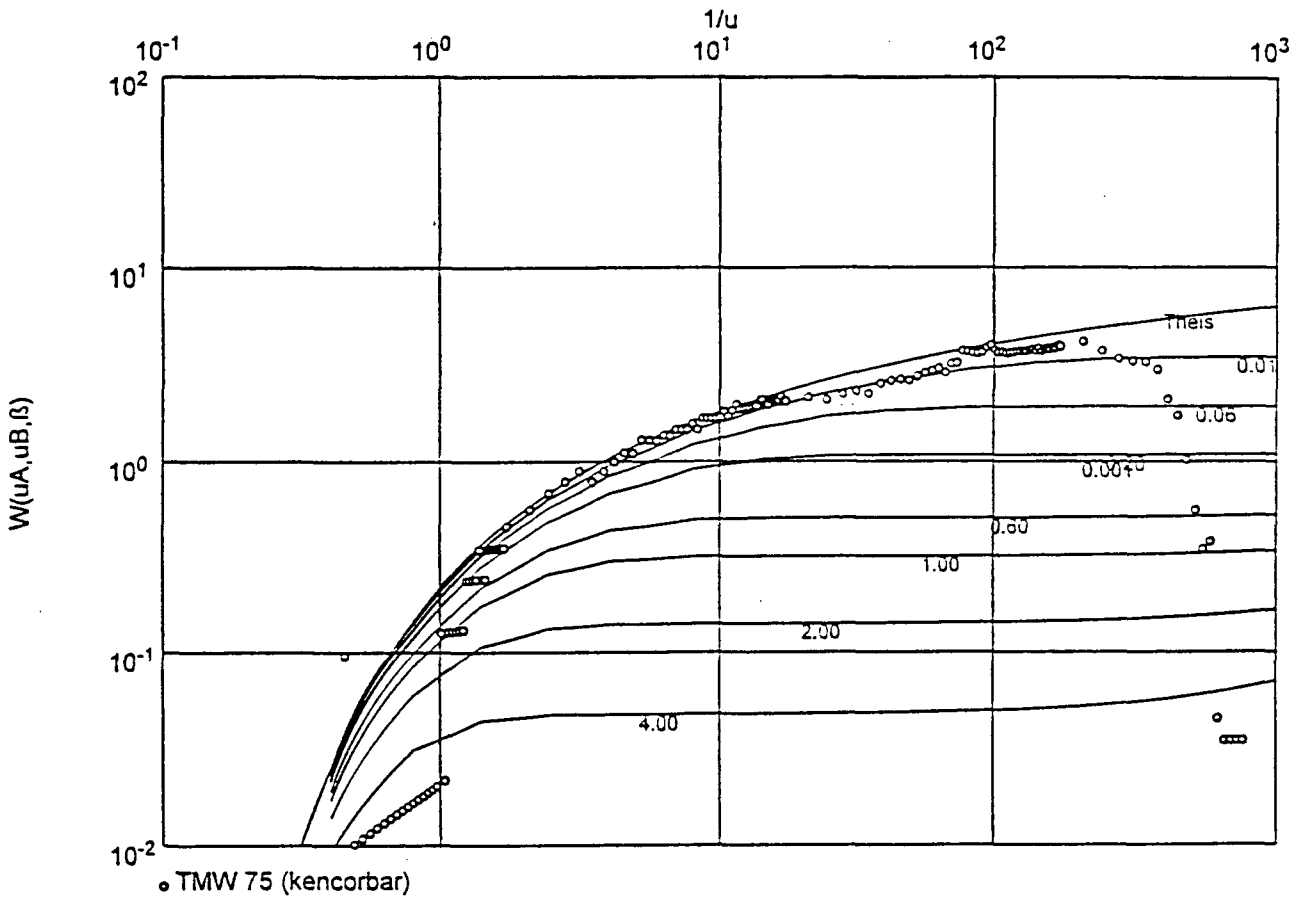
|---|---|
| Pumping Test No. TMW-17 | Test conducted on: TMW-17 |
| TMW 75 (kencorbar) | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $1.39 \times 10^{0}$ = 2001.6 $ft^2$/day

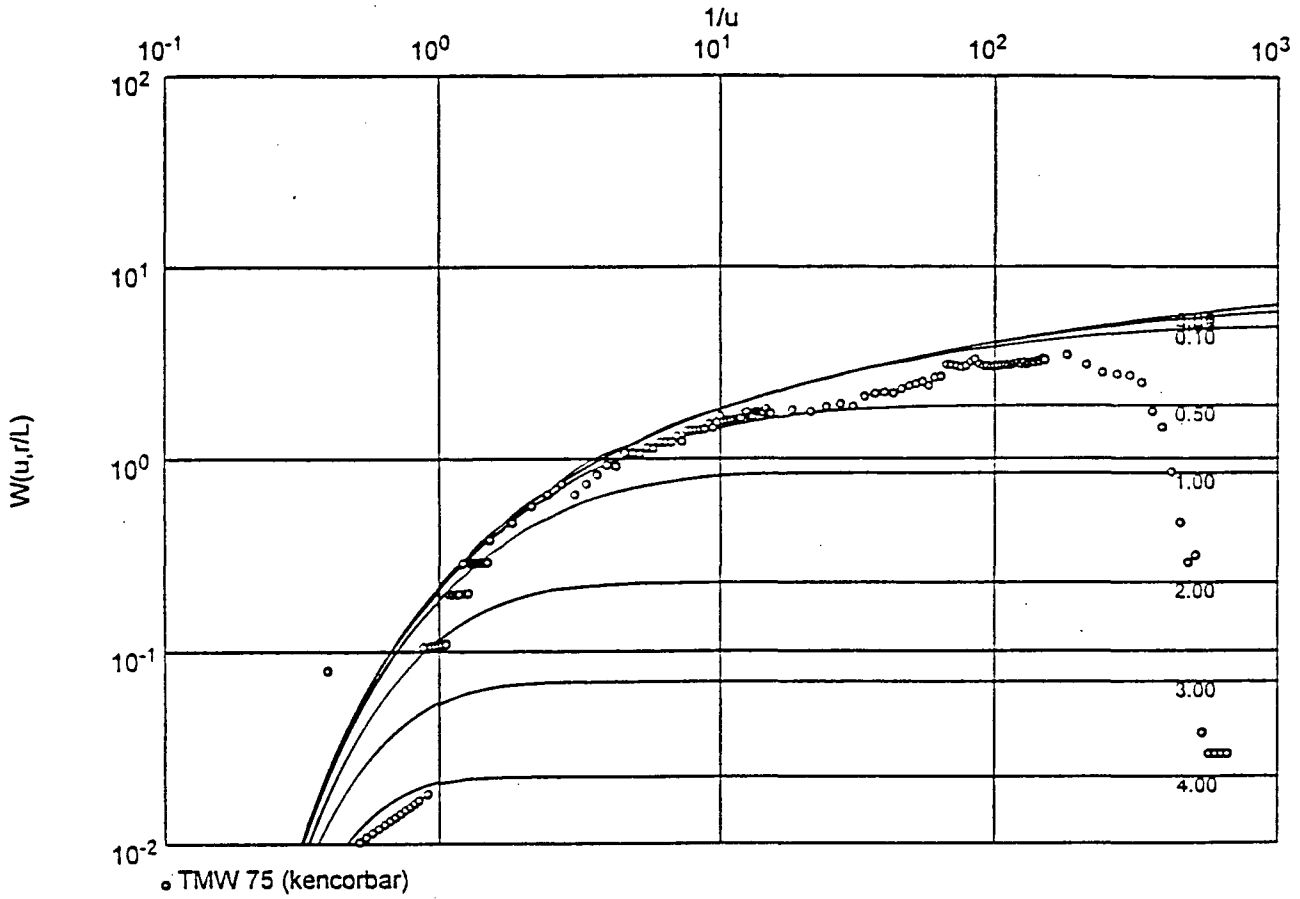
Hydraulic conductivity [ft/min]: $3.99 \times 10^{-2}$ = 57.46 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $8.02 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB \| Date: 15.01.1997 |
|---|---|---|

| | |
|---|---|
| Pumping Test No. TMW-17 | Test conducted on: TMW-17 |
| TMW 75 (kencorbar) | |
| Discharge 7.50 U.S.gal/min | |



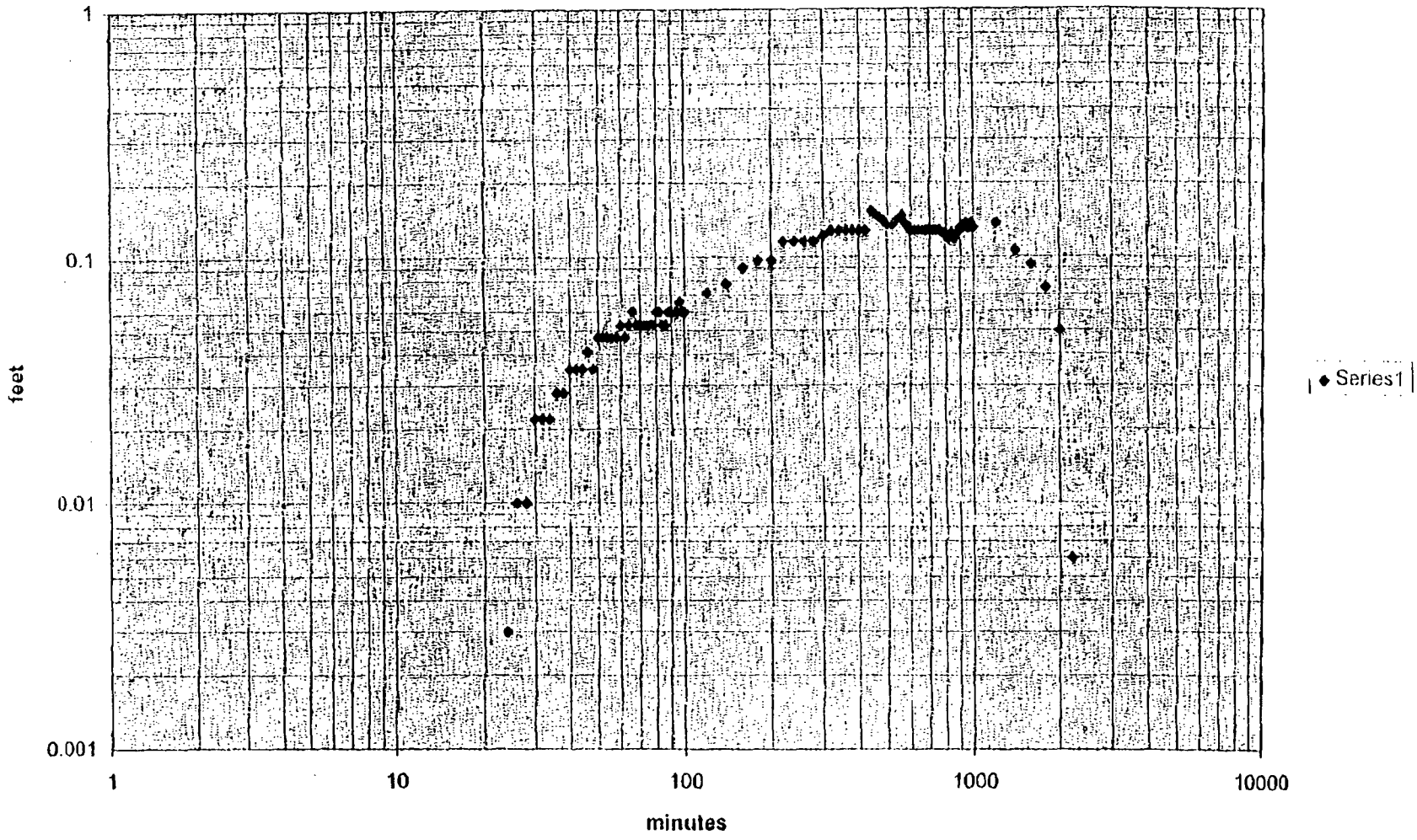

Transmissivity [ft²/min]: $1.16 \times 10^{0}$ = 1670.4 $ft^2$/day

Hydraulic conductivity [ft/min]: $3.32 \times 10^{-2}$ = 47.81ft/day

Aquifer thickness [ft]: 35.00

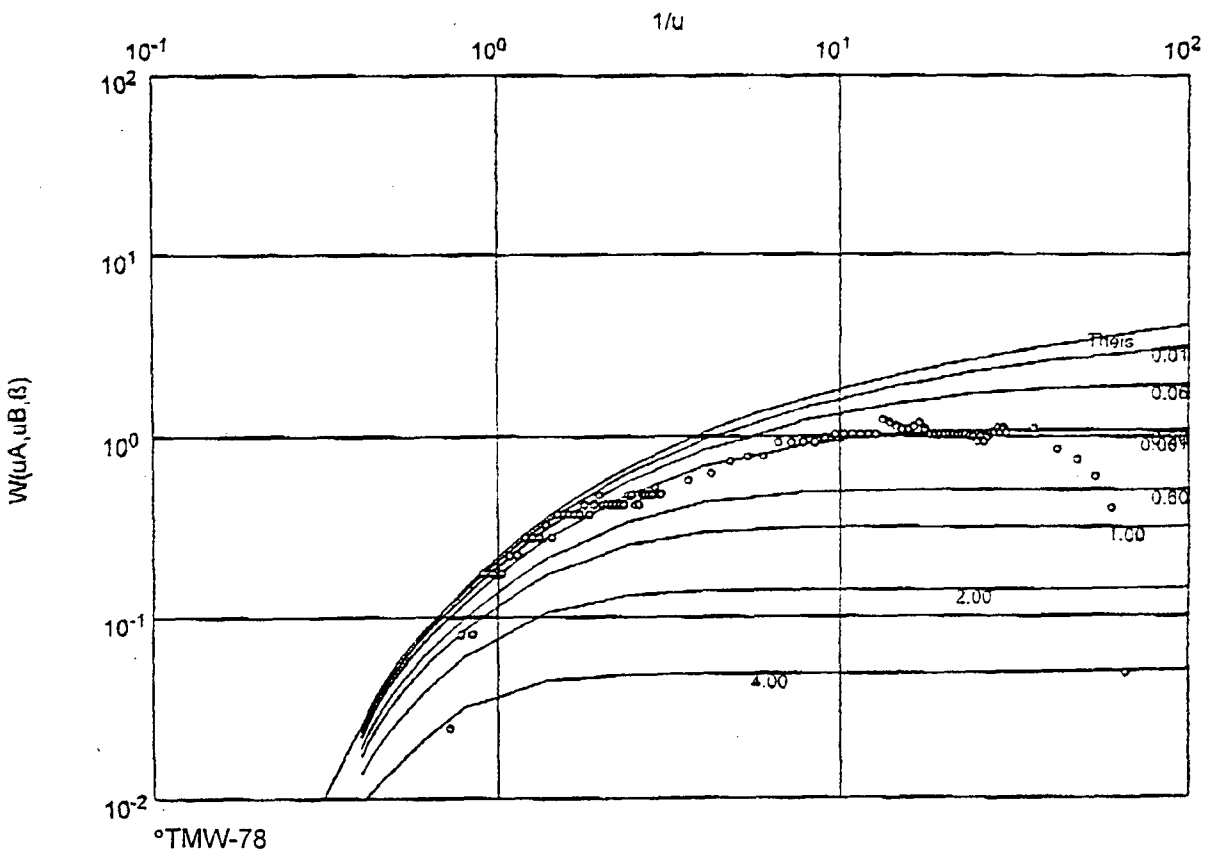
Storativity: $7.66 \times 10^{-4}$

TMW-78 (TMW-45 Corrected)



| Shepherd Miller, Inc<br>2460 West 26th Ave. # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project:<br>Evaluated by: | Date: 20.01.1997 |
|---|---|---|---|

| Pumping Test No. | Test conducted on: TMW-17 |
|---|---|
| TMW-78 (TMW-45 Corrected) | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $6.38 \times 10^{-1}$ = 918.7 $ft^2$/day

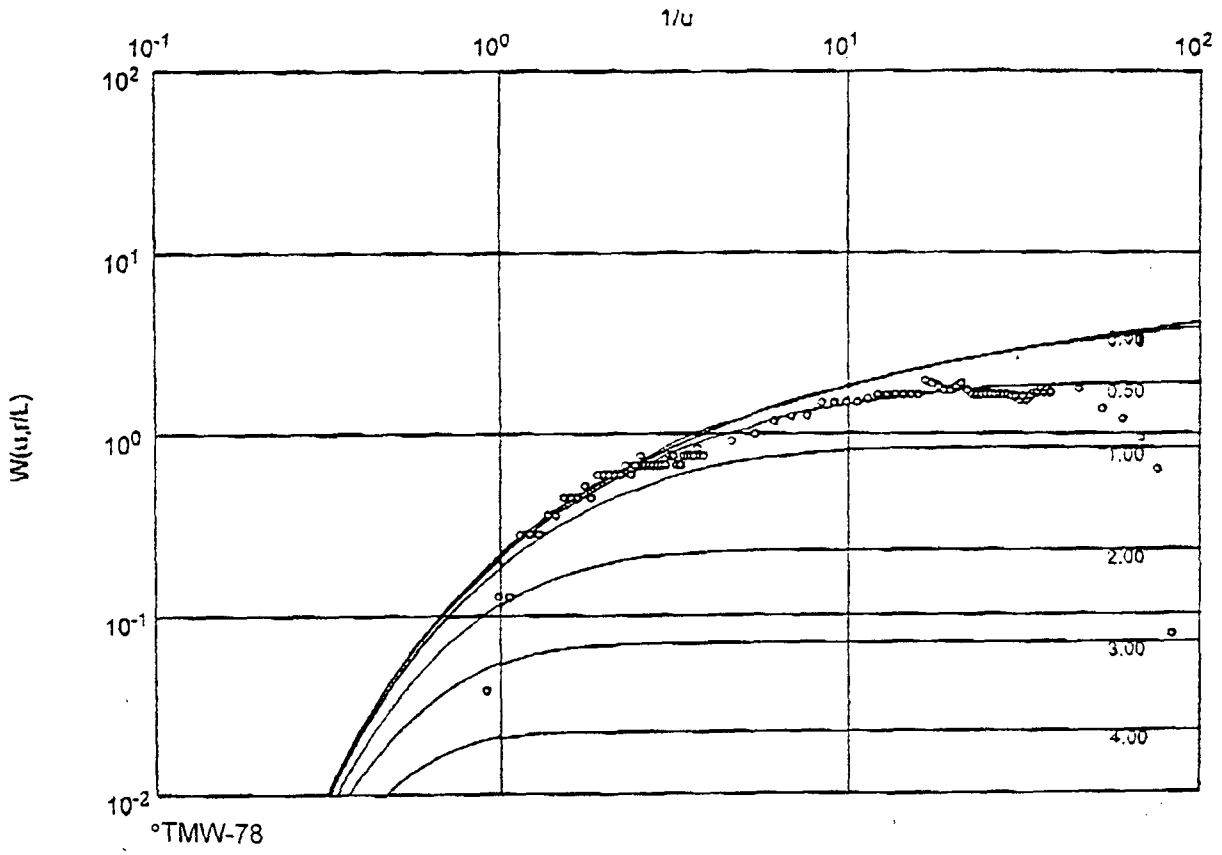
Hydraulic conductivity [ft/min]: $1.82 \times 10^{-2}$ = 26.21 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $4.18 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave. # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project:<br>Evaluated by: | Date: 20.01.1997 |
|---|---|---|---|

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW-17 |
| TMW-17 (TMW-45 corrected) | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $1.01 \times 10^{0}$ = 1454.4 $ft^2$/day

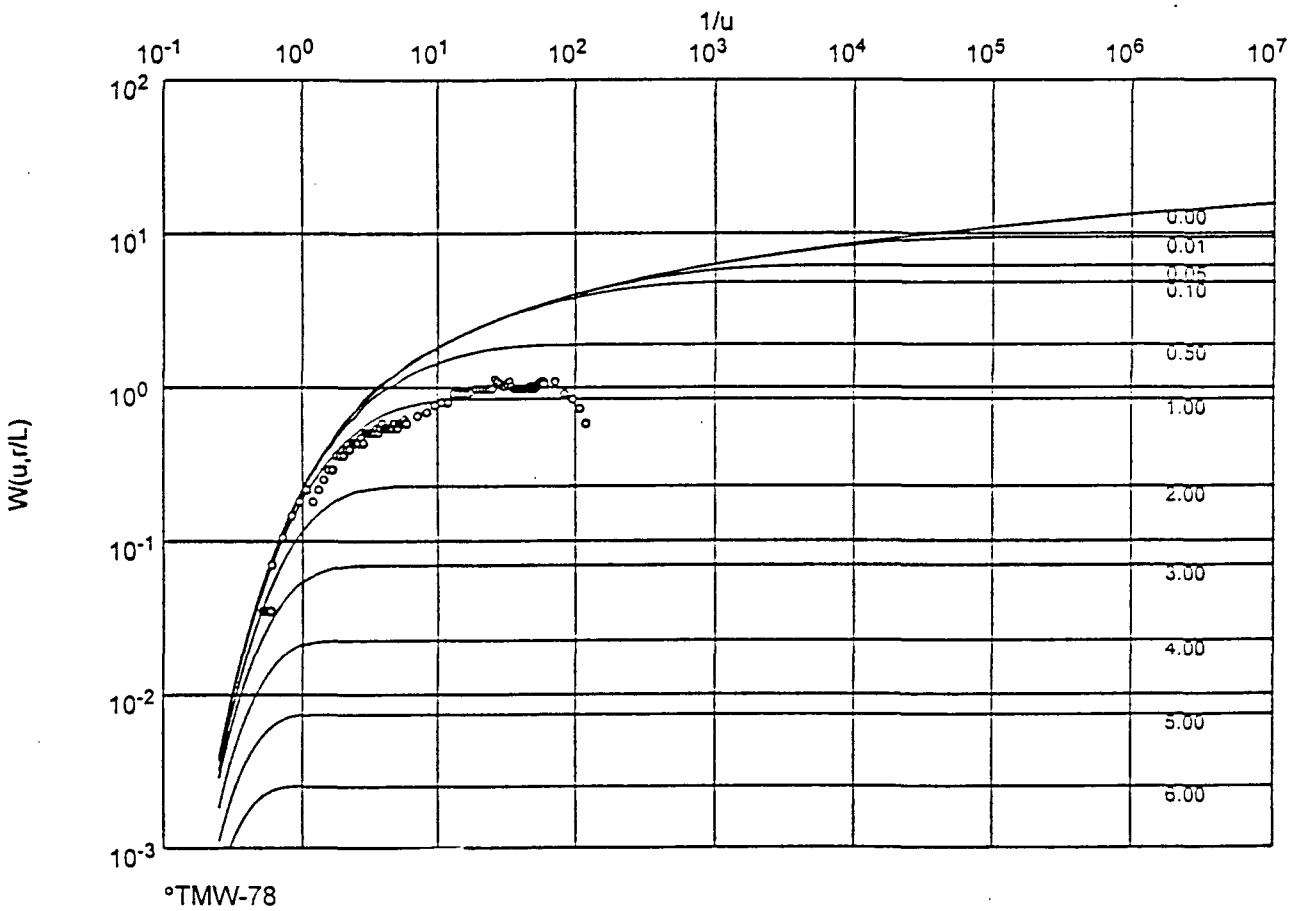
Hydraulic conductivity [ft/min]: $2.89 \times 10^{-2}$ = 41.62 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $5.26 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project:<br>Evaluated by: | Date: 08.01.1997 |
|---|---|---|---|

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW-17 |
| TMW-78 (Uncorrected) | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $4.64 \times 10^{-1}$ = 668.2 $ft^2$/day

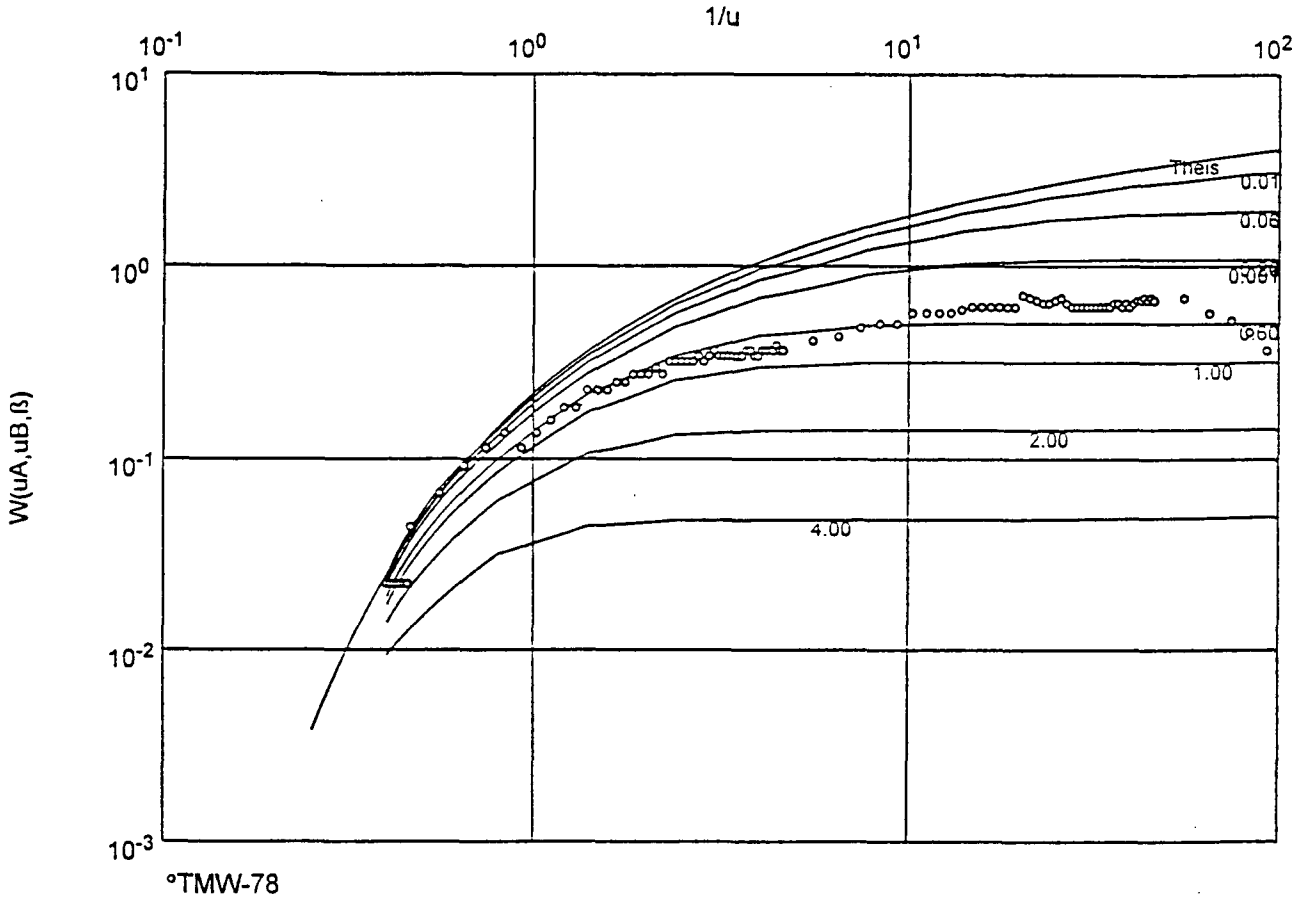
Hydraulic conductivity [ft/min]: $1.32 \times 10^{-2}$ = 19 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $1.53 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project:<br>Evaluated by: | Date: 08.01.1997 |
|---|---|---|---|

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW-17 |
| TMW-78 (Uncorrected) | |
| Discharge 7.50 U.S.gal/min | |



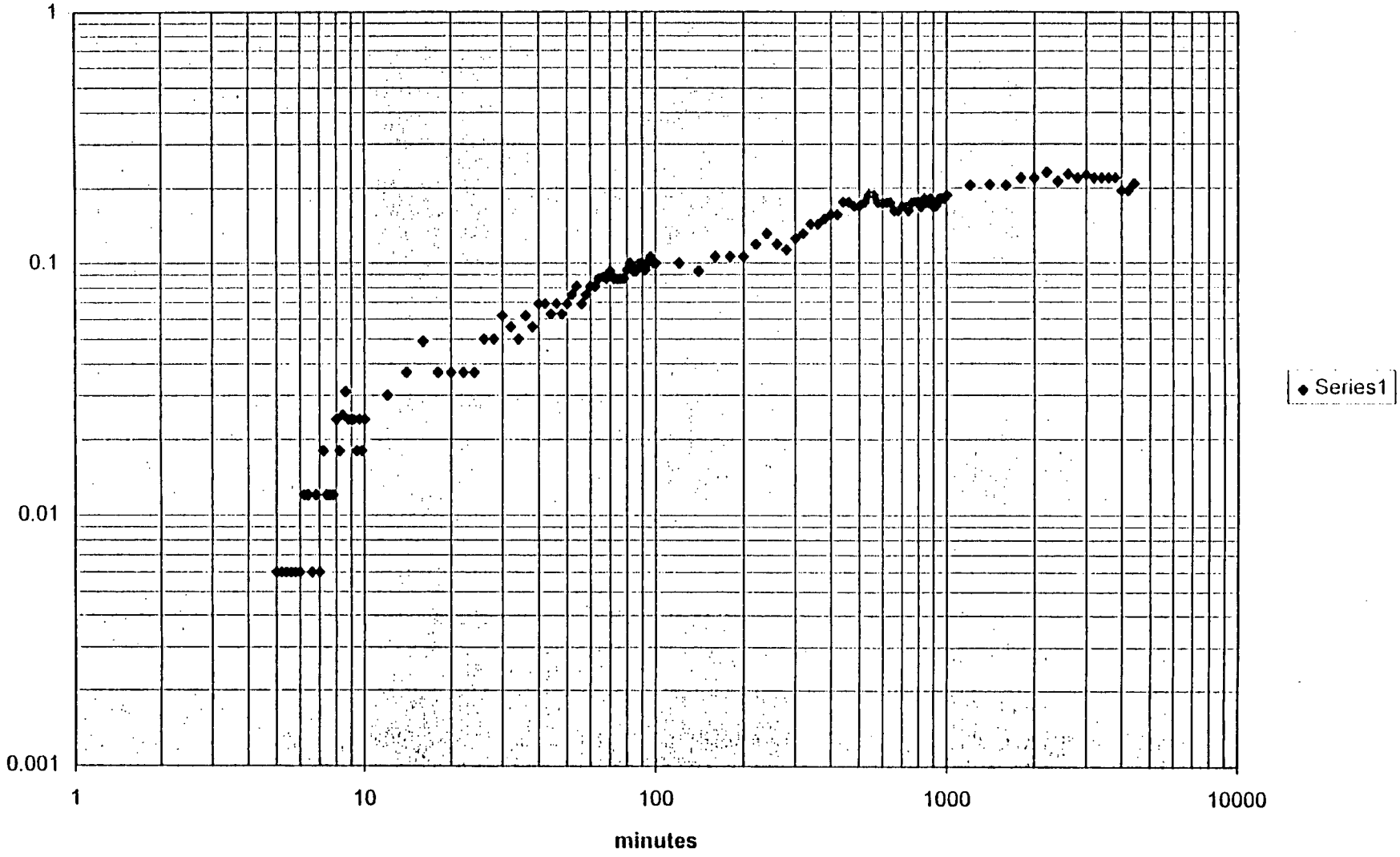

Transmissivity [ft²/min]: $2.92 \times 10^{-1}$ = 420.5 $ft^2$/day

Hydraulic conductivity [ft/min]: $8.36 \times 10^{-3}$ = 12.04 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $1.24 \times 10^{-4}$

## TMW-78 Drift Corrected and TMW-16 Transducer Corrected

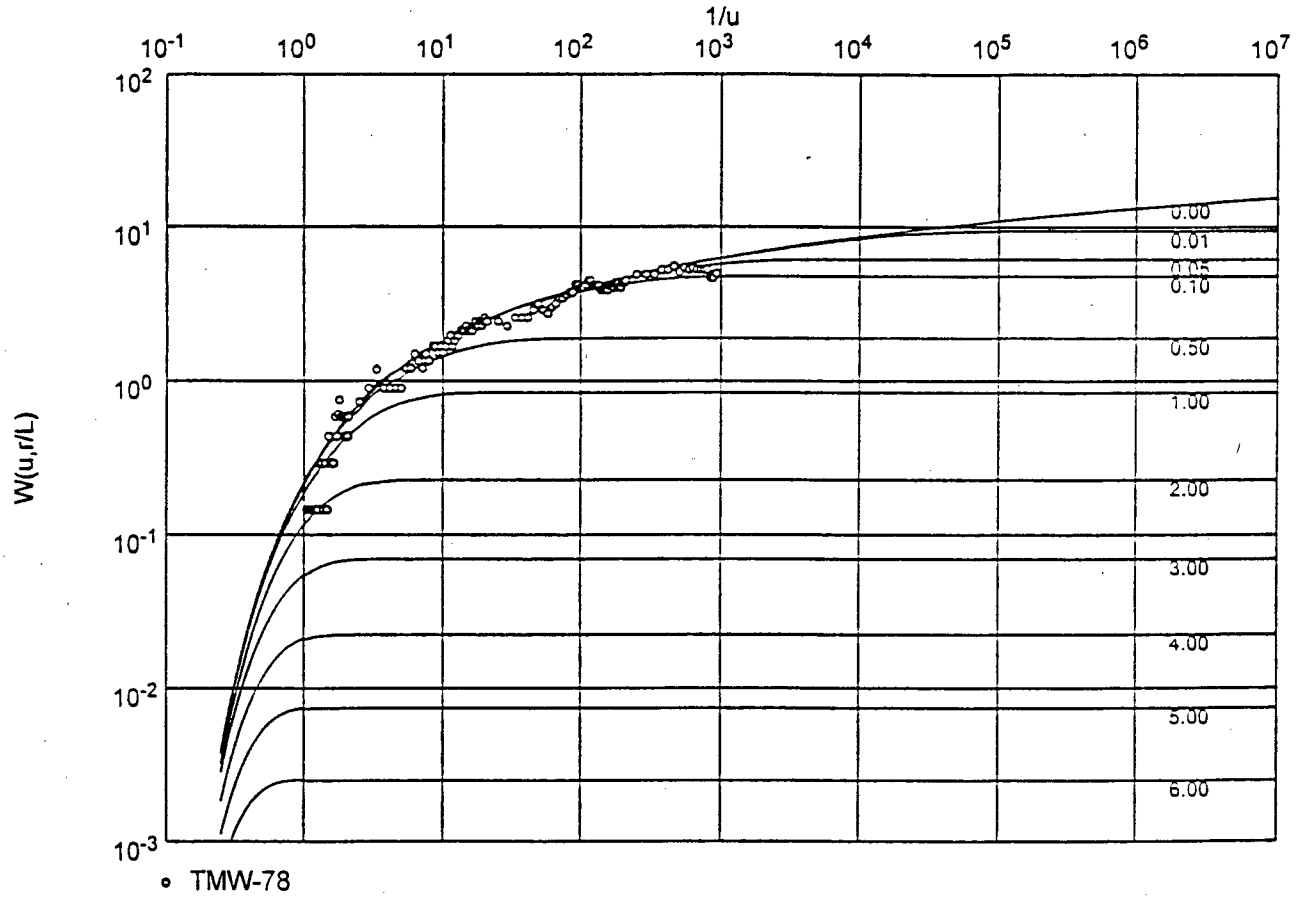


| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 09.01.1997 |
|---|---|---|

Pumping Test No. | Test conducted on: TMW- 17

TMW-17 Drift Corrected and TMW-16 Transducer Corrected

Discharge 7.50 U.S.gal/min




Transmissivity [ft²/min]: $1.93 \times 10^{0}$ = 2779.2 $ft^2$/day

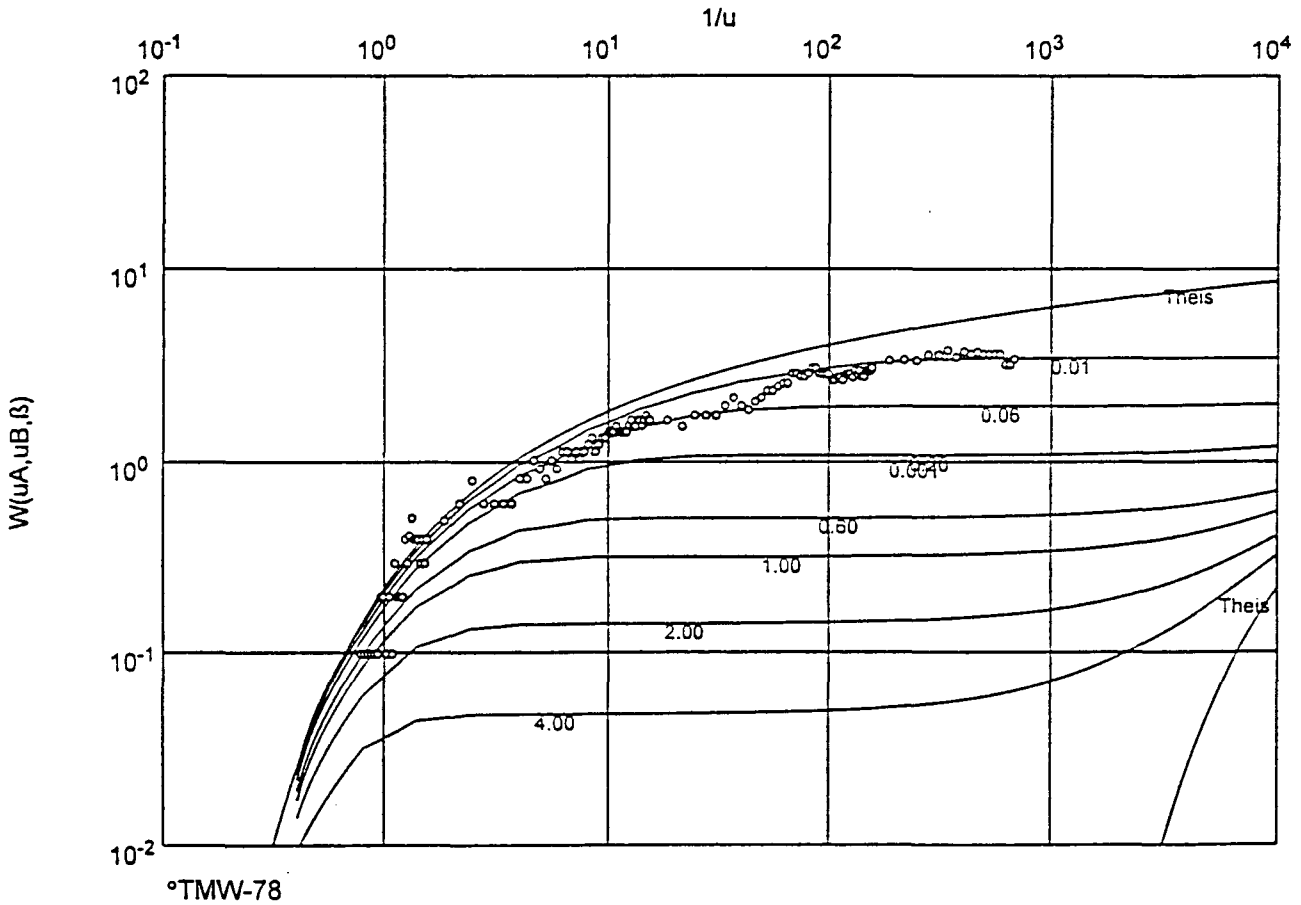
Hydraulic conductivity [ft/min]: $5.52 \times 10^{-2}$ = 79.5 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $1.81 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB \| Date: 09.01.1997 |
|---|---|---|

| Pumping Test No. | Test conducted on: TMW-17 |
|---|---|
| TMW-17 Drift Corrected and TMW-16 Transducer Corrected | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $1.30 \times 10^{0}$ = 1872 $ft^2$/day

Hydraulic conductivity [ft/min]: $3.73 \times 10^{-2}$ = 53.71 ft/day

Aquifer thickness [ft]: 35.00

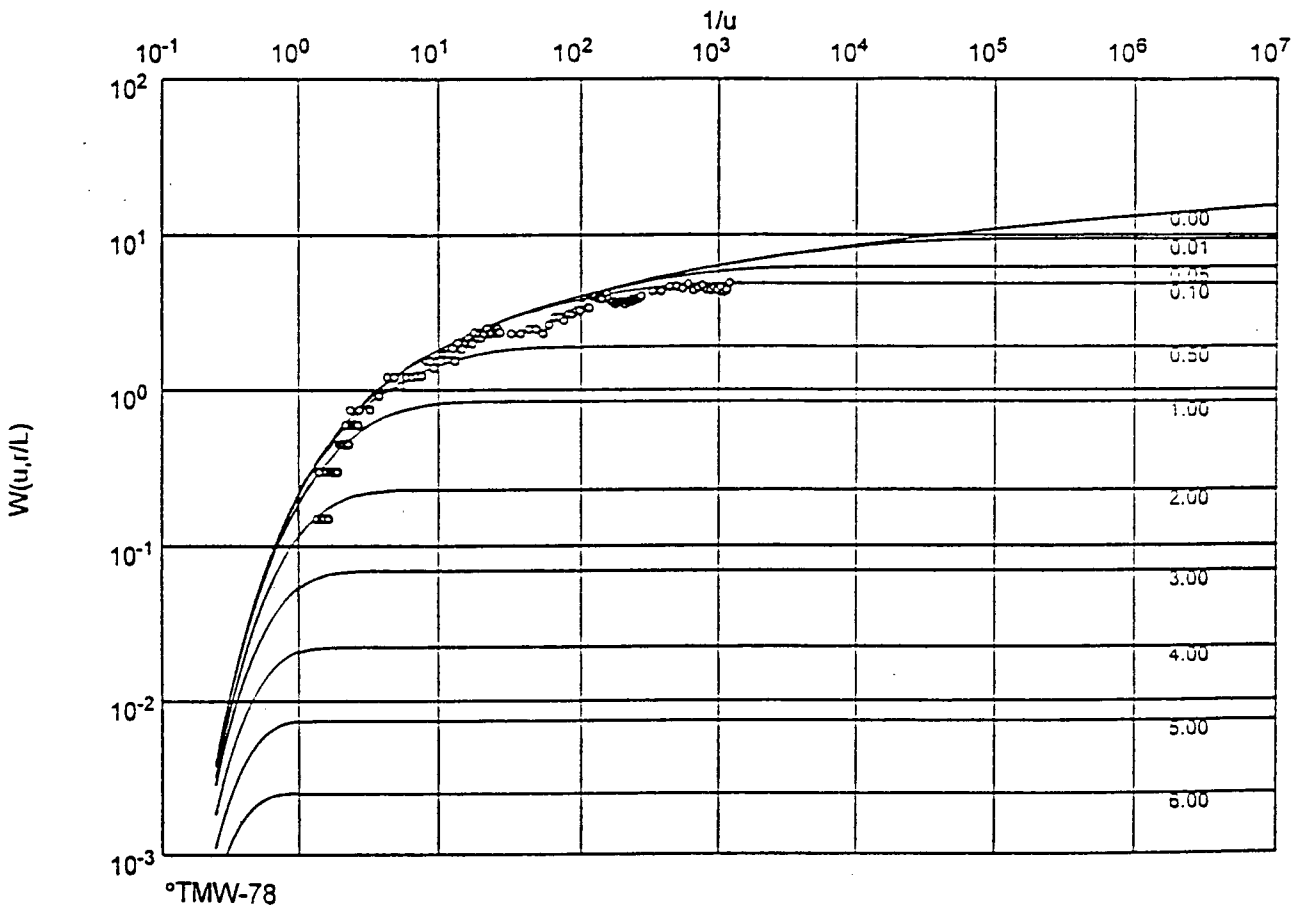
Storativity: $1.65 \times 10^{-4}$

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB Date: 09.01.1997 |
|---|---|---|

Pumping Test No. | Test conducted on: TMW-17

TMW-78 Drift Corrected and TMW-29 Transducer Corrected

Discharge 7.50 U.S.gal/min




Transmissivity [ft²/min]: $1.97 \times 10^{0}$ = 2836.8 $ft^2$/day

Storativity: $1.42 \times 10^{-4}$

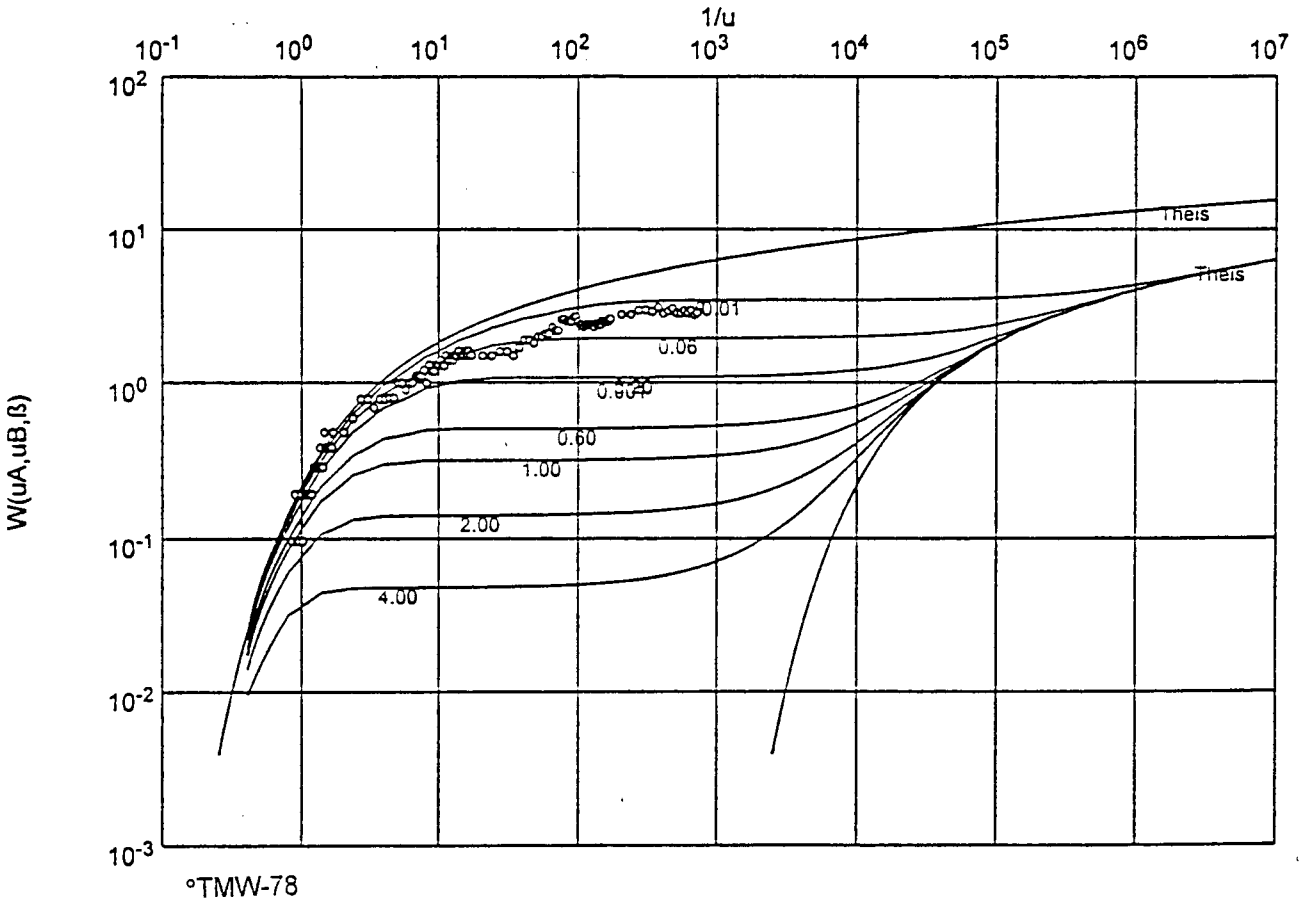
Conductivity = 81.05 ft/day

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | Page 1<br>Project: Sweetwater<br>Evaluated by: RCB \| Date: 09.01.1997 |
|---|---|---|

Pumping Test No. | Test conducted on: TMW-17

TMW-78 Drift Corrected and TMW-29 Transducer Corrected

Discharge 7.50 U.S.gal/min

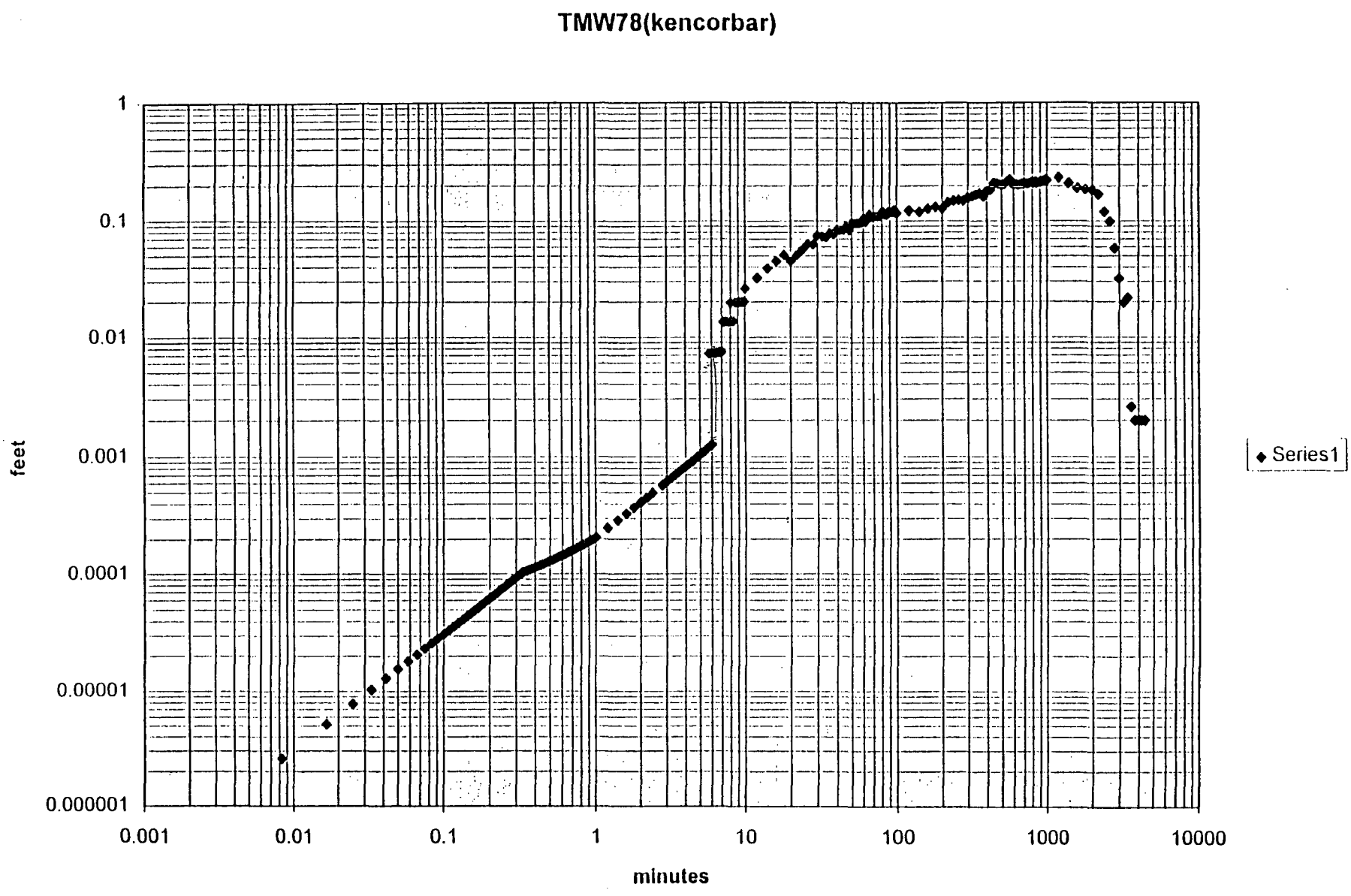



Transmissivity [ft²/min]: $1.27 \times 10^{0}$ = 1828.8 $ft^2$/day

Hydraulic conductivity [ft/min]: $3.63 \times 10^{-2}$ = 52.3 ft/day

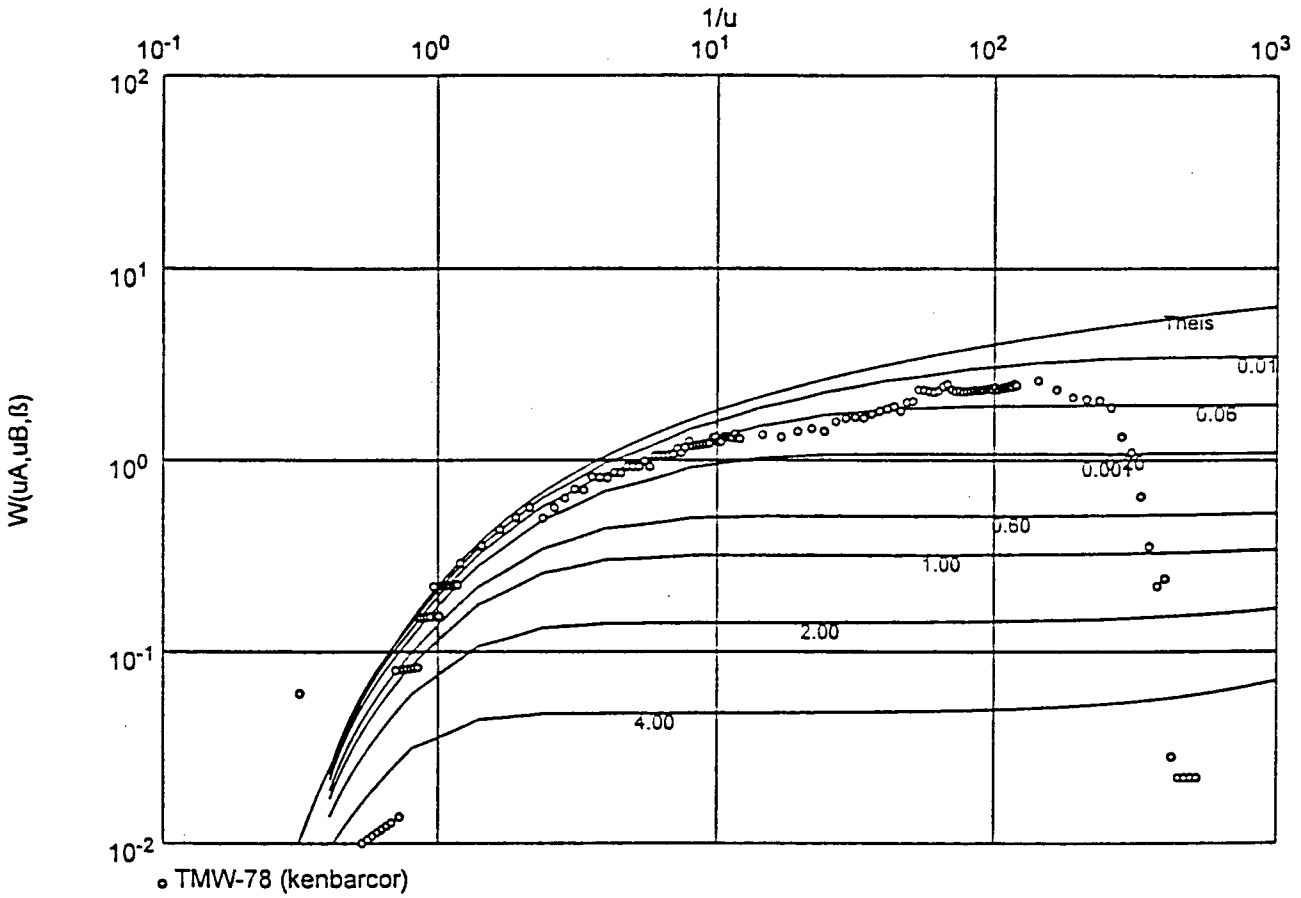
Aquifer thickness [ft]: 35.00

Storativity: $1.46 \times 10^{-4}$


TMW78(kencorbar)
1
0.1
0.01
0.001
0.0001
0.00001
0.000001
feet
0.001
0.01
0.1
1
10
100
1000
10000
minutes
Series1

| Shepherd Miller, Inc<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>NEUMAN's method<br>Unconfined aquifer with<br>delayed watertable response | kencot bar. correction, Page 1<br>Project: Sweetwater<br>Evaluated by: RCB \| Date: 15.01.1997 |
|---|---|---|

| Pumping Test No. | Test conducted on: TMW-17 |
|---|---|
| TMW-78 | |
| Discharge 7.50 U.S.gal/min | |




Transmissivity [ft²/min]: $8.81 \times 10^{-1}$ = 1268.6 $ft^2$/day

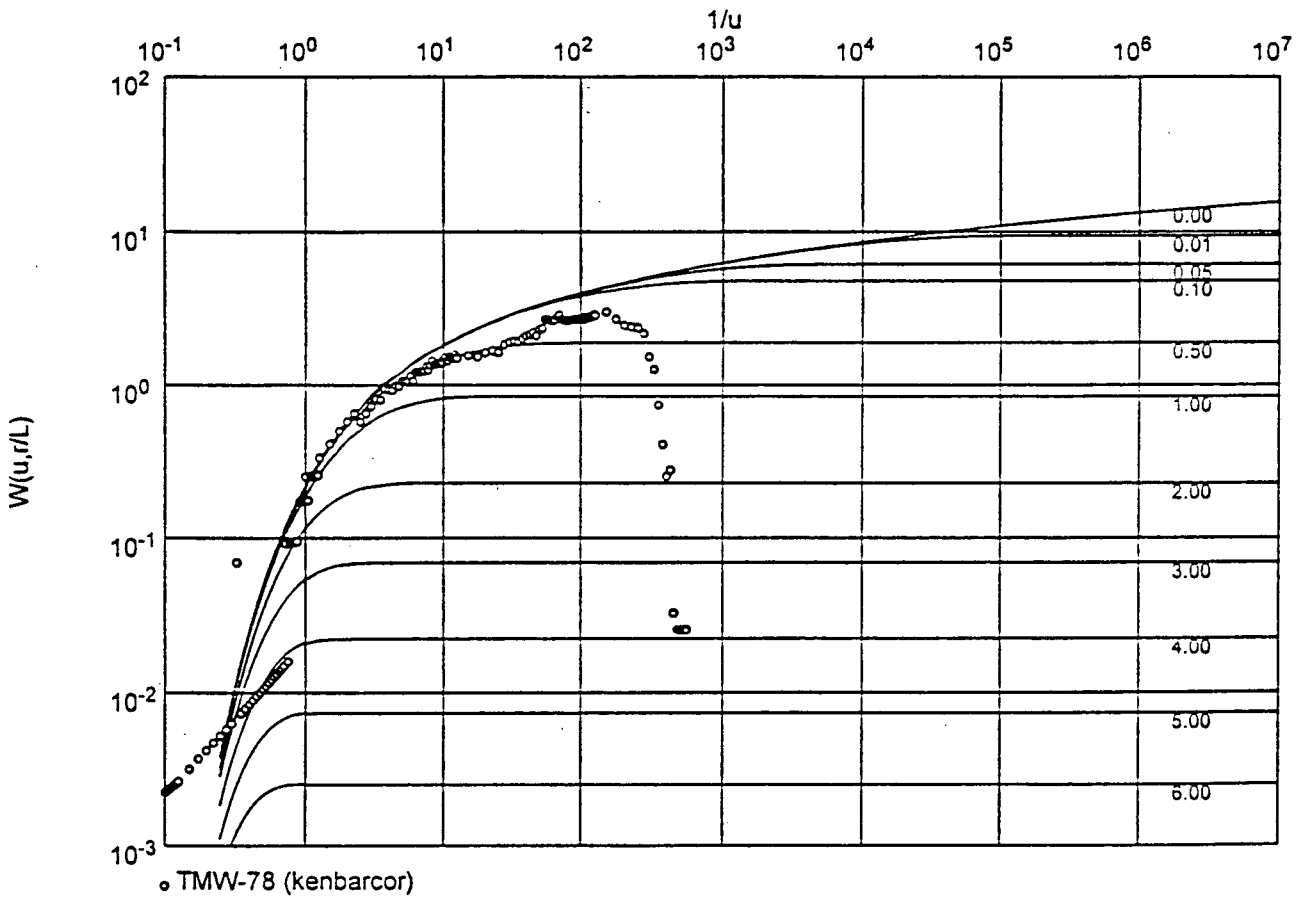
Hydraulic conductivity [ft/min]: $2.51 \times 10^{-2}$ = 36.1 ft/day

Aquifer thickness [ft]: 35.00

Storativity: $1.44 \times 10^{-4}$

| | | |
|---|---|---|
| **Shepherd Miller, Inc**<br>2460 West 26th Ave, # 430C<br>Denver, CO 80211<br>303-477-5338 | Pumping test analysis<br>HANTUSH's method<br>Leaky aquifer, no aquitard storage | kencot bar. correction, Page 1<br>Project: Sweetwater<br>Evaluated by: RCB \| Date: 15.01.1997 |

| | |
|---|---|
| Pumping Test No. | Test conducted on: TMW-17 |
| TMW-78 | |
| Discharge 7.50 U.S.gal/min | |

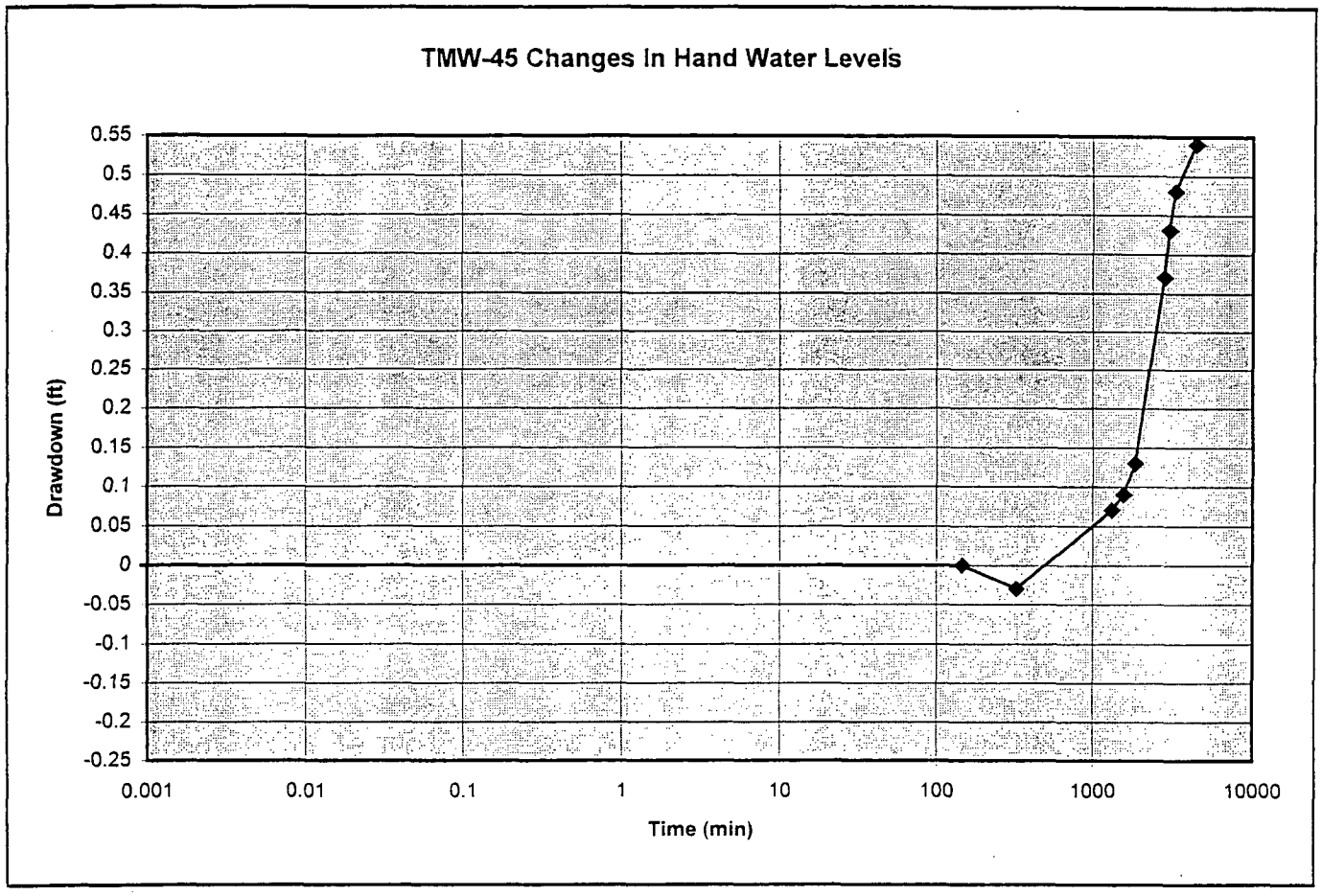



Transmissivity [ft²/min]: $1.01 \times 10^{0}$ = 1454.4 $ft^2$/day

Hydraulic conductivity [ft/min]: $2.89 \times 10^{-2}$ = 41.6 ft/day

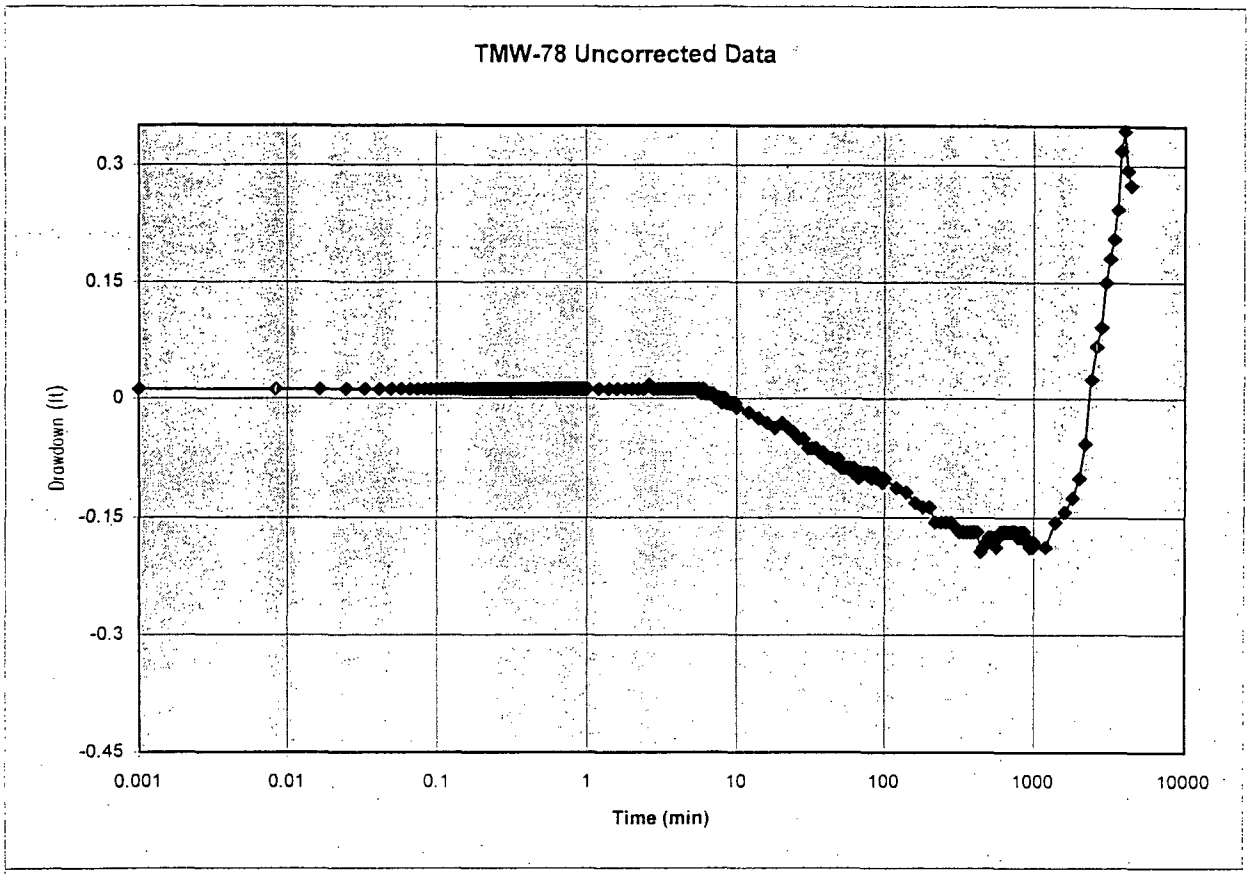
Aquifer thickness [ft]: 35.00

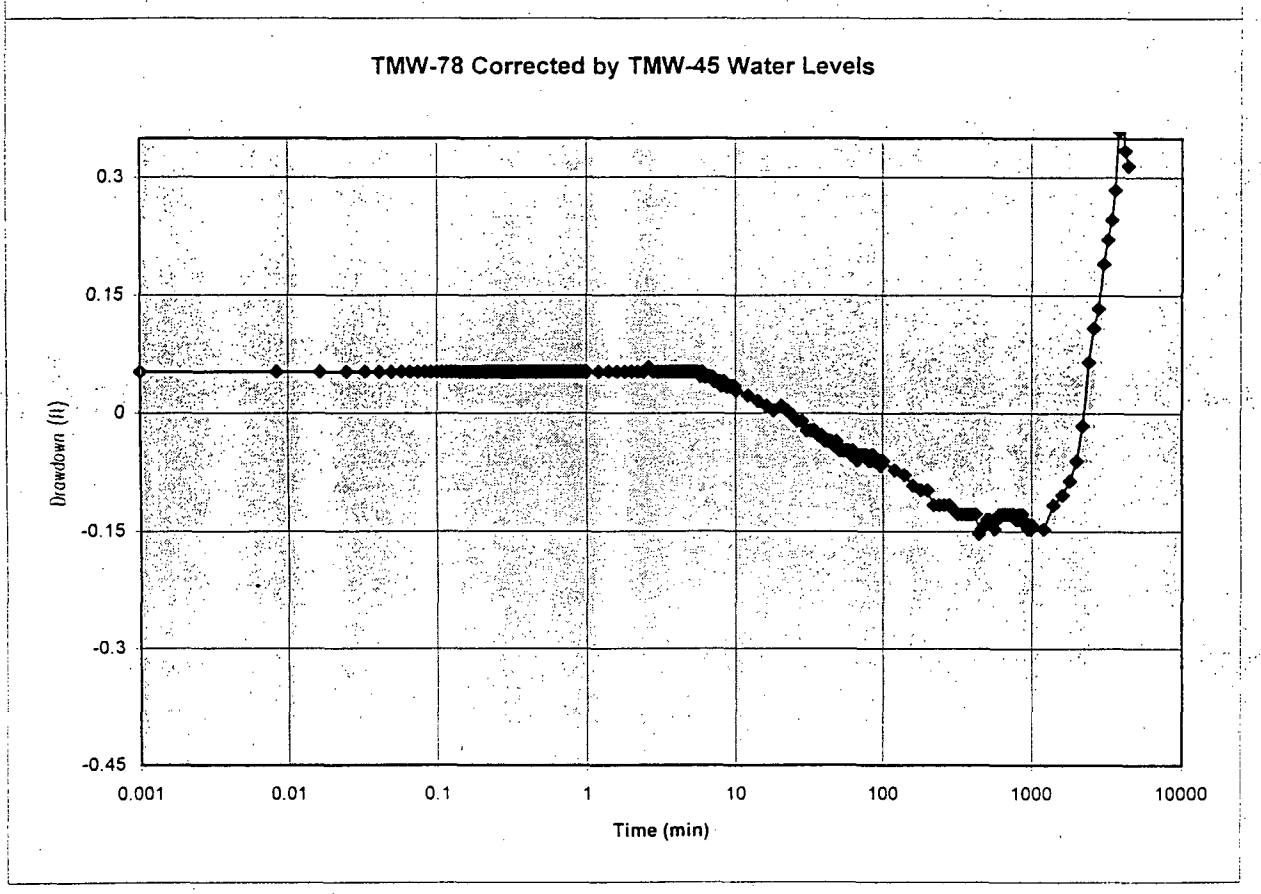
Storativity: $1.58 \times 10^{-4}$

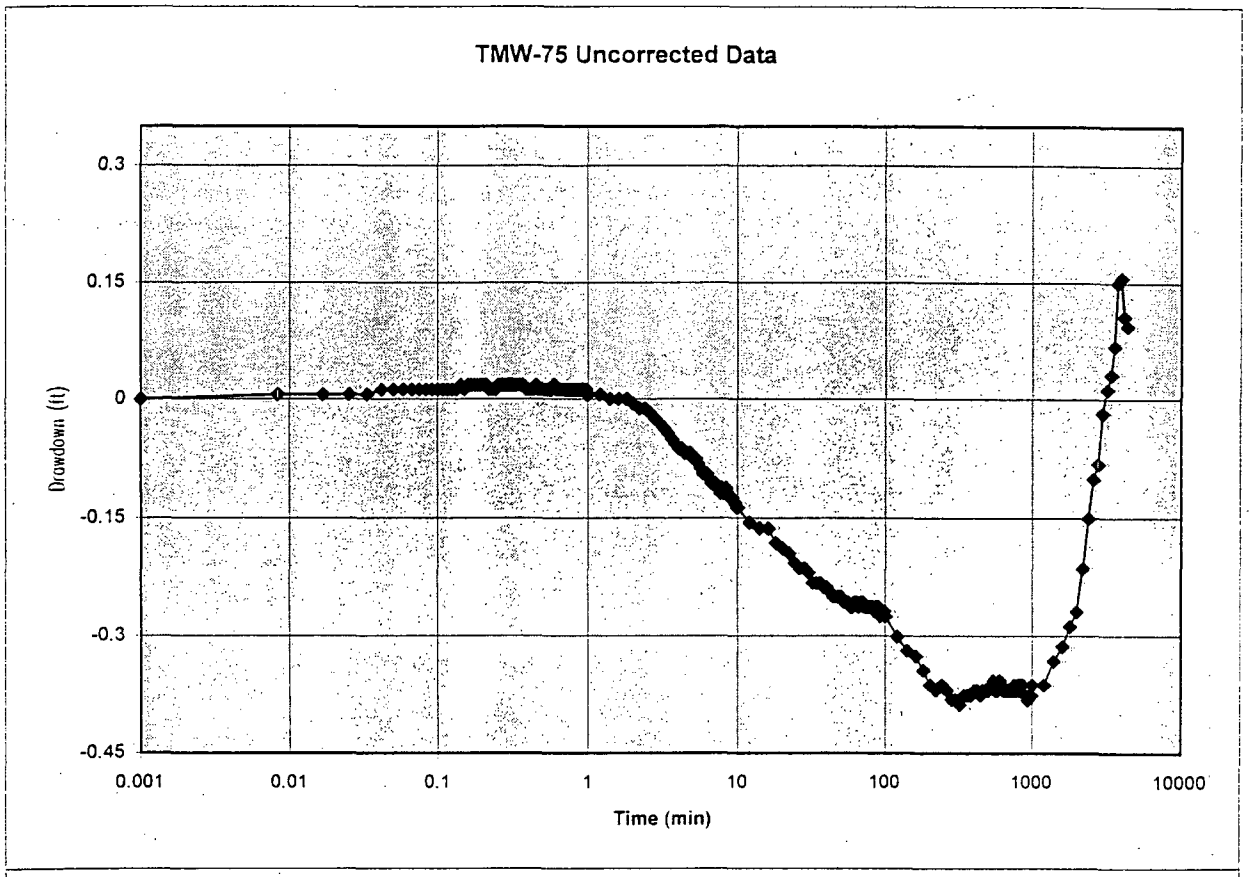

TMW-45 Changes In Hand Water Levels
Drawdown (ft)
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

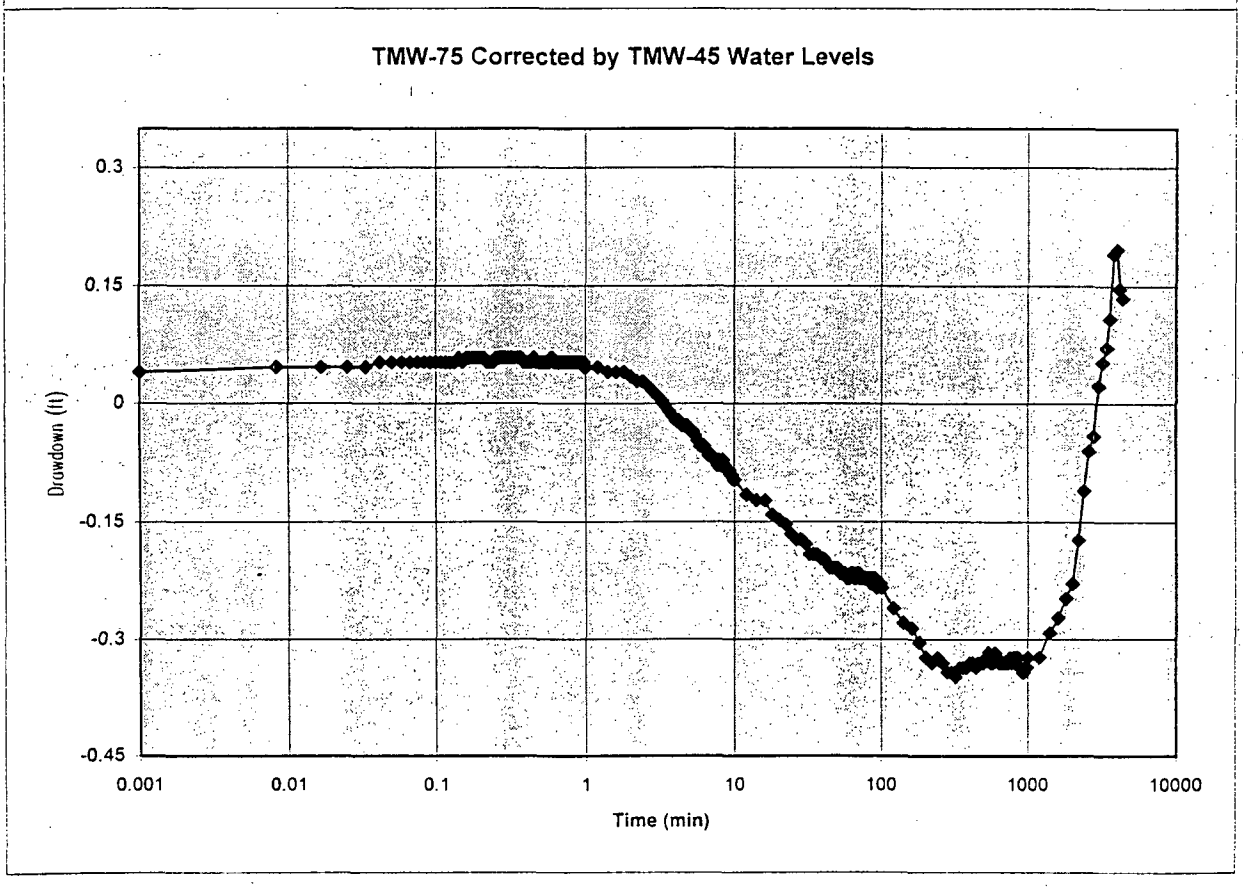
# APPENDIX F

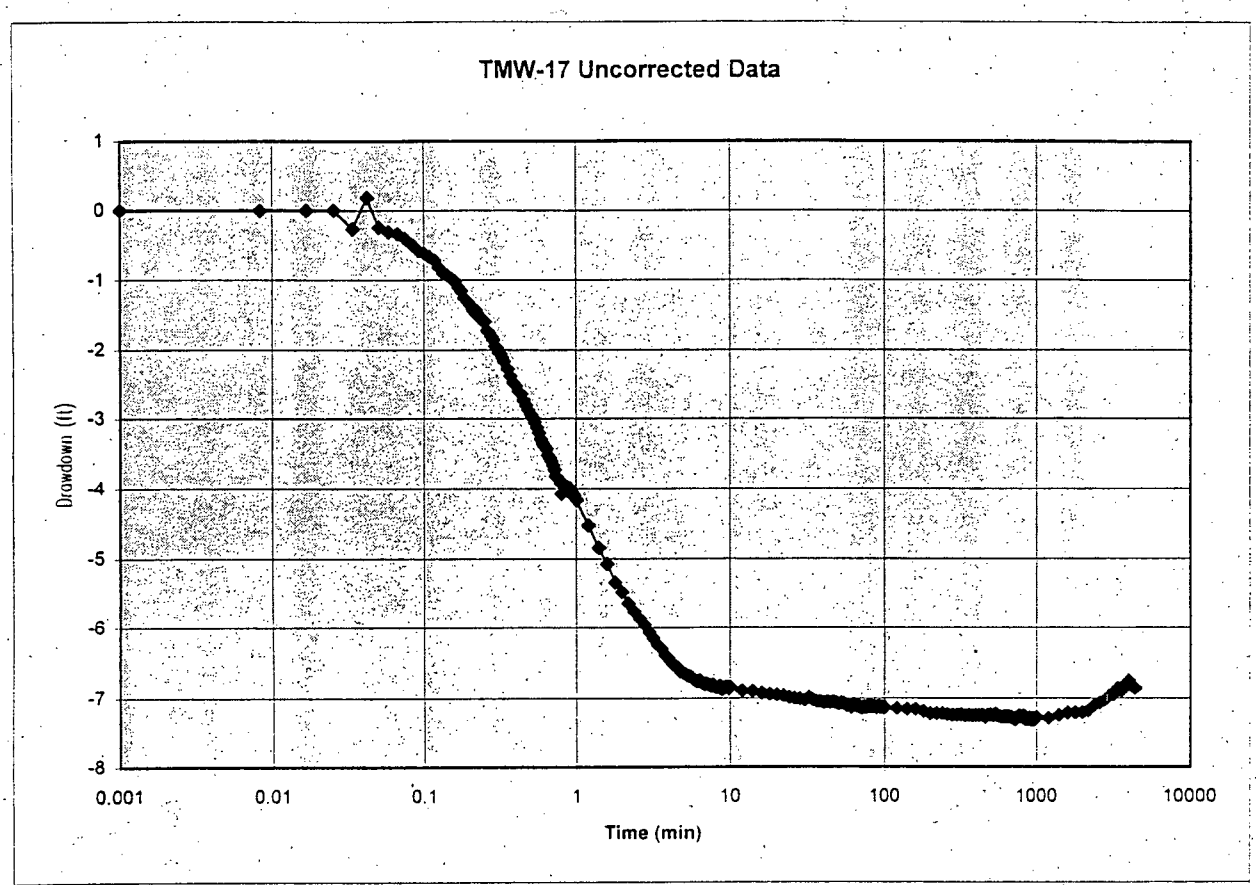
# ORIGINAL HAND WATER LEVEL DATA

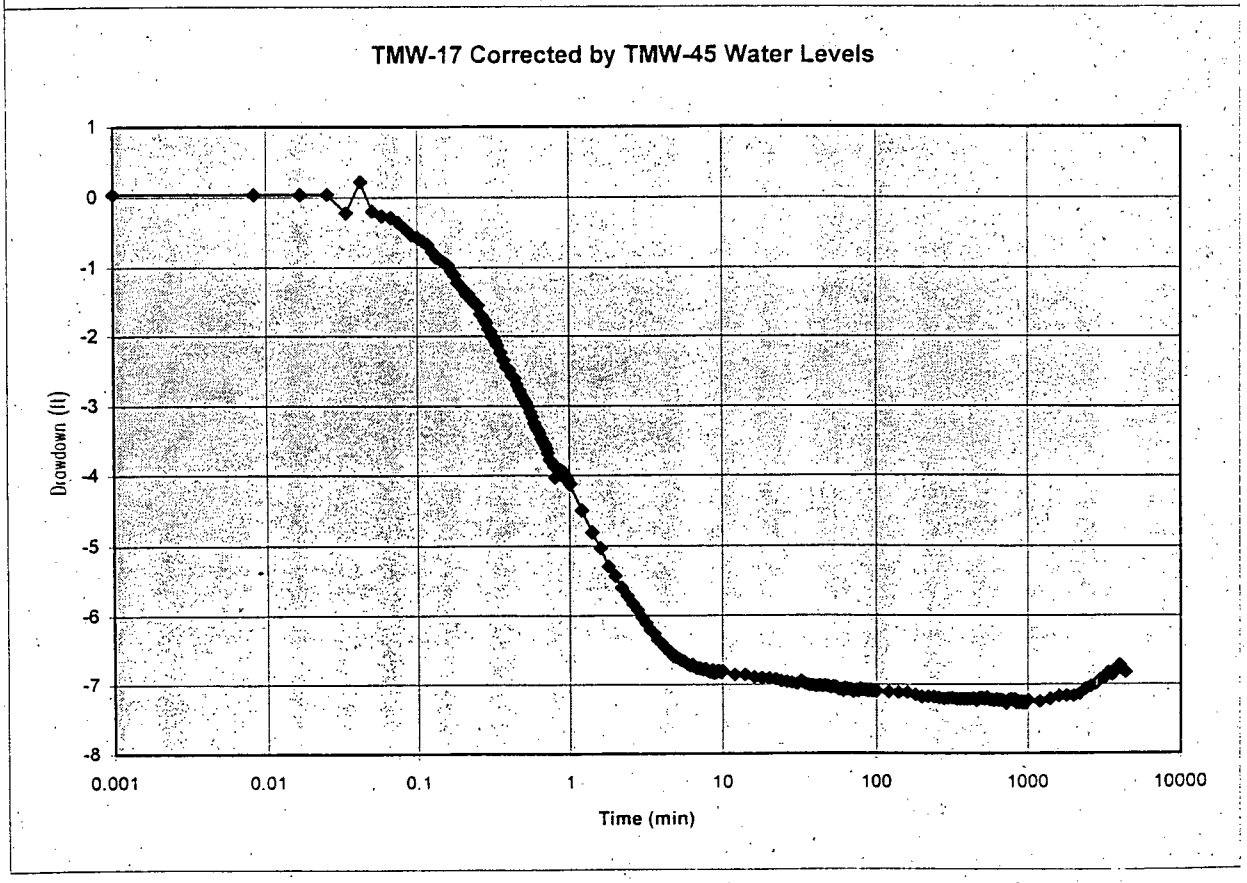

TMW-78 Uncorrected Data
0.3
0.15
0
-0.15
-0.3
-0.45
Drawdown (ft)
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)


TMW-78 Corrected by TMW-45 Water Levels
0.3
0.15
0
-0.15
-0.3
-0.45
Drawdown (ft)
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)


TMW-75 Uncorrected Data
0.3
0.15
0
-0.15
-0.3
-0.45
Drawdown (ft)
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

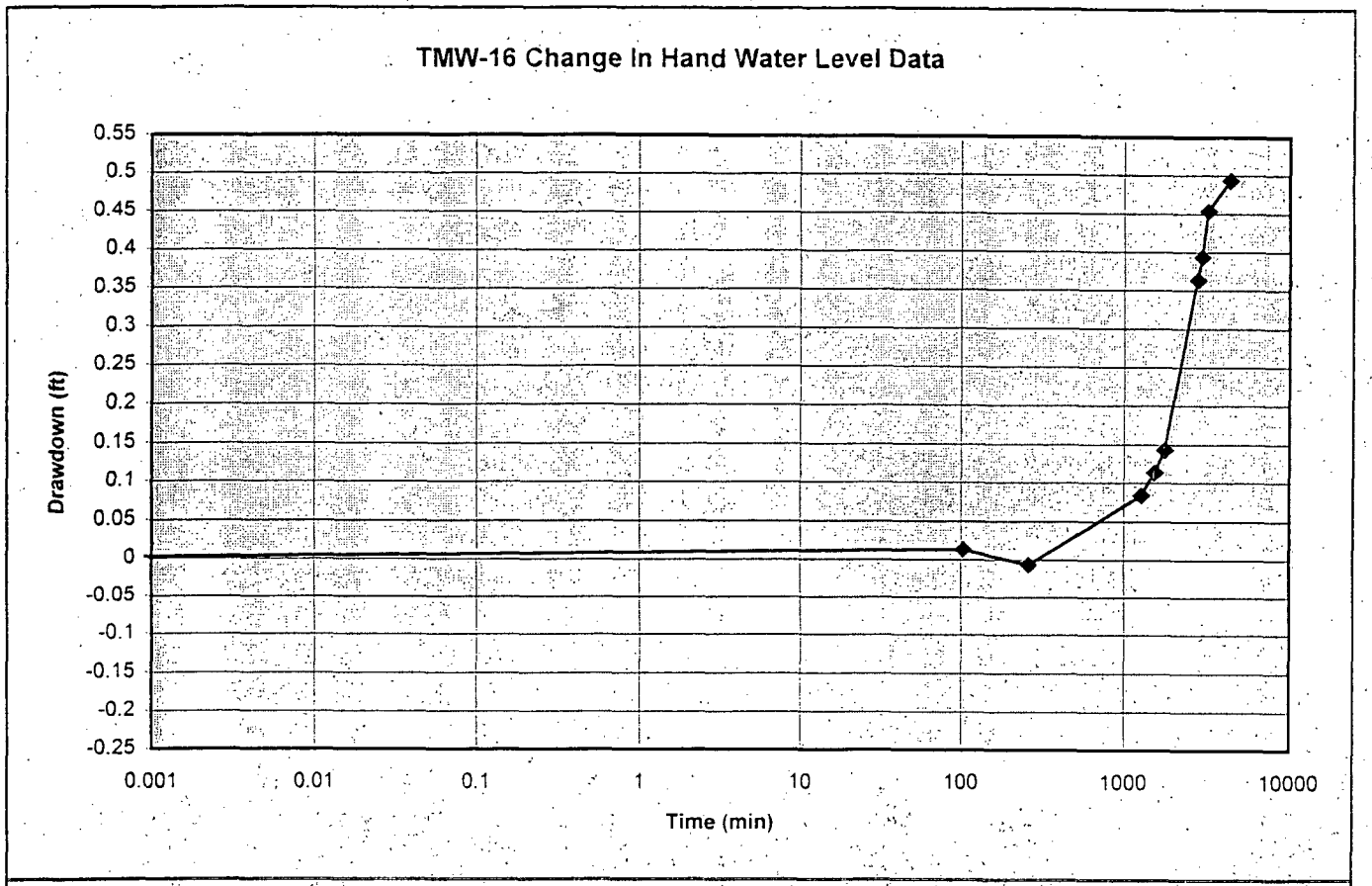

TMW-75 Corrected by TMW-45 Water Levels
0.3
0.15
0
-0.15
-0.3
-0.45
Drawdown (ft)
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

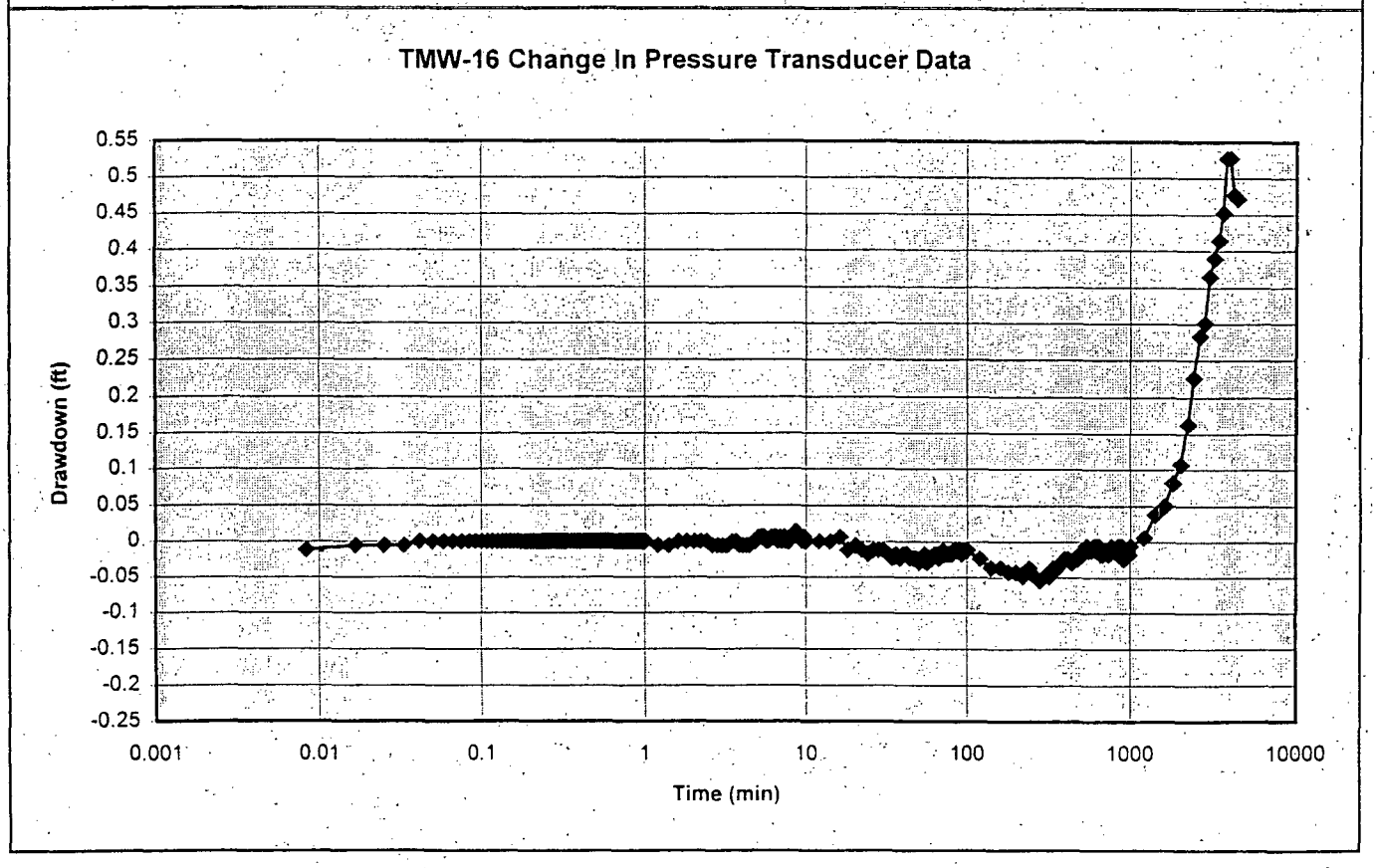

TMW-17 Uncorrected Data
Drawdown (ft)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

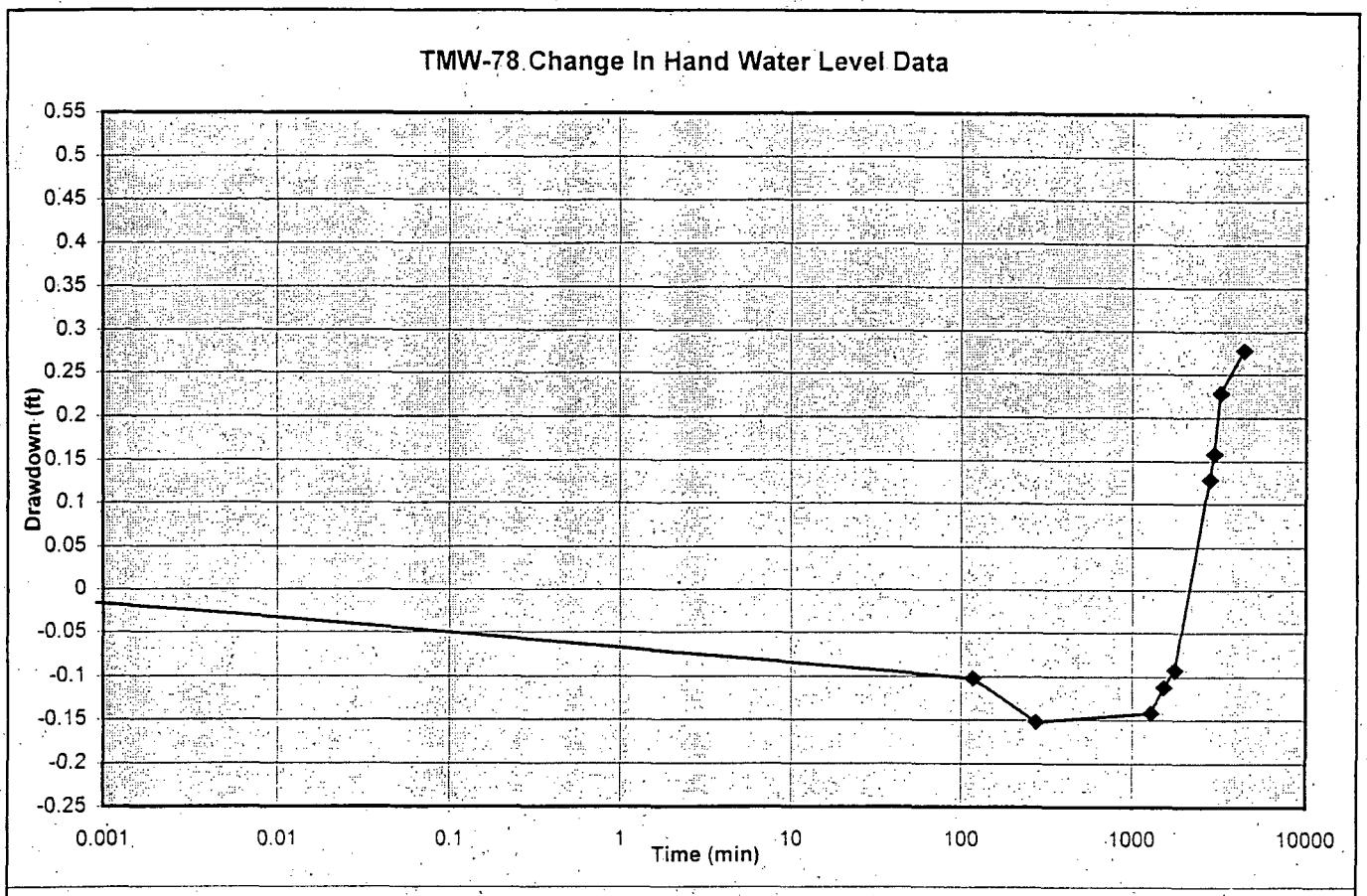

TMW-17 Corrected by TMW-45 Water Levels
Drawdown (ft)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

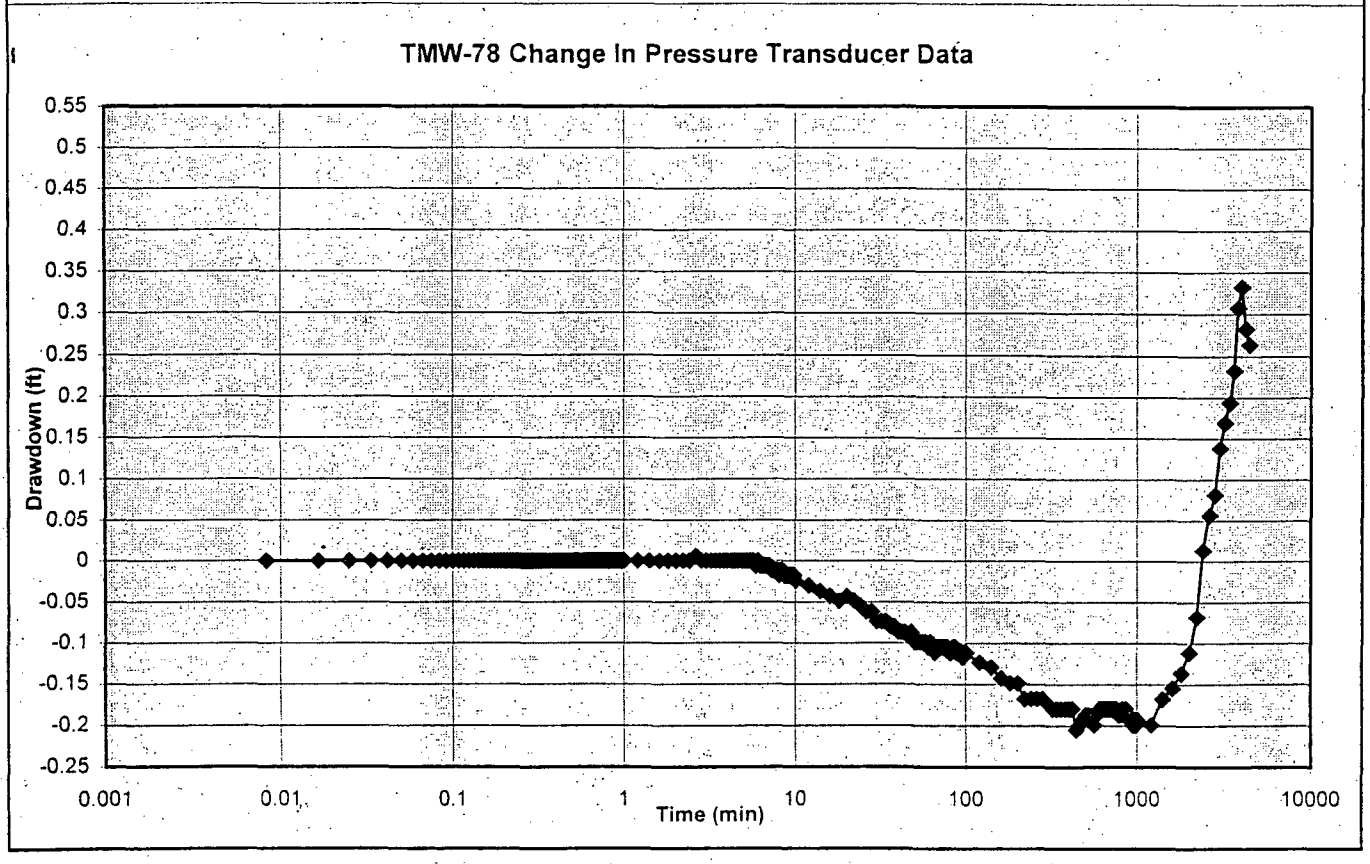
# APPENDIX G

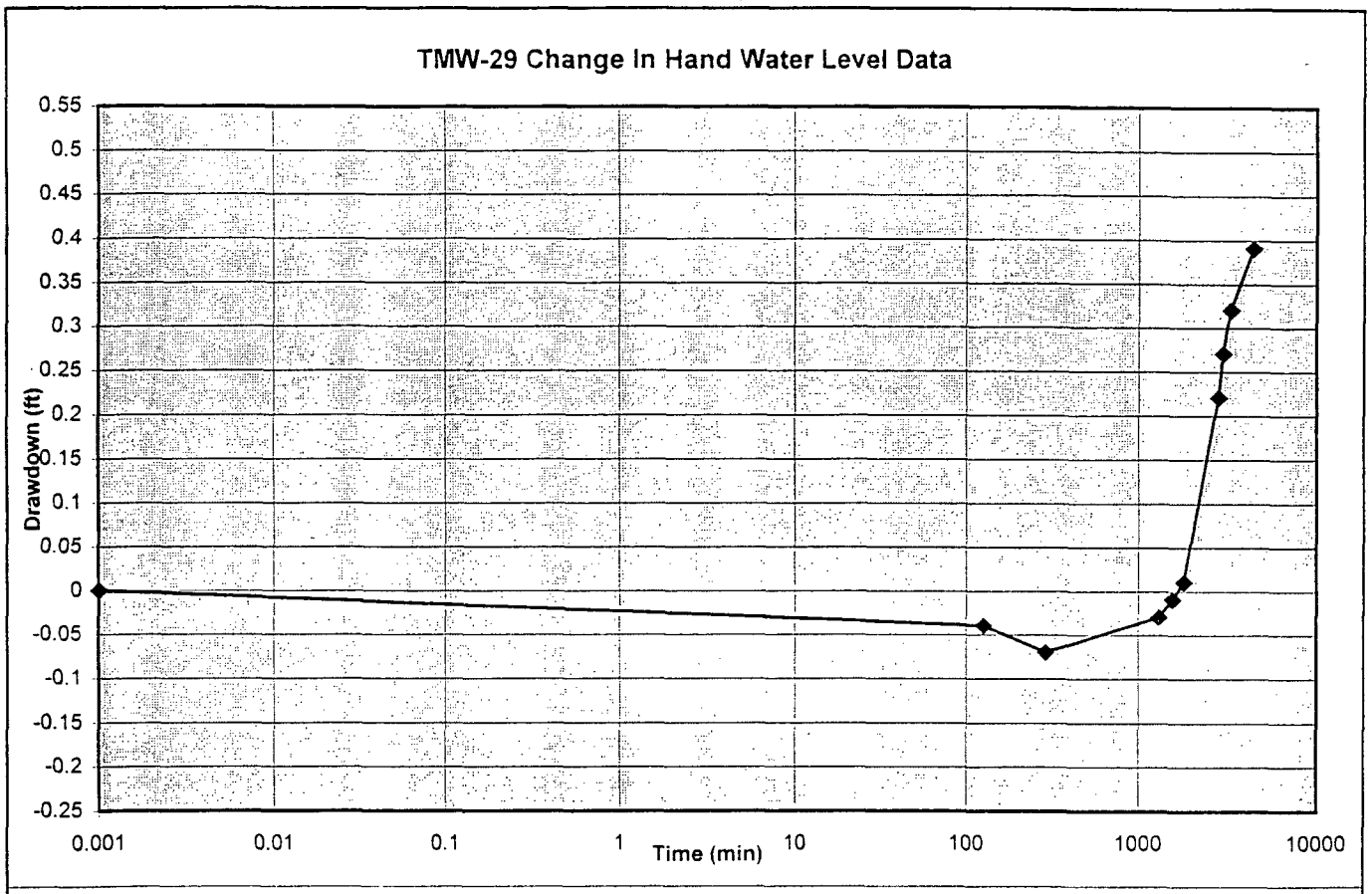
# GEOPHYSICAL WELL LOGS

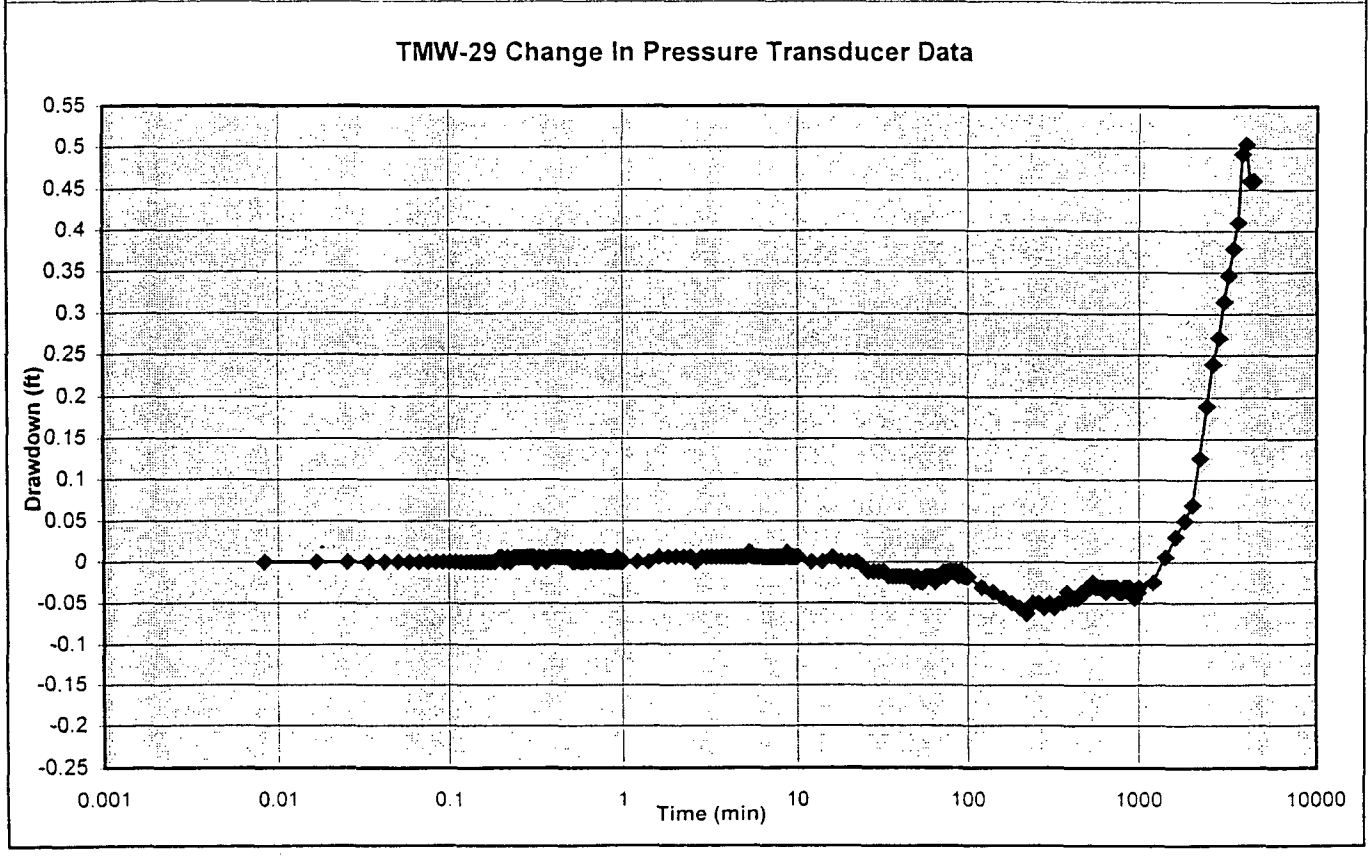

TMW-16 Change In Hand Water Level Data
Drawdown (ft)
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

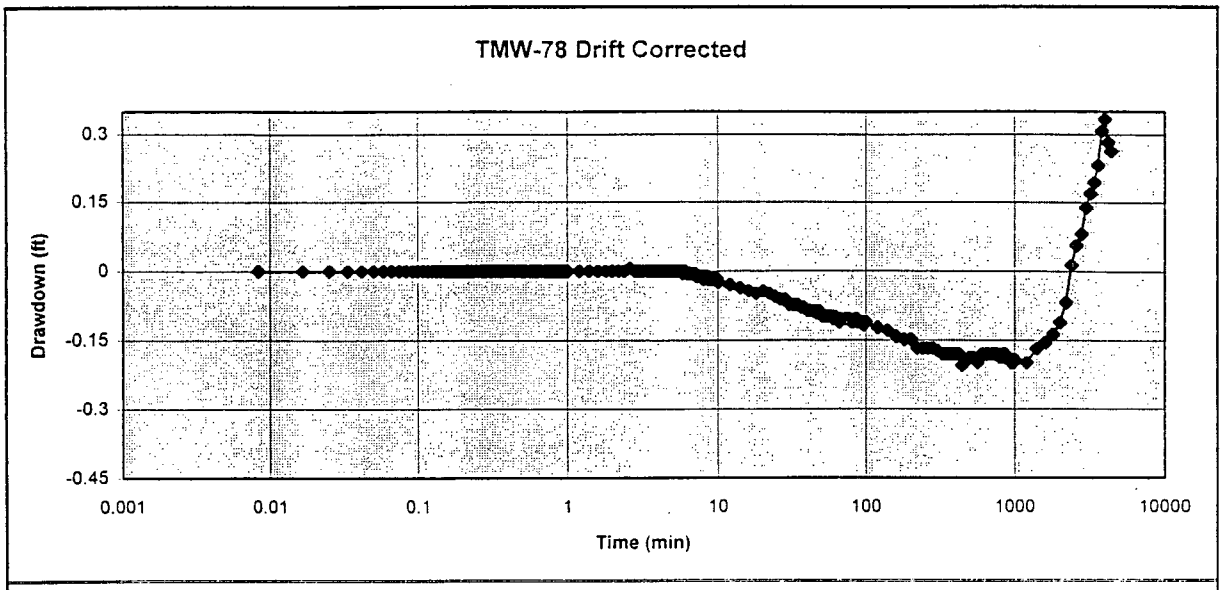

TMW-16 Change In Pressure Transducer Data
Drawdown (ft)
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

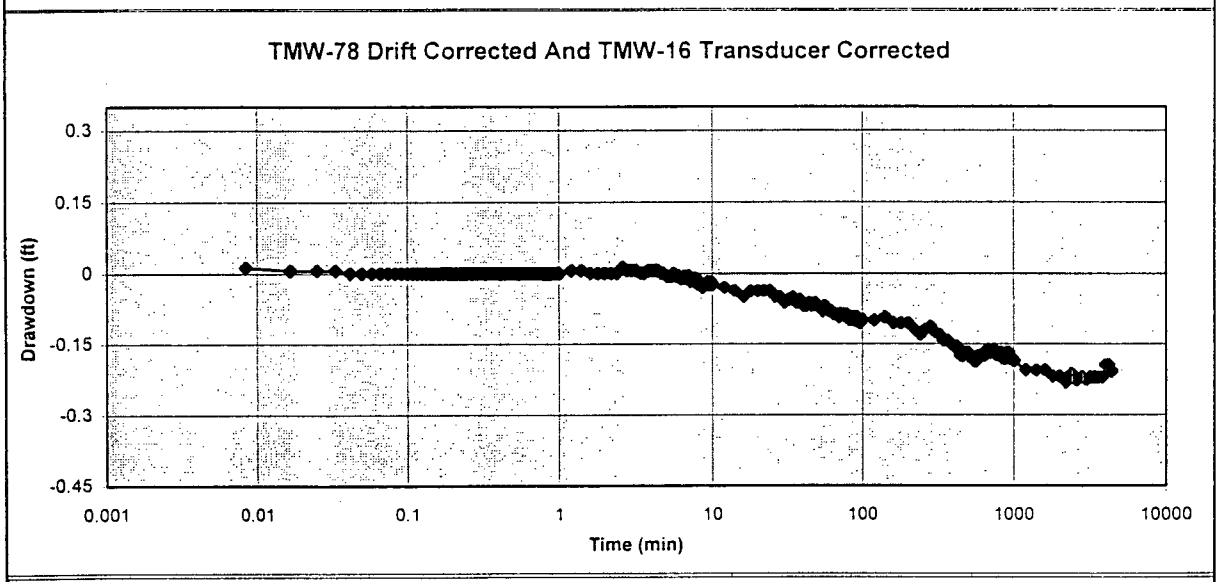

TMW-78 Change In Hand Water Level Data
Drawdown (ft)
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

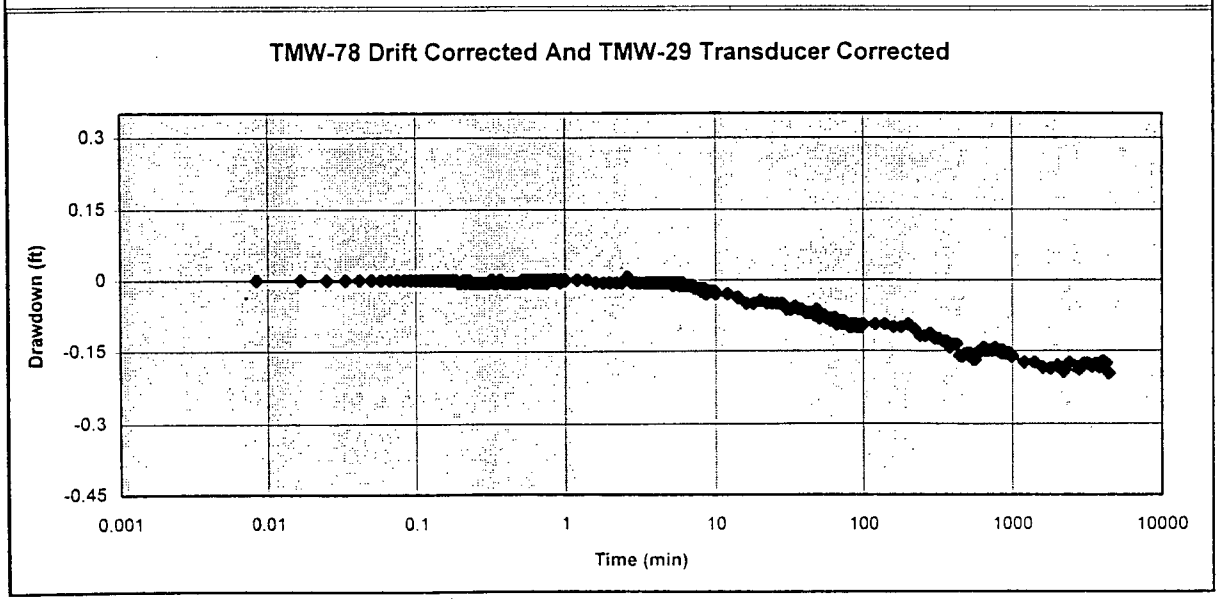

TMW-78 Change In Pressure Transducer Data
Drawdown (ft)
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

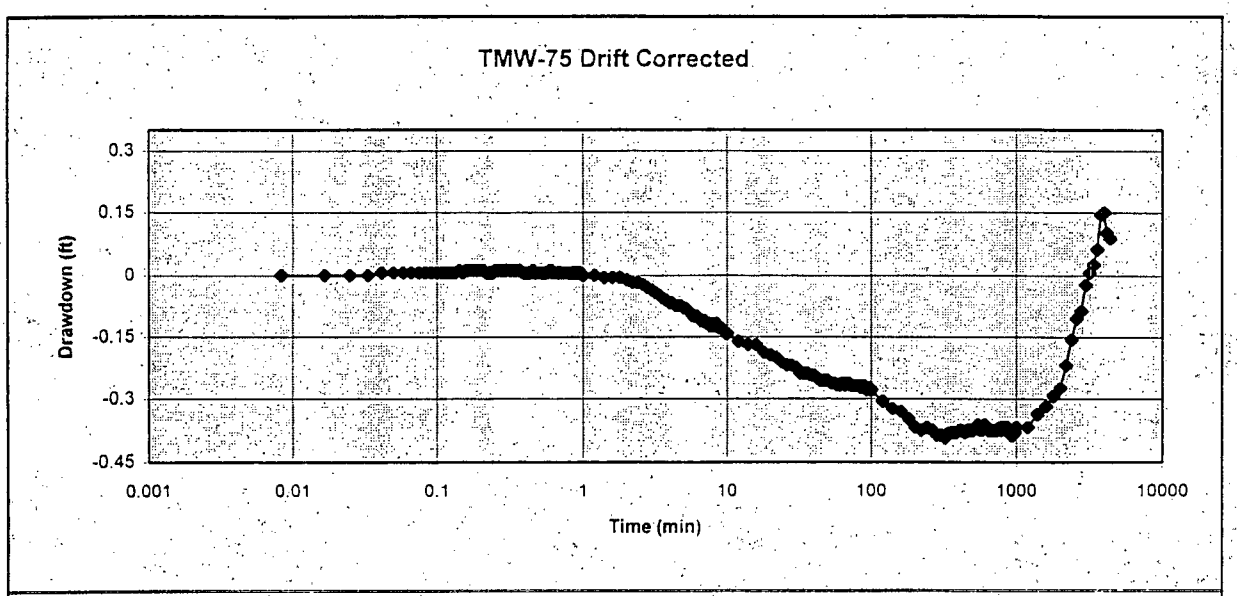

TMW-29 Change In Hand Water Level Data
Drawdown (ft)
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

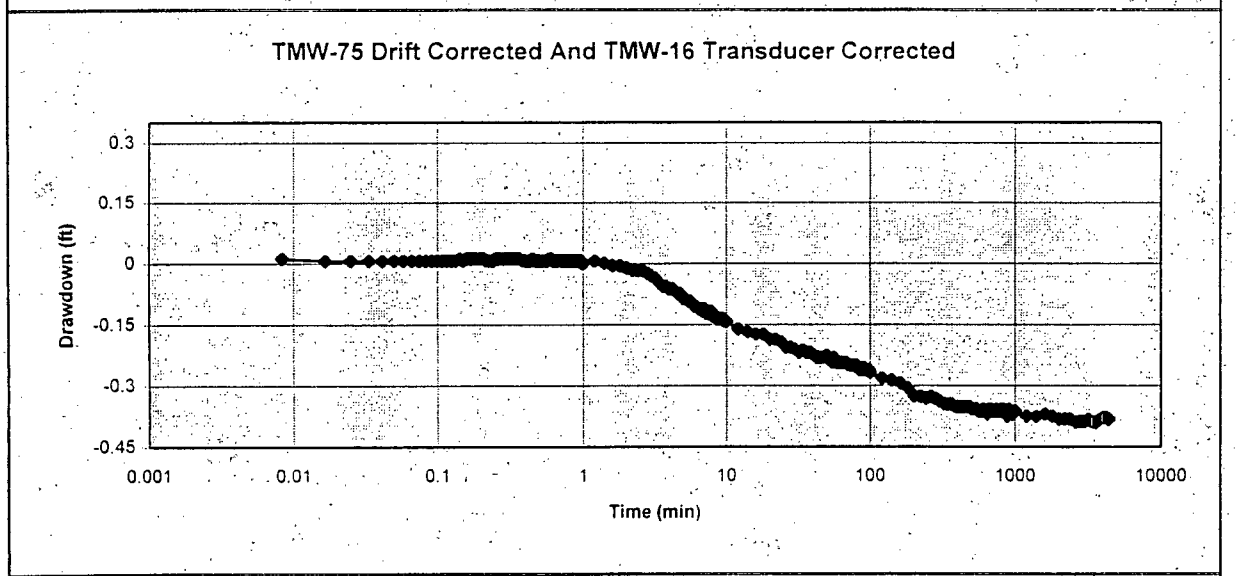

TMW-29 Change In Pressure Transducer Data
Drawdown (ft)
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

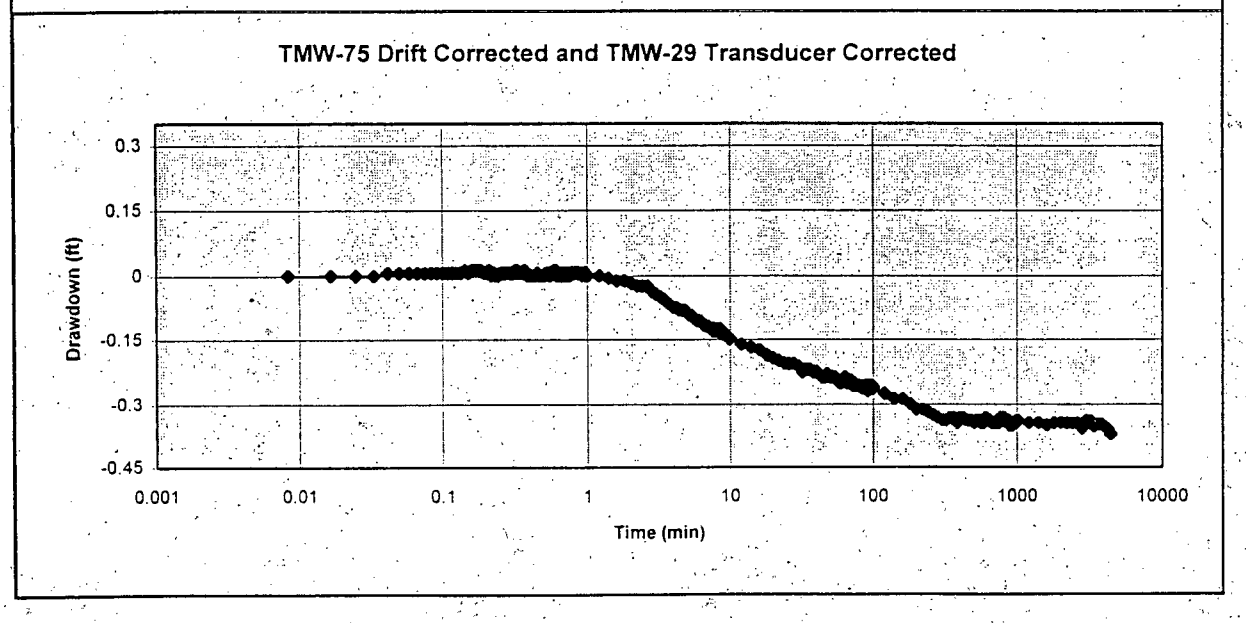

TMW-78 Drift Corrected
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

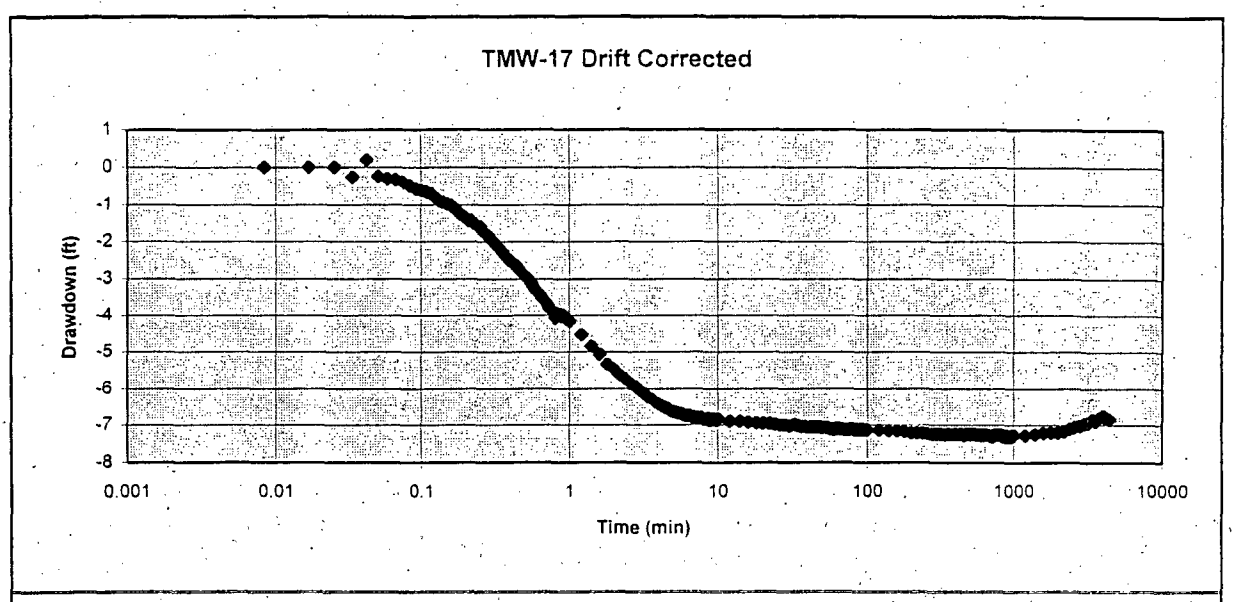

TMW-78 Drift Corrected And TMW-16 Transducer Corrected
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

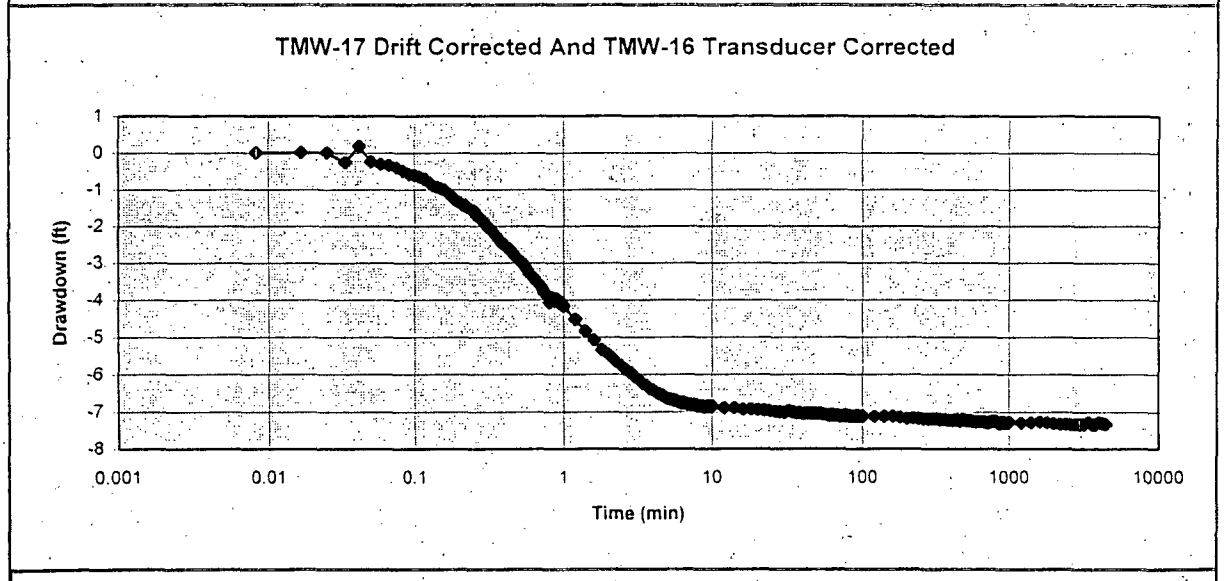

TMW-78 Drift Corrected And TMW-29 Transducer Corrected
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

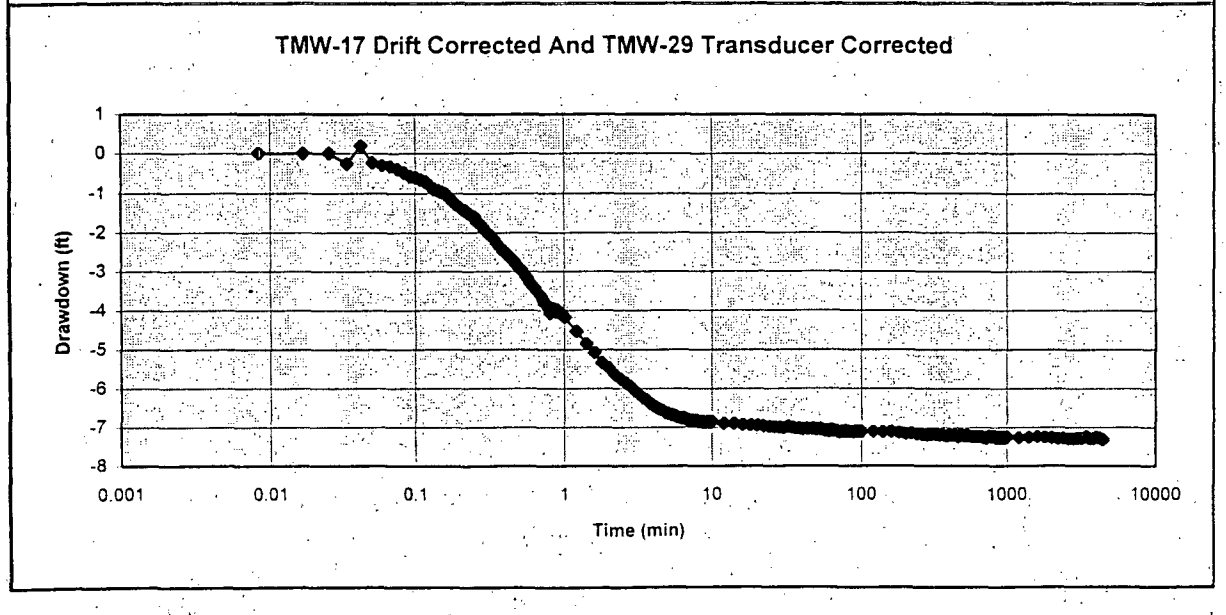

TMW-75 Drift Corrected
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)


TMW-75 Drift Corrected And TMW-16 Transducer Corrected
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)


TMW-75 Drift Corrected and TMW-29 Transducer Corrected
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

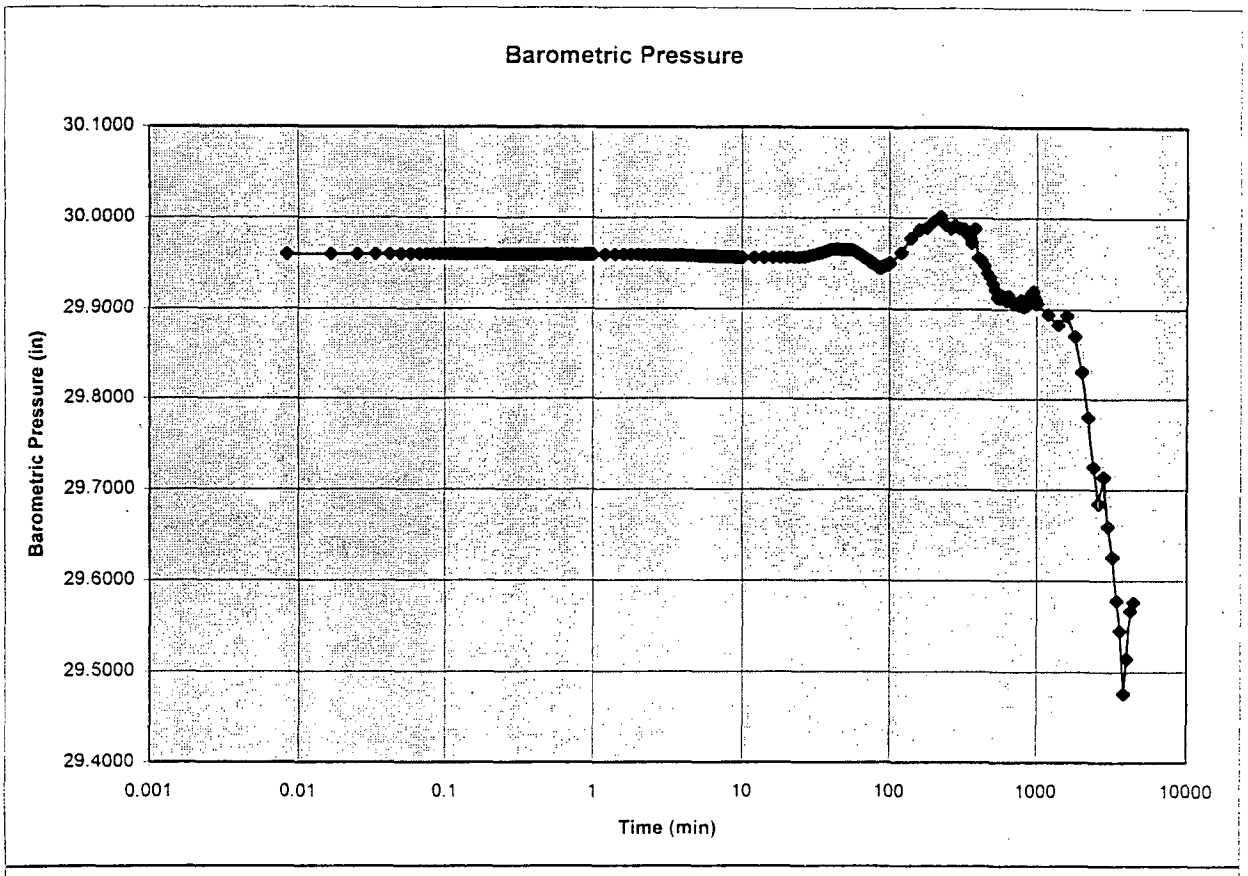

TMW-17 Drift Corrected
Drawdown (ft)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

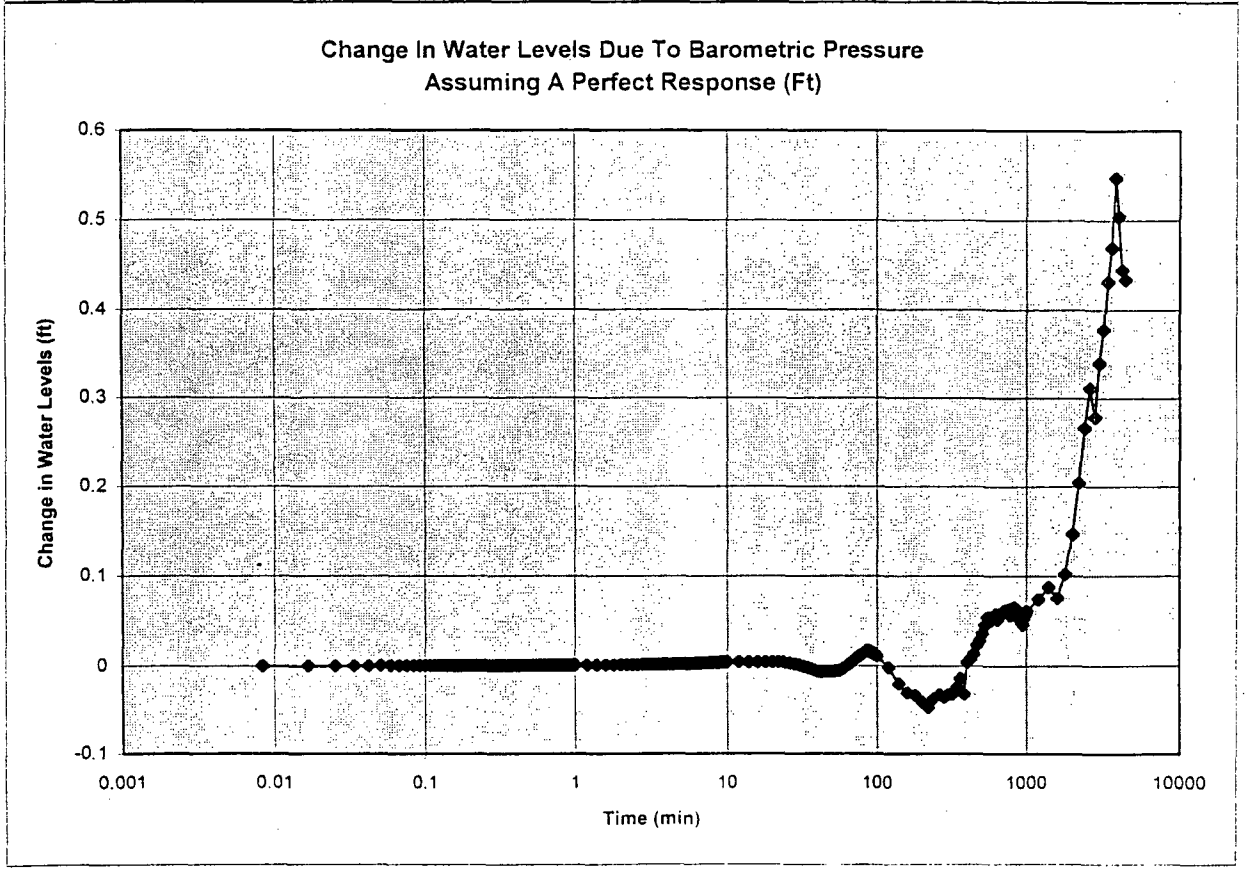

TMW-17 Drift Corrected And TMW-16 Transducer Corrected
Drawdown (ft)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

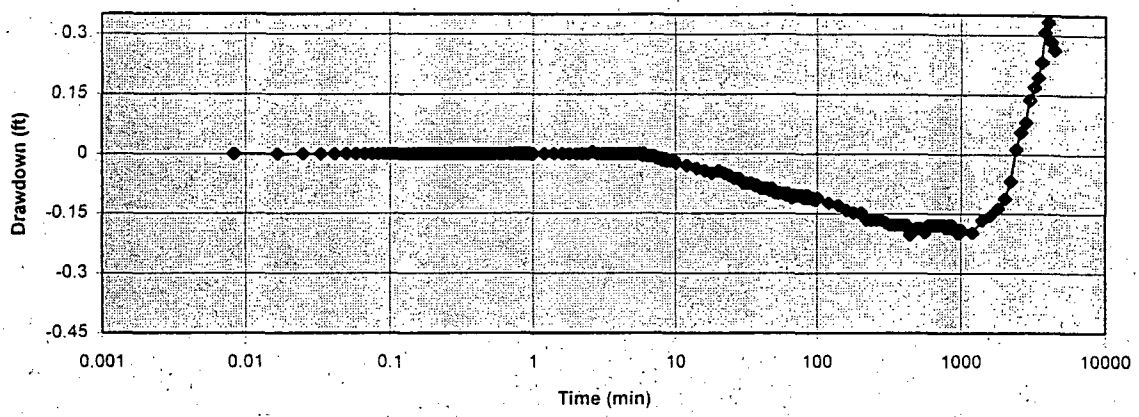

TMW-17 Drift Corrected And TMW-29 Transducer Corrected
Drawdown (ft)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

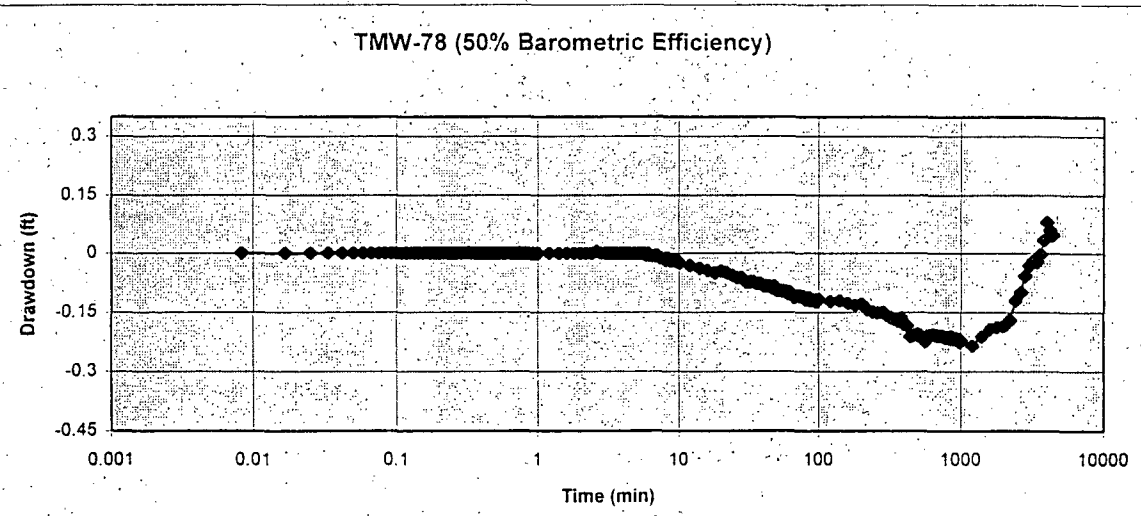
# APPENDIX H

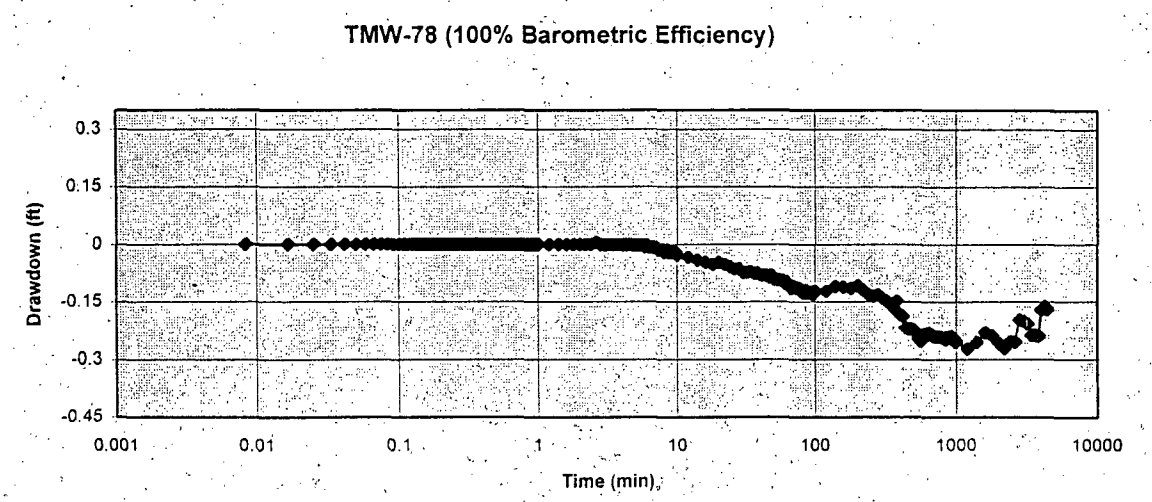
# BAROMETRIC PRESSURE CORRECTED DATA

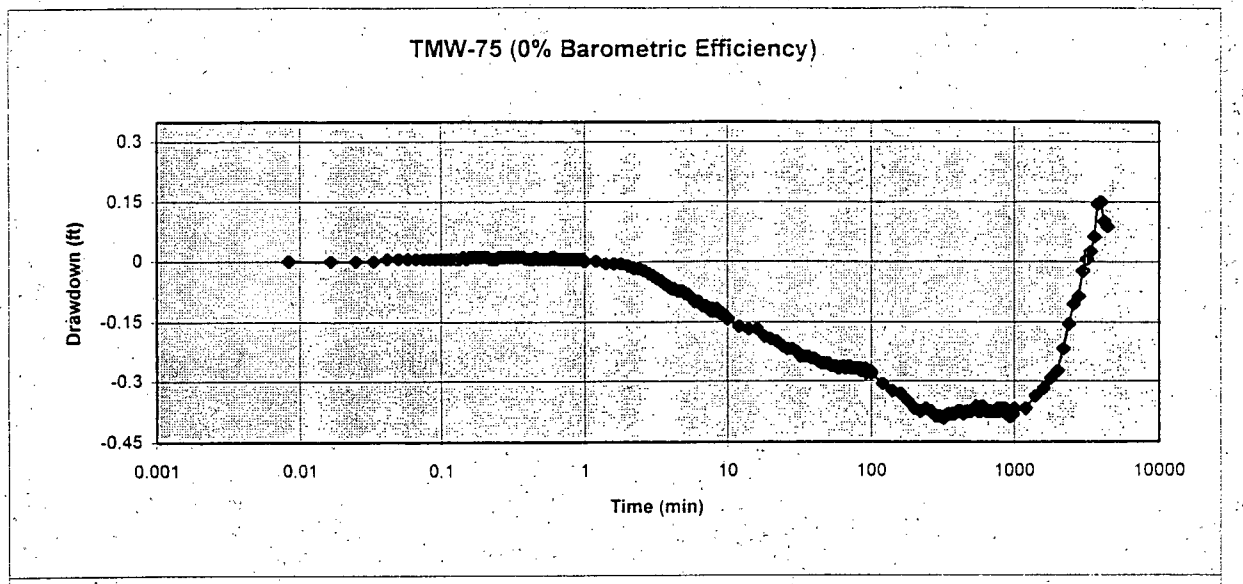

Barometric Pressure
30.1000
30.0000
29.9000
29.8000
29.7000
29.6000
29.5000
29.4000
Barometric Pressure (in)
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

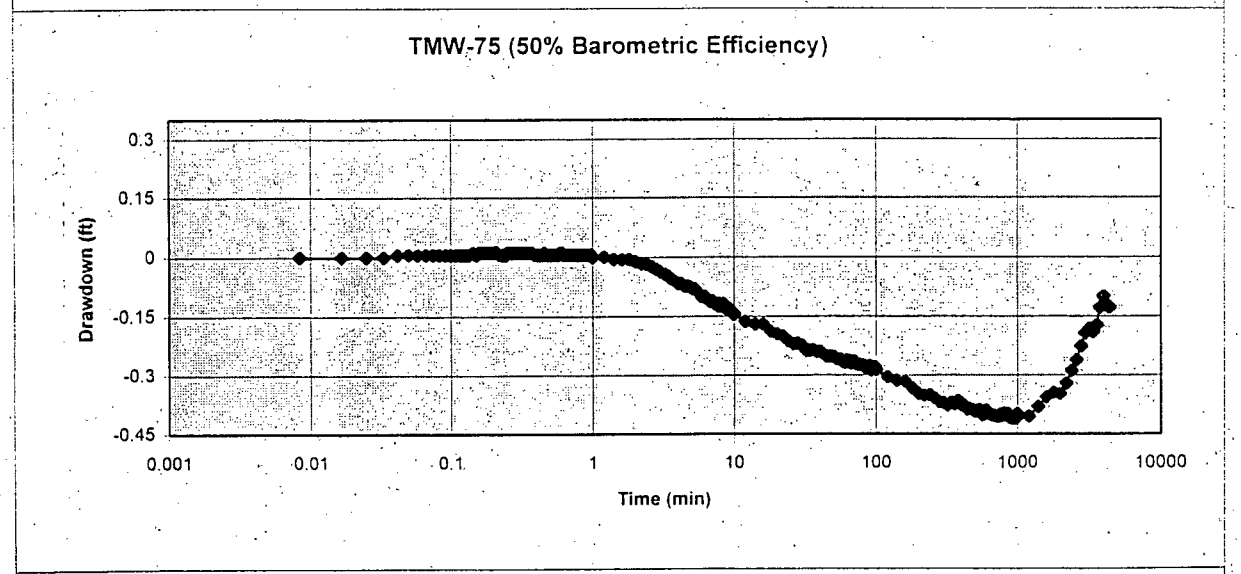

Change In Water Levels Due To Barometric Pressure
Assuming A Perfect Response (Ft)
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
Change in Water Levels (ft)
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

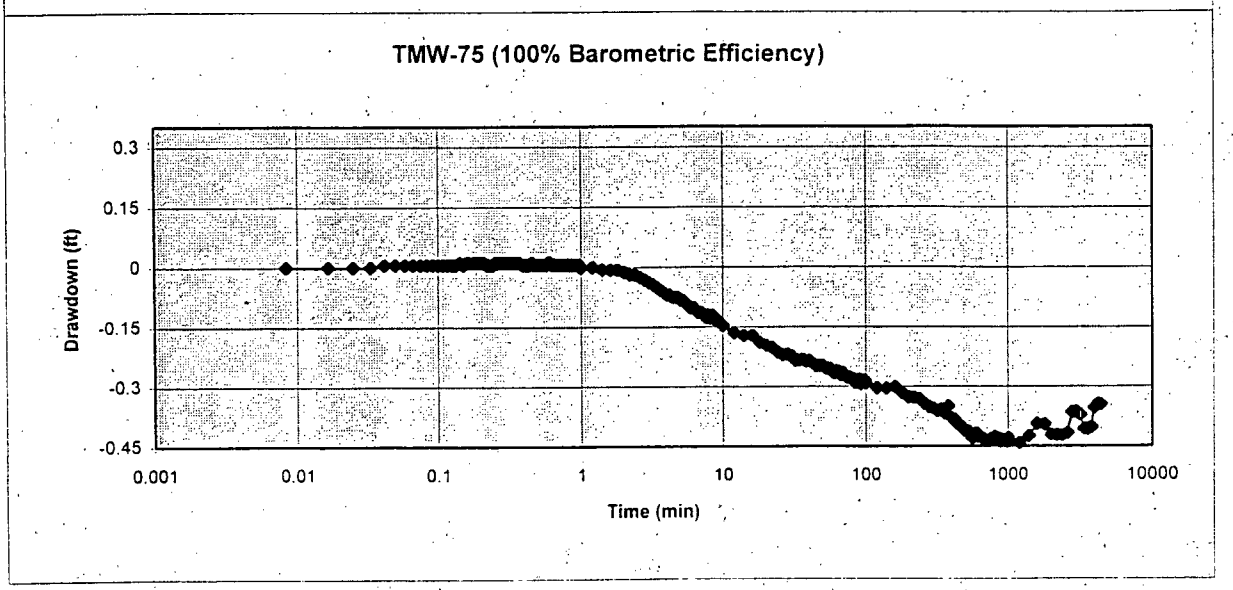

TMW-78 (0% Barometric Efficiency)
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

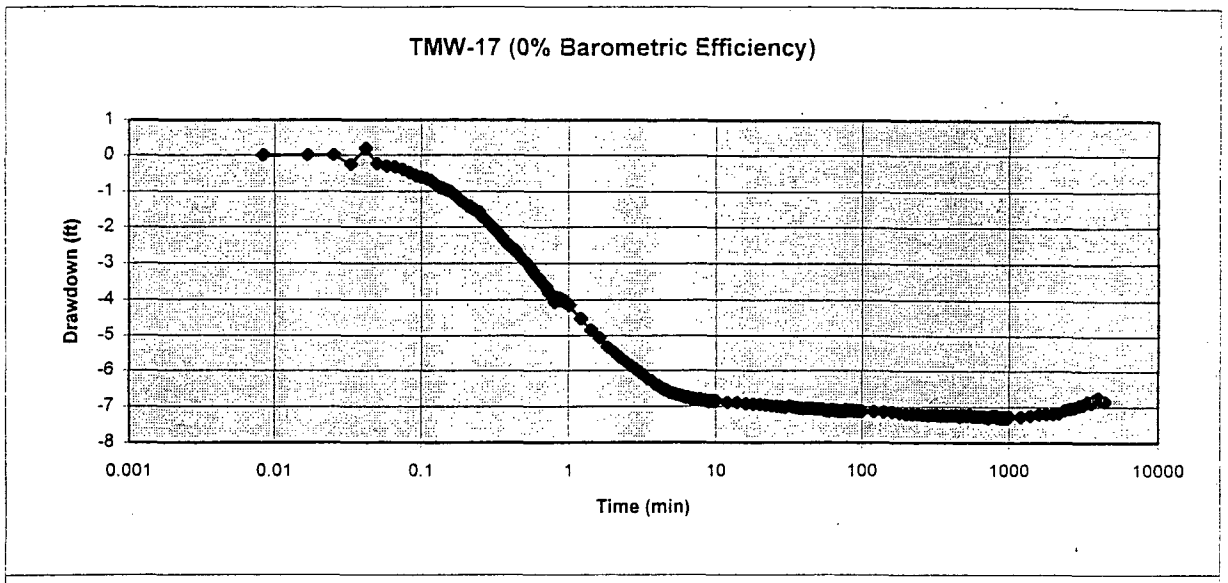

TMW-78 (50% Barometric Efficiency)
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

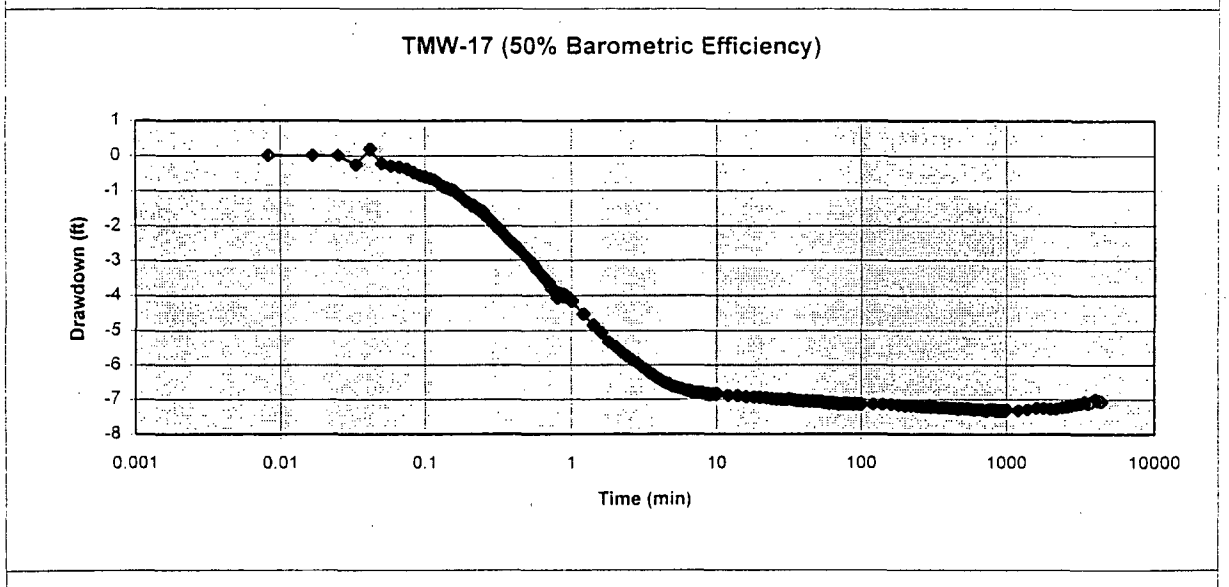

TMW-78 (100% Barometric Efficiency)
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)

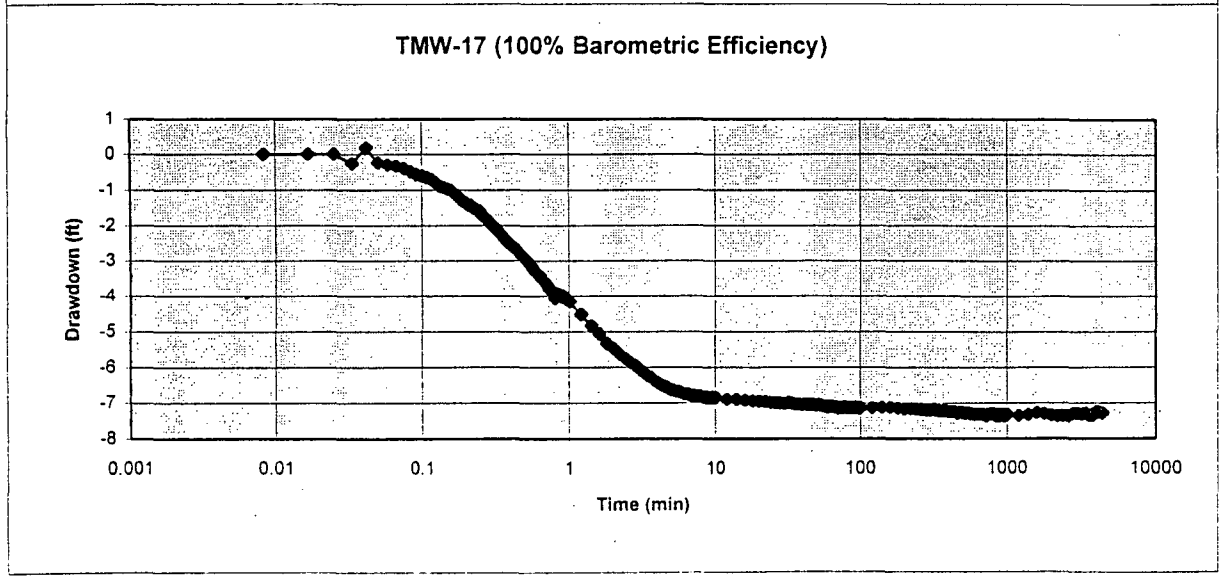

TMW-75 (0% Barometric Efficiency)
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)


TMW-75 (50% Barometric Efficiency)
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)


TMW-75 (100% Barometric Efficiency)
Drawdown (ft)
0.3
0.15
0
-0.15
-0.3
-0.45
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)


TMW-17 (0% Barometric Efficiency)
Drawdown (ft)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)


TMW-17 (50% Barometric Efficiency)
Drawdown (ft)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)


TMW-17 (100% Barometric Efficiency)
Drawdown (ft)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0.001
0.01
0.1
1
10
100
1000
10000
Time (min)