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HYDROGEOLOGIC ANALYSIS

FOR EXPANSION OF COGENERATION PLANT

AT SIERRA PACIFIC INDUSTRIES

ANDERSON FACILITY

SHASTA COUNTY, CALIFORNIA

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INTRODUCTION

This report presents the results of a hydrogeologic analysis conducted at the Sierra Pacific Industries (SPI) Anderson Cogeneration Plant, Shasta County, California (**Figures 1** and **2**). The work was conducted to assess the impacts of increased groundwater pumping resulting from the proposed expansion of the Cogeneration Plant.

The initial analysis was conducted in late 2007. At that time, SPI did not have a firm design for the new facilities or a firm plan of operations. In late 2009, the water-use estimates were updated to reflect addition of a larger boiler to the system. In both of these analyses, the water-use estimates were provided by SPI staff, based on their experience of water use by the Anderson facility and estimates of water use by other facilities of a size similar to that proposed at Anderson. The operating assumption was that the old and new plants would have operational overlap when one facility started and the other shut down.

In March 2010, the Shasta County Planning Department requested more detail on the projected water use, in response to a peer-review of the previous hydrogeological analyses. Because SPI now has both (1) a firmer design for the new facilities and (2) a plan for operations, the estimated water use (and potential associated impacts) is recalculated in this update, and is based on a relatively specific cooling-tower design and an operating scenario where the old plant will not be in operation except when the new plant is shut down.

The hydrogeologic investigation consisted of records research, collection of background water levels, site-specific aquifer testing and data collection, data interpretation, and reporting. All work was conducted under the supervision of Ms. Bonnie E. Lampley, California Certified Hydrogeologist 626.

CONCLUSIONS

WATER DEMAND

The annual-average demand for the new plant alone would be about 400 gpm (about 300 gpm higher than current use). This equates to about 645 acre-feet per year (400 gpm × 1,440 minutes/day × 365 days/year ÷ 325,851 gallons/acre-foot). During the hottest month of the summer, demand would be about 450 gpm.

Cumulatively, the proposed annual demand of 700 gpm for the site as a whole (including the Sawmill) equates to about 1,130 acre-feet per year. This is an increase of 485 acre-feet per year over the current use.

WELL TESTING AND YIELD

Three site wells were monitored and evaluated for this report. The pumping well for the test was SPI Well #2a, the main Cogen-facility well. One of the observation wells was the old well (SPI Well #2) near Well #2a. The other observation well was the well at the Pipe Shop (SPI Well #1). This well supplies water for both domestic uses at the Plant and log-deck pond make-up water, and is equipped with two pumps – a small one for the domestic use and a large one for the make-up water.

Results from an 8-hour constant-discharge aquifer test conducted at an average pumping rate of 450 gpm showed maximum drawdown in the pumping well of about 5 feet. Drawdown in the observation well (SPI Well #2), completed in the same aquifer as the pumping well (although not as deep) and located 20 feet away, was about 1 foot. Drawdown in the Pipe Shop well located about 1,185 feet away, was about 1.4 feet, although this value was influenced by simultaneous pumping for domestic use from the Pipe Shop well.

Calculations based on the testing show that the aquifer is high yielding, with a transmissivity of about 20,000 to 40,000 square feet per day and a hydraulic conductivity of about 140 to 240 feet per day. Storativity is between 4.4 and 7.1×10^{-2}. These are typical values for the high-yield aquifers of the Redding groundwater basin.

Long-term yield of the test well (Well #2a) is at least 1,000 gpm. Assuming another well will be installed to provide additional water, a minimum of two site wells will easily supply Project needs. Alternatively, one new well constructed to more modern standards could supply all Project needs by itself.

INTERFERENCE

At a distance of about ½ mile, interference would be about one foot at the end of summer; at one mile the interference would be about 7 inches (**Figure 13**). The interference from the 450 gpm pumping rate for one month is less (about ½ foot at ½ mile and 2.5 inches at one mile).

Existing site pumping already may cause some interference on neighboring properties, at about half the magnitude of the predicted interference. Thus, the additional interference on neighboring wells, attributable to expanded Plant pumping, would be from about 3 to 6 inches. This is not a significant level of interference.

WATER AVAILABILITY

The new Cogen pumping (485 acre-feet/year) would be about 0.2% of Redding basin groundwater inflow; total facility pumping (Cogen and Sawmill) would be about 0.4% of basin groundwater inflow.

The new Cogen pumping (485 acre-feet/year) would be about 1.3% of current groundwater pumping and about 0.5% of future groundwater pumping. Total facility pumping (Cogen and Sawmill) would be about 3% of current groundwater pumping and about 1% of future groundwater pumping.

The proposed expanded pumping would not substantially deplete the groundwater supply in the Redding basin.

DROUGHT AND WATER-SUPPLY SUSTAINABILITY

Groundwater levels in Redding basin wells roughly correlate to precipitation – when there is less precipitation (drought), water levels decline and when there is more precipitation, water levels rise. This illustrates that the groundwater basin is in steady state, and is not overdrafted. Because the proposed pumping would not substantially deplete the groundwater supply, it will not lead to an overdraft condition in the basin.

Water level decline caused by drought is about seven feet in the vicinity of the site. Normal seasonal changes in water levels can be as much as five to seven feet. Historically, seasonal water-level changes during drought are much less than normal; during the 1987 to 1992 drought, seasonal changes were about three feet or less.

Properly constructed individual wells should be able to continue to produce water under conditions similar to historic droughts. A properly constructed well is one which is drilled deep enough into the aquifer such that anticipated water-level declines (such as droughts) can be accommodated. Assuming existing wells have continued to produce during past droughts, the addition of less than six inches of interference from new project water use should not cause neighboring wells to “go dry” during a drought.

DISCUSSION

PROPOSED WATER USE

The current total use, for both the Cogeneration Plant and the Sawmill, is estimated at about 400 gpm, at times of maximum water use (*e.g.*, in the summer), of which the Cogeneration Plant (including the boiler) uses about 100 gpm on average.

The initial assumptions (2007) for increased water use assumed that both the new and old plants would operate simultaneously during a period of operational overlap necessary for a seamless transition such that electricity and steam would have been constantly supplied. SPI now plans to operate only one plant at a time, with no operational overlap. The old boiler system would be used if the new plant a breakdown or during extended maintenance periods.

Therefore, the proposed Cogeneration Facility water use will be solely that of the new tower and boiler. Midwest Towers, a manufacturer of cooling towers of the type planned, provided data on water use for the proposed tower. Water use in a cooling tower is represented by evaporation from the tower. The evaporation rate is based on the wet-bulb temperature of the air around the tower, and varies throughout the year. For the proposed tower, L&A supplied Midwest Tower with the average monthly wet-bulb temperatures for this area (from the Redding Airport weather station; wet-bulb temperature is the lowest temperature that can be reached by the evaporation of water only). Based on those temperatures, Midwest Towers provided a table of monthly evaporation (water demand).

Table 1 shows the data, and **Figure 3** shows a graph of the monthly wet-bulb temperature, maximum water use at average monthly wet-bulb temperature, and the "design" water use.

Table 1: Average Monthly Wet-Bulb Temperature, Tower Evaporation, and Predicted Water Use

Month	Wet-Bulb Temperature	Evaporation	Total Water Use Including Boiler
	degrees F	gpm	gpm
January	41	323	358
February	44	337	372
March	47	347	382
April	51	363	398
May	56	383	418
June	60	399	434
July	64	416	451
August	62	406	441
September	59	396	431
October	53	373	408
November	46	343	378
December	41	323	358
Average	**52**	**367**	**402**

The design water use represents the water use at an assumed maximum wet-bulb temperature. For the new tower, the assumed maximum wet-bulb temperature is 67^{o} F and the associated water use is 422 gpm. This is higher than the highest average wet-bulb temperature in the summer and represents the highest temperature at which the tower is designed to function properly.

The actual average monthly water use likely will be less than that shown in **Table 1**, because the tower is unlikely to operate at 100% capacity all of the time. This is because not all of the heat that is generated at the Plant goes to the cooling tower – some goes to the kilns to dry lumber. At times when the kilns need heat to dry lumber, water use in the cooling tower is less because it is not operating at full capacity.

Table 2 summarizes the old vs. new average-annual water use. Water demand at the Sawmill is estimated by SPI staff to be about 300 gpm at times of maximum demand (*e.g.*, in the summer). On an annual basis, the demand could be about half that amount.

Table 2: Summary of Old vs. New Annual Water Use

	Old Cogen	New Cogen	Sawmill	Total
	gpm	gpm	gpm	gpm
Current	100	0	300	400
Future	0	400	300	700
	acre-feet/year	acre-feet/year	acre-feet/year	acre-feet/year
Current	160	0	485	645
Future	0	645	485	1,130

The annual-average demand for the new plant alone would be about 400 gpm. This equates to about 645 acre-feet per year (400 gpm × 1,440 minutes/day × 365 days/year ÷ 325,851 gallons/acre-foot). Cumulatively, the annual demand of 700 gpm for the site as a whole (including the Sawmill) equates to about 1,130 acre-feet per year. This is an increase of 485 acre-feet per year over the current use.

For groundwater-pumping impacts evaluation, it will be assumed that the tower will operate at 100% capacity all of the time. This will lead to overestimation of the predicted impacts and a conservative impacts analysis.

SITE AND VICINITY DESCRIPTION

LOCATION

The site is located off of Riverside in northern Anderson, Shasta County, California (**Figure 1**). The eastern boundary of the site is the Sacramento River, and the western boundary of the site is State Highway 273. The site covers approximately 150 acres in portions of Sections 14, 15, 23, 26, 27, and 28, of Township 29 North, Range 4 West.

The site is generally flat. Ponds are used on the site for storage of log-deck sprinkling water. The ponds are supplied by pumping from either Well #2a or Well 1.

GEOLOGY AND STRATIGRAPHY

REGIONAL

The project site is in the southern part of the Redding basin, the northernmost subbasin of the Sacramento Valley basin (**Figure 4**). The Redding basin is filled with Tertiary-age sediments that are thickest in the central part of the valley and thin to the north, east, and west.

Because the project site is located near the center of the basin, the deposits are relatively thick. The thickest section of sediments in the Redding groundwater basin underlies Cottonwood Creek in the vicinity of Cottonwood to a depth of 4,000 feet.[1]

Geologic units occurring in the site vicinity are, from youngest to oldest, Recent stream deposits; the Pleistocene-age Modesto, Riverbank, and Red Bluff formations; the Pliocene-age Tehama and Tuscan Formations; the Oligocene to late-Miocene-age Upper Princeton Gorge Formation; and the late-Jurassic to Cretaceous-age Great Valley Sequence or Chico Formation.[2]

Recent stream deposits are found in the channel of the Sacramento River. These consist of unconsolidated gravel, sand, silt, and clay.

The Modesto Formation consists of unconsolidated, slightly weathered gravel, sand, silt, and clay. The Riverbank Formation consists of unconsolidated to semiconsolidated gravel, sand, silt, and minor clay. The Modesto and Riverbank formations outcrop in the northern portion and the major drainages of the site.

The Red Bluff Formation typically consists of distinctly reddish, clayey gravel with some sand. The Red Bluff Formation caps the hills across the site and in the vicinity.

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[1] California Department of Water Resources, July 1964, *Shasta County Investigation*, DWR Bulletin 22.

[2] Helley, D. S., and Harwood, E. J., 1985, *Cenozoic Deposits of the Sacramento Valley and Northern California*, U.S.G.S.

The Tehama Formation generally consists of interbedded clay, silt, sand, and gravel, or mixtures thereof, interpreted to be fluvial in origin.[3] The Tehama Formation is one of the principal water-bearing formations in the Sacramento Valley groundwater basin. The Tehama Formation generally is moderately to highly permeable, with moderate to high (100 to over 1,000 gpm) groundwater yields. The Tehama Formation immediately underlies most of the Project site.

Gravels in the Tehama Formation sediments are composed mainly of greenstone, with lesser quantities of metamorphic rock fragments, chert, and occasional granitic rock fragments. These rock types are typically found in the Klamath Mountains and Coast Ranges to the west of the site, indicating that Tehama Formation sediments beneath the site are derived from these areas. Most of the gravel clasts are rounded to subrounded, resembling present-day gravels in Cottonwood Creek.

Interfingering with the Tehama Formation is the Tuscan Formation. Sediment in the Tuscan Formation was derived from the volcanic terrains to the east of the Sacramento Valley, rather than the Coast Ranges. The Tuscan Formation consists of volcanic mudflows, ash beds, tuff breccias, and tuffaceous sandstones and conglomerates. Four distinct units (A through D) have been mapped in the Tuscan Formation.[4]

Underlying the Tehama/Tuscan Formations is the Upper Princeton Gorge Formation. The Upper Princeton Gorge consists of non-marine sandstone with shale or conglomerate interbeds.

Underlying the Tertiary-age units in the western part of the basin is the Great Valley Sequence or Chico Formation. These units consist of well-consolidated to cemented, interbedded sandstone and shale. Generally, these units contain very poor quality water and have low groundwater yields.

LOCAL

Figures 5 and **6** show the driller's logs for Wells 2a and 1, respectively. These logs show that the Plant site is immediately underlain by a sequence of gravel and boulders, with occasional clay layers, to a depth of about 65 to 70 feet bgs. Underlying this coarse-grained zone is a finer-grained interval described as either "mudstone" or "hard brown clay" and "cemented gravel, to a depth of about 148 feet. Beneath this finer-grained zone is another coarse-grained interval of gravel and boulders, to a depth of 285 to 300 feet. This interval is the zone in which the site

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[3] Pierce, M. J., 1983, *Groundwater in the Redding Basin, Shasta and Tehama Counties, California*, U.S.G.S. Water Resources Investigations Report 83-4052.

[4] Helley and Harwood, 1985.

wells are completed. Underlying this zone is layer described as either "lava rock" or "cemented conglomerate", to depths of at least 305 to 340 feet bgs.

GROUNDWATER OCCURRENCE

Productive groundwater zones beneath the site and vicinity occur in the Tehama and Tuscan Formations. Wells in the vicinity of the site range in depth from less than 100 feet bgs (older domestic wells) to generally about 500 feet bgs, and pump from the Tehama or younger formations.[5] Generally, groundwater in the Tehama Formation occurs in a semiconfined to confined condition. This means that wells completed in semiconfined or confined aquifers have water levels higher than the top of the aquifer.

At the site, the large wells which supply the Cogen facility (2a) and pond make-up water (1 and 2a) are completed in the aquifer extending from 148 to at least 285 feet bgs.

Groundwater moves generally from west to east towards the Sacramento River in the site vicinity (**Figure 7**).

VICINITY WELL YIELDS

There are hundreds of wells in the project vicinity, but most are smaller domestic wells, which drillers indicate as having lower yields (mostly less than 50 to 100 gpm). These yields generally reflect the wells' construction or the needs of the property owners for less water; these yields are not necessarily reflective the aquifer's ability to yield more water (the aquifer's transmissivity).

The yields noted for irrigation or industrial wells generally are more indicative of the true nature of the aquifer's transmissivity. Based on the site wells and our experience in the area, wells with yields of over 1,000 gpm are not uncommon. Better constructed wells (*e.g.*, gravel packed, with wire-wrapped type screened casing), can have yields up to 3,000 gpm. Most of these higher yielding wells are located closer to the axis of the Redding groundwater basin.

FIELD METHODS

Existing site wells were used for this analysis. **Appendix A** contains the driller's logs for the three wells used in the analysis. **Figures 5** and **6** show the stratigraphy and screened interval, if noted on the log.

A 8-hour constant-discharge drawdown test was conducted on Well #2a, on November 24, 2007. The length and timing of the test was constrained by the need to use the well for Plant

[5] Department of Water Resources (DWR) drillers logs on file, Red Bluff, CA.

operations. The existing pump was used in the test. The well was pumped at an average discharge of 450 gpm (the limit of the existing pump); initial discharge was over 800 gpm, but declined to about 450 as pressure tanks and distribution lines were filled and provided back-pressure to the system. The discharge rate was measured using a totalizing flow meter with a digital readout, installed in the pump house for Well #2a.

Discharge was to the log-deck pond near the well. This pond, along with other ponds on the site, are generally kept relatively full and are an intrinsic feature of the site. Usually for an aquifer test, the discharge is routed some distance away from the well so that percolating discharge does not return to the well and decrease drawdown. In this case, however, because the ponds are a long-standing feature of the site and will remain in place after the expansion providing recharge to the subsurface, routing the test water to the nearby pond was not inappropriate.

Pressure transducers were installed in the Observation well (#2) and the Pipe Shop well (#1) on November 6, 2007. The transducers were wired to continuously recording data loggers. An obstruction in the casing of the Test well (Well #2a) prohibited installation of a transducer in that well. Water levels also were measured manually using 2-wire electric sounders. Recovery of water levels was recorded in the Observation and Pipe Shop wells for 48 hours after concluding the test.

Appendices B, **C**, and **D** contain the manual water-level data, transducer readings, and/or calculated water levels for the period of observation (before, during, and after pumping), for all wells. The manual water-level data is recorded on the calibration sheet for each test. The calibration sheets show the equations used to transform transducer readings to true water levels, based on the water levels measured manually.

Figures 8 through **12** show the various graphs used to evaluate the aquifer test data. **Figures 8** through **10** show graphs of depth to water for the Test, Observation, and Pipe Shop wells, respectively. **Figures 11** and **12** show the Theis analysis of the data for the Test and Observation wells, respectively.

AQUIFER TESTING RESULTS

Evaluation of aquifer-test data was performed using the commercially available AquiferTest ver. 4.0 software package from Waterloo Hydrogeologic, Inc. This software package is specifically designed for aquifer-test data analysis, and serves as an efficient means of applying several classic methods of data evaluation to a specific data set. **Appendix E** describes the analytical methods used. **Table 3** summarizes results from the aquifer testing.

The calculated transmissivity is between 20,000 and 40,000 square feet per day (from the Test and Observation wells, respectively). This transmissivity range equates to hydraulic conductivities of about 140 to 250 feet per day, based on the aquifer thickness of 153 feet. This is a relatively high hydraulic conductivity, reflecting the coarse-grained nature of the aquifer in this location.

The storativity ranged from 4.4×10^{-2}, to 7.1×10^{-2}, value typical of the semi-confined aquifers in the Redding groundwater basin.

The Observation well showed influence from the Pipe Shop well, in addition to influence from the Test well. The influence from the Pipe Shop well is delineated with green boxes on **Figure 9**. The influence was about 6 inches for each one-day operation period of the Pipe Shop well. This data was not formally analyzed because the Pipe Shop well does not have a flow meter, and accurate flow data is necessary to calculate aquifer parameters.

Table 3: Summary of Aquifer-Testing Results

Parameter	**Test Well (2a)**	**Observation Well (2)**
Discharge and length of test	450 gpm, 12 hours	
Maximum drawdown	4.2 feet	1.1 feet
Transmissivity, Theis method (Figures 10 and 11)	21,400 feet^2/day	37,800 feet^2/day
Hydraulic Conductivity (transmissivity ÷ aquifer thickness)	139 feet/day	245 feet/day
Storativity	2.45×10^{-2}	7.06×10^{-2}

Conversely, the Pipe Shop well showed an interference of about 1.4 feet from pumping of the Test well (delineated with a circle on **Figure 10**). This interference was slightly higher than in the Observation well, which is located much closer to the Test well. The observed interference could have been slightly higher than expected because the Pipe Shop well also supplies domestic water to the Plant, with the small pump operating frequently, potentially causing additional drawdown not attributable to the Test well. Alternatively, the higher interference may reflect the lack of a nearby recharge source at the Pipe Shop well – the Observation well is near a make-up water pond which could contribute recharge during pumping, thereby reducing interference in that well. Note that this potential phenomenon was accounted for in analyzing the test data; for example, on **Figure 12**, only the first part of the data set was used to calculate aquifer parameter. That is, the potential effects of the recharge were not considered.

LONG-TERM YIELD

The long-term yield of the existing Test well (2a) is at least 1,000 gpm (**Appendix E**). Pumping for a theoretical extended period of time (180 days) at this discharge would not cause water levels to decline below the top of the screen (**page 4, Appendix E**). Thus, this well could supply the expanded facility's water needs.

INTERFERENCE

Interference is the decrease in water level in a well caused by the pumping of a neighboring well. Different pumping rates and times cause different amounts of interference (a higher pumping rate and/or longer pumping duration cause more interference than a lower rate and/or shorter pumping time at any given distance). To evaluate the potential interference that project wells may cause, pumping rates and duration must be used in conjunction with the calculated aquifer coefficients to assess interference.

Figure 13 shows a graph of interference vs. distance for one well pumping at 430 gpm for 180 days (average pumping rate during 6-month dry season) and at 450 gpm for 30 days (the time of maximum pumping during the summer). **Appendix E** contains the calculations, which are based on the Theis equation and the lower end of the calculated aquifer parameters from the site testing. Use of the Theis equation is very conservative in this instance, as it does not account for recharge. That is, it assumes that all pumped water comes from aquifer storage, and that none comes from recharge, such as infiltration of rainfall or irrigation water. Thus, it overestimates the amount of interference because local aquifer recharge will reduce interference. Additionally, using the lower end of the calculated aquifer parameters will yield more conservative (larger) interference results.

Figure 13 shows that at a distance of about ½ mile, the interference would be about one foot at the end of summer; at one mile the interference would be about 0.6 feet (7 inches). The interference from the 450 gpm pumping rate for only 30 days is less (about ½ foot at ½ mile and 2.5 inches at one mile).

Figure 2 shows the ½ and 1 mile radii around the Test well (a new well would be installed in this general area). The neighboring residential properties, most of which are served by individual domestic wells, could experience from 6 inches to about one foot of interference. Note, however, that existing site pumping already may cause some interference on neighboring properties, at about half the magnitude of the predicted interference. Thus, the additional interference on neighboring wells, attributable to expanded Plant pumping, would be from about 3 to 6 inches. This is not a significant level of interference.

AVAILABLE GROUNDWATER

The groundwater budget for the Redding basin was estimated in the *Shasta County Water Resources Master Plan*.[6] Total inflow into the groundwater system of the Redding basin is estimated to be 293,600 acre-feet. Groundwater discharge from the basin is estimated to be about 37,300 acre-feet from pumping and about 266,000 acre-feet to surface streams.

The Redding groundwater basin is in "steady state", where inflows equal outflows. That is, removal of water from the basin (from pumping or other means) does not exceed recharge to the basin. **Figure 14**, showing several hydrographs of wells near the Plant and in the vicinity, illustrates that the basin is in steady state because changes in water levels roughly correlate to precipitation (recharge): During drought (for example from 1987 to 1992), water levels decline. When precipitation returns to average or above average, water levels increase.

The total water demand in the Redding basin as of the date of the *Shasta County Water Resources Master Plan* (1997) was about 280,500 acre-feet. The projected demand for the year 2030 is about 342,500 acre-feet, or an increase of about 62,000 acre-feet. Conservatively assuming that all of the additional demand will be supplied by groundwater gives a total groundwater pumpage for the year 2030 of 99,300 acre-feet.

Table 4 compares current and potential future groundwater pumping, and future project pumping, to groundwater inflow in to the Redding basin.

Current basin pumpage is about 13% of groundwater inflow. Estimated future basin pumpage would be about 34% of groundwater inflow. The new Cogen pumping (485 acre-feet/year) would be about 0.2% of groundwater inflow; total facility pumping (Cogen and Sawmill) would be about 0.4% of groundwater inflow.

The new Cogen pumping (485 acre-feet/year) would be about 1.3% of current groundwater pumping and about 0.5% of future groundwater pumping. Total facility pumping (Cogen and Sawmill) would be about 3% of current groundwater pumping and about 1% of future groundwater pumping.

Based on these calculations, the proposed expanded pumping, would not substantially deplete the groundwater supply.

[6] Shasta Co. Water Agency, CH2M Hill, 1997, *Shasta County Water Resources Master Plan, Phase 1 Report, Current and Future Water Needs*, Figure 19 and pp. 101 – 103.

Table 4: Project Water Use

	Groundwater Inflow	Groundwater Pumping
	acre-feet/year	acre-feet/year
Year 1997 (assumed for current)	293,600	37,300
Year 2030	293,600	99,300
Groundwater pumping as % of groundwater Inflow		
Year 1997 (assumed for current)	13%	
Year 2030	34%	
Project use as % of groundwater inflow		
New Use (485 af/yr)	0.2%	
Total Use (1,130 af/yr)	0.4%	
Project use as % of other groundwater use – Current		
New Use (485 af/yr)	1.3%	
Total Use (1,130 af/yr)	3.0%	
Project use as % of other groundwater use – Year 2030		
New Use (485 af/yr)	0.5%	
Total Use (1,130 af/yr)	1.1%	

DROUGHT AND WATER-SUPPLY SUSTAINABILITY

Regarding drought and the sustainability of the groundwater supply, **Figure 13** shows hydrographs of several wells in the area of the SPI Plant (all from Township 30 North, Range 4 West). Hydrographs show the groundwater levels over time. Graphs for the wells in the project area show that water levels roughly correlate to precipitation – when there is less precipitation (drought), water levels decline and when there is more precipitation, water levels rise. These types of patterns show that the groundwater basin is in steady state, and is not overdrafted. If overdraft were occurring, water levels would continually decline, even when there was higher than normal precipitation.

The California Department of Water Resources (DWR) maps the difference between spring to spring groundwater levels as a measure of how aquifers are responding to changes in precipitation, pumping, or other factors that could affect water levels. For the most recent drought, DWR mapped the difference between spring 2006 and spring 2009 levels to illustrate how the last three dry years affected groundwater levels.

For wells up to 200 feet deep in the Redding basin, between 2006 and 2009 groundwater levels have declined between zero and seven feet.[7] Most wells between 200 and 600 feet deep also show water levels between zero and seven feet lower; there is one well in the far northern part of the basin with higher water levels and one well with levels eight to 14 feet lower.[8]

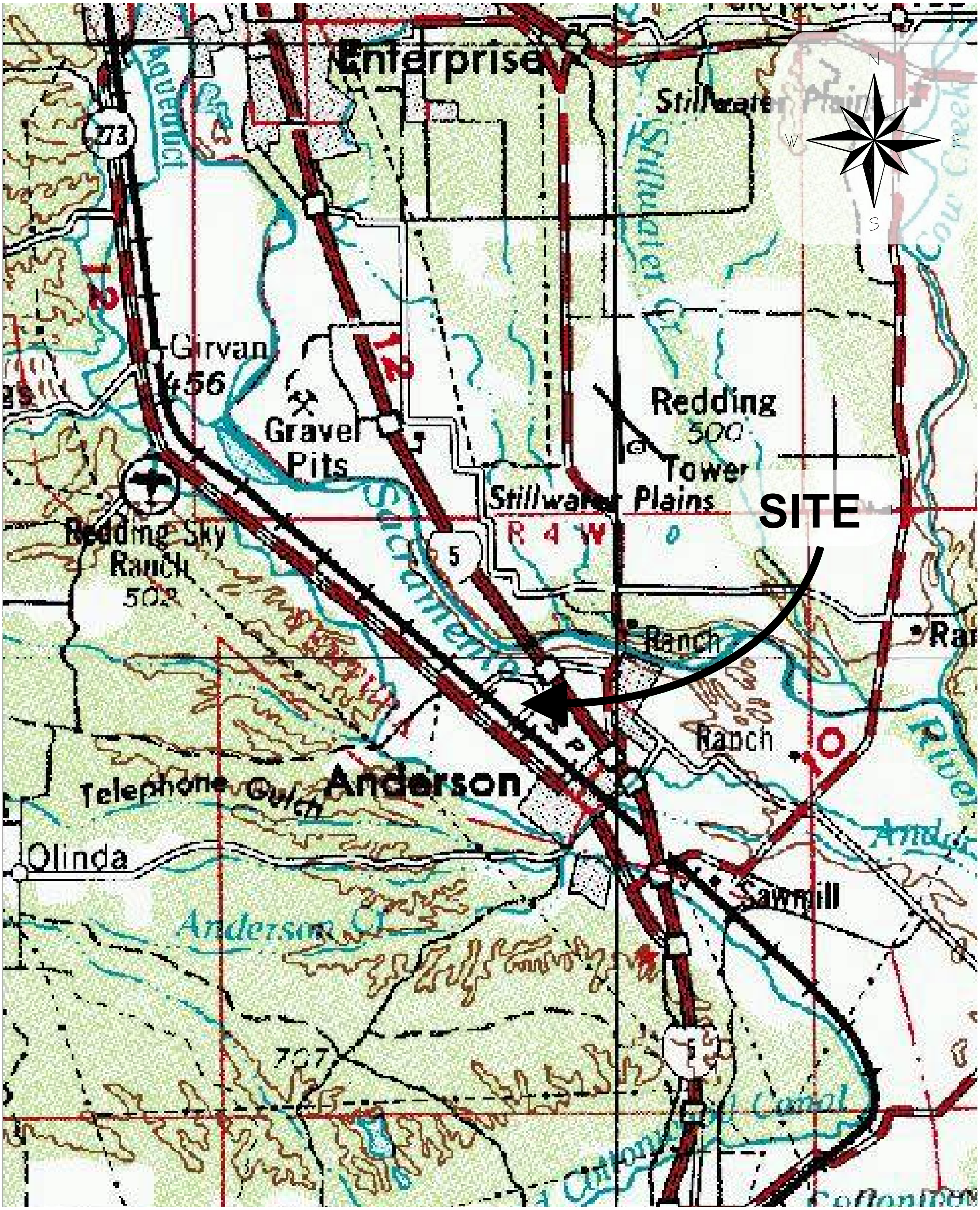
A well monitored by DWR near the SPI site illustrates the changes in water level in the project area caused by drought. **Figure 15** shows a hydrograph for this well, State well number 30N04W05K001M. This well shows a spring-to-spring decline of about seven feet during the period 1986 though 1992 (the most recent extended drought). Between 2006 and 2009 (the most recent drought of shorter duration), the spring-to-spring water level declined about five feet, although the spring 2006 starting level was about three feet higher than average.

In addition to changes in water level from drought, there are seasonal changes in water level in this well of up to about five feet.

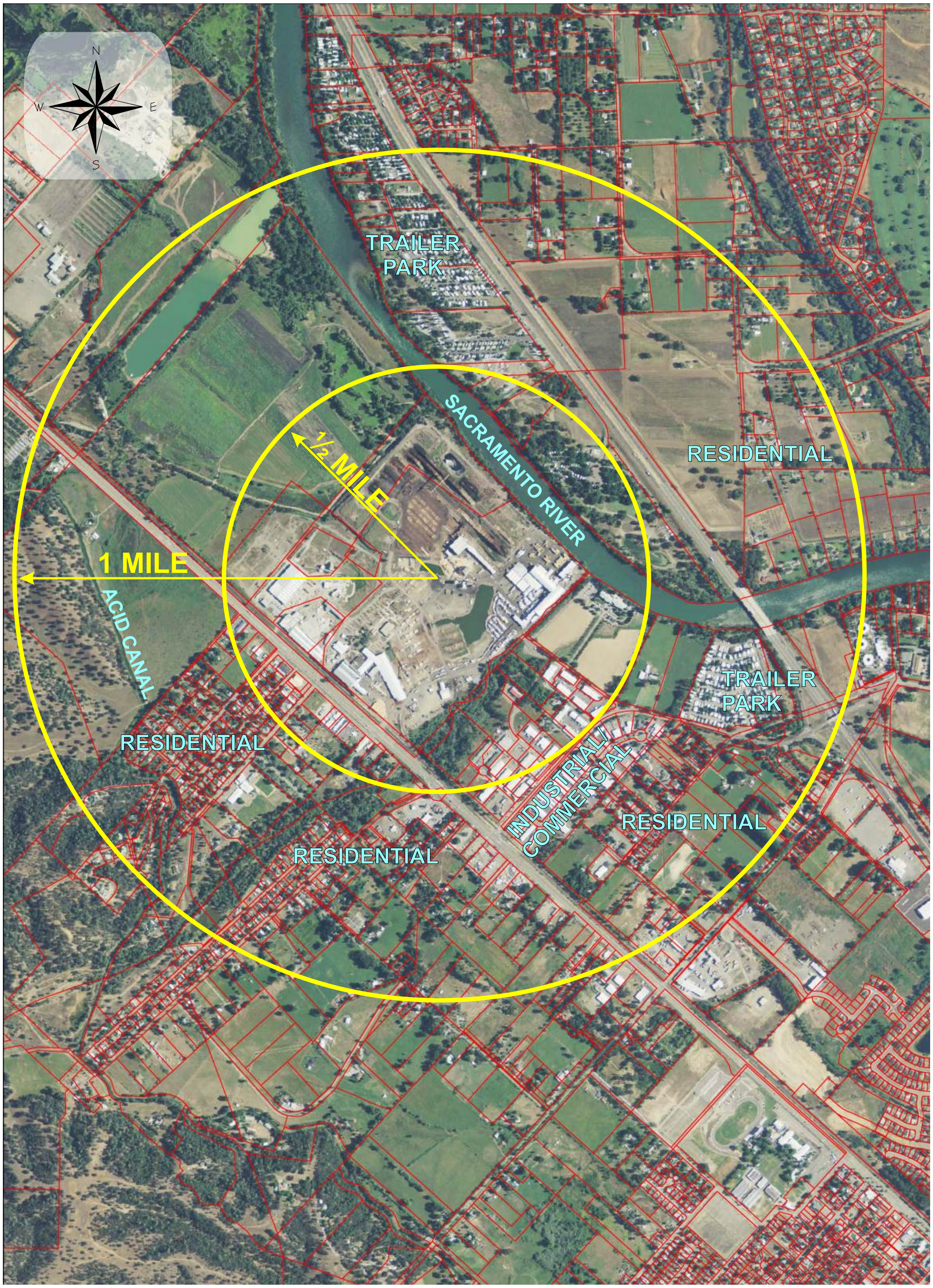
Properly constructed individual wells should be able to continue to produce water under conditions similar to historic droughts. A properly constructed well is one which is drilled deep enough into the aquifer such that anticipated water-level declines (such as droughts) can be accommodated. Assuming existing wells have continued to produce during past droughts, the addition of less than six inches of interference from new project water use should not cause neighboring wells to “go dry” during a drought.

7 http://www.nd.water.ca.gov/PPAs/GroundwaterBasins/GroundwaterLevel/GWLevelMonitReports/Plate1-Spring2006toSpring2009GWEChangeinWellsUpto200ftindepth.pdf

8 http://www.nd.water.ca.gov/PPAs/GroundwaterBasins/GroundwaterLevel/GWLevelMonitReports/Plate2-Spring2006toSpring2009GWEChangeinWellsFrom200to600ftindepth.pdf



SITE LOCATION MAP SIERRA PACIFIC INDUSTRIES, ANDERSON, CA MAP ADAPTED FROM USGS QUAD		LAWRENCE & ASSOCIATES 2001 Market Street, Room 523 Redding, CA 96001 Phone (530) 244-9703 Fax (530) 244-5021	SCALE: 1" = 4,000' DATE: DEC. 10, 2007 JOB NO.: 007134.00
CLIENT: SIERRA PACIFIC INDUSTRIES	PROJECT: HYDROGEOL. ANALYSIS	DRAWN BY: C. KLINESTEKER	FIGURE 1



VICINITY MAP SIERRA PACIFIC INDUSTRIES, ANDERSON, CA MAP ADAPTED FROM SHASTA CO. 2004 AERIAL IMAGERY		LAWRENCE & ASSOCIATES 2001 Market Street, Room 523 Redding, CA 96001 Phone (530) 244-9703 Fax (530) 244-5021	SCALE: 2.5 INCHES = 1 MILE DATE: APRIL 7, 2010 JOB NO.: 007134.00
CLIENT: SIERRA PACIFIC INDUSTRIES	PROJECT: HYDROGEOL. ANALYSIS	DRAWN BY: B. LAMPLEY	FIGURE 2

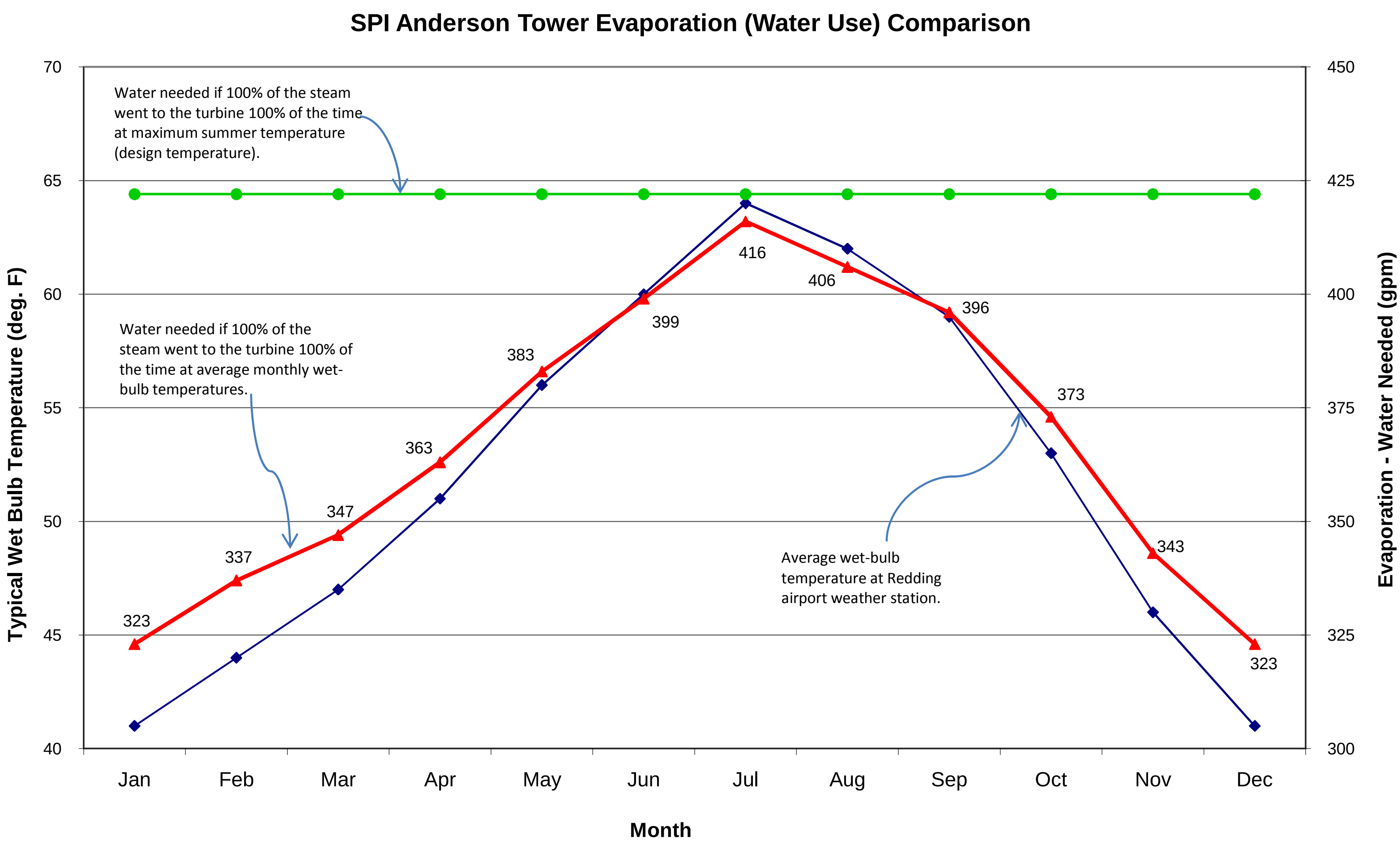
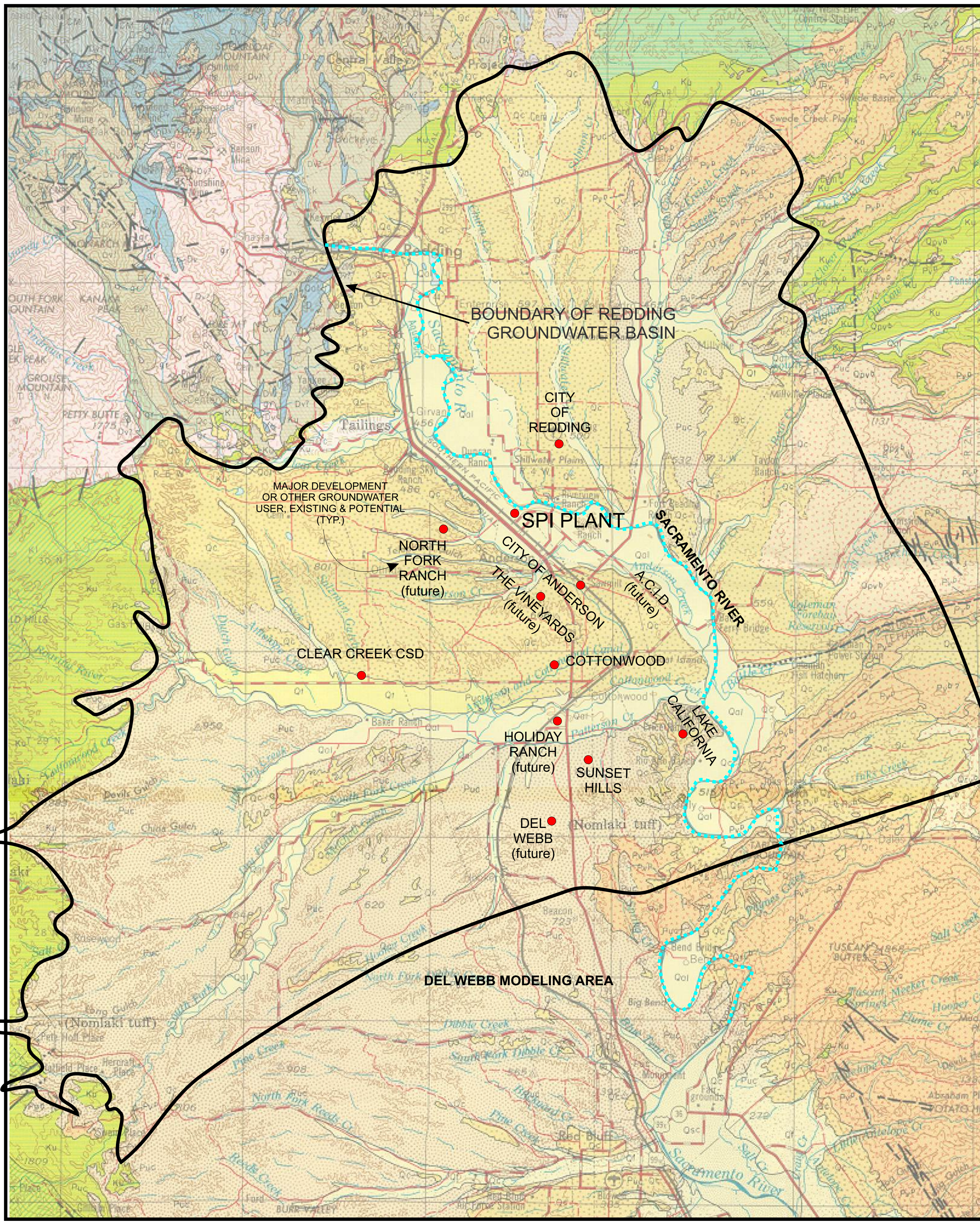

SPI Anderson Tower Evaporation (Water Use) Comparison
Typical Wet Bulb Temperature (deg. F)
Evaporation - Water Needed (gpm)
70
65
60
55
50
45
40
450
425
400
375
350
325
300
Water needed if 100% of the steam went to the turbine 100% of the time at maximum summer temperature (design temperature).
Water needed if 100% of the steam went to the turbine 100% of the time at average monthly wet-bulb temperatures.
Average wet-bulb temperature at Redding airport weather station.
323
337
347
363
383
399
416
406
396
373
343
323
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month

FIGURE 3

NORTH



EXPLANATION OF GEOLOGIC UNITS ON REVERSE

0 2 4 6 8
MILES

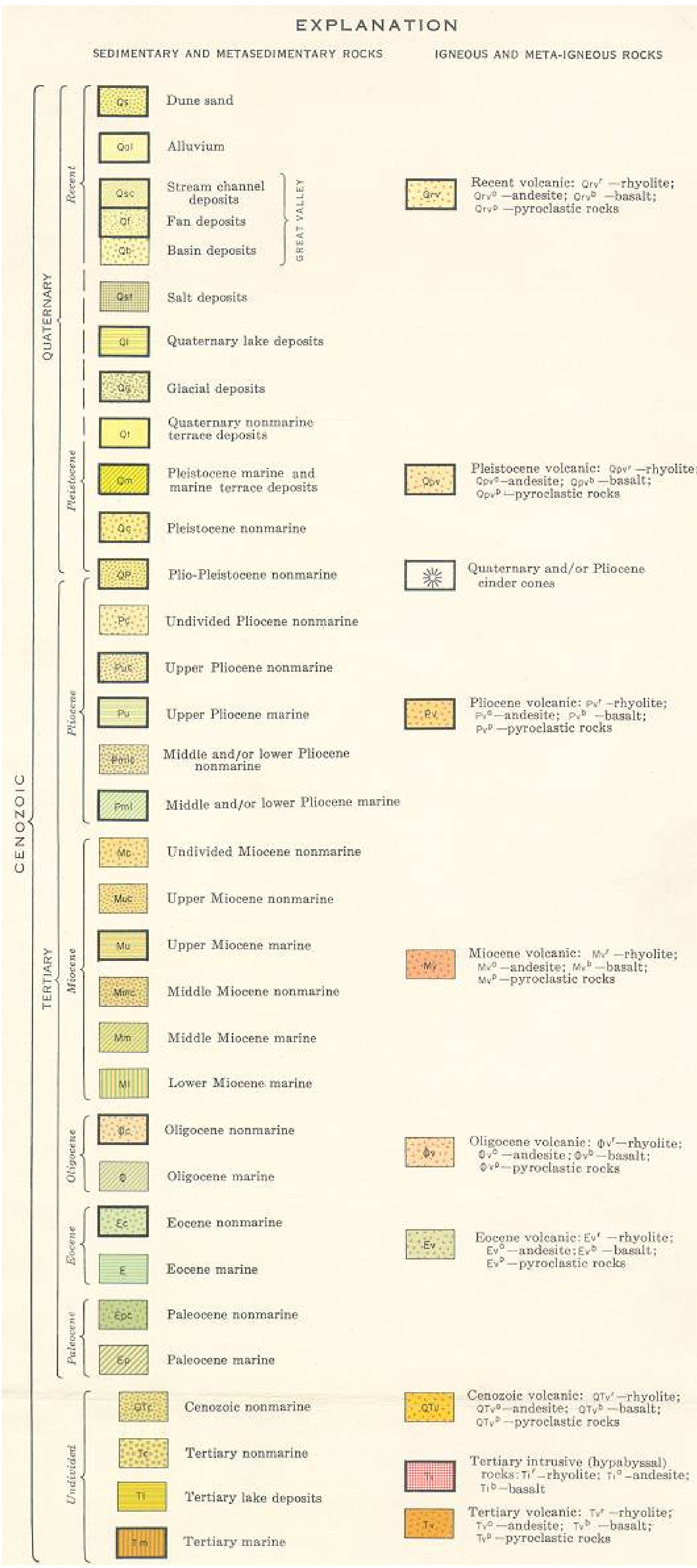
Note: All locations approximate.

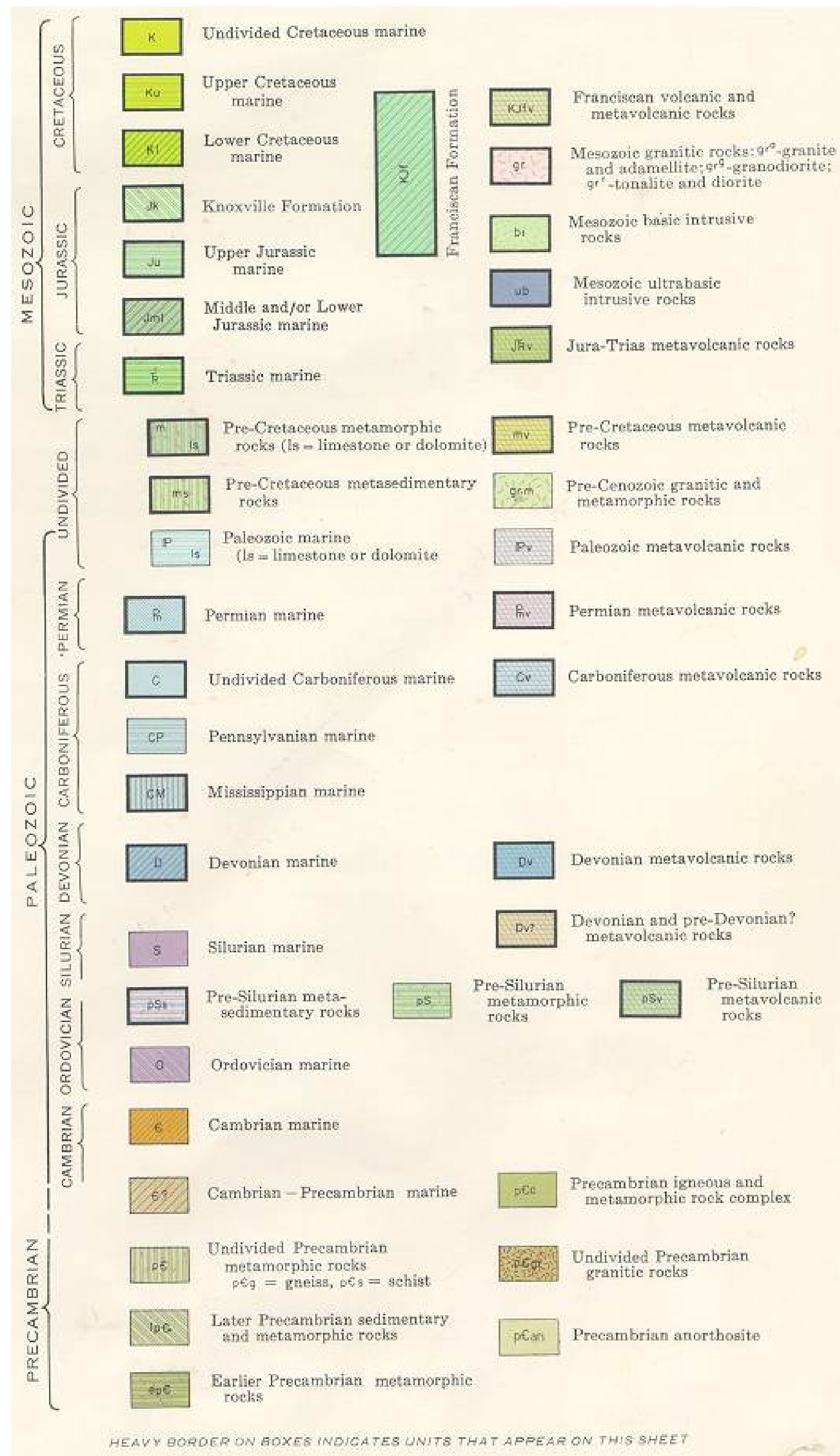
TAKEN FROM: *Geologic Map of California, Redding Sheet*, 1969, CA Division Mines and Geology.

REGIONAL GEOLOGIC MAP REDDING GROUNDWATER BASIN		LAWRENCE & ASSOCIATES 2001 MARKET STREET, ROOM 523 REDDING, CALIFORNIA 96001 PHONE: (530) 244-9703 FAX: (530) 244-5021	SCALE: 1 INCH = 4 MILES DATE: APRIL 7, 2010 JOB NO.: 007134.00
CLIENT: SIERRA PACIFIC IND.	PROJECT: HYDROGEOLOGIC EVALUATION	DRAWN BY: B. LAMPLEY	FIGURE 4 (pg. 1)

CENOZOIC UNITS
(YOUNGEST)

MESOZOIC AND PALEOZOIC UNITS
(OLDER)



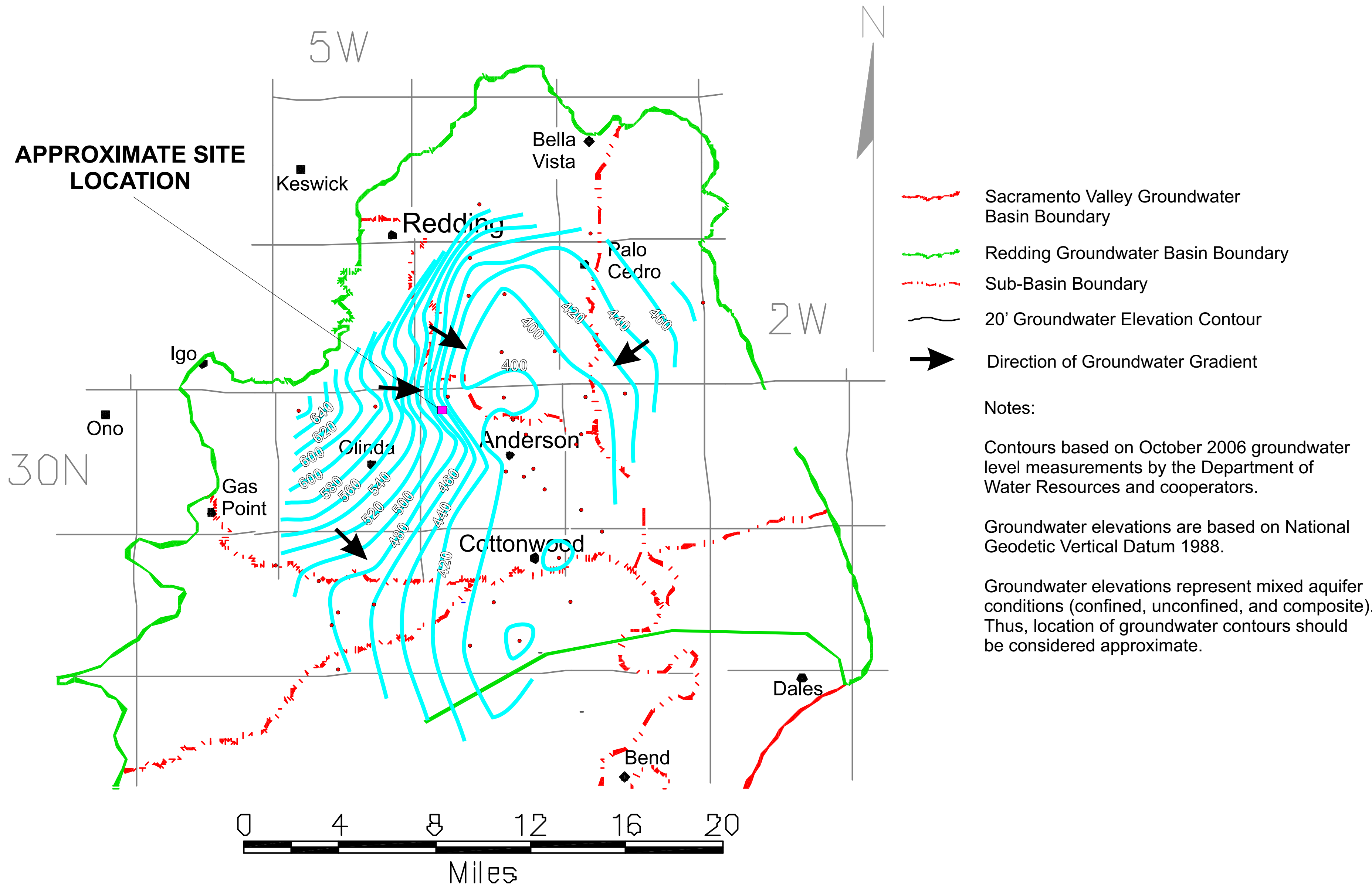


Contact, dashed where inferred

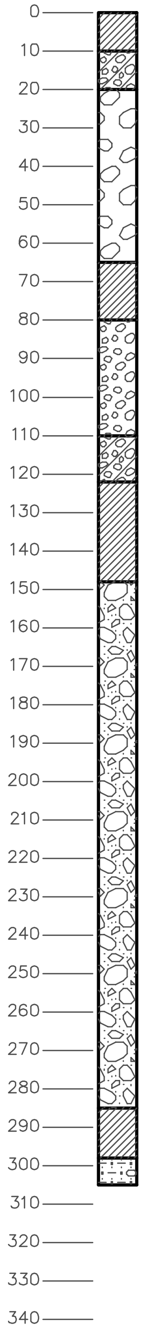
Fault, dashed where inferred

TAKEN FROM: *Geologic Map of California, Redding Sheet*, 1969, CA Division Mines and Geology.

LEGEND FOR REGIONAL GEOLOGIC MAP REDDING BASIN AREA		LAWRENCE & ASSOCIATES 2001 MARKET STREET, ROOM 523 REDDING, CALIFORNIA 96001 PHONE: (530) 244-9703 FAX: (530) 244-5021	SCALE: NO SCALE DATE: APRIL 7, 2010 JOB NO.: 007134.00
CLIENT: ENPLAN	PROJECT: HYDROGEOLOGIC EVALUATION	DRAWN BY: B. LAMPLEY	FIGURE 4 (pg. 2)



REGIONAL GROUNDWATER ELEVATION CONTOURS REDDING BASIN - FALL 2006 DEPT. OF WATER RESOURCES DATA		LAWRENCE & ASSOCIATES 2001 MARKET STREET, ROOM 523 REDDING, CALIFORNIA 96001 PHONE: (530) 244-9703 FAX: (530) 244-5021	SCALE: 1 INCH ~ 6 MILES DATE: APRIL 7, 2010 JOB NO.: 007134.00
CLIENT: S.P.I.	PROJECT: HYDROGEOLOGIC INVESTIGATION - COGEN	DRAWN BY: B. LAMPLEY	FIGURE 5

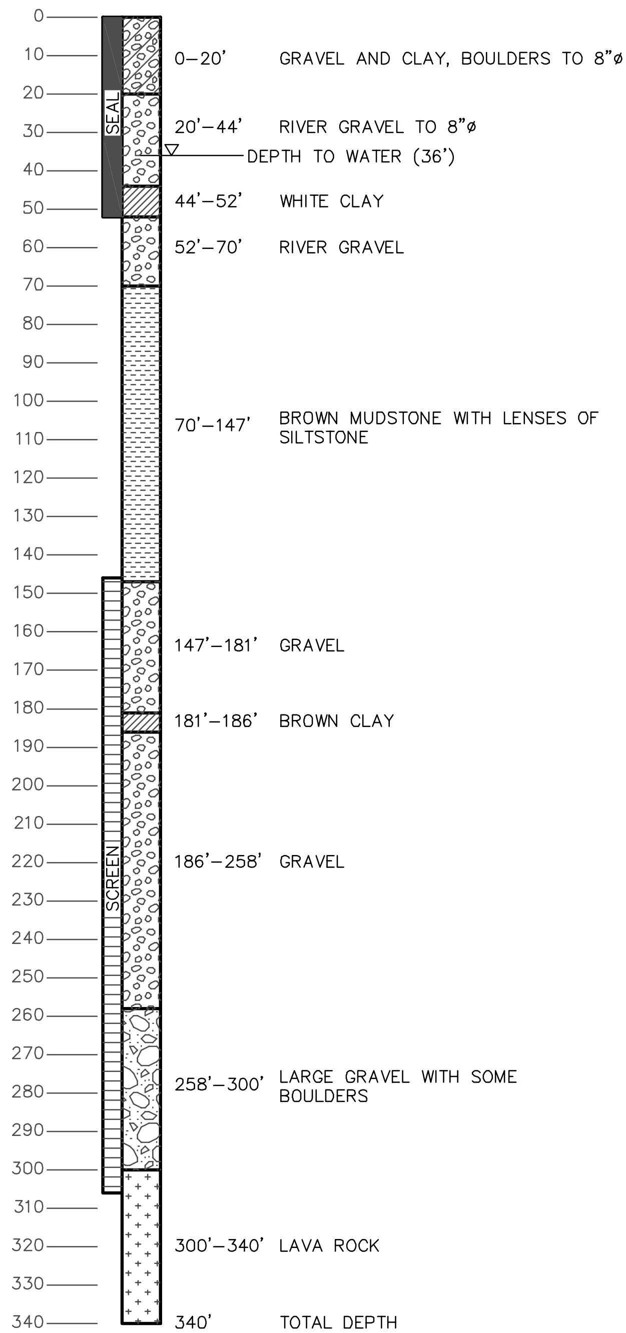


0–10'	CLAY
10'–20'	CLAY AND BOULDERS
20'–65'	BOULDERS
65'–80'	CLAY
80'–110'	CEMENTED GRAVEL
110'–122'	CLAY AND GRAVEL
122'–148'	HARD BROWN CLAY
148'–285'	HARD CEMENTED GRAVEL AND BOULDERS
285'–298'	CLAY
298'–305'	CEMENTED CONGLOMERATE
305'	TOTAL DEPTH

OBSERVATION WELL (SPI WELL 2)
DRILLED 1948

P:\007134.00_SPI–Hydro Analysis\WELL LOGS.dwg D.B.Z. 12/13/2007

DRILLERS LOG FOR SPI WELLS	LAWRENCE & ASSOCIATES 2001 MARKET STREET, RM. 523 REDDING, CA 96001 PHONE (530) 244-9703 FAX (530) 244-5021	SCALE: 1"=50' DATE: 12/12/2007 JOB NO: 007134.00
CLIENT: SIERRA PACIFIC INDUSTRIES PROJECT: HYDROGEOL. ANALYSIS	DRAWN BY: J. HOLDEN	FIGURE 6



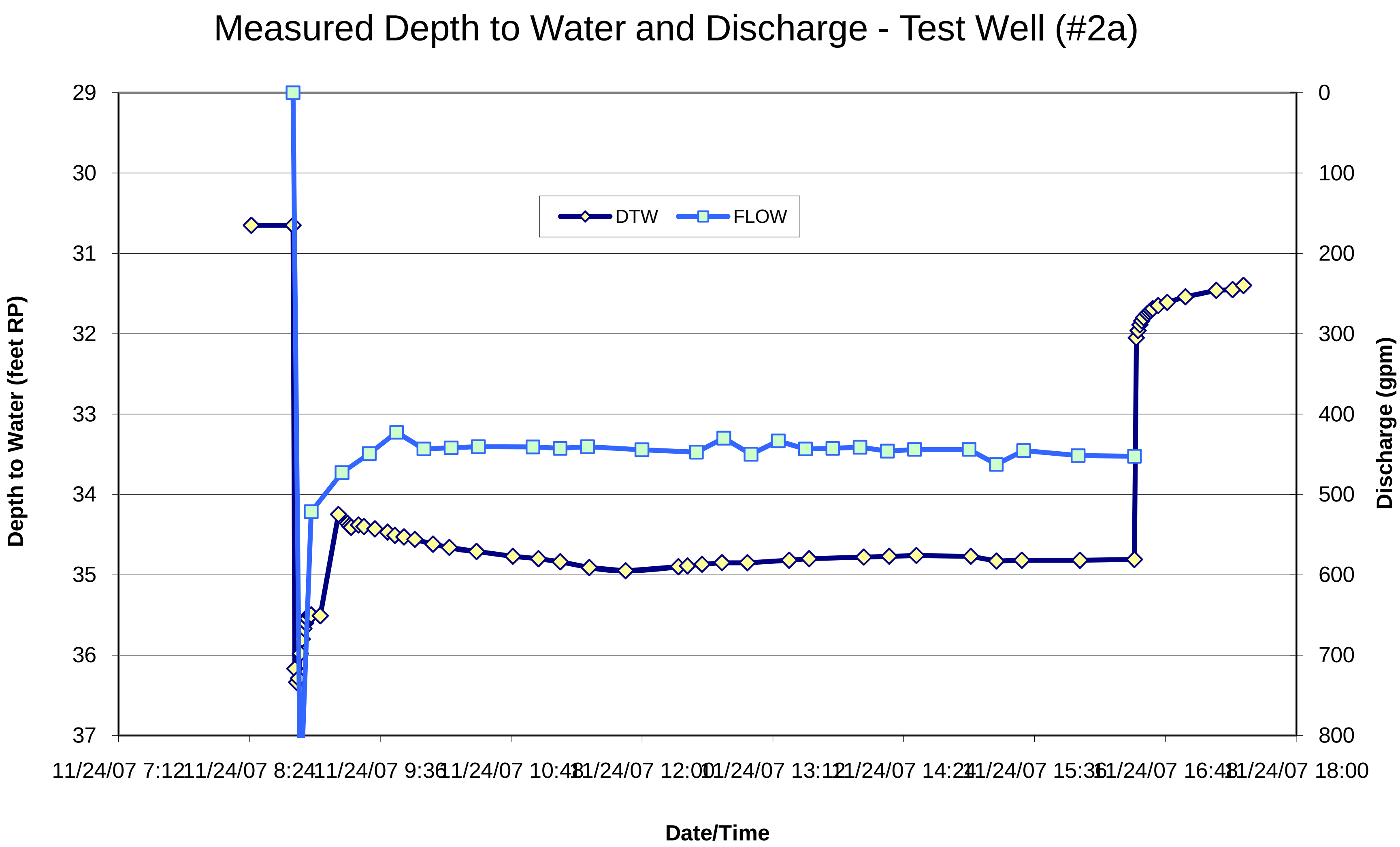
TEST WELL (SPI WELL 2A)

DRILLED 1997

P:\007134.00_SPI–Hydro Analysis\WELL LOGS.dwg D.B.Z. 12/13/2007

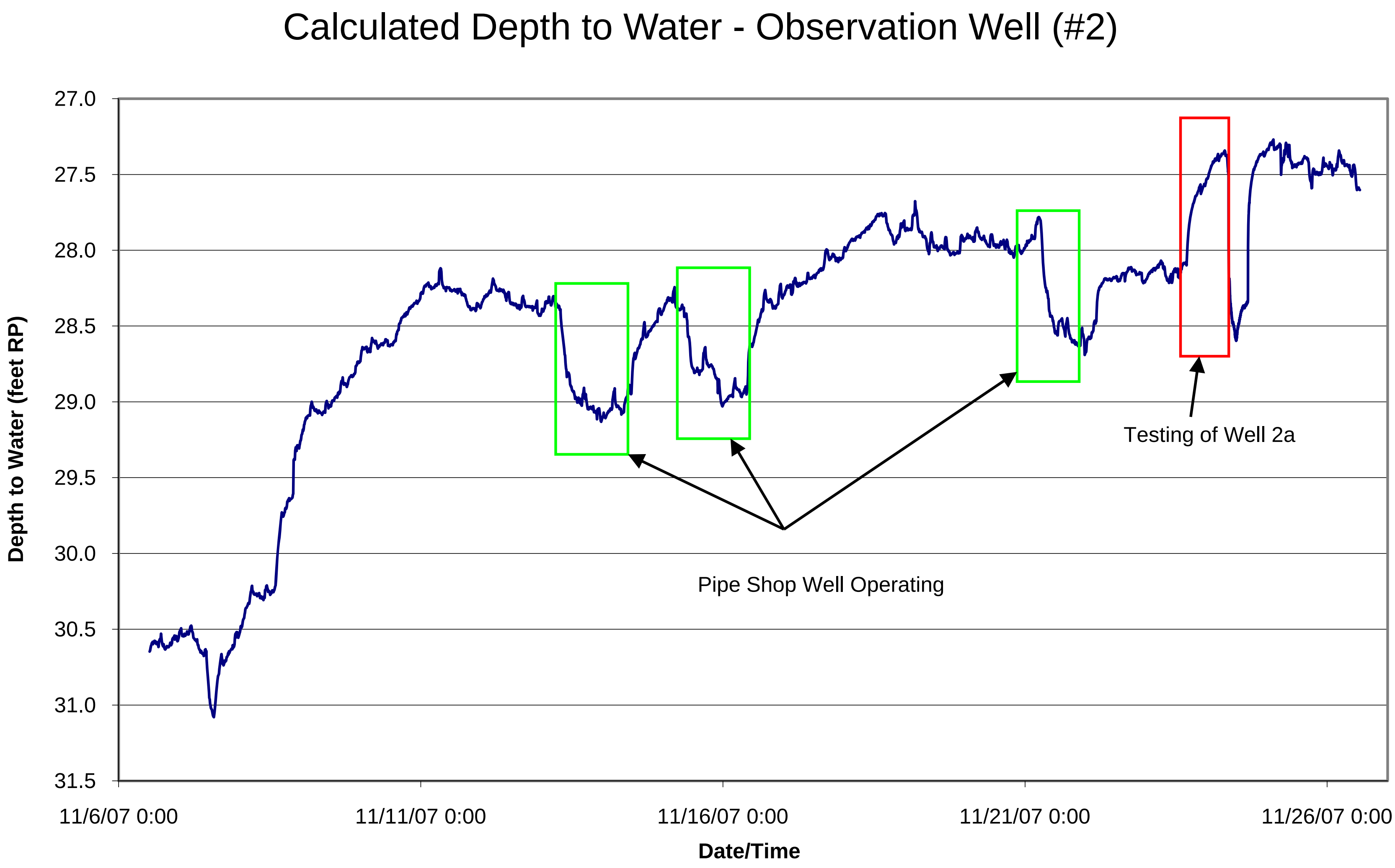
DRILLERS LOG FOR SPI WELLS	LAWRENCE & ASSOCIATES 2001 MARKET STREET, RM. 523 REDDING, CA 96001 PHONE (530) 244-9703 FAX (530) 244-5021	SCALE: 1"=50' DATE: 12/12/2007 JOB NO: 007134.00

CLIENT: SIERRA PACIFIC INDUSTRIES	PROJECT: HYDROGEOL. ANALYSIS	DRAWN BY: J. HOLDEN	FIGURE 7



Measured Depth to Water and Discharge - Test Well (#2a)
DTW
FLOW
Depth to Water (feet RP)
Discharge (gpm)
Date/Time
29
30
31
32
33
34
35
36
37
0
100
200
300
400
500
600
700
800
11/24/07 7:12
11/24/07 8:24
11/24/07 9:36
11/24/07 10:48
11/24/07 12:00
11/24/07 13:12
11/24/07 14:24
11/24/07 15:36
11/24/07 16:48
11/24/07 18:00

FIGURE 8



Calculated Depth to Water - Observation Well (#2)
27.0
27.5
28.0
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Depth to Water (feet RP)
11/6/07 0:00
11/11/07 0:00
11/16/07 0:00
11/21/07 0:00
11/26/07 0:00
Date/Time
Pipe Shop Well Operating
Testing of Well 2a

FIGURE 9

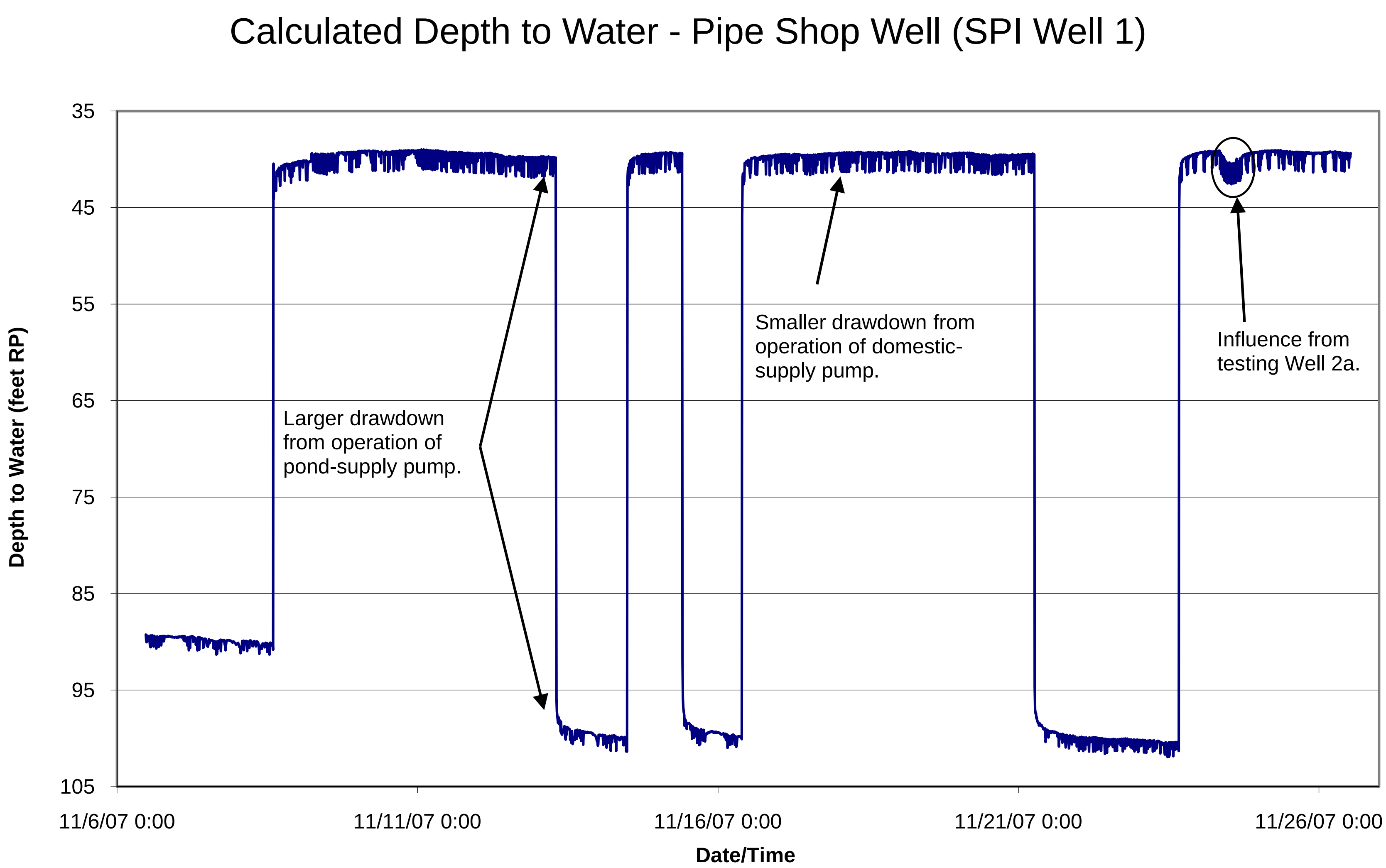
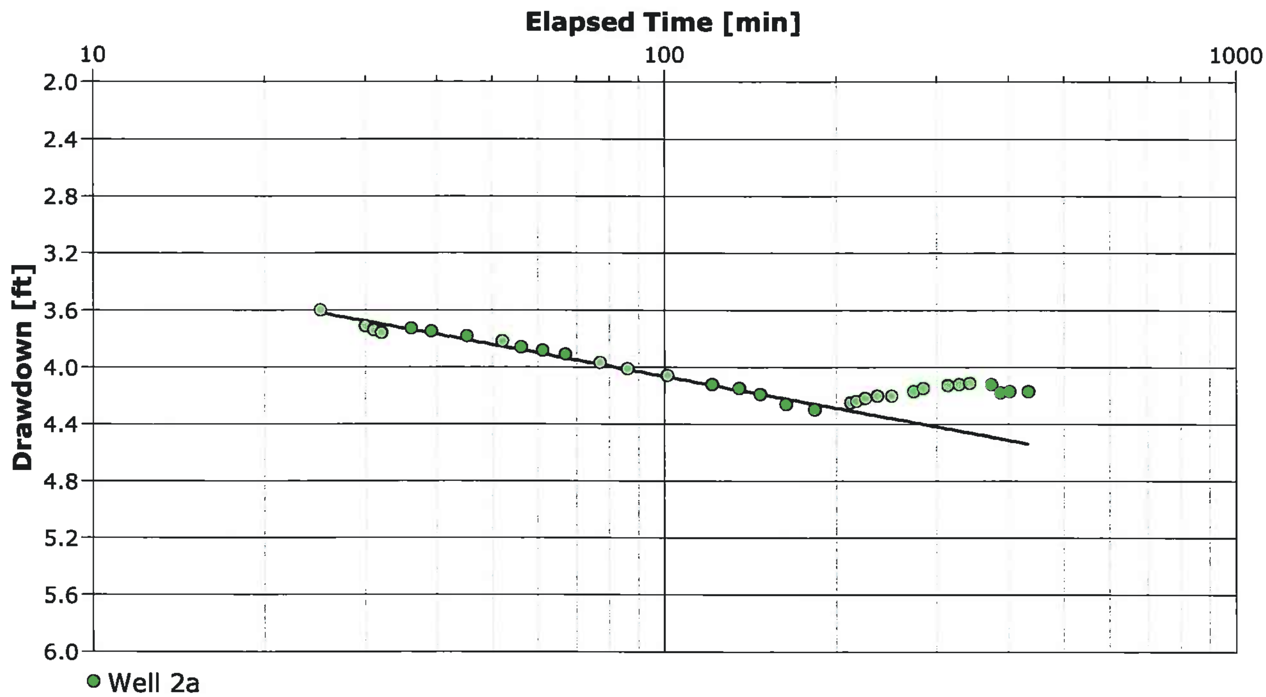

Calculated Depth to Water - Pipe Shop Well (SPI Well 1)
35
45
55
65
75
85
95
105
Depth to Water (feet RP)
11/6/07 0:00
11/11/07 0:00
11/16/07 0:00
11/21/07 0:00
11/26/07 0:00
Date/Time
Larger drawdown from operation of pond-supply pump.
Smaller drawdown from operation of domestic-supply pump.
Influence from testing Well 2a.

FIGURE 10

LAWRENCE & ASSOCIATES 2001 Market Street Redding, CA 96001 530.244.9703 info@lwrnc.com	**Pumping Test Analysis Report** Project: SPI - Cogen Expansion Number: 007134.00 Client: Sierra Pacific Industries

Location: Anderson, Shasta County, CA	Pumping Test: Pumping Test 1	Pumping well: Well 2a
Test conducted by: B. Lampley, C. Klinesteker		Test date: 11/24/2007
Analysis performed by: B. Lampley	Theis Well 2a	Date: 12/11/2007
Aquifer Thickness: 154.00 ft	Discharge: variable, average rate 450.06 [U.S. gal/min]	



Calculation after Theis

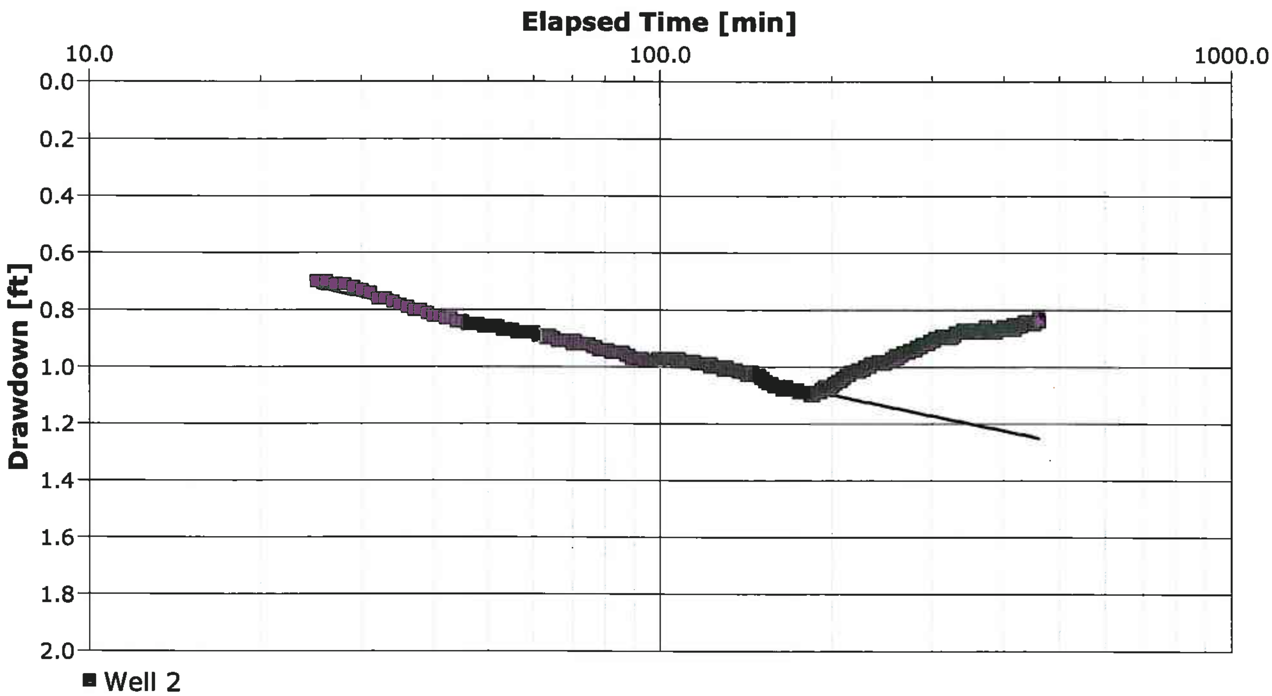
Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	P	Radial distance to PW [ft]
Well 2a	2.14×10^4	1.39×10^2	4.36×10^{-2}	9.06×10^3	0.5

FIGURE 11

2001 Market Street
Redding, CA 96001
530.244.9703
info@lwrnc.com
LAWRENCE & ASSOCIATES

Pumping Test Analysis Report	
Project:	SPI - Cogen Expansion
Number:	007134.00
Client:	Sierra Pacific Industries

Location: Anderson, Shasta County, CA	Pumping Test: Pumping Test 1	Pumping well: Well 2a
Test conducted by: B. Lampley, C. Klinesteker		Test date: 11/24/2007
Analysis performed by: B. Lampley	Theis Well 2	Date: 12/11/2007
Aquifer Thickness: 154.00 ft	Discharge: variable, average rate 449.09 [U.S. gal/min]	



Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	P	Radial distance to PW [ft]
Well 2	3.78×10^4	2.45×10^2	7.06×10^{-2}	1.00×10^6	20.0

FIGURE 12

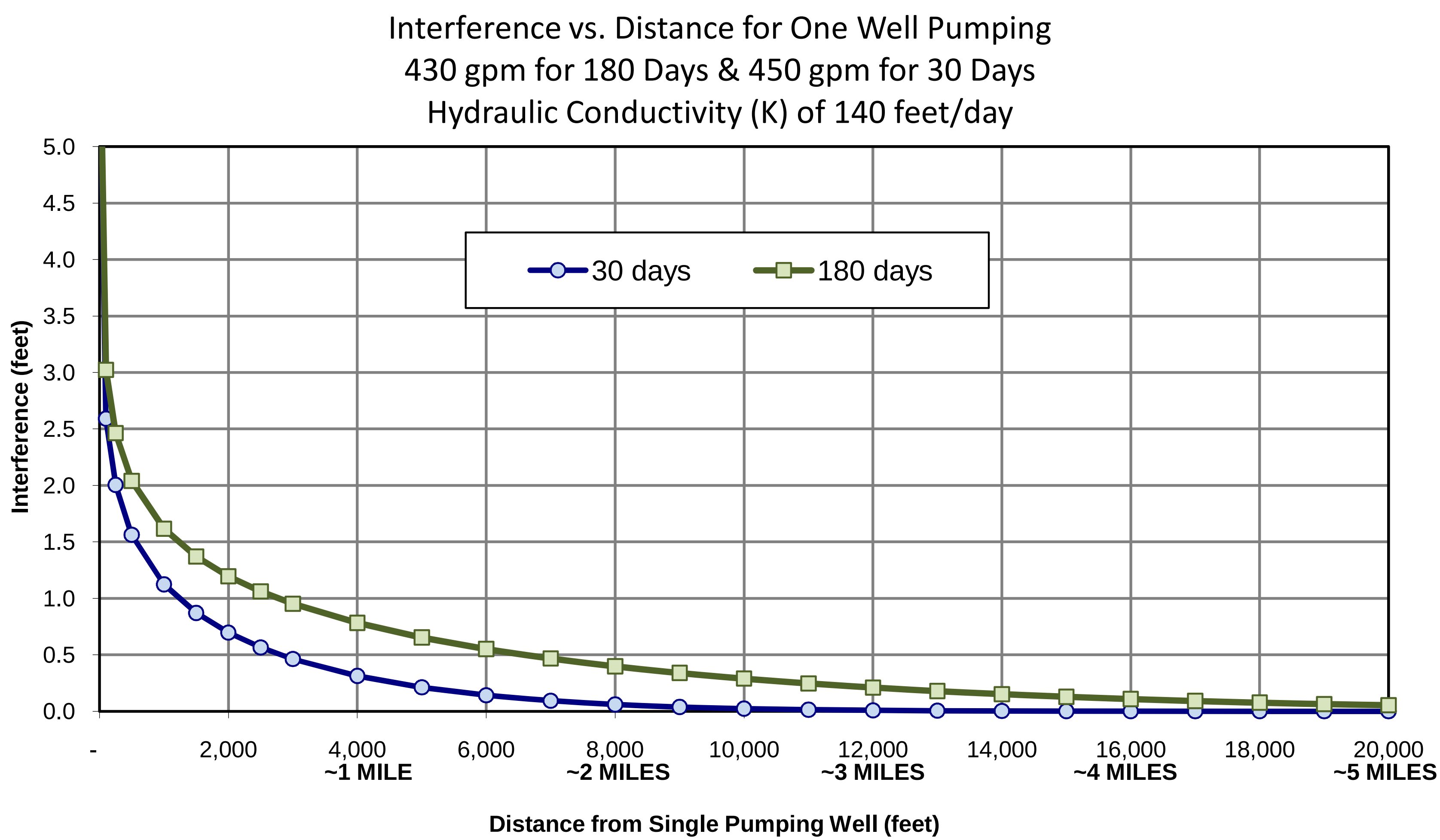
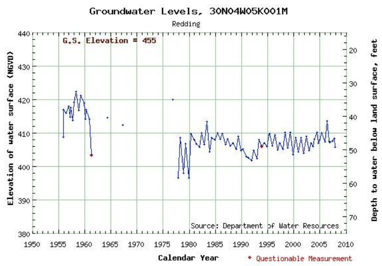
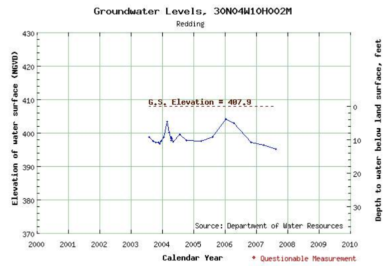

Interference vs. Distance for One Well Pumping
430 gpm for 180 Days & 450 gpm for 30 Days
Hydraulic Conductivity (K) of 140 feet/day
30 days
180 days
Interference (feet)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-
2,000
4,000
~1 MILE
6,000
8,000
~2 MILES
10,000
12,000
~3 MILES
14,000
16,000
~4 MILES
18,000
20,000
~5 MILES
Distance from Single Pumping Well (feet)

FIGURE 13

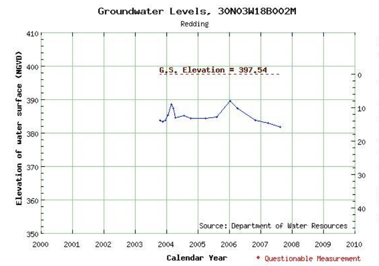
30N 04W 05K



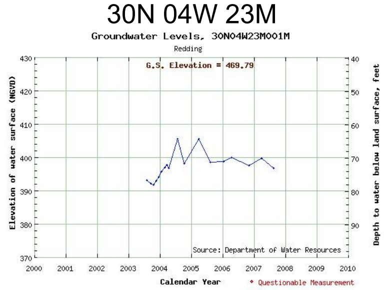
30N 04W 10H



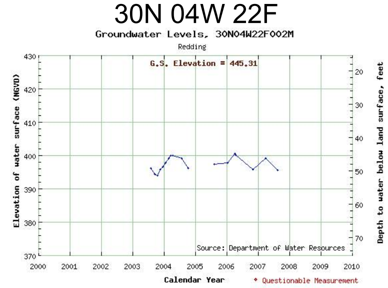
30N 04W 18B



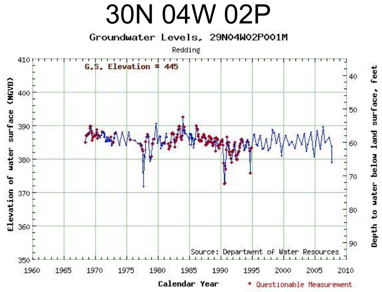
30N 04W 23M



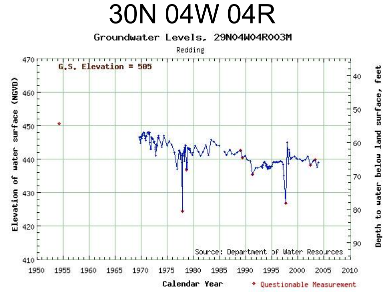
30N 04W 22F



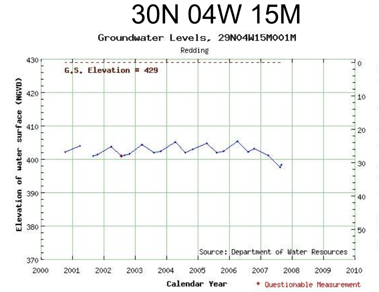
30N 04W 02P



30N 04W 04R

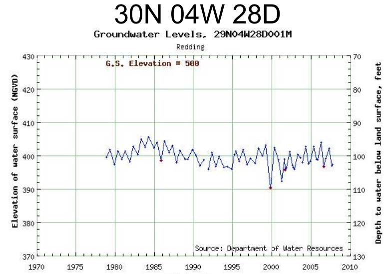


30N 04W 15M

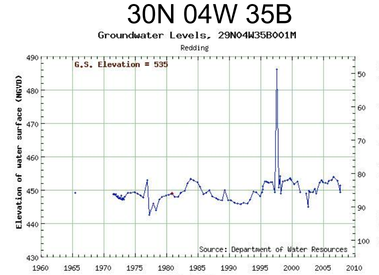


30N 04W 27A

30N 04W 28D



30N 04W 35B



HYDROGRAPHS OF REDDING BASIN WELLS

FROM CA DEPT. OF WATER RESOURCES

SEE FIGURE 5 FOR WELL LOCATIONS

LAWRENCE & ASSOCIATES
2001 Market Street, Room 523
Redding, CA 96001

Phone (530) 244-9703
Fax (530) 244-5021

SCALE: 2.5 INCHES = 1 MILE

DATE: APRIL 7, 2010

JOB NO.: 007134.00

CLIENT: SIERRA PACIFIC INDUSTRIES

PROJECT: HYDROGEOL. ANALYSIS

DRAWN BY: C. KLINESTEKER

FIGURE 14

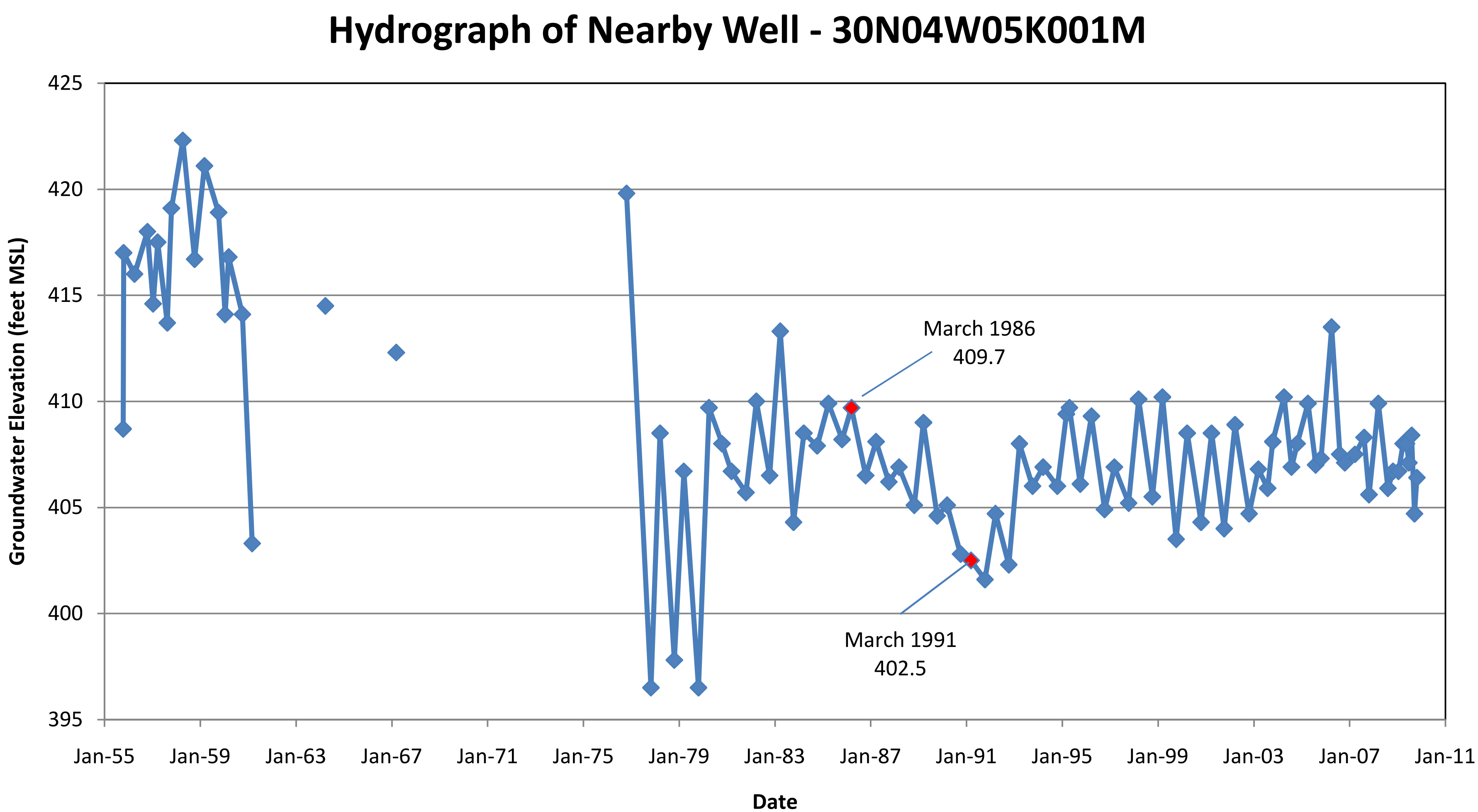

Hydrograph of Nearby Well - 30N04W05K001M
Groundwater Elevation (feet MSL)
425
420
415
410
405
400
395
March 1986
409.7
March 1991
402.5
Jan-55
Jan-59
Jan-63
Jan-67
Jan-71
Jan-75
Jan-79
Jan-83
Jan-87
Jan-91
Jan-95
Jan-99
Jan-03
Jan-07
Jan-11
Date

FIGURE 15

APPENDIX A

Site Well Logs

REGION
COUNTY
NEAR

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

WELL LOG

BASIN
DWR NO. 35N/4W-9C1
OTHER NOS.

CONFIDENTIAL LOG
Water Code Sec. 13752

LOCATION Well No1? at fuel Bin

OWNER U.S. Plywood ADDRESS

DRILLED BY Jessee 232 ADDRESS

DRILLING METHOD Cable GRAVEL PACKED DATE COMPLETED April 7, 1948

SIZE OF CASING DEPTH 264 of 14" STRUCK WATER AT

PERFORATIONS SIZE

Well #1

WATER LEVEL BEFORE PERFORATING AFTER

TEST DATA: DISCHARGE G. P. M. See below DRAWDOWN FT.

OTHER DATA AVAILABLE: WATER LEVEL RECORD ANALYS

SURFACE ELEV. DATUM SOURCE OF INFORMATIO

FOR FIELD COPIES USE ALTERNATE LINES

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICK-NESS	SP. YIELD %
1-10		clay		
10-20		clay + boulders		
20-65		boulders		
65-80		clay		
80-110		cement gravel		
110-122		Clay & gravel		
122-148		hard brown clay		
148-285		hard cement gravel & Boulders		
285-298		clay		
298-305		Cemented conglomerate		
		Pump test 810 at 46'		
		780 44		
		725 42		
		610 40		
		490 37		
		325 32		

LOG OBTAINED BY DATE SHEET 1 OF

REGION
COUNTY
NEAR

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

WELL LOG

BASIN
DWR No. 30N/4W-9E2
OTHER Nos.

CONFIDENTIAL LOG
Water Code Sec. 13752

LOCATION No 3 at Boiler Plant ?

OWNER U. S. Plywood ADDRESS

DRILLED BY Footer H80 ADDRESS

DRILLING METHOD GRAVEL PACKED DATE COMPLETED March '54

SIZE OF CASING DEPTH 224' of 10" STRUCK WATER AT

PERFORATIONS 70' - 224 SIZE No.

WATER LEVEL BEFORE PERFORATING AFTER 20'

TEST DATA: DISCHARGE G. P. M. DRAWDOWN FT. HOURS RUN

OTHER DATA AVAILABLE: WATER LEVEL RECORD ANALYSIS

SURFACE ELEV. DATUM SOURCE OF INFORMATION driller

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICKNESS	SP. YIELD %	
0-36		gravel			
36-70		clay			
70-118		clay gravel			
118-164		clay			
164-180		sand			
180-210		cement gravel			
210-216		loose gravel			
216-224		cement gravel			

Well # 2

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE SHEET 1 OF

Copy 1 of 1

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 508672

Owner's Well No. 2a

Date Work Began 9-26-97, Ended 10-31-97

Local Permit Agency Shasta Co.

Permit No. 11896 Permit Date 10-14-97

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER — (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION (Describe material, grain size, color, etc.)
20	Gravel + clay, Boulder gravel up to 8"
44	River gravels up to 8"
52	white fat clay
70	River gravels
147	Brown mudstone with lenses of siltstone
181	gravel
186	clay - Brown color
258	gravel
300	Large gravel with some boulder gravel
340	Lava rock

ATTN: Paula

TOTAL DEPTH OF BORING 340 (Feet)

TOTAL DEPTH OF COMPLETED WELL 306 (Feet)

WELL OWNER

Name Sierra Pacific Industries

Mailing Address P.O. Bx. 10939

Anderson, CITY Ca. STATE 96007 ZIP

WELL LOCATION

Address Riverside Drive

City Anderson, Ca.

County Shasta

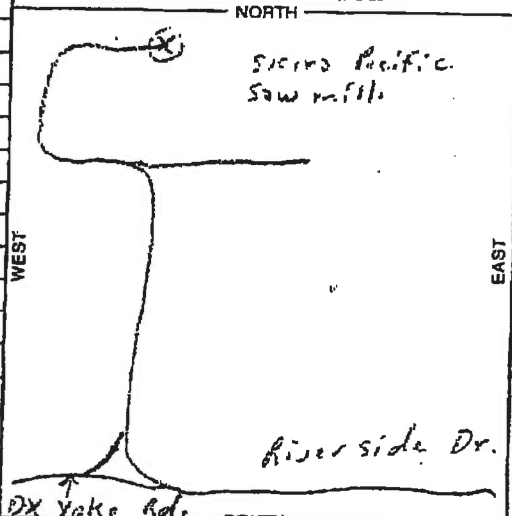
APN Book 050 Page 110 Parcel 25-11

Township ___ Range ___ Section ___

Latitude ___ NORTH Longitude ___ WEST

DEG. MIN. SEC.

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)

___ MONITORING

WATER SUPPLY

___ Domestic

X Public

___ Irrigation

___ Industrial

___ "TEST WELL"

___ CATHODIC PROTECTION

___ OTHER (Specify)

DRILLING METHOD Mud Rotary FLUID Bentonite + water

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 36 (Ft.) & DATE MEASURED 10-30-97

ESTIMATED YIELD* 1000 (GPM) & TEST TYPE Air lift

TEST LENGTH 8 (Hrs.) TOTAL DRAWDOWN 30 (Ft.) Estimated

* May not be representative of a well's long-term yield.

CASING(S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
340'	10"								
306'	21"								
146	21"	✓				H53A	12¼"	.250	
306	21"		✓			"	"	"	⅛"x2½"

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 to 52	✓	✓		
52 to 306				⅛" Pea Gravel

ATTACHMENTS (✓)

— Geologic Log

— Well Construction Diagram

— Geophysical Log(s)

— Soil/Water Chemical Analyses

— Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Don's Drilling Co. Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

27983 Camino Real, Shingletown, Ca. 96088
ADDRESS CITY STATE ZIP

Signed Don Ackley
WELL DRILLER/AUTHORIZED REPRESENTATIVE

10-28-97 DATE SIGNED

641500 C-57 LICENSE NUMBER

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

APPENDIX B

Aquifer-Testing Data, Pumping Well (2a)

WATER LEVEL & DRAWDOWN					
Date& Time	**Elapsed Time (minutes)**	**Water Level (feet)**	**Drawdown (feet)**		
11/24/07 8:25		30.65			
11/24/07 8:48	0	30.65	0.00	Pump on	
11/24/07 8:49	1	36.17	5.52		
11/24/07 8:50	2	36.34	5.69		
11/24/07 8:51	3	36.29	5.64		
11/24/07 8:52	4	35.98	5.33		
11/24/07 8:53	5	35.80	5.15		
11/24/07 8:54	6	35.67	5.02		
11/24/07 8:55	7	35.60	4.95		
11/24/07 8:56	8	35.55	4.90		
11/24/07 8:57	9	35.50	4.85		
11/24/07 8:58	10	35.50	4.85		
11/24/07 9:03	15	35.51	4.86		
11/24/07 9:13	25	34.25	3.60		
11/24/07 9:18	30	34.36	3.71		
11/24/07 9:19	31	34.39	3.74		
11/24/07 9:20	32	34.41	3.76		
11/24/07 9:24	36	34.38	3.73		
11/24/07 9:27	39	34.40	3.75		
11/24/07 9:33	45	34.43	3.78		
11/24/07 9:40	52	34.47	3.82		
11/24/07 9:44	56	34.51	3.86		
11/24/07 9:49	61	34.53	3.88		
11/24/07 9:55	67	34.56	3.91		
11/24/07 10:05	77	34.62	3.97		
11/24/07 10:14	86	34.66	4.01		
11/24/07 10:29	101	34.71	4.06		
11/24/07 10:49	121	34.77	4.12		
11/24/07 11:03	135	34.80	4.15		
11/24/07 11:15	147	34.84	4.19		
11/24/07 11:31	163	34.91	4.26		
11/24/07 11:51	183	34.95	4.30		
11/24/07 12:20	212	34.90	4.25		
11/24/07 12:25	217	34.89	4.24		
11/24/07 12:33	225	34.87	4.22		
11/24/07 12:44	236	34.85	4.20		
11/24/07 12:58	250	34.85	4.20		
11/24/07 13:21	273	34.82	4.17		
11/24/07 13:32	284	34.80	4.15		
11/24/07 14:02	314	34.78	4.13		
11/24/07 14:16	328	34.77	4.12		
11/24/07 14:31	343	34.76	4.11		
11/24/07 15:01	373	34.77	4.12		
11/24/07 15:15	387	34.83	4.18		
11/24/07 15:29	401	34.82	4.17		
11/24/07 16:01	433	34.82	4.17		
11/24/07 16:31	463	34.81	4.16		

WATER LEVEL & DRAWDOWN					
Date& Time	**Elapsed Time (minutes)**	**Water Level (feet)**	**Drawdown (feet)**		
11/24/07 16:32	464	32.05	1.40	Pump off	
11/24/07 16:33	465	31.96	1.31		
11/24/07 16:34	466	31.89	1.24		
11/24/07 16:35	467	31.84	1.19		
11/24/07 16:36	468	31.80	1.15		
11/24/07 16:38	470	31.75	1.10		
11/24/07 16:39	471	31.73	1.08		
11/24/07 16:40	472	31.71	1.06		
11/24/07 16:41	473	31.69	1.04		
11/24/07 16:44	476	31.65	1.00		
11/24/07 16:49	481	31.61	0.96		
11/24/07 16:59	491	31.54	0.89		
11/24/07 17:16	548	31.46	0.81		
11/24/07 17:25	557	31.45	0.80		
11/24/07 17:31	563	31.40	0.75		

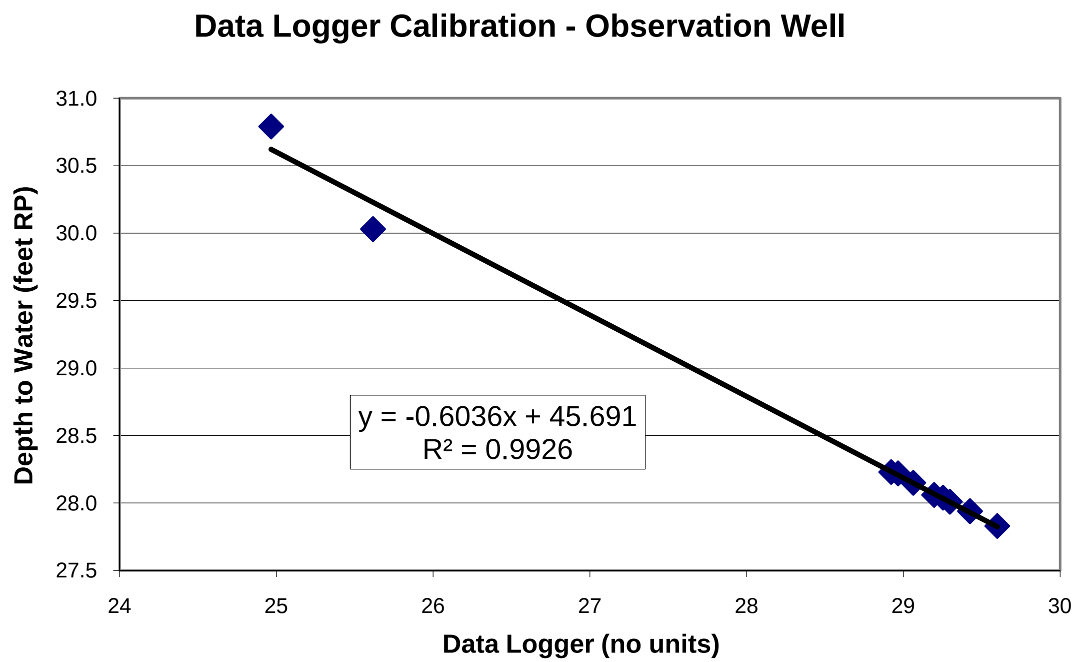
TEST WELL (SPI WELL #2A)

FLOW			
Date& Time	**Elapsed Time (minutes)**	**Totalizer (gallons)**	**Flow Rate (gpm)**
11/24/07 8:48	0	6266560	0
11/24/07 8:52	4	6270080	880
11/24/07 8:58	10	6273210	522
11/24/07 9:15	27	6281250	473
11/24/07 9:30	42	6287990	449
11/24/07 9:45	57	6294330	423
11/24/07 10:00	72	6300980	443
11/24/07 10:15	87	6307610	442
11/24/07 10:30	102	6314220	441
11/24/07 11:00	132	6327450	441
11/24/07 11:15	147	6334090	443
11/24/07 11:30	162	6340700	441
11/24/07 12:00	192	6354030	444
11/24/07 12:30	222	6367450	447
11/24/07 12:45	237	6373900	430
11/24/07 13:00	252	6380650	450
11/24/07 13:15	267	6387150	433
11/24/07 13:30	282	6393800	443
11/24/07 13:45	297	6400440	443
11/24/07 14:00	312	6407060	441
11/24/07 14:15	327	6413750	446
11/24/07 14:30	342	6420410	444
11/24/07 15:00	372	6433730	444
11/24/07 15:15	387	6440670	463
11/24/07 15:30	402	6447350	445
11/24/07 16:00	432	6460900	452
11/24/07 16:31	463	6474930	453

APPENDIX C

Aquifer-Testing Data, Observation Well (2)

Data Logger (no units)	Depth to Water (feet)
24.966	30.79
25.616	30.03
29.599	27.83
29.425	27.94
29.297	28.01
29.253	28.04
29.196	28.06
29.063	28.15
28.922	28.23
28.966	28.22



OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/6/07 12:20		30.65	
11/6/07 12:30		30.64	
11/6/07 12:40		30.62	
11/6/07 12:50		30.61	
11/6/07 13:00		30.60	
11/6/07 13:10		30.59	
11/6/07 13:20		30.59	
11/6/07 13:30		30.58	
11/6/07 13:40		30.60	
11/6/07 13:50		30.58	
11/6/07 14:00		30.58	
11/6/07 14:10		30.58	
11/6/07 14:20		30.58	
11/6/07 14:30		30.58	
11/6/07 14:40		30.59	
11/6/07 14:50		30.59	
11/6/07 15:00		30.60	
11/6/07 15:10		30.58	
11/6/07 15:20		30.59	
11/6/07 15:30		30.60	
11/6/07 15:40		30.60	
11/6/07 15:50		30.62	
11/6/07 16:00		30.59	
11/6/07 16:10		30.57	
11/6/07 16:20		30.57	
11/6/07 16:30		30.57	
11/6/07 16:40		30.56	
11/6/07 16:50		30.53	
11/6/07 17:00		30.56	
11/6/07 17:10		30.58	
11/6/07 17:20		30.60	
11/6/07 17:30		30.61	
11/6/07 17:40		30.61	
11/6/07 17:50		30.60	
11/6/07 18:00		30.61	
11/6/07 18:10		30.62	
11/6/07 18:20		30.63	
11/6/07 18:30		30.63	
11/6/07 18:40		30.63	
11/6/07 18:50		30.62	
11/6/07 19:00		30.62	
11/6/07 19:10		30.61	
11/6/07 19:20		30.62	
11/6/07 19:30		30.62	
11/6/07 19:40		30.62	
11/6/07 19:50		30.62	
11/6/07 20:00		30.62	
11/6/07 20:10		30.61	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/6/07 20:20		30.60	
11/6/07 20:30		30.59	
11/6/07 20:40		30.60	
11/6/07 20:50		30.61	
11/6/07 21:00		30.60	
11/6/07 21:10		30.59	
11/6/07 21:20		30.57	
11/6/07 21:30		30.56	
11/6/07 21:40		30.56	
11/6/07 21:50		30.55	
11/6/07 22:00		30.56	
11/6/07 22:10		30.54	
11/6/07 22:20		30.57	
11/6/07 22:30		30.56	
11/6/07 22:40		30.54	
11/6/07 22:50		30.56	
11/6/07 23:00		30.55	
11/6/07 23:10		30.56	
11/6/07 23:20		30.58	
11/6/07 23:30		30.58	
11/6/07 23:40		30.57	
11/6/07 23:50		30.56	
11/7/07 0:00		30.54	
11/7/07 0:10		30.52	
11/7/07 0:20		30.51	
11/7/07 0:30		30.51	
11/7/07 0:40		30.50	
11/7/07 0:50		30.49	
11/7/07 1:00		30.53	
11/7/07 1:10		30.53	
11/7/07 1:20		30.55	
11/7/07 1:30		30.54	
11/7/07 1:40		30.54	
11/7/07 1:50		30.55	
11/7/07 2:00		30.54	
11/7/07 2:10		30.53	
11/7/07 2:20		30.54	
11/7/07 2:30		30.54	
11/7/07 2:40		30.54	
11/7/07 2:50		30.53	
11/7/07 3:00		30.53	
11/7/07 3:10		30.51	
11/7/07 3:20		30.52	
11/7/07 3:30		30.52	
11/7/07 3:40		30.54	
11/7/07 3:50		30.53	
11/7/07 4:00		30.52	
11/7/07 4:10		30.51	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/7/07 4:20		30.50	
11/7/07 4:30		30.46	
11/7/07 4:40		30.48	
11/7/07 4:50		30.48	
11/7/07 5:00		30.49	
11/7/07 5:10		30.51	
11/7/07 5:20		30.52	
11/7/07 5:30		30.53	
11/7/07 5:40		30.55	
11/7/07 5:50		30.56	
11/7/07 6:00		30.56	
11/7/07 6:10		30.56	
11/7/07 6:20		30.57	
11/7/07 6:30		30.57	
11/7/07 6:40		30.57	
11/7/07 6:50		30.58	
11/7/07 7:00		30.58	
11/7/07 7:10		30.57	
11/7/07 7:20		30.59	
11/7/07 7:30		30.61	
11/7/07 7:40		30.60	
11/7/07 7:50		30.62	
11/7/07 8:00		30.63	
11/7/07 8:10		30.64	
11/7/07 8:20		30.64	
11/7/07 8:30		30.65	
11/7/07 8:40		30.64	
11/7/07 8:50		30.64	
11/7/07 9:00		30.65	
11/7/07 9:10		30.66	
11/7/07 9:20		30.66	
11/7/07 9:30		30.66	
11/7/07 9:40		30.67	
11/7/07 9:50		30.68	
11/7/07 10:00		30.67	
11/7/07 10:10		30.66	
11/7/07 10:20		30.64	
11/7/07 10:30		30.63	
11/7/07 10:40		30.66	
11/7/07 10:50		30.64	
11/7/07 11:00		30.71	
11/7/07 11:10		30.76	
11/7/07 11:20		30.79	
11/7/07 11:30		30.83	
11/7/07 11:40		30.85	
11/7/07 11:50		30.90	
11/7/07 12:00		30.95	
11/7/07 12:10		30.96	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/7/07 12:20		30.99	
11/7/07 12:30		31.00	
11/7/07 12:40		31.02	
11/7/07 12:50		31.03	
11/7/07 13:00		31.03	
11/7/07 13:10		31.04	
11/7/07 13:20		31.06	
11/7/07 13:30		31.07	
11/7/07 13:40		31.08	
11/7/07 13:50		31.08	
11/7/07 14:00		31.07	
11/7/07 14:10		31.03	
11/7/07 14:20		30.98	
11/7/07 14:30		30.97	
11/7/07 14:40		30.95	
11/7/07 14:50		30.89	
11/7/07 15:00		30.87	
11/7/07 15:10		30.86	
11/7/07 15:20		30.84	
11/7/07 15:30		30.81	
11/7/07 15:40		30.80	
11/7/07 15:50		30.79	
11/7/07 16:00		30.76	
11/7/07 16:10		30.75	
11/7/07 16:20		30.72	
11/7/07 16:30		30.70	
11/7/07 16:40		30.68	
11/7/07 16:50		30.66	
11/7/07 17:00		30.69	
11/7/07 17:10		30.70	
11/7/07 17:20		30.73	
11/7/07 17:30		30.72	
11/7/07 17:40		30.74	
11/7/07 17:50		30.73	
11/7/07 18:00		30.72	
11/7/07 18:10		30.71	
11/7/07 18:20		30.71	
11/7/07 18:30		30.71	
11/7/07 18:40		30.71	
11/7/07 18:50		30.69	
11/7/07 19:00		30.68	
11/7/07 19:10		30.68	
11/7/07 19:20		30.67	
11/7/07 19:30		30.66	
11/7/07 19:40		30.67	
11/7/07 19:50		30.65	
11/7/07 20:00		30.66	
11/7/07 20:10		30.65	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/7/07 20:20		30.64	
11/7/07 20:30		30.64	
11/7/07 20:40		30.63	
11/7/07 20:50		30.63	
11/7/07 21:00		30.63	
11/7/07 21:10		30.63	
11/7/07 21:20		30.60	
11/7/07 21:30		30.62	
11/7/07 21:40		30.62	
11/7/07 21:50		30.62	
11/7/07 22:00		30.60	
11/7/07 22:10		30.56	
11/7/07 22:20		30.53	
11/7/07 22:30		30.53	
11/7/07 22:40		30.55	
11/7/07 22:50		30.52	
11/7/07 23:00		30.52	
11/7/07 23:10		30.52	
11/7/07 23:20		30.54	
11/7/07 23:30		30.56	
11/7/07 23:40		30.55	
11/7/07 23:50		30.54	
11/8/07 0:00		30.53	
11/8/07 0:10		30.52	
11/8/07 0:20		30.51	
11/8/07 0:30		30.48	
11/8/07 0:40		30.49	
11/8/07 0:50		30.49	
11/8/07 1:00		30.48	
11/8/07 1:10		30.47	
11/8/07 1:20		30.45	
11/8/07 1:30		30.44	
11/8/07 1:40		30.43	
11/8/07 1:50		30.42	
11/8/07 2:00		30.40	
11/8/07 2:10		30.39	
11/8/07 2:20		30.37	
11/8/07 2:30		30.36	
11/8/07 2:40		30.36	
11/8/07 2:50		30.36	
11/8/07 3:00		30.35	
11/8/07 3:10		30.34	
11/8/07 3:20		30.34	
11/8/07 3:30		30.33	
11/8/07 3:40		30.33	
11/8/07 3:50		30.33	
11/8/07 4:00		30.32	
11/8/07 4:10		30.29	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/8/07 4:20		30.27	
11/8/07 4:30		30.25	
11/8/07 4:40		30.25	
11/8/07 4:50		30.22	
11/8/07 5:00		30.21	
11/8/07 5:10		30.25	
11/8/07 5:20		30.26	
11/8/07 5:30		30.25	
11/8/07 5:40		30.27	
11/8/07 5:50		30.27	
11/8/07 6:00		30.27	
11/8/07 6:10		30.27	
11/8/07 6:20		30.27	
11/8/07 6:30		30.27	
11/8/07 6:40		30.27	
11/8/07 6:50		30.26	
11/8/07 7:00		30.28	
11/8/07 7:10		30.27	
11/8/07 7:20		30.27	
11/8/07 7:30		30.27	
11/8/07 7:40		30.27	
11/8/07 7:50		30.26	
11/8/07 8:00		30.28	
11/8/07 8:10		30.29	
11/8/07 8:20		30.29	
11/8/07 8:30		30.28	
11/8/07 8:40		30.29	
11/8/07 8:50		30.30	
11/8/07 9:00		30.29	
11/8/07 9:10		30.29	
11/8/07 9:20		30.29	
11/8/07 9:30		30.31	
11/8/07 9:40		30.29	
11/8/07 9:50		30.29	
11/8/07 10:00		30.29	
11/8/07 10:10		30.24	
11/8/07 10:20		30.24	
11/8/07 10:30		30.24	
11/8/07 10:40		30.22	
11/8/07 10:50		30.21	
11/8/07 11:00		30.22	
11/8/07 11:10		30.23	
11/8/07 11:20		30.25	
11/8/07 11:30		30.25	
11/8/07 11:40		30.25	
11/8/07 11:50		30.25	
11/8/07 12:00		30.25	
11/8/07 12:10		30.27	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/8/07 12:20		30.27	
11/8/07 12:30		30.26	
11/8/07 12:40		30.26	
11/8/07 12:50		30.26	
11/8/07 13:00		30.24	
11/8/07 13:10		30.25	
11/8/07 13:20		30.24	
11/8/07 13:30		30.26	
11/8/07 13:40		30.25	
11/8/07 13:50		30.24	
11/8/07 14:00		30.23	
11/8/07 14:10		30.22	
11/8/07 14:20		30.21	
11/8/07 14:30		30.19	
11/8/07 14:40		30.12	
11/8/07 14:50		30.07	
11/8/07 15:00		30.02	
11/8/07 15:10		29.99	
11/8/07 15:20		29.96	
11/8/07 15:30		29.94	
11/8/07 15:40		29.92	
11/8/07 15:50		29.89	
11/8/07 16:00		29.87	
11/8/07 16:10		29.83	
11/8/07 16:20		29.80	
11/8/07 16:30		29.77	
11/8/07 16:40		29.75	
11/8/07 16:50		29.73	
11/8/07 17:00		29.74	
11/8/07 17:10		29.75	
11/8/07 17:20		29.76	
11/8/07 17:30		29.75	
11/8/07 17:40		29.74	
11/8/07 17:50		29.73	
11/8/07 18:00		29.73	
11/8/07 18:10		29.70	
11/8/07 18:20		29.70	
11/8/07 18:30		29.71	
11/8/07 18:40		29.70	
11/8/07 18:50		29.68	
11/8/07 19:00		29.66	
11/8/07 19:10		29.66	
11/8/07 19:20		29.65	
11/8/07 19:30		29.64	
11/8/07 19:40		29.64	
11/8/07 19:50		29.65	
11/8/07 20:00		29.64	
11/8/07 20:10		29.64	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/8/07 20:20		29.64	
11/8/07 20:30		29.64	
11/8/07 20:40		29.64	
11/8/07 20:50		29.64	
11/8/07 21:00		29.63	
11/8/07 21:10		29.61	
11/8/07 21:20		29.61	
11/8/07 21:30		29.39	
11/8/07 21:40		29.38	
11/8/07 21:50		29.38	
11/8/07 22:00		29.38	
11/8/07 22:10		29.32	
11/8/07 22:20		29.30	
11/8/07 22:30		29.32	
11/8/07 22:40		29.32	
11/8/07 22:50		29.29	
11/8/07 23:00		29.29	
11/8/07 23:10		29.29	
11/8/07 23:20		29.30	
11/8/07 23:30		29.29	
11/8/07 23:40		29.31	
11/8/07 23:50		29.29	
11/9/07 0:00		29.28	
11/9/07 0:10		29.26	
11/9/07 0:20		29.26	
11/9/07 0:30		29.24	
11/9/07 0:40		29.22	
11/9/07 0:50		29.21	
11/9/07 1:00		29.20	
11/9/07 1:10		29.18	
11/9/07 1:20		29.19	
11/9/07 1:30		29.18	
11/9/07 1:40		29.15	
11/9/07 1:50		29.15	
11/9/07 2:00		29.13	
11/9/07 2:10		29.12	
11/9/07 2:20		29.11	
11/9/07 2:30		29.11	
11/9/07 2:40		29.10	
11/9/07 2:50		29.11	
11/9/07 3:00		29.10	
11/9/07 3:10		29.09	
11/9/07 3:20		29.09	
11/9/07 3:30		29.09	
11/9/07 3:40		29.09	
11/9/07 3:50		29.08	
11/9/07 4:00		29.09	
11/9/07 4:10		29.05	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/9/07 4:20		29.03	
11/9/07 4:30		29.02	
11/9/07 4:40		29.00	
11/9/07 4:50		29.01	
11/9/07 5:00		29.03	
11/9/07 5:10		29.04	
11/9/07 5:20		29.03	
11/9/07 5:30		29.04	
11/9/07 5:40		29.04	
11/9/07 5:50		29.06	
11/9/07 6:00		29.05	
11/9/07 6:10		29.06	
11/9/07 6:20		29.06	
11/9/07 6:30		29.05	
11/9/07 6:40		29.06	
11/9/07 6:50		29.07	
11/9/07 7:00		29.07	
11/9/07 7:10		29.08	
11/9/07 7:20		29.07	
11/9/07 7:30		29.06	
11/9/07 7:40		29.07	
11/9/07 7:50		29.06	
11/9/07 8:00		29.07	
11/9/07 8:10		29.07	
11/9/07 8:20		29.07	
11/9/07 8:30		29.08	
11/9/07 8:40		29.08	
11/9/07 8:50		29.09	
11/9/07 9:00		29.08	
11/9/07 9:10		29.08	
11/9/07 9:20		29.06	
11/9/07 9:30		29.07	
11/9/07 9:40		29.06	
11/9/07 9:50		29.06	
11/9/07 10:00		29.07	
11/9/07 10:10		29.03	
11/9/07 10:20		29.01	
11/9/07 10:30		29.00	
11/9/07 10:40		28.99	
11/9/07 10:50		29.01	
11/9/07 11:00		29.02	
11/9/07 11:10		29.02	
11/9/07 11:20		29.04	
11/9/07 11:30		29.02	
11/9/07 11:40		29.03	
11/9/07 11:50		29.03	
11/9/07 12:00		29.02	
11/9/07 12:10		29.03	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/9/07 12:20		29.03	
11/9/07 12:30		29.01	
11/9/07 12:40		29.01	
11/9/07 12:50		28.99	
11/9/07 13:00		28.99	
11/9/07 13:10		28.99	
11/9/07 13:20		28.99	
11/9/07 13:30		28.99	
11/9/07 13:40		28.98	
11/9/07 13:50		28.97	
11/9/07 14:00		28.97	
11/9/07 14:10		28.97	
11/9/07 14:20		28.97	
11/9/07 14:30		28.96	
11/9/07 14:40		28.96	
11/9/07 14:50		28.97	
11/9/07 15:00		28.95	
11/9/07 15:10		28.94	
11/9/07 15:20		28.95	
11/9/07 15:30		28.95	
11/9/07 15:40		28.93	
11/9/07 15:50		28.94	
11/9/07 16:00		28.93	
11/9/07 16:10		28.89	
11/9/07 16:20		28.88	
11/9/07 16:30		28.86	
11/9/07 16:40		28.87	
11/9/07 16:50		28.86	
11/9/07 17:00		28.84	
11/9/07 17:10		28.87	
11/9/07 17:20		28.88	
11/9/07 17:30		28.89	
11/9/07 17:40		28.88	
11/9/07 17:50		28.88	
11/9/07 18:00		28.88	
11/9/07 18:10		28.88	
11/9/07 18:20		28.89	
11/9/07 18:30		28.89	
11/9/07 18:40		28.90	
11/9/07 18:50		28.89	
11/9/07 19:00		28.88	
11/9/07 19:10		28.87	
11/9/07 19:20		28.86	
11/9/07 19:30		28.85	
11/9/07 19:40		28.84	
11/9/07 19:50		28.84	
11/9/07 20:00		28.84	
11/9/07 20:10		28.83	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/9/07 20:20		28.83	
11/9/07 20:30		28.82	
11/9/07 20:40		28.83	
11/9/07 20:50		28.84	
11/9/07 21:00		28.83	
11/9/07 21:10		28.83	
11/9/07 21:20		28.82	
11/9/07 21:30		28.82	
11/9/07 21:40		28.81	
11/9/07 21:50		28.81	
11/9/07 22:00		28.81	
11/9/07 22:10		28.77	
11/9/07 22:20		28.76	
11/9/07 22:30		28.76	
11/9/07 22:40		28.75	
11/9/07 22:50		28.74	
11/9/07 23:00		28.74	
11/9/07 23:10		28.73	
11/9/07 23:20		28.74	
11/9/07 23:30		28.74	
11/9/07 23:40		28.74	
11/9/07 23:50		28.73	
11/10/07 0:00		28.73	
11/10/07 0:10		28.70	
11/10/07 0:20		28.69	
11/10/07 0:30		28.66	
11/10/07 0:40		28.66	
11/10/07 0:50		28.64	
11/10/07 1:00		28.65	
11/10/07 1:10		28.64	
11/10/07 1:20		28.65	
11/10/07 1:30		28.65	
11/10/07 1:40		28.65	
11/10/07 1:50		28.64	
11/10/07 2:00		28.65	
11/10/07 2:10		28.65	
11/10/07 2:20		28.64	
11/10/07 2:30		28.64	
11/10/07 2:40		28.67	
11/10/07 2:50		28.67	
11/10/07 3:00		28.67	
11/10/07 3:10		28.67	
11/10/07 3:20		28.66	
11/10/07 3:30		28.65	
11/10/07 3:40		28.65	
11/10/07 3:50		28.67	
11/10/07 4:00		28.67	
11/10/07 4:10		28.64	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/10/07 4:20		28.62	
11/10/07 4:30		28.60	
11/10/07 4:40		28.58	
11/10/07 4:50		28.60	
11/10/07 5:00		28.59	
11/10/07 5:10		28.60	
11/10/07 5:20		28.60	
11/10/07 5:30		28.60	
11/10/07 5:40		28.60	
11/10/07 5:50		28.61	
11/10/07 6:00		28.60	
11/10/07 6:10		28.60	
11/10/07 6:20		28.61	
11/10/07 6:30		28.62	
11/10/07 6:40		28.63	
11/10/07 6:50		28.64	
11/10/07 7:00		28.65	
11/10/07 7:10		28.64	
11/10/07 7:20		28.64	
11/10/07 7:30		28.64	
11/10/07 7:40		28.63	
11/10/07 7:50		28.63	
11/10/07 8:00		28.63	
11/10/07 8:10		28.63	
11/10/07 8:20		28.62	
11/10/07 8:30		28.62	
11/10/07 8:40		28.62	
11/10/07 8:50		28.62	
11/10/07 9:00		28.63	
11/10/07 9:10		28.61	
11/10/07 9:20		28.61	
11/10/07 9:30		28.61	
11/10/07 9:40		28.61	
11/10/07 9:50		28.60	
11/10/07 10:00		28.59	
11/10/07 10:10		28.59	
11/10/07 10:20		28.59	
11/10/07 10:30		28.60	
11/10/07 10:40		28.59	
11/10/07 10:50		28.59	
11/10/07 11:00		28.63	
11/10/07 11:10		28.63	
11/10/07 11:20		28.63	
11/10/07 11:30		28.63	
11/10/07 11:40		28.63	
11/10/07 11:50		28.63	
11/10/07 12:00		28.63	
11/10/07 12:10		28.62	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/10/07 12:20		28.62	
11/10/07 12:30		28.62	
11/10/07 12:40		28.62	
11/10/07 12:50		28.63	
11/10/07 13:00		28.62	
11/10/07 13:10		28.61	
11/10/07 13:20		28.61	
11/10/07 13:30		28.60	
11/10/07 13:40		28.60	
11/10/07 13:50		28.60	
11/10/07 14:00		28.60	
11/10/07 14:10		28.58	
11/10/07 14:20		28.55	
11/10/07 14:30		28.56	
11/10/07 14:40		28.54	
11/10/07 14:50		28.53	
11/10/07 15:00		28.53	
11/10/07 15:10		28.53	
11/10/07 15:20		28.49	
11/10/07 15:30		28.48	
11/10/07 15:40		28.48	
11/10/07 15:50		28.48	
11/10/07 16:00		28.47	
11/10/07 16:10		28.46	
11/10/07 16:20		28.45	
11/10/07 16:30		28.44	
11/10/07 16:40		28.44	
11/10/07 16:50		28.44	
11/10/07 17:00		28.44	
11/10/07 17:10		28.44	
11/10/07 17:20		28.43	
11/10/07 17:30		28.43	
11/10/07 17:40		28.42	
11/10/07 17:50		28.44	
11/10/07 18:00		28.43	
11/10/07 18:10		28.42	
11/10/07 18:20		28.41	
11/10/07 18:30		28.41	
11/10/07 18:40		28.42	
11/10/07 18:50		28.41	
11/10/07 19:00		28.41	
11/10/07 19:10		28.40	
11/10/07 19:20		28.39	
11/10/07 19:30		28.38	
11/10/07 19:40		28.38	
11/10/07 19:50		28.39	
11/10/07 20:00		28.38	
11/10/07 20:10		28.38	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/10/07 20:20		28.37	
11/10/07 20:30		28.37	
11/10/07 20:40		28.37	
11/10/07 20:50		28.37	
11/10/07 21:00		28.36	
11/10/07 21:10		28.36	
11/10/07 21:20		28.36	
11/10/07 21:30		28.35	
11/10/07 21:40		28.35	
11/10/07 21:50		28.35	
11/10/07 22:00		28.35	
11/10/07 22:10		28.34	
11/10/07 22:20		28.33	
11/10/07 22:30		28.34	
11/10/07 22:40		28.35	
11/10/07 22:50		28.34	
11/10/07 23:00		28.34	
11/10/07 23:10		28.34	
11/10/07 23:20		28.33	
11/10/07 23:30		28.33	
11/10/07 23:40		28.32	
11/10/07 23:50		28.31	
11/11/07 0:00		28.28	
11/11/07 0:10		28.28	
11/11/07 0:20		28.28	
11/11/07 0:30		28.29	
11/11/07 0:40		28.28	
11/11/07 0:50		28.29	
11/11/07 1:00		28.27	
11/11/07 1:10		28.26	
11/11/07 1:20		28.24	
11/11/07 1:30		28.23	
11/11/07 1:40		28.23	
11/11/07 1:50		28.23	
11/11/07 2:00		28.24	
11/11/07 2:10		28.23	
11/11/07 2:20		28.22	
11/11/07 2:30		28.23	
11/11/07 2:40		28.22	
11/11/07 2:50		28.22	
11/11/07 3:00		28.21	
11/11/07 3:10		28.22	
11/11/07 3:20		28.24	
11/11/07 3:30		28.24	
11/11/07 3:40		28.24	
11/11/07 3:50		28.24	
11/11/07 4:00		28.24	
11/11/07 4:10		28.26	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/11/07 4:20		28.25	
11/11/07 4:30		28.25	
11/11/07 4:40		28.25	
11/11/07 4:50		28.25	
11/11/07 5:00		28.25	
11/11/07 5:10		28.24	
11/11/07 5:20		28.25	
11/11/07 5:30		28.24	
11/11/07 5:40		28.23	
11/11/07 5:50		28.23	
11/11/07 6:00		28.22	
11/11/07 6:10		28.24	
11/11/07 6:20		28.23	
11/11/07 6:30		28.23	
11/11/07 6:40		28.22	
11/11/07 6:50		28.22	
11/11/07 7:00		28.22	
11/11/07 7:10		28.22	
11/11/07 7:20		28.14	
11/11/07 7:30		28.13	
11/11/07 7:40		28.13	
11/11/07 7:50		28.12	
11/11/07 8:00		28.12	
11/11/07 8:10		28.14	
11/11/07 8:20		28.20	
11/11/07 8:30		28.21	
11/11/07 8:40		28.23	
11/11/07 8:50		28.23	
11/11/07 9:00		28.24	
11/11/07 9:10		28.25	
11/11/07 9:20		28.25	
11/11/07 9:30		28.25	
11/11/07 9:40		28.25	
11/11/07 9:50		28.26	
11/11/07 10:00		28.27	
11/11/07 10:10		28.25	
11/11/07 10:20		28.24	
11/11/07 10:30		28.25	
11/11/07 10:40		28.25	
11/11/07 10:50		28.25	
11/11/07 11:00		28.25	
11/11/07 11:10		28.25	
11/11/07 11:20		28.25	
11/11/07 11:30		28.25	
11/11/07 11:40		28.27	
11/11/07 11:50		28.26	
11/11/07 12:00		28.27	
11/11/07 12:10		28.26	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/11/07 12:20		28.27	
11/11/07 12:30		28.27	
11/11/07 12:40		28.27	
11/11/07 12:50		28.27	
11/11/07 13:00		28.26	
11/11/07 13:10		28.26	
11/11/07 13:20		28.26	
11/11/07 13:30		28.26	
11/11/07 13:40		28.26	
11/11/07 13:50		28.27	
11/11/07 14:00		28.26	
11/11/07 14:10		28.27	
11/11/07 14:20		28.26	
11/11/07 14:30		28.26	
11/11/07 14:40		28.28	
11/11/07 14:50		28.26	
11/11/07 15:00		28.26	
11/11/07 15:10		28.26	
11/11/07 15:20		28.26	
11/11/07 15:30		28.26	
11/11/07 15:40		28.26	
11/11/07 15:50		28.28	
11/11/07 16:00		28.28	
11/11/07 16:10		28.28	
11/11/07 16:20		28.30	
11/11/07 16:30		28.29	
11/11/07 16:40		28.29	
11/11/07 16:50		28.29	
11/11/07 17:00		28.30	
11/11/07 17:10		28.30	
11/11/07 17:20		28.29	
11/11/07 17:30		28.29	
11/11/07 17:40		28.29	
11/11/07 17:50		28.31	
11/11/07 18:00		28.32	
11/11/07 18:10		28.34	
11/11/07 18:20		28.34	
11/11/07 18:30		28.35	
11/11/07 18:40		28.36	
11/11/07 18:50		28.37	
11/11/07 19:00		28.37	
11/11/07 19:10		28.37	
11/11/07 19:20		28.37	
11/11/07 19:30		28.37	
11/11/07 19:40		28.39	
11/11/07 19:50		28.39	
11/11/07 20:00		28.40	
11/11/07 20:10		28.39	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/11/07 20:20		28.39	
11/11/07 20:30		28.39	
11/11/07 20:40		28.38	
11/11/07 20:50		28.39	
11/11/07 21:00		28.38	
11/11/07 21:10		28.38	
11/11/07 21:20		28.38	
11/11/07 21:30		28.39	
11/11/07 21:40		28.39	
11/11/07 21:50		28.40	
11/11/07 22:00		28.39	
11/11/07 22:10		28.36	
11/11/07 22:20		28.35	
11/11/07 22:30		28.36	
11/11/07 22:40		28.37	
11/11/07 22:50		28.35	
11/11/07 23:00		28.37	
11/11/07 23:10		28.37	
11/11/07 23:20		28.37	
11/11/07 23:30		28.38	
11/11/07 23:40		28.38	
11/11/07 23:50		28.38	
11/12/07 0:00		28.36	
11/12/07 0:10		28.36	
11/12/07 0:20		28.34	
11/12/07 0:30		28.34	
11/12/07 0:40		28.33	
11/12/07 0:50		28.32	
11/12/07 1:00		28.32	
11/12/07 1:10		28.32	
11/12/07 1:20		28.30	
11/12/07 1:30		28.31	
11/12/07 1:40		28.31	
11/12/07 1:50		28.31	
11/12/07 2:00		28.29	
11/12/07 2:10		28.30	
11/12/07 2:20		28.30	
11/12/07 2:30		28.29	
11/12/07 2:40		28.29	
11/12/07 2:50		28.29	
11/12/07 3:00		28.28	
11/12/07 3:10		28.28	
11/12/07 3:20		28.27	
11/12/07 3:30		28.27	
11/12/07 3:40		28.27	
11/12/07 3:50		28.28	
11/12/07 4:00		28.27	
11/12/07 4:10		28.24	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/12/07 4:20		28.22	
11/12/07 4:30		28.21	
11/12/07 4:40		28.19	
11/12/07 4:50		28.19	
11/12/07 5:00		28.20	
11/12/07 5:10		28.23	
11/12/07 5:20		28.22	
11/12/07 5:30		28.23	
11/12/07 5:40		28.24	
11/12/07 5:50		28.24	
11/12/07 6:00		28.26	
11/12/07 6:10		28.27	
11/12/07 6:20		28.26	
11/12/07 6:30		28.27	
11/12/07 6:40		28.26	
11/12/07 6:50		28.27	
11/12/07 7:00		28.27	
11/12/07 7:10		28.27	
11/12/07 7:20		28.25	
11/12/07 7:30		28.27	
11/12/07 7:40		28.26	
11/12/07 7:50		28.26	
11/12/07 8:00		28.26	
11/12/07 8:10		28.27	
11/12/07 8:20		28.26	
11/12/07 8:30		28.27	
11/12/07 8:40		28.27	
11/12/07 8:50		28.26	
11/12/07 9:00		28.27	
11/12/07 9:10		28.28	
11/12/07 9:20		28.28	
11/12/07 9:30		28.30	
11/12/07 9:40		28.31	
11/12/07 9:50		28.32	
11/12/07 10:00		28.33	
11/12/07 10:10		28.30	
11/12/07 10:20		28.29	
11/12/07 10:30		28.31	
11/12/07 10:40		28.28	
11/12/07 10:50		28.28	
11/12/07 11:00		28.28	
11/12/07 11:10		28.31	
11/12/07 11:20		28.33	
11/12/07 11:30		28.34	
11/12/07 11:40		28.35	
11/12/07 11:50		28.35	
11/12/07 12:00		28.36	
11/12/07 12:10		28.35	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/12/07 12:20		28.35	
11/12/07 12:30		28.35	
11/12/07 12:40		28.35	
11/12/07 12:50		28.36	
11/12/07 13:00		28.35	
11/12/07 13:10		28.35	
11/12/07 13:20		28.36	
11/12/07 13:30		28.36	
11/12/07 13:40		28.35	
11/12/07 13:50		28.36	
11/12/07 14:00		28.36	
11/12/07 14:10		28.37	
11/12/07 14:20		28.38	
11/12/07 14:30		28.38	
11/12/07 14:40		28.37	
11/12/07 14:50		28.37	
11/12/07 15:00		28.36	
11/12/07 15:10		28.37	
11/12/07 15:20		28.39	
11/12/07 15:30		28.36	
11/12/07 15:40		28.37	
11/12/07 15:50		28.38	
11/12/07 16:00		28.37	
11/12/07 16:10		28.33	
11/12/07 16:20		28.31	
11/12/07 16:30		28.31	
11/12/07 16:40		28.30	
11/12/07 16:50		28.32	
11/12/07 17:00		28.33	
11/12/07 17:10		28.34	
11/12/07 17:20		28.36	
11/12/07 17:30		28.37	
11/12/07 17:40		28.37	
11/12/07 17:50		28.37	
11/12/07 18:00		28.37	
11/12/07 18:10		28.37	
11/12/07 18:20		28.37	
11/12/07 18:30		28.37	
11/12/07 18:40		28.37	
11/12/07 18:50		28.37	
11/12/07 19:00		28.38	
11/12/07 19:10		28.37	
11/12/07 19:20		28.37	
11/12/07 19:30		28.37	
11/12/07 19:40		28.38	
11/12/07 19:50		28.38	
11/12/07 20:00		28.37	
11/12/07 20:10		28.37	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/12/07 20:20		28.37	
11/12/07 20:30		28.40	
11/12/07 20:40		28.38	
11/12/07 20:50		28.37	
11/12/07 21:00		28.38	
11/12/07 21:10		28.38	
11/12/07 21:20		28.38	
11/12/07 21:30		28.38	
11/12/07 21:40		28.37	
11/12/07 21:50		28.36	
11/12/07 22:00		28.34	
11/12/07 22:10		28.33	
11/12/07 22:20		28.41	
11/12/07 22:30		28.42	
11/12/07 22:40		28.42	
11/12/07 22:50		28.42	
11/12/07 23:00		28.43	
11/12/07 23:10		28.42	
11/12/07 23:20		28.43	
11/12/07 23:30		28.43	
11/12/07 23:40		28.42	
11/12/07 23:50		28.42	
11/13/07 0:00		28.41	
11/13/07 0:10		28.39	
11/13/07 0:20		28.40	
11/13/07 0:30		28.40	
11/13/07 0:40		28.40	
11/13/07 0:50		28.39	
11/13/07 1:00		28.39	
11/13/07 1:10		28.38	
11/13/07 1:20		28.37	
11/13/07 1:30		28.34	
11/13/07 1:40		28.34	
11/13/07 1:50		28.34	
11/13/07 2:00		28.35	
11/13/07 2:10		28.34	
11/13/07 2:20		28.34	
11/13/07 2:30		28.35	
11/13/07 2:40		28.33	
11/13/07 2:50		28.31	
11/13/07 3:00		28.31	
11/13/07 3:10		28.34	
11/13/07 3:20		28.34	
11/13/07 3:30		28.34	
11/13/07 3:40		28.36	
11/13/07 3:50		28.36	
11/13/07 4:00		28.36	
11/13/07 4:10		28.34	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/13/07 4:20		28.33	
11/13/07 4:30		28.31	
11/13/07 4:40		28.30	
11/13/07 4:50		28.31	
11/13/07 5:00		28.32	
11/13/07 5:10		28.33	
11/13/07 5:20		28.34	
11/13/07 5:30		28.37	
11/13/07 5:40		28.38	
11/13/07 5:50		28.36	
11/13/07 6:00		28.35	
11/13/07 6:10		28.37	
11/13/07 6:20		28.37	
11/13/07 6:30		28.38	
11/13/07 6:40		28.38	
11/13/07 6:50		28.37	
11/13/07 7:00		28.37	
11/13/07 7:10		28.39	
11/13/07 7:20		28.40	
11/13/07 7:30		28.39	
11/13/07 7:40		28.45	
11/13/07 7:50		28.49	
11/13/07 8:00		28.51	
11/13/07 8:10		28.54	
11/13/07 8:20		28.56	
11/13/07 8:30		28.58	
11/13/07 8:40		28.61	
11/13/07 8:50		28.62	
11/13/07 9:00		28.66	
11/13/07 9:10		28.69	
11/13/07 9:20		28.69	
11/13/07 9:30		28.74	
11/13/07 9:40		28.78	
11/13/07 9:50		28.79	
11/13/07 10:00		28.84	
11/13/07 10:10		28.82	
11/13/07 10:20		28.82	
11/13/07 10:30		28.81	
11/13/07 10:40		28.81	
11/13/07 10:50		28.81	
11/13/07 11:00		28.83	
11/13/07 11:10		28.85	
11/13/07 11:20		28.89	
11/13/07 11:30		28.89	
11/13/07 11:40		28.90	
11/13/07 11:50		28.90	
11/13/07 12:00		28.91	
11/13/07 12:10		28.93	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/13/07 12:20		28.93	
11/13/07 12:30		28.93	
11/13/07 12:40		28.93	
11/13/07 12:50		28.93	
11/13/07 13:00		28.95	
11/13/07 13:10		28.96	
11/13/07 13:20		28.98	
11/13/07 13:30		28.97	
11/13/07 13:40		28.98	
11/13/07 13:50		28.97	
11/13/07 14:00		28.98	
11/13/07 14:10		29.01	
11/13/07 14:20		28.99	
11/13/07 14:30		28.98	
11/13/07 14:40		28.97	
11/13/07 14:50		28.98	
11/13/07 15:00		28.98	
11/13/07 15:10		29.01	
11/13/07 15:20		28.98	
11/13/07 15:30		29.01	
11/13/07 15:40		29.01	
11/13/07 15:50		29.02	
11/13/07 16:00		29.03	
11/13/07 16:10		28.98	
11/13/07 16:20		28.95	
11/13/07 16:30		28.95	
11/13/07 16:40		28.93	
11/13/07 16:50		28.91	
11/13/07 17:00		28.94	
11/13/07 17:10		28.97	
11/13/07 17:20		28.98	
11/13/07 17:30		28.95	
11/13/07 17:40		28.98	
11/13/07 17:50		28.99	
11/13/07 18:00		29.01	
11/13/07 18:10		29.04	
11/13/07 18:20		29.05	
11/13/07 18:30		29.05	
11/13/07 18:40		29.05	
11/13/07 18:50		29.04	
11/13/07 19:00		29.04	
11/13/07 19:10		29.04	
11/13/07 19:20		29.03	
11/13/07 19:30		29.03	
11/13/07 19:40		29.04	
11/13/07 19:50		29.04	
11/13/07 20:00		29.05	
11/13/07 20:10		29.04	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/13/07 20:20		29.04	
11/13/07 20:30		29.03	
11/13/07 20:40		29.06	
11/13/07 20:50		29.07	
11/13/07 21:00		29.07	
11/13/07 21:10		29.06	
11/13/07 21:20		29.07	
11/13/07 21:30		29.07	
11/13/07 21:40		29.08	
11/13/07 21:50		29.07	
11/13/07 22:00		29.11	
11/13/07 22:10		29.05	
11/13/07 22:20		29.05	
11/13/07 22:30		29.05	
11/13/07 22:40		29.04	
11/13/07 22:50		29.04	
11/13/07 23:00		29.06	
11/13/07 23:10		29.08	
11/13/07 23:20		29.11	
11/13/07 23:30		29.13	
11/13/07 23:40		29.13	
11/13/07 23:50		29.12	
11/14/07 0:00		29.11	
11/14/07 0:10		29.11	
11/14/07 0:20		29.10	
11/14/07 0:30		29.09	
11/14/07 0:40		29.07	
11/14/07 0:50		29.09	
11/14/07 1:00		29.10	
11/14/07 1:10		29.10	
11/14/07 1:20		29.11	
11/14/07 1:30		29.10	
11/14/07 1:40		29.09	
11/14/07 1:50		29.09	
11/14/07 2:00		29.08	
11/14/07 2:10		29.07	
11/14/07 2:20		29.07	
11/14/07 2:30		29.06	
11/14/07 2:40		29.06	
11/14/07 2:50		29.06	
11/14/07 3:00		29.06	
11/14/07 3:10		29.05	
11/14/07 3:20		29.04	
11/14/07 3:30		29.05	
11/14/07 3:40		29.05	
11/14/07 3:50		29.05	
11/14/07 4:00		29.04	
11/14/07 4:10		28.99	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/14/07 4:20		28.97	
11/14/07 4:30		28.95	
11/14/07 4:40		28.93	
11/14/07 4:50		28.93	
11/14/07 5:00		28.91	
11/14/07 5:10		28.98	
11/14/07 5:20		29.01	
11/14/07 5:30		29.02	
11/14/07 5:40		29.02	
11/14/07 5:50		29.03	
11/14/07 6:00		29.03	
11/14/07 6:10		29.03	
11/14/07 6:20		29.03	
11/14/07 6:30		29.03	
11/14/07 6:40		29.04	
11/14/07 6:50		29.04	
11/14/07 7:00		29.05	
11/14/07 7:10		29.04	
11/14/07 7:20		29.05	
11/14/07 7:30		29.05	
11/14/07 7:40		29.08	
11/14/07 7:50		29.08	
11/14/07 8:00		29.07	
11/14/07 8:10		29.08	
11/14/07 8:20		29.07	
11/14/07 8:30		29.07	
11/14/07 8:40		29.07	
11/14/07 8:50		29.02	
11/14/07 9:00		29.01	
11/14/07 9:10		29.00	
11/14/07 9:20		28.99	
11/14/07 9:30		28.98	
11/14/07 9:40		28.97	
11/14/07 9:50		28.97	
11/14/07 10:00		28.99	
11/14/07 10:10		28.93	
11/14/07 10:20		28.91	
11/14/07 10:30		28.91	
11/14/07 10:40		28.90	
11/14/07 10:50		28.89	
11/14/07 11:00		28.89	
11/14/07 11:10		28.94	
11/14/07 11:20		28.95	
11/14/07 11:30		28.95	
11/14/07 11:40		28.94	
11/14/07 11:50		28.89	
11/14/07 12:00		28.82	
11/14/07 12:10		28.78	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/14/07 12:20		28.74	
11/14/07 12:30		28.72	
11/14/07 12:40		28.70	
11/14/07 12:50		28.68	
11/14/07 13:00		28.68	
11/14/07 13:10		28.72	
11/14/07 13:20		28.71	
11/14/07 13:30		28.70	
11/14/07 13:40		28.69	
11/14/07 13:50		28.66	
11/14/07 14:00		28.67	
11/14/07 14:10		28.65	
11/14/07 14:20		28.65	
11/14/07 14:30		28.65	
11/14/07 14:40		28.65	
11/14/07 14:50		28.64	
11/14/07 15:00		28.63	
11/14/07 15:10		28.62	
11/14/07 15:20		28.60	
11/14/07 15:30		28.59	
11/14/07 15:40		28.58	
11/14/07 15:50		28.59	
11/14/07 16:00		28.58	
11/14/07 16:10		28.59	
11/14/07 16:20		28.54	
11/14/07 16:30		28.51	
11/14/07 16:40		28.49	
11/14/07 16:50		28.47	
11/14/07 17:00		28.50	
11/14/07 17:10		28.55	
11/14/07 17:20		28.56	
11/14/07 17:30		28.57	
11/14/07 17:40		28.57	
11/14/07 17:50		28.57	
11/14/07 18:00		28.56	
11/14/07 18:10		28.56	
11/14/07 18:20		28.55	
11/14/07 18:30		28.53	
11/14/07 18:40		28.54	
11/14/07 18:50		28.54	
11/14/07 19:00		28.53	
11/14/07 19:10		28.53	
11/14/07 19:20		28.53	
11/14/07 19:30		28.52	
11/14/07 19:40		28.52	
11/14/07 19:50		28.51	
11/14/07 20:00		28.50	
11/14/07 20:10		28.50	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/14/07 20:20		28.49	
11/14/07 20:30		28.50	
11/14/07 20:40		28.49	
11/14/07 20:50		28.48	
11/14/07 21:00		28.48	
11/14/07 21:10		28.48	
11/14/07 21:20		28.47	
11/14/07 21:30		28.47	
11/14/07 21:40		28.47	
11/14/07 21:50		28.47	
11/14/07 22:00		28.47	
11/14/07 22:10		28.42	
11/14/07 22:20		28.40	
11/14/07 22:30		28.39	
11/14/07 22:40		28.39	
11/14/07 22:50		28.38	
11/14/07 23:00		28.39	
11/14/07 23:10		28.41	
11/14/07 23:20		28.42	
11/14/07 23:30		28.43	
11/14/07 23:40		28.42	
11/14/07 23:50		28.41	
11/15/07 0:00		28.41	
11/15/07 0:10		28.40	
11/15/07 0:20		28.40	
11/15/07 0:30		28.39	
11/15/07 0:40		28.38	
11/15/07 0:50		28.37	
11/15/07 1:00		28.36	
11/15/07 1:10		28.35	
11/15/07 1:20		28.35	
11/15/07 1:30		28.35	
11/15/07 1:40		28.34	
11/15/07 1:50		28.33	
11/15/07 2:00		28.33	
11/15/07 2:10		28.31	
11/15/07 2:20		28.31	
11/15/07 2:30		28.32	
11/15/07 2:40		28.33	
11/15/07 2:50		28.33	
11/15/07 3:00		28.33	
11/15/07 3:10		28.32	
11/15/07 3:20		28.33	
11/15/07 3:30		28.32	
11/15/07 3:40		28.32	
11/15/07 3:50		28.34	
11/15/07 4:00		28.34	
11/15/07 4:10		28.29	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/15/07 4:20		28.27	
11/15/07 4:30		28.27	
11/15/07 4:40		28.25	
11/15/07 4:50		28.24	
11/15/07 5:00		28.34	
11/15/07 5:10		28.36	
11/15/07 5:20		28.37	
11/15/07 5:30		28.38	
11/15/07 5:40		28.37	
11/15/07 5:50		28.38	
11/15/07 6:00		28.38	
11/15/07 6:10		28.39	
11/15/07 6:20		28.39	
11/15/07 6:30		28.39	
11/15/07 6:40		28.39	
11/15/07 6:50		28.40	
11/15/07 7:00		28.39	
11/15/07 7:10		28.39	
11/15/07 7:20		28.39	
11/15/07 7:30		28.39	
11/15/07 7:40		28.37	
11/15/07 7:50		28.36	
11/15/07 8:00		28.38	
11/15/07 8:10		28.38	
11/15/07 8:20		28.38	
11/15/07 8:30		28.38	
11/15/07 8:40		28.44	
11/15/07 8:50		28.43	
11/15/07 9:00		28.44	
11/15/07 9:10		28.44	
11/15/07 9:20		28.42	
11/15/07 9:30		28.42	
11/15/07 9:40		28.45	
11/15/07 9:50		28.46	
11/15/07 10:00		28.53	
11/15/07 10:10		28.57	
11/15/07 10:20		28.57	
11/15/07 10:30		28.57	
11/15/07 10:40		28.60	
11/15/07 10:50		28.61	
11/15/07 11:00		28.63	
11/15/07 11:10		28.69	
11/15/07 11:20		28.73	
11/15/07 11:30		28.75	
11/15/07 11:40		28.77	
11/15/07 11:50		28.77	
11/15/07 12:00		28.78	
11/15/07 12:10		28.78	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/15/07 12:20		28.78	
11/15/07 12:30		28.80	
11/15/07 12:40		28.81	
11/15/07 12:50		28.81	
11/15/07 13:00		28.80	
11/15/07 13:10		28.80	
11/15/07 13:20		28.79	
11/15/07 13:30		28.80	
11/15/07 13:40		28.80	
11/15/07 13:50		28.78	
11/15/07 14:00		28.80	
11/15/07 14:10		28.80	
11/15/07 14:20		28.80	
11/15/07 14:30		28.79	
11/15/07 14:40		28.82	
11/15/07 14:50		28.80	
11/15/07 15:00		28.80	
11/15/07 15:10		28.79	
11/15/07 15:20		28.79	
11/15/07 15:30		28.80	
11/15/07 15:40		28.79	
11/15/07 15:50		28.79	
11/15/07 16:00		28.78	
11/15/07 16:10		28.71	
11/15/07 16:20		28.68	
11/15/07 16:30		28.68	
11/15/07 16:40		28.65	
11/15/07 16:50		28.64	
11/15/07 17:00		28.64	
11/15/07 17:10		28.69	
11/15/07 17:20		28.72	
11/15/07 17:30		28.72	
11/15/07 17:40		28.75	
11/15/07 17:50		28.74	
11/15/07 18:00		28.78	
11/15/07 18:10		28.76	
11/15/07 18:20		28.76	
11/15/07 18:30		28.77	
11/15/07 18:40		28.77	
11/15/07 18:50		28.76	
11/15/07 19:00		28.76	
11/15/07 19:10		28.76	
11/15/07 19:20		28.75	
11/15/07 19:30		28.76	
11/15/07 19:40		28.76	
11/15/07 19:50		28.77	
11/15/07 20:00		28.78	
11/15/07 20:10		28.78	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/15/07 20:20		28.78	
11/15/07 20:30		28.80	
11/15/07 20:40		28.82	
11/15/07 20:50		28.82	
11/15/07 21:00		28.83	
11/15/07 21:10		28.84	
11/15/07 21:20		28.84	
11/15/07 21:30		28.84	
11/15/07 21:40		28.85	
11/15/07 21:50		28.85	
11/15/07 22:00		28.94	
11/15/07 22:10		28.88	
11/15/07 22:20		28.85	
11/15/07 22:30		28.86	
11/15/07 22:40		28.91	
11/15/07 22:50		28.93	
11/15/07 23:00		28.96	
11/15/07 23:10		28.99	
11/15/07 23:20		29.01	
11/15/07 23:30		29.01	
11/15/07 23:40		29.03	
11/15/07 23:50		29.03	
11/16/07 0:00		29.02	
11/16/07 0:10		29.02	
11/16/07 0:20		29.01	
11/16/07 0:30		29.01	
11/16/07 0:40		29.00	
11/16/07 0:50		29.00	
11/16/07 1:00		29.00	
11/16/07 1:10		29.00	
11/16/07 1:20		28.99	
11/16/07 1:30		28.99	
11/16/07 1:40		28.98	
11/16/07 1:50		28.98	
11/16/07 2:00		28.98	
11/16/07 2:10		28.97	
11/16/07 2:20		28.96	
11/16/07 2:30		28.96	
11/16/07 2:40		28.96	
11/16/07 2:50		28.96	
11/16/07 3:00		28.96	
11/16/07 3:10		28.96	
11/16/07 3:20		28.96	
11/16/07 3:30		28.95	
11/16/07 3:40		28.96	
11/16/07 3:50		28.96	
11/16/07 4:00		28.97	
11/16/07 4:10		28.91	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/16/07 4:20		28.89	
11/16/07 4:30		28.88	
11/16/07 4:40		28.86	
11/16/07 4:50		28.85	
11/16/07 5:00		28.89	
11/16/07 5:10		28.90	
11/16/07 5:20		28.91	
11/16/07 5:30		28.91	
11/16/07 5:40		28.92	
11/16/07 5:50		28.92	
11/16/07 6:00		28.92	
11/16/07 6:10		28.92	
11/16/07 6:20		28.93	
11/16/07 6:30		28.92	
11/16/07 6:40		28.94	
11/16/07 6:50		28.94	
11/16/07 7:00		28.95	
11/16/07 7:10		28.96	
11/16/07 7:20		28.96	
11/16/07 7:30		28.97	
11/16/07 7:40		28.95	
11/16/07 7:50		28.95	
11/16/07 8:00		28.94	
11/16/07 8:10		28.94	
11/16/07 8:20		28.93	
11/16/07 8:30		28.93	
11/16/07 8:40		28.91	
11/16/07 8:50		28.92	
11/16/07 9:00		28.90	
11/16/07 9:10		28.90	
11/16/07 9:20		28.95	
11/16/07 9:30		28.94	
11/16/07 9:40		28.92	
11/16/07 9:50		28.87	
11/16/07 10:00		28.81	
11/16/07 10:10		28.73	
11/16/07 10:20		28.67	
11/16/07 10:30		28.65	
11/16/07 10:40		28.63	
11/16/07 10:50		28.62	
11/16/07 11:00		28.63	
11/16/07 11:10		28.62	
11/16/07 11:20		28.62	
11/16/07 11:30		28.63	
11/16/07 11:40		28.64	
11/16/07 11:50		28.63	
11/16/07 12:00		28.61	
11/16/07 12:10		28.61	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/16/07 12:20		28.59	
11/16/07 12:30		28.58	
11/16/07 12:40		28.57	
11/16/07 12:50		28.56	
11/16/07 13:00		28.55	
11/16/07 13:10		28.53	
11/16/07 13:20		28.52	
11/16/07 13:30		28.50	
11/16/07 13:40		28.50	
11/16/07 13:50		28.47	
11/16/07 14:00		28.46	
11/16/07 14:10		28.47	
11/16/07 14:20		28.47	
11/16/07 14:30		28.45	
11/16/07 14:40		28.45	
11/16/07 14:50		28.44	
11/16/07 15:00		28.42	
11/16/07 15:10		28.41	
11/16/07 15:20		28.40	
11/16/07 15:30		28.39	
11/16/07 15:40		28.40	
11/16/07 15:50		28.40	
11/16/07 16:00		28.39	
11/16/07 16:10		28.34	
11/16/07 16:20		28.30	
11/16/07 16:30		28.28	
11/16/07 16:40		28.27	
11/16/07 16:50		28.26	
11/16/07 17:00		28.29	
11/16/07 17:10		28.31	
11/16/07 17:20		28.32	
11/16/07 17:30		28.33	
11/16/07 17:40		28.33	
11/16/07 17:50		28.34	
11/16/07 18:00		28.34	
11/16/07 18:10		28.34	
11/16/07 18:20		28.34	
11/16/07 18:30		28.33	
11/16/07 18:40		28.33	
11/16/07 18:50		28.32	
11/16/07 19:00		28.33	
11/16/07 19:10		28.33	
11/16/07 19:20		28.34	
11/16/07 19:30		28.35	
11/16/07 19:40		28.37	
11/16/07 19:50		28.38	
11/16/07 20:00		28.38	
11/16/07 20:10		28.37	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/16/07 20:20		28.38	
11/16/07 20:30		28.38	
11/16/07 20:40		28.37	
11/16/07 20:50		28.38	
11/16/07 21:00		28.38	
11/16/07 21:10		28.37	
11/16/07 21:20		28.36	
11/16/07 21:30		28.36	
11/16/07 21:40		28.36	
11/16/07 21:50		28.36	
11/16/07 22:00		28.35	
11/16/07 22:10		28.30	
11/16/07 22:20		28.28	
11/16/07 22:30		28.27	
11/16/07 22:40		28.23	
11/16/07 22:50		28.23	
11/16/07 23:00		28.22	
11/16/07 23:10		28.27	
11/16/07 23:20		28.31	
11/16/07 23:30		28.31	
11/16/07 23:40		28.32	
11/16/07 23:50		28.31	
11/17/07 0:00		28.30	
11/17/07 0:10		28.29	
11/17/07 0:20		28.30	
11/17/07 0:30		28.29	
11/17/07 0:40		28.28	
11/17/07 0:50		28.27	
11/17/07 1:00		28.26	
11/17/07 1:10		28.25	
11/17/07 1:20		28.24	
11/17/07 1:30		28.24	
11/17/07 1:40		28.23	
11/17/07 1:50		28.24	
11/17/07 2:00		28.24	
11/17/07 2:10		28.25	
11/17/07 2:20		28.25	
11/17/07 2:30		28.24	
11/17/07 2:40		28.23	
11/17/07 2:50		28.23	
11/17/07 3:00		28.23	
11/17/07 3:10		28.29	
11/17/07 3:20		28.29	
11/17/07 3:30		28.28	
11/17/07 3:40		28.28	
11/17/07 3:50		28.26	
11/17/07 4:00		28.21	
11/17/07 4:10		28.22	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/17/07 4:20		28.21	
11/17/07 4:30		28.19	
11/17/07 4:40		28.18	
11/17/07 4:50		28.19	
11/17/07 5:00		28.21	
11/17/07 5:10		28.23	
11/17/07 5:20		28.21	
11/17/07 5:30		28.24	
11/17/07 5:40		28.24	
11/17/07 5:50		28.24	
11/17/07 6:00		28.24	
11/17/07 6:10		28.23	
11/17/07 6:20		28.22	
11/17/07 6:30		28.23	
11/17/07 6:40		28.23	
11/17/07 6:50		28.23	
11/17/07 7:00		28.23	
11/17/07 7:10		28.23	
11/17/07 7:20		28.22	
11/17/07 7:30		28.22	
11/17/07 7:40		28.22	
11/17/07 7:50		28.21	
11/17/07 8:00		28.21	
11/17/07 8:10		28.21	
11/17/07 8:20		28.21	
11/17/07 8:30		28.21	
11/17/07 8:40		28.21	
11/17/07 8:50		28.21	
11/17/07 9:00		28.22	
11/17/07 9:10		28.21	
11/17/07 9:20		28.21	
11/17/07 9:30		28.18	
11/17/07 9:40		28.15	
11/17/07 9:50		28.15	
11/17/07 10:00		28.18	
11/17/07 10:10		28.18	
11/17/07 10:20		28.19	
11/17/07 10:30		28.18	
11/17/07 10:40		28.19	
11/17/07 10:50		28.19	
11/17/07 11:00		28.18	
11/17/07 11:10		28.18	
11/17/07 11:20		28.19	
11/17/07 11:30		28.18	
11/17/07 11:40		28.18	
11/17/07 11:50		28.17	
11/17/07 12:00		28.17	
11/17/07 12:10		28.17	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/17/07 12:20		28.16	
11/17/07 12:30		28.17	
11/17/07 12:40		28.18	
11/17/07 12:50		28.17	
11/17/07 13:00		28.16	
11/17/07 13:10		28.16	
11/17/07 13:20		28.15	
11/17/07 13:30		28.15	
11/17/07 13:40		28.15	
11/17/07 13:50		28.14	
11/17/07 14:00		28.15	
11/17/07 14:10		28.13	
11/17/07 14:20		28.14	
11/17/07 14:30		28.13	
11/17/07 14:40		28.13	
11/17/07 14:50		28.12	
11/17/07 15:00		28.13	
11/17/07 15:10		28.12	
11/17/07 15:20		28.13	
11/17/07 15:30		28.13	
11/17/07 15:40		28.13	
11/17/07 15:50		28.13	
11/17/07 16:00		28.11	
11/17/07 16:10		28.10	
11/17/07 16:20		28.07	
11/17/07 16:30		28.06	
11/17/07 16:40		28.02	
11/17/07 16:50		28.00	
11/17/07 17:00		28.00	
11/17/07 17:10		27.99	
11/17/07 17:20		28.00	
11/17/07 17:30		28.00	
11/17/07 17:40		28.02	
11/17/07 17:50		28.03	
11/17/07 18:00		28.04	
11/17/07 18:10		28.06	
11/17/07 18:20		28.07	
11/17/07 18:30		28.06	
11/17/07 18:40		28.06	
11/17/07 18:50		28.05	
11/17/07 19:00		28.05	
11/17/07 19:10		28.05	
11/17/07 19:20		28.04	
11/17/07 19:30		28.03	
11/17/07 19:40		28.02	
11/17/07 19:50		28.04	
11/17/07 20:00		28.03	
11/17/07 20:10		28.03	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/17/07 20:20		28.05	
11/17/07 20:30		28.05	
11/17/07 20:40		28.05	
11/17/07 20:50		28.07	
11/17/07 21:00		28.07	
11/17/07 21:10		28.06	
11/17/07 21:20		28.05	
11/17/07 21:30		28.05	
11/17/07 21:40		28.06	
11/17/07 21:50		28.08	
11/17/07 22:00		28.06	
11/17/07 22:10		28.06	
11/17/07 22:20		28.05	
11/17/07 22:30		28.06	
11/17/07 22:40		28.07	
11/17/07 22:50		28.06	
11/17/07 23:00		28.06	
11/17/07 23:10		28.05	
11/17/07 23:20		28.05	
11/17/07 23:30		28.05	
11/17/07 23:40		28.05	
11/17/07 23:50		28.02	
11/18/07 0:00		28.00	
11/18/07 0:10		27.99	
11/18/07 0:20		27.98	
11/18/07 0:30		27.99	
11/18/07 0:40		27.98	
11/18/07 0:50		28.01	
11/18/07 1:00		28.00	
11/18/07 1:10		27.99	
11/18/07 1:20		27.99	
11/18/07 1:30		27.98	
11/18/07 1:40		27.97	
11/18/07 1:50		27.97	
11/18/07 2:00		27.96	
11/18/07 2:10		27.95	
11/18/07 2:20		27.95	
11/18/07 2:30		27.95	
11/18/07 2:40		27.94	
11/18/07 2:50		27.94	
11/18/07 3:00		27.93	
11/18/07 3:10		27.93	
11/18/07 3:20		27.92	
11/18/07 3:30		27.93	
11/18/07 3:40		27.94	
11/18/07 3:50		27.93	
11/18/07 4:00		27.93	
11/18/07 4:10		27.93	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/18/07 4:20		27.93	
11/18/07 4:30		27.94	
11/18/07 4:40		27.93	
11/18/07 4:50		27.92	
11/18/07 5:00		27.91	
11/18/07 5:10		27.91	
11/18/07 5:20		27.91	
11/18/07 5:30		27.91	
11/18/07 5:40		27.91	
11/18/07 5:50		27.91	
11/18/07 6:00		27.91	
11/18/07 6:10		27.90	
11/18/07 6:20		27.91	
11/18/07 6:30		27.92	
11/18/07 6:40		27.90	
11/18/07 6:50		27.90	
11/18/07 7:00		27.89	
11/18/07 7:10		27.89	
11/18/07 7:20		27.88	
11/18/07 7:30		27.88	
11/18/07 7:40		27.88	
11/18/07 7:50		27.88	
11/18/07 8:00		27.88	
11/18/07 8:10		27.88	
11/18/07 8:20		27.88	
11/18/07 8:30		27.87	
11/18/07 8:40		27.86	
11/18/07 8:50		27.86	
11/18/07 9:00		27.85	
11/18/07 9:10		27.85	
11/18/07 9:20		27.85	
11/18/07 9:30		27.86	
11/18/07 9:40		27.85	
11/18/07 9:50		27.84	
11/18/07 10:00		27.86	
11/18/07 10:10		27.85	
11/18/07 10:20		27.84	
11/18/07 10:30		27.83	
11/18/07 10:40		27.83	
11/18/07 10:50		27.84	
11/18/07 11:00		27.83	
11/18/07 11:10		27.82	
11/18/07 11:20		27.81	
11/18/07 11:30		27.81	
11/18/07 11:40		27.81	
11/18/07 11:50		27.81	
11/18/07 12:00		27.81	
11/18/07 12:10		27.80	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/18/07 12:20		27.80	
11/18/07 12:30		27.80	
11/18/07 12:40		27.79	
11/18/07 12:50		27.78	
11/18/07 13:00		27.78	
11/18/07 13:10		27.77	
11/18/07 13:20		27.77	
11/18/07 13:30		27.76	
11/18/07 13:40		27.77	
11/18/07 13:50		27.77	
11/18/07 14:00		27.77	
11/18/07 14:10		27.76	
11/18/07 14:20		27.76	
11/18/07 14:30		27.77	
11/18/07 14:40		27.76	
11/18/07 14:50		27.76	
11/18/07 15:00		27.76	
11/18/07 15:10		27.77	
11/18/07 15:20		27.77	
11/18/07 15:30		27.78	
11/18/07 15:40		27.77	
11/18/07 15:50		27.77	
11/18/07 16:00		27.77	
11/18/07 16:10		27.76	
11/18/07 16:20		27.75	
11/18/07 16:30		27.76	
11/18/07 16:40		27.76	
11/18/07 16:50		27.78	
11/18/07 17:00		27.82	
11/18/07 17:10		27.82	
11/18/07 17:20		27.83	
11/18/07 17:30		27.84	
11/18/07 17:40		27.85	
11/18/07 17:50		27.87	
11/18/07 18:00		27.86	
11/18/07 18:10		27.86	
11/18/07 18:20		27.87	
11/18/07 18:30		27.89	
11/18/07 18:40		27.89	
11/18/07 18:50		27.90	
11/18/07 19:00		27.90	
11/18/07 19:10		27.90	
11/18/07 19:20		27.91	
11/18/07 19:30		27.93	
11/18/07 19:40		27.94	
11/18/07 19:50		27.95	
11/18/07 20:00		27.96	
11/18/07 20:10		27.95	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/18/07 20:20		27.95	
11/18/07 20:30		27.95	
11/18/07 20:40		27.95	
11/18/07 20:50		27.94	
11/18/07 21:00		27.93	
11/18/07 21:10		27.91	
11/18/07 21:20		27.91	
11/18/07 21:30		27.92	
11/18/07 21:40		27.90	
11/18/07 21:50		27.91	
11/18/07 22:00		27.91	
11/18/07 22:10		27.90	
11/18/07 22:20		27.87	
11/18/07 22:30		27.86	
11/18/07 22:40		27.82	
11/18/07 22:50		27.85	
11/18/07 23:00		27.85	
11/18/07 23:10		27.85	
11/18/07 23:20		27.82	
11/18/07 23:30		27.82	
11/18/07 23:40		27.82	
11/18/07 23:50		27.81	
11/19/07 0:00		27.80	
11/19/07 0:10		27.85	
11/19/07 0:20		27.86	
11/19/07 0:30		27.87	
11/19/07 0:40		27.87	
11/19/07 0:50		27.86	
11/19/07 1:00		27.86	
11/19/07 1:10		27.85	
11/19/07 1:20		27.86	
11/19/07 1:30		27.87	
11/19/07 1:40		27.87	
11/19/07 1:50		27.86	
11/19/07 2:00		27.86	
11/19/07 2:10		27.86	
11/19/07 2:20		27.86	
11/19/07 2:30		27.86	
11/19/07 2:40		27.86	
11/19/07 2:50		27.87	
11/19/07 3:00		27.86	
11/19/07 3:10		27.83	
11/19/07 3:20		27.78	
11/19/07 3:30		27.77	
11/19/07 3:40		27.77	
11/19/07 3:50		27.76	
11/19/07 4:00		27.77	
11/19/07 4:10		27.75	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/19/07 4:20		27.68	
11/19/07 4:30		27.71	
11/19/07 4:40		27.74	
11/19/07 4:50		27.74	
11/19/07 5:00		27.75	
11/19/07 5:10		27.78	
11/19/07 5:20		27.81	
11/19/07 5:30		27.85	
11/19/07 5:40		27.86	
11/19/07 5:50		27.86	
11/19/07 6:00		27.88	
11/19/07 6:10		27.87	
11/19/07 6:20		27.88	
11/19/07 6:30		27.88	
11/19/07 6:40		27.88	
11/19/07 6:50		27.88	
11/19/07 7:00		27.88	
11/19/07 7:10		27.89	
11/19/07 7:20		27.90	
11/19/07 7:30		27.91	
11/19/07 7:40		27.91	
11/19/07 7:50		27.91	
11/19/07 8:00		27.91	
11/19/07 8:10		27.91	
11/19/07 8:20		27.91	
11/19/07 8:30		27.92	
11/19/07 8:40		27.92	
11/19/07 8:50		27.93	
11/19/07 9:00		27.97	
11/19/07 9:10		27.99	
11/19/07 9:20		27.99	
11/19/07 9:30		28.01	
11/19/07 9:40		28.00	
11/19/07 9:50		28.02	
11/19/07 10:00		28.02	
11/19/07 10:10		27.95	
11/19/07 10:20		27.95	
11/19/07 10:30		27.92	
11/19/07 10:40		27.89	
11/19/07 10:50		27.88	
11/19/07 11:00		27.90	
11/19/07 11:10		27.93	
11/19/07 11:20		27.94	
11/19/07 11:30		27.95	
11/19/07 11:40		27.96	
11/19/07 11:50		27.98	
11/19/07 12:00		27.98	
11/19/07 12:10		27.98	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/19/07 12:20		27.98	
11/19/07 12:30		27.98	
11/19/07 12:40		27.97	
11/19/07 12:50		27.97	
11/19/07 13:00		27.99	
11/19/07 13:10		27.98	
11/19/07 13:20		28.00	
11/19/07 13:30		27.99	
11/19/07 13:40		27.99	
11/19/07 13:50		27.99	
11/19/07 14:00		27.99	
11/19/07 14:10		27.98	
11/19/07 14:20		27.98	
11/19/07 14:30		27.97	
11/19/07 14:40		27.97	
11/19/07 14:50		27.97	
11/19/07 15:00		27.97	
11/19/07 15:10		27.98	
11/19/07 15:20		27.98	
11/19/07 15:30		27.98	
11/19/07 15:40		27.98	
11/19/07 15:50		27.99	
11/19/07 16:00		27.99	
11/19/07 16:10		27.95	
11/19/07 16:20		27.92	
11/19/07 16:30		27.91	
11/19/07 16:40		27.91	
11/19/07 16:50		27.94	
11/19/07 17:00		27.97	
11/19/07 17:10		27.99	
11/19/07 17:20		28.00	
11/19/07 17:30		28.00	
11/19/07 17:40		28.00	
11/19/07 17:50		28.01	
11/19/07 18:00		28.01	
11/19/07 18:10		28.02	
11/19/07 18:20		28.03	
11/19/07 18:30		28.03	
11/19/07 18:40		28.03	
11/19/07 18:50		28.03	
11/19/07 19:00		28.02	
11/19/07 19:10		28.02	
11/19/07 19:20		28.01	
11/19/07 19:30		28.02	
11/19/07 19:40		28.01	
11/19/07 19:50		28.02	
11/19/07 20:00		28.03	
11/19/07 20:10		28.02	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/19/07 20:20		28.02	
11/19/07 20:30		28.02	
11/19/07 20:40		28.02	
11/19/07 20:50		28.02	
11/19/07 21:00		28.02	
11/19/07 21:10		28.01	
11/19/07 21:20		28.02	
11/19/07 21:30		28.02	
11/19/07 21:40		28.02	
11/19/07 21:50		28.02	
11/19/07 22:00		28.02	
11/19/07 22:10		28.00	
11/19/07 22:20		27.95	
11/19/07 22:30		27.91	
11/19/07 22:40		27.91	
11/19/07 22:50		27.90	
11/19/07 23:00		27.91	
11/19/07 23:10		27.91	
11/19/07 23:20		27.93	
11/19/07 23:30		27.94	
11/19/07 23:40		27.94	
11/19/07 23:50		27.94	
11/20/07 0:00		27.92	
11/20/07 0:10		27.92	
11/20/07 0:20		27.92	
11/20/07 0:30		27.93	
11/20/07 0:40		27.92	
11/20/07 0:50		27.91	
11/20/07 1:00		27.91	
11/20/07 1:10		27.89	
11/20/07 1:20		27.91	
11/20/07 1:30		27.92	
11/20/07 1:40		27.91	
11/20/07 1:50		27.90	
11/20/07 2:00		27.91	
11/20/07 2:10		27.90	
11/20/07 2:20		27.92	
11/20/07 2:30		27.92	
11/20/07 2:40		27.92	
11/20/07 2:50		27.93	
11/20/07 3:00		27.93	
11/20/07 3:10		27.93	
11/20/07 3:20		27.91	
11/20/07 3:30		27.94	
11/20/07 3:40		27.93	
11/20/07 3:50		27.94	
11/20/07 4:00		27.94	
11/20/07 4:10		27.88	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/20/07 4:20		27.87	
11/20/07 4:30		27.87	
11/20/07 4:40		27.87	
11/20/07 4:50		27.85	
11/20/07 5:00		27.85	
11/20/07 5:10		27.87	
11/20/07 5:20		27.88	
11/20/07 5:30		27.88	
11/20/07 5:40		27.89	
11/20/07 5:50		27.91	
11/20/07 6:00		27.91	
11/20/07 6:10		27.92	
11/20/07 6:20		27.92	
11/20/07 6:30		27.92	
11/20/07 6:40		27.93	
11/20/07 6:50		27.93	
11/20/07 7:00		27.92	
11/20/07 7:10		27.92	
11/20/07 7:20		27.92	
11/20/07 7:30		27.92	
11/20/07 7:40		27.91	
11/20/07 7:50		27.92	
11/20/07 8:00		27.94	
11/20/07 8:10		27.94	
11/20/07 8:20		27.94	
11/20/07 8:30		27.95	
11/20/07 8:40		27.95	
11/20/07 8:50		27.96	
11/20/07 9:00		27.96	
11/20/07 9:10		27.97	
11/20/07 9:20		27.97	
11/20/07 9:30		27.97	
11/20/07 9:40		27.97	
11/20/07 9:50		27.97	
11/20/07 10:00		27.98	
11/20/07 10:10		27.94	
11/20/07 10:20		27.91	
11/20/07 10:30		27.90	
11/20/07 10:40		27.90	
11/20/07 10:50		27.90	
11/20/07 11:00		27.91	
11/20/07 11:10		27.93	
11/20/07 11:20		27.94	
11/20/07 11:30		27.96	
11/20/07 11:40		27.97	
11/20/07 11:50		27.97	
11/20/07 12:00		27.97	
11/20/07 12:10		27.96	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/20/07 12:20		27.97	
11/20/07 12:30		27.98	
11/20/07 12:40		27.97	
11/20/07 12:50		27.96	
11/20/07 13:00		27.97	
11/20/07 13:10		27.97	
11/20/07 13:20		27.98	
11/20/07 13:30		27.98	
11/20/07 13:40		27.98	
11/20/07 13:50		27.97	
11/20/07 14:00		27.96	
11/20/07 14:10		27.95	
11/20/07 14:20		27.94	
11/20/07 14:30		27.97	
11/20/07 14:40		27.95	
11/20/07 14:50		27.96	
11/20/07 15:00		27.95	
11/20/07 15:10		27.95	
11/20/07 15:20		27.95	
11/20/07 15:30		27.93	
11/20/07 15:40		27.96	
11/20/07 15:50		27.97	
11/20/07 16:00		27.99	
11/20/07 16:10		27.99	
11/20/07 16:20		27.96	
11/20/07 16:30		27.95	
11/20/07 16:40		27.94	
11/20/07 16:50		27.93	
11/20/07 17:00		27.94	
11/20/07 17:10		27.97	
11/20/07 17:20		27.98	
11/20/07 17:30		27.99	
11/20/07 17:40		28.02	
11/20/07 17:50		27.99	
11/20/07 18:00		28.00	
11/20/07 18:10		28.02	
11/20/07 18:20		28.01	
11/20/07 18:30		28.01	
11/20/07 18:40		28.01	
11/20/07 18:50		28.02	
11/20/07 19:00		28.03	
11/20/07 19:10		28.02	
11/20/07 19:20		28.04	
11/20/07 19:30		28.05	
11/20/07 19:40		28.04	
11/20/07 19:50		28.03	
11/20/07 20:00		28.02	
11/20/07 20:10		27.99	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/20/07 20:20		27.97	
11/20/07 20:30		27.97	
11/20/07 20:40		27.97	
11/20/07 20:50		27.97	
11/20/07 21:00		27.97	
11/20/07 21:10		28.00	
11/20/07 21:20		28.00	
11/20/07 21:30		27.97	
11/20/07 21:40		28.00	
11/20/07 21:50		28.00	
11/20/07 22:00		28.00	
11/20/07 22:10		28.01	
11/20/07 22:20		28.02	
11/20/07 22:30		28.02	
11/20/07 22:40		28.00	
11/20/07 22:50		28.02	
11/20/07 23:00		28.01	
11/20/07 23:10		28.01	
11/20/07 23:20		28.00	
11/20/07 23:30		28.00	
11/20/07 23:40		27.98	
11/20/07 23:50		27.99	
11/21/07 0:00		27.98	
11/21/07 0:10		27.98	
11/21/07 0:20		27.96	
11/21/07 0:30		27.97	
11/21/07 0:40		27.97	
11/21/07 0:50		27.94	
11/21/07 1:00		27.95	
11/21/07 1:10		27.95	
11/21/07 1:20		27.95	
11/21/07 1:30		27.94	
11/21/07 1:40		27.95	
11/21/07 1:50		27.94	
11/21/07 2:00		27.94	
11/21/07 2:10		27.94	
11/21/07 2:20		27.93	
11/21/07 2:30		27.93	
11/21/07 2:40		27.90	
11/21/07 2:50		27.92	
11/21/07 3:00		27.92	
11/21/07 3:10		27.91	
11/21/07 3:20		27.92	
11/21/07 3:30		27.91	
11/21/07 3:40		27.92	
11/21/07 3:50		27.93	
11/21/07 4:00		27.91	
11/21/07 4:10		27.86	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/21/07 4:20		27.84	
11/21/07 4:30		27.83	
11/21/07 4:40		27.81	
11/21/07 4:50		27.83	
11/21/07 5:00		27.80	
11/21/07 5:10		27.79	
11/21/07 5:20		27.79	
11/21/07 5:30		27.78	
11/21/07 5:40		27.78	
11/21/07 5:50		27.80	
11/21/07 6:00		27.80	
11/21/07 6:10		27.80	
11/21/07 6:20		27.82	
11/21/07 6:30		27.85	
11/21/07 6:40		27.92	
11/21/07 6:50		27.97	
11/21/07 7:00		28.04	
11/21/07 7:10		28.10	
11/21/07 7:20		28.13	
11/21/07 7:30		28.17	
11/21/07 7:40		28.18	
11/21/07 7:50		28.20	
11/21/07 8:00		28.22	
11/21/07 8:10		28.25	
11/21/07 8:20		28.25	
11/21/07 8:30		28.26	
11/21/07 8:40		28.27	
11/21/07 8:50		28.27	
11/21/07 9:00		28.29	
11/21/07 9:10		28.32	
11/21/07 9:20		28.32	
11/21/07 9:30		28.39	
11/21/07 9:40		28.41	
11/21/07 9:50		28.41	
11/21/07 10:00		28.44	
11/21/07 10:10		28.44	
11/21/07 10:20		28.43	
11/21/07 10:30		28.44	
11/21/07 10:40		28.43	
11/21/07 10:50		28.44	
11/21/07 11:00		28.47	
11/21/07 11:10		28.48	
11/21/07 11:20		28.49	
11/21/07 11:30		28.51	
11/21/07 11:40		28.51	
11/21/07 11:50		28.54	
11/21/07 12:00		28.55	
11/21/07 12:10		28.55	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/21/07 12:20		28.53	
11/21/07 12:30		28.55	
11/21/07 12:40		28.55	
11/21/07 12:50		28.56	
11/21/07 13:00		28.56	
11/21/07 13:10		28.51	
11/21/07 13:20		28.48	
11/21/07 13:30		28.47	
11/21/07 13:40		28.47	
11/21/07 13:50		28.47	
11/21/07 14:00		28.47	
11/21/07 14:10		28.46	
11/21/07 14:20		28.46	
11/21/07 14:30		28.45	
11/21/07 14:40		28.45	
11/21/07 14:50		28.47	
11/21/07 15:00		28.50	
11/21/07 15:10		28.50	
11/21/07 15:20		28.51	
11/21/07 15:30		28.52	
11/21/07 15:40		28.53	
11/21/07 15:50		28.55	
11/21/07 16:00		28.57	
11/21/07 16:10		28.50	
11/21/07 16:20		28.49	
11/21/07 16:30		28.48	
11/21/07 16:40		28.46	
11/21/07 16:50		28.45	
11/21/07 17:00		28.47	
11/21/07 17:10		28.51	
11/21/07 17:20		28.53	
11/21/07 17:30		28.55	
11/21/07 17:40		28.56	
11/21/07 17:50		28.56	
11/21/07 18:00		28.58	
11/21/07 18:10		28.58	
11/21/07 18:20		28.58	
11/21/07 18:30		28.59	
11/21/07 18:40		28.61	
11/21/07 18:50		28.60	
11/21/07 19:00		28.60	
11/21/07 19:10		28.59	
11/21/07 19:20		28.60	
11/21/07 19:30		28.61	
11/21/07 19:40		28.59	
11/21/07 19:50		28.62	
11/21/07 20:00		28.62	
11/21/07 20:10		28.62	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/21/07 20:20		28.61	
11/21/07 20:30		28.62	
11/21/07 20:40		28.61	
11/21/07 20:50		28.62	
11/21/07 21:00		28.63	
11/21/07 21:10		28.63	
11/21/07 21:20		28.62	
11/21/07 21:30		28.63	
11/21/07 21:40		28.63	
11/21/07 21:50		28.63	
11/21/07 22:00		28.63	
11/21/07 22:10		28.56	
11/21/07 22:20		28.53	
11/21/07 22:30		28.52	
11/21/07 22:40		28.51	
11/21/07 22:50		28.55	
11/21/07 23:00		28.55	
11/21/07 23:10		28.56	
11/21/07 23:20		28.58	
11/21/07 23:30		28.59	
11/21/07 23:40		28.69	
11/21/07 23:50		28.68	
11/22/07 0:00		28.67	
11/22/07 0:10		28.67	
11/22/07 0:20		28.66	
11/22/07 0:30		28.62	
11/22/07 0:40		28.60	
11/22/07 0:50		28.58	
11/22/07 1:00		28.59	
11/22/07 1:10		28.58	
11/22/07 1:20		28.57	
11/22/07 1:30		28.57	
11/22/07 1:40		28.58	
11/22/07 1:50		28.58	
11/22/07 2:00		28.57	
11/22/07 2:10		28.58	
11/22/07 2:20		28.57	
11/22/07 2:30		28.54	
11/22/07 2:40		28.55	
11/22/07 2:50		28.54	
11/22/07 3:00		28.54	
11/22/07 3:10		28.53	
11/22/07 3:20		28.49	
11/22/07 3:30		28.47	
11/22/07 3:40		28.46	
11/22/07 3:50		28.48	
11/22/07 4:00		28.48	
11/22/07 4:10		28.47	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/22/07 4:20		28.47	
11/22/07 4:30		28.38	
11/22/07 4:40		28.34	
11/22/07 4:50		28.30	
11/22/07 5:00		28.28	
11/22/07 5:10		28.26	
11/22/07 5:20		28.26	
11/22/07 5:30		28.25	
11/22/07 5:40		28.25	
11/22/07 5:50		28.24	
11/22/07 6:00		28.23	
11/22/07 6:10		28.24	
11/22/07 6:20		28.23	
11/22/07 6:30		28.22	
11/22/07 6:40		28.22	
11/22/07 6:50		28.22	
11/22/07 7:00		28.21	
11/22/07 7:10		28.21	
11/22/07 7:20		28.20	
11/22/07 7:30		28.19	
11/22/07 7:40		28.19	
11/22/07 7:50		28.19	
11/22/07 8:00		28.19	
11/22/07 8:10		28.19	
11/22/07 8:20		28.19	
11/22/07 8:30		28.20	
11/22/07 8:40		28.20	
11/22/07 8:50		28.19	
11/22/07 9:00		28.20	
11/22/07 9:10		28.20	
11/22/07 9:20		28.19	
11/22/07 9:30		28.19	
11/22/07 9:40		28.19	
11/22/07 9:50		28.19	
11/22/07 10:00		28.20	
11/22/07 10:10		28.20	
11/22/07 10:20		28.20	
11/22/07 10:30		28.19	
11/22/07 10:40		28.19	
11/22/07 10:50		28.19	
11/22/07 11:00		28.18	
11/22/07 11:10		28.18	
11/22/07 11:20		28.18	
11/22/07 11:30		28.18	
11/22/07 11:40		28.18	
11/22/07 11:50		28.18	
11/22/07 12:00		28.18	
11/22/07 12:10		28.18	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/22/07 12:20		28.17	
11/22/07 12:30		28.17	
11/22/07 12:40		28.20	
11/22/07 12:50		28.20	
11/22/07 13:00		28.21	
11/22/07 13:10		28.20	
11/22/07 13:20		28.20	
11/22/07 13:30		28.19	
11/22/07 13:40		28.20	
11/22/07 13:50		28.19	
11/22/07 14:00		28.19	
11/22/07 14:10		28.17	
11/22/07 14:20		28.17	
11/22/07 14:30		28.16	
11/22/07 14:40		28.16	
11/22/07 14:50		28.15	
11/22/07 15:00		28.15	
11/22/07 15:10		28.15	
11/22/07 15:20		28.15	
11/22/07 15:30		28.15	
11/22/07 15:40		28.20	
11/22/07 15:50		28.18	
11/22/07 16:00		28.17	
11/22/07 16:10		28.16	
11/22/07 16:20		28.14	
11/22/07 16:30		28.14	
11/22/07 16:40		28.14	
11/22/07 16:50		28.13	
11/22/07 17:00		28.12	
11/22/07 17:10		28.12	
11/22/07 17:20		28.13	
11/22/07 17:30		28.12	
11/22/07 17:40		28.11	
11/22/07 17:50		28.12	
11/22/07 18:00		28.11	
11/22/07 18:10		28.11	
11/22/07 18:20		28.12	
11/22/07 18:30		28.14	
11/22/07 18:40		28.14	
11/22/07 18:50		28.13	
11/22/07 19:00		28.13	
11/22/07 19:10		28.13	
11/22/07 19:20		28.13	
11/22/07 19:30		28.13	
11/22/07 19:40		28.14	
11/22/07 19:50		28.15	
11/22/07 20:00		28.14	
11/22/07 20:10		28.16	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/22/07 20:20		28.16	
11/22/07 20:30		28.16	
11/22/07 20:40		28.16	
11/22/07 20:50		28.16	
11/22/07 21:00		28.16	
11/22/07 21:10		28.16	
11/22/07 21:20		28.16	
11/22/07 21:30		28.14	
11/22/07 21:40		28.15	
11/22/07 21:50		28.15	
11/22/07 22:00		28.15	
11/22/07 22:10		28.15	
11/22/07 22:20		28.15	
11/22/07 22:30		28.20	
11/22/07 22:40		28.21	
11/22/07 22:50		28.21	
11/22/07 23:00		28.22	
11/22/07 23:10		28.21	
11/22/07 23:20		28.21	
11/22/07 23:30		28.20	
11/22/07 23:40		28.21	
11/22/07 23:50		28.20	
11/23/07 0:00		28.20	
11/23/07 0:10		28.19	
11/23/07 0:20		28.19	
11/23/07 0:30		28.18	
11/23/07 0:40		28.17	
11/23/07 0:50		28.17	
11/23/07 1:00		28.16	
11/23/07 1:10		28.15	
11/23/07 1:20		28.15	
11/23/07 1:30		28.15	
11/23/07 1:40		28.14	
11/23/07 1:50		28.14	
11/23/07 2:00		28.14	
11/23/07 2:10		28.13	
11/23/07 2:20		28.13	
11/23/07 2:30		28.14	
11/23/07 2:40		28.13	
11/23/07 2:50		28.12	
11/23/07 3:00		28.12	
11/23/07 3:10		28.13	
11/23/07 3:20		28.12	
11/23/07 3:30		28.12	
11/23/07 3:40		28.13	
11/23/07 3:50		28.12	
11/23/07 4:00		28.12	
11/23/07 4:10		28.11	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/23/07 4:20		28.12	
11/23/07 4:30		28.11	
11/23/07 4:40		28.10	
11/23/07 4:50		28.10	
11/23/07 5:00		28.11	
11/23/07 5:10		28.09	
11/23/07 5:20		28.09	
11/23/07 5:30		28.09	
11/23/07 5:40		28.09	
11/23/07 5:50		28.08	
11/23/07 6:00		28.07	
11/23/07 6:10		28.07	
11/23/07 6:20		28.09	
11/23/07 6:30		28.08	
11/23/07 6:40		28.09	
11/23/07 6:50		28.12	
11/23/07 7:00		28.12	
11/23/07 7:10		28.13	
11/23/07 7:20		28.11	
11/23/07 7:30		28.12	
11/23/07 7:40		28.16	
11/23/07 7:50		28.17	
11/23/07 8:00		28.17	
11/23/07 8:10		28.18	
11/23/07 8:20		28.19	
11/23/07 8:30		28.20	
11/23/07 8:40		28.20	
11/23/07 8:50		28.19	
11/23/07 9:00		28.20	
11/23/07 9:10		28.22	
11/23/07 9:20		28.20	
11/23/07 9:30		28.18	
11/23/07 9:40		28.17	
11/23/07 9:50		28.21	
11/23/07 10:00		28.16	
11/23/07 10:10		28.17	
11/23/07 10:20		28.21	
11/23/07 10:30		28.20	
11/23/07 10:40		28.18	
11/23/07 10:50		28.15	
11/23/07 11:00		28.14	
11/23/07 11:10		28.14	
11/23/07 11:20		28.12	
11/23/07 11:30		28.13	
11/23/07 11:40		28.12	
11/23/07 11:50		28.14	
11/23/07 12:00		28.14	
11/23/07 12:10		28.13	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/23/07 12:20		28.12	
11/23/07 12:30		28.12	
11/23/07 12:40		28.12	
11/23/07 12:50		28.18	
11/23/07 13:00		28.13	
11/23/07 13:10		28.17	
11/23/07 13:20		28.18	
11/23/07 13:30		28.19	
11/23/07 13:40		28.13	
11/23/07 13:50		28.15	
11/23/07 14:00		28.11	
11/23/07 14:10		28.13	
11/23/07 14:20		28.10	
11/23/07 14:30		28.10	
11/23/07 14:40		28.10	
11/23/07 14:50		28.09	
11/23/07 15:00		28.08	
11/23/07 15:10		28.09	
11/23/07 15:20		28.09	
11/23/07 15:30		28.08	
11/23/07 15:40		28.09	
11/23/07 15:50		28.08	
11/23/07 16:00		28.09	
11/23/07 16:10		28.10	
11/23/07 16:20		28.02	
11/23/07 16:30		27.96	
11/23/07 16:40		27.92	
11/23/07 16:50		27.90	
11/23/07 17:00		27.87	
11/23/07 17:10		27.85	
11/23/07 17:20		27.81	
11/23/07 17:30		27.80	
11/23/07 17:40		27.77	
11/23/07 17:50		27.76	
11/23/07 18:00		27.75	
11/23/07 18:10		27.74	
11/23/07 18:20		27.72	
11/23/07 18:30		27.72	
11/23/07 18:40		27.70	
11/23/07 18:50		27.69	
11/23/07 19:00		27.69	
11/23/07 19:10		27.68	
11/23/07 19:20		27.67	
11/23/07 19:30		27.66	
11/23/07 19:40		27.64	
11/23/07 19:50		27.64	
11/23/07 20:00		27.64	
11/23/07 20:10		27.64	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/23/07 20:20		27.63	
11/23/07 20:30		27.62	
11/23/07 20:40		27.61	
11/23/07 20:50		27.61	
11/23/07 21:00		27.60	
11/23/07 21:10		27.59	
11/23/07 21:20		27.58	
11/23/07 21:30		27.57	
11/23/07 21:40		27.57	
11/23/07 21:50		27.63	
11/23/07 22:00		27.62	
11/23/07 22:10		27.61	
11/23/07 22:20		27.60	
11/23/07 22:30		27.59	
11/23/07 22:40		27.58	
11/23/07 22:50		27.58	
11/23/07 23:00		27.58	
11/23/07 23:10		27.56	
11/23/07 23:20		27.56	
11/23/07 23:30		27.58	
11/23/07 23:40		27.56	
11/23/07 23:50		27.55	
11/24/07 0:00		27.53	
11/24/07 0:10		27.53	
11/24/07 0:20		27.53	
11/24/07 0:30		27.53	
11/24/07 0:40		27.52	
11/24/07 0:50		27.51	
11/24/07 1:00		27.49	
11/24/07 1:10		27.49	
11/24/07 1:20		27.48	
11/24/07 1:30		27.47	
11/24/07 1:40		27.46	
11/24/07 1:50		27.45	
11/24/07 2:00		27.44	
11/24/07 2:10		27.44	
11/24/07 2:20		27.43	
11/24/07 2:30		27.43	
11/24/07 2:40		27.42	
11/24/07 2:50		27.42	
11/24/07 3:00		27.42	
11/24/07 3:10		27.41	
11/24/07 3:20		27.40	
11/24/07 3:30		27.40	
11/24/07 3:40		27.40	
11/24/07 3:50		27.41	
11/24/07 4:00		27.40	
11/24/07 4:10		27.39	

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 4:20		27.39	
11/24/07 4:30		27.37	
11/24/07 4:40		27.37	
11/24/07 4:50		27.40	
11/24/07 5:00		27.41	
11/24/07 5:10		27.40	
11/24/07 5:20		27.39	
11/24/07 5:30		27.38	
11/24/07 5:40		27.38	
11/24/07 5:50		27.38	
11/24/07 6:00		27.37	
11/24/07 6:10		27.36	
11/24/07 6:20		27.37	
11/24/07 6:30		27.37	
11/24/07 6:40		27.36	
11/24/07 6:50		27.36	
11/24/07 7:00		27.35	
11/24/07 7:10		27.35	
11/24/07 7:20		27.34	
11/24/07 7:30		27.35	
11/24/07 7:40		27.38	
11/24/07 7:50		27.37	
11/24/07 8:00		27.37	
11/24/07 8:10		27.37	
11/24/07 8:20		27.40	
11/24/07 8:30		27.44	
11/24/07 8:40		27.48	
11/24/07 8:40		27.48	
11/24/07 8:41		27.48	
11/24/07 8:42		27.48	
11/24/07 8:43		27.49	
11/24/07 8:44		27.49	
11/24/07 8:45		27.49	
11/24/07 8:46		27.50	
11/24/07 8:47		27.50	
11/24/07 8:48	0	27.50	0.00
11/24/07 8:49	1	27.69	0.19
11/24/07 8:50	2	27.88	0.38
11/24/07 8:51	3	28.00	0.50
11/24/07 8:52	4	28.07	0.57
11/24/07 8:53	5	28.12	0.62
11/24/07 8:54	6	28.15	0.65
11/24/07 8:55	7	28.18	0.68
11/24/07 8:56	8	28.19	0.70
11/24/07 8:57	9	28.21	0.71
11/24/07 8:58	10	28.22	0.72
11/24/07 8:59	11	28.23	0.73
11/24/07 9:00	12	28.25	0.75

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 9:01	13	28.25	0.75
11/24/07 9:02	14	28.23	0.73
11/24/07 9:03	15	28.22	0.72
11/24/07 9:04	16	28.21	0.71
11/24/07 9:05	17	28.20	0.70
11/24/07 9:06	18	28.19	0.69
11/24/07 9:07	19	28.19	0.69
11/24/07 9:08	20	28.19	0.69
11/24/07 9:09	21	28.19	0.69
11/24/07 9:10	22	28.19	0.70
11/24/07 9:11	23	28.19	0.69
11/24/07 9:12	24	28.19	0.69
11/24/07 9:13	25	28.20	0.70
11/24/07 9:14	26	28.20	0.71
11/24/07 9:15	27	28.21	0.71
11/24/07 9:16	28	28.21	0.71
11/24/07 9:17	29	28.22	0.72
11/24/07 9:18	30	28.23	0.73
11/24/07 9:19	31	28.24	0.74
11/24/07 9:20	32	28.26	0.76
11/24/07 9:21	33	28.26	0.76
11/24/07 9:22	34	28.27	0.77
11/24/07 9:23	35	28.28	0.78
11/24/07 9:24	36	28.29	0.79
11/24/07 9:25	37	28.30	0.80
11/24/07 9:26	38	28.30	0.80
11/24/07 9:27	39	28.31	0.81
11/24/07 9:28	40	28.32	0.82
11/24/07 9:29	41	28.32	0.82
11/24/07 9:30	42	28.33	0.83
11/24/07 9:31	43	28.33	0.83
11/24/07 9:32	44	28.34	0.84
11/24/07 9:33	45	28.34	0.84
11/24/07 9:34	46	28.35	0.85
11/24/07 9:35	47	28.35	0.85
11/24/07 9:36	48	28.35	0.85
11/24/07 9:37	49	28.36	0.86
11/24/07 9:38	50	28.36	0.86
11/24/07 9:39	51	28.36	0.86
11/24/07 9:40	52	28.36	0.86
11/24/07 9:41	53	28.37	0.87
11/24/07 9:42	54	28.37	0.87
11/24/07 9:43	55	28.37	0.87
11/24/07 9:44	56	28.38	0.88
11/24/07 9:45	57	28.38	0.88
11/24/07 9:46	58	28.38	0.88
11/24/07 9:47	59	28.38	0.89
11/24/07 9:48	60	28.38	0.88

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 9:49	61	28.39	0.89
11/24/07 9:50	62	28.39	0.89
11/24/07 9:51	63	28.40	0.90
11/24/07 9:52	64	28.39	0.90
11/24/07 9:53	65	28.40	0.90
11/24/07 9:54	66	28.41	0.91
11/24/07 9:55	67	28.41	0.91
11/24/07 9:56	68	28.41	0.91
11/24/07 9:57	69	28.41	0.91
11/24/07 9:58	70	28.42	0.92
11/24/07 9:59	71	28.41	0.91
11/24/07 10:00	72	28.42	0.92
11/24/07 10:01	73	28.42	0.92
11/24/07 10:02	74	28.42	0.92
11/24/07 10:03	75	28.42	0.93
11/24/07 10:04	76	28.43	0.93
11/24/07 10:05	77	28.43	0.93
11/24/07 10:06	78	28.44	0.94
11/24/07 10:07	79	28.44	0.94
11/24/07 10:08	80	28.44	0.94
11/24/07 10:09	81	28.44	0.94
11/24/07 10:10	82	28.45	0.95
11/24/07 10:11	83	28.45	0.95
11/24/07 10:12	84	28.45	0.95
11/24/07 10:13	85	28.45	0.95
11/24/07 10:14	86	28.45	0.95
11/24/07 10:15	87	28.46	0.96
11/24/07 10:16	88	28.46	0.96
11/24/07 10:17	89	28.47	0.97
11/24/07 10:18	90	28.47	0.97
11/24/07 10:19	91	28.47	0.97
11/24/07 10:20	92	28.47	0.97
11/24/07 10:21	93	28.47	0.97
11/24/07 10:22	94	28.48	0.98
11/24/07 10:23	95	28.48	0.98
11/24/07 10:24	96	28.48	0.98
11/24/07 10:25	97	28.48	0.98
11/24/07 10:26	98	28.48	0.98
11/24/07 10:27	99	28.47	0.98
11/24/07 10:28	100	28.48	0.98
11/24/07 10:29	101	28.47	0.97
11/24/07 10:30	102	28.47	0.97
11/24/07 10:31	103	28.47	0.97
11/24/07 10:32	104	28.47	0.97
11/24/07 10:33	105	28.47	0.97
11/24/07 10:34	106	28.47	0.97
11/24/07 10:35	107	28.48	0.98
11/24/07 10:36	108	28.47	0.97

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 10:37	109	28.48	0.98
11/24/07 10:38	110	28.48	0.98
11/24/07 10:39	111	28.48	0.98
11/24/07 10:40	112	28.48	0.98
11/24/07 10:41	113	28.48	0.98
11/24/07 10:42	114	28.48	0.98
11/24/07 10:43	115	28.48	0.99
11/24/07 10:44	116	28.49	0.99
11/24/07 10:45	117	28.49	0.99
11/24/07 10:46	118	28.49	0.99
11/24/07 10:47	119	28.49	0.99
11/24/07 10:48	120	28.49	0.99
11/24/07 10:49	121	28.49	0.99
11/24/07 10:50	122	28.50	1.00
11/24/07 10:51	123	28.49	0.99
11/24/07 10:52	124	28.50	1.00
11/24/07 10:53	125	28.50	1.00
11/24/07 10:54	126	28.50	1.00
11/24/07 10:55	127	28.50	1.00
11/24/07 10:56	128	28.50	1.00
11/24/07 10:57	129	28.51	1.01
11/24/07 10:58	130	28.50	1.00
11/24/07 10:59	131	28.50	1.00
11/24/07 11:00	132	28.51	1.01
11/24/07 11:01	133	28.51	1.01
11/24/07 11:02	134	28.51	1.02
11/24/07 11:03	135	28.51	1.01
11/24/07 11:04	136	28.51	1.01
11/24/07 11:05	137	28.52	1.02
11/24/07 11:06	138	28.52	1.02
11/24/07 11:07	139	28.52	1.02
11/24/07 11:08	140	28.52	1.02
11/24/07 11:09	141	28.52	1.02
11/24/07 11:10	142	28.53	1.03
11/24/07 11:11	143	28.52	1.02
11/24/07 11:12	144	28.53	1.03
11/24/07 11:13	145	28.52	1.02
11/24/07 11:14	146	28.53	1.03
11/24/07 11:15	147	28.53	1.03
11/24/07 11:16	148	28.53	1.03
11/24/07 11:17	149	28.53	1.03
11/24/07 11:18	150	28.54	1.04
11/24/07 11:19	151	28.54	1.04
11/24/07 11:20	152	28.55	1.05
11/24/07 11:21	153	28.55	1.05
11/24/07 11:22	154	28.56	1.06
11/24/07 11:23	155	28.56	1.06
11/24/07 11:24	156	28.56	1.06

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 11:25	157	28.56	1.06
11/24/07 11:26	158	28.57	1.07
11/24/07 11:27	159	28.57	1.07
11/24/07 11:28	160	28.57	1.07
11/24/07 11:29	161	28.57	1.07
11/24/07 11:30	162	28.57	1.07
11/24/07 11:31	163	28.58	1.08
11/24/07 11:32	164	28.57	1.07
11/24/07 11:33	165	28.57	1.08
11/24/07 11:34	166	28.57	1.08
11/24/07 11:35	167	28.58	1.08
11/24/07 11:36	168	28.58	1.08
11/24/07 11:37	169	28.58	1.08
11/24/07 11:38	170	28.58	1.08
11/24/07 11:39	171	28.58	1.08
11/24/07 11:40	172	28.58	1.08
11/24/07 11:41	173	28.58	1.08
11/24/07 11:42	174	28.58	1.08
11/24/07 11:43	175	28.59	1.09
11/24/07 11:44	176	28.59	1.09
11/24/07 11:45	177	28.59	1.09
11/24/07 11:46	178	28.59	1.09
11/24/07 11:47	179	28.59	1.09
11/24/07 11:48	180	28.59	1.09
11/24/07 11:49	181	28.59	1.09
11/24/07 11:50	182	28.59	1.09
11/24/07 11:51	183	28.60	1.10
11/24/07 11:52	184	28.60	1.10
11/24/07 11:53	185	28.60	1.10
11/24/07 11:54	186	28.60	1.10
11/24/07 11:55	187	28.59	1.10
11/24/07 11:56	188	28.59	1.09
11/24/07 11:57	189	28.59	1.09
11/24/07 11:58	190	28.59	1.09
11/24/07 11:59	191	28.59	1.09
11/24/07 12:00	192	28.58	1.08
11/24/07 12:01	193	28.58	1.08
11/24/07 12:02	194	28.57	1.08
11/24/07 12:03	195	28.58	1.08
11/24/07 12:04	196	28.58	1.08
11/24/07 12:05	197	28.57	1.07
11/24/07 12:06	198	28.57	1.08
11/24/07 12:07	199	28.58	1.08
11/24/07 12:08	200	28.57	1.07
11/24/07 12:09	201	28.57	1.07
11/24/07 12:10	202	28.56	1.06
11/24/07 12:11	203	28.56	1.06
11/24/07 12:12	204	28.56	1.06

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 12:13	205	28.55	1.05
11/24/07 12:14	206	28.55	1.05
11/24/07 12:15	207	28.55	1.06
11/24/07 12:16	208	28.55	1.05
11/24/07 12:17	209	28.54	1.04
11/24/07 12:18	210	28.54	1.04
11/24/07 12:19	211	28.54	1.04
11/24/07 12:20	212	28.53	1.04
11/24/07 12:21	213	28.53	1.03
11/24/07 12:22	214	28.53	1.03
11/24/07 12:23	215	28.53	1.03
11/24/07 12:24	216	28.52	1.03
11/24/07 12:25	217	28.52	1.02
11/24/07 12:26	218	28.52	1.02
11/24/07 12:27	219	28.52	1.02
11/24/07 12:28	220	28.52	1.02
11/24/07 12:29	221	28.52	1.02
11/24/07 12:30	222	28.51	1.01
11/24/07 12:31	223	28.51	1.01
11/24/07 12:32	224	28.52	1.02
11/24/07 12:33	225	28.51	1.01
11/24/07 12:34	226	28.51	1.01
11/24/07 12:35	227	28.51	1.01
11/24/07 12:36	228	28.51	1.01
11/24/07 12:37	229	28.50	1.00
11/24/07 12:38	230	28.50	1.00
11/24/07 12:39	231	28.50	1.00
11/24/07 12:40	232	28.50	1.00
11/24/07 12:41	233	28.50	1.00
11/24/07 12:42	234	28.49	0.99
11/24/07 12:43	235	28.49	0.99
11/24/07 12:44	236	28.49	0.99
11/24/07 12:45	237	28.49	0.99
11/24/07 12:46	238	28.49	0.99
11/24/07 12:47	239	28.49	0.99
11/24/07 12:48	240	28.49	0.99
11/24/07 12:49	241	28.48	0.98
11/24/07 12:50	242	28.48	0.98
11/24/07 12:51	243	28.48	0.99
11/24/07 12:52	244	28.48	0.98
11/24/07 12:53	245	28.48	0.98
11/24/07 12:54	246	28.48	0.99
11/24/07 12:55	247	28.49	0.99
11/24/07 12:56	248	28.48	0.98
11/24/07 12:57	249	28.49	0.99
11/24/07 12:58	250	28.48	0.99
11/24/07 12:59	251	28.48	0.98
11/24/07 13:00	252	28.48	0.98

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 13:01	253	28.48	0.98
11/24/07 13:02	254	28.48	0.98
11/24/07 13:03	255	28.47	0.97
11/24/07 13:04	256	28.48	0.98
11/24/07 13:05	257	28.47	0.97
11/24/07 13:06	258	28.47	0.97
11/24/07 13:07	259	28.46	0.96
11/24/07 13:08	260	28.47	0.97
11/24/07 13:09	261	28.46	0.96
11/24/07 13:10	262	28.47	0.97
11/24/07 13:11	263	28.46	0.96
11/24/07 13:12	264	28.46	0.96
11/24/07 13:13	265	28.46	0.96
11/24/07 13:14	266	28.46	0.96
11/24/07 13:15	267	28.45	0.95
11/24/07 13:16	268	28.45	0.95
11/24/07 13:17	269	28.45	0.95
11/24/07 13:18	270	28.45	0.95
11/24/07 13:19	271	28.45	0.95
11/24/07 13:20	272	28.45	0.95
11/24/07 13:21	273	28.45	0.95
11/24/07 13:22	274	28.44	0.94
11/24/07 13:23	275	28.44	0.94
11/24/07 13:24	276	28.44	0.94
11/24/07 13:25	277	28.44	0.94
11/24/07 13:26	278	28.44	0.94
11/24/07 13:27	279	28.44	0.94
11/24/07 13:28	280	28.44	0.94
11/24/07 13:29	281	28.44	0.94
11/24/07 13:30	282	28.43	0.93
11/24/07 13:31	283	28.43	0.93
11/24/07 13:32	284	28.43	0.93
11/24/07 13:33	285	28.43	0.93
11/24/07 13:34	286	28.43	0.93
11/24/07 13:35	287	28.43	0.93
11/24/07 13:36	288	28.42	0.92
11/24/07 13:37	289	28.42	0.92
11/24/07 13:38	290	28.42	0.92
11/24/07 13:39	291	28.42	0.92
11/24/07 13:40	292	28.42	0.92
11/24/07 13:41	293	28.42	0.92
11/24/07 13:42	294	28.42	0.92
11/24/07 13:43	295	28.42	0.92
11/24/07 13:44	296	28.42	0.92
11/24/07 13:45	297	28.41	0.91
11/24/07 13:46	298	28.41	0.91
11/24/07 13:47	299	28.41	0.91
11/24/07 13:48	300	28.41	0.91

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 13:49	301	28.41	0.91
11/24/07 13:50	302	28.41	0.91
11/24/07 13:51	303	28.40	0.91
11/24/07 13:52	304	28.40	0.90
11/24/07 13:53	305	28.40	0.90
11/24/07 13:54	306	28.40	0.90
11/24/07 13:55	307	28.40	0.90
11/24/07 13:56	308	28.40	0.90
11/24/07 13:57	309	28.40	0.90
11/24/07 13:58	310	28.40	0.90
11/24/07 13:59	311	28.40	0.90
11/24/07 14:00	312	28.39	0.90
11/24/07 14:01	313	28.39	0.90
11/24/07 14:02	314	28.40	0.90
11/24/07 14:03	315	28.39	0.90
11/24/07 14:04	316	28.40	0.90
11/24/07 14:05	317	28.40	0.90
11/24/07 14:06	318	28.40	0.90
11/24/07 14:07	319	28.40	0.90
11/24/07 14:08	320	28.39	0.89
11/24/07 14:09	321	28.39	0.89
11/24/07 14:10	322	28.40	0.90
11/24/07 14:11	323	28.39	0.89
11/24/07 14:12	324	28.39	0.89
11/24/07 14:13	325	28.40	0.90
11/24/07 14:14	326	28.39	0.89
11/24/07 14:15	327	28.39	0.89
11/24/07 14:16	328	28.39	0.89
11/24/07 14:17	329	28.38	0.88
11/24/07 14:18	330	28.38	0.88
11/24/07 14:19	331	28.38	0.88
11/24/07 14:20	332	28.38	0.88
11/24/07 14:21	333	28.38	0.88
11/24/07 14:22	334	28.38	0.88
11/24/07 14:23	335	28.38	0.88
11/24/07 14:24	336	28.38	0.88
11/24/07 14:25	337	28.38	0.88
11/24/07 14:26	338	28.38	0.88
11/24/07 14:27	339	28.37	0.88
11/24/07 14:28	340	28.38	0.88
11/24/07 14:29	341	28.38	0.88
11/24/07 14:30	342	28.37	0.88
11/24/07 14:31	343	28.38	0.88
11/24/07 14:32	344	28.37	0.87
11/24/07 14:33	345	28.37	0.87
11/24/07 14:34	346	28.37	0.87
11/24/07 14:35	347	28.37	0.87
11/24/07 14:36	348	28.38	0.88

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 14:37	349	28.37	0.87
11/24/07 14:38	350	28.37	0.87
11/24/07 14:39	351	28.37	0.87
11/24/07 14:40	352	28.37	0.87
11/24/07 14:41	353	28.38	0.88
11/24/07 14:42	354	28.37	0.88
11/24/07 14:43	355	28.38	0.88
11/24/07 14:44	356	28.38	0.88
11/24/07 14:45	357	28.37	0.88
11/24/07 14:46	358	28.38	0.88
11/24/07 14:47	359	28.38	0.88
11/24/07 14:48	360	28.38	0.88
11/24/07 14:49	361	28.38	0.88
11/24/07 14:50	362	28.38	0.88
11/24/07 14:51	363	28.38	0.88
11/24/07 14:52	364	28.38	0.88
11/24/07 14:53	365	28.37	0.88
11/24/07 14:54	366	28.37	0.87
11/24/07 14:55	367	28.37	0.88
11/24/07 14:56	368	28.37	0.87
11/24/07 14:57	369	28.37	0.87
11/24/07 14:58	370	28.37	0.87
11/24/07 14:59	371	28.37	0.87
11/24/07 15:00	372	28.36	0.86
11/24/07 15:01	373	28.37	0.87
11/24/07 15:02	374	28.37	0.87
11/24/07 15:03	375	28.37	0.87
11/24/07 15:04	376	28.37	0.87
11/24/07 15:05	377	28.38	0.88
11/24/07 15:06	378	28.38	0.88
11/24/07 15:07	379	28.38	0.88
11/24/07 15:08	380	28.37	0.88
11/24/07 15:09	381	28.38	0.88
11/24/07 15:10	382	28.37	0.88
11/24/07 15:11	383	28.38	0.88
11/24/07 15:12	384	28.37	0.87
11/24/07 15:13	385	28.37	0.87
11/24/07 15:14	386	28.37	0.87
11/24/07 15:15	387	28.37	0.87
11/24/07 15:16	388	28.38	0.88
11/24/07 15:17	389	28.37	0.87
11/24/07 15:18	390	28.37	0.87
11/24/07 15:19	391	28.37	0.87
11/24/07 15:20	392	28.37	0.86
11/24/07 15:21	393	28.37	0.87
11/24/07 15:22	394	28.37	0.87
11/24/07 15:23	395	28.37	0.87
11/24/07 15:24	396	28.37	0.87

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 15:25	397	28.37	0.87
11/24/07 15:26	398	28.36	0.86
11/24/07 15:27	399	28.36	0.86
11/24/07 15:28	400	28.36	0.87
11/24/07 15:29	401	28.36	0.87
11/24/07 15:30	402	28.36	0.86
11/24/07 15:31	403	28.37	0.87
11/24/07 15:32	404	28.37	0.87
11/24/07 15:33	405	28.36	0.86
11/24/07 15:34	406	28.36	0.87
11/24/07 15:35	407	28.36	0.86
11/24/07 15:36	408	28.36	0.86
11/24/07 15:37	409	28.36	0.86
11/24/07 15:38	410	28.36	0.86
11/24/07 15:39	411	28.36	0.86
11/24/07 15:40	412	28.36	0.86
11/24/07 15:41	413	28.36	0.86
11/24/07 15:42	414	28.36	0.86
11/24/07 15:43	415	28.35	0.85
11/24/07 15:44	416	28.36	0.86
11/24/07 15:45	417	28.36	0.86
11/24/07 15:46	418	28.36	0.86
11/24/07 15:47	419	28.37	0.87
11/24/07 15:48	420	28.36	0.86
11/24/07 15:49	421	28.36	0.86
11/24/07 15:50	422	28.36	0.86
11/24/07 15:51	423	28.36	0.86
11/24/07 15:52	424	28.36	0.86
11/24/07 15:53	425	28.36	0.86
11/24/07 15:54	426	28.36	0.86
11/24/07 15:55	427	28.36	0.86
11/24/07 15:56	428	28.36	0.86
11/24/07 15:57	429	28.36	0.86
11/24/07 15:58	430	28.35	0.85
11/24/07 15:59	431	28.35	0.86
11/24/07 16:00	432	28.35	0.85
11/24/07 16:01	433	28.35	0.85
11/24/07 16:02	434	28.35	0.85
11/24/07 16:03	435	28.34	0.85
11/24/07 16:04	436	28.35	0.85
11/24/07 16:05	437	28.34	0.85
11/24/07 16:06	438	28.34	0.84
11/24/07 16:07	439	28.35	0.85
11/24/07 16:08	440	28.35	0.85
11/24/07 16:09	441	28.34	0.84
11/24/07 16:10	442	28.35	0.85
11/24/07 16:11	443	28.35	0.85
11/24/07 16:12	444	28.35	0.85

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 16:13	445	28.35	0.85
11/24/07 16:14	446	28.35	0.85
11/24/07 16:15	447	28.35	0.85
11/24/07 16:16	448	28.34	0.84
11/24/07 16:17	449	28.34	0.84
11/24/07 16:18	450	28.34	0.84
11/24/07 16:19	451	28.35	0.85
11/24/07 16:20	452	28.34	0.84
11/24/07 16:21	453	28.35	0.85
11/24/07 16:22	454	28.35	0.85
11/24/07 16:23	455	28.34	0.84
11/24/07 16:24	456	28.34	0.84
11/24/07 16:25	457	28.34	0.84
11/24/07 16:26	458	28.34	0.84
11/24/07 16:27	459	28.34	0.84
11/24/07 16:28	460	28.34	0.84
11/24/07 16:29	461	28.33	0.83
11/24/07 16:30	462	28.34	0.84
11/24/07 16:31	463	28.33	0.83
11/24/07 16:32	464	28.22	0.72
11/24/07 16:33	465	28.11	0.61
11/24/07 16:34	466	28.04	0.54
11/24/07 16:35	467	27.98	0.48
11/24/07 16:36	468	27.94	0.44
11/24/07 16:37	469	27.92	0.42
11/24/07 16:38	470	27.89	0.39
11/24/07 16:39	471	27.87	0.37
11/24/07 16:40	472	27.86	0.36
11/24/07 16:41	473	27.84	0.34
11/24/07 16:42	474	27.83	0.33
11/24/07 16:43	475	27.82	0.32
11/24/07 16:44	476	27.81	0.31
11/24/07 16:45	477	27.80	0.30
11/24/07 16:46	478	27.79	0.29
11/24/07 16:47	479	27.78	0.28
11/24/07 16:48	480	27.77	0.28
11/24/07 16:49	481	27.77	0.27
11/24/07 16:50	482	27.76	0.26
11/24/07 16:51	483	27.75	0.25
11/24/07 16:52	484	27.74	0.25
11/24/07 16:53	485	27.74	0.24
11/24/07 16:54	486	27.73	0.23
11/24/07 16:55	487	27.72	0.23
11/24/07 16:56	488	27.72	0.22
11/24/07 16:57	489	27.71	0.21
11/24/07 16:58	490	27.71	0.21
11/24/07 16:59	491	27.70	0.20
11/24/07 17:00	492	27.70	0.20

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 17:01	493	27.69	0.20
11/24/07 17:02	494	27.69	0.19
11/24/07 17:03	495	27.69	0.19
11/24/07 17:04	496	27.69	0.19
11/24/07 17:05	497	27.69	0.19
11/24/07 17:06	498	27.69	0.19
11/24/07 17:07	499	27.69	0.19
11/24/07 17:08	500	27.68	0.18
11/24/07 17:09	501	27.68	0.18
11/24/07 17:10	502	27.67	0.17
11/24/07 17:10	502	27.67	0.17
11/24/07 17:20	512	27.63	0.13
11/24/07 17:30	522	27.60	0.10
11/24/07 17:40	532	27.58	0.08
11/24/07 17:50	542	27.56	0.06
11/24/07 18:00	552	27.54	0.04
11/24/07 18:10	562	27.53	0.03
11/24/07 18:20	572	27.50	0.00
11/24/07 18:30	582	27.49	-0.01
11/24/07 18:40	592	27.48	-0.02
11/24/07 18:50	602	27.46	-0.03
11/24/07 19:00	612	27.47	-0.03
11/24/07 19:10	622	27.46	-0.04
11/24/07 19:20	632	27.45	-0.05
11/24/07 19:30	642	27.44	-0.05
11/24/07 19:40	652	27.44	-0.06
11/24/07 19:50	662	27.42	-0.08
11/24/07 20:00	672	27.41	-0.09
11/24/07 20:10	682	27.42	-0.08
11/24/07 20:20	692	27.41	-0.09
11/24/07 20:30	702	27.40	-0.10
11/24/07 20:40	712	27.39	-0.11
11/24/07 20:50	722	27.38	-0.11
11/24/07 21:00	732	27.38	-0.12
11/24/07 21:10	742	27.38	-0.12
11/24/07 21:20	752	27.37	-0.13
11/24/07 21:30	762	27.37	-0.13
11/24/07 21:40	772	27.37	-0.13
11/24/07 21:50	782	27.37	-0.13
11/24/07 22:00	792	27.37	-0.13
11/24/07 22:10	802	27.37	-0.13
11/24/07 22:20	812	27.36	-0.14
11/24/07 22:30	822	27.36	-0.14
11/24/07 22:40	832	27.35	-0.15
11/24/07 22:50	842	27.38	-0.12
11/24/07 23:00	852	27.38	-0.12
11/24/07 23:10	862	27.38	-0.12
11/24/07 23:20	872	27.37	-0.13

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/24/07 23:30	882	27.36	-0.14
11/24/07 23:40	892	27.35	-0.15
11/24/07 23:50	902	27.35	-0.15
11/25/07 0:00	912	27.34	-0.16
11/25/07 0:10	922	27.33	-0.16
11/25/07 0:20	932	27.33	-0.17
11/25/07 0:30	942	27.34	-0.16
11/25/07 0:40	952	27.34	-0.16
11/25/07 0:50	962	27.32	-0.18
11/25/07 1:00	972	27.32	-0.18
11/25/07 1:10	982	27.30	-0.19
11/25/07 1:20	992	27.30	-0.20
11/25/07 1:30	1002	27.29	-0.21
11/25/07 1:40	1012	27.30	-0.20
11/25/07 1:50	1022	27.31	-0.19
11/25/07 2:00	1032	27.29	-0.20
11/25/07 2:10	1042	27.28	-0.21
11/25/07 2:20	1052	27.28	-0.22
11/25/07 2:30	1062	27.28	-0.22
11/25/07 2:40	1072	27.27	-0.23
11/25/07 2:50	1082	27.31	-0.19
11/25/07 3:00	1092	27.34	-0.16
11/25/07 3:10	1102	27.33	-0.17
11/25/07 3:20	1112	27.33	-0.16
11/25/07 3:30	1122	27.33	-0.16
11/25/07 3:40	1132	27.33	-0.17
11/25/07 3:50	1142	27.32	-0.18
11/25/07 4:00	1152	27.33	-0.17
11/25/07 4:10	1162	27.32	-0.18
11/25/07 4:20	1172	27.31	-0.19
11/25/07 4:30	1182	27.32	-0.18
11/25/07 4:40	1192	27.32	-0.18
11/25/07 4:50	1202	27.31	-0.19
11/25/07 5:00	1212	27.30	-0.20
11/25/07 5:10	1222	27.30	-0.20
11/25/07 5:20	1232	27.31	-0.19
11/25/07 5:30	1242	27.30	-0.19
11/25/07 5:40	1252	27.50	0.00
11/25/07 5:50	1262	27.45	-0.05
11/25/07 6:00	1272	27.43	-0.07
11/25/07 6:10	1282	27.39	-0.11
11/25/07 6:20	1292	27.39	-0.10
11/25/07 6:30	1302	27.42	-0.08
11/25/07 6:40	1312	27.41	-0.09
11/25/07 6:50	1322	27.41	-0.09
11/25/07 7:00	1332	27.34	-0.16
11/25/07 7:10	1342	27.35	-0.14
11/25/07 7:20	1352	27.37	-0.13

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/25/07 7:30	1362	27.30	-0.19
11/25/07 7:40	1372	27.29	-0.21
11/25/07 7:50	1382	27.30	-0.20
11/25/07 8:00	1392	27.33	-0.17
11/25/07 8:10	1402	27.32	-0.18
11/25/07 8:20	1412	27.31	-0.19
11/25/07 8:30	1422	27.38	-0.11
11/25/07 8:40	1432	27.31	-0.19
11/25/07 8:50	1442	27.33	-0.17
11/25/07 9:00	1452	27.31	-0.19
11/25/07 9:10	1462	27.37	-0.13
11/25/07 9:20	1472	27.40	-0.10
11/25/07 9:30	1482	27.41	-0.09
11/25/07 9:40	1492	27.41	-0.09
11/25/07 9:50	1502	27.43	-0.07
11/25/07 10:00	1512	27.42	-0.08
11/25/07 10:10	1522	27.46	-0.04
11/25/07 10:20	1532	27.44	-0.06
11/25/07 10:30	1542	27.44	-0.06
11/25/07 10:40	1552	27.45	-0.05
11/25/07 10:50	1562	27.45	-0.05
11/25/07 11:00	1572	27.44	-0.06
11/25/07 11:10	1582	27.43	-0.07
11/25/07 11:20	1592	27.44	-0.06
11/25/07 11:30	1602	27.45	-0.05
11/25/07 11:40	1612	27.44	-0.05
11/25/07 11:50	1622	27.45	-0.05
11/25/07 12:00	1632	27.43	-0.07
11/25/07 12:10	1642	27.43	-0.07
11/25/07 12:20	1652	27.43	-0.07
11/25/07 12:30	1662	27.44	-0.06
11/25/07 12:40	1672	27.42	-0.08
11/25/07 12:50	1682	27.42	-0.07
11/25/07 13:00	1692	27.42	-0.07
11/25/07 13:10	1702	27.42	-0.08
11/25/07 13:20	1712	27.42	-0.07
11/25/07 13:30	1722	27.43	-0.07
11/25/07 13:40	1732	27.42	-0.07
11/25/07 13:50	1742	27.42	-0.08
11/25/07 14:00	1752	27.43	-0.07
11/25/07 14:10	1762	27.42	-0.08
11/25/07 14:20	1772	27.40	-0.09
11/25/07 14:30	1782	27.40	-0.10
11/25/07 14:40	1792	27.39	-0.11
11/25/07 14:50	1802	27.39	-0.11
11/25/07 15:00	1812	27.38	-0.12
11/25/07 15:10	1822	27.39	-0.11
11/25/07 15:20	1832	27.39	-0.11

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/25/07 15:30	1842	27.39	-0.11
11/25/07 15:40	1852	27.39	-0.11
11/25/07 15:50	1862	27.39	-0.11
11/25/07 16:00	1872	27.40	-0.10
11/25/07 16:10	1882	27.40	-0.10
11/25/07 16:20	1892	27.40	-0.10
11/25/07 16:30	1902	27.42	-0.08
11/25/07 16:40	1912	27.42	-0.08
11/25/07 16:50	1922	27.46	-0.04
11/25/07 17:00	1932	27.50	0.01
11/25/07 17:10	1942	27.53	0.03
11/25/07 17:20	1952	27.54	0.04
11/25/07 17:30	1962	27.55	0.05
11/25/07 17:40	1972	27.55	0.05
11/25/07 17:50	1982	27.59	0.09
11/25/07 18:00	1992	27.59	0.09
11/25/07 18:10	2002	27.50	0.00
11/25/07 18:20	2012	27.47	-0.02
11/25/07 18:30	2022	27.46	-0.04
11/25/07 18:40	2032	27.47	-0.03
11/25/07 18:50	2042	27.47	-0.03
11/25/07 19:00	2052	27.50	0.00
11/25/07 19:10	2062	27.50	0.00
11/25/07 19:20	2072	27.49	-0.01
11/25/07 19:30	2082	27.50	0.00
11/25/07 19:40	2092	27.49	-0.01
11/25/07 19:50	2102	27.48	-0.02
11/25/07 20:00	2112	27.50	0.00
11/25/07 20:10	2122	27.50	0.00
11/25/07 20:20	2132	27.49	-0.01
11/25/07 20:30	2142	27.49	-0.01
11/25/07 20:40	2152	27.50	0.01
11/25/07 20:50	2162	27.50	0.00
11/25/07 21:00	2172	27.49	-0.01
11/25/07 21:10	2182	27.49	-0.01
11/25/07 21:20	2192	27.50	0.00
11/25/07 21:30	2202	27.49	-0.01
11/25/07 21:40	2212	27.50	0.00
11/25/07 21:50	2222	27.49	-0.01
11/25/07 22:00	2232	27.48	-0.02
11/25/07 22:10	2242	27.45	-0.05
11/25/07 22:20	2252	27.41	-0.09
11/25/07 22:30	2262	27.39	-0.11
11/25/07 22:40	2272	27.44	-0.06
11/25/07 22:50	2282	27.45	-0.05
11/25/07 23:00	2292	27.44	-0.06
11/25/07 23:10	2302	27.43	-0.07
11/25/07 23:20	2312	27.44	-0.06

OBSERVATION WELL
SPI WELL 2

Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/25/07 23:30	2322	27.43	-0.07
11/25/07 23:40	2332	27.44	-0.06
11/25/07 23:50	2342	27.44	-0.05
11/26/07 0:00	2352	27.44	-0.05
11/26/07 0:10	2362	27.45	-0.05
11/26/07 0:20	2372	27.45	-0.05
11/26/07 0:30	2382	27.46	-0.04
11/26/07 0:40	2392	27.46	-0.04
11/26/07 0:50	2402	27.45	-0.04
11/26/07 1:00	2412	27.42	-0.08
11/26/07 1:10	2422	27.44	-0.06
11/26/07 1:20	2432	27.45	-0.05
11/26/07 1:30	2442	27.44	-0.06
11/26/07 1:40	2452	27.44	-0.06
11/26/07 1:50	2462	27.44	-0.06
11/26/07 2:00	2472	27.47	-0.03
11/26/07 2:10	2482	27.51	0.01
11/26/07 2:20	2492	27.49	-0.01
11/26/07 2:30	2502	27.46	-0.04
11/26/07 2:40	2512	27.47	-0.03
11/26/07 2:50	2522	27.46	-0.04
11/26/07 3:00	2532	27.47	-0.03
11/26/07 3:10	2542	27.47	-0.03
11/26/07 3:20	2552	27.47	-0.03
11/26/07 3:30	2562	27.47	-0.03
11/26/07 3:40	2572	27.45	-0.05
11/26/07 3:50	2582	27.43	-0.07
11/26/07 4:00	2592	27.45	-0.05
11/26/07 4:10	2602	27.42	-0.08
11/26/07 4:20	2612	27.39	-0.11
11/26/07 4:30	2622	27.37	-0.13
11/26/07 4:40	2632	27.34	-0.16
11/26/07 4:50	2642	27.35	-0.15
11/26/07 5:00	2652	27.37	-0.13
11/26/07 5:10	2662	27.38	-0.12
11/26/07 5:20	2672	27.37	-0.13
11/26/07 5:30	2682	27.39	-0.11
11/26/07 5:40	2692	27.41	-0.09
11/26/07 5:50	2702	27.42	-0.08
11/26/07 6:00	2712	27.43	-0.07
11/26/07 6:10	2722	27.42	-0.08
11/26/07 6:20	2732	27.42	-0.08
11/26/07 6:30	2742	27.41	-0.09
11/26/07 6:40	2752	27.41	-0.09
11/26/07 6:50	2762	27.43	-0.07
11/26/07 7:00	2772	27.44	-0.05
11/26/07 7:10	2782	27.44	-0.06
11/26/07 7:20	2792	27.44	-0.06

OBSERVATION WELL
SPI WELL 2

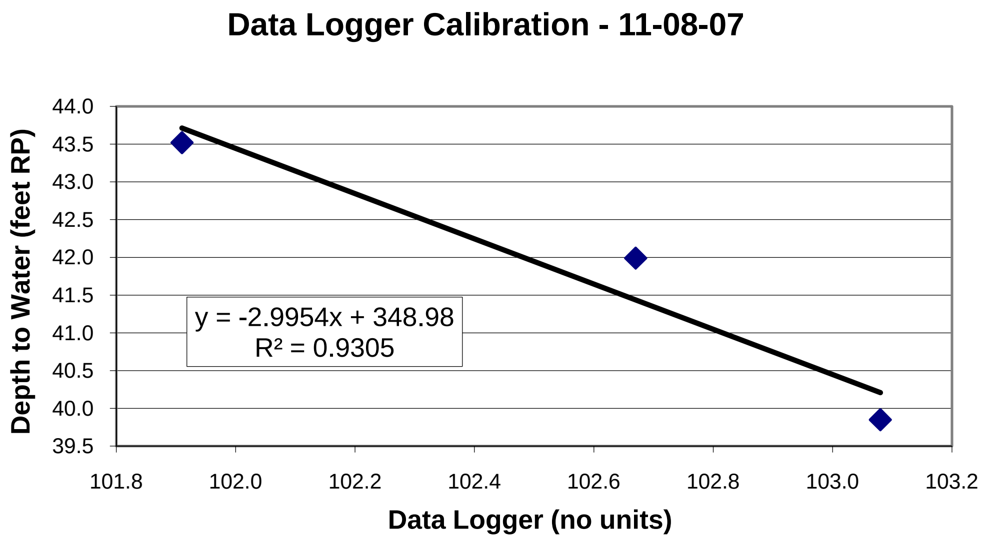
Day/Time	Elapsed Time	Calculated Depth to Water	Drawdown
	(minutes)	(feet RP)	(feet)
11/26/07 7:30	2802	27.44	-0.06
11/26/07 7:40	2812	27.44	-0.06
11/26/07 7:50	2822	27.43	-0.07
11/26/07 8:00	2832	27.43	-0.06
11/26/07 8:10	2842	27.45	-0.05
11/26/07 8:20	2852	27.45	-0.05
11/26/07 8:30	2862	27.45	-0.05
11/26/07 8:40	2872	27.46	-0.04
11/26/07 8:50	2882	27.44	-0.06
11/26/07 9:00	2892	27.47	-0.03
11/26/07 9:10	2902	27.47	-0.03
11/26/07 9:20	2912	27.49	-0.01
11/26/07 9:30	2922	27.50	0.00
11/26/07 9:40	2932	27.51	0.01
11/26/07 9:50	2942	27.51	0.02
11/26/07 10:00	2952	27.50	0.00
11/26/07 10:10	2962	27.47	-0.03
11/26/07 10:20	2972	27.44	-0.06
11/26/07 10:30	2982	27.44	-0.06
11/26/07 10:40	2992	27.44	-0.06
11/26/07 10:50	3002	27.45	-0.05
11/26/07 11:00	3012	27.46	-0.03
11/26/07 11:10	3022	27.49	0.00
11/26/07 11:20	3032	27.52	0.02
11/26/07 11:30	3042	27.56	0.06
11/26/07 11:40	3052	27.58	0.09
11/26/07 11:50	3062	27.60	0.10
11/26/07 12:00	3072	27.59	0.09
11/26/07 12:10	3082	27.59	0.10
11/26/07 12:20	3092	27.59	0.09
11/26/07 12:30	3102	27.59	0.09
11/26/07 12:40	3112	27.60	0.10
11/26/07 12:50	3122	27.60	0.10
11/26/07 13:00	3132	27.60	0.10

APPENDIX D

Aquifer-Testing Data, Pipe Shop Well (1)

Second Calibration, 11-08-07

Data Logger (no units)	Depth to Water (feet)
101.91	43.52
102.67	41.99
103.08	39.85



APPENDIX E

Aquifer-Test Analysis Methods and Interference Calculations

Appendix E

AQUIFER-TEST THEORY

Information determined from an aquifer test is used to predict drawdown in a pumping well and interference on adjacent wells caused by the pumping well. To make these predictions requires determination of two aquifer characteristics—transmissivity (T) and storage coefficient (S). Transmissivity indicates the capacity of an aquifer as a whole to transmit water (it is defined as the rate of flow of water through a vertical strip of the aquifer 1 foot wide and extending the full saturated thickness under a hydraulic gradient of 1 foot per foot). Transmissivity can be calculated by multiplying the permeability of an aquifer (k) by the saturated thickness (b).

Storage coefficient (dimensionless) is defined as the volume of water the aquifer releases or takes into storage per unit surface area of the aquifer per unit change in the component of head normal to that surface. During pumping, water is released from storage in different ways, depending upon the type of aquifer. In a confined or artesian aquifer (in which the aquifer is overlain by a low-permeability bed which does not readily transmit water), water is derived from storage as the pressure decreases in the aquifer; the pore spaces remain fully saturated (analogous to water discharging from a full pipe). In a water-table aquifer (in which the aquifer is not overlain by low-permeability beds), water is derived from storage as the water level drops and the pore spaces drain by gravity. The deep aquifer underlying the project site is confined.

THEIS NONEQUILIBRIUM EQUATION

For confined aquifers, values of transmissivity and storage are determined from the basic Theis nonequilibrium equation (or a simplification of Theis, the Cooper-Jacob method). This equation takes into account the effect of duration of pumping on well yield. Using this equation, transmissivity and storage coefficient can be determined in wells, and long-term predictions of drawdown can be made from short-term tests. In its simplest form, the Theis equation is as follows:

$$s = (114.6 \times Q \times W[u]) \div T$$

where:

s = drawdown at any point in the vicinity of a well discharging at a constant rate, in feet

Q = pumping rate, in gpm

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

W[u] = “well function of u”; W[u] is shorthand for the exponential function $(-0.5772)-(\ln(u))+(u)-(u^2/2\times2!)+(u^3/3\times3!)-(u4/4\times4!)\ldots$

where:

$$u = (1.87 \times r^2 \times S) \div T \times t$$

Appendix E

where:

r	=	distance from center of pumped well to point where drawdown is measured (if drawdown is measured in the pumping well, r equals the casing radius, or if no head losses are felt to occur in the gravel pack, r equals the radius of the well bore), in feet
S	=	coefficient of storage, dimensionless
T	=	coefficient of transmissivity, in gpd/ft of aquifer thickness
t	=	time since pumping began, in days

Derivation of the nonequilibrium equation and its applicability to "real" situations is based on the following assumptions:

1. The water-bearing formation is uniform in character and permeability in both horizontal and vertical directions.
2. The formation has uniform thickness.
3. The formation has infinite areal extent.
4. The formation receives no recharge from any source (all water comes from storage).
5. The pumped well penetrates and receives water from the full thickness of the water-bearing formation.
6. The water removed from storage is discharged instantaneously with lowering of the pressure head.

Most of the above criteria cannot strictly be met—especially the criteria for equal permeabilities in the horizontal and vertical directions. Nonetheless, duplication of observed data using derived coefficients is relatively good in most aquifer tests.

TRANSMISSIVITY AND STORAGE COEFFICIENT

Values of transmissivity (in pumping or observation wells) and storage coefficient (in observation wells only) are solved using one method by plotting drawdown measurements on semi-logarithmic paper. Solutions are graphical. Transmissivity is determined by the "modified" Theis equation or the Cooper-Jacob method which is a simplification of the modified Theis method. It has been found that when the value of "u" is sufficiently small (less than 0.05), the nonequilibrium formula can be modified to the following form without significant error:

$$T = (35 \times Q) \div \Delta s$$

where:

T	=	Coefficient of transmissivity, in ft^2/day of aquifer thickness
Q	=	Pumping rate, in gpm
Δs	=	Drawdown (or recovery), in feet per log cycle

Appendix E

Storage coefficient is determined using the following formula:

$$S = (T \times t_o) \div (640 \times r^2)$$

where:

S	=	coefficient of storage, dimensionless
T	=	coefficient of transmissivity, in ft^2/day of aquifer thickness
t_o	=	time at 0 feet of drawdown, in days
r	=	distance to center of pumping well, in feet

Another method for determining transmissivity, storage coefficient, and/or the coefficient of vertical permeability (P′) for confining layers is by plotting drawdown versus time on a log-log plot and conducting a nonequilibrium type-curve analysis. For a type-curve analysis, the log-log plot of observed data are overlain on a set of “leaky” type curves. Once the best fit is determined, the “match point” is noted; the coordinates of the match point are then used to determine T, S, and/or P′.

Flow Rate	430 gpm
Duration	180 days
Hydraulic conductivity	140 feet/day
Aquifer thickness	154 feet
Storage coefficient	4.40E-02

Q/4piT	**Time days**	**Distance r(x) ft**	**u(r)**	**W(u)**	**s(r) [Drawdown]**
0.30554213	180	0.5	0.0000	20.4905	6.26
0.30554213	180	100	0.0000	9.8939	3.02
0.30554213	180	250	0.0002	8.0615	2.46
0.30554213	180	500	0.0007	6.6757	2.04
0.30554213	180	1000	0.0028	5.2915	1.62
0.30554213	180	1500	0.0064	4.4841	1.37
0.30554213	180	2000	0.0113	3.9137	1.20
0.30554213	180	2640	0.0198	3.3668	1.03
0.30554213	180	3000	0.0255	3.1168	0.95
0.30554213	180	4000	0.0454	2.5609	0.78
0.30554213	180	5280	0.0790	2.0383	0.62
0.30554213	180	6000	0.1020	1.8047	0.55
0.30554213	180	7000	0.1389	1.5311	0.47
0.30554213	180	8000	0.1814	1.3033	0.40
0.30554213	180	9000	0.2296	1.1113	0.34
0.30554213	180	10000	0.2834	0.9481	0.29
0.30554213	180	11000	0.3430	0.8086	0.25
0.30554213	180	12000	0.4082	0.6889	0.21
0.30554213	180	13000	0.4790	0.5860	0.18
0.30554213	180	14000	0.5556	0.4976	0.15
0.30554213	180	15000	0.6378	0.4215	0.13
0.30554213	180	16000	0.7256	0.3561	0.11
0.30554213	180	17000	0.8192	0.3001	0.09
0.30554213	180	18000	0.9184	0.2520	0.08
0.30554213	180	19000	1.0232	0.2110	0.06
0.30554213	180	20000	1.1338	0.1761	0.05

Flow Rate	450 gpm				
Duration	30 days				
Hydraulic conductivity	140 feet/day				
Aquifer thickness	154 feet				
Storage coefficient	4.40E-02				

Q/4piT	Time days	Distance r(x) ft	u(r)	W(u)	s(r) [Drawdown]
0.31975339	30	0.5	0.0000	18.6987	5.98
0.31975339	30	100	0.0002	8.1023	2.59
0.31975339	30	250	0.0011	6.2706	2.01
0.31975339	30	500	0.0043	4.8875	1.56
0.31975339	30	1000	0.0170	3.5139	1.12
0.31975339	30	1500	0.0383	2.7239	0.87
0.31975339	30	2000	0.0680	2.1775	0.70
0.31975339	30	2640	0.1185	1.6705	0.53
0.31975339	30	3000	0.1531	1.4471	0.46
0.31975339	30	4000	0.2721	0.9790	0.31
0.31975339	30	5280	0.4741	0.5924	0.19
0.31975339	30	6000	0.6122	0.4434	0.14
0.31975339	30	7000	0.8333	0.2926	0.09
0.31975339	30	8000	1.0884	0.1895	0.06
0.31975339	30	9000	1.3776	0.1203	0.04
0.31975339	30	10000	1.7007	0.0746	0.02
0.31975339	30	11000	2.0578	0.0452	0.01
0.31975339	30	12000	2.4490	0.0267	0.01
0.31975339	30	13000	2.8741	0.0153	0.00
0.31975339	30	14000	3.3333	0.0086	0.00
0.31975339	30	15000	3.8265	0.0047	0.00
0.31975339	30	16000	4.3537	0.0025	0.00
0.31975339	30	17000	4.9150	0.0013	0.00
0.31975339	30	18000	5.5102	0.0006	0.00
0.31975339	30	19000	6.1395	0.0003	0.00
0.31975339	30	20000	6.8027	0.0000	0.00