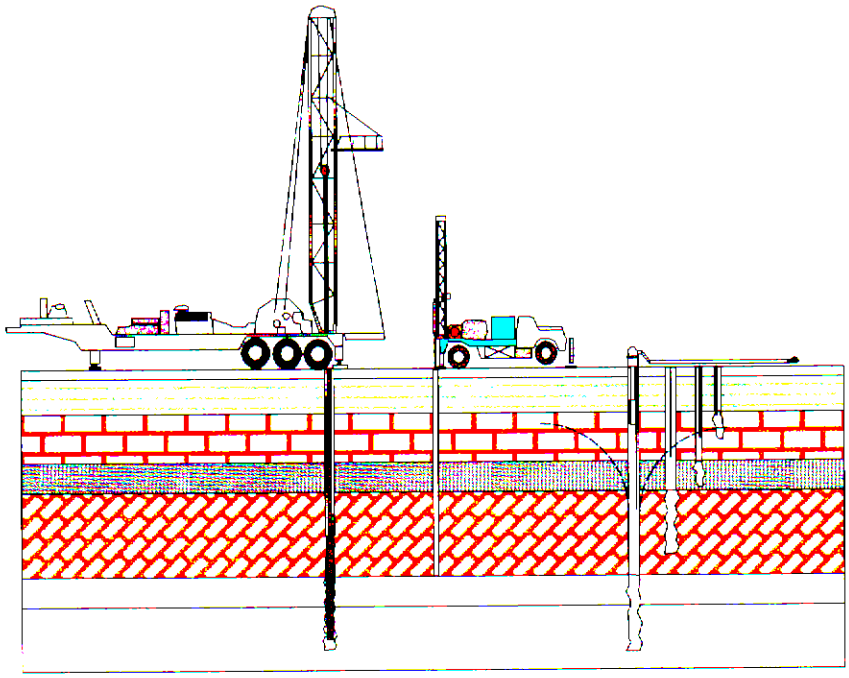
ROMP 13 TIPPEN BAY

MONITOR WELL SITE
DE SOTO COUNTY, FLORIDA

PHASE THREE

AQUIFER PERFORMANCE TESTING



Geohydrologic Data Section
Resource Data Department
Southwest Florida Water Management District
February 1999

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February 1999

The geological evaluations and interpretations contained in the *ROMP 13 Exploratory Drilling and Monitor Well Construction Report* have been prepared by or approved by a certified Professional Geologist in the State of Florida, in accordance with Chapter 492, Florida Statutes.

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Date: 2/4/1999

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MONITOR WELL SITE
DE SOTO COUNTY, FLORIDA

PHASE THREE

AQUIFER PERFORMANCE TESTING

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February 1999

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

The Regional Observation and Monitor-Well Program (ROMP) 13 (WRAP S-4) Tippen Bay well site is one of six well sites constructed for the Southern Water Resource Assessment Project (SWRAP). The SWRAP is a long-term study of the groundwater systems in DeSoto, Hardee, and portions of Charlotte, Polk, and Sarasota Counties (Figure 1).

The ROMP 13 well site was obtained by the Southwest Florida Water Management District (SWFWMD) in November 1993 for construction of a multiple well monitor site. Drilling, testing, and monitor well construction at ROMP 13 was planned and executed in three phases. The data collected are presented in three separate reports: *Phase 1 - Core Drilling and Testing* (Peterman, 1997), *Phase 2 - Exploratory Drilling and Monitor Well Construction* (Baldini, 1998), and this report, *Phase Three - Aquifer Performance Testing.*

Phase one, exploratory coring from land surface to 1,544 feet below land surface (bls), began in January 1994 and was completed in June 1994. Phase two, deep exploratory drilling (below 1,544 feet bls), testing and monitor well construction was initiated on November 27, 1995. The exploratory drilling and testing was completed on June 27, 1996 and monitor well construction was completed in August 1996. Phase three, aquifer performance testing, began in December 1996 and was completed in August 1997. This report, *Phase Three - Aquifer Performance Testing*, presents the hydraulic data collected during the aquifer performance testing.

2.0 SITE LOCATION

ROMP 13 (WRAP S-4) Tippen Bay is located in DeSoto County, approximately 20 miles southeast of Arcadia (Figure 2). The site is located on property obtained from Bob Paul, Inc., in the northeast quarter of Section 21, Township 39 South, Range 27 East at latitude 27° 04' 17" north, longitude 81° 36' 57" west (Figure 3). Land surface elevation at the well site is approximately 60 feet above the National Geodetic Vertical Datum of 1929 (NGVD).

3.0 AQUIFER PERFORMANCE TESTING METHODOLOGY

Aquifer performance tests (APT's) are conducted to help determine the hydraulic properties of an aquifer. Three constant-rate pump tests and one slug test were performed at the ROMP 13 Tippen Bay well-site in order to establish the transmissivity, horizontal hydraulic conductivity, and storativity of the aquifers.

Hydraulic conductivity is a permeability coefficient that describes how easily a fluid can pass through a porous medium. It is dependent upon both the fluid properties (density and viscosity) and the properties of the porous medium (pore aperture diameter, number of pores, and pore interconnectedness). Transmissivity is calculated by multiplying aquifer conductivity by the thickness of the aquifer. It is a measure of the rate at which water is transmitted through an aquifer or a confining bed under a unit hydraulic gradient. Storativity is the volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head and is dimensionless (Fetter, 1994).

During a constant-rate pump test the aquifer being tested is pumped for several days while pressure transducers record the water level drawdown in the monitor wells and the observation wells on a datalogger. After the water level reaches a state of equilibrium, that is, there is no more drawdown with time, the pump is shut off and the recovery is recorded on the datalogger.

A slug test is performed by lowering a device called a "slug" into the well and recording the water level changes that occur as a result of the water level displacement. The slug is then removed and the water level changes are recorded as the system recovers to its natural state.

The data from each aquifer test at the ROMP 13 site is then analyzed using Waterloo Hydrogeologic Inc., AquiferTest® software. The methods used to analyze the data and their governing equations are discussed below.

3.1 The Theis Method (Confined Aquifer)

Theis (1935) developed a method for determining the hydraulic conductivity, transmissivity, and storativity for a confined aquifer. The method is based on an equation known as the Theis equation derived from solving the non-equilibrium flow equation in radial coordinates as follows:

$$s(r,t) = \frac{Q}{4\pi T}\int_{u}^{\infty}\frac{e^{-u}du}{u}$$

where,

$$u = \frac{r^2 S}{4Tt}$$

and $s = h_o - h$ (drawdown)

Q = pumping rate, in gpm

T = coefficient of transmissivity of the aquifer, in gpd/ft

r = distance, in ft, from the center of a pumped well to a point where the drawdown is measured

S = coefficient of storage (dimensionless)

t = time since pumping started, in days

The integral above is known as the well function of u (W(u)) and can be represented by an infinite Taylor series. The equation then becomes:

$$s = \frac{Q}{4\pi T}W(u)$$

A log/log plot of W(u) along the y axis versus 1/u on the x axis is known as the Theis curve. The data recorded in the field is plotted on the same log/log scale with time (t) along the horizontal axis and drawdown (s) along the vertical axis. The analysis is performed by matching the field data to the type curve and obtaining values for W(u), 1/u, drawdown, and time. These values are then used to solve the above equations for transmissivity and storativity.

The Theis method assumes:

1. The aquifer is confined and has an apparent infinite extent
2. The aquifer is homogeneous, isotropic, of uniform thickness over the area influenced by pumping
3. The piezometric surface was horizontal prior to pumping

4. The well is fully penetrating
5. Water removed from storage is discharged instantaneously with decline in head
6. The well diameter is small so that well storage is negligible

3.2 Cooper and Jacob Method (Confined Aquifer)

Cooper and Jacob (1946) developed a method for determining transmissivity, storativity and hydraulic conductivity of an aquifer. This method is a simplification of the Theis method and does not require type-curve matching. The equation is as follows:

$$s = \left(\frac{2.3Q}{4\pi T}\right)\log_{10}\left(\frac{2.25Tt}{Sr^2}\right)$$

where $s = h_0 - h$ (drawdown)

Q = well discharge rate

t = time

r = radial distance

S = storativity

T = transmissivity

The equation above plots as a straight line on semi-logarithmic paper. The observed data is plotted with drawdown (s) on the linear y axis and t/r^2 on the logarithmic x axis. The Cooper and Jacob straight line is fitted to the observed data plot and transmissivity and storativity are calculated as follows:

$$T = \frac{2.3Q}{4\pi\Delta s}$$

$$S = \frac{2.25Tt_0}{r^2}$$

where Δs = the change in drawdown over one logarithmic cycle

t_0/r^2 = the value where the straight line fit of the data crosses the t/r^2 axis

The Cooper and Jacob method assumes:

1. The aquifer is confined and has an apparent infinite extent
2. The aquifer is homogeneous, isotropic, of uniform thickness over the area influenced by pumping
3. The piezometric surface was horizontal prior to pumping
4. The well is pumped at a constant rate
5. The well is fully penetrating

6. Water removed from storage is discharged instantaneously with decline in head
7. The well diameter is so small that well storage is negligible
8. The values of u are small (u<0.01)

3.3 Hantush Method (leaky, no storage in the aquitard)

A confined aquifer may be overlain or underlain by less permeable layers that can leak water into the aquifer that is being pumped. Hantush (1955) developed a method for analyzing aquifer hydraulic properties for a leaky aquifer assuming no storage in the aquitard. The solution given by Hantush and Jacob is given by:

$$s = \frac{Q}{4\pi T}\int_u^\infty \frac{1}{y}\exp\left(-y - \frac{r^2}{L^2 y}\right)dy$$

which can be simplified to,

$$s = \frac{Q}{4\pi T}W\left(u, \frac{r}{L}\right)$$

where,

$$u = \frac{r^2 S}{4\pi T}$$

A series of type curves are plotted on a log/log scale with W(u, r/L) on the y axis and 1/u on the x axis. The field data is plotted as t or t/r^2 on the x axis and drawdown (s) along the y axis. The field curve is matched to the type curves and a match point is selected. Values of W(u) and 1/u are read from the match point and used to calculate values for transmissivity and storativity.

The Hantush Method assumes:

1. The aquifer is leaky and has an apparent infinite extent
2. The aquifer and the confining layer are homogeneous, isotropic, and of uniform thickness over the area influenced by pumping
3. The piezometric surface was horizontal prior to pumping
4. The well is pumped at a constant rate
5. The well is fully penetrating
6. Flow in the confining layer is vertical
7. Water removed from storage is discharged instantaneously with decline in head
8. The well diameter is small so that well storage is negligible
9. Leakage through the confining layer is vertical and proportional to the drawdown

10. The head in the confining layer and any unpumped aquifers remains constant
11. Storage in the confining layer is negligible

3.4 Bouwer & Rice Slug Test (unconfined or leaky confined aquifer, incompressible, partial penetration)

Bouwer and Rice (1976) developed a method for estimating hydraulic conductivity of the aquifer material using the slug-test. This test is performed by submerging a "slug" into the well thereby instantaneously raising the water level in the well. Water level changes with respect to time are recorded as the system recovers to its initial water level. The equation for hydraulic conductivity is:

$$K = \frac{r^2 \ln(R_{cont} / R)}{2L} \frac{1}{t} \ln\left(\frac{h_o}{h_t}\right)$$

where r = piezometer radius

R = radius measured from center of well to aquifer material

R_{cont} = contributing radial distance over which the difference in head, h_o, is dissipated in the aquifer

L = length of the screen

h_o = head in well at $t_o = 0$

h_t = head in well at $t > t_o$

The Bouwer & Rice method assumes:

1. An unconfined aquifer of apparently infinite extent
2. Homogeneous, isotropic aquifer of uniform thickness
3. Water table is horizontal prior to the test
4. Instantaneous change in head
5. Inertia of water column and non-linear well losses are negligible
6. Fully or partially penetrating well
7. The well storage is not negligible, thus it is taken into account
8. The flow to the well is in a steady state

3.5 Theis and Jacob Recovery Test

Aquifer transmissivity and hydraulic conductivity can me measured from the observed rate of recovery of the water level in a well. The residual drawdown, or water level measured as the well recovers, is a useful tool in determining the hydrogeological properties of the aquifer. The theory is based on the principle of superposition. If an imaginary injection well is superimposed

on the pumped well with the same flow rate, the two flow rates will cancel each other. The residual drawdown can then be expressed as:

$$s' = \frac{Q}{4\pi T} w(u) - W(u')$$

where $u = \frac{r^2 S}{4Tt}$ $\qquad$ $u' = \frac{r^2 S'}{4Tt'}$

and s' = residual drawdown
Q = constant discharge
T = transmissivity
r = distance to the observation well
S = storativity during pumping
S' = storativity during recovery
t = elapsed time from the start of pumping
t' = elapsed time from the end of pumping

When u is sufficiently small ($u<0.01$), the approximation for the W(u) shown previously in the Cooper Jacob method, is used:

$$s' = \frac{Q}{4\pi T}\left(\ln\frac{4Tt}{r^2 S} - \ln\frac{4Tt'}{r^2 S'}\right)$$

When S ans S' are constant and equal and T is constant, the equation becomes:

$$s' = \frac{2.3Q}{4\pi T}\log\left(\frac{t}{t'}\right)$$

The observed recovery data is plotted on semi-logarithmic with s' on the logarithmic y axis and time on the linear x axis as t/t' (total time since pumping began divided by time since pumping ceased). When S and S' are constant, but unequal and T is constant, the straight line fit through the data intercepts the x axis where $s'=0$ and $t/t'=(t/t')_o$. The equation then becomes:

$$0 = \frac{2.3Q}{4\pi T}\left[\left(\log\frac{t}{t'}\right)_o - \log\frac{S}{S'}\right]$$

Since $2.3Q/4\pi T \neq 0$, therefore $\log(t/t')_o - \log(S/S') = 0$, and $(t/t')_o = S/S'$

The Theis and Jacob Recovery Method Assumes:

1. The aquifer is confined and has an apparent infinite extent
2. The aquifer is homogeneous, isotropic, of uniform thickness over the area influenced by pumping
3. The piezometric surface was horizontal prior to pumping
4. The well is pumped at a constant rate
5. The well is fully penetrating
6. Water removed from storage is discharged instantaneously with decline in head
7. The well diameter is small so well storage is negligible
8. The values of u are small ($u<0.01$)
9. The length of pumping and recovery measured is greater than $25r^2/T$

4.0 AQUIFER PERFORMANCE TESTING

Aquifer performance tests were performed on all of the permanent monitor wells, except the Avon Park/Upper Floridan well (MW-5). Table 1 presents the well construction details. The aquifers that were tested include: the surficial aquifer, middle intermediate aquifer system (MIAS), lower intermediate aquifer system (LIAS), and the Suwannee/Upper Floridan aquifer system. Figure 4 depicts the hydrogeology at the ROMP 13 site. The tests were performed from November 1996 to December 1996, except the surficial aquifer slug test, which was conducted on August 7, 1997. The data collected from the APT's were analyzed using Waterloo Hydrogeologic Inc., AquiferTest® software. Each test analysis is presented in Appendix A. Table 2 presents the hydraulic values for each aquifer tested.

4.1 Surficial Aquifer System

A slug test was performed on the surficial aquifer system well on August 7, 1997. Background water levels were not collected prior to the aquifer test. A slug constructed from a 2-inch by 3 foot PVC pipe filled with sand was rapidly lowered into the well resulting in an instantaneous rise in water level. Water levels were recorded in the well until the system recovered to its static state. The slug was then rapidly removed resulting in a new instantaneous drop in water level. The later levels were again recorded as the system recovered to its natural state. Figure 5 depicts the water level displacement curves for the slug-in and slug-out aquifer tests.

The data collected during the slug-in and slug-out phases of the aquifer slug test were analyzed using the *Bouwer & Rice Slug Test Method (unconfined or leaky confined aquifer, incompressible, partial penetration)*. The averaged value of the two tests are as follows:

Hydraulic Conductivity (K_h) = 3.28 x 10^0 feet/day

4.2 Middle Permeable Zone Intermediate Aquifer

The APT for the middle permeable zone of the intermediate aquifer was conducted from December 9, 1996 to December 11, 1996. Water levels were recorded prior to the test in all of the permanent monitor wells from December 5, 1996 to December 9, 1996. Figure 6 presents hydrographs of the monitor wells prior to the APT, during the drawdown, and during the recovery of the middle permeable zone of the intermediate aquifer system. The 8-inch diameter middle permeable zone IAS monitor well (MW-2) was pumped with a 2 HP 4-inch high capacity submersible pump at 46 gpm for 49.67 hours. The pump was set at approximately 142 feet below the top of the casing. The water was discharged at the surface through 200 feet of 2-inch flexible hose. During drawdown there were no significant water level changes in any of the other monitor wells, indicating that the aquifers are not hydraulically connected in the area of ROMP 13.

Figure 7 presents the drawdown and recovery curves of the 8-inch pumped well and the 2-inch observation well. Maximum drawdown in the pumped well was 52 feet and maximum drawdown in the observation well (located 160 feet from the pumped well) was 13 feet.

The drawdown curve of the 2-inch observation well was analyzed using the *Theis Method (confined aquifer)*, and the *Cooper and Jacob Method (confined aquifer)*. The recovery curves for the 2-inch observation well and the 8-inch pumped well were analyzed using the *Theis and Jacob Recovery Test Method (confined aquifer)*. The average values for transmissivity, storativity and hydraulic conductivity are:

Transmissivity (T) = 2.58 x 10^2 feet^2/day

Storativity (S) = 7.63 x 10^{-5}

Horizontal Hydraulic Conductivity (K_h) = 1.91 x 10^0 feet/day

4.3 Lower Permeable Zone Intermediate Aquifer

The APT for lower permeable zone of the IAS was conducted from December 2, 1996 to December 4, 1996. Figure 8 presents hydrographs of the water levels in the monitor wells prior to the APT, during drawdown, and during recovery. Water levels were recorded on all monitor wells prior to the APT from November 25, 1996 to December 2, 1996. The 8-inch diameter lower permeable zone IAS monitor well (MW-3) was pumped with a 10 HP 6-inch submersible turbine pump at 230 gpm for 51.67 hours. The noticeable drawdown effects in the Suwannee well (Figure 8) occurred when the landowner was testing the citrus irrigation system. Other than the drawdown in the Suwannee well due to pumping near the site, there was no significant drawdown in any of the other wells indicating that the aquifer is well confined.

Figure 9 presents the drawdown and recovery curves for the 8-inch pumped well and the 2-inch observation well. The maximum drawdown in the pumped well was 47.9 feet and the maximum drawdown in the observation well (located 146 feet from the pumped well) was 24.9 feet.

The drawdown curve of the 2-inch observation well was analyzed using the *Theis Method (confined aquifer),* and the *Cooper and Jacob Method (confined aquifer)*. The recovery curves of the 2-inch observation well and the 8-inch pumped well were analyzed using the *Theis and Jacob Recovery test (confined aquifer)*. The average values for transmissivity, storativity, and hydraulic conductivity are:

Transmissivity (T) = 7.66 x 10^2 feet^2/day

Storativity (S) = 1.19 x 10^{-4}

Horizontal Hydraulic Conductivity (K_h) = 9.82 x 10^0 feet/day

4.4 Suwannee/Upper Floridan Aquifer

The APT for the Suwannee/Upper Floridan aquifer was conducted form November 5, 1996 to November 7, 1996. The Suwannee/Upper Floridan well was pumped with 40 HP submersible turbine pump at 480 gpm for 61.67 hours. The pumped interval (674 feet to 786 feet bls) includes the Suwannee limestone and a small portion of the Hawthorn group directly overlying the Suwannee Limestone. Figure 10 presents the drawdown and recovery curves for the Suwannee APT. Maximum drawdown was approximately 141 feet in the pumped well and approximately 18 feet in the observation well (located 178 feet from the pumped well).

Figure 11 presents the hydrographs for all of the monitor wells, except the pumped well, during the drawdown phase and during the recovery phase. The background water levels recorded prior to the Suwannee APT are not available. The water levels in the middle permeable zone and lower permeable zone of the IAS and the Avon Park/Upper Floridan wells decreased approximately 1 foot. This indicates that there is some hydraulic connection between the aquifers located directly above and below the Suwannee limestone aquifer. The rise in water level in the surficial aquifer appears to be surficial loading during the pumping of the Suwannee well.

The drawdown curve of the 2-inch Suwannee observation well was analyzed using the *Cooper and Jacob Distance-Time-Drawdown Method (confined aquifer)*, and the *Hantush Method (leaky, no aquitard storage)*. The recovery curves for the 2-inch observation well and the 6-inch pumped well were analyzed using the *Theis and Jacob Recovery Method (confined aquifer)*. The average values for transmissivity, storativity and hydraulic conductivity are:

Transmissivity (T) = 2.35×10^{3} feet^2/day
Storativity (S) = 8.60×10^{-2}
Horizontal Hydraulic Conductivity (K_h) = 2.10×10^{1} feet/day

5.0 SUMMARY

The final phase of the ROMP 13 well-site study was aquifer performance testing. Constant-rate pump tests were performed on the middle permeable zone of the IAS, the lower permeable zone of the IAS, and the Suwannee/Upper Floridan aquifer system. Several methods were used to analyze the data from the pump tests: the Theis method, Cooper and Jacob method, Hantush method, and Theis & Jacob method. A slug test was conducted on the surficial aquifer system and the data was analyzed using the Bouwer and Rice method.

The results of the APT's indicate that the most productive zone is the 112 feet thick Suwannee/Upper Floridan aquifer, with an average transmissivity (T) of 2,350 $feet^2$/day and an average horizontal hydraulic conductivity (K_h) of 21.0 feet/day. The 78 feet thick lower permeable zone of the IAS was much less productive than the Suwannee/Upper Floridan Zone with an average transmissivity (T) of 766 $feet^2$/day and an average horizontal hydraulic conductivity of 9.82 feet/day. The 135 feet thick middle permeable zone of the IAS was less productive than the lower IAS with an average transmissivity (T) of 258 $feet^2$/day and an average horizontal hydraulic conductivity of 1.91 feet/day. The 19 feet thick surficial aquifer had an average horizontal hydraulic conductivity of 3.28 feet/day, which is slightly higher than the middle IAS.

6.0 REFERENCES

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FIGURES

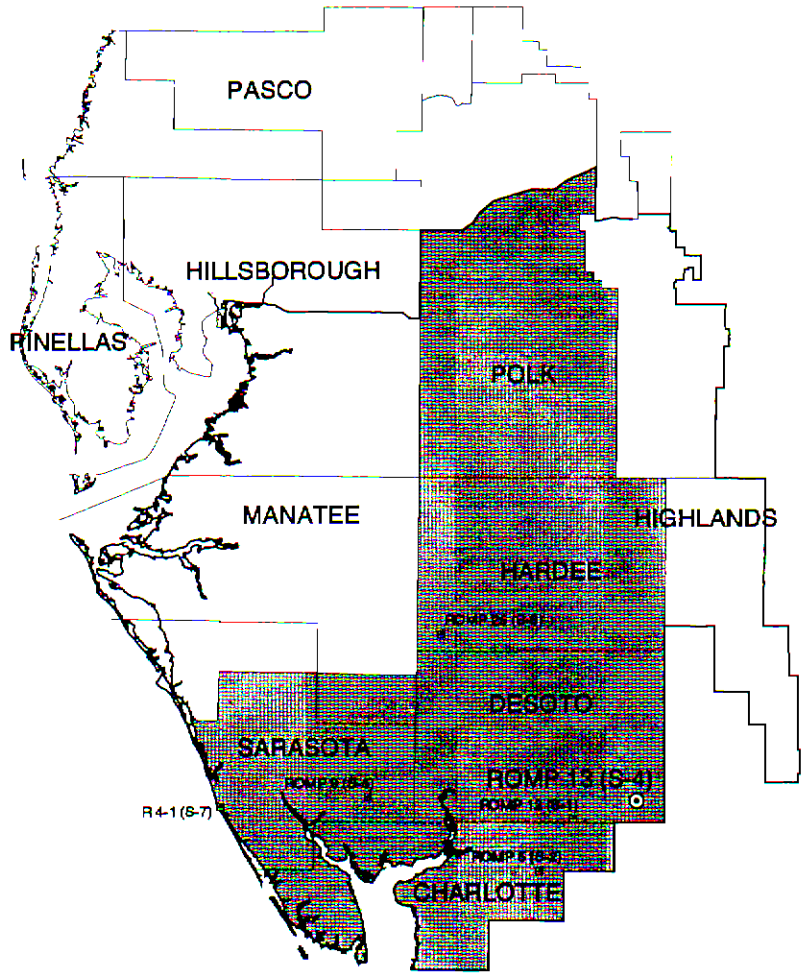
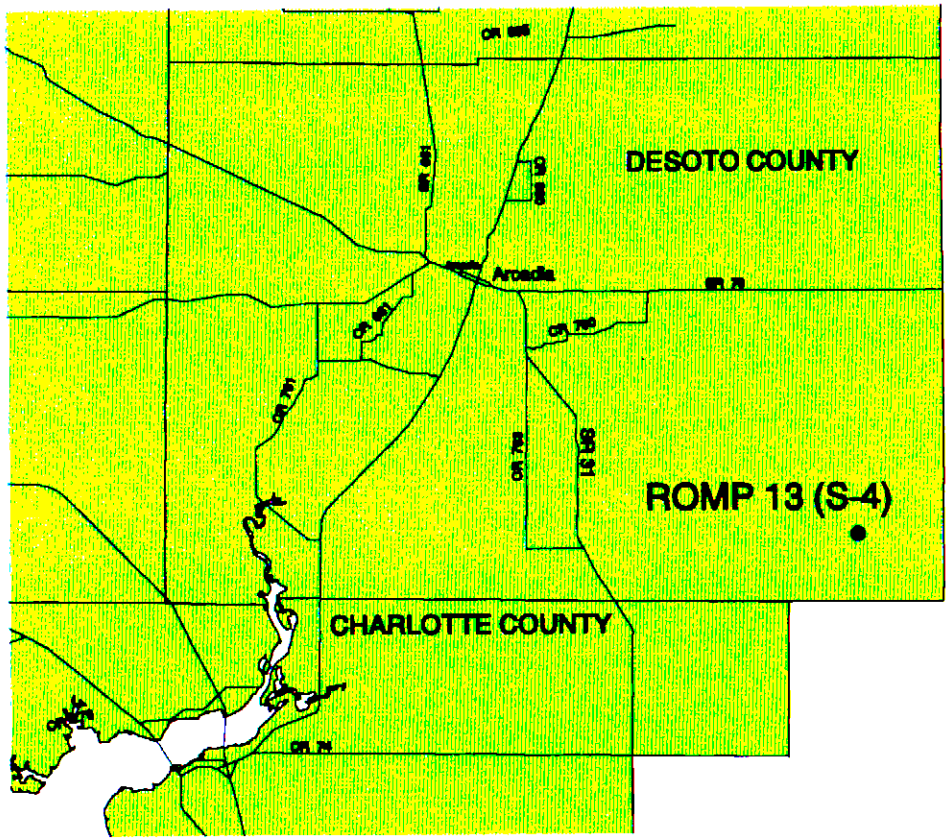
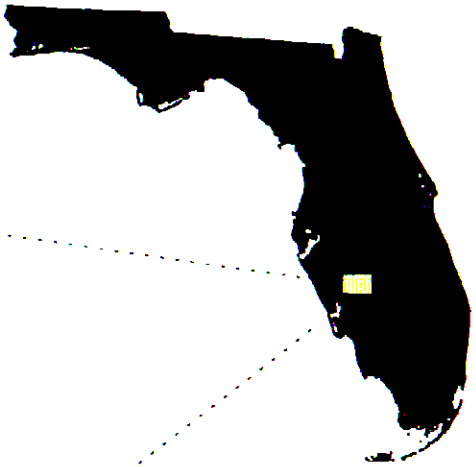


FIGURE 1. ROMP 13 TIPPEN BAY

Southern District Water Resource Assessment Project Area





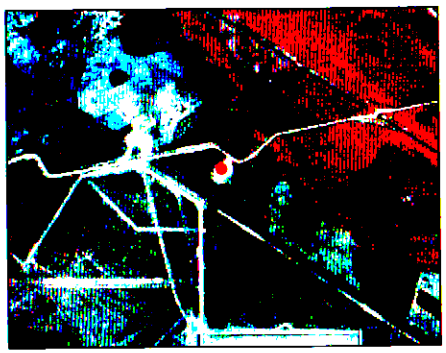


FIGURE 2. ROMP 13 TIPPEN BAY

General Location Map

District Parcel # 20-020-055
Quad Sheet: Long Island Marsh, FL
STR: 21, 39S, 27E
Lat. 27° 04' 17" Long. 81° 36' 57"
Approximate Elevation: 60 ft

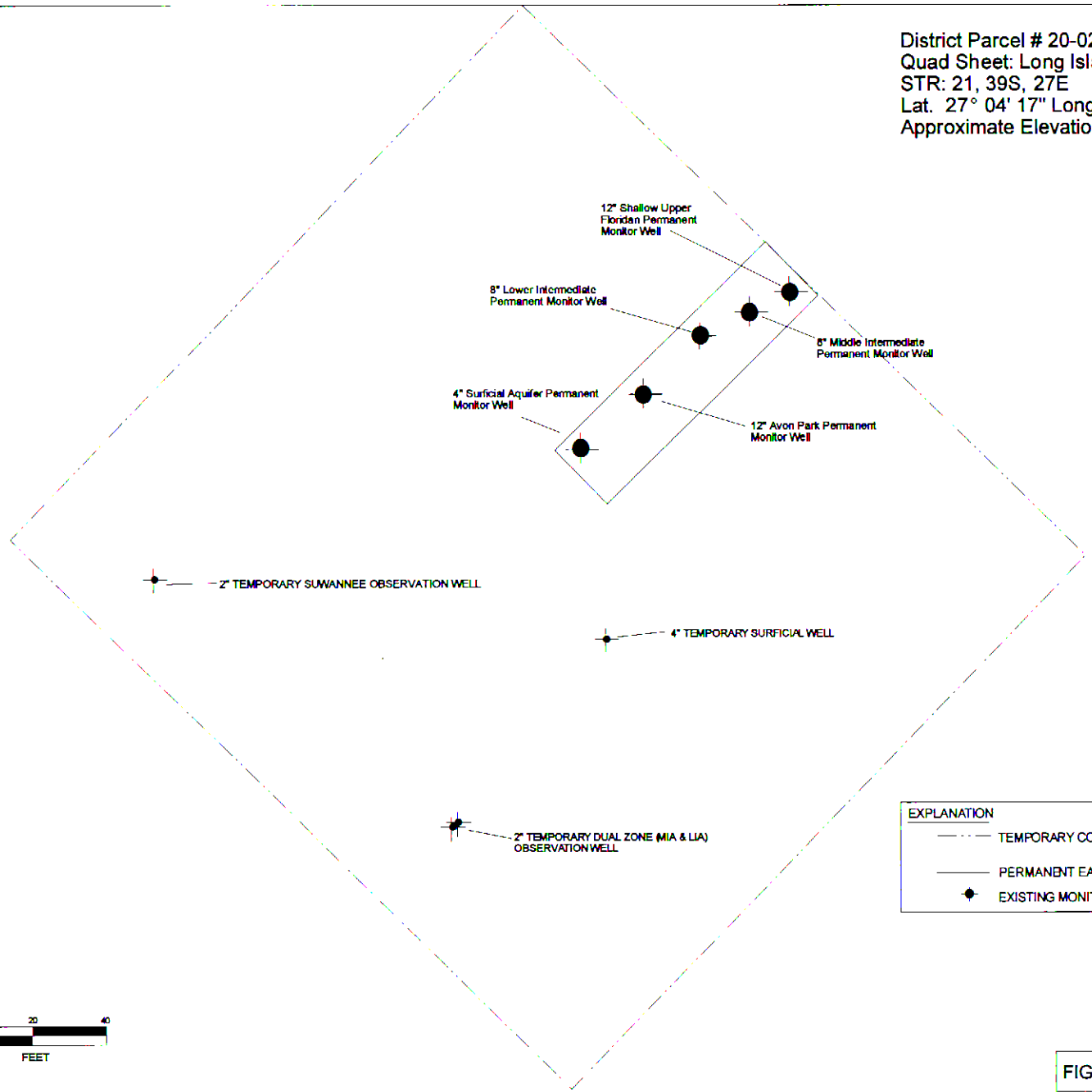


FIGURE 3. ROMP 13 TIPPEN BAY

WELL SITE DIAGRAM

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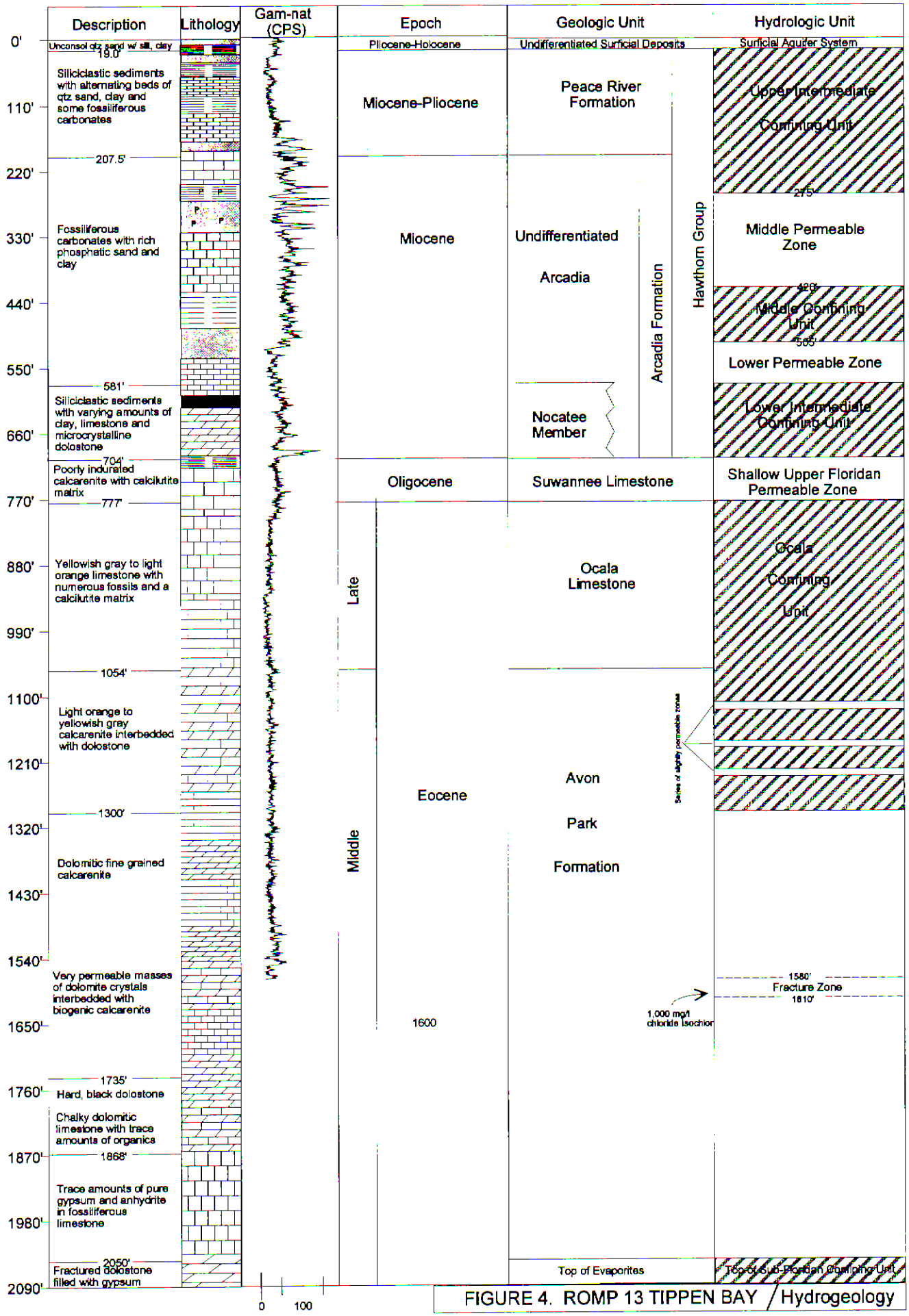
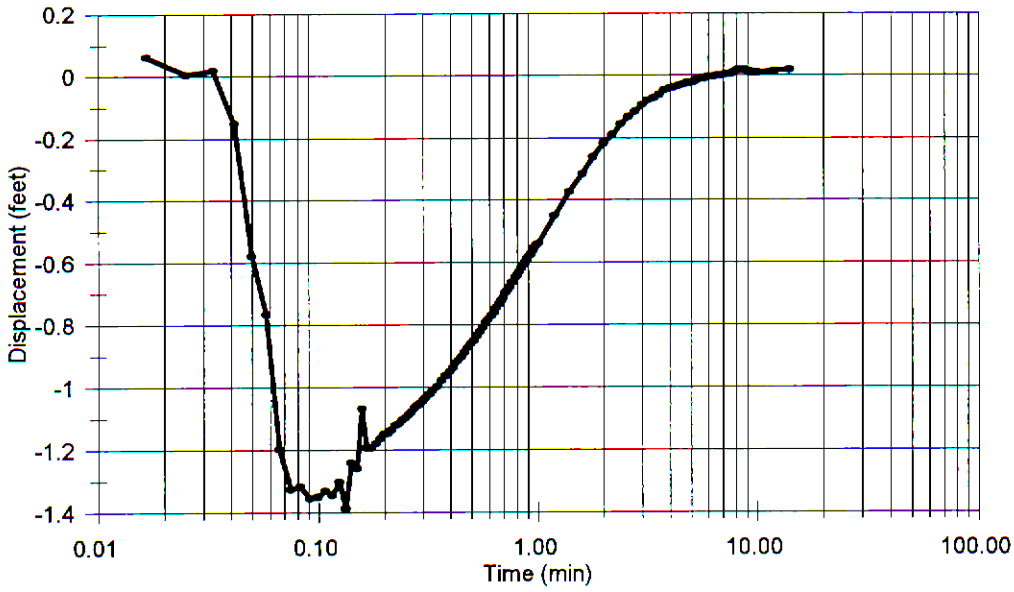


FIGURE 4. ROMP 13 TIPPEN BAY / Hydrogeology

Surficial Aquifer Slug Test

Slug-In



Surficial Aquifer Slug Test

Slug-Out

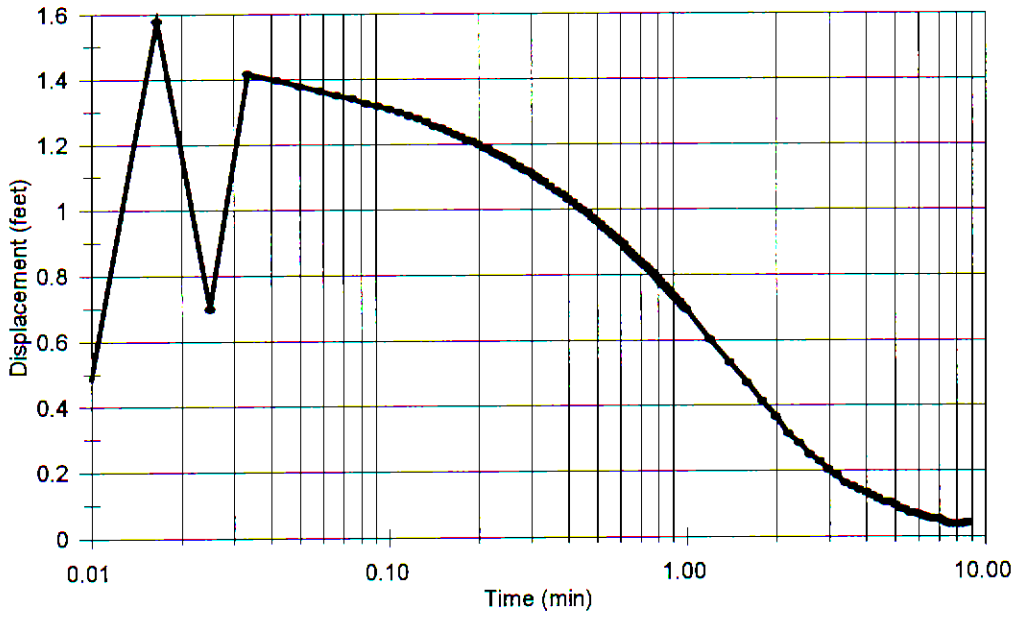


FIGURE 5. ROMP 13 TIPPEN BAY
Surficial Aquifer Slug Test
Water Level Displacement Curves

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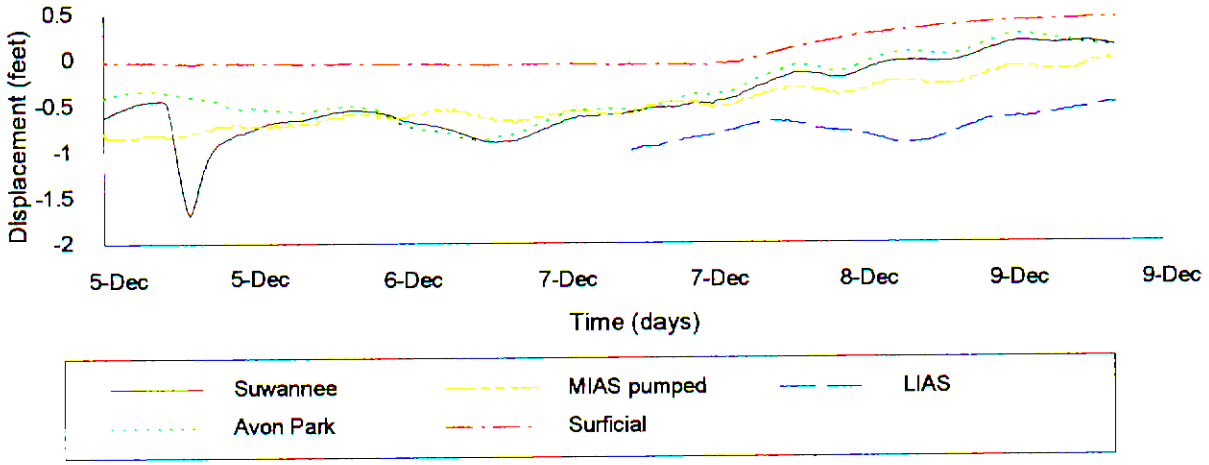
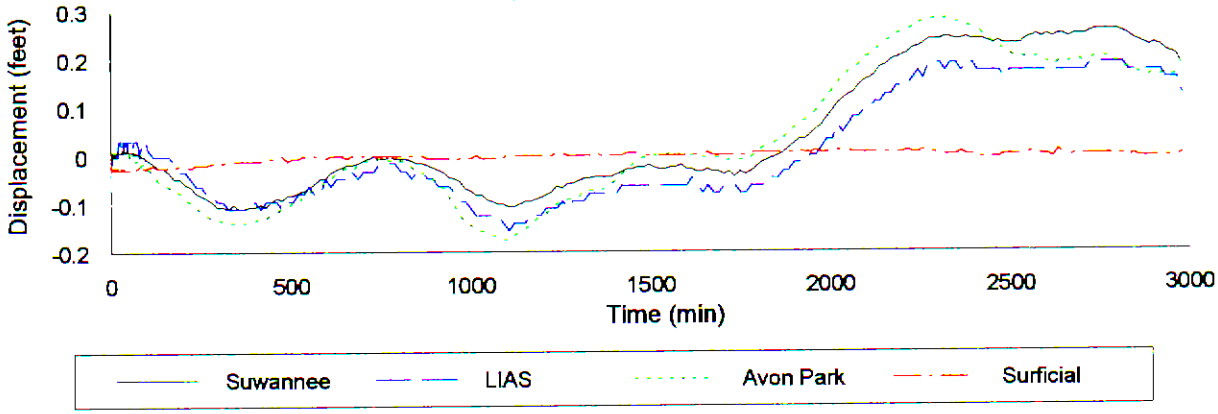
Hydrograph Prior to MIAS APT

December 5, 1996 to December 9, 1996



Hydrograph During MIAS Drawdown

December 9, 1996 to December 11, 1996



Hydrograph During MIAS Recovery

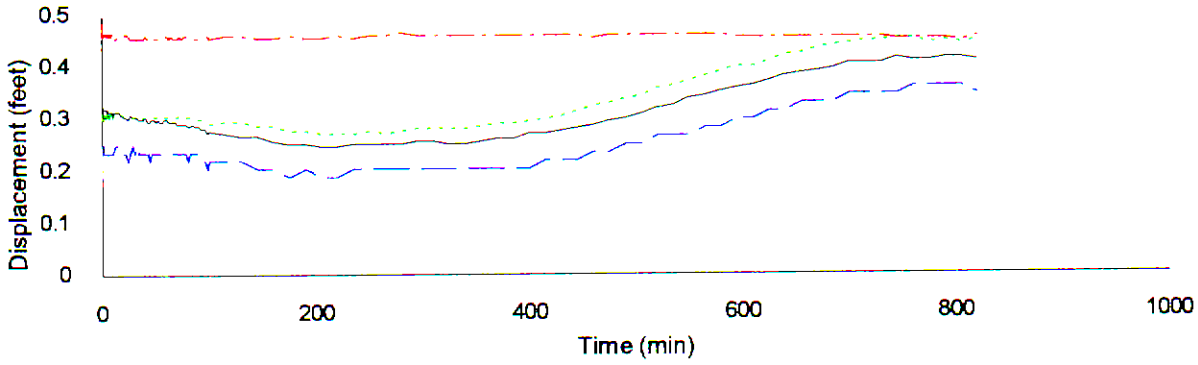


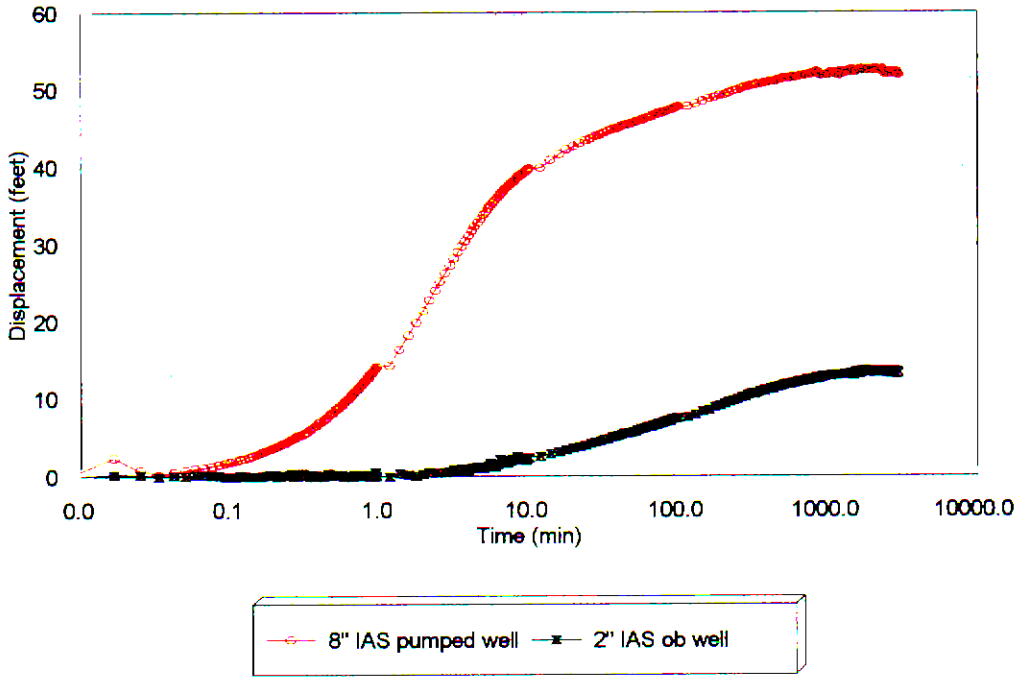
FIGURE 6. ROMP13 TIPPEN BAY

Middle Permeable Zone IAS Hydrographs

Miahyd1.wpg

IAS Middle Permeable Zone APT

Drawdown Phase at 46 GPM



IAS Middle Permeable Zone APT

Recovery Phase

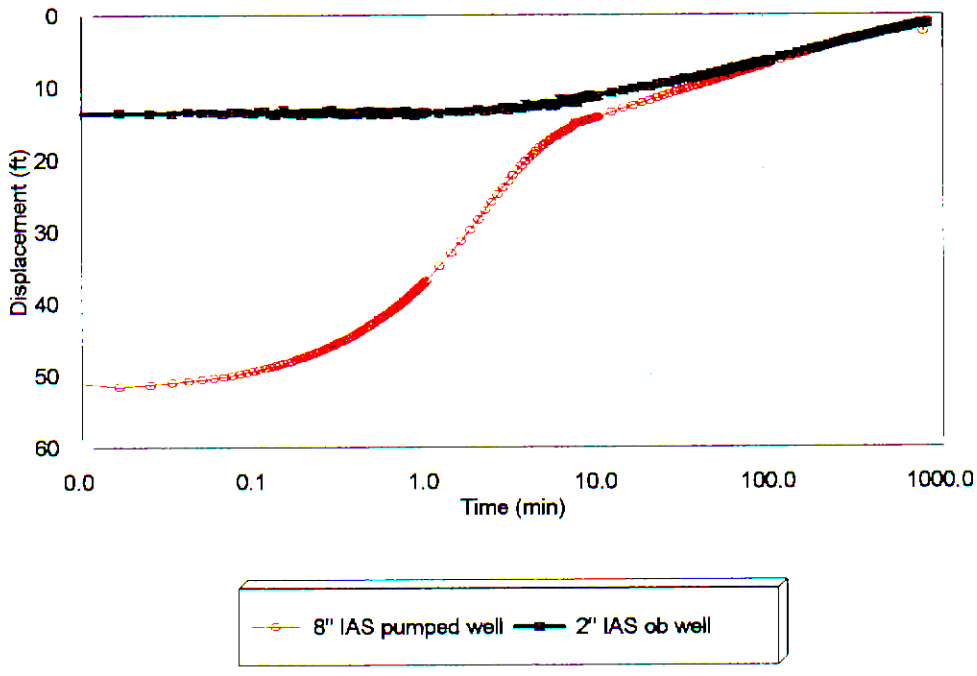


FIGURE 7. ROMP 13 TIPPEN BAY
Middle Permeable Zone IAS Drawdown and Recovery Curves

phase3graphs.wb3

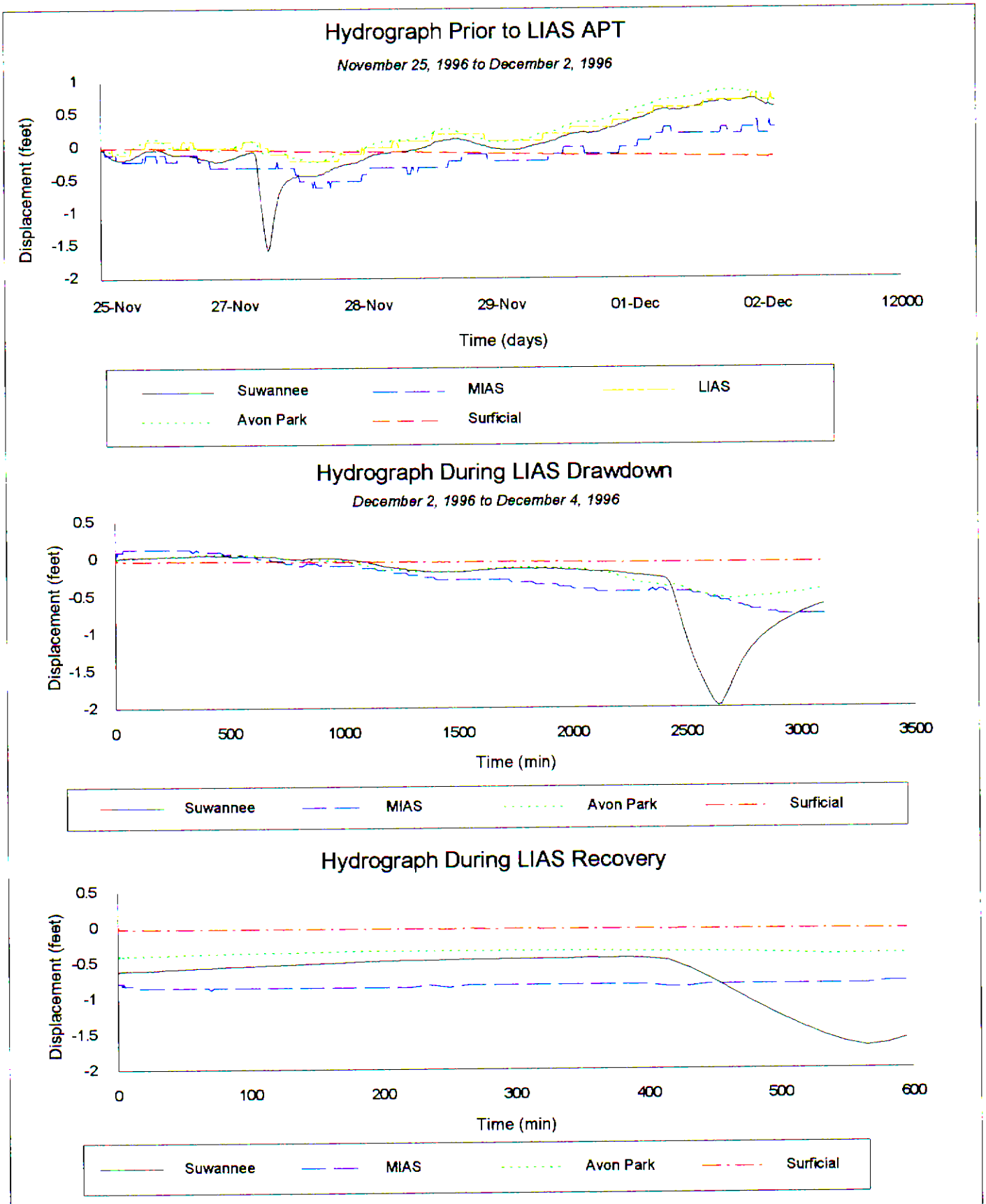


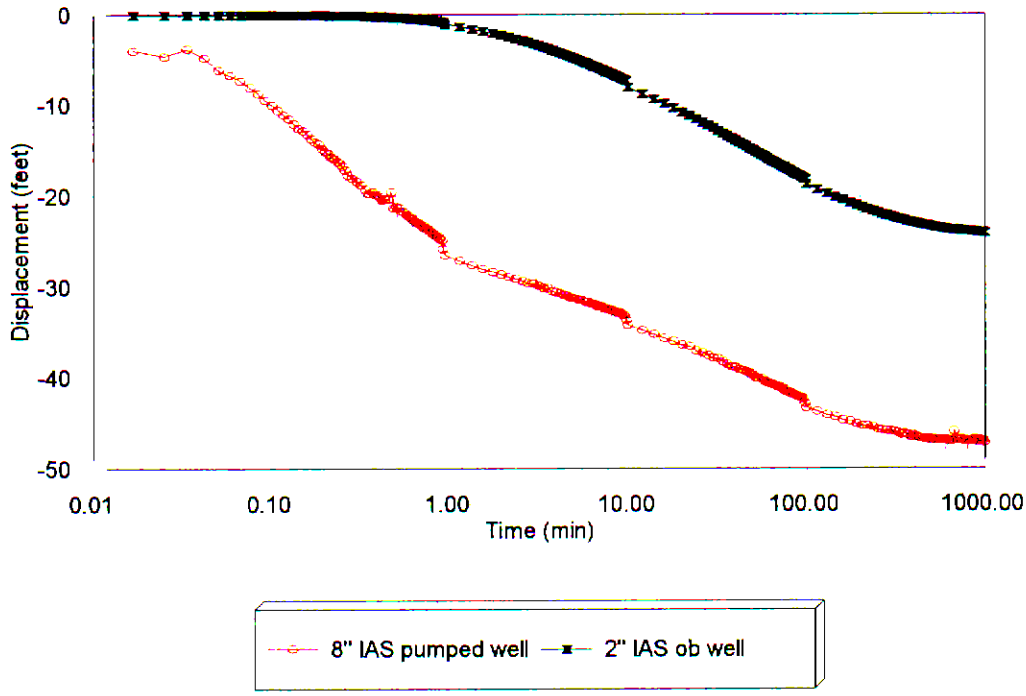
FIGURE 8. ROMP 13 TIPPEN BAY

Lower Permeable Zone IAS Hydrographs

Liahyd.wpg

IAS Lower Permeable Zone APT

Drawdown Phase at 230 GPM



IAS Lower Permeable Zone APT

Recovery Phase

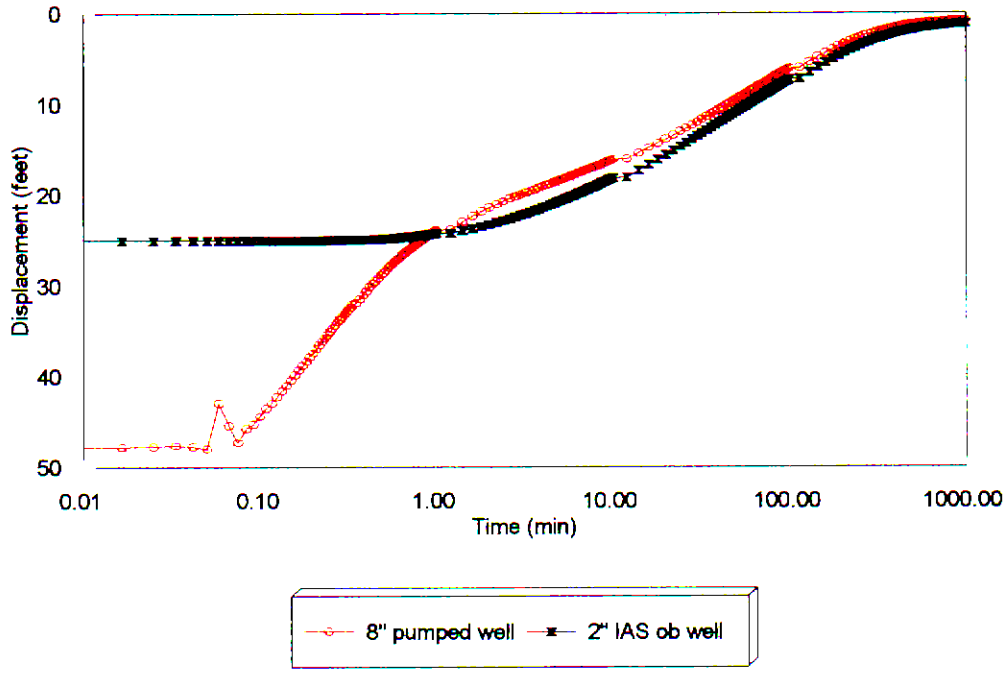
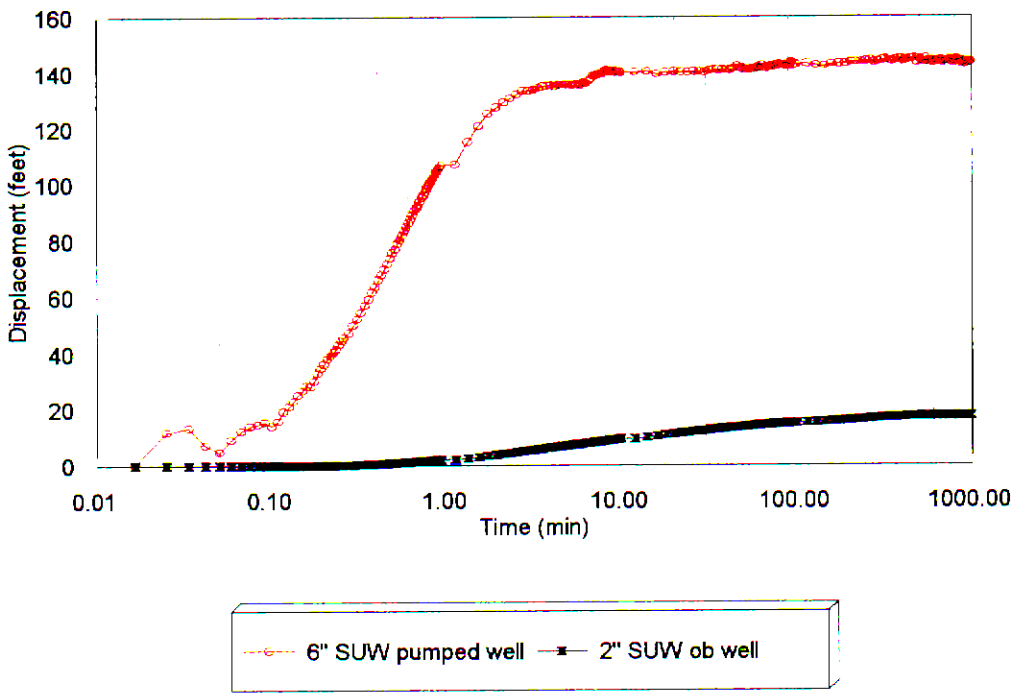


FIGURE 9. ROMP 13 TIPPEN BAY
Lower Permeable Zone IAS
Drawdown and Recovery Curves

phase3graphs.wb3



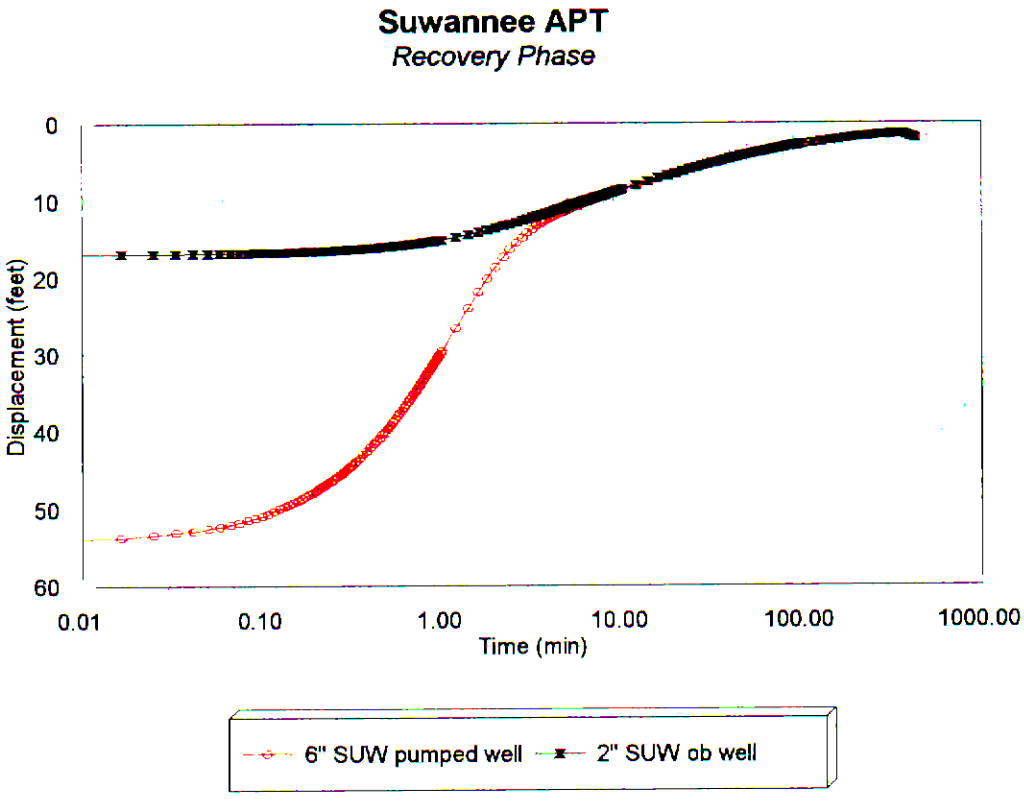
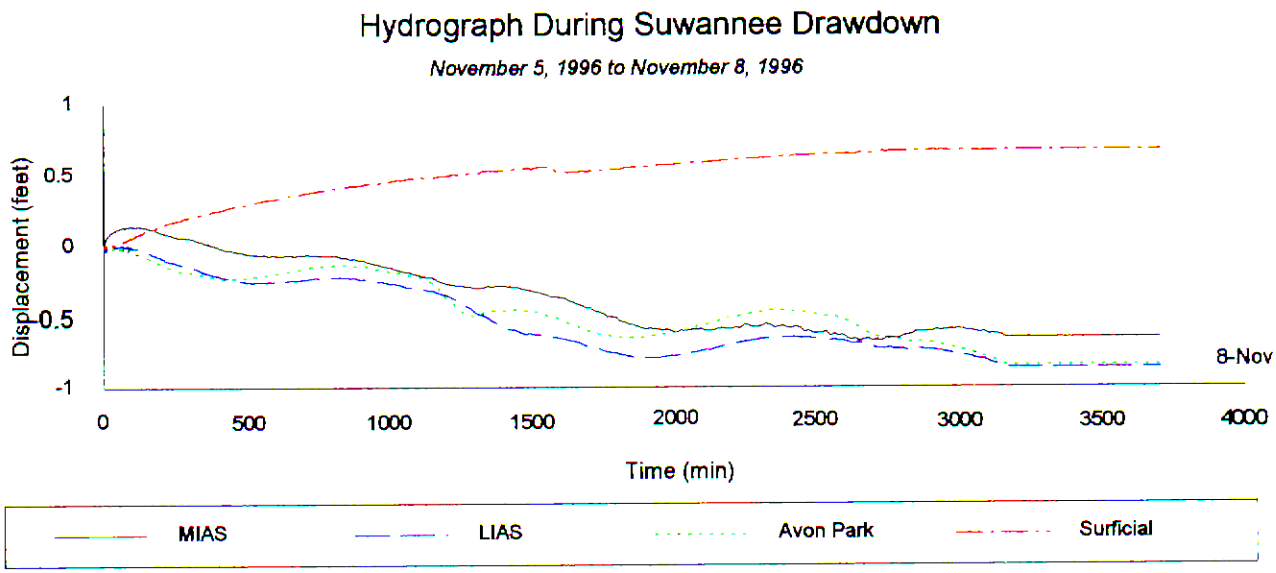


FIGURE 10. ROMP 13 TIPPEN BAY
Suwannee/Upper Floridan Drawdown and Recovery Curves

phase3graphs.wb3



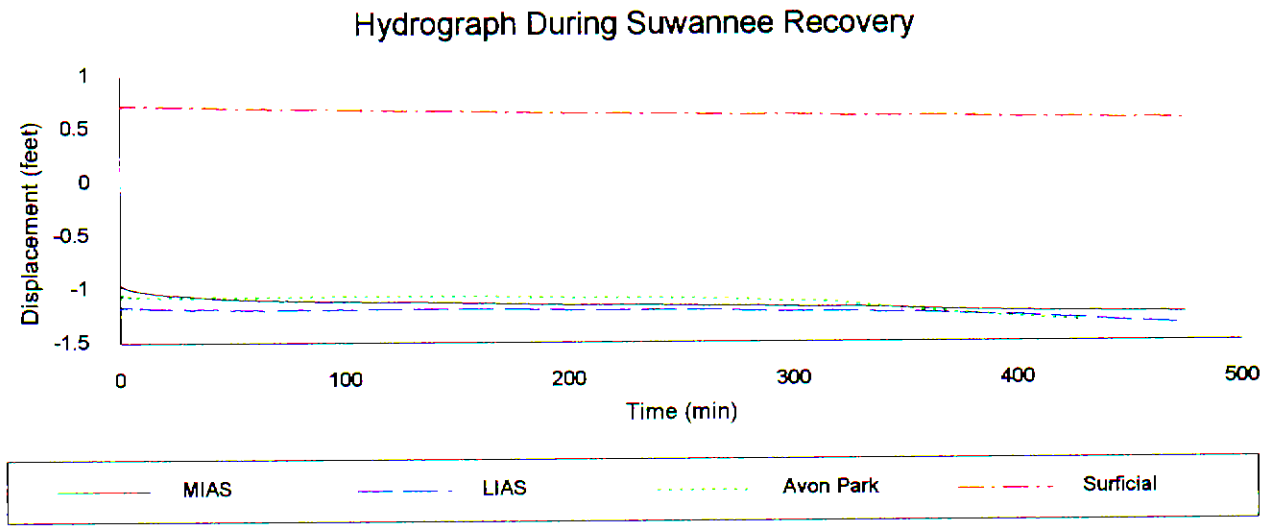


FIGURE 11. ROMP 13 TIPPEN BAY

Suwannee/Upper Floridan Hydrographs

Suwhyd.wpg

TABLES

Table 1. Well Construction Details

table1.wpg

Well No.	Formation Monitored	Aquifer Monitored	Casing Interval	Monitored Interval
MW-1	USD, Peace River Fm.	Surficial	4" PVC Casing (+3' - 7.5')	4" PVC Screen (7.5' - 22.5')
MW-2	Undifferentiated Arcadia Fm.	Middle Intermediate	8" PVC Casing (+1' - 282')	7-7/8" Open Hole (282' - 417')
MW-3	Undifferentiated Arcadia Fm.	Lower Intermediate	8" PVC Casing (+2' - 510')	7-7/8" Open Hole (510' - 592')
MW-4	Suwannee Lm.	Floridan	6" PVC Casing (+2' - 671')	12" Open Hole (671' - 786')
MW-5	Avon Park Fm.	Floridan	6" PVC Casing (+3' - 1550')	12" Open Hole (1550' - 1600')
Temporary	USD, Peace River Fm.	Surficial, Upper Intermediate	4" PVC Casing (+2'- 5')	4" PVC Screen (5' - 24')
Temporary Dual Zone (1)	Undifferentiated Arcadia Fm.	Middle Intermediate	2" PVC Casing (LSD - 280')	2" PVC Screen (280' - 415')
Temporary Dual Zone (2)	Undiff. Arcadia, Nocatee Mbr.	Lower Intermediate	2" PVC Casing (LSD - 510')	2" PVC Screen (510' - 595')
Temporary	Suwannee Lm.	Floridan	2" PVC Casing (+3' - 670')	2" PVC Screen (670' - 780')

Table 2. Aquifer Hydraulic Values

table1.wb3

Aquifer Tested	Well Analyzed	Test Phase	Method	Transmissivity (T) (Feet²/day)	Hydraulic Conductivity (Kh) (Feet/day)	Storativity (S)
Surficial	4" monitor	Slug-In	Bouwer-Rice	N/A	3.70E+00	N/A
	4" monitor	Slug-Out	Bouwer-Rice	N/A	2.86E+00	N/A
			Average	N/A	3.28E+00	N/A
Middle Permeable Zone Intermediate Aquifer System	2" OB	Drawdown	Theis	2.80E+02	2.07E+00	7.08E-05
	2" OB	Drawdown	Cooper & Jacob	2.83E+02	2.09E+00	8.17E-05
	2" OB	Recovery	Theis & Jacob	2.57E+02	1.91E+00	N/A
	4" Pumped	Recovery	Theis & Jacob	2.10E+02	1.55E+00	N/A
			Average	2.58E+02	1.91E+00	7.63E-05
Lower Permeable Zone Intermediate Aquifer System	2" OB	Drawdown	Theis	7.88E+02	1.01E+01	1.11E-04
	2" OB	Drawdown	Cooper & Jacob	7.36E+02	9.44E+00	1.26E-04
	2" OB	Recovery	Theis & Jacob	7.61E+02	9.76E+00	N/A
	8" Pumped	Recovery	Theis & Jacob	7.78E+02	9.97E+00	N/A
			Average	7.66E+02	9.82E+00	1.19E-04
Suwannee Upper Floridan	2" OB	Drawdown	Cooper & Jacob	2.36E+03	2.11E+01	7.91E-02
	2" OB	Drawdown	Hantush	2.32E+03	2.07E+01	9.28E-02
	2" OB	Recovery	Theis & Jacob	2.39E+03	2.14E+01	N/A
	6" Pumped	Recovery	Theis & Jacob	2.31E+03	2.06E+01	N/A
			Average	2.35E+03	2.10E+01	8.60E-02

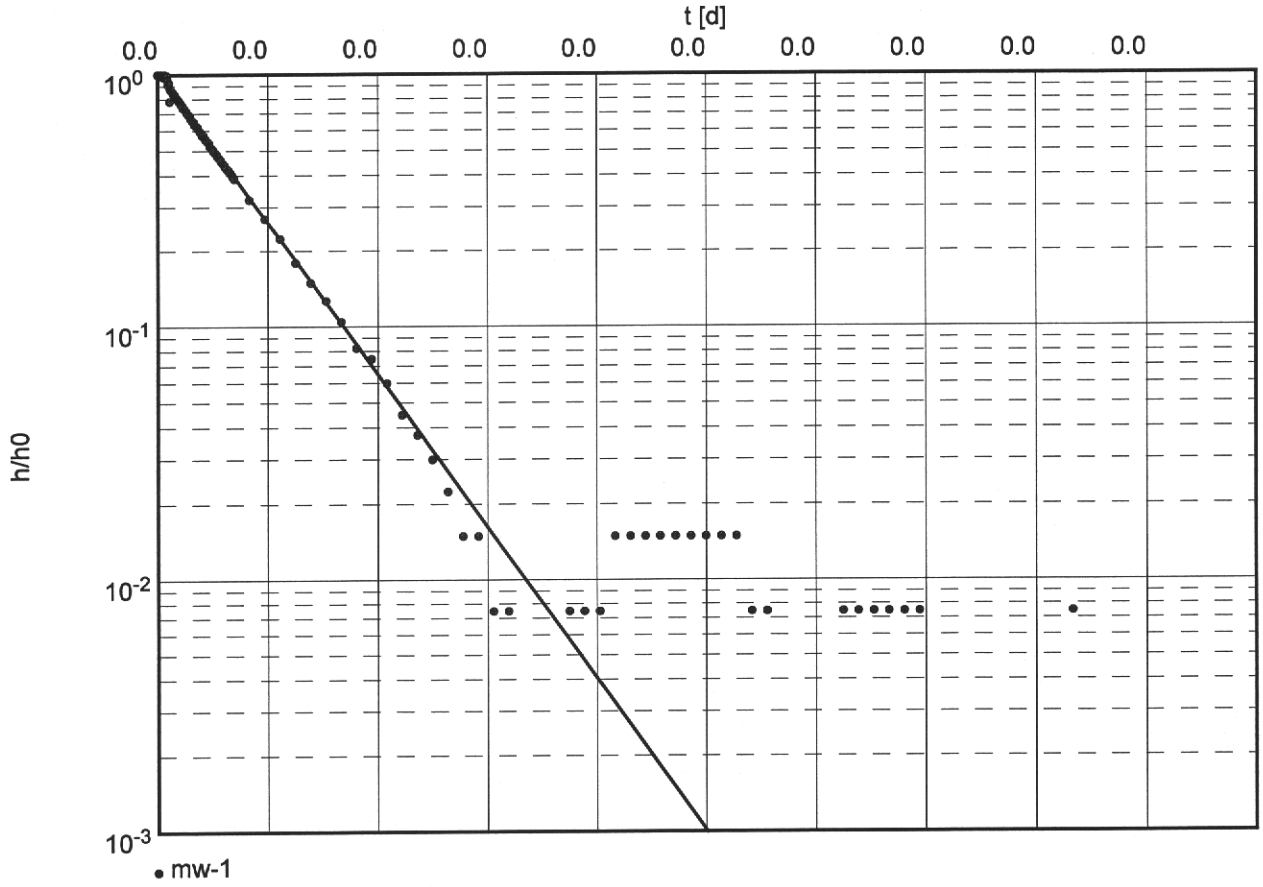
N/A Not Analyzed

Appendix A

Aquifer Test Analysis

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	slug/bail test analysis BOUWER-RICE's method	Date: 10/26/98	Page 1
		Project: ROMP 13 TIPPEN BAY	
		Evaluated by: SMB	

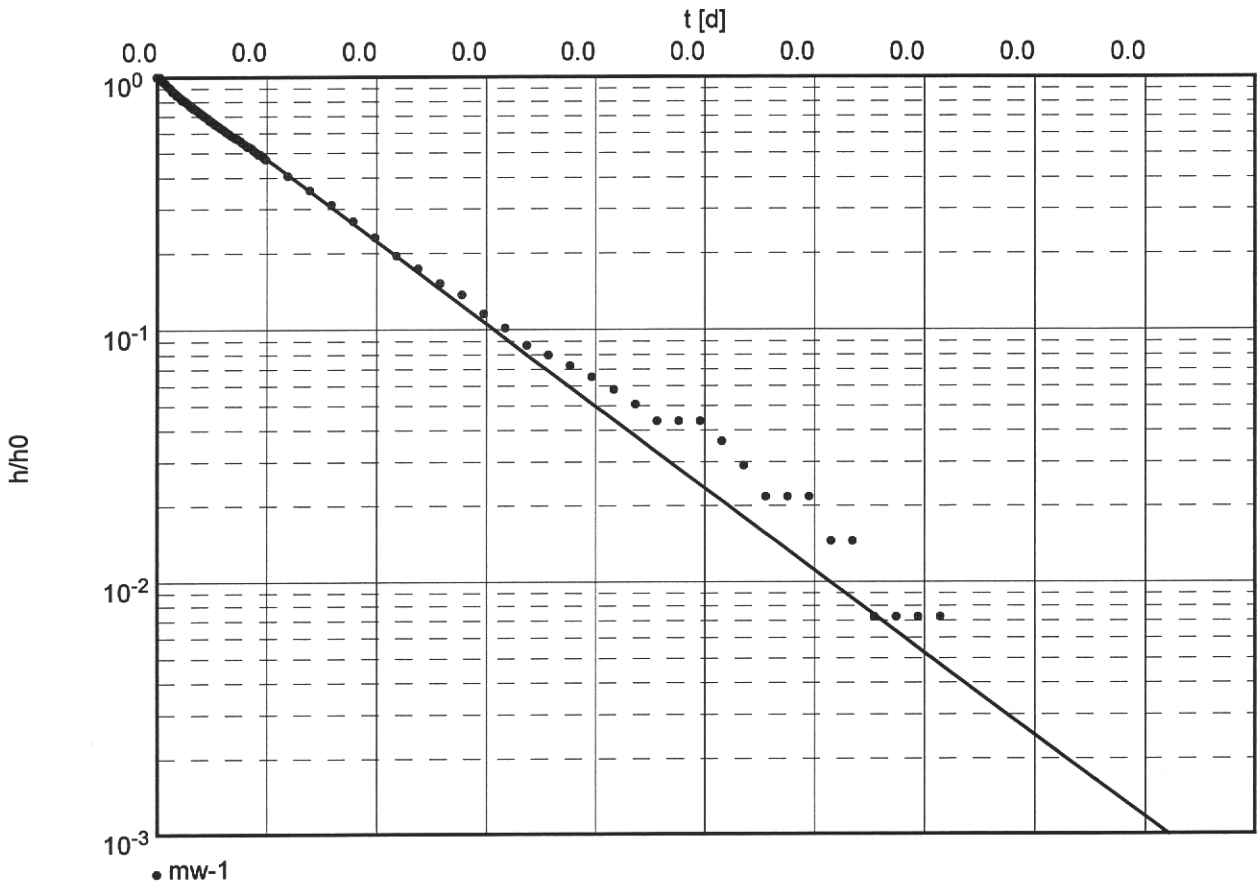
Slug Test No. 1 (SLUG-IN)	Test conducted on: 8/7/97
Permanent Surficial Well	



Hydraulic conductivity [ft/d]: 3.70×10^{0}

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	slug/bail test analysis BOUWER-RICE's method	Date: 10/26/98	Page 1
		Project: ROMP 13 TIPPEN BAY	
		Evaluated by: SMB	

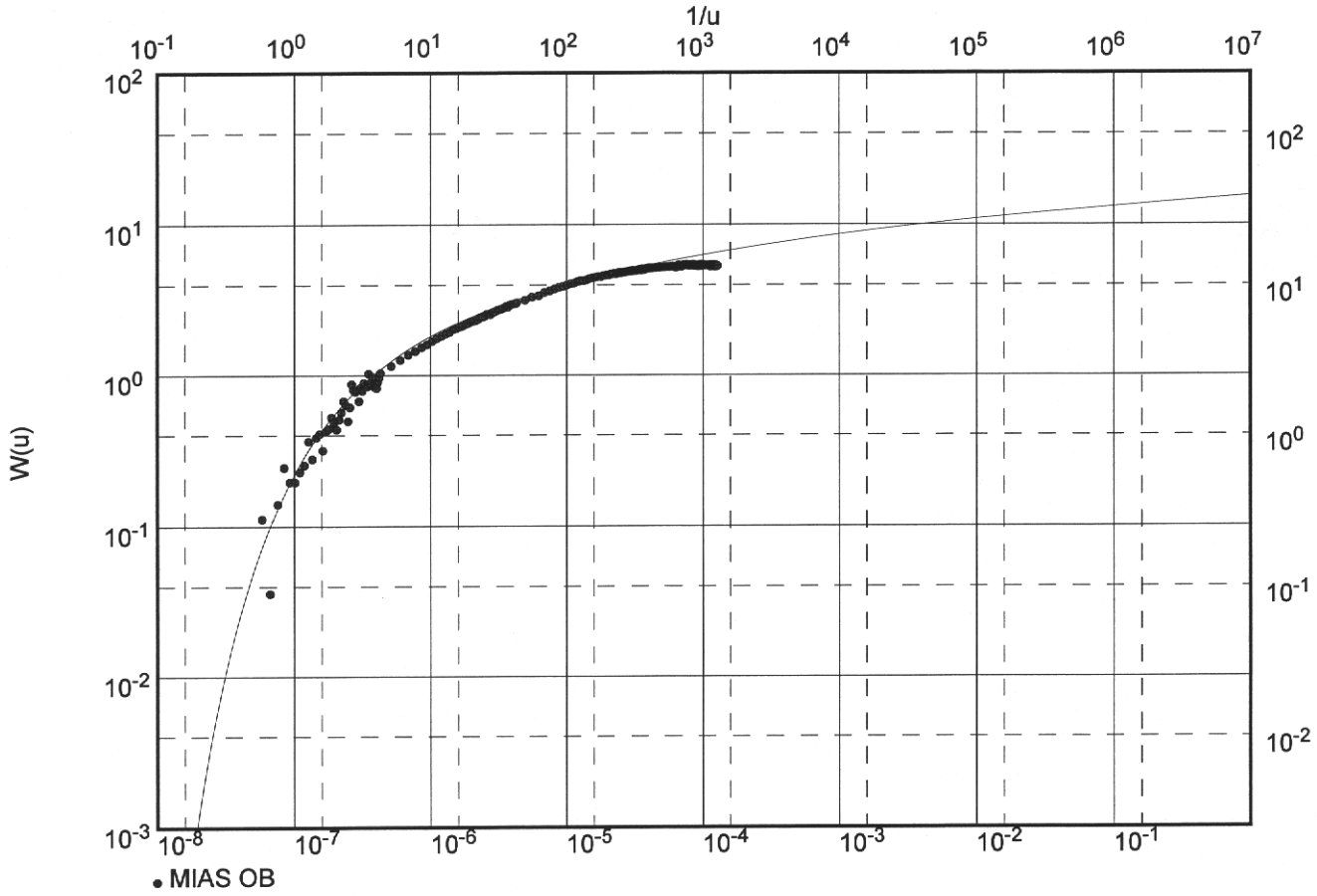
Slug Test No. 1 (SLUG-OUT)	Test conducted on: 8/7/97
Permanent Surficial Well	



Hydraulic conductivity [ft/d]: 2.86×10^{0}

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Theis analysis method Confined aquifer	Date: 7/20/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 1	Test conducted on: 12/9/96 - 12/11/96
2-inch MIAS Observation Well	
Discharge 46.00 U.S.gal/min	



Transmissivity [ft²/d]: 2.80×10^{2}

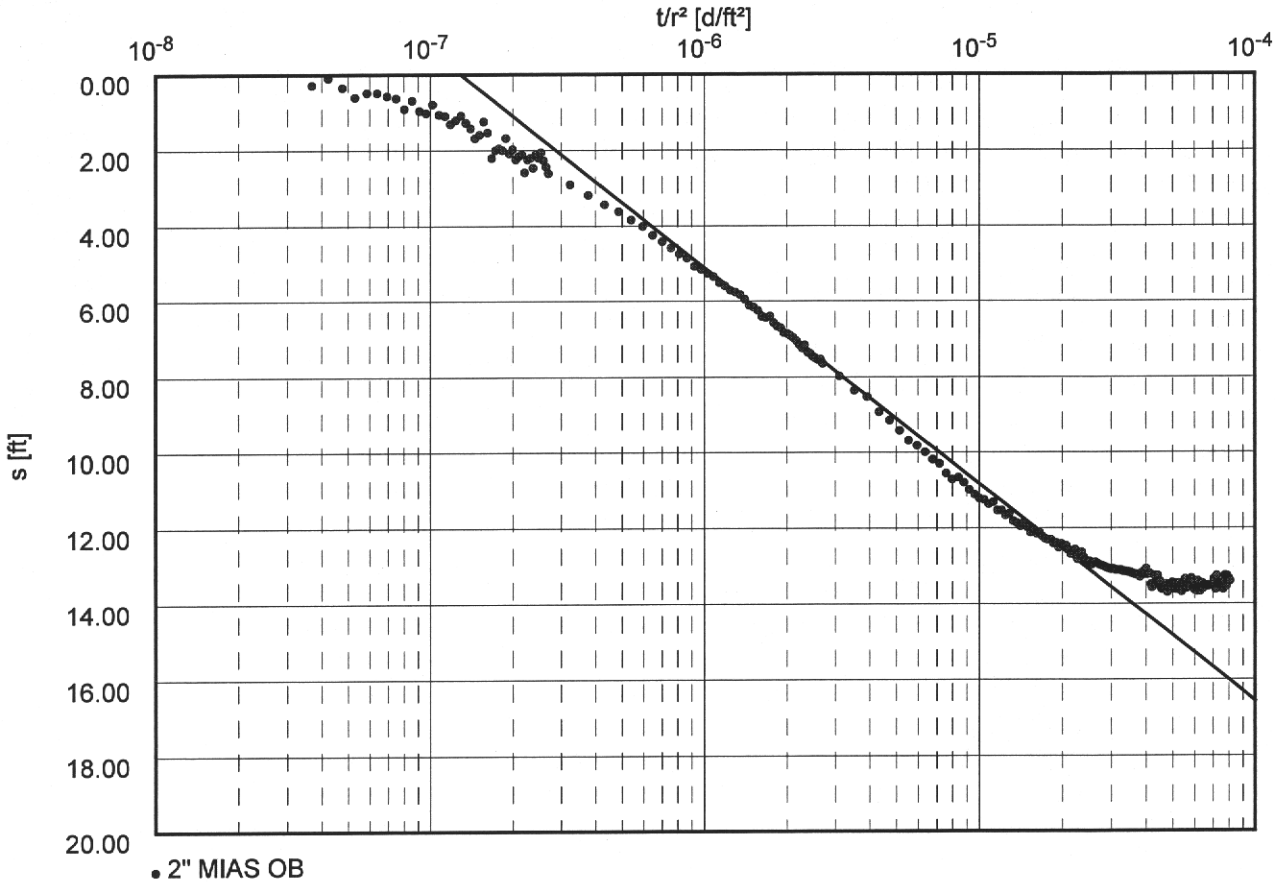
Hydraulic conductivity [ft/d]: 2.07×10^{0}

Aquifer thickness [ft]: 135.00

Storativity: 7.08×10^{-5}

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Distance-Time-Drawdown-method after COOPER & JACOB Confined aquifer	Date: 7/20/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 1 Drawdown Phase	Test conducted on: 12/9/96 - 12/11/96
2-inch MIAS Observation Well	
Discharge 46.00 U.S.gal/min	



Transmissivity [ft²/d]: 2.83×10^{2}

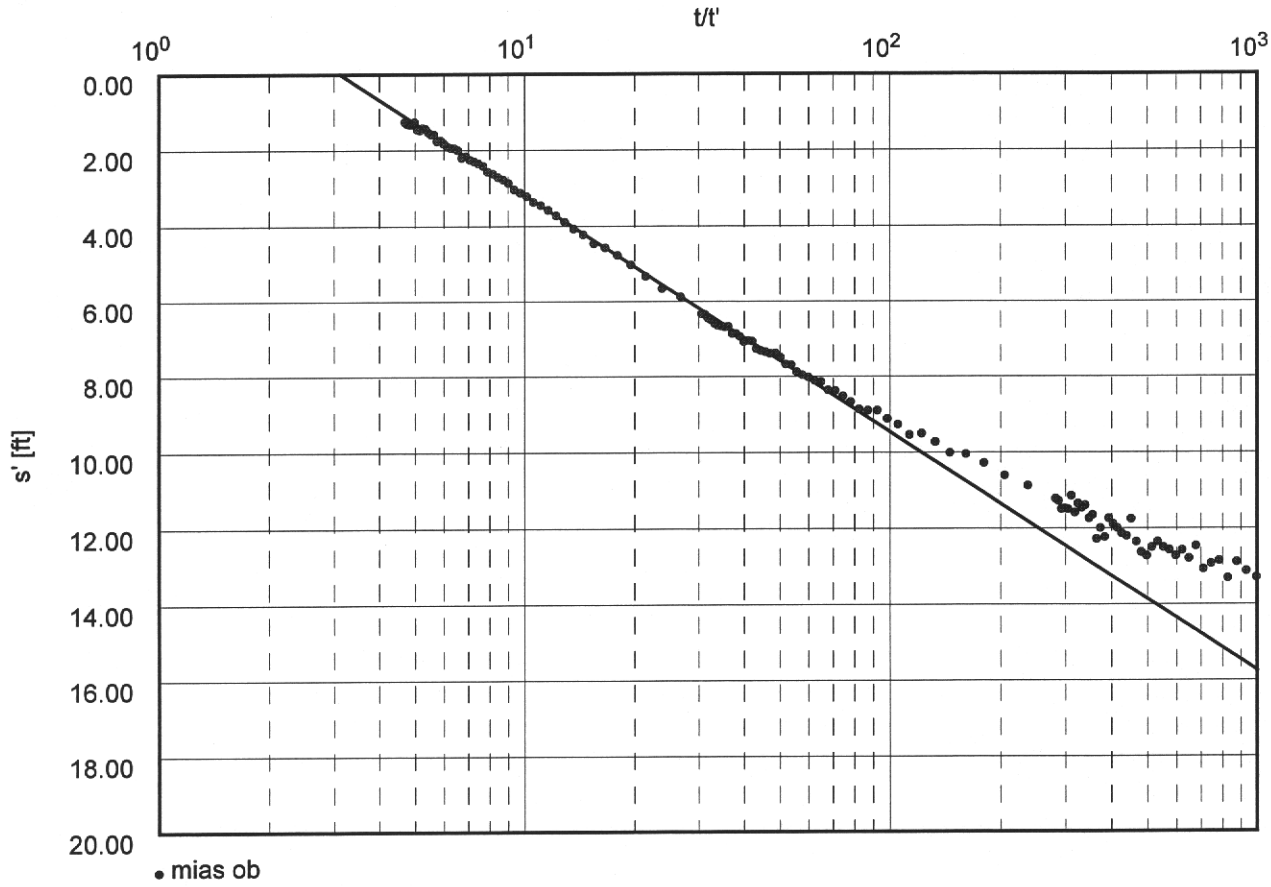
Hydraulic conductivity [ft/d]: 2.09×10^{0}

Aquifer thickness [ft]: 135.00

Storativity: 8.17×10^{-5}

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Recovery method after THEIS & JACOB Confined aquifer	Date: 11/17/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 1 Recovery Phase	Test conducted on: 12/9/96 - 12/11/96
2-inch MIAS Observation Well	
Discharge 46.00 U.S.gal/min	
	Pumping test duration: 2.06900 d



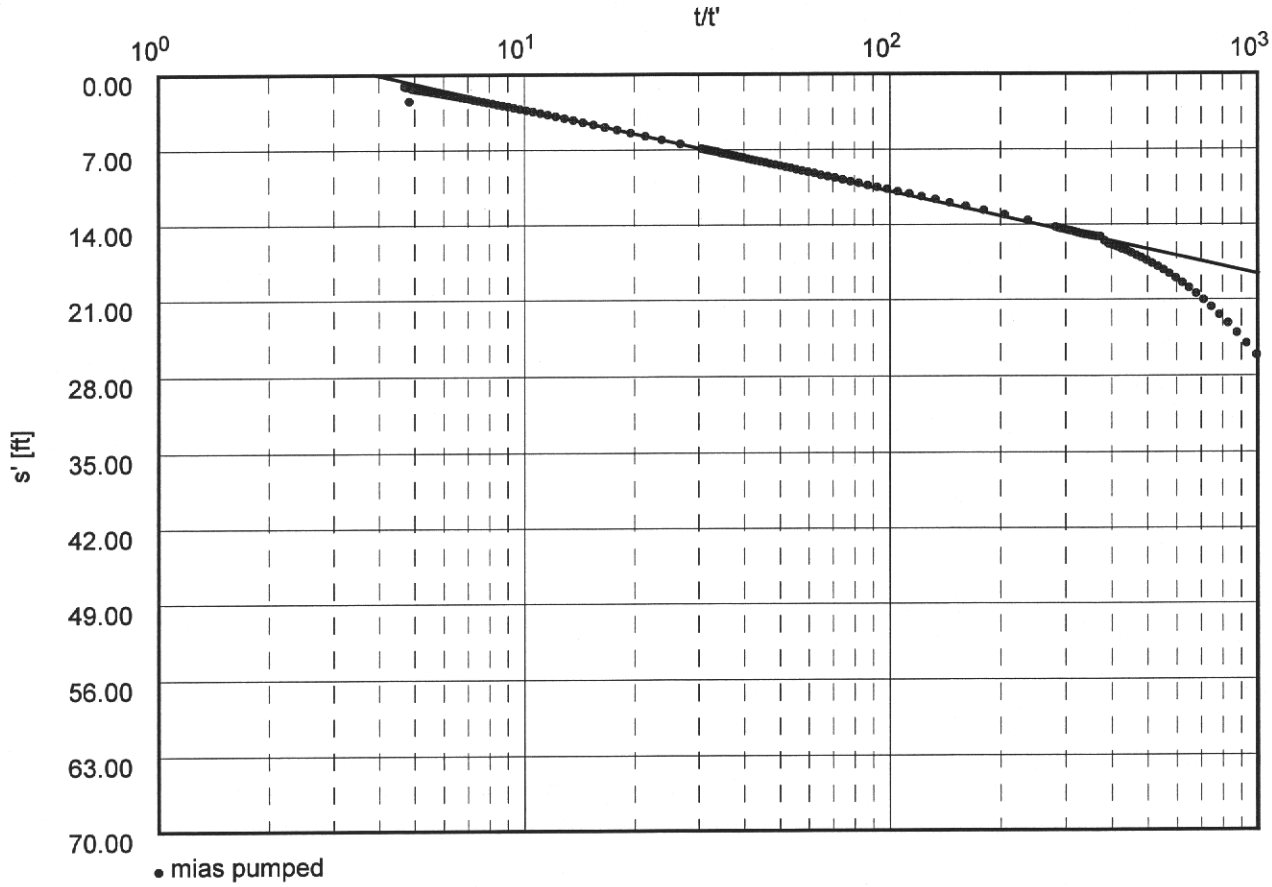
Transmissivity [ft²/d]: 2.57×10^2

Hydraulic conductivity [ft/d]: 1.91×10^0

Aquifer thickness [ft]: 135.00

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Recovery method after THEIS & JACOB Confined aquifer	Date: 11/17/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 1 Recovery Phase	Test conducted on: 12/9/96 - 12/11/96
8-inch MIAS Pumped Well	
Discharge 46.00 U.S.gal/min	
	Pumping test duration: 2.06900 d



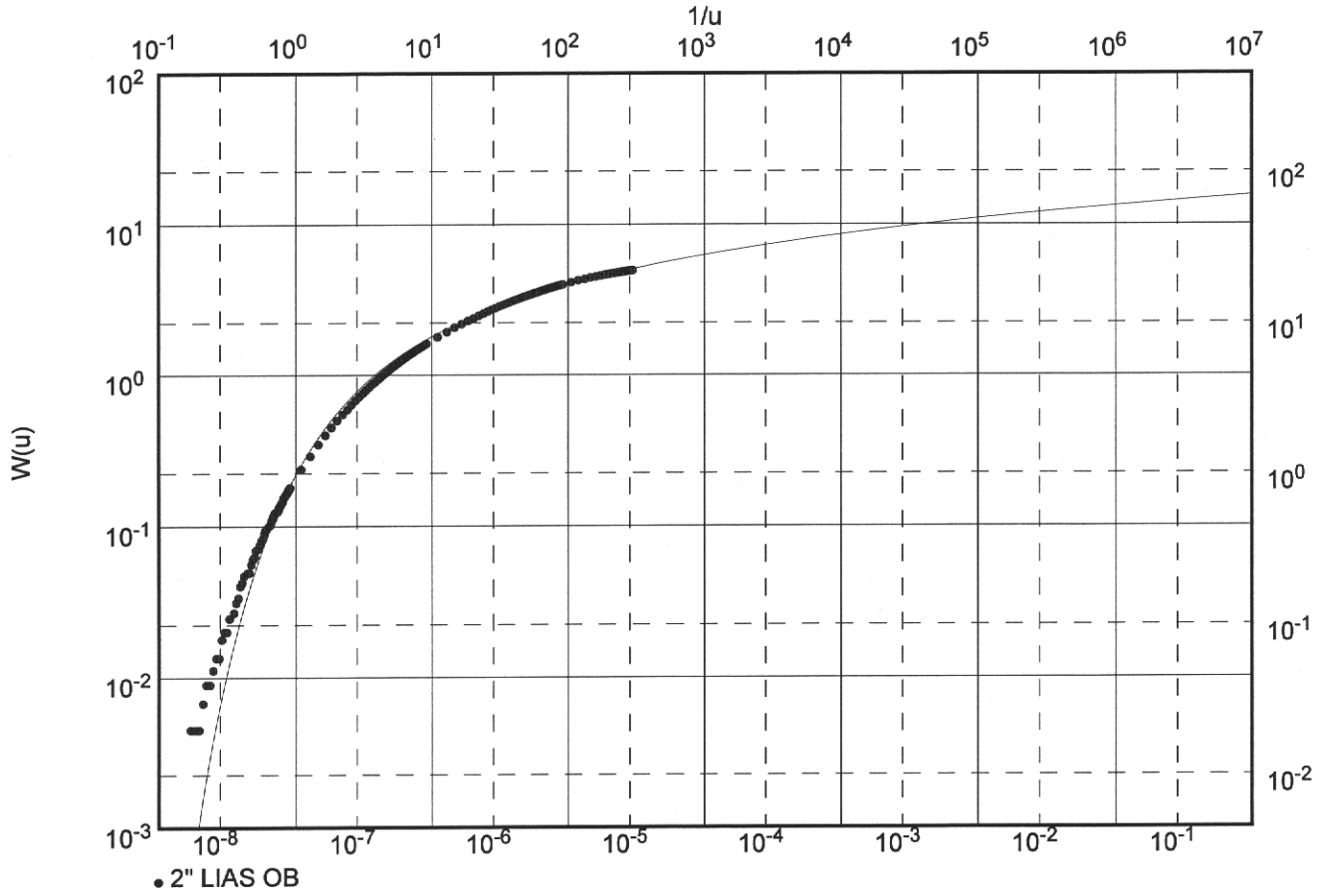
Transmissivity [ft²/d]: 2.10×10^2

Hydraulic conductivity [ft/d]: 1.55×10^0

Aquifer thickness [ft]: 135.00

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Theis analysis method Confined aquifer	Date: 9/21/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 1 Drawdown Phase	Test conducted on: 12/2/98 - 12/4/98
2-inch LIAS Observation Well	
Discharge 230.00 U.S.gal/min	



Transmissivity [ft²/d]: 7.88×10^{2}

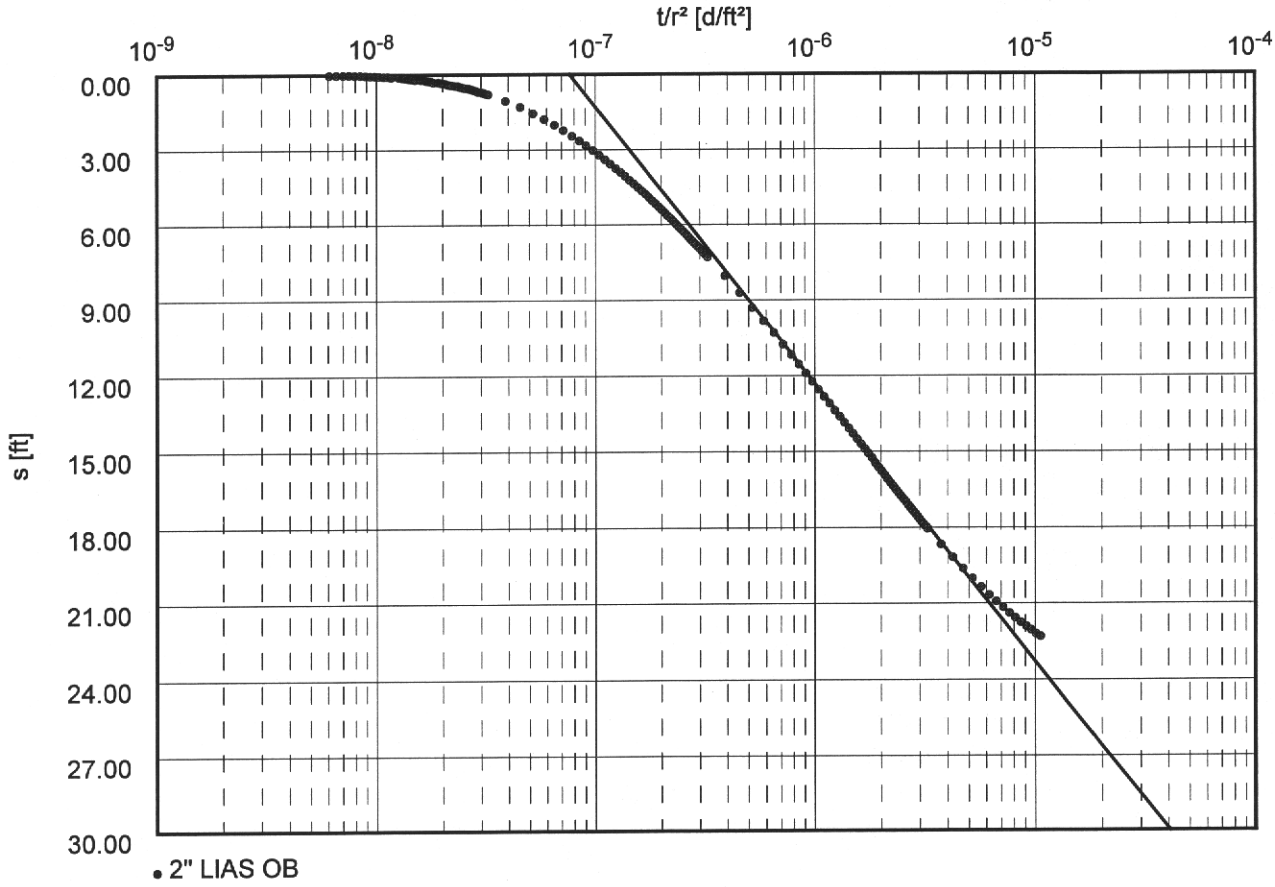
Hydraulic conductivity [ft/d]: 1.01×10^{1}

Aquifer thickness [ft]: 78.00

Storativity: 1.11×10^{-4}

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Distance-Time-Drawdown-method after COOPER & JACOB Confined aquifer	Date: 9/21/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 1 Drawdown Phase	Test conducted on: 12/2/98 - 12/4/98
2-inch LIAS Observation Well	
Discharge 230.00 U.S.gal/min	



Transmissivity [ft²/d]: 7.36×10^{2}

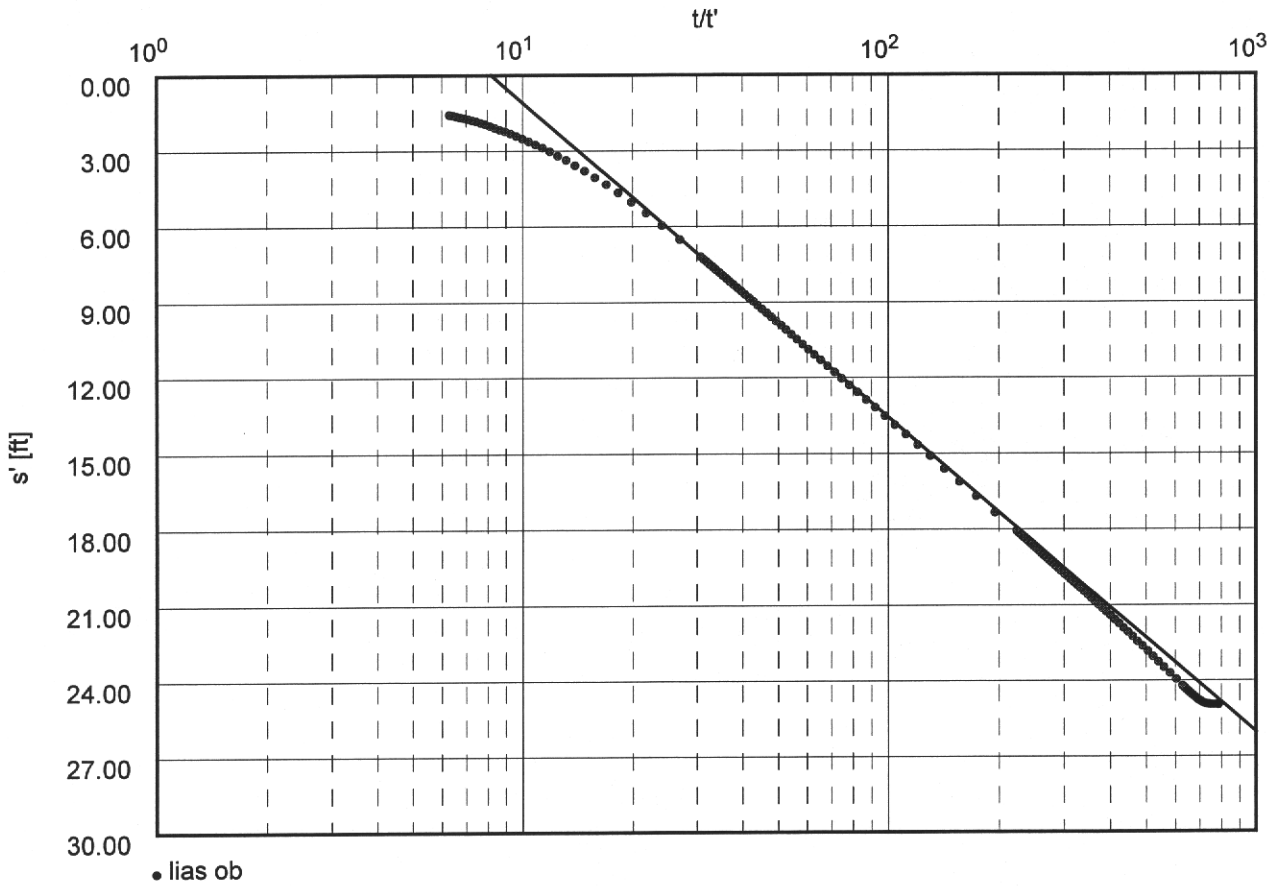
Hydraulic conductivity [ft/d]: 9.44×10^{0}

Aquifer thickness [ft]: 78.00

Storativity: 1.26×10^{-4}

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Recovery method after THEIS & JACOB Confined aquifer	Date: 11/16/98	Page 1
		Project: ROMP 13 TIPPEN BAY	
		Evaluated by: SMB	

Pumping Test No. 1 Recovery Phase	Test conducted on: 12/2/96 - 12/4/96
2-inch LIAS Observation Well	
Discharge 240.00 U.S.gal/min	
	Pumping test duration: 2.15000 d



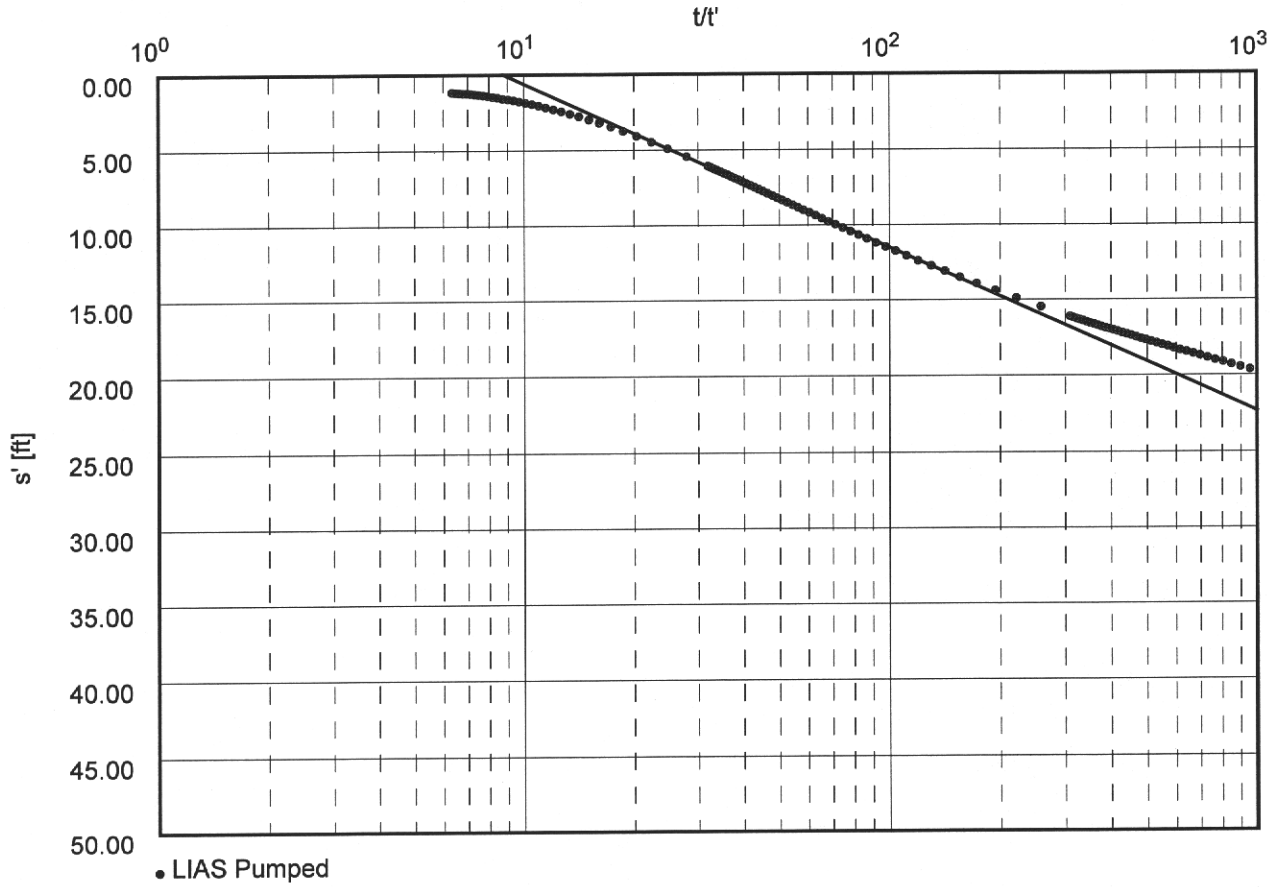
Transmissivity [ft²/d]: 6.77×10^2

Hydraulic conductivity [ft/d]: 8.68×10^0

Aquifer thickness [ft]: 78.00

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Recovery method after THEIS & JACOB Confined aquifer	Date: 11/17/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 1 Recovery Phase	Test conducted on: 12/2/96 - 12/4/96
8-inch LIAS Pumped Well	
Discharge 240.00 U.S.gal/min	
	Pumping test duration: 2.15270 d



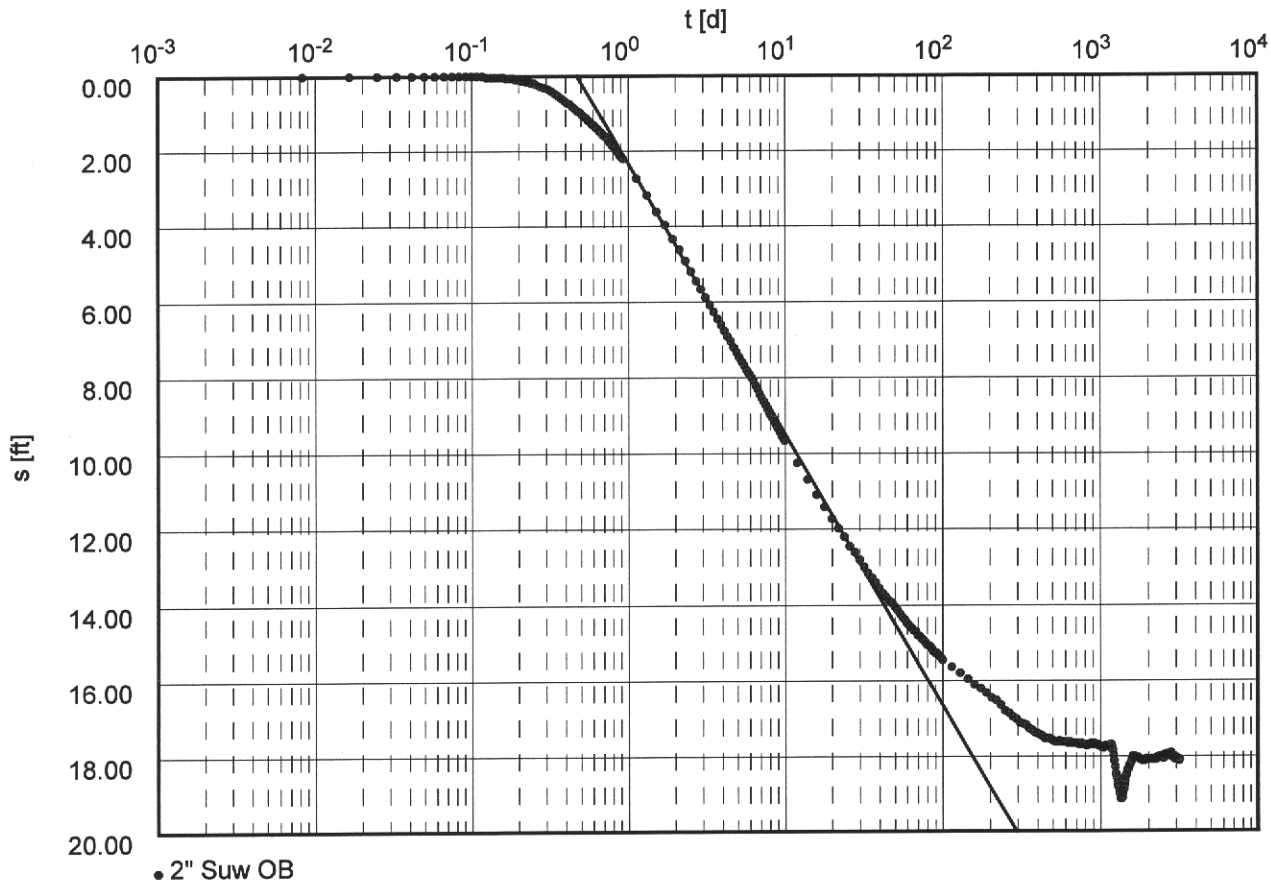
Transmissivity [ft²/d]: 7.78×10^2

Hydraulic conductivity [ft/d]: 9.97×10^0

Aquifer thickness [ft]: 78.00

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Time-Drawdown-method after COOPER & JACOB Confined aquifer	Date: 9/21/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 2 Drawdown Phase	Test conducted on: 11/5/96-11/7/96
2-inch Suwannee Observation Well	
Discharge 480.00 U.S.gal/min	



Transmissivity [ft²/d]: 2.36×10^{3}

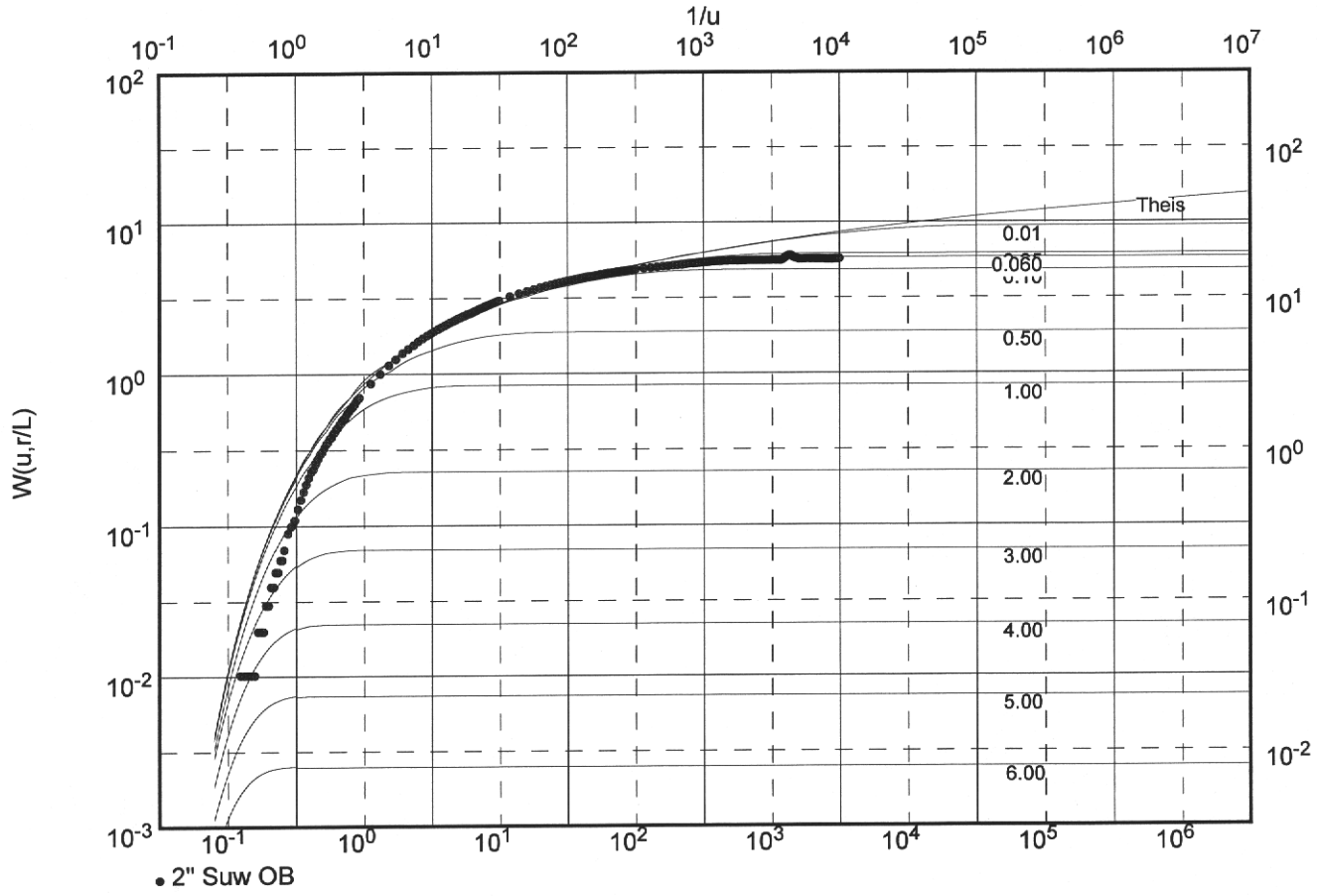
Hydraulic conductivity [ft/d]: 2.11×10^{1}

Aquifer thickness [ft]: 112.00

Storativity: 7.91×10^{-2}

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis HANTUSH's method Leaky aquifer, no aquitard storage	Date: 9/21/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 2 Drawdown Phase	Test conducted on: 11/5/96-11/7/96
2-inch Suwannee Observation Well	
Discharge 480.00 U.S.gal/min	



Transmissivity [ft²/d]: 2.32×10^{3}

Hydraulic conductivity [ft/d]: 2.07×10^{1}

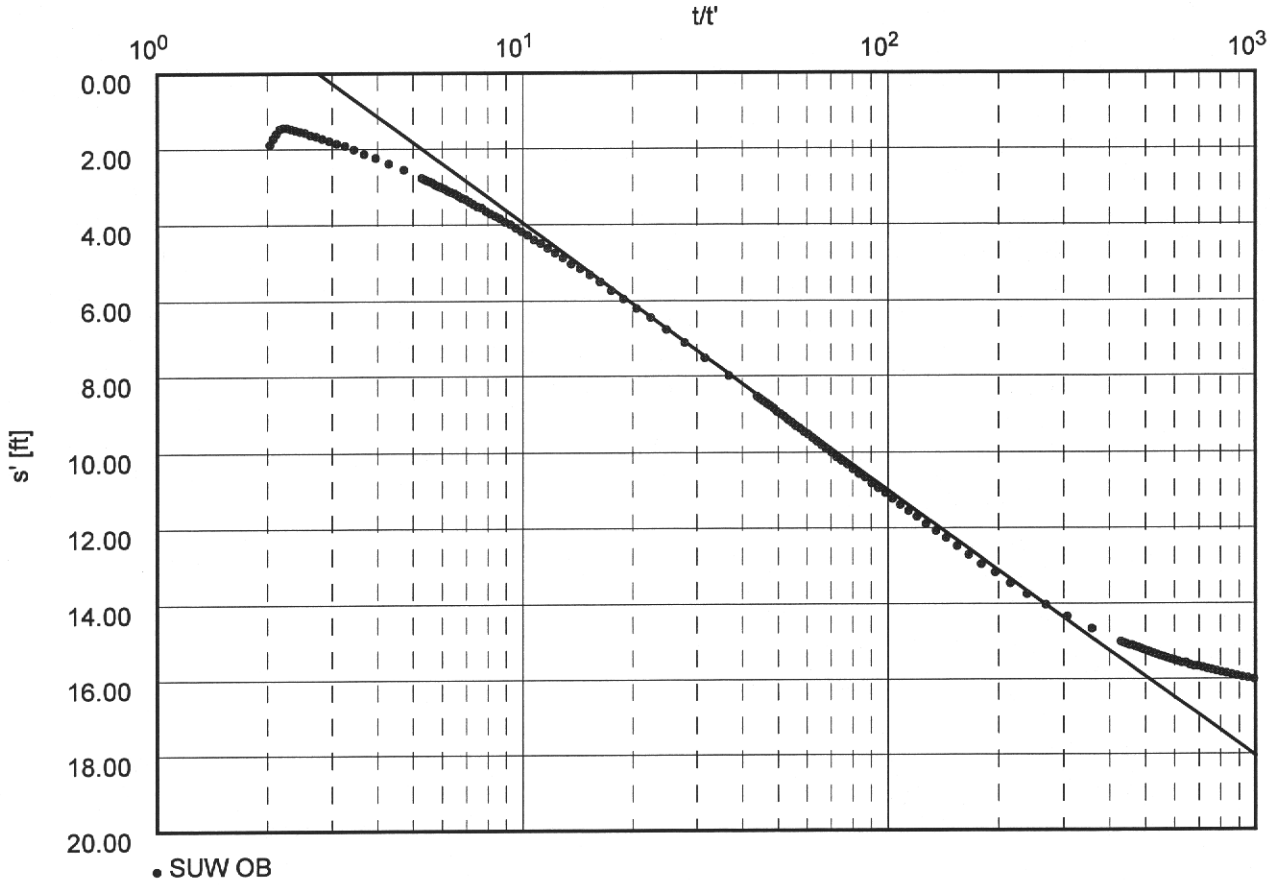
Aquifer thickness [ft]: 112.00

Storativity: 9.28×10^{-2}

Hydraulic resistance (c) [d]: 3.78×10^{3}

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Recovery method after THEIS & JACOB Confined aquifer	Date: 11/17/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 1 Recovery Phase	Test conducted on: 11/8/96
2-inch Suwannee Observation Well	
Discharge 480.00 U.S.gal/min	
	Pumping test duration: 0.29800 d



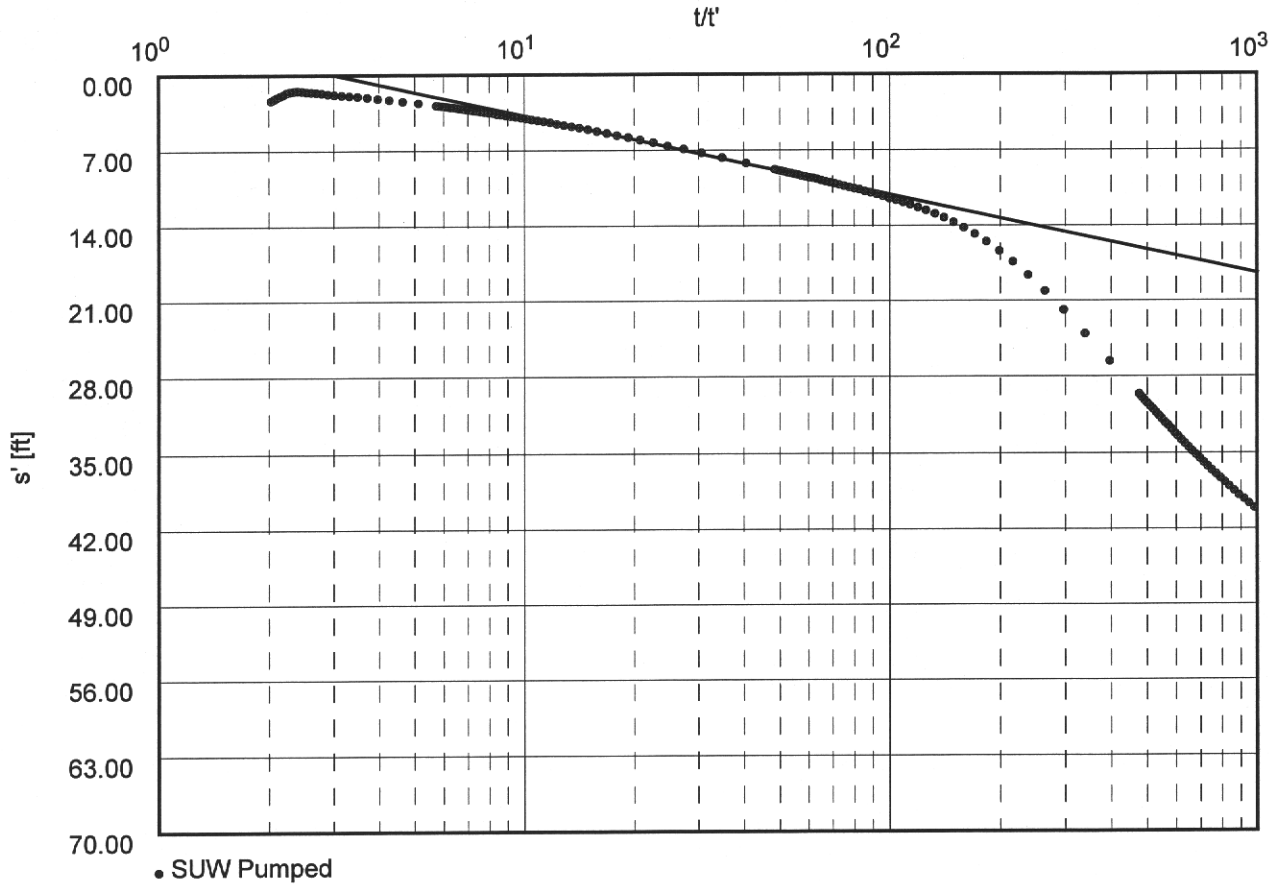
Transmissivity [ft²/d]: 2.39×10^3

Hydraulic conductivity [ft/d]: 2.14×10^1

Aquifer thickness [ft]: 112.00

SWFWMD 2379 Broad St. Brooksville, FL 34609-6899 ph.(352)796-7211	Pumping test analysis Recovery method after THEIS & JACOB Confined aquifer	Date: 11/17/98	Page 1
		Project: ROMP 13 Tippen Bay	
		Evaluated by: SMB	

Pumping Test No. 2 Recovery Phase	Test conducted on: 11/8/96
6-inch Suwannee Pumped Well	
Discharge 480.00 U.S.gal/min	
	Pumping test duration: 0.32990 d



Transmissivity [ft²/d]: 2.31×10^3

Hydraulic conductivity [ft/d]: 2.06×10^1

Aquifer thickness [ft]: 112.00

Appendix B

Data Logger Water Level Measurements for Surficial APT

SE2000
Environmental Logger
Unit# 577 Test 0
Setups: Input 1

Type Level (F)
Mode OC
I.D.
Reference 0.000
PSI at Ref. 4.317
SG 1.000
Linearity 0.106
Scale factor 15.039
Offset -0.040
Delay mSEC 50.000
Step 0 8/07 9:58:35

Surficial Slug Test (Slug-In)

Elapsed Time (min)	Input 1 Surficial Monitor
0.0000	0.023
0.0083	0.014
0.0166	0.061
0.0250	0.004
0.0333	0.019
0.0416	-0.152
0.0500	-0.579
0.0583	-0.765
0.0666	-1.198
0.0750	-1.326
0.0833	-1.317
0.0916	-1.355
0.1000	-1.350
0.1083	-1.331
0.1166	-1.345
0.1250	-1.302
0.1333	-1.388
0.1416	-1.240
0.1500	-1.259
0.1583	-1.069
0.1666	-1.193
0.1750	-1.193
0.1833	-1.179
0.1916	-1.164
0.2000	-1.150
0.2083	-1.145
0.2166	-1.136
0.2250	-1.122
0.2333	-1.117
0.2416	-1.107
0.2500	-1.098
0.2583	-1.088
0.2666	-1.079
0.2750	-1.069
0.2833	-1.060
0.2916	-1.055
0.3000	-1.045
0.3083	-1.036
0.3166	-1.026
0.3250	-1.022
0.3333	-1.012
0.3500	-0.998

SE2000
Environmental Logger
8/07 14:51
Setups Input 1

Type Level (F)
Mode OC
I.D.
Reference 0.000
PSI at Ref 4.317
SG 1.000
Linearity 0.106
Scale Factor 15.039
Offset -0.040
Delay mSec 50.000
Step 1 8/07 10:14:15

Surficial Slug Test (Slug-Out)

Elapsed Time (min)	Input 1 Surficial Monitor
0.0000	0.019
0.0083	0.085
0.0166	1.577
0.0250	0.698
0.0333	1.416
0.0416	1.397
0.0500	1.378
0.0583	1.363
0.0666	1.349
0.0750	1.340
0.0833	1.325
0.0916	1.316
0.1000	1.306
0.1083	1.297
0.1166	1.287
0.1250	1.278
0.1333	1.268
0.1416	1.254
0.1500	1.249
0.1583	1.240
0.1666	1.230
0.1750	1.221
0.1833	1.211
0.1916	1.207
0.2000	1.197
0.2083	1.188
0.2166	1.183
0.2250	1.173
0.2333	1.164
0.2416	1.159
0.2500	1.150
0.2583	1.145
0.2666	1.135
0.2750	1.131
0.2833	1.121
0.2916	1.116
0.3000	1.112
0.3083	1.102
0.3166	1.097
0.3250	1.088
0.3333	1.083
0.3500	1.069

Elapsed Time (min)	Input 1 Surficial Monitor
0.3666	-0.979
0.3833	-0.965
0.4000	-0.950
0.4166	-0.936
0.4333	-0.917
0.4500	-0.903
0.4666	-0.889
0.4833	-0.874
0.5000	-0.860
0.5166	-0.850
0.5333	-0.836
0.5500	-0.822
0.5666	-0.808
0.5833	-0.793
0.6000	-0.784
0.6166	-0.770
0.6333	-0.760
0.6500	-0.746
0.6666	-0.736
0.6833	-0.722
0.7000	-0.713
0.7166	-0.698
0.7333	-0.689
0.7500	-0.679
0.7666	-0.665
0.7833	-0.660
0.8000	-0.646
0.8166	-0.637
0.8333	-0.627
0.8500	-0.618
0.8666	-0.608
0.8833	-0.598
0.9000	-0.589
0.9166	-0.579
0.9333	-0.575
0.9500	-0.565
0.9666	-0.556
0.9833	-0.546
1.0000	-0.541
1.2000	-0.451
1.4000	-0.375
1.6000	-0.318
1.8000	-0.261
2.0000	-0.218
2.2000	-0.190
2.4000	-0.156
2.6000	-0.133
2.8000	-0.114
3.0000	-0.095
3.2000	-0.080
3.4000	-0.071
3.6000	-0.061
3.8000	-0.047
4.0000	-0.042
4.2000	-0.038
4.4000	-0.033
4.6000	-0.028
4.8000	-0.023
5.0000	-0.023

Elapsed Time (min)	Input 1 Surficial Monitor
0.3666	1.055
0.3833	1.045
0.4000	1.031
0.4166	1.021
0.4333	1.007
0.4500	0.997
0.4666	0.988
0.4833	0.974
0.5000	0.964
0.5166	0.955
0.5333	0.940
0.5500	0.931
0.5666	0.921
0.5833	0.912
0.6000	0.902
0.6166	0.893
0.6333	0.879
0.6500	0.869
0.6666	0.860
0.6833	0.850
0.7000	0.841
0.7166	0.831
0.7333	0.826
0.7500	0.817
0.7666	0.807
0.7833	0.798
0.8000	0.788
0.8166	0.779
0.8333	0.769
0.8500	0.765
0.8666	0.755
0.8833	0.746
0.9000	0.736
0.9166	0.731
0.9333	0.722
0.9500	0.717
0.9666	0.708
0.9833	0.698
1.0000	0.693
1.2000	0.603
1.4000	0.532
1.6000	0.470
1.8000	0.413
2.0000	0.365
2.2000	0.313
2.4000	0.285
2.6000	0.251
2.8000	0.228
3.0000	0.204
3.2000	0.185
3.4000	0.161
3.6000	0.152
3.8000	0.142
4.0000	0.133
4.2000	0.123
4.4000	0.114
4.6000	0.104
4.8000	0.104
5.0000	0.095

Elapsed Time (min)	Input 1 Surficial Monitor
5.2000	-0.019
5.4000	-0.014
5.6000	-0.009
5.8000	-0.009
6.0000	-0.004
6.2000	-0.004
6.4000	-0.004
6.6000	0.000
6.8000	0.000
7.0000	0.000
7.2000	0.004
7.4000	0.004
7.6000	0.004
7.8000	0.009
8.0000	0.014
8.2000	0.019
8.4000	0.019
8.6000	0.019
8.8000	0.019

Elapsed Time (min)	Input 1 Surficial Monitor
5.2000	0.085
5.4000	0.080
5.6000	0.071
5.8000	0.071
6.0000	0.066
6.2000	0.061
6.4000	0.057
6.6000	0.052
6.8000	0.052
7.0000	0.052
7.2000	0.047
7.4000	0.042
7.6000	0.038
7.8000	0.038
8.0000	0.038
8.2000	0.038
8.4000	0.038
8.6000	0.042
8.8000	0.042

Appendix C

Data Logger Water Level Measurements for MIAS APT

SE2000

Environmental Logger

12/09 21:25

Unit# 577 Test 1

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	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
I.D.								
Reference	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PSI at Ref.	10.990	49.294	37.857	8.758	1.992	10.929	14.215	38.674
SG	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Linearity	0.147	0.036	0.014	0.110	0.073	0.081	0.078	0.000
Scale factor	14.930	99.651	49.817	15.035	14.905	15.012	15.068	50.000
Offset	0.011	-0.083	-0.107	-0.026	0.009	-0.016	0.040	0.000
Delay mSEC	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000

Step 0 12/09 17:37:05

Middle Intermediate Aquifer APT

	XD 1	XD 2	XD 3	XD 4	XD 5	XD 8
Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
0	0	0	0	0	0	0
0.0084	0	-2.322	-0.015	0.01	0.005	-0.283
0.0167	0	-0.722	-0.015	0.01	0	-0.22
0.025	-0.005	-0.188	0	0.005	0	0.032
0.0334	0.005	-0.502	0	0.005	0.005	-0.204
0.0417	0	-0.753	0	0.005	0.005	0.063
0.05	0	-0.973	-0.015	0.01	0.005	0.251
0.0584	-0.005	-1.098	0	-0.004	0	0.267
0.0667	0	-1.286	-0.015	0.005	0.005	0.204
0.075	-0.005	-1.475	0	0.005	0.005	0.126
0.0834	0	-1.663	-0.015	0.015	0	-0.031
0.0917	0	-1.788	0	0.01	0	-0.031
0.1	-0.005	-1.945	-0.015	0.01	0	-0.031
0.1084	0	-2.134	0	0.005	0.005	0.158
0.1167	0	-2.259	0	0.005	0	-0.063
0.125	0	-2.447	-0.015	0.005	0	0.032
0.1334	0	-2.604	0	0.005	0.005	-0.015
0.1417	0	-2.761	-0.015	0.005	0	-0.015
0.15	0	-2.918	0	0.005	0.005	0.048
0.1584	0	-3.075	0	0.01	0.005	0.095
0.1667	0	-3.263	-0.015	0	0.005	0.111
0.175	-0.005	-3.389	0	0.005	0	0.235
0.1834	0	-3.546	-0.015	0.005	0	0.142
0.1917	0	-3.702	0	0.005	0	0.267
0.2	0	-3.828	-0.015	0	0	0.048
0.2084	0	-4.016	0	0.01	0	-0.047
0.2167	0	-4.142	-0.015	0.005	0	-0.126
0.225	0	-4.299	-0.015	0	0.005	0
0.2334	-0.005	-4.424	0	0	0	0.204
0.2417	0	-4.55	-0.015	0.01	0.005	-0.283
0.25	0	-4.738	0	0.005	0.005	0.472
0.2584	-0.005	-4.863	-0.015	0.01	0.005	-0.047
0.2667	0	-5.02	0	0.01	0.005	0.095
0.275	-0.005	-5.146	-0.015	0.005	0	0.095
0.2834	0	-5.271	-0.015	0	0	0.283
0.2917	-0.005	-5.428	-0.015	0.005	0.005	0.424
0.3084	0	-5.679	0	0.005	-0.024	-0.126
0.325	0	-5.993	0	0	-0.024	-0.031
0.3417	0	-6.244	0	0	-0.024	0.235
0.3584	0	-6.495	-0.015	0.005	-0.024	-0.031
0.375	0	-6.777	-0.015	0.005	-0.024	0.158

SE2000

Environmental Logger

12/12 08:58

Unit# 577 Test 1

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	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
I.D.								
Reference	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PSI at Ref.	10.990	49.294	37.857	8.758	1.992	10.929	14.215	38.674
SG	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Linearity	0.147	0.036	0.014	0.110	0.073	0.081	0.078	0.000
Scale factor	14.930	99.651	49.817	15.035	14.905	15.012	15.068	50.000
Offset	0.011	-0.083	-0.107	-0.026	0.009	-0.016	0.040	0.000
Delay mSEC	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000

Step 1 12/11 19:17:46 Recovery data

Middle Intermediate Aquifer System APT

	XD 1	XD 2	XD 3	XD 4	XD 5	XD 8
Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
0	0.314	-51.015	0.25	0.31	0.465	-13.824
0.0083	0.319	-51.046	0.235	0.31	0.488	-13.714
0.0166	0.319	-51.642	0.25	0.305	0.488	-13.635
0.025	0.319	-51.423	0.235	0.305	0.488	-13.683
0.0333	0.319	-51.109	0.235	0.315	0.488	-13.746
0.0416	0.319	-50.921	0.235	0.315	0.488	-13.462
0.05	0.319	-50.701	0.235	0.31	0.488	-13.572
0.0583	0.319	-50.513	0.235	0.3	0.488	-13.557
0.0666	0.319	-50.325	0.235	0.31	0.488	-13.698
0.075	0.319	-50.105	0.235	0.315	0.488	-13.525
0.0833	0.319	-49.917	0.235	0.305	0.488	-13.462
0.0916	0.319	-49.729	0.235	0.31	0.488	-13.635
0.1	0.319	-49.54	0.235	0.305	0.488	-13.73
0.1083	0.319	-49.352	0.235	0.31	0.488	-13.368
0.1166	0.319	-49.164	0.235	0.305	0.488	-13.336
0.125	0.319	-48.976	0.235	0.305	0.488	-13.714
0.1333	0.319	-48.819	0.235	0.31	0.488	-13.824
0.1416	0.319	-48.631	0.235	0.315	0.488	-13.541
0.15	0.314	-48.474	0.235	0.3	0.488	-13.179
0.1583	0.314	-48.286	0.235	0.31	0.488	-13.588
0.1666	0.319	-48.129	0.235	0.31	0.488	-13.746
0.175	0.319	-47.94	0.235	0.31	0.488	-13.62
0.1833	0.319	-47.784	0.235	0.31	0.488	-13.667
0.1916	0.314	-47.627	0.25	0.31	0.488	-13.903
0.2	0.319	-47.47	0.235	0.305	0.488	-13.446
0.2083	0.314	-47.313	0.235	0.305	0.488	-13.494
0.2166	0.319	-47.156	0.235	0.31	0.488	-13.635
0.225	0.319	-46.999	0.235	0.305	0.488	-13.683
0.2333	0.319	-46.842	0.235	0.31	0.488	-13.462
0.2416	0.314	-46.717	0.235	0.31	0.488	-13.588
0.25	0.319	-46.591	0.235	0.305	0.488	-13.73
0.2583	0.319	-46.435	0.235	0.31	0.488	-13.494
0.2666	0.319	-46.278	0.235	0.305	0.488	-13.257
0.275	0.319	-46.121	0.235	0.305	0.488	-13.32
0.2833	0.319	-45.995	0.235	0.305	0.488	-13.195
0.2916	0.319	-45.839	0.235	0.305	0.488	-13.525
0.3	0.314	-45.744	0.235	0.31	0.488	-13.635
0.3083	0.314	-45.588	0.235	0.305	0.488	-13.651
0.3166	0.319	-45.462	0.235	0.31	0.488	-13.509
0.325	0.314	-45.337	0.235	0.31	0.488	-13.62
0.3333	0.319	-45.211	0.235	0.315	0.488	-13.872

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
0.3917	0	-6.997	-0.015	0.005	-0.024	0.048
0.4084	-0.005	-7.248	0	0	-0.024	0.063
0.425	0	-7.499	0	0.005	-0.024	0.142
0.4417	0	-7.781	-0.015	0.005	-0.028	0.377
0.4584	0	-8.032	0	0.005	-0.024	0.235
0.475	0	-8.252	-0.015	0.005	-0.024	0.111
0.4917	0	-8.503	-0.015	0.01	-0.028	-0.204
0.5084	0	-8.723	-0.015	0.005	-0.024	-0.173
0.525	0	-8.942	0	0.005	-0.024	-0.252
0.5417	0	-9.225	0	0.005	-0.024	-0.267
0.5584	0	-9.444	0	0.01	-0.024	0.032
0.575	0	-9.664	-0.015	0	-0.024	-0.078
0.5917	0	-9.884	-0.015	0.005	-0.024	0.095
0.6084	-0.005	-10.103	-0.015	0	-0.024	0.079
0.625	0	-10.323	0	0	-0.024	0.095
0.6417	-0.005	-10.543	0	0.01	-0.028	-0.031
0.6584	0	-10.762	0	0.01	-0.024	-0.299
0.675	0	-10.982	0	0.005	-0.028	0
0.6917	0.005	-11.201	-0.015	0.005	-0.024	0.142
0.7084	0	-11.39	-0.015	0.005	-0.024	0
0.725	-0.005	-11.609	0	0.005	-0.024	0.063
0.7417	0	-11.798	0	0.01	-0.024	-0.063
0.7584	0	-12.017	0	0.005	-0.024	0.173
0.775	0	-12.237	0	0.01	-0.024	-0.126
0.7917	0	-12.425	-0.015	0.01	-0.024	0.095
0.8084	0	-12.613	-0.015	0.005	-0.028	-0.283
0.825	0	-12.802	-0.015	0.005	-0.024	-0.22
0.8417	0	-12.99	-0.015	0	-0.024	-0.063
0.8584	0	-13.178	-0.015	0.005	-0.024	-0.047
0.875	0	-13.366	-0.015	0.005	-0.024	0.158
0.8917	-0.005	-13.555	-0.015	0.005	-0.024	0.016
0.9084	-0.005	-13.743	0	0.01	-0.024	-0.252
0.925	0	-13.931	0	0.005	-0.024	-0.582
0.9417	0	-14.119	0	0	-0.024	-0.078
0.9584	0	-14.276	0	0	-0.019	-0.031
1.1584	0	-16.347	0	0	-0.028	-0.425
1.3584	0	-18.167	0	0.005	-0.024	-0.283
1.5584	0	-19.83	0	0.005	-0.028	-0.094
1.7584	0	-21.367	-0.015	0.005	-0.024	-0.346
1.9584	0	-22.779	0	0	-0.024	-0.614
2.1584	0	-24.034	0	0.01	-0.024	-0.488
2.3584	0	-25.195	0	0.005	-0.024	-0.488
2.5584	0	-26.262	0	0.01	-0.024	-0.567
2.7584	-0.005	-27.234	0	0.01	-0.024	-0.63
2.9584	0	-28.144	0	0.005	-0.024	-0.913
3.1584	0	-28.96	0	0.005	-0.024	-0.693
3.3584	-0.005	-29.744	0	0.005	-0.024	-0.96
3.5584	0	-30.466	0	0.01	-0.024	-1.023
3.7584	0.005	-31.125	0	0.005	-0.024	-0.787
3.9584	0.005	-31.752	0	0	-0.024	-1.055
4.1584	0.005	-32.317	0	0.005	-0.024	-1.102
4.3584	-0.005	-32.85	0	0.01	-0.024	-1.307
4.5584	0	-33.352	0	0.005	-0.024	-1.212
4.7584	0	-33.823	0	0.01	-0.024	-1.086
4.9584	0.005	-34.262	0	0.005	-0.024	-1.275
5.1584	0.005	-34.67	0	0.005	-0.024	-1.417
5.3584	0	-35.078	0	0.005	-0.024	-1.685
5.5584	0.005	-35.423	0	0.005	-0.024	-1.59
5.7584	0	-35.768	0	0.005	-0.024	-1.244

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
0.35	0.319	-44.96	0.235	0.315	0.46	-13.541
0.3666	0.319	-44.678	0.235	0.305	0.465	-13.62
0.3833	0.319	-44.458	0.235	0.305	0.46	-13.777
0.4	0.319	-44.176	0.25	0.305	0.465	-13.777
0.4166	0.319	-43.925	0.235	0.315	0.46	-13.494
0.4333	0.319	-43.674	0.235	0.3	0.465	-13.415
0.45	0.319	-43.454	0.235	0.31	0.465	-13.635
0.4666	0.319	-43.203	0.235	0.31	0.46	-13.289
0.4833	0.319	-42.984	0.235	0.31	0.465	-13.872
0.5	0.319	-42.764	0.235	0.31	0.465	-13.415
0.5166	0.319	-42.544	0.235	0.305	0.465	-13.714
0.5333	0.319	-42.325	0.235	0.315	0.465	-13.667
0.55	0.319	-42.136	0.235	0.3	0.465	-13.383
0.5666	0.319	-41.917	0.235	0.315	0.465	-13.73
0.5833	0.319	-41.729	0.235	0.315	0.465	-13.824
0.6	0.319	-41.54	0.235	0.31	0.465	-13.809
0.6166	0.319	-41.321	0.235	0.3	0.465	-13.431
0.6333	0.314	-41.133	0.235	0.315	0.465	-13.62
0.65	0.319	-40.913	0.235	0.31	0.465	-13.446
0.6666	0.319	-40.693	0.235	0.315	0.465	-13.588
0.6833	0.319	-40.505	0.235	0.305	0.465	-13.399
0.7	0.319	-40.317	0.235	0.31	0.465	-13.541
0.7166	0.319	-40.129	0.235	0.31	0.465	-13.62
0.7333	0.319	-39.909	0.235	0.31	0.465	-13.635
0.75	0.319	-39.721	0.235	0.31	0.465	-13.557
0.7666	0.319	-39.533	0.25	0.31	0.465	-13.32
0.7833	0.319	-39.344	0.235	0.31	0.465	-13.809
0.8	0.319	-39.156	0.235	0.31	0.465	-13.824
0.8166	0.319	-38.968	0.235	0.31	0.465	-13.572
0.8333	0.319	-38.78	0.25	0.305	0.465	-13.604
0.85	0.324	-38.591	0.235	0.315	0.465	-13.887
0.8666	0.319	-38.403	0.235	0.31	0.465	-14.013
0.8833	0.319	-38.215	0.235	0.305	0.465	-13.698
0.9	0.319	-38.027	0.235	0.31	0.465	-13.651
0.9166	0.319	-37.838	0.235	0.3	0.465	-13.604
0.9333	0.314	-37.681	0.235	0.3	0.465	-13.572
0.95	0.319	-37.493	0.235	0.315	0.465	-13.793
0.9666	0.319	-37.305	0.235	0.305	0.465	-13.635
0.9833	0.319	-37.148	0.235	0.31	0.465	-13.462
1	0.319	-36.96	0.235	0.305	0.465	-13.572
1.2	0.319	-34.952	0.235	0.31	0.46	-13.683
1.4	0.319	-33.132	0.25	0.305	0.46	-13.446
1.6	0.319	-31.469	0.235	0.305	0.465	-13.431
1.8	0.319	-29.932	0.235	0.31	0.465	-13.368
2	0.319	-28.52	0.235	0.305	0.465	-13.179
2.2	0.319	-27.265	0.235	0.315	0.465	-13.415
2.4	0.319	-26.104	0.235	0.315	0.465	-13.289
2.6	0.319	-25.038	0.235	0.305	0.465	-13.116
2.8	0.319	-24.065	0.235	0.31	0.465	-12.88
3	0.319	-23.187	0.235	0.315	0.465	-13.305
3.2	0.319	-22.402	0.235	0.315	0.465	-12.848
3.4	0.319	-21.681	0.235	0.315	0.465	-12.927
3.6	0.319	-21.022	0.235	0.305	0.465	-13.069
3.8	0.319	-20.426	0.235	0.31	0.465	-12.47
4	0.319	-19.892	0.235	0.305	0.465	-12.785
4.2	0.314	-19.421	0.235	0.315	0.465	-12.58
4.4	0.314	-18.982	0.235	0.31	0.465	-12.722
4.6	0.314	-18.574	0.235	0.31	0.46	-12.565
4.8	0.314	-18.229	0.235	0.315	0.465	-12.502

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
5.9584	0.005	-36.082	0	0.015	-0.024	-1.527
6.1584	0.005	-36.396	0	0.005	-0.024	-2.204
6.3584	0.005	-36.678	0	0.005	-0.024	-1.999
6.5584	0	-36.96	0	0.005	-0.024	-1.952
6.7584	0	-37.211	0	0.005	-0.028	-1.999
6.9584	0	-37.431	0	0.005	-0.028	-1.685
7.1584	0.005	-37.682	0	0.005	-0.024	-2.078
7.3584	0.005	-37.901	0	0.01	-0.024	-1.968
7.5584	0	-38.09	0	0.005	-0.024	-2.236
7.7584	0	-38.278	0	0.005	-0.024	-2.157
7.9584	0.005	-38.498	0	0.015	-0.028	-2.11
8.1584	0.005	-38.654	0	0.01	-0.024	-2.582
8.3584	0.005	-38.843	0	0	-0.024	-2.236
8.5584	0	-39	0	0.005	-0.024	-2.204
8.7584	0.005	-39.125	0	0.01	-0.024	-2.456
8.9584	0.005	-39.282	0	0.005	-0.024	-2.11
9.1584	0.005	-39.407	0	0.005	-0.024	-2.204
9.3584	0.005	-39.533	0	0.01	-0.024	-2.062
9.5584	0.005	-39.69	0	0	-0.024	-2.267
9.7584	0.005	-39.815	0	0.005	-0.024	-2.44
9.9584	0.005	-39.909	0	0.005	-0.024	-2.614
11.9584	0.005	-40.882	0	0.005	-0.028	-2.897
13.9584	0.005	-41.635	0	0.005	-0.024	-3.18
15.9584	0.01	-42.168	0	0.01	-0.024	-3.432
17.9584	0.005	-42.639	0	0.005	-0.024	-3.621
19.9584	0.015	-43.015	0.016	0.01	-0.028	-3.842
21.9584	0.01	-43.392	0.032	0.01	-0.028	-4.015
23.9584	0.01	-43.674	0.032	0.01	-0.028	-4.235
25.9584	0.01	-43.957	0.032	0.01	-0.028	-4.409
27.9584	0.01	-44.145	0.016	0.01	-0.024	-4.582
29.9584	0.01	-44.396	0.032	0.01	-0.028	-4.739
31.9584	0.015	-44.584	0.032	0.005	-0.028	-4.849
33.9584	0.01	-44.772	0.032	0.005	-0.028	-5.07
35.9584	0.01	-44.929	0.016	0.005	-0.024	-5.149
37.9584	0.015	-45.055	0.032	0.005	-0.028	-5.259
39.9584	0.01	-45.211	0.032	0.01	-0.028	-5.353
41.9584	0.01	-45.337	0.032	0.005	-0.028	-5.511
43.9584	0.015	-45.431	0.016	0.005	-0.028	-5.589
45.9584	0.015	-45.557	0.032	0.005	-0.028	-5.715
47.9584	0.01	-45.682	0.032	0.005	-0.028	-5.763
49.9584	0.01	-45.808	0.032	0.005	-0.028	-5.826
51.9584	0.01	-45.902	0.032	0	-0.028	-5.952
53.9584	0.01	-45.996	0.032	0	-0.028	-6.109
55.9584	0.01	-46.121	0.032	0	-0.028	-6.156
57.9584	0.01	-46.247	0.032	0	-0.028	-6.235
59.9584	0.005	-46.341	0.016	-0.004	-0.024	-6.408
61.9584	0.01	-46.404	0.032	-0.004	-0.028	-6.44
63.9584	0.01	-46.498	0.032	0	-0.028	-6.393
65.9584	0.005	-46.623	0.032	-0.004	-0.028	-6.566
67.9584	0.005	-46.717	0.032	-0.009	-0.028	-6.66
69.9584	0.01	-46.78	0.032	-0.009	-0.024	-6.707
71.9584	0.005	-46.874	0.032	-0.004	-0.024	-6.833
73.9584	0.005	-46.937	0.016	-0.009	-0.024	-6.865
75.9584	0.005	-47	0.016	-0.009	-0.019	-6.912
77.9584	0.005	-47.094	0	-0.014	-0.019	-6.975
79.9584	0	-47.125	0.016	-0.014	-0.024	-7.054
81.9584	0.005	-47.219	0.016	-0.019	-0.028	-7.148
83.9584	0	-47.313	0.016	-0.014	-0.028	-7.243
85.9584	0	-47.376	0.032	-0.014	-0.024	-7.164

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
5	0.314	-17.884	0.235	0.315	0.465	-12.36
5.2	0.319	-17.602	0.235	0.31	0.465	-12.502
5.4	0.314	-17.319	0.235	0.315	0.465	-12.722
5.6	0.314	-17.068	0.235	0.31	0.465	-12.628
5.8	0.314	-16.849	0.235	0.305	0.465	-12.36
6	0.314	-16.629	0.235	0.31	0.465	-11.762
6.2	0.314	-16.409	0.235	0.305	0.465	-12.203
6.4	0.314	-16.253	0.235	0.31	0.465	-12.14
6.6	0.314	-16.064	0.235	0.315	0.465	-11.998
6.8	0.314	-15.907	0.235	0.31	0.465	-11.888
7	0.314	-15.782	0.235	0.305	0.465	-11.746
7.2	0.314	-15.5	0.235	0.31	0.465	-12.234
7.4	0.314	-15.123	0.235	0.31	0.46	-11.998
7.6	0.314	-15.092	0.235	0.31	0.465	-12.281
7.8	0.314	-15.029	0.235	0.31	0.465	-11.651
8	0.314	-14.966	0.235	0.305	0.46	-11.746
8.2	0.314	-14.903	0.235	0.305	0.465	-11.399
8.4	0.314	-14.841	0.235	0.315	0.465	-11.462
8.6	0.314	-14.747	0.235	0.305	0.465	-11.352
8.8	0.314	-14.684	0.235	0.305	0.465	-11.588
9	0.309	-14.59	0.235	0.31	0.465	-11.148
9.2	0.314	-14.527	0.235	0.31	0.465	-11.494
9.4	0.309	-14.433	0.235	0.305	0.465	-11.478
9.6	0.309	-14.37	0.235	0.305	0.46	-11.494
9.8	0.314	-14.307	0.235	0.31	0.465	-11.289
10	0.309	-14.245	0.235	0.305	0.465	-11.226
12	0.314	-13.617	0.25	0.31	0.455	-10.88
14	0.314	-13.084	0.25	0.31	0.46	-10.612
16	0.314	-12.676	0.235	0.31	0.46	-10.282
18	0.309	-12.268	0.235	0.31	0.46	-10.045
20	0.305	-11.954	0.235	0.305	0.46	-10.014
22	0.305	-11.64	0.235	0.305	0.465	-9.73
24	0.3	-11.358	0.219	0.305	0.46	-9.51
26	0.309	-11.107	0.235	0.305	0.455	-9.541
28	0.305	-10.887	0.25	0.305	0.455	-9.274
30	0.305	-10.668	0.235	0.305	0.455	-9.116
32	0.305	-10.479	0.25	0.305	0.455	-8.896
34	0.3	-10.291	0.235	0.305	0.455	-8.896
36	0.3	-10.103	0.235	0.3	0.455	-8.864
38	0.3	-9.946	0.235	0.305	0.455	-8.675
40	0.305	-9.758	0.235	0.305	0.46	-8.518
42	0.295	-9.601	0.235	0.305	0.455	-8.376
44	0.295	-9.475	0.219	0.305	0.46	-8.361
46	0.3	-9.35	0.235	0.305	0.46	-8.14
48	0.3	-9.193	0.235	0.305	0.455	-8.109
50	0.295	-9.067	0.235	0.305	0.455	-8.014
52	0.3	-8.942	0.235	0.305	0.455	-7.951
54	0.295	-8.816	0.235	0.31	0.46	-7.872
56	0.295	-8.691	0.235	0.305	0.46	-7.683
58	0.3	-8.597	0.235	0.305	0.46	-7.668
60	0.3	-8.471	0.235	0.305	0.46	-7.479
62	0.295	-8.377	0.235	0.305	0.455	-7.369
64	0.295	-8.283	0.235	0.31	0.46	-7.384
66	0.295	-8.189	0.235	0.305	0.455	-7.337
68	0.295	-8.095	0.235	0.305	0.455	-7.306
70	0.29	-8.001	0.235	0.305	0.455	-7.258
72	0.29	-7.907	0.235	0.31	0.46	-7.054
74	0.29	-7.812	0.235	0.305	0.455	-7.038
76	0.29	-7.718	0.235	0.305	0.46	-7.069

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
87.9584	0	-47.408	0.032	-0.014	-0.024	-7.353
89.9584	0	-47.47	0.032	-0.019	-0.024	-7.384
91.9584	0	-47.564	0.032	-0.019	-0.024	-7.463
93.9584	-0.005	-47.659	0.032	-0.023	-0.024	-7.495
95.9584	-0.005	-47.69	0.032	-0.023	-0.028	-7.542
97.9584	-0.005	-47.753	0.032	-0.023	-0.024	-7.526
99.9584	-0.005	-47.753	0.016	-0.023	-0.024	-7.636
114.9584	-0.014	-48.129	0	-0.033	-0.019	-7.967
129.9584	-0.024	-48.474	0	-0.052	-0.024	-8.361
144.9584	-0.024	-48.725	0	-0.057	-0.024	-8.534
159.9584	-0.033	-48.945	0	-0.062	-0.024	-8.928
174.9584	-0.047	-49.196	-0.015	-0.071	-0.024	-9.148
189.9584	-0.047	-49.321	-0.031	-0.076	-0.019	-9.416
204.9584	-0.057	-49.541	-0.031	-0.09	-0.019	-9.683
219.9584	-0.062	-49.792	-0.047	-0.095	-0.024	-9.825
234.9584	-0.076	-49.917	-0.062	-0.105	-0.019	-9.998
249.9584	-0.081	-50.106	-0.062	-0.114	-0.019	-10.187
264.9584	-0.086	-50.262	-0.078	-0.124	-0.019	-10.297
279.9584	-0.095	-50.357	-0.078	-0.128	-0.014	-10.549
294.9584	-0.105	-50.482	-0.094	-0.133	-0.01	-10.707
309.9584	-0.105	-50.545	-0.094	-0.133	-0.014	-10.66
324.9584	-0.109	-50.67	-0.109	-0.138	-0.01	-10.801
339.9584	-0.1	-50.702	-0.109	-0.138	-0.01	-10.99
354.9584	-0.109	-50.764	-0.109	-0.138	-0.01	-11.116
369.9584	-0.109	-50.827	-0.109	-0.138	-0.01	-11.226
384.9584	-0.105	-50.89	-0.109	-0.138	-0.01	-11.258
399.9584	-0.105	-50.984	-0.094	-0.133	-0.01	-11.368
414.9584	-0.1	-51.047	-0.109	-0.128	-0.01	-11.321
429.9584	-0.105	-51.015	-0.094	-0.128	-0.01	-11.541
444.9584	-0.095	-51.172	-0.094	-0.119	-0.005	-11.541
459.9584	-0.086	-51.204	-0.094	-0.114	-0.005	-11.667
474.9584	-0.09	-51.266	-0.109	-0.109	0	-11.62
489.9584	-0.081	-51.423	-0.094	-0.105	-0.01	-11.825
504.9584	-0.081	-51.423	-0.094	-0.095	-0.005	-11.872
519.9584	-0.076	-51.423	-0.078	-0.095	-0.005	-11.951
534.9584	-0.071	-51.486	-0.078	-0.081	0	-11.872
549.9584	-0.067	-51.549	-0.062	-0.076	-0.005	-11.982
564.9584	-0.057	-51.611	-0.078	-0.066	0	-12.108
579.9584	-0.047	-51.549	-0.078	-0.062	-0.005	-12.03
594.9584	-0.047	-51.643	-0.047	-0.052	-0.005	-12.155
609.9584	-0.033	-51.643	-0.062	-0.047	0	-12.124
624.9584	-0.028	-51.643	-0.047	-0.033	0	-12.218
639.9584	-0.024	-51.737	-0.047	-0.028	0	-12.281
654.9584	-0.019	-51.8	-0.047	-0.023	-0.005	-12.313
669.9584	-0.019	-51.8	-0.031	-0.028	0	-12.313
684.9584	-0.014	-51.8	-0.047	-0.019	0	-12.407
699.9584	-0.009	-51.831	-0.031	-0.009	0	-12.392
714.9584	-0.005	-51.894	-0.031	-0.009	0	-12.518
729.9584	0	-51.862	-0.031	-0.009	0	-12.423
744.9584	-0.005	-51.925	-0.015	-0.004	0	-12.455
759.9584	-0.005	-51.988	-0.015	-0.004	0	-12.47
774.9584	0	-52.019	-0.015	-0.009	0	-12.565
789.9584	-0.005	-52.051	-0.015	-0.009	0	-12.691
804.9584	-0.005	-52.082	-0.031	-0.009	0	-12.596
819.9584	-0.005	-52.145	-0.031	-0.014	0	-12.565
834.9584	-0.009	-52.239	-0.047	-0.023	0	-12.833
849.9584	-0.014	-52.176	-0.031	-0.028	0	-12.659
864.9584	-0.014	-51.957	-0.031	-0.033	0	-12.644
879.9584	-0.019	-51.831	-0.047	-0.042	-0.005	-12.77

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
78	0.29	-7.655	0.235	0.305	0.46	-6.928
80	0.286	-7.561	0.219	0.305	0.46	-6.849
82	0.286	-7.499	0.235	0.305	0.455	-6.849
84	0.29	-7.404	0.235	0.305	0.455	-6.66
86	0.286	-7.342	0.235	0.3	0.455	-6.676
88	0.286	-7.279	0.235	0.3	0.455	-6.644
90	0.286	-7.185	0.235	0.3	0.455	-6.628
92	0.281	-7.122	0.235	0.3	0.455	-6.581
94	0.281	-7.059	0.219	0.295	0.455	-6.487
96	0.281	-6.997	0.219	0.295	0.455	-6.44
98	0.271	-6.934	0.203	0.295	0.46	-6.345
100	0.276	-6.871	0.219	0.291	0.455	-6.329
115	0.271	-6.432	0.219	0.295	0.46	-5.873
130	0.266	-6.055	0.219	0.295	0.46	-5.652
145	0.266	-5.71	0.203	0.286	0.455	-5.322
160	0.257	-5.396	0.203	0.286	0.455	-5.022
175	0.252	-5.114	0.188	0.276	0.46	-4.77
190	0.252	-4.863	0.203	0.276	0.455	-4.566
205	0.247	-4.643	0.188	0.272	0.455	-4.456
220	0.247	-4.424	0.188	0.272	0.46	-4.219
235	0.252	-4.235	0.203	0.272	0.455	-4.062
250	0.252	-4.047	0.203	0.276	0.46	-3.889
265	0.252	-3.859	0.203	0.272	0.46	-3.716
280	0.252	-3.733	0.203	0.276	0.465	-3.574
295	0.257	-3.577	0.203	0.281	0.46	-3.448
310	0.257	-3.42	0.203	0.281	0.46	-3.369
325	0.252	-3.294	0.203	0.281	0.46	-3.212
340	0.252	-3.2	0.203	0.281	0.46	-3.117
355	0.257	-3.074	0.203	0.286	0.46	-3.038
370	0.262	-2.949	0.203	0.291	0.46	-2.865
385	0.262	-2.855	0.203	0.291	0.46	-2.771
400	0.271	-2.761	0.203	0.295	0.46	-2.708
415	0.271	-2.667	0.219	0.3	0.46	-2.613
430	0.276	-2.572	0.219	0.305	0.46	-2.566
445	0.281	-2.478	0.219	0.315	0.46	-2.409
460	0.286	-2.384	0.235	0.324	0.455	-2.346
475	0.295	-2.321	0.235	0.329	0.46	-2.298
490	0.3	-2.227	0.25	0.338	0.46	-2.251
505	0.309	-2.165	0.25	0.343	0.46	-2.157
520	0.319	-2.102	0.266	0.357	0.46	-2.204
535	0.324	-2.008	0.266	0.362	0.46	-1.999
550	0.338	-1.945	0.266	0.372	0.46	-1.952
565	0.343	-1.882	0.282	0.381	0.46	-1.936
580	0.352	-1.819	0.282	0.391	0.46	-1.905
595	0.357	-1.757	0.298	0.4	0.455	-1.826
610	0.362	-1.725	0.298	0.4	0.455	-1.747
625	0.371	-1.663	0.313	0.41	0.455	-1.763
640	0.381	-1.6	0.313	0.42	0.455	-1.59
655	0.386	-1.568	0.329	0.424	0.455	-1.59
670	0.39	-1.506	0.329	0.434	0.455	-1.527
685	0.395	-1.474	0.329	0.439	0.455	-1.432
700	0.405	-1.411	0.345	0.443	0.455	-1.417
715	0.405	-1.38	0.345	0.448	0.455	-1.48
730	0.405	-1.349	0.345	0.448	0.455	-1.448
745	0.414	-1.286	0.345	0.453	0.451	-1.259
760	0.41	-1.255	0.36	0.453	0.451	-1.322
775	0.41	-2.447	0.36	0.443	0.451	-1.322
790	0.414	-1.129	0.36	0.448	0.451	-1.306
805	0.414	-1.066	0.36	0.443	0.446	-1.259

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
894.9584	-0.024	-51.831	-0.047	-0.047	-0.005	-12.848
909.9584	-0.028	-51.831	-0.062	-0.062	-0.005	-12.927
924.9584	-0.033	-51.894	-0.062	-0.066	-0.005	-12.88
939.9584	-0.043	-51.862	-0.062	-0.085	-0.005	-12.974
954.9584	-0.047	-51.831	-0.078	-0.105	-0.01	-12.927
969.9584	-0.052	-51.831	-0.094	-0.124	-0.005	-12.911
984.9584	-0.067	-51.957	-0.094	-0.138	-0.005	-12.943
999.9584	-0.071	-51.957	-0.109	-0.143	-0.005	-12.974
1014.958	-0.081	-52.019	-0.124	-0.151	0	-12.99
1029.958	-0.081	-52.051	-0.124	-0.156	-0.005	-13.006
1044.958	-0.09	-52.145	-0.124	-0.161	-0.005	-13.022
1059.958	-0.095	-52.113	-0.124	-0.166	-0.005	-13.053
1074.958	-0.1	-52.051	-0.124	-0.166	-0.005	-13.069
1089.958	-0.1	-52.082	-0.14	-0.175	-0.005	-13.084
1104.958	-0.105	-52.145	-0.156	-0.175	0.005	-13.1
1119.958	-0.105	-52.051	-0.14	-0.166	0	-13.084
1134.958	-0.1	-52.082	-0.14	-0.156	0	-13.1
1149.958	-0.095	-52.176	-0.14	-0.151	0	-13.116
1164.958	-0.095	-51.988	-0.124	-0.143	0	-13.116
1179.958	-0.09	-51.8	-0.124	-0.133	0	-13.116
1194.958	-0.086	-51.957	-0.124	-0.124	0	-13.116
1209.958	-0.081	-52.239	-0.109	-0.119	0	-13.132
1224.958	-0.076	-52.208	-0.109	-0.109	0	-13.147
1239.958	-0.062	-52.051	-0.109	-0.1	0.005	-13.147
1254.958	-0.067	-52.082	-0.094	-0.095	0.005	-13.163
1269.958	-0.057	-52.019	-0.109	-0.09	0	-13.163
1284.958	-0.057	-52.082	-0.094	-0.09	0	-13.179
1299.958	-0.052	-52.208	-0.094	-0.085	0	-13.179
1314.958	-0.047	-52.27	-0.094	-0.076	0	-13.195
1329.958	-0.047	-52.239	-0.078	-0.071	0	-13.21
1344.958	-0.043	-52.239	-0.078	-0.071	0.005	-13.226
1359.958	-0.043	-52.176	-0.078	-0.071	0	-13.226
1374.958	-0.043	-52.302	-0.078	-0.066	0	-13.242
1389.958	-0.043	-52.396	-0.078	-0.057	0	-13.226
1404.958	-0.038	-52.333	-0.078	-0.052	0	-13.289
1419.958	-0.033	-52.396	-0.062	-0.038	0	-13.195
1434.958	-0.028	-52.521	-0.062	-0.028	0.005	-13.226
1449.958	-0.028	-52.145	-0.062	-0.019	0.005	-13.147
1464.958	-0.024	-52.208	-0.062	-0.009	0.005	-13.226
1479.958	-0.024	-52.208	-0.062	-0.004	0	-13.084
1494.958	-0.019	-52.239	-0.062	-0.004	0	-13.226
1509.958	-0.024	-52.333	-0.062	0	0	-13.195
1524.958	-0.028	-52.333	-0.062	0	0	-13.21
1539.958	-0.028	-52.364	-0.062	0	0	-13.494
1554.958	-0.024	-52.396	-0.062	0.005	0	-13.573
1569.958	-0.024	-52.396	-0.062	0.005	0	-13.478
1584.958	-0.019	-52.458	-0.062	0	0	-13.258
1599.958	-0.028	-52.49	-0.062	0	0	-13.494
1614.958	-0.028	-52.49	-0.047	0	0	-13.415
1629.958	-0.033	-52.458	-0.062	0	0	-13.273
1644.958	-0.033	-52.458	-0.078	-0.004	0	-13.399
1659.958	-0.028	-52.584	-0.062	-0.004	0.005	-13.415
1674.958	-0.033	-52.553	-0.078	-0.004	0	-13.604
1689.958	-0.033	-52.584	-0.078	-0.004	0	-13.62
1704.958	-0.038	-52.553	-0.062	-0.009	0	-13.604
1719.958	-0.033	-52.553	-0.062	-0.009	0	-13.588
1734.958	-0.043	-52.615	-0.062	-0.009	0	-13.588
1749.958	-0.033	-52.584	-0.078	-0.009	0	-13.494
1764.958	-0.038	-52.584	-0.078	-0.009	0	-13.699

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
820	0.41	-1.066	0.345	0.448	0.455	-1.165

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
1779.958	-0.033	-52.584	-0.062	-0.004	0.005	-13.588
1794.958	-0.024	-52.553	-0.062	0.005	0.005	-13.494
1809.958	-0.014	-52.521	-0.062	0.015	0.005	-13.525
1824.958	-0.009	-52.458	-0.062	0.02	0.005	-13.62
1839.958	-0.005	-52.553	-0.047	0.024	0.005	-13.447
1854.958	0	-52.553	-0.047	0.029	0.005	-13.478
1869.958	0.005	-52.647	-0.031	0.034	0.005	-13.557
1884.958	0.015	-52.647	-0.031	0.048	0.005	-13.62
1899.958	0.024	-52.615	-0.015	0.058	0.005	-13.462
1914.958	0.034	-52.553	-0.015	0.067	0.009	-13.62
1929.958	0.034	-52.584	-0.015	0.072	0.005	-13.588
1944.958	0.043	-52.521	0	0.082	0.005	-13.462
1959.958	0.053	-52.521	0	0.091	0.009	-13.604
1974.958	0.062	-52.396	0.016	0.105	0.005	-13.525
1989.958	0.077	-52.427	0.032	0.12	0.005	-13.683
2004.958	0.091	-52.458	0.032	0.134	0.009	-13.636
2019.958	0.105	-52.458	0.063	0.148	0.009	-13.525
2034.958	0.115	-52.427	0.047	0.163	0.009	-13.399
2049.958	0.124	-52.458	0.063	0.172	0.009	-13.352
2064.958	0.129	-52.521	0.079	0.177	0.005	-13.604
2079.958	0.143	-52.553	0.079	0.187	0.005	-13.588
2094.958	0.153	-52.553	0.094	0.201	0.005	-13.462
2109.958	0.158	-52.553	0.094	0.206	0.005	-13.494
2124.958	0.167	-52.521	0.11	0.215	0.005	-13.557
2139.958	0.181	-52.553	0.11	0.225	0.005	-13.384
2154.958	0.186	-52.553	0.126	0.234	0.005	-13.336
2169.958	0.196	-52.553	0.126	0.239	0.005	-13.368
2184.958	0.2	-52.521	0.141	0.249	0.005	-13.447
2199.958	0.205	-52.458	0.141	0.253	0.005	-13.573
2214.958	0.21	-52.553	0.141	0.258	0.009	-13.636
2229.958	0.22	-52.615	0.157	0.263	0.005	-13.541
2244.958	0.224	-52.584	0.173	0.273	0.005	-13.604
2259.958	0.229	-52.553	0.157	0.273	0.009	-13.667
2274.958	0.239	-52.647	0.189	0.277	0.005	-13.399
2289.958	0.239	-52.615	0.189	0.282	0.005	-13.573
2304.958	0.239	-52.553	0.189	0.282	0	-13.604
2319.958	0.243	-52.458	0.173	0.282	0	-13.667
2334.958	0.243	-52.458	0.189	0.277	0	-13.573
2349.958	0.239	-52.27	0.189	0.273	0	-13.557
2364.958	0.239	-52.176	0.173	0.273	0.005	-13.462
2379.958	0.243	-52.145	0.189	0.268	0	-13.604
2394.958	0.239	-52.208	0.189	0.263	0	-13.51
2409.958	0.239	-52.082	0.173	0.258	-0.005	-13.51
2424.958	0.239	-51.957	0.173	0.249	-0.005	-13.51
2439.958	0.234	-52.019	0.173	0.239	-0.005	-13.51
2454.958	0.229	-52.019	0.173	0.23	-0.005	-13.51
2469.958	0.234	-52.208	0.173	0.225	-0.005	-13.51
2484.958	0.229	-52.27	0.157	0.215	0	-13.541
2499.958	0.229	-52.27	0.173	0.21	0	-13.525
2514.958	0.229	-52.208	0.173	0.201	0	-13.525
2529.958	0.229	-52.145	0.173	0.201	0	-13.525
2544.958	0.239	-52.113	0.173	0.201	0	-13.51
2559.958	0.243	-52.051	0.173	0.201	0.005	-13.51
2574.958	0.248	-52.113	0.173	0.201	0.005	-13.478
2589.958	0.243	-52.113	0.173	0.196	0	-13.494
2604.958	0.248	-52.082	0.173	0.191	0	-13.352
2619.958	0.243	-52.082	0.173	0.182	-0.005	-13.415
2634.958	0.248	-52.176	0.173	0.191	0.009	-13.557
2649.958	0.248	-52.145	0.173	0.191	0	-13.62

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well
2664.958	0.243	-52.082	0.173	0.191	-0.005	-13.273
2679.958	0.248	-52.051	0.173	0.196	0	-13.478
2694.958	0.248	-52.019	0.173	0.196	0	-13.478
2709.958	0.248	-52.051	0.173	0.191	0	-13.462
2724.958	0.253	-52.208	0.189	0.196	0	-13.462
2739.958	0.258	-52.27	0.189	0.201	0	-13.462
2754.958	0.258	-52.208	0.189	0.201	0	-13.462
2769.958	0.258	-52.208	0.189	0.201	0	-13.462
2784.958	0.258	-52.208	0.189	0.191	0	-13.462
2799.958	0.258	-52.176	0.189	0.191	0	-13.51
2814.958	0.253	-52.176	0.189	0.182	0	-13.62
2829.958	0.248	-52.145	0.173	0.177	-0.005	-13.573
2844.958	0.239	-52.176	0.173	0.172	0	-13.415
2859.958	0.234	-52.082	0.173	0.168	-0.005	-13.258
2874.958	0.229	-52.113	0.173	0.163	-0.005	-13.273
2889.958	0.224	-52.113	0.173	0.163	-0.005	-13.541
2904.958	0.229	-52.145	0.173	0.168	-0.005	-13.273
2919.958	0.224	-52.082	0.173	0.163	-0.005	-13.368
2934.958	0.215	-52.019	0.157	0.163	-0.005	-13.321
2949.958	0.21	-51.894	0.157	0.163	-0.005	-13.336
2964.958	0.205	-51.925	0.157	0.163	-0.005	-13.368
2979.958	0.186	-51.957	0.126	0.163	0	-13.399

Elapsed Time (min)	FAS/SUW Perm Well	MIAS Perm Well **PUMPED**	LIAS Perm Well	FAS/AVPK Perm Well	SAS Perm Well	MIAS **OB** Well

Appendix D

Data Logger Water Level Measurements for LIAS APT

SE2000

Environmental Logger

12/02 12:31 PM

Unit #577

Settings	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	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
I.D.								
Reference	0	0	0	0	0	0	0	0
PSI at ref.	10.99	49.294	37.857	8.758	1.992	10.929	14.215	38.674
SG	1	1	1	1	1	1	1	1
Linearity	0.147	0.036	0.014	0.11	0.073	0.081	0.078	0
Scale Facto	14.93	99.651	49.817	15.035	14.905	15.012	15.068	50
Offset	0.011	-0.083	-0.107	-0.026	0.009	-0.016	0.04	0
Delay mSE	50	50	50	50	50	50	50	50

Lower Intermediate Aquifer APT

	XD1	XD2	XD3	XD4	XD5	XD 8
Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well
0	0	0	0	0	0	0
0.0084	0	0.031	-20.517	0.005	0	0.005
0.0167	0.005	0.031	0.235	0	0	0
0.025	0.005	0.031	1.176	0.005	0	-0.005
0.0334	0.005	0.031	-4.031	0.005	0	0
0.0417	0.005	0.031	-4.674	0	0	-0.005
0.05	0.005	0.031	-3.843	0	0	0
0.0584	0.005	0.031	-4.862	0.005	0	-0.005
0.0667	0.005	0.031	-6.211	0	-0.005	-0.009
0.075	0.005	0.031	-6.745	0.01	0	-0.009
0.0834	0.005	0.031	-7.419	0	0	-0.009
0.0917	0.005	0.031	-8.094	0	0	0
0.1	0.005	0.031	-8.768	0	0	-0.005
0.1084	0	0.031	-9.49	0.005	-0.005	-0.014
0.1167	0.005	0.031	-10.086	0.01	-0.005	-0.009
0.125	0.005	0.031	-10.604	0	0	-0.005
0.1334	0	0.031	-11.09	0.005	0	-0.009
0.1417	0.005	0.031	-11.561	0.005	0	-0.014
0.15	0.005	0.031	-12.11	0.005	-0.005	-0.009
0.1584	0.005	0.031	-12.596	0	0	-0.019
0.1667	0.005	0.031	-12.863	0.005	0	-0.024
0.175	0.005	0.031	-13.239	0	0	-0.024
0.1834	0.005	0	-13.725	0.005	0	-0.029
0.1917	0	0.031	-14.102	0	0	-0.024
0.2	0	0.031	-14.368	0	0	-0.033
0.2084	0.005	0.031	-14.855	0.005	0	-0.038
0.2167	0	0	-15.153	0	-0.005	-0.048
0.225	0	0.031	-15.325	0.01	0	-0.057
0.2334	0	0.031	-15.764	0.005	0	-0.048
0.2417	0	0.031	-15.937	0	0	-0.053
0.25	0.005	0.031	-16.204	0.005	0	-0.067
0.2584	0	0.031	-16.47	0	0	-0.077
0.2667	0	0.031	-16.753	-0.004	0	-0.081
0.2834	0.005	0.031	-17.145	0	-0.028	-0.072
0.3	0.005	0.031	-17.694	0.005	-0.028	-0.091
0.3167	0	0.031	-18.039	0	-0.028	-0.105
0.3334	0	0.031	-18.4	0.005	-0.028	-0.124
0.35	0	0.031	-18.76	0.005	-0.028	-0.139
0.3667	0	0.031	-19.247	0	-0.028	-0.163

SE2000

Environmental Logger

12/05 01:25

Unit# 577 Test 1

Setups:	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5	INPUT 6	INPUT 7
Type	Level (F)	Level (F)	Level (F)	Level (F)	Level (F)	Level (F)	Level (F)	Level (
Mode	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surfa
I.D.								
Reference	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PSI at Ref.	10.990	49.294	37.857	8.758	1.992	10.929	14.215	38.674
SG	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Linearity	0.147	0.036	0.014	0.110	0.073	0.081	0.078	0.000
Scale factor	14.930	99.651	49.817	15.035	14.905	15.012	15.068	50.0
Offset	0.011	-0.083	-0.107	-0.026	0.009	-0.016	0.040	0.000
Delay mSEC	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.

Lower Intermediate Aquifer APT

	XD 1	XD 2	XD 3	XD 4	XD 5	XD 7
Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well
0	-0.624	-0.784	-47.949	-0.405	-0.023	-24.972
0.0083	-0.624	-0.784	-47.871	-0.405	0	-24.967
0.0166	-0.624	-0.784	-47.777	-0.41	0	-24.967
0.025	-0.624	-0.784	-47.698	-0.405	0	-24.963
0.0333	-0.629	-0.784	-47.84	-0.4	0	-24.967
0.0416	-0.629	-0.784	-47.981	-0.405	0	-24.967
0.05	-0.624	-0.784	-42.993	-0.405	0	-24.967
0.0583	-0.629	-0.784	-45.44	-0.415	0	-24.967
0.0666	-0.624	-0.784	-47.322	-0.405	0	-24.967
0.075	-0.624	-0.784	-45.785	-0.41	0	-24.967
0.0833	-0.624	-0.784	-45.315	-0.415	0	-24.967
0.0916	-0.624	-0.784	-44.421	-0.405	0	-24.967
0.1	-0.624	-0.784	-43.574	-0.405	0	-24.967
0.1083	-0.624	-0.784	-43.025	-0.405	0	-24.967
0.1166	-0.624	-0.784	-42.272	-0.405	0	-24.967
0.125	-0.624	-0.784	-41.692	-0.415	0	-24.963
0.1333	-0.629	-0.784	-41.08	-0.405	0	-24.967
0.1416	-0.624	-0.784	-40.468	-0.405	-0.004	-24.963
0.15	-0.624	-0.784	-39.919	-0.405	0	-24.967
0.1583	-0.624	-0.784	-39.355	-0.405	0	-24.963
0.1666	-0.624	-0.784	-38.853	-0.405	0	-24.963
0.175	-0.624	-0.784	-38.367	-0.41	0	-24.963
0.1833	-0.624	-0.784	-37.896	-0.405	-0.004	-24.963
0.1916	-0.624	-0.784	-37.441	-0.405	0	-24.963
0.2	-0.624	-0.784	-37.002	-0.405	0	-24.963
0.2083	-0.624	-0.784	-36.594	-0.405	0	-24.958
0.2166	-0.624	-0.784	-36.186	-0.41	0	-24.958
0.225	-0.624	-0.784	-35.81	-0.41	0	-24.958
0.2333	-0.624	-0.784	-35.434	-0.405	0	-24.953
0.2416	-0.624	-0.784	-35.073	-0.405	0.004	-24.953
0.25	-0.624	-0.784	-34.728	-0.4	0	-24.944
0.2583	-0.624	-0.784	-34.398	-0.41	0	-24.944
0.2666	-0.624	-0.784	-34.069	-0.4	0	-24.948
0.275	-0.629	-0.784	-33.771	-0.405	0	-24.948
0.2833	-0.624	-0.784	-33.473	-0.405	0	-24.944
0.2916	-0.624	-0.784	-33.191	-0.405	0	-24.944
0.3	-0.624	-0.784	-32.924	-0.405	0	-24.939
0.3083	-0.624	-0.784	-32.657	-0.405	0	-24.934
0.3166	-0.624	-0.784	-32.391	-0.41	0	-24.934

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS OB Well
0.3834	0	0.031	-19.764	0	-0.028	-0.172
0.4	0	0.031	-19.56	0.005	-0.028	-0.196
0.4167	0	0.031	-19.811	0	-0.028	-0.211
0.4334	0	0.031	-20.015	0.005	-0.028	-0.211
0.45	0	0.031	-20.47	0	-0.028	-0.239
0.4667	0	0.031	-20.36	0.005	-0.028	-0.254
0.4834	0	0.031	-20.345	0.01	-0.028	-0.268
0.5	0	0.031	-19.545	0.005	-0.028	-0.297
0.5167	0	0.031	-21.301	0.005	-0.028	-0.302
0.5334	0	0.031	-21.16	0	-0.028	-0.326
0.55	-0.005	0.031	-21.317	0	-0.028	-0.345
0.5667	0	0.031	-21.662	0	-0.024	-0.359
0.5834	0	0.031	-21.725	0.01	-0.028	-0.388
0.6	0	0.031	-22.023	0.005	-0.028	-0.402
0.6167	0	0.031	-22.148	-0.004	-0.028	-0.417
0.6334	0	0.031	-22.399	0.005	-0.028	-0.436
0.65	0	0.031	-22.447	0	-0.028	-0.45
0.6667	0	0.031	-22.713	0.005	-0.028	-0.479
0.6834	0	0.031	-22.917	0	-0.028	-0.493
0.7	0	0.031	-22.948	0	-0.028	-0.517
0.7167	0	0.031	-23.152	0.005	-0.028	-0.536
0.7334	0	0.031	-23.231	0	-0.028	-0.551
0.75	0	0.031	-23.482	0.005	-0.028	-0.565
0.7667	0	0.031	-23.466	0	-0.028	-0.589
0.7834	-0.005	0.031	-23.67	0.005	-0.028	-0.608
0.8	0	0.031	-23.827	0	-0.028	-0.623
0.8167	0	0.031	-23.905	0.005	-0.028	-0.647
0.8334	0	0.031	-24.125	-0.004	-0.028	-0.671
0.85	-0.005	0.031	-24.203	0.005	-0.028	-0.695
0.8667	0	0.031	-24.36	0.01	-0.028	-0.714
0.8834	-0.005	0.031	-24.407	0	-0.028	-0.728
0.9	-0.005	0.031	-24.595	0	-0.024	-0.757
0.9167	-0.005	0.031	-24.627	-0.004	-0.032	-0.766
0.9334	0	0.031	-24.831	0	-0.024	-0.79
1.1334	-0.005	0.031	-25.85	0	-0.028	-1.049
1.3334	-0.005	0.031	-26.509	0.005	-0.024	-1.289
1.5334	-0.005	0.031	-27.136	0.005	-0.028	-1.533
1.7334	-0.005	0.031	-27.607	0.005	-0.028	-1.772
1.9334	-0.005	0.031	-28.046	0.01	-0.028	-1.993
2.1334	-0.005	0.062	-28.344	0.005	-0.024	-2.213
2.3334	-0.005	0.062	-28.611	0	-0.028	-2.433
2.5334	-0.005	0.062	-28.893	0	-0.028	-2.625
2.7334	-0.005	0.062	-29.081	-0.004	-0.028	-2.821
2.9334	-0.005	0.062	-29.332	0.005	-0.028	-3.012
3.1334	-0.005	0.062	-29.568	0	-0.028	-3.194
3.3334	-0.005	0.062	-29.646	0.005	-0.028	-3.376
3.5334	-0.005	0.062	-29.881	0	-0.028	-3.553
3.7334	-0.005	0.062	-30.117	0	-0.028	-3.726
3.9334	-0.005	0.062	-30.164	0	-0.028	-3.884
4.1334	0	0.062	-30.54	0	-0.024	-4.037
4.3334	0	0.062	-30.603	0	-0.024	-4.195
4.5334	0	0.062	-30.728	0.005	-0.028	-4.338
4.7334	0	0.062	-30.932	0	-0.028	-4.487
4.9334	0	0.062	-30.964	0	-0.028	-4.621
5.1334	0	0.062	-31.183	0	-0.028	-4.759
5.3334	0	0.062	-31.262	0	-0.028	-4.898
5.5334	0	0.062	-31.371	0.005	-0.024	-5.032
5.7334	0	0.062	-31.465	0.005	-0.024	-5.147
5.9334	-0.005	0.062	-31.512	0.005	-0.028	-5.276

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS OB Well
0.325	-0.624	-0.784	-32.156	-0.405	0	-24.929
0.3333	-0.624	-0.784	-31.92	-0.405	0	-24.929
0.35	-0.624	-0.784	-31.465	-0.405	-0.023	-24.92
0.3666	-0.624	-0.784	-31.026	-0.4	-0.023	-24.91
0.3833	-0.624	-0.784	-30.634	-0.41	-0.023	-24.901
0.4	-0.624	-0.784	-30.179	-0.405	-0.023	-24.886
0.4166	-0.624	-0.784	-29.819	-0.415	-0.023	-24.872
0.4333	-0.624	-0.784	-29.489	-0.4	-0.028	-24.863
0.45	-0.624	-0.784	-29.16	-0.4	-0.028	-24.848
0.4666	-0.624	-0.784	-28.862	-0.405	-0.028	-24.829
0.4833	-0.624	-0.784	-28.579	-0.405	-0.028	-24.82
0.5	-0.619	-0.784	-28.313	-0.41	-0.028	-24.801
0.5166	-0.619	-0.784	-28.062	-0.405	-0.028	-24.782
0.5333	-0.619	-0.784	-27.811	-0.4	-0.028	-24.772
0.55	-0.619	-0.784	-27.576	-0.4	-0.023	-24.749
0.5666	-0.619	-0.784	-27.356	-0.41	-0.023	-24.73
0.5833	-0.619	-0.784	-27.152	-0.405	-0.023	-24.71
0.6	-0.619	-0.784	-26.948	-0.405	-0.023	-24.696
0.6166	-0.619	-0.784	-26.76	-0.405	-0.028	-24.677
0.6333	-0.619	-0.784	-26.572	-0.405	-0.023	-24.653
0.65	-0.619	-0.784	-26.399	-0.41	-0.023	-24.634
0.6666	-0.619	-0.784	-26.227	-0.4	-0.023	-24.615
0.6833	-0.619	-0.784	-26.07	-0.415	-0.023	-24.596
0.7	-0.619	-0.784	-25.913	-0.405	-0.028	-24.577
0.7166	-0.619	-0.784	-25.772	-0.405	-0.028	-24.558
0.7333	-0.619	-0.784	-25.631	-0.41	-0.023	-24.539
0.75	-0.614	-0.784	-25.489	-0.4	-0.023	-24.525
0.7666	-0.619	-0.784	-25.348	-0.4	-0.023	-24.501
0.7833	-0.619	-0.784	-25.223	-0.41	-0.023	-24.482
0.8	-0.619	-0.784	-25.097	-0.405	-0.028	-24.458
0.8166	-0.619	-0.784	-24.988	-0.4	-0.023	-24.439
0.8333	-0.619	-0.784	-24.862	-0.41	-0.028	-24.42
0.85	-0.619	-0.784	-24.752	-0.405	-0.023	-24.397
0.8666	-0.619	-0.784	-24.642	-0.41	-0.023	-24.378
0.8833	-0.614	-0.784	-24.548	-0.4	-0.023	-24.358
0.9	-0.619	-0.784	-24.439	-0.405	-0.028	-24.339
0.9166	-0.614	-0.784	-24.344	-0.4	-0.028	-24.311
0.9333	-0.614	-0.784	-24.25	-0.4	-0.023	-24.297
0.95	-0.619	-0.784	-24.156	-0.41	-0.023	-24.278
0.9666	-0.614	-0.784	-24.062	-0.41	-0.028	-24.254
0.9833	-0.619	-0.784	-23.968	-0.41	-0.028	-24.235
1	-0.619	-0.784	-23.89	-0.396	-0.023	-24.216
1.2	-0.614	-0.784	-23.027	-0.405	-0.023	-23.954
1.4	-0.614	-0.784	-22.384	-0.405	-0.023	-23.716
1.6	-0.614	-0.784	-21.882	-0.4	-0.023	-23.488
1.8	-0.614	-0.784	-21.458	-0.4	-0.028	-23.264
2	-0.614	-0.784	-21.098	-0.396	-0.028	-23.05
2.2	-0.61	-0.784	-20.784	-0.4	-0.023	-22.841
2.4	-0.614	-0.784	-20.517	-0.41	-0.023	-22.641
2.6	-0.614	-0.784	-20.266	-0.41	-0.023	-22.455
2.8	-0.614	-0.815	-20.047	-0.396	-0.023	-22.26
3	-0.614	-0.784	-19.843	-0.4	-0.023	-22.084
3.2	-0.61	-0.784	-19.639	-0.405	-0.023	-21.912
3.4	-0.61	-0.784	-19.466	-0.4	-0.023	-21.741
3.6	-0.614	-0.815	-19.294	-0.4	-0.028	-21.584
3.8	-0.614	-0.815	-19.137	-0.405	-0.023	-21.427
4	-0.61	-0.815	-18.996	-0.405	-0.028	-21.274
4.2	-0.61	-0.815	-18.855	-0.405	-0.023	-21.127
4.4	-0.61	-0.784	-18.713	-0.405	-0.023	-20.989

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS OB Well
6.1334	0	0.062	-31.701	0.005	-0.028	-5.396
6.3334	0	0.062	-31.685	0.005	-0.028	-5.515
6.5334	0	0.062	-31.858	0	-0.024	-5.635
6.7334	0	0.062	-31.936	0.005	-0.024	-5.745
6.9334	0	0.093	-31.999	0.005	-0.028	-5.855
7.1334	0	0.062	-32.171	0	-0.028	-5.97
7.3334	0	0.093	-32.124	0.01	-0.028	-6.075
7.5334	0	0.093	-32.25	0.01	-0.024	-6.175
7.7334	0	0.062	-32.422	0	-0.028	-6.276
7.9334	0	0.093	-32.422	0.005	-0.024	-6.372
8.1334	0	0.093	-32.563	0.01	-0.028	-6.477
8.3334	0.005	0.093	-32.642	0.005	-0.024	-6.572
8.5334	0	0.093	-32.61	0	-0.028	-6.663
8.7334	0	0.093	-32.752	0	-0.028	-6.754
8.9334	0	0.093	-32.861	0.005	-0.024	-6.845
9.1334	0.005	0.093	-32.924	0	-0.028	-6.926
9.3334	0	0.062	-32.846	0	-0.024	-7.017
9.5334	0	0.093	-33.003	0.01	-0.024	-7.108
9.7334	0.005	0.062	-33.159	0.005	-0.028	-7.189
9.9334	0	0.093	-33.238	0.005	-0.028	-7.275
11.9334	0.005	0.093	-33.724	0.005	-0.028	-8.031
13.9334	0.005	0.093	-34.273	0.005	-0.028	-8.695
15.9334	0.009	0.093	-34.791	0.005	-0.028	-9.283
17.9334	0.009	0.093	-35.245	0.005	-0.028	-9.813
19.9334	0.013	0.093	-35.7	0.01	-0.032	-10.291
21.9334	0.018	0.093	-36.014	0.01	-0.028	-10.735
23.9334	0.018	0.093	-36.469	0.01	-0.032	-11.146
25.9334	0.013	0.093	-36.61	0.01	-0.032	-11.528
27.9334	0.013	0.093	-37.112	0.015	-0.028	-11.881
29.9334	0.013	0.093	-37.269	0.01	-0.028	-12.206
31.9334	0.013	0.093	-37.582	0.015	-0.028	-12.521
33.9334	0.018	0.125	-37.865	0.01	-0.032	-12.812
35.9334	0.018	0.125	-37.943	0.015	-0.028	-13.089
37.9334	0.023	0.125	-38.304	0.015	-0.032	-13.352
39.9334	0.018	0.125	-38.57	0.015	-0.032	-13.6
41.9334	0.023	0.125	-38.837	0.015	-0.032	-13.839
43.9334	0.018	0.125	-38.963	0.015	-0.032	-14.068
45.9334	0.013	0.125	-39.119	0.015	-0.028	-14.282
47.9334	0.013	0.125	-39.245	0.01	-0.028	-14.492
49.9334	0.018	0.125	-39.402	0.015	-0.028	-14.697
51.9334	0.018	0.125	-39.543	0.015	-0.028	-14.883
53.9334	0.018	0.125	-39.747	0.015	-0.028	-15.07
55.9334	0.018	0.125	-40.013	0.015	-0.028	-15.246
57.9334	0.018	0.125	-40.107	0.015	-0.032	-15.446
59.9334	0.023	0.125	-40.217	0.015	-0.032	-15.609
61.9334	0.023	0.125	-40.453	0.015	-0.032	-15.766
63.9334	0.018	0.125	-40.609	0.015	-0.032	-15.919
65.9334	0.023	0.125	-40.688	0.015	-0.028	-16.071
67.9334	0.023	0.125	-40.751	0.015	-0.032	-16.214
69.9334	0.023	0.125	-40.907	0.015	-0.028	-16.357
71.9334	0.023	0.125	-41.001	0.015	-0.032	-16.491
73.9334	0.023	0.125	-41.08	0.015	-0.032	-16.624
75.9334	0.023	0.125	-41.205	0.015	-0.032	-16.748
77.9334	0.018	0.125	-41.299	0.015	-0.032	-16.872
79.9334	0.023	0.125	-41.488	0.019	-0.032	-16.991
81.9334	0.023	0.125	-41.629	0.015	-0.032	-17.111
83.9334	0.023	0.125	-41.676	0.015	-0.032	-17.22
85.9334	0.018	0.125	-41.833	0.015	-0.032	-17.335
87.9334	0.018	0.125	-41.895	0.015	-0.032	-17.44

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS OB Well
4.6	-0.61	-0.815	-18.572	-0.4	-0.023	-20.841
4.8	-0.614	-0.815	-18.447	-0.396	-0.028	-20.713
5	-0.61	-0.815	-18.337	-0.41	-0.028	-20.579
5.2	-0.61	-0.815	-18.211	-0.396	-0.023	-20.451
5.4	-0.61	-0.815	-18.102	-0.4	-0.023	-20.322
5.6	-0.614	-0.815	-17.992	-0.4	-0.023	-20.203
5.8	-0.61	-0.815	-17.882	-0.405	-0.023	-20.084
6	-0.61	-0.815	-17.772	-0.4	-0.023	-19.97
6.2	-0.61	-0.815	-17.678	-0.4	-0.023	-19.855
6.4	-0.61	-0.815	-17.584	-0.4	-0.023	-19.746
6.6	-0.614	-0.815	-17.474	-0.4	-0.023	-19.631
6.8	-0.61	-0.815	-17.38	-0.4	-0.023	-19.531
7	-0.61	-0.815	-17.286	-0.4	-0.023	-19.426
7.2	-0.61	-0.815	-17.208	-0.4	-0.028	-19.326
7.4	-0.61	-0.815	-17.113	-0.396	-0.023	-19.226
7.6	-0.61	-0.815	-17.019	-0.396	-0.023	-19.126
7.8	-0.61	-0.815	-16.941	-0.396	-0.023	-19.031
8	-0.61	-0.815	-16.862	-0.4	-0.023	-18.936
8.2	-0.61	-0.815	-16.784	-0.4	-0.023	-18.845
8.4	-0.61	-0.815	-16.706	-0.4	-0.023	-18.755
8.6	-0.61	-0.815	-16.611	-0.4	-0.023	-18.659
8.8	-0.61	-0.815	-16.549	-0.4	-0.023	-18.569
9	-0.61	-0.815	-16.47	-0.4	-0.023	-18.488
9.2	-0.61	-0.815	-16.392	-0.4	-0.023	-18.402
9.4	-0.61	-0.815	-16.329	-0.4	-0.023	-18.316
9.6	-0.61	-0.815	-16.251	-0.4	-0.023	-18.235
9.8	-0.61	-0.815	-16.172	-0.405	-0.023	-18.154
10	-0.61	-0.815	-16.11	-0.4	-0.023	-18.073
12	-0.61	-0.815	-15.451	-0.4	-0.028	-17.33
14	-0.61	-0.847	-14.886	-0.4	-0.023	-16.691
16	-0.61	-0.847	-14.384	-0.4	-0.023	-16.114
18	-0.61	-0.847	-13.913	-0.396	-0.023	-15.599
20	-0.61	-0.847	-13.49	-0.4	-0.028	-15.098
22	-0.605	-0.847	-13.082	-0.4	-0.028	-14.659
24	-0.6	-0.847	-12.706	-0.396	-0.028	-14.253
26	-0.605	-0.847	-12.376	-0.396	-0.028	-13.881
28	-0.6	-0.847	-12.047	-0.396	-0.028	-13.528
30	-0.6	-0.847	-11.733	-0.391	-0.028	-13.189
32	-0.595	-0.847	-11.451	-0.391	-0.028	-12.879
34	-0.595	-0.847	-11.168	-0.391	-0.028	-12.583
36	-0.591	-0.847	-10.902	-0.391	-0.032	-12.301
38	-0.591	-0.847	-10.651	-0.386	-0.028	-12.034
40	-0.586	-0.847	-10.415	-0.386	-0.028	-11.781
42	-0.586	-0.847	-10.18	-0.386	-0.028	-11.537
44	-0.586	-0.847	-9.961	-0.386	-0.028	-11.303
46	-0.581	-0.847	-9.757	-0.381	-0.028	-11.084
48	-0.581	-0.847	-9.553	-0.381	-0.028	-10.869
50	-0.581	-0.847	-9.349	-0.381	-0.028	-10.663
52	-0.576	-0.847	-9.161	-0.381	-0.028	-10.463
54	-0.576	-0.847	-8.988	-0.377	-0.028	-10.276
56	-0.576	-0.847	-8.815	-0.377	-0.028	-10.09
58	-0.576	-0.847	-8.643	-0.377	-0.028	-9.913
60	-0.571	-0.847	-8.486	-0.377	-0.028	-9.741
62	-0.571	-0.847	-8.329	-0.377	-0.028	-9.574
64	-0.567	-0.847	-8.172	-0.372	-0.028	-9.416
66	-0.567	-0.847	-8.031	-0.372	-0.028	-9.259
68	-0.567	-0.847	-7.89	-0.372	-0.028	-9.111
70	-0.567	-0.878	-7.749	-0.372	-0.028	-8.962
72	-0.562	-0.847	-7.608	-0.372	-0.028	-8.819

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well
89.9334	0.018	0.125	-41.958	0.015	-0.032	-17.544
91.9334	0.018	0.125	-42.084	0.015	-0.032	-17.649
93.9334	0.018	0.125	-42.084	0.015	-0.032	-17.745
95.9334	0.018	0.125	-42.225	0.015	-0.032	-17.845
97.9334	0.018	0.125	-42.272	0.015	-0.032	-17.935
99.9334	0.023	0.125	-42.382	0.015	-0.032	-18.026
114.9334	0.023	0.125	-42.868	0.019	-0.032	-18.645
129.9334	0.023	0.125	-43.37	0.019	-0.032	-19.169
144.9334	0.023	0.125	-43.778	0.019	-0.032	-19.617
159.9334	0.023	0.125	-44.154	0.024	-0.032	-20.008
174.9334	0.023	0.125	-44.405	0.024	-0.028	-20.351
189.9334	0.028	0.125	-44.719	0.029	-0.032	-20.651
204.9334	0.032	0.125	-44.907	0.029	-0.032	-20.918
219.9334	0.032	0.125	-45.142	0.038	-0.032	-21.156
234.9334	0.032	0.125	-45.362	0.038	-0.028	-21.375
249.9334	0.037	0.125	-45.362	0.043	-0.032	-21.565
264.9334	0.032	0.125	-45.534	0.038	-0.032	-21.746
279.9334	0.037	0.125	-45.801	0.038	-0.032	-21.903
294.9334	0.037	0.125	-45.816	0.038	-0.032	-22.046
309.9334	0.037	0.125	-45.91	0.043	-0.032	-22.184
324.9334	0.037	0.125	-45.926	0.043	-0.028	-22.298
339.9334	0.042	0.093	-46.02	0.053	-0.032	-22.413
354.9334	0.047	0.125	-46.146	0.053	-0.032	-22.517
369.9334	0.047	0.093	-46.35	0.053	-0.032	-22.612
384.9334	0.047	0.093	-46.256	0.058	-0.032	-22.703
399.9334	0.047	0.093	-46.318	0.058	-0.032	-22.789
414.9334	0.047	0.093	-46.601	0.058	-0.032	-22.865
429.9334	0.047	0.093	-46.397	0.058	-0.032	-22.936
444.9334	0.042	0.093	-46.663	0.058	-0.032	-23.007
459.9334	0.042	0.093	-46.726	0.058	-0.032	-23.069
474.9334	0.042	0.062	-46.789	0.058	-0.032	-23.131
489.9334	0.042	0.062	-46.804	0.058	-0.032	-23.184
504.9334	0.037	0.062	-46.789	0.053	-0.032	-23.241
519.9334	0.032	0.062	-46.914	0.048	-0.032	-23.293
534.9334	0.032	0.031	-46.852	0.053	-0.037	-23.341
549.9334	0.037	0.062	-46.867	0.053	-0.032	-23.383
564.9334	0.037	0.031	-46.914	0.053	-0.037	-23.426
579.9334	0.032	0.031	-46.946	0.053	-0.037	-23.464
594.9334	0.023	0.031	-46.961	0.043	-0.032	-23.502
609.9334	0.028	0.031	-46.899	0.048	-0.037	-23.54
624.9334	0.032	0	-47.024	0.048	-0.037	-23.574
639.9334	0.028	0	-46.93	0.043	-0.037	-23.607
654.9334	0.028	0	-47.055	0.034	-0.042	-23.636
669.9334	0.023	0	-47.024	0.029	-0.037	-23.664
684.9334	0.028	-0.031	-47.04	0.029	-0.037	-23.697
699.9334	0.028	-0.031	-45.973	0.029	-0.037	-23.697
714.9334	0.013	-0.031	-46.82	0.019	-0.042	-23.678
729.9334	0.009	-0.031	-46.93	0.01	-0.042	-23.707
744.9334	0	-0.063	-46.977	0.005	-0.042	-23.726
759.9334	0	-0.063	-46.852	-0.004	-0.042	-23.745
774.9334	-0.005	-0.063	-46.883	-0.008	-0.046	-23.764
789.9334	-0.005	-0.063	-47.055	-0.008	-0.046	-23.778
804.9334	-0.005	-0.094	-47.055	-0.013	-0.042	-23.793
819.9334	-0.01	-0.094	-46.977	-0.018	-0.042	-23.802
834.9334	0	-0.063	-47.024	-0.013	-0.042	-23.812
849.9334	0.005	-0.063	-47.087	-0.013	-0.037	-23.821
864.9334	0.005	-0.063	-46.977	-0.013	-0.046	-23.831
879.9334	0.005	-0.063	-47.04	-0.013	-0.042	-23.845
894.9334	0.005	-0.094	-46.883	-0.018	-0.042	-23.859

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well
74	-0.562	-0.847	-7.482	-0.372	-0.028	-8.68
76	-0.557	-0.847	-7.357	-0.372	-0.028	-8.547
78	-0.557	-0.847	-7.231	-0.367	-0.028	-8.418
80	-0.557	-0.847	-7.106	-0.367	-0.028	-8.289
82	-0.552	-0.847	-6.98	-0.367	-0.028	-8.169
84	-0.552	-0.847	-6.87	-0.367	-0.028	-8.045
86	-0.548	-0.847	-6.761	-0.362	-0.028	-7.93
88	-0.548	-0.847	-6.651	-0.362	-0.028	-7.815
90	-0.548	-0.847	-6.557	-0.362	-0.028	-7.705
92	-0.548	-0.847	-6.447	-0.362	-0.028	-7.595
94	-0.548	-0.847	-6.353	-0.362	-0.028	-7.49
96	-0.543	-0.847	-6.259	-0.362	-0.028	-7.39
98	-0.543	-0.847	-6.164	-0.362	-0.028	-7.289
100	-0.543	-0.847	-6.07	-0.362	-0.028	-7.189
115	-0.529	-0.847	-5.443	-0.357	-0.028	-6.519
130	-0.524	-0.847	-4.91	-0.353	-0.028	-5.955
145	-0.514	-0.847	-4.47	-0.348	-0.028	-5.467
160	-0.505	-0.847	-4.078	-0.348	-0.028	-5.041
175	-0.495	-0.847	-3.733	-0.338	-0.028	-4.673
190	-0.481	-0.847	-3.435	-0.334	-0.028	-4.343
205	-0.476	-0.847	-3.184	-0.334	-0.028	-4.06
220	-0.471	-0.847	-2.964	-0.334	-0.028	-3.802
235	-0.467	-0.815	-2.76	-0.334	-0.028	-3.577
250	-0.462	-0.847	-2.588	-0.334	-0.032	-3.371
265	-0.457	-0.815	-2.431	-0.334	-0.023	-3.199
280	-0.457	-0.815	-2.29	-0.334	-0.032	-3.026
295	-0.448	-0.815	-2.164	-0.329	-0.028	-2.878
310	-0.448	-0.815	-2.055	-0.338	-0.028	-2.744
325	-0.448	-0.815	-1.945	-0.338	-0.032	-2.615
340	-0.448	-0.815	-1.851	-0.338	-0.032	-2.5
355	-0.438	-0.815	-1.772	-0.338	-0.032	-2.399
370	-0.443	-0.815	-1.694	-0.343	-0.032	-2.304
385	-0.438	-0.815	-1.631	-0.348	-0.032	-2.217
400	-0.448	-0.815	-1.584	-0.348	-0.032	-2.145
415	-0.476	-0.847	-1.505	-0.353	-0.037	-2.069
430	-0.581	-0.847	-1.458	-0.357	-0.032	-2.002
445	-0.714	-0.815	-1.396	-0.357	-0.042	-1.925
460	-0.872	-0.815	-1.349	-0.362	-0.042	-1.868
475	-1.029	-0.815	-1.317	-0.367	-0.042	-1.815
490	-1.172	-0.815	-1.286	-0.377	-0.042	-1.767
505	-1.305	-0.815	-1.254	-0.381	-0.037	-1.724
520	-1.434	-0.815	-1.223	-0.391	-0.042	-1.686
535	-1.548	-0.815	-1.223	-0.4	-0.042	-1.662
550	-1.634	-0.815	-1.192	-0.4	-0.042	-1.614
565	-1.691	-0.815	-1.176	-0.4	-0.046	-1.585
580	-1.662	-0.784	-1.16	-0.396	-0.046	-1.561
595	-1.582	-0.784	-1.145	-0.396	-0.046	-1.528

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well
909.9334	0.005	-0.063	-47.071	-0.023	-0.037	-23.873
924.9334	0.005	-0.094	-47.024	-0.023	-0.051	-23.893
939.9334	0.005	-0.094	-47.134	-0.023	-0.042	-23.897
954.9334	0.005	-0.094	-46.899	-0.023	-0.042	-23.912
969.9334	0	-0.094	-47.15	-0.027	-0.046	-23.921
984.9334	0	-0.094	-46.946	-0.032	-0.046	-23.935
999.9334	-0.01	-0.094	-47.024	-0.037	-0.046	-23.954
1014.9334	-0.01	-0.094	-46.977	-0.046	-0.042	-23.969
1029.9334	-0.019	-0.094	-47.212	-0.051	-0.046	-23.983
1044.9334	-0.019	-0.094	-46.977	-0.056	-0.042	-23.997
1059.9334	-0.029	-0.125	-47.165	-0.066	-0.042	-24.011
1074.9334	-0.033	-0.125	-47.055	-0.075	-0.046	-24.026
1089.9334	-0.038	-0.125	-47.15	-0.08	-0.046	-24.04
1104.9334	-0.048	-0.125	-46.946	-0.094	-0.042	-24.035
1119.9334	-0.062	-0.125	-46.946	-0.118	-0.046	-24.04
1134.9334	-0.072	-0.125	-46.993	-0.132	-0.046	-24.054
1149.9334	-0.081	-0.157	-46.946	-0.142	-0.046	-24.064
1164.9334	-0.095	-0.157	-47.197	-0.151	-0.046	-24.078
1179.9334	-0.105	-0.157	-47.055	-0.156	-0.046	-24.092
1194.9334	-0.114	-0.157	-47.055	-0.151	-0.046	-24.116
1209.9334	-0.119	-0.188	-47.15	-0.151	-0.046	-24.135
1224.9334	-0.124	-0.188	-47.306	-0.147	-0.046	-24.145
1239.9334	-0.124	-0.188	-47.055	-0.151	-0.046	-24.159
1254.9334	-0.134	-0.188	-47.118	-0.151	-0.046	-24.173
1269.9334	-0.138	-0.188	-47.134	-0.156	-0.046	-24.187
1284.9334	-0.153	-0.22	-47.15	-0.166	-0.042	-24.202
1299.9334	-0.153	-0.22	-47.15	-0.171	-0.046	-24.216
1314.9334	-0.157	-0.22	-47.102	-0.175	-0.046	-24.235
1329.9334	-0.162	-0.22	-47.291	-0.175	-0.051	-24.245
1344.9334	-0.167	-0.251	-47.369	-0.175	-0.046	-24.259
1359.9334	-0.172	-0.251	-47.4	-0.18	-0.046	-24.268
1374.9334	-0.172	-0.251	-47.259	-0.18	-0.051	-24.283
1389.9334	-0.176	-0.251	-47.244	-0.18	-0.051	-24.287
1404.9334	-0.176	-0.282	-47.212	-0.18	-0.051	-24.302
1419.9334	-0.176	-0.282	-47.259	-0.18	-0.046	-24.306
1434.9334	-0.181	-0.282	-47.244	-0.18	-0.051	-24.316
1449.9334	-0.176	-0.282	-47.385	-0.175	-0.046	-24.325
1464.9334	-0.176	-0.282	-47.369	-0.175	-0.051	-24.33
1479.9334	-0.176	-0.282	-47.212	-0.171	-0.046	-24.335
1494.9334	-0.176	-0.282	-47.369	-0.171	-0.051	-24.349
1509.9334	-0.176	-0.282	-47.291	-0.171	-0.046	-24.349
1524.9334	-0.176	-0.282	-47.212	-0.166	-0.051	-24.359
1539.9334	-0.172	-0.282	-47.244	-0.166	-0.046	-24.364
1554.9334	-0.172	-0.282	-47.244	-0.161	-0.046	-24.368
1569.9334	-0.162	-0.282	-47.495	-0.156	-0.046	-24.368
1584.9334	-0.162	-0.282	-47.197	-0.151	-0.046	-24.373
1599.9334	-0.157	-0.282	-47.385	-0.147	-0.046	-24.378
1614.9334	-0.153	-0.282	-47.447	-0.142	-0.046	-24.378
1629.9334	-0.153	-0.282	-47.432	-0.137	-0.046	-24.383
1644.9334	-0.143	-0.282	-47.369	-0.132	-0.046	-24.383
1659.9334	-0.148	-0.282	-47.369	-0.128	-0.046	-24.387
1674.9334	-0.138	-0.282	-47.306	-0.128	-0.046	-24.392
1689.9334	-0.134	-0.282	-47.463	-0.118	-0.046	-24.383
1704.9334	-0.134	-0.282	-47.495	-0.118	-0.046	-24.387
1719.9334	-0.138	-0.282	-47.306	-0.118	-0.046	-24.392
1734.9334	-0.138	-0.314	-47.447	-0.123	-0.042	-24.397
1749.9334	-0.138	-0.314	-47.463	-0.118	-0.046	-24.402
1764.9334	-0.134	-0.314	-47.463	-0.118	-0.046	-24.406
1779.9334	-0.134	-0.314	-47.479	-0.118	-0.046	-24.411

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well
1794.9334	-0.134	-0.314	-47.322	-0.113	-0.046	-24.416
1809.9334	-0.138	-0.314	-47.385	-0.118	-0.051	-24.421
1824.9334	-0.138	-0.314	-47.447	-0.118	-0.046	-24.425
1839.9334	-0.143	-0.345	-47.495	-0.123	-0.051	-24.43
1854.9334	-0.138	-0.345	-47.338	-0.123	-0.046	-24.43
1869.9334	-0.138	-0.345	-47.306	-0.118	-0.046	-24.435
1884.9334	-0.138	-0.345	-47.259	-0.123	-0.051	-24.44
1899.9334	-0.143	-0.345	-47.4	-0.128	-0.051	-24.444
1914.9334	-0.143	-0.345	-47.479	-0.128	-0.051	-24.449
1929.9334	-0.138	-0.345	-47.353	-0.128	-0.046	-24.449
1944.9334	-0.148	-0.376	-47.447	-0.128	-0.046	-24.459
1959.9334	-0.148	-0.376	-47.542	-0.132	-0.051	-24.463
1974.9334	-0.153	-0.376	-47.338	-0.137	-0.051	-24.473
1989.9334	-0.153	-0.376	-47.416	-0.137	-0.051	-24.482
2004.9334	-0.157	-0.408	-47.542	-0.142	-0.051	-24.478
2019.9334	-0.157	-0.408	-47.338	-0.147	-0.051	-24.487
2034.9334	-0.162	-0.408	-47.447	-0.142	-0.051	-24.487
2049.9334	-0.167	-0.408	-47.4	-0.147	-0.056	-24.497
2064.9334	-0.167	-0.408	-47.416	-0.156	-0.056	-24.501
2079.9334	-0.176	-0.408	-47.51	-0.171	-0.056	-24.501
2094.9334	-0.176	-0.408	-47.573	-0.171	-0.051	-24.501
2109.9334	-0.176	-0.439	-47.338	-0.18	-0.056	-24.511
2124.9334	-0.181	-0.439	-47.463	-0.185	-0.056	-24.516
2139.9334	-0.176	-0.439	-47.557	-0.19	-0.056	-24.516
2154.9334	-0.181	-0.439	-47.322	-0.199	-0.056	-24.52
2169.9334	-0.186	-0.439	-47.338	-0.209	-0.056	-24.52
2184.9334	-0.191	-0.439	-47.495	-0.223	-0.056	-24.53
2199.9334	-0.191	-0.439	-47.526	-0.237	-0.06	-24.544
2214.9334	-0.2	-0.439	-47.369	-0.256	-0.065	-24.559
2229.9334	-0.2	-0.439	-47.557	-0.271	-0.06	-24.554
2244.9334	-0.215	-0.439	-47.447	-0.29	-0.06	-24.563
2259.9334	-0.215	-0.439	-47.51	-0.299	-0.06	-24.568
2274.9334	-0.224	-0.439	-47.573	-0.314	-0.06	-24.573
2289.9334	-0.229	-0.439	-47.604	-0.323	-0.056	-24.573
2304.9334	-0.229	-0.439	-47.62	-0.328	-0.06	-24.582
2319.9334	-0.238	-0.439	-47.4	-0.338	-0.056	-24.582
2334.9334	-0.238	-0.439	-47.416	-0.342	-0.06	-24.587
2349.9334	-0.243	-0.408	-47.463	-0.342	-0.056	-24.587
2364.9334	-0.253	-0.439	-47.62	-0.352	-0.056	-24.592
2379.9334	-0.257	-0.408	-47.542	-0.361	-0.056	-24.601
2394.9334	-0.262	-0.408	-47.4	-0.366	-0.06	-24.597
2409.9334	-0.277	-0.439	-47.495	-0.376	-0.06	-24.592
2424.9334	-0.329	-0.439	-47.479	-0.371	-0.06	-24.597
2439.9334	-0.453	-0.439	-47.495	-0.366	-0.056	-24.62
2454.9334	-0.605	-0.439	-47.51	-0.371	-0.06	-24.63
2469.9334	-0.767	-0.439	-47.447	-0.381	-0.06	-24.63
2484.9334	-0.929	-0.439	-47.542	-0.395	-0.06	-24.639
2499.9334	-1.077	-0.439	-47.745	-0.414	-0.06	-24.649
2514.9334	-1.22	-0.439	-47.636	-0.433	-0.06	-24.658
2529.9334	-1.349	-0.471	-47.542	-0.447	-0.06	-24.663
2544.9334	-1.468	-0.471	-47.495	-0.457	-0.06	-24.668
2559.9334	-1.573	-0.471	-47.667	-0.471	-0.06	-24.692
2574.9334	-1.673	-0.502	-47.479	-0.481	-0.06	-24.706
2589.9334	-1.763	-0.502	-47.51	-0.49	-0.06	-24.73
2604.9334	-1.849	-0.533	-47.698	-0.505	-0.06	-24.749
2619.9334	-1.925	-0.533	-47.745	-0.514	-0.06	-24.768
2634.9334	-1.977	-0.533	-47.73	-0.519	-0.056	-24.787
2649.9334	-1.968	-0.565	-47.636	-0.524	-0.056	-24.815
2664.9334	-1.892	-0.565	-47.808	-0.533	-0.06	-24.839

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well
2679.9334	-1.792	-0.565	-47.887	-0.538	-0.056	-24.868
2694.9334	-1.687	-0.596	-47.73	-0.543	-0.06	-24.887
2709.9334	-1.587	-0.627	-47.871	-0.543	-0.056	-24.911
2724.9334	-1.492	-0.627	-47.949	-0.538	-0.06	-24.925
2739.9334	-1.406	-0.627	-47.902	-0.533	-0.06	-24.939
2754.9334	-1.334	-0.659	-47.761	-0.533	-0.06	-24.953
2769.9334	-1.263	-0.659	-47.949	-0.528	-0.056	-24.963
2784.9334	-1.206	-0.69	-47.996	-0.524	-0.06	-24.972
2799.9334	-1.153	-0.69	-47.808	-0.519	-0.06	-24.982
2814.9334	-1.101	-0.69	-47.871	-0.519	-0.06	-24.987
2829.9334	-1.058	-0.69	-47.918	-0.514	-0.06	-24.987
2844.9334	-1.02	-0.722	-47.887	-0.509	-0.06	-24.991
2859.9334	-0.982	-0.722	-47.793	-0.509	-0.06	-24.996
2874.9334	-0.948	-0.722	-47.824	-0.505	-0.06	-24.996
2889.9334	-0.92	-0.722	-47.793	-0.5	-0.06	-24.996
2904.9334	-0.887	-0.753	-47.84	-0.49	-0.06	-24.996
2919.9334	-0.863	-0.753	-47.934	-0.486	-0.06	-24.996
2934.9334	-0.834	-0.753	-48.012	-0.486	-0.056	-24.991
2949.9334	-0.815	-0.753	-47.981	-0.476	-0.056	-24.996
2964.9334	-0.791	-0.753	-47.902	-0.471	-0.06	-24.991
2979.9334	-0.767	-0.753	-47.855	-0.466	-0.056	-24.991
2994.9334	-0.744	-0.753	-47.902	-0.462	-0.056	-24.991
3009.9334	-0.725	-0.753	-47.793	-0.457	-0.06	-24.987
3024.9334	-0.705	-0.753	-47.855	-0.447	-0.056	-24.982
3039.9334	-0.686	-0.753	-47.918	-0.438	-0.056	-24.977
3054.9334	-0.672	-0.753	-47.793	-0.438	-0.051	-24.968
3069.9334	-0.653	-0.753	-47.793	-0.428	-0.056	-24.972
3084.9334	-0.634	-0.753	-47.777	-0.419	-0.056	-24.968
3099.9334	-0.629	-0.753	-47.934	-0.419	-0.051	-24.958

Elapsed Time (min)	SUW Perm Well	MIAS Perm Well	LIAS Perm Well **Pumped**	AVPK Perm Well	SAS Perm Well	LIAS **OB** Well

Appendix E

Data Logger Water Level Measurements for Suwannee/Upper Floridan APT

SE2000

Environmental Logger

11/08 08:48

Unit# 577 Test 1

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	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
I.D.								
Reference	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PSI at Ref.	71.633	1.919	11.845	10.178	2.269	24.393	6.090	5.333
SG	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Linearity	0.000	0.000	0.073	0.000	0.078	-0.081	0.106	0.128
Scale factor	100.000	5.000	14.989	15.000	15.068	99.925	15.039	14.976
Offset	0.000	0.000	0.034	0.000	0.040	-0.112	-0.040	0.031
Delay mSEC	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000

Step 1 11/08 03:19:23

Suwannee/Upper Floridan APT

	XD1	XD 2	XD 3	XD 4	XD 5	XD 6
Elapsed Time (min)	Suw Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
0	0	0	0	0	0	0
0.0083	0.063	0.002	0	0	0	0
0.0166	-11.897	-0.001	0.005	0.005	0.005	0
0.025	-13.313	-0.006	-0.009	0.005	0.005	0
0.0333	-7.113	0.033	-0.009	0.005	0	0
0.0416	-4.783	0.008	0	0.005	0.005	0
0.05	-9.127	0.002	0	0.009	0	0
0.0583	-12.243	0.003	-0.009	0.005	0.005	0
0.0666	-13.974	-0.001	0	0.009	0	0
0.075	-14.635	-0.001	-0.005	0.005	0.005	0
0.0833	-15.422	0.003	-0.005	0.005	0.005	0
0.0916	-13.943	0	0	0.005	0.005	0
0.1	-15.706	0	-0.005	0.009	0.005	0
0.1083	-19.294	0.005	0	0.005	0.005	0
0.1166	-20.994	-0.005	0.01	0.005	0	0
0.125	-22.977	0.006	0	0.005	0.005	-0.032
0.1333	-24.991	-0.005	-0.005	0.009	0.005	-0.032
0.1416	-26.691	0	-0.005	0.009	0.005	-0.032
0.15	-28.359	-0.001	0.005	0.005	0	-0.032
0.1583	-28.17	0.002	-0.005	0.009	0	-0.032
0.1666	-30.184	0	0	0.014	0	-0.063
0.175	-32.954	0	0.005	0.009	0.005	-0.063
0.1833	-34.811	-0.001	-0.005	0.009	0	-0.063
0.1916	-36.291	0	0	0.009	0.005	-0.094
0.2	-38.148	-0.001	0	0.009	0.005	-0.094
0.2083	-39.344	0.002	-0.009	0.009	0.005	-0.125
0.2166	-40.603	0	-0.009	0.019	0.005	-0.125
0.225	-41.516	-0.001	-0.005	0.009	0.005	-0.156
0.2333	-43.216	0	-0.005	0.014	0	-0.156
0.2416	-44.569	0.002	-0.005	0.014	0	-0.188
0.25	-45.734	0	0	0.009	0	-0.188
0.2583	-47.37	-0.001	0.005	0.014	0	-0.219
0.275	-49.951	-0.001	-0.005	0.005	-0.004	-0.282
0.2916	-52.281	0	0	0.009	-0.004	-0.314
0.3083	-54.641	-0.003	0.005	0.014	-0.004	-0.345
0.325	-57.159	-0.001	0	0.014	0	-0.408
0.3416	-59.363	0	-0.009	0.005	0	-0.471
0.3583	-61.755	-0.003	0	0.014	0	-0.534
0.375	-63.612	-0.001	-0.009	0.019	0	-0.597
0.3916	-66.162	0	-0.009	0.014	0	-0.66
0.4083	-67.83	0	-0.005	0.009	0	-0.723

SE2000

Environmental Logger

11/08 08:48

Unit# 577 Test 1

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	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
I.D.								
Reference	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PSI at Ref.	71.633	1.919	11.845	10.178	2.269	24.393	6.090	5.333
SG	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Linearity	0.000	0.000	0.073	0.000	0.078	-0.081	0.106	0.128
Scale factor	100.000	5.000	14.989	15.000	15.068	99.925	15.039	14.976
Offset	0.000	0.000	0.034	0.000	0.040	-0.112	-0.040	0.031
Delay mSEC	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000

Step 1 11/08 03:19:23

Suwannee/Upper Floridan APT

	XD 1	XD 2	XD 3	XD 4	XD 5	XD 6
Elapsed Time (min)	SUW Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
0	-54.296	-0.96	-1.169	-1.076	0.717	-16.861
0.0083	-53.981	-0.96	-1.169	-1.071	0.717	-16.829
0.0166	-53.729	-0.96	-1.169	-1.071	0.717	-16.829
0.025	-53.446	-0.96	-1.169	-1.071	0.717	-16.798
0.0333	-53.131	-0.96	-1.169	-1.071	0.717	-16.798
0.0416	-52.879	-0.96	-1.169	-1.071	0.717	-16.766
0.05	-52.596	-0.96	-1.174	-1.071	0.717	-16.766
0.0583	-52.344	-0.96	-1.169	-1.067	0.717	-16.735
0.0666	-52.061	-0.96	-1.169	-1.067	0.717	-16.735
0.075	-51.777	-0.96	-1.164	-1.071	0.717	-16.703
0.0833	-51.526	-0.961	-1.169	-1.067	0.717	-16.703
0.0916	-51.242	-0.961	-1.174	-1.067	0.717	-16.672
0.1	-50.991	-0.961	-1.169	-1.062	0.717	-16.672
0.1083	-50.707	-0.961	-1.169	-1.067	0.717	-16.64
0.1166	-50.298	-0.961	-1.169	-1.067	0.717	-16.64
0.125	-50.015	-0.961	-1.169	-1.067	0.717	-16.609
0.1333	-49.763	-0.961	-1.164	-1.067	0.717	-16.609
0.1416	-49.511	-0.961	-1.164	-1.067	0.722	-16.578
0.15	-49.259	-0.961	-1.169	-1.067	0.717	-16.578
0.1583	-48.976	-0.961	-1.174	-1.062	0.717	-16.546
0.1666	-48.756	-0.961	-1.169	-1.062	0.717	-16.546
0.175	-48.473	-0.961	-1.169	-1.062	0.717	-16.515
0.1833	-48.221	-0.961	-1.169	-1.062	0.717	-16.515
0.1916	-47.969	-0.963	-1.169	-1.062	0.717	-16.483
0.2	-47.717	-0.963	-1.174	-1.062	0.717	-16.483
0.2083	-47.465	-0.963	-1.169	-1.062	0.717	-16.452
0.2166	-47.213	-0.963	-1.169	-1.062	0.717	-16.452
0.225	-46.993	-0.963	-1.169	-1.062	0.717	-16.42
0.2333	-46.741	-0.963	-1.169	-1.057	0.717	-16.42
0.2416	-46.49	-0.963	-1.169	-1.062	0.717	-16.389
0.25	-46.269	-0.963	-1.169	-1.062	0.717	-16.389
0.2583	-46.017	-0.963	-1.169	-1.057	0.717	-16.357
0.2666	-45.797	-0.963	-1.169	-1.057	0.717	-16.326
0.275	-45.545	-0.963	-1.169	-1.062	0.717	-16.326
0.2833	-45.325	-0.963	-1.169	-1.062	0.717	-16.294
0.2916	-45.105	-0.963	-1.169	-1.062	0.717	-16.294
0.3	-44.853	-0.963	-1.169	-1.057	0.717	-16.263
0.3083	-44.632	-0.963	-1.169	-1.057	0.717	-16.263
0.3166	-44.412	-0.964	-1.169	-1.057	0.717	-16.231
0.325	-44.16	-0.963	-1.169	-1.057	0.722	-16.231
0.3333	-43.94	-0.964	-1.174	-1.057	0.722	-16.2

Elapsed Time (min)	Suw Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
0.425	-69.876	-0.001	-0.005	0.014	0	-0.754
0.4416	-71.764	0	-0.005	0.014	0	-0.817
0.4583	-73.842	-0.003	0	0.014	0	-0.88
0.475	-75.762	-0.001	0	0.019	0	-0.943
0.4916	-77.084	0	-0.014	0.014	0	-0.974
0.5083	-78.941	-0.001	-0.005	0.009	0	-1.037
0.525	-80.326	0	-0.009	0.014	0.005	-1.1
0.5416	-81.774	0	-0.005	0.005	0.005	-1.132
0.5583	-83.379	0	-0.009	0.014	0.005	-1.194
0.575	-84.795	0	-0.005	0.019	0	-1.226
0.5916	-86.338	-0.001	0	0.014	0	-1.289
0.6083	-87.565	-0.001	-0.005	0.019	0.005	-1.32
0.625	-89.108	0	-0.009	0.024	0.005	-1.383
0.6416	-90.618	-0.003	-0.014	0.019	0.005	-1.415
0.6583	-91.689	0	-0.009	0.019	0.005	-1.478
0.675	-92.507	-0.001	-0.009	0.019	0.005	-1.509
0.6916	-93.923	0	-0.009	0.019	0.005	-1.572
0.7083	-95.529	-0.001	-0.019	0.019	0.005	-1.603
0.725	-96.221	-0.001	-0.019	0.019	0.005	-1.635
0.7416	-97.134	-0.003	-0.005	0.019	0.005	-1.698
0.7583	-98.708	0	-0.009	0.024	0.005	-1.761
0.775	-99.62	-0.001	-0.009	0.024	0.005	-1.792
0.7916	-100.754	0	-0.014	0.024	0.005	-1.855
0.8083	-101.383	0.003	-0.014	0.019	0	-1.886
0.825	-102.202	-0.001	-0.014	0.019	0.005	-1.918
0.8416	-103.492	0.005	-0.009	0.019	0.005	-1.981
0.8583	-104.499	0.002	-0.005	0.024	0.005	-2.012
0.875	-105.097	0.002	-0.014	0.019	0	-2.075
0.8916	-105.821	0.002	-0.019	0.014	0	-2.138
0.9083	-106.797	0.002	-0.019	0.009	0.005	-2.17
0.925	-107.206	0.002	-0.019	0.014	0	-2.201
1.125	-115.421	-0.001	-0.019	0.014	0.005	-2.736
1.325	-120.993	0	-0.019	0.009	0.005	-3.176
1.525	-125.305	0.008	-0.024	0.014	0.005	-3.617
1.725	-127.666	0.008	-0.019	0.005	0	-3.963
1.925	-129.491	0.01	-0.024	0.005	0.005	-4.34
2.125	-130.971	0.011	-0.024	0.005	0.005	-4.623
2.325	-132.324	0.011	-0.028	0.009	0.005	-4.906
2.525	-133.709	0.014	-0.019	0.005	0.005	-5.189
2.725	-133.583	0.017	-0.019	0.005	0	-5.441
2.925	-133.898	0.019	-0.024	0.005	0	-5.661
3.125	-134.653	0.021	-0.019	0.005	0	-5.881
3.325	-135.188	0.022	-0.014	0	0.005	-6.07
3.525	-135.409	0.024	-0.028	-0.005	0.005	-6.259
3.725	-135.598	0.028	-0.019	0.005	0.005	-6.448
3.925	-135.283	0.032	-0.019	-0.005	0.005	-6.605
4.125	-135.786	0.03	-0.019	-0.005	0	-6.762
4.325	-135.881	0.03	-0.014	0.009	0.005	-6.92
4.525	-135.755	0.03	-0.024	0.009	0.005	-7.045
4.725	-135.786	0.036	-0.024	0.005	0.005	-7.203
4.925	-135.818	0.033	-0.024	0	0	-7.328
5.125	-135.535	0.036	-0.019	-0.005	0	-7.454
5.325	-135.912	0.036	-0.014	0	0.005	-7.58
5.525	-135.503	0.041	-0.014	0.005	0.01	-7.674
5.725	-136.038	0.043	-0.005	0.005	0.01	-7.8
5.925	-136.51	0.041	-0.019	0.014	0.01	-7.895
6.125	-136.29	0.043	-0.009	0.014	0.01	-7.989
6.325	-137.108	0.047	-0.005	0.005	0.01	-8.083
6.525	-137.927	0.046	-0.009	0.009	0.01	-8.209

Elapsed Time (min)	SUW Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
0.35	-43.499	-0.964	-1.164	-1.057	0.717	-16.169
0.3666	-42.996	-0.964	-1.169	-1.062	0.717	-16.137
0.3833	-42.587	-0.964	-1.169	-1.062	0.722	-16.106
0.4	-42.146	-0.964	-1.174	-1.052	0.722	-16.074
0.4166	-41.705	-0.964	-1.164	-1.057	0.722	-16.043
0.4333	-41.296	-0.964	-1.164	-1.057	0.722	-16.011
0.45	-40.887	-0.964	-1.169	-1.057	0.722	-15.98
0.4666	-40.446	-0.964	-1.169	-1.057	0.722	-15.948
0.4833	-40.068	-0.966	-1.169	-1.057	0.717	-15.917
0.5	-39.659	-0.966	-1.169	-1.062	0.722	-15.885
0.5166	-39.25	-0.966	-1.164	-1.052	0.722	-15.854
0.5333	-38.872	-0.966	-1.169	-1.057	0.722	-15.823
0.55	-38.463	-0.966	-1.169	-1.057	0.722	-15.791
0.5666	-38.054	-0.966	-1.164	-1.057	0.722	-15.76
0.5833	-37.676	-0.966	-1.169	-1.057	0.722	-15.728
0.6	-37.299	-0.966	-1.159	-1.057	0.722	-15.697
0.6166	-36.921	-0.966	-1.169	-1.052	0.722	-15.665
0.6333	-36.575	-0.966	-1.159	-1.057	0.722	-15.665
0.65	-36.228	-0.966	-1.169	-1.057	0.722	-15.634
0.6666	-35.882	-0.967	-1.164	-1.057	0.722	-15.571
0.6833	-35.504	-0.966	-1.169	-1.057	0.722	-15.571
0.7	-35.158	-0.967	-1.169	-1.057	0.722	-15.539
0.7166	-34.843	-0.967	-1.169	-1.057	0.722	-15.508
0.7333	-34.497	-0.967	-1.164	-1.052	0.722	-15.476
0.75	-34.151	-0.967	-1.164	-1.057	0.717	-15.445
0.7666	-33.836	-0.967	-1.164	-1.057	0.722	-15.414
0.7833	-33.49	-0.967	-1.164	-1.052	0.722	-15.382
0.8	-33.175	-0.967	-1.164	-1.052	0.717	-15.351
0.8166	-32.829	-0.967	-1.164	-1.057	0.722	-15.319
0.8333	-32.514	-0.967	-1.164	-1.052	0.722	-15.288
0.85	-32.231	-0.967	-1.169	-1.052	0.722	-15.256
0.8666	-31.916	-0.969	-1.169	-1.048	0.722	-15.225
0.8833	-31.633	-0.969	-1.169	-1.052	0.722	-15.193
0.9	-31.318	-0.969	-1.169	-1.052	0.717	-15.162
0.9166	-31.035	-0.969	-1.164	-1.057	0.722	-15.13
0.9333	-30.752	-0.969	-1.164	-1.052	0.722	-15.099
0.95	-30.468	-0.969	-1.169	-1.052	0.722	-15.099
0.9666	-30.185	-0.969	-1.164	-1.052	0.722	-15.067
0.9833	-29.902	-0.969	-1.159	-1.052	0.722	-15.036
1	-29.618	-0.969	-1.164	-1.052	0.722	-15.005
1.2	-26.597	-0.971	-1.159	-1.057	0.722	-14.659
1.4	-24.047	-0.972	-1.159	-1.057	0.717	-14.344
1.6	-21.875	-0.972	-1.159	-1.062	0.722	-14.029
1.8	-20.113	-0.974	-1.164	-1.057	0.722	-13.746
2	-18.602	-0.975	-1.164	-1.062	0.722	-13.463
2.2	-17.374	-0.977	-1.169	-1.062	0.722	-13.18
2.4	-16.367	-0.978	-1.159	-1.071	0.722	-12.96
2.6	-15.486	-0.98	-1.169	-1.062	0.722	-12.708
2.8	-14.793	-0.982	-1.159	-1.062	0.722	-12.488
3	-14.195	-0.983	-1.164	-1.067	0.722	-12.268
3.2	-13.692	-0.985	-1.164	-1.067	0.722	-12.079
3.4	-13.251	-0.986	-1.164	-1.067	0.722	-11.89
3.6	-12.905	-0.988	-1.159	-1.067	0.722	-11.701
3.8	-12.59	-0.988	-1.159	-1.067	0.722	-11.544
4	-12.307	-0.989	-1.159	-1.062	0.722	-11.387
4.2	-12.055	-0.991	-1.164	-1.067	0.722	-11.23
4.4	-11.834	-0.993	-1.164	-1.067	0.722	-11.072
4.6	-11.646	-0.994	-1.164	-1.071	0.717	-10.946
4.8	-11.488	-0.996	-1.164	-1.071	0.722	-10.821

Elapsed Time (min)	Suw Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
6.725	-138.965	0.05	-0.014	0.005	0.01	-8.304
6.925	-138.965	0.047	-0.014	0.005	0.01	-8.429
7.125	-139.469	0.052	-0.019	-0.005	0.005	-8.524
7.325	-139.658	0.049	-0.014	-0.005	0.005	-8.618
7.525	-139.941	0.047	-0.019	-0.009	0	-8.713
7.725	-140.099	0.052	-0.024	-0.014	0	-8.807
7.925	-140.791	0.05	-0.028	-0.014	0	-8.901
8.125	-140.917	0.05	-0.014	-0.005	0	-8.996
8.325	-140.665	0.054	-0.019	-0.005	0	-9.059
8.525	-140.539	0.057	-0.014	-0.005	0	-9.153
8.725	-140.602	0.052	-0.024	-0.005	0	-9.216
8.925	-140.823	0.054	-0.014	-0.009	0	-9.31
9.125	-140.162	0.057	-0.019	-0.005	0	-9.373
9.325	-140.319	0.06	-0.019	-0.005	0	-9.436
9.525	-140.476	0.058	-0.019	-0.005	0	-9.53
9.725	-140.225	0.063	-0.014	-0.005	0.01	-9.593
9.925	-140.256	0.06	-0.009	0	0.005	-9.656
11.925	-140.602	0.065	-0.009	-0.009	-0.004	-10.254
13.925	-139.658	0.076	0	0	0.005	-10.694
15.925	-140.225	0.079	-0.005	-0.014	-0.004	-11.103
17.925	-140.445	0.08	0	-0.014	-0.004	-11.418
19.925	-140.162	0.087	-0.005	-0.009	0	-11.733
21.925	-140.13	0.09	0	-0.009	0	-11.984
23.925	-140.413	0.099	0	-0.014	0.005	-12.204
25.925	-140.287	0.102	0.005	-0.014	0.005	-12.456
27.925	-140.13	0.102	0	-0.014	0.01	-12.613
29.925	-140.728	0.104	0	-0.019	0.01	-12.802
31.925	-141.263	0.106	0.005	-0.014	0.005	-12.991
33.925	-140.886	0.109	0.01	-0.009	0.015	-13.148
35.925	-141.169	0.113	0.01	-0.009	0.015	-13.274
37.925	-141.011	0.115	-0.009	-0.024	0.015	-13.4
39.925	-140.98	0.115	0.005	-0.019	0.015	-13.557
41.925	-141.547	0.115	0.005	-0.014	0.015	-13.683
43.925	-142.365	0.115	-0.005	-0.028	0.015	-13.777
45.925	-141.672	0.124	-0.005	-0.024	0.019	-13.872
47.925	-141.295	0.124	-0.005	-0.024	0.024	-13.935
49.925	-141.232	0.124	0	-0.024	0.024	-14.029
51.925	-141.106	0.124	0	-0.019	0.029	-14.123
53.925	-141.547	0.126	0	-0.019	0.024	-14.218
55.925	-141.169	0.128	0.01	-0.014	0.029	-14.312
57.925	-141.861	0.131	0	-0.019	0.029	-14.375
59.925	-141.767	0.132	0	-0.014	0.029	-14.469
61.925	-142.617	0.131	0.005	-0.019	0.029	-14.532
63.925	-141.83	0.131	0	-0.019	0.034	-14.595
65.925	-141.641	0.137	0.005	-0.019	0.034	-14.658
67.925	-142.207	0.137	0.01	-0.019	0.042	-14.69
69.925	-142.302	0.137	-0.005	-0.024	0.034	-14.784
71.925	-141.861	0.139	0	-0.024	0.038	-14.815
73.925	-142.491	0.132	0	-0.024	0.042	-14.878
75.925	-142.522	0.137	0.01	-0.014	0.052	-14.91
77.925	-143.026	0.135	-0.005	-0.028	0.047	-14.973
79.925	-142.68	0.14	-0.005	-0.028	0.042	-15.036
81.925	-142.806	0.135	0	-0.028	0.047	-15.067
83.925	-142.68	0.142	0.005	-0.024	0.052	-15.099
85.925	-142.239	0.143	0.005	-0.019	0.057	-15.161
87.925	-142.68	0.14	-0.009	-0.033	0.052	-15.224
89.925	-142.868	0.142	-0.009	-0.024	0.057	-15.256
91.925	-143.655	0.139	-0.014	-0.028	0.066	-15.256
93.925	-142.428	0.145	-0.009	-0.033	0.061	-15.319

Elapsed Time (min)	SUW Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
5	-11.268	-0.997	-1.174	-1.071	0.722	-10.663
5.2	-11.111	-0.997	-1.169	-1.071	0.722	-10.569
5.4	-10.953	-0.999	-1.164	-1.067	0.722	-10.443
5.6	-10.827	-1	-1.169	-1.067	0.722	-10.317
5.8	-10.67	-1	-1.164	-1.071	0.722	-10.223
6	-10.575	-1.002	-1.164	-1.067	0.722	-10.129
6.2	-10.45	-1.004	-1.169	-1.067	0.722	-10.003
6.4	-10.324	-1.005	-1.159	-1.071	0.722	-9.908
6.6	-10.229	-1.005	-1.169	-1.067	0.722	-9.814
6.8	-10.103	-1.007	-1.164	-1.067	0.717	-9.72
7	-10.009	-1.008	-1.164	-1.076	0.722	-9.625
7.2	-9.914	-1.008	-1.174	-1.071	0.717	-9.531
7.4	-9.789	-1.01	-1.169	-1.071	0.717	-9.468
7.6	-9.694	-1.01	-1.169	-1.067	0.722	-9.374
7.8	-9.6	-1.011	-1.174	-1.071	0.717	-9.311
8	-9.537	-1.013	-1.169	-1.067	0.722	-9.216
8.2	-9.442	-1.013	-1.164	-1.067	0.717	-9.153
8.4	-9.379	-1.013	-1.174	-1.071	0.722	-9.059
8.6	-9.285	-1.015	-1.169	-1.071	0.722	-8.996
8.8	-9.222	-1.016	-1.178	-1.071	0.722	-8.933
9	-9.128	-1.016	-1.174	-1.067	0.722	-8.839
9.2	-9.065	-1.018	-1.169	-1.071	0.717	-8.776
9.4	-8.97	-1.018	-1.169	-1.071	0.722	-8.713
9.6	-8.907	-1.019	-1.169	-1.071	0.717	-8.65
9.8	-8.844	-1.019	-1.169	-1.071	0.717	-8.587
10	-8.781	-1.021	-1.174	-1.071	0.717	-8.524
12	-8.183	-1.026	-1.174	-1.071	0.722	-7.989
14	-7.68	-1.032	-1.178	-1.071	0.717	-7.518
16	-7.239	-1.04	-1.178	-1.071	0.712	-7.109
18	-6.893	-1.043	-1.183	-1.076	0.717	-6.763
20	-6.609	-1.048	-1.183	-1.076	0.712	-6.448
22	-6.295	-1.052	-1.178	-1.071	0.712	-6.196
24	-6.043	-1.056	-1.183	-1.071	0.708	-5.945
26	-5.823	-1.057	-1.183	-1.076	0.712	-5.725
28	-5.634	-1.06	-1.183	-1.076	0.712	-5.504
30	-5.445	-1.063	-1.188	-1.076	0.712	-5.316
32	-5.256	-1.068	-1.193	-1.076	0.708	-5.158
34	-5.067	-1.071	-1.183	-1.071	0.703	-5.032
36	-4.941	-1.073	-1.183	-1.071	0.703	-4.875
38	-4.815	-1.078	-1.188	-1.071	0.703	-4.749
40	-4.689	-1.079	-1.188	-1.071	0.703	-4.624
42	-4.564	-1.082	-1.183	-1.067	0.703	-4.498
44	-4.438	-1.084	-1.188	-1.071	0.698	-4.403
46	-4.343	-1.087	-1.188	-1.071	0.698	-4.278
48	-4.249	-1.09	-1.193	-1.071	0.698	-4.183
50	-4.154	-1.092	-1.193	-1.076	0.698	-4.089
52	-4.06	-1.092	-1.188	-1.071	0.693	-3.994
54	-3.997	-1.093	-1.193	-1.071	0.693	-3.931
56	-3.903	-1.095	-1.193	-1.071	0.693	-3.837
58	-3.84	-1.096	-1.193	-1.071	0.693	-3.774
60	-3.777	-1.098	-1.188	-1.071	0.693	-3.711
62	-3.682	-1.1	-1.193	-1.071	0.693	-3.648
64	-3.651	-1.1	-1.197	-1.076	0.698	-3.554
66	-3.556	-1.103	-1.193	-1.071	0.689	-3.523
68	-3.525	-1.104	-1.193	-1.071	0.689	-3.46
70	-3.462	-1.104	-1.193	-1.071	0.689	-3.397
72	-3.399	-1.106	-1.193	-1.071	0.689	-3.334
74	-3.336	-1.104	-1.193	-1.071	0.689	-3.302
76	-3.304	-1.106	-1.193	-1.071	0.689	-3.239

Elapsed Time (min)	Suw Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
95.925	-142.994	0.145	0	-0.024	0.066	-15.35
97.925	-142.963	0.142	-0.005	-0.033	0.061	-15.382
99.925	-143.183	0.139	-0.014	-0.038	0.066	-15.445
114.925	-142.585	0.139	-0.014	-0.047	0.076	-15.633
129.925	-142.428	0.143	-0.019	-0.057	0.09	-15.791
144.925	-143.026	0.135	-0.028	-0.076	0.104	-15.948
159.925	-143.183	0.128	-0.043	-0.085	0.114	-16.105
174.925	-143.246	0.117	-0.057	-0.104	0.123	-16.2
189.925	-143.75	0.11	-0.071	-0.113	0.137	-16.325
204.925	-143.844	0.096	-0.085	-0.127	0.147	-16.451
219.925	-144.002	0.088	-0.105	-0.146	0.161	-16.514
234.925	-144.033	0.082	-0.109	-0.151	0.166	-16.64
249.925	-144.348	0.068	-0.119	-0.156	0.175	-16.797
264.925	-143.687	0.063	-0.128	-0.17	0.18	-16.86
279.925	-143.97	0.065	-0.133	-0.179	0.194	-16.955
294.925	-144.411	0.061	-0.143	-0.179	0.204	-17.018
309.925	-144.851	0.057	-0.147	-0.184	0.213	-17.112
324.925	-144.253	0.041	-0.157	-0.194	0.218	-17.143
339.925	-144.096	0.035	-0.176	-0.198	0.223	-17.175
354.925	-144.505	0.024	-0.185	-0.203	0.232	-17.269
369.925	-144.757	0.013	-0.195	-0.212	0.237	-17.301
384.925	-144.914	0.006	-0.204	-0.222	0.247	-17.364
399.925	-144.065	-0.006	-0.209	-0.227	0.251	-17.395
414.925	-144.568	-0.017	-0.223	-0.227	0.256	-17.427
429.925	-144.789	-0.024	-0.228	-0.227	0.266	-17.458
444.925	-145.009	-0.027	-0.233	-0.227	0.275	-17.521
459.925	-145.072	-0.035	-0.238	-0.227	0.28	-17.521
474.925	-143.624	-0.039	-0.242	-0.222	0.285	-17.521
489.925	-144.82	-0.046	-0.247	-0.222	0.289	-17.552
504.925	-144.19	-0.053	-0.252	-0.222	0.294	-17.584
519.925	-143.876	-0.057	-0.257	-0.217	0.304	-17.615
534.925	-145.103	-0.06	-0.252	-0.212	0.308	-17.615
549.925	-143.876	-0.064	-0.252	-0.208	0.318	-17.584
564.925	-144.159	-0.06	-0.252	-0.203	0.323	-17.615
579.925	-144.316	-0.066	-0.252	-0.203	0.327	-17.615
594.925	-143.309	-0.064	-0.252	-0.198	0.332	-17.615
609.925	-144.285	-0.069	-0.247	-0.189	0.337	-17.615
624.925	-144.222	-0.069	-0.242	-0.184	0.346	-17.647
639.925	-143.813	-0.064	-0.247	-0.175	0.351	-17.615
654.925	-144.379	-0.063	-0.238	-0.175	0.356	-17.647
669.925	-143.718	-0.066	-0.242	-0.17	0.361	-17.647
684.925	-143.939	-0.061	-0.238	-0.16	0.365	-17.647
699.925	-143.907	-0.064	-0.233	-0.156	0.37	-17.647
714.925	-143.939	-0.06	-0.233	-0.151	0.375	-17.647
729.925	-144.159	-0.061	-0.228	-0.146	0.38	-17.678
744.925	-144.663	-0.061	-0.228	-0.146	0.384	-17.678
759.925	-143.687	-0.069	-0.228	-0.142	0.389	-17.647
774.925	-144.19	-0.069	-0.228	-0.137	0.394	-17.678
789.925	-144.6	-0.068	-0.223	-0.137	0.399	-17.678
804.925	-144.631	-0.069	-0.223	-0.132	0.403	-17.678
819.925	-144.379	-0.069	-0.219	-0.132	0.408	-17.71
834.925	-143.278	-0.079	-0.223	-0.132	0.413	-17.678
849.925	-144.128	-0.08	-0.223	-0.132	0.418	-17.678
864.925	-143.624	-0.091	-0.228	-0.137	0.422	-17.678
879.925	-143.813	-0.091	-0.228	-0.137	0.422	-17.647
894.925	-143.529	-0.099	-0.233	-0.142	0.427	-17.678
909.925	-142.9	-0.101	-0.233	-0.142	0.432	-17.647
924.925	-143.026	-0.113	-0.238	-0.146	0.437	-17.678
939.925	-143.655	-0.12	-0.247	-0.151	0.437	-17.678

Elapsed Time (min)	SUW Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
78	-3.242	-1.107	-1.193	-1.071	0.689	-3.177
80	-3.21	-1.107	-1.188	-1.071	0.689	-3.145
82	-3.147	-1.107	-1.193	-1.067	0.684	-3.114
84	-3.116	-1.109	-1.193	-1.071	0.684	-3.051
86	-3.084	-1.111	-1.193	-1.067	0.684	-3.019
88	-3.021	-1.112	-1.193	-1.071	0.684	-2.988
90	-3.021	-1.114	-1.193	-1.071	0.684	-2.956
92	-2.958	-1.114	-1.193	-1.067	0.684	-2.893
94	-2.927	-1.114	-1.193	-1.067	0.684	-2.862
96	-2.895	-1.115	-1.193	-1.067	0.679	-2.831
98	-2.864	-1.115	-1.188	-1.071	0.679	-2.799
100	-2.832	-1.115	-1.193	-1.067	0.679	-2.768
115	-2.612	-1.118	-1.188	-1.067	0.674	-2.547
130	-2.455	-1.122	-1.188	-1.067	0.67	-2.39
145	-2.297	-1.126	-1.188	-1.067	0.665	-2.233
160	-2.171	-1.131	-1.188	-1.067	0.66	-2.138
175	-2.077	-1.137	-1.188	-1.071	0.655	-2.013
190	-1.982	-1.144	-1.193	-1.081	0.651	-1.918
205	-1.92	-1.148	-1.197	-1.085	0.646	-1.855
220	-1.857	-1.148	-1.197	-1.085	0.646	-1.792
235	-1.794	-1.152	-1.197	-1.085	0.641	-1.73
250	-1.731	-1.155	-1.197	-1.09	0.636	-1.667
265	-1.668	-1.161	-1.197	-1.095	0.632	-1.635
280	-1.605	-1.164	-1.207	-1.1	0.627	-1.572
295	-1.573	-1.169	-1.216	-1.118	0.632	-1.541
310	-1.542	-1.174	-1.216	-1.123	0.627	-1.509
325	-1.479	-1.177	-1.216	-1.142	0.617	-1.478
340	-1.447	-1.183	-1.226	-1.175	0.617	-1.446
355	-1.479	-1.192	-1.231	-1.203	0.613	-1.446
370	-1.542	-1.202	-1.24	-1.227	0.613	-1.478
385	-1.636	-1.211	-1.254	-1.255	0.603	-1.604
400	-1.794	-1.216	-1.259	-1.279	0.598	-1.73
415	-1.92	-1.222	-1.273	-1.293	0.594	-1.887
430	-2.077	-1.225	-1.288	-1.307	0.594	-2.044

Elapsed Time (min)	Suw Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
954.925	-143.718	-0.126	-0.252	-0.16	0.441	-17.678
969.925	-143.75	-0.134	-0.252	-0.165	0.446	-17.71
984.925	-143.781	-0.143	-0.257	-0.17	0.446	-17.71
999.925	-143.435	-0.148	-0.266	-0.179	0.451	-17.741
1014.925	-144.002	-0.156	-0.266	-0.179	0.456	-17.741
1029.925	-143.372	-0.167	-0.271	-0.189	0.461	-17.773
1044.925	-143.498	-0.178	-0.28	-0.194	0.461	-17.773
1059.925	-143.435	-0.184	-0.295	-0.203	0.47	-17.741
1074.925	-142.994	-0.184	-0.295	-0.208	0.475	-17.71
1089.925	-143.246	-0.198	-0.295	-0.212	0.47	-17.741
1104.925	-143.278	-0.203	-0.304	-0.217	0.475	-17.741
1119.925	-142.176	-0.216	-0.309	-0.231	0.48	-17.741
1134.925	-142.207	-0.222	-0.314	-0.245	0.48	-17.71
1149.925	-142.27	-0.223	-0.318	-0.26	0.48	-17.71
1164.925	-141.798	-0.239	-0.328	-0.283	0.484	-17.678
1179.925	-141.704	-0.255	-0.337	-0.321	0.489	-17.741
1194.925	-141.704	-0.26	-0.347	-0.359	0.489	-17.836
1209.925	-141.232	-0.271	-0.356	-0.392	0.494	-17.961
1224.925	-141.106	-0.274	-0.371	-0.406	0.503	-18.119
1239.925	-141.547	-0.28	-0.39	-0.439	0.499	-18.276
1254.925	-141.2	-0.282	-0.413	-0.463	0.499	-18.465
1269.925	-141.074	-0.291	-0.423	-0.467	0.508	-18.559
1284.925	-141.295	-0.291	-0.437	-0.477	0.513	-18.716
1299.925	-141.043	-0.297	-0.471	-0.505	0.513	-18.811
1314.925	-140.634	-0.299	-0.485	-0.496	0.513	-18.937
1329.925	-140.791	-0.293	-0.494	-0.467	0.527	-19
1344.925	-140.728	-0.285	-0.509	-0.463	0.527	-19.125
1359.925	-140.98	-0.288	-0.528	-0.458	0.527	-19.125
1374.925	-141.609	-0.285	-0.547	-0.458	0.527	-19.094
1389.925	-141.043	-0.285	-0.566	-0.453	0.532	-18.968
1404.925	-140.634	-0.286	-0.575	-0.458	0.532	-18.874
1419.925	-140.854	-0.288	-0.594	-0.458	0.527	-18.748
1434.925	-140.98	-0.294	-0.594	-0.453	0.537	-18.653
1449.925	-139.91	-0.294	-0.599	-0.444	0.541	-18.528
1464.925	-139.847	-0.302	-0.618	-0.453	0.541	-18.465
1479.925	-139.91	-0.31	-0.623	-0.458	0.546	-18.37
1494.925	-139.28	-0.316	-0.618	-0.458	0.541	-18.339
1509.925	-139.815	-0.326	-0.627	-0.463	0.546	-18.307
1524.925	-140.256	-0.327	-0.627	-0.467	0.551	-18.244
1539.925	-141.043	-0.337	-0.632	-0.477	0.551	-18.213
1554.925	-140.697	-0.349	-0.642	-0.496	0.551	-18.182
1569.925	-140.162	-0.359	-0.646	-0.505	0.551	-18.15
1584.925	-140.351	-0.553	-0.86	-0.731	0.518	-18.056
1599.925	-140.382	-0.561	-0.869	-0.745	0.522	-17.993
1614.925	-140.288	-0.564	-0.874	-0.76	0.518	-18.025
1629.925	-140.351	-0.582	-0.884	-0.774	0.518	-17.993
1644.925	-140.886	-0.59	-0.888	-0.783	0.522	-17.993
1659.925	-141.012	-0.604	-0.898	-0.797	0.522	-18.025
1674.925	-141.264	-0.613	-0.907	-0.812	0.527	-18.025
1689.925	-140.508	-0.631	-0.922	-0.821	0.522	-18.025
1704.925	-141.106	-0.632	-0.926	-0.83	0.527	-18.025
1719.925	-140.917	-0.654	-0.936	-0.84	0.532	-18.025
1734.925	-140.792	-0.66	-0.941	-0.849	0.532	-18.025
1749.925	-141.232	-0.672	-0.955	-0.854	0.532	-18.056
1764.925	-141.673	-0.695	-0.964	-0.859	0.537	-18.056
1779.925	-142.837	-0.697	-0.969	-0.864	0.541	-18.088
1794.925	-141.862	-0.701	-0.974	-0.873	0.541	-18.088
1809.925	-142.649	-0.727	-0.983	-0.873	0.541	-18.088
1824.925	-142.617	-0.733	-0.988	-0.873	0.546	-18.088

Elapsed Time (min)	SUW Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well

Elapsed Time (min)	Suw Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
1839.925	-142.271	-0.749	-0.998	-0.873	0.546	-18.119
1854.925	-142.176	-0.752	-1.002	-0.873	0.551	-18.119
1869.925	-142.491	-0.763	-1.002	-0.878	0.551	-18.119
1884.925	-142.9	-0.771	-1.007	-0.873	0.556	-18.119
1899.925	-142.554	-0.78	-1.007	-0.868	0.556	-18.119
1914.925	-141.83	-0.777	-1.007	-0.864	0.556	-18.088
1929.925	-142.302	-0.78	-1.007	-0.859	0.56	-18.088
1944.925	-141.988	-0.788	-1.007	-0.859	0.565	-18.056
1959.925	-142.239	-0.79	-1.002	-0.849	0.565	-18.056
1974.925	-142.365	-0.785	-0.998	-0.845	0.57	-18.088
1989.925	-142.176	-0.796	-0.993	-0.84	0.57	-18.088
2004.925	-143.184	-0.808	-0.993	-0.835	0.575	-18.088
2019.925	-142.208	-0.791	-0.983	-0.826	0.575	-18.088
2034.925	-143.184	-0.796	-0.983	-0.821	0.579	-18.088
2049.925	-143.404	-0.79	-0.974	-0.812	0.579	-18.088
2064.925	-142.586	-0.788	-0.969	-0.807	0.584	-18.088
2079.925	-142.712	-0.785	-0.964	-0.797	0.584	-18.088
2094.925	-143.373	-0.782	-0.955	-0.788	0.584	-18.088
2109.925	-143.278	-0.794	-0.95	-0.779	0.589	-18.056
2124.925	-142.46	-0.794	-0.95	-0.774	0.589	-18.056
2139.925	-143.373	-0.791	-0.941	-0.764	0.594	-18.056
2154.925	-143.31	-0.78	-0.931	-0.755	0.594	-18.056
2169.925	-143.436	-0.777	-0.922	-0.745	0.598	-18.088
2184.925	-143.75	-0.78	-0.917	-0.736	0.598	-18.056
2199.925	-144.159	-0.783	-0.917	-0.731	0.603	-18.088
2214.925	-143.53	-0.772	-0.907	-0.727	0.608	-18.056
2229.925	-143.782	-0.777	-0.898	-0.717	0.608	-18.056
2244.925	-144.065	-0.75	-0.893	-0.712	0.608	-18.088
2259.925	-142.617	-0.753	-0.888	-0.708	0.613	-18.056
2274.925	-143.121	-0.766	-0.884	-0.698	0.613	-18.025
2289.925	-143.53	-0.766	-0.879	-0.698	0.613	-18.025
2304.925	-142.397	-0.763	-0.874	-0.694	0.617	-18.025
2319.925	-142.995	-0.745	-0.869	-0.689	0.617	-18.025
2334.925	-143.152	-0.756	-0.865	-0.684	0.617	-18.025
2349.925	-143.467	-0.772	-0.865	-0.684	0.622	-18.025
2364.925	-143.215	-0.766	-0.86	-0.684	0.622	-17.993
2379.925	-143.782	-0.758	-0.86	-0.684	0.627	-18.025
2394.925	-143.215	-0.774	-0.86	-0.689	0.622	-18.025
2409.925	-143.184	-0.779	-0.86	-0.689	0.627	-18.025
2424.925	-143.656	-0.764	-0.86	-0.694	0.632	-18.025
2439.925	-143.404	-0.771	-0.865	-0.694	0.632	-18.025
2454.925	-144.034	-0.802	-0.865	-0.698	0.632	-18.025
2469.925	-142.9	-0.796	-0.865	-0.703	0.632	-18.025
2484.925	-143.687	-0.813	-0.869	-0.708	0.636	-18.056
2499.925	-143.971	-0.813	-0.869	-0.712	0.636	-18.056
2514.925	-142.837	-0.813	-0.874	-0.717	0.636	-18.025
2529.925	-142.617	-0.799	-0.879	-0.722	0.641	-17.962
2544.925	-142.239	-0.832	-0.884	-0.727	0.636	-17.962
2559.925	-142.365	-0.816	-0.879	-0.727	0.641	-17.962
2574.925	-141.988	-0.83	-0.888	-0.736	0.641	-17.962
2589.925	-141.578	-0.826	-0.888	-0.741	0.641	-17.962
2604.925	-141.673	-0.851	-0.898	-0.764	0.641	-17.93
2619.925	-141.83	-0.857	-0.903	-0.779	0.641	-17.93
2634.925	-142.019	-0.852	-0.903	-0.797	0.641	-17.93
2649.925	-141.641	-0.868	-0.907	-0.807	0.651	-17.93
2664.925	-141.578	-0.856	-0.912	-0.826	0.655	-17.962
2679.925	-141.641	-0.852	-0.926	-0.849	0.641	-17.962
2694.925	-142.523	-0.867	-0.931	-0.854	0.651	-17.993
2709.925	-142.082	-0.862	-0.941	-0.873	0.646	-17.993

Elapsed Time (min)	SUW Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well

Elapsed Time (min)	Suw Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
2724.925	-142.491	-0.868	-0.941	-0.878	0.66	-17.962
2739.925	-140.917	-0.849	-0.941	-0.882	0.655	-17.962
2754.925	-140.445	-0.843	-0.936	-0.887	0.66	-17.93
2769.925	-141.484	-0.851	-0.945	-0.897	0.66	-17.93
2784.925	-141.327	-0.848	-0.945	-0.892	0.66	-17.899
2799.925	-141.295	-0.838	-0.945	-0.897	0.66	-17.899
2814.925	-142.019	-0.826	-0.955	-0.901	0.66	-17.962
2829.925	-141.862	-0.824	-0.96	-0.911	0.66	-17.962
2844.925	-142.051	-0.805	-0.95	-0.911	0.665	-17.993
2859.925	-142.208	-0.804	-0.945	-0.906	0.665	-18.025
2874.925	-142.743	-0.802	-0.95	-0.911	0.665	-18.025
2889.925	-141.893	-0.797	-0.95	-0.911	0.665	-18.025
2904.925	-143.152	-0.797	-0.95	-0.911	0.67	-17.993
2919.925	-142.743	-0.788	-0.96	-0.92	0.665	-18.056
2934.925	-142.302	-0.793	-0.96	-0.925	0.67	-18.056
2949.925	-142.68	-0.79	-0.969	-0.934	0.665	-18.056
2964.925	-142.239	-0.786	-0.974	-0.944	0.66	-18.088
2979.925	-141.83	-0.786	-0.979	-0.949	0.665	-18.025
2994.925	-142.176	-0.78	-0.979	-0.953	0.665	-18.025
3009.925	-141.862	-0.785	-0.988	-0.963	0.67	-18.025
3024.925	-142.46	-0.794	-0.998	-0.972	0.665	-18.056
3039.925	-141.862	-0.793	-1.002	-0.982	0.665	-18.056
3054.925	-142.208	-0.805	-1.012	-0.991	0.665	-18.088
3069.925	-142.019	-0.81	-1.021	-1.005	0.66	-18.088
3084.925	-141.421	-0.802	-1.021	-1.01	0.665	-18.056
3099.925	-141.169	-0.823	-1.036	-1.019	0.665	-18.056
3114.925	-141.61	-0.816	-1.045	-1.029	0.665	-18.088
3129.925	-141.925	-0.824	-1.055	-1.043	0.665	-18.119
3144.925	-141.767	-0.827	-1.064	-1.057	0.665	-18.119
3159.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3174.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3189.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3204.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3219.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3234.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3249.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3264.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3279.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3294.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3309.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3324.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3339.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3354.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3369.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3384.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3399.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3414.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3429.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3444.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3459.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3474.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3489.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3504.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3519.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3534.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3549.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3564.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3579.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3594.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088

Elapsed Time (min)	SUW Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well

Elapsed Time (min)	Suw Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well
3609.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3624.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3639.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3654.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3669.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3684.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088
3699.925	-141.264	-0.846	-1.079	-1.071	0.67	-18.088

Elapsed Time (min)	SUW Perm Well **Pumped**	MIAS Perm Well	LIAS Perm Well	AVPK Perm Well	SAS Perm Well	SUW **OB** Well