TECHNICAL MEMORANDUM

DOCKET
08-AFC-12
DATE Feb 19 2009
RECD. MAR 20 2009

TO: **Jason Moore, PG, CEG**

FROM: **Mike DeSmet and Eddy Teasdale, PG**

DATE: **February 19, 2009**

SUBJECT: **San Joaquin Solar 1&2 – Aquifer Test Analysis**

INTRODUCTION

This technical memorandum summarizes aquifer testing and analysis conducted by URS Corporation (URS) using existing agricultural irrigation wells located at a site approximately 5 miles west of Interstate 5 near Coalinga, California at the proposed San Joaquin Solar 1&2 Hybrid Power Plant. The aquifer test was conducted to address data adequacy requests dated December 23, 2008 related to the Application for Certification (AFC) for the proposed facility. The objective of the test was to evaluate the aquifer characteristics in order to estimate well yield and the affects long-term pumping may have on other wells in the vicinity of the proposed site

URS understands that during average daily operation of the proposed project, recycled water from a nearby wastewater treatment facility will supply up to 650 to 700 gallons per minute (gpm) (approximately 1,000,000 gallons per day) of process water, and the well located on the proposed project site would be required to supply 630 to 680 gpm of process water under average conditions. To meet the estimated maximum daily usage rates additional groundwater usage may be required on a temporary basis.

TEST WELL

The test well used for pumping is referenced as the Anderson Well and is located on the site as shown on Figure 1. According to the State of California Well Completion Report, the test well was drilled in 2006 and is constructed of 16-inch (in.) diameter steel casing to a total depth of 980 feet (ft) below ground surface (bgs) (Figure 2). Blank well casing, with a wall thickness of 0.312 in., was installed from ground surface to 370 ft bgs. The well screen is 16-in. diameter with a slot size of 0.070 in. and a wall thickness of 0.312 in. Well screen was installed at depths ranging from 378 ft bgs to 858 ft bgs and 939 ft bgs to 980 ft bgs; separated by blank well casing as described above.

The pump currently installed in the well was used for the test. No pump setting depth was available, but the pump is rated for 350 horsepower (hp) at 1,700 revolutions per minute (rpm). Well construction details were not available for either of the observation wells used during the test, but static water levels were similar which indicates that the wells are completed within the same aquifer.

OBSERVATION WELLS

Two observation wells located in proximity of the site were monitored during pumping of the test well (Figure 1). Observation Well #1 (Coalinga State Hospital well) is located to the west of the site

approximately 230 feet from the test well. It is our understanding that the hospital no longer uses the well as it obtains potable water through the municipal water district. Observation Well #2 (Anderson Agricultural well) is located approximately 1 mile southeast of the test well.

PRE-TEST WATER-LEVEL MONITORING

As requested by the CEC, URS conducted baseline water-level monitoring prior to starting the aquifer test. Water-levels were monitored on February 5, 2009 to provide an evaluation of the variability of water levels that could affect water levels during the aquifer test. The static water level measured in the test well was 321 ft bgs. The static water levels in Observation Wells 1 & 2 were 321 ft bgs and 327 ft bgs, respectively. Water levels in the three wells were measured using a electronic water level indicator. Water levels were also measured in the test well using an airline pressurized with nitrogen.

Based on the results of monitoring, the variability in water-level elevations appears to be minor and are not considered to be a factor in evaluation of the pump test data.

AQUIFER TEST PROCEDURE

A constant-rate aquifer test was conducted to evaluate the aquifer characteristics. The test involves pumping a well at a known rate and monitoring water levels in observation wells and the test well. Measurements from observation wells during pumping and recovery provide the most reliable information with respect to the aquifer parameters of Transmissivity (T) and storativity (S). The estimation of these parameters can be used to estimate changes in water levels (head) as a result of pumping for a period of time (t).

The Anderson Well and Coalinga State Hospital well currently contains pumps, piping and motors at the ground surface, which made measuring the depth to water challenging. A combination of manual water-level measurements, data logging pressure transducers and pressure gauge measurements were used to monitor water levels in the test well and observation wells before and during the test. Groundwater levels in the test well were manually measured throughout the aquifer test using an airline pressurized with nitrogen. Following the start of the aquifer test, leaks were noted in the airline, therefore, the pressure readings are not considered to be accurate and reliable. Manual water-level measurements were collected in the observation wells using a 500-foot electronic water level indicator for the first 21 hours into the test, when mechanical difficulties made it inoperable. Pressure transducers having a pressure rating of 30 pounds per square inch (psi) were installed in each of the observation wells. The timers in each transducer/data logger unit were synchronized with a portable computer timer for uniform timing. Throughout the test, both data loggers were programmed to a linear data collection scale using a 1-minute interval between readings.

Flow rate and totalizer readings from the flow meter installed in the discharge pipe of the test well were recorded concurrently with each manual water level measurement collected at the well. Groundwater discharged during the test was used to irrigate fields adjacent to the pumping well.

AQUIFER TEST RESULTS

The constant rate aquifer test began at 10:19 a.m. on February 10, 2009. The test well was pumped at a constant rate of approximately 900 gpm for 72 hours. Static water level in the test well was measured at 94 psi (corresponding to a water depth of approximately 322.86 ft bgs) prior to starting the pump.

Static water levels were measured in the observation wells immediately prior to the start of the test. The static water level in the Coalinga State Hospital well (Observation Well #1) was measured at 321.31 ft bgs. The static water level in the Anderson Agricultural well (Observation Well #2) was measured at 327.03 ft bgs. These static water levels were consistent with background static water levels measured in the wells the preceding week.

The constant-rate aquifer test was concluded at 10:15 a.m. on February 13, 2009, at which time manual water-level measurement began during the recovery phase. The measurements were collected for approximately 2.5 hours, when the water level in the test well recovered to approximately 95 percent of its original pre-test water level. The water-level measurements were collected over the same time intervals as those collected during the pumping phase. Water-level recovery in the observation wells was monitored using pressure transducers until groundwater levels in each well recovered to greater than 95 percent of pre-test static water levels. Field datasheets are provided as Appendix A. Pumping water level plots for the test well and Observation Wells 1 & 2 are provided as Appendix B.

Maximum drawdown in the test well was approximately 55.44 ft after 4,316 minutes, although most drawdown from pumping occurred within a few hundred minutes of the start of the test. There was approximately 6 feet of drawdown in Observation Well #1 located 230 ft west of the pumping well soon after the test began and there was 9.57 ft of drawdown in Observation Well #1 when pumping stopped. No discernable drawdown attributable to pumping of the test well was observed in Observation Well #2 located a mile southeast of the pumping well.

AQUIFER TEST ANALYSIS METHODS

The drawdown and recovery data collected during the aquifer test from Observation Well #1 were analyzed using AQTESOLV (Duffield, 2007), a software package that is used to match type-curves from various analytical solutions to estimate aquifer Transmissivity (T), hydraulic conductivity (k), and storativity (S). The method used for analyzing the data sets presented herein consisted of Theis (1935) and Theis Recovery (1935) for transient flow. Note that the calculations do not provide unique solutions and parameter results are likely to be within a range of values.

AQUIFER TEST ANALYSIS RESULTS

Based on the curve matching, a transmissivity of 13,840 square feet per day (ft^2/day) (Figure 3) was estimated for the Anderson Well #1. A transmissivity of 11,280 ft^2/day is estimated for Observation Well #1 (Figure 4).

In addition, a Theis Recovery plot was prepared showing water-level recovery data for Observation Well #1 (Figure 5) located 230 feet west of the test well. Using the recovery data, a transmissivity of 10,770

ft^2/day was estimated. The Theis recovery plot is generally considered more representatives of aquifer characteristics; therefore, 10,770 ft^2/day is considered a reasonable estimate of the transmissivity for this aquifer.

The storativity (S) of the aquifer based on the Observation Well recovery data is estimated to be 0.001 which is reasonable for a typical confined aquifer system in the Central Valley (Poland, 1961).

ESTIMATED DRAWDOWN DUE TO PUMPING

Estimated groundwater production from the Anderson Well to support the project will be approximately 391 to 422 acre feet per year (afy) based on a continuous pumping rate of 630 to 680 gpm. A spreadsheet was developed using the Theis (1935) equation to estimate the impact the Anderson Well would have on water-levels (heads) in the site vicinity. To estimate the potential effect of pumping, two scenarios were considered: pumping the test well at 680 and at 1,750 gpm, respectively. The lower pumping rate is the groundwater supply needs assuming a supply of reclaimed water. The higher rate is a worst-case scenario in the case that no reclaimed water is available for an extended period to support the project. The resulting drawdown associated with these pumping rates was estimated following 1, 10 and 20 years. Twenty years is the considered life of the project.

The potential effects of pumping from the test well on the site vicinity can be estimated using the Theis solution to the equation for transient groundwater flow using the following results from the aquifer test for Observation Well #1:

- The initial transmissivity (T) is considered to be 10,770 ft^2/day. Based on the distance from static water level (321 feet bgs) to the bottom of the test well screen interval (980 feet bgs) the estimated effective aquifer thickness (b) is considered to be 530 ft. The hydraulic conductivity (K) value is estimated to be 20.3 ft/day based on the relationship T=Kb.

- Transmissivity of the aquifer is reduced due to previous aquifer dewatering.

- The Andersen Well is screened in the middle aquifer unit in this area. The estimated storativity for this aquifer is approximately 0.001.

This estimate of the 1, 10 and 20 year water-level drawdown takes into account variations in aquifer transmissivity due to dewatering from the pumping well. The drawdown for each time interval is calculated and subsequently, the saturated thickness is recalculated and a new transmissivity value is determined for the next time interval.

The calculated drawdown for 1, 10 and 20 year periods pumping at 680 gpm is presented on Figure 6. The calculated drawdown for 1, 10 and 20 year periods pumping at 1,750 gpm is presented on Figure 7.

SUMMARY AND CONCLUSIONS

The analyses presented herein indicate that groundwater production of approximately 680 gpm continuous flow (about 422 acre-feet/year) from the Andersen Well would be expected to produce less

than 10 ft of decrease in head in the aquifer within about 2,000 ft of the Andersen Well and will not significantly impact any existing nearby wells. It is estimated that the radial extent of the 10-foot drawdown impact is approximately 600 ft after 1 year, 1,500 ft after 10 years and 2,000 ft after 20 years. Based on the Theis analysis and the approximate locations of the two neighboring wells as located by URS, no wells receiving groundwater from the regional aquifer will be impacted by more than 20 ft of drawdown after 20 years of continuous pumping from the proposed Anderson Well at 680 gpm. Pumping the Andersen Well at higher rates if recycled water was not available would produce greater drawdown in nearby wells.

REFERENCES

Duffield, Glenn M., 2007 AQTESOLV for Windows. Version 4.02. HydroSOLVE, Inc., Distributed by Geraghty & Miller Modeling Group, Reston, VA.

Poland, J.F., 1961. The coefficient of storage in a region of major subsidence caused by compaction of an aquifer system. U.S Geological Survey Professional Paper 424-B, p B52-B54.

Theis, C.V., 1935. The relation between the lowering of piezometric surface and the rate and duration of discharge of a well using ground-water storage. Trans. Am. Geophys. Union, v. 16, p. 519-524.

ATTACHMENTS:

Figure 1 – Site Map (including approximate well locations)
Figure 2 – Well Completion Report – Anderson Well
Figure 3 – Anderson Pumping Well (Drawdown)
Figure 4 – Observation Well #1 - Coalinga State Hospital Well (Drawdown)
Figure 5 – Observation Well #1 - Coalinga State Hospital Well (Recovery)
Figure 6 – Well Impact Analysis (680 gpm)
Figure 7 – Well Impact Analysis (1750 gpm)

Appendix A – Aquifer Testing Field Data Sheets (Constant- Rate Test)
Appendix B – Pumping Test Water Level Graphs

FIGURES

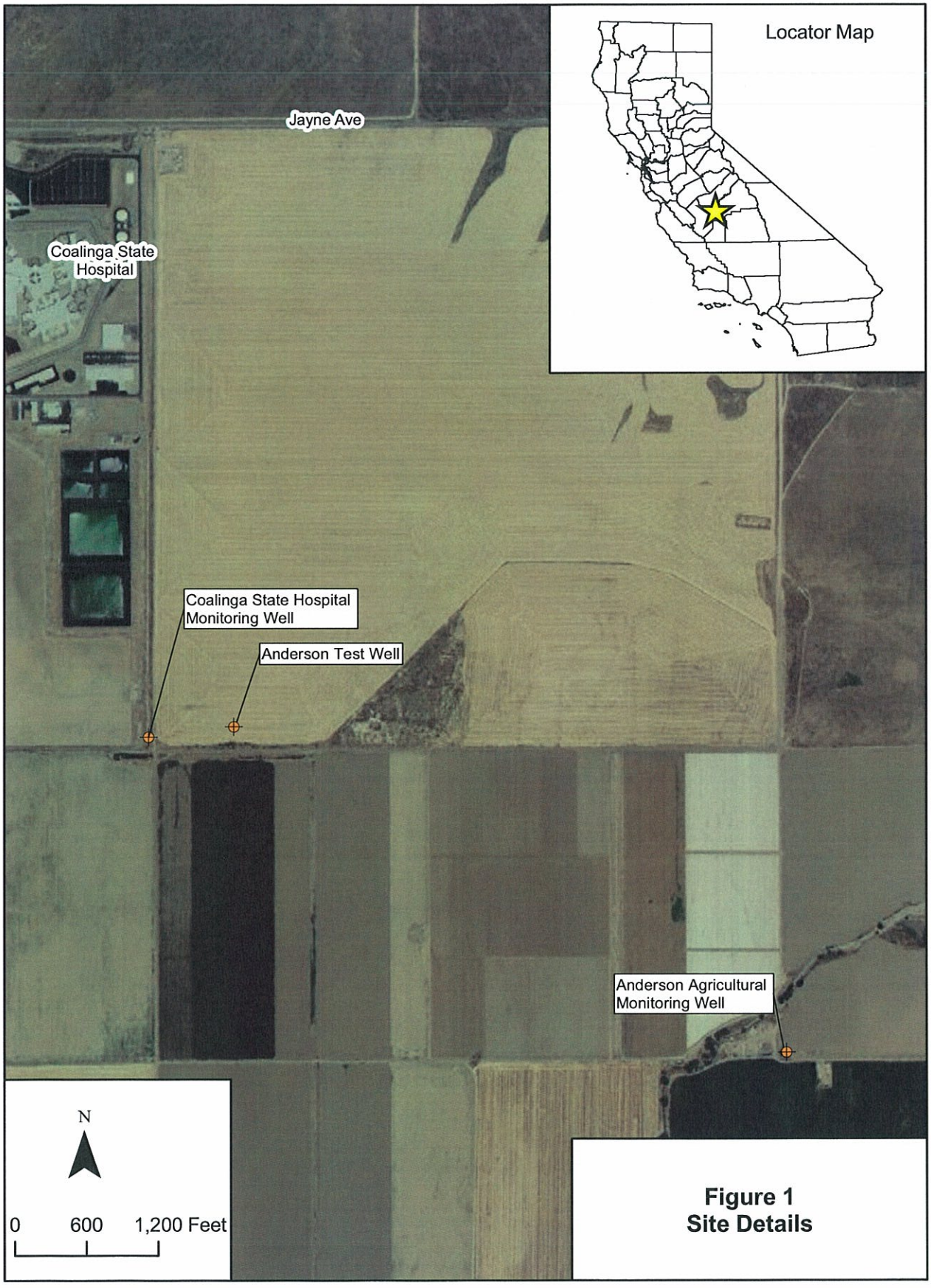


Figure 1
Site Details

ORIGINAL
File with DWR

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. EO-38695

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./ STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. MOURAN #1
Date Work Began 6/26/06, Ended 7/14/06
Local Permit Agency FRESNO COUNTY
Permit No. WP-0026516 Permit Date 3/27/06

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL — HORIZONTAL — ANGLE — (SPECIFY)
DRILLING METHOD REVERSE FLUID WATER

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain, size, color, etc.*
0	8	BROWN TOP SOIL
8	217	BROWN CLAY - TRACE SAND
217	345	BROWN CLAY & 1/8" GRAVEL
345	386	BROWN CLAY
386	784	BROWN CLAY & GRAVEL
784	805	BROWN CLAY
805	928	BROWN CLAY & GRAVEL
928	1000	BROWN GRITTY CLAY

TOTAL DEPTH OF BORING 1000 (Feet)
TOTAL DEPTH OF COMPLETED WELL 980 (Feet)

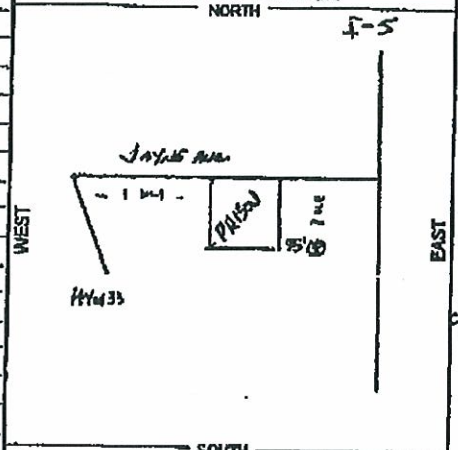
WELL OWNER

Name W T MOURAN
Mailing Address P.O. BOX 835
COALINGA CA 93210
CITY STATE ZIP

WELL LOCATION

Address JAYNE AVE BY PRISON
City COALINGA CA 93210
County FRESNO
APN Book 085 Page 030 Parcel 57
Township 21 S Range 16 E Section 3
Latitude DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

✓ NEW WELL
MODIFICATION/REPAIR
— Deepen
— Other (Specify)
— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
— Domestic — Public
✓ Irrigation — Industrial
MONITORING —
TEST WELL —
CATHODIC PROTECTION —
HEAT EXCHANGE —
DIRECT PUSH —
INJECTION —
VAPOR EXTRACTION —
SPARGING —
REMEDIATION —
OTHER (SPECIFY) —

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ? (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED
ESTIMATED YIELD (GPM) & TEST TYPE
TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)
May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	40	42			✓		STEEL	30	.250	
0	370	28	✓				STEEL	16	.312	
370	858	28		✓			STEEL	16	.312	.070 X 32
858	939	28	✓				STEEL	16	.312	
939	980	28		✓			STEEL	16	.312	.070 X 32

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	40	✓			
40	1000				

ATTACHMENTS (✓)

— Geologic Log
— Well Construction Diagram
— Geophysical Log(s)
— Soil/Water Chemical Analysis
— 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 Farm Pump and Irrigation
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
P.O. Box 1477 Shafter CA 93263
ADDRESS CITY STATE ZIP
Signed
WELL DRILLER/AUTHORIZED REPRESENTATIVE
07/13/06 602148 C-57
DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM.

4403 24

Figure 2
Anderson Well Completion Report

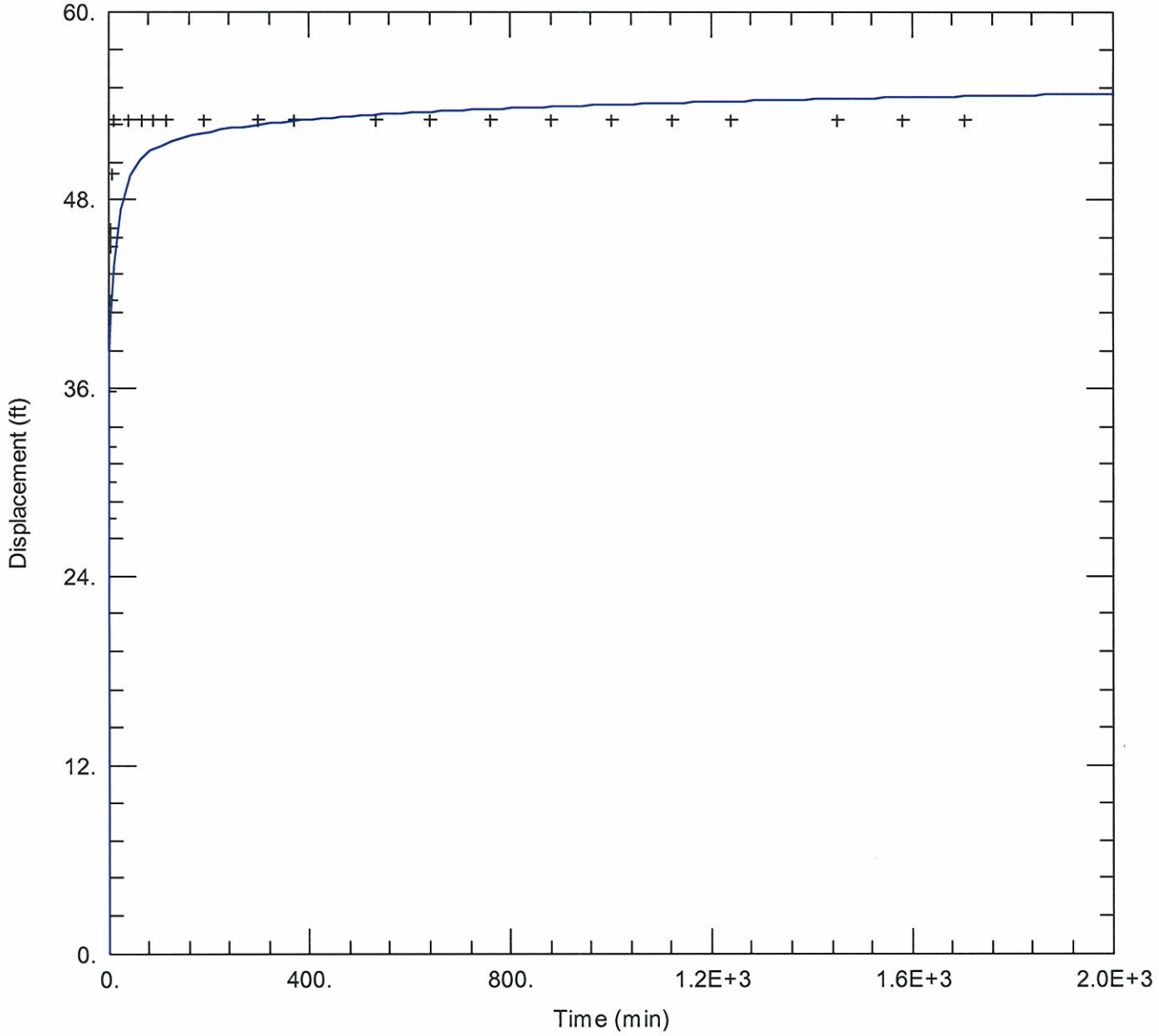


Figure 3. Anderson Pumping Well (Drawdown)

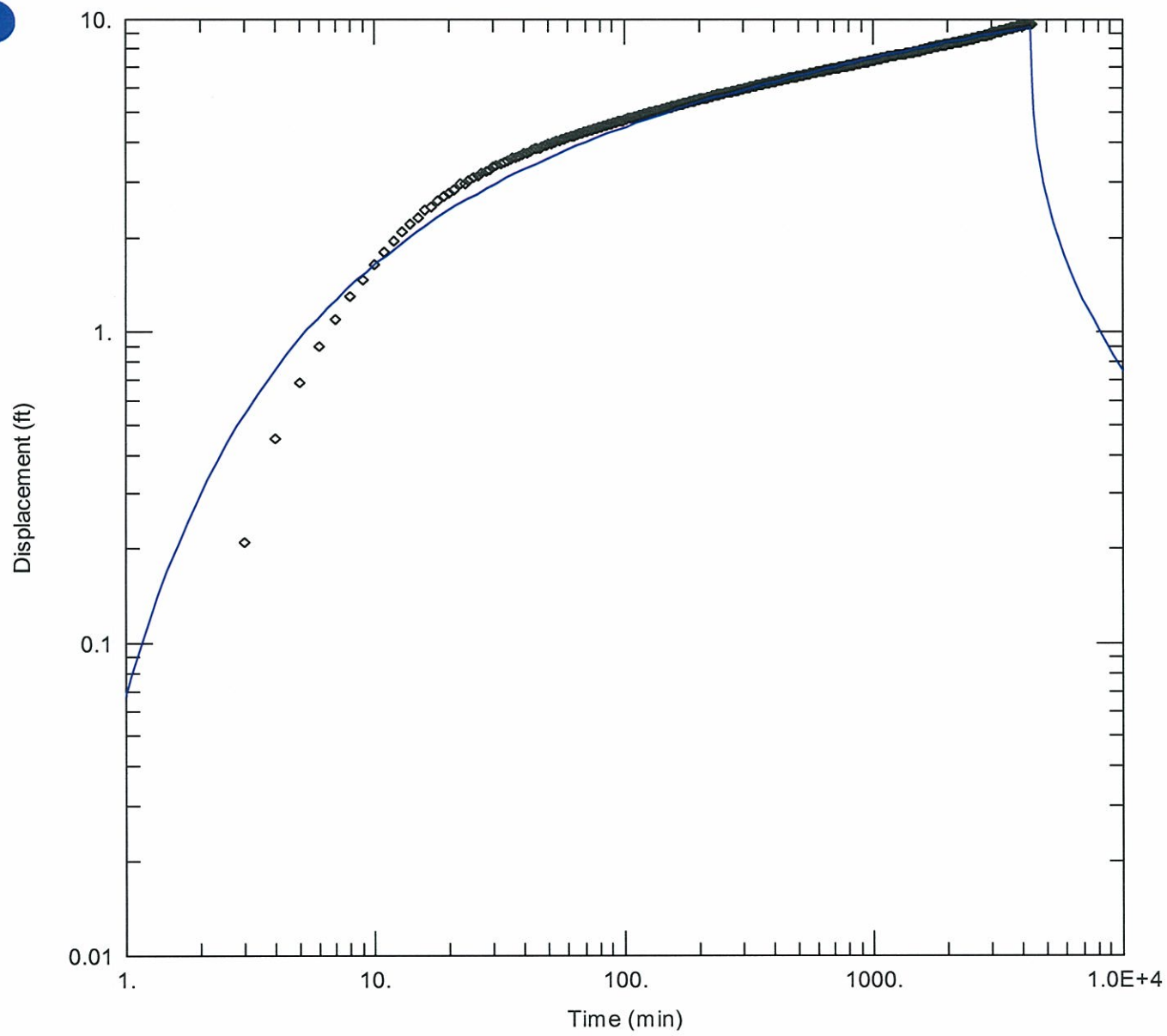


Figure 4. Observation Well #1, Coalinga State Hospital (Drawdown)

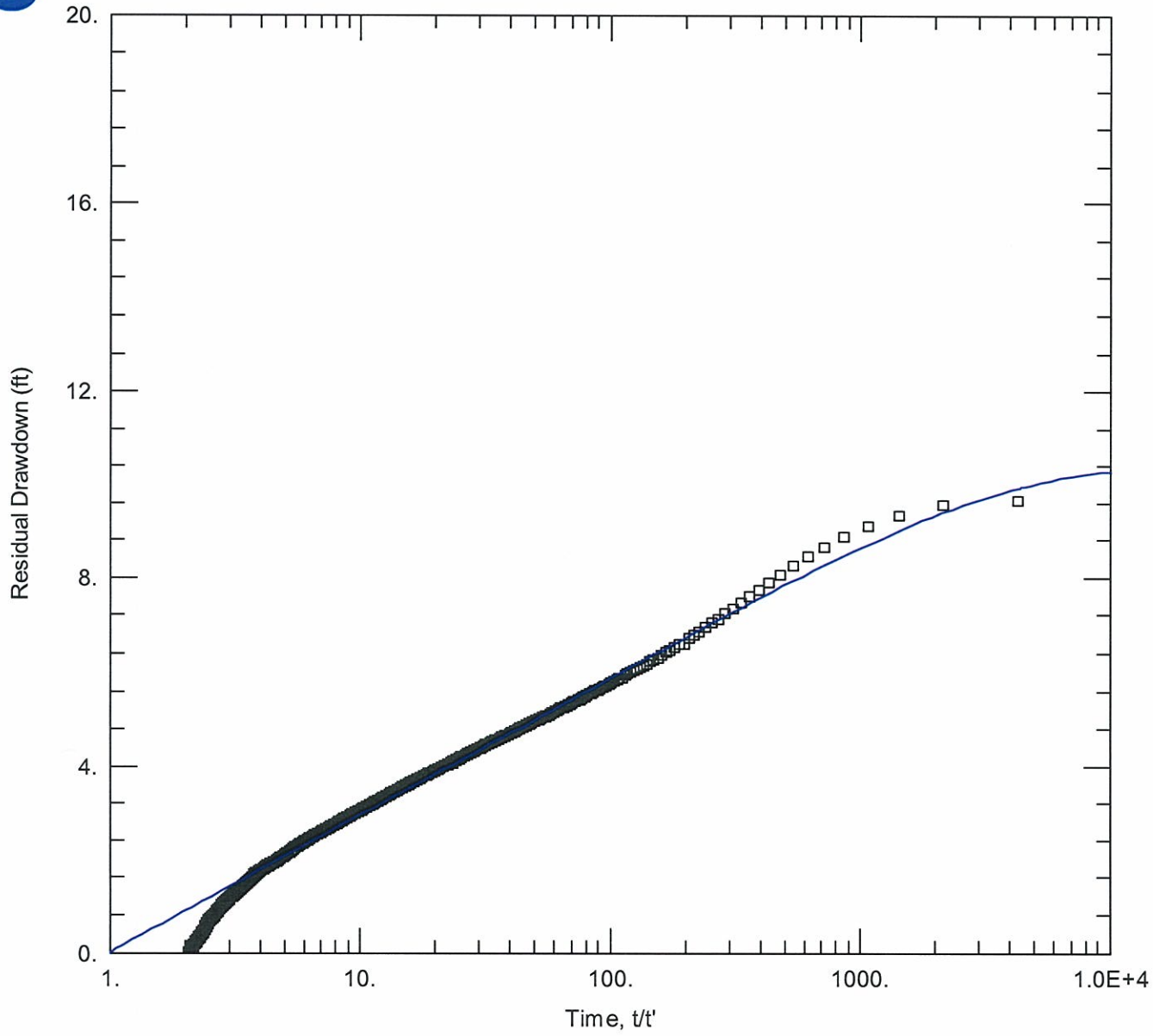


Figure 5. Observation Well #1, Coalinga State Hospital (Recovery)

Estimated Drawdown at Varying Distances

Based On Theis Equation. Q = 680 gpm
Pumping Period = 1, 10 and 20 years.

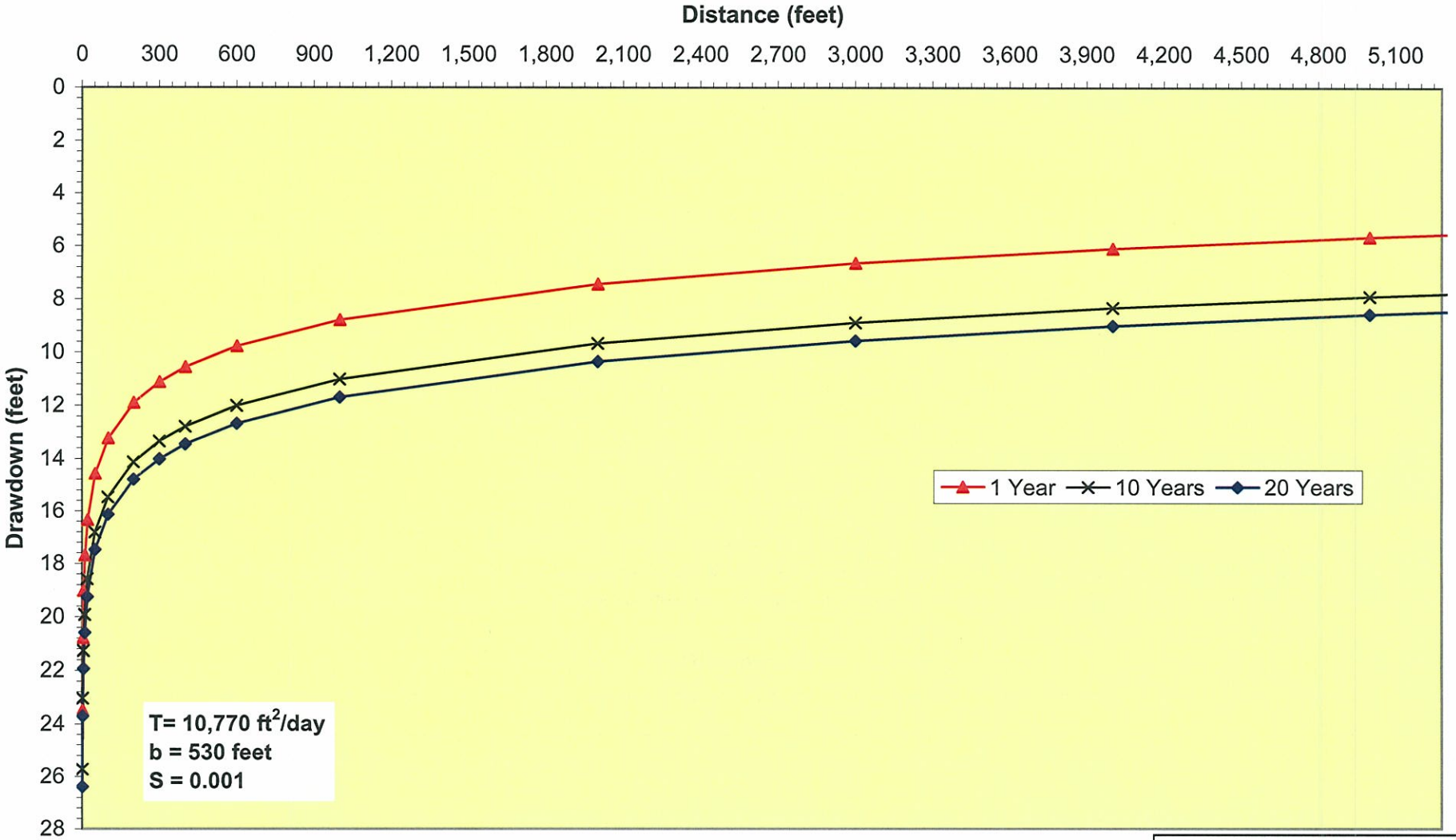


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Figure 6
Estimated Drawdown
Anderson Well

Estimated Drawdown at Varying Distances

Based On Theis Equation. Q = 1750 gpm
Pumping Period = 1, 10 and 20 years.

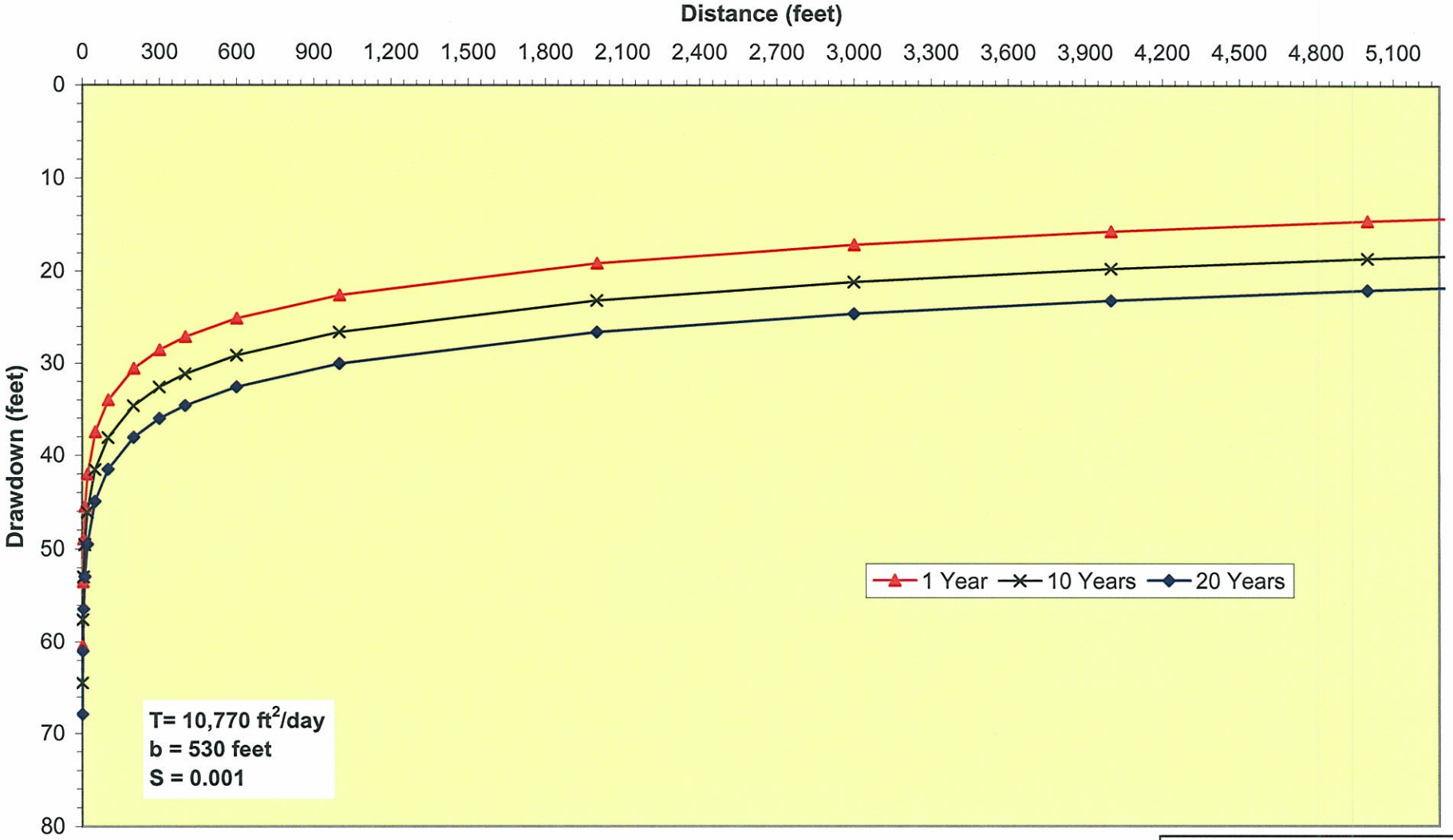

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Figure 7
Estimated Drawdown
Anderson Well

APPENDIX A

(Anderson Test Well)

CONSTANT RATE AQUIFER FIELD TEST DATA FORM

Project: Anderson Ac Well Pump Test	Initial Airline Pressure (psi): 92.5	Calculated Static Water Level: 322.86
Project No.:	Total Length of Airline (feet): 540	
Well Location: Coalinga, CA	Well No.: Test Well	Measuring Point: Air line
Well Diameter: 16"	Measured By: MJD / RN	Elevation Measuring Point:
Pump Setting: Unknown	Pump On: Date 10 Feb 09 Time: 1019	Available Drawdown:
Screen Interval(s):	Pump Off: Date 13 Feb 09 Time: 1015	Initial Totalizer Reading: 291863 AcFT x.001
How discharge was measured: Flowmeter	Duration of Aquifer Test: 72 Hours	Final Totalizer Reading: 302752 AcFT x.001

Time of Measure-ment	Time Since Pumping Started (t) (minutes)	Recovery Time (t') (minutes)	t/t'	Air line Pressure Reading (psi)	Total Length of Air line (feet)	Correction (feet)	(-540) Calculated Water Level (feet) 322.86	Drawdown (feet)	Discharge (gpm)	Specific Capacity (gpm/ft)	AC·FT X.001 Totalizer Reading (~~gallons~~)	Remarks
1019:45	0			92.5	540	217.14	~~316.5~~	0			291863	SWL
1020:45	1			92		189.42	350.58	27.72				Bad PSI's
1021:	2			91		187.11	352.89	30.03				need to
1021:15	2.25			90.5		185.95	354.045	31.185				pressurize
1021:30	2.5			90		184.8	355.2	32.34				line each
1022	3			89.5		181.335	358.665	35.805				time.
1022:30	3.5			88		175.56	364.44	41.58				@ 1040
1023	4			87.5		172.095	367.905	45.045	1100			
1024	5			87.25		171.518	368.4825	45.6225				
1025	6			87		170.94	369.00	46.2	900			
1026	7			86.5		167.475	372.525	49.665				
1027	8			86.5		162855	377.145	54.285				
1028	9			90		161.7	378.3	55.44				
1029	10			~~71~~		164.01	375.99	53.13	900		291883	
1030	11			~~71~~		164.01	375.99	53.13				
1040				54					900		291910	Leaking air line

(Anderson Test Well)

CONSTANT RATE AQUIFER TEST FIELD DATA FORM

Project No. AND AG WELL

Date 10 FEB 09

ACRE FEET x 0.0017

Time of Measure-ment	Time Since Pumping Started (t) (minutes)	Recovery Time (t') (minutes)	t/t'	Airline Pressure Reading (psi)	Total Length of Airline (feet)	Correction (feet)	Calculated Water Level (feet)	Drawdown (feet)	Discharge (gpm)	Specific Capacity (gpm/ft)	Totalizer Reading ~~(gallons)~~	Remarks
1051				49					~~850~~			
1059	40			71		164.01	375.99	53.13				
~~1125~~	66			71		164.01	375.99	53.13	900	16.94		
1150	91			71		164.01	375.99	53.13	875	16.47	292075	
1215	116			71		164.01	375.99	53.13	875	16.47	292138	
1330	191			71		164.01	375.99	53.13	900	16.94		
1516	297			71		164.01	375.99	53.13	900	16.94	292613	
1630	371			71		164.01	375.99	53.13	900	16.94	292802	
1910	531			70		161.7	378.3	55.44	850	16.00	293213	
2100	641			70		161.7	378.3	55.44	~~875~~	16.47	293.485	
2300	761			70		161.7	378.3	55.44	900	16.94	293.787	
FEB 11 2009 0100	881			70		161.7	378.3	55.44	900	16.94	294.093	
0302	1003			69		159.39	380.61	57.75	875	16.47	294.397	
0502	1123			69		159.39	380.61	57.75	900	16.94	294.698	
0700	1241			68		157.08	382.92	60.06	900	16.94	294.996	
1031	1452			71		164.01	375.99	53.13	900	16.94	295534	
1240	1581			71		164.01	375.99	53.13	900	16.94	295867	
1445	1706			71		164.01	375.99	53.13	900	16.94	296191	
1834	1935			70.5		162.855	377.145	54.285	900	~~16.9458~~	296778	
2100	2081			70		161.7	378.3	55.44	900	~~16.9444~~	297.146	SC = 16.23
FEB 12 2009 0100	2321			70.5		162.855	377.145	~~54.285~~ 55.44	900	~~16.9458~~	297.754	SC = 16.58
0502	2563			70		161.7	378.3	55.44	900	~~16.94~~	298.362	16.23
1028	2889			70		161.7	378.3	55.44	900	~~16.94~~	299193	16.23

2805 - 9.402

1365 - 8.335

8.

0.044 ft./hr.

CONSTANT RATE AQUIFER TEST FIELD DATA FORM

Project No. AND AG WELL
Date 12 FEB 09

Time of Measurement	Time Since Pumping Started (t) (minutes)	Recovery Time (t') (minutes)	t/t'	Airline Pressure Reading (psi)	Total Length of Airline (feet)	Correction (feet)	Calculated Water Level (feet)	Drawdown (feet)	Discharge (gpm)	Specific Capacity (gpm/ft)	AC FT Totalizer Reading (gallons)	Remarks
1200	2981			70.5	~~162.855~~	162.855	377.145	54.285	850	15.66	299431	
1400	3101			70.5		162.855	377.145	54.285	875	16.12	299735	
1700	3281			70.5		162.855	377.145	54.285	875	16.12	300179	
2100	3521			70.0		161.7	378.3	55.44	900	16.23	300777	
0101	3762			70.0		161.7	378.3	55.44	900	16.23	301378	
0501	4002			70.0		161.7	378.3	55.44	875	15.78	301972	

Continued on Pg. 4

2765832.00100

CONSTANT RATE AQUIFER TEST FIELD DATA FORM

Project No. AND AG WELL
Date 13 Feb 09

Time of Measure-ment	Time Since Pumping Started (t) (minutes)	Recovery Time (t') (minutes)	t/t'	Airline Pressure Reading (psi)	Total Length of Airline (feet)	Correction (feet)	Calculated Water Level (feet)	Drawdown (feet)	Discharge (gpm)	Specific Capacity (gpm/ft)	Totalizer Reading (gallons)	Remarks
1015	4316			70	540	161.7	378.3	55.44	950	17.14	302752	
1017		1 2		82		189.42	350.58	27.72				Well off @ 1015
1018		2 3		92		212.52	327.48	4.62				
1019		3 4		94		217.14	322.80	0				
1020		4 5		92		212.52	350.58	~~4.62~~ 27.72				
1021		5 6		89		205.59	334.41	11.55				
1022		6 7		89		205.59	334.41	11.55				
1023		7 8		89		205.59	334.41	11.55				
1024		8 9		89		205.59	334.41	11.55				
1025		9 10		89		205.59	334.41	11.55				
1030		14 15		89		205.59	334.41	11.55				
1035		20		90		207.9	332.1	9.24				
1040		25		90		207.9	332.1	9.24				
1045		30		90		207.9	332.1	9.24				
1050		35		90.25		208.478	331.522	8.663				
1055		40		90.25		208.478	331.522	8.663				
1100		45		90		207.9	332.1	9.24				
1115		60		90		207.9	332.1	9.24				
1130		75		91		210.21	329.79	6.93				
1145		90		92		212.52	327.48	4.62				
1200		105		91		210.21	329.79	6.93				
1240		~~145~~		92		212.52	327.48	4.62				

URS

(Hospital Monitoring Well)

AQUIFER CONSTANT-RATE TEST DATA

Project: Anderson Ag Well Test	Project No.:	Static Water Level (feet bls): 321.31
Well Location: Cuyama, CA	Well No.: Cuyama Hospital MW	Measuring Point: Opening of column
Well Diameter: 16"	Measured By: MJD	Elevation Measuring Point (feet bls):
Pump Setting:	Pump On: Date 10 Feb 09 Time: 1019	Available Drawdown:
Screen Interval(s):	Pump Off: Date 13 Feb 09 Time: 1015	Distance From Pumping Well: ~ 200 feet
How Q Measured: ~~In line flow meter~~	Duration of Aquifer Test: 72 hours	Initial Totalizer Reading:

Time of Measure-ment	Time Since Pumping Started (t) (minutes)	Recovery Time (t') (minutes)	t/t'	Sounder Reading (feet)	Correction (feet)	Water Level (feet)	Drawdown (feet)	Discharge (gpm)	Specific Capacity (gpm/ft)	Totalizer Reading (gallons)	Remarks
0835				321.31	321.31		0				SWL
~~1107~~ ~~1075~~				325.60			4.29				
1147				326.22			4.91				
1217				326.52			5.21				
1333				327.07			5.76				
1521				327.62			6.31				
1624				327.84			6.53				
1802				328.24			6.93				
1907				328.28			6.97				
2105				328.52			7.21				
2308				328.80			7.49				
0105				328.97			7.66				
0308				329.11			7.80				
0505				329.20			7.89				
0702 –	FOUND SOUNDER HAD UNSPOOLED & BROKEN OFF OF REEL										

URS

(Ag Monitoring Well)

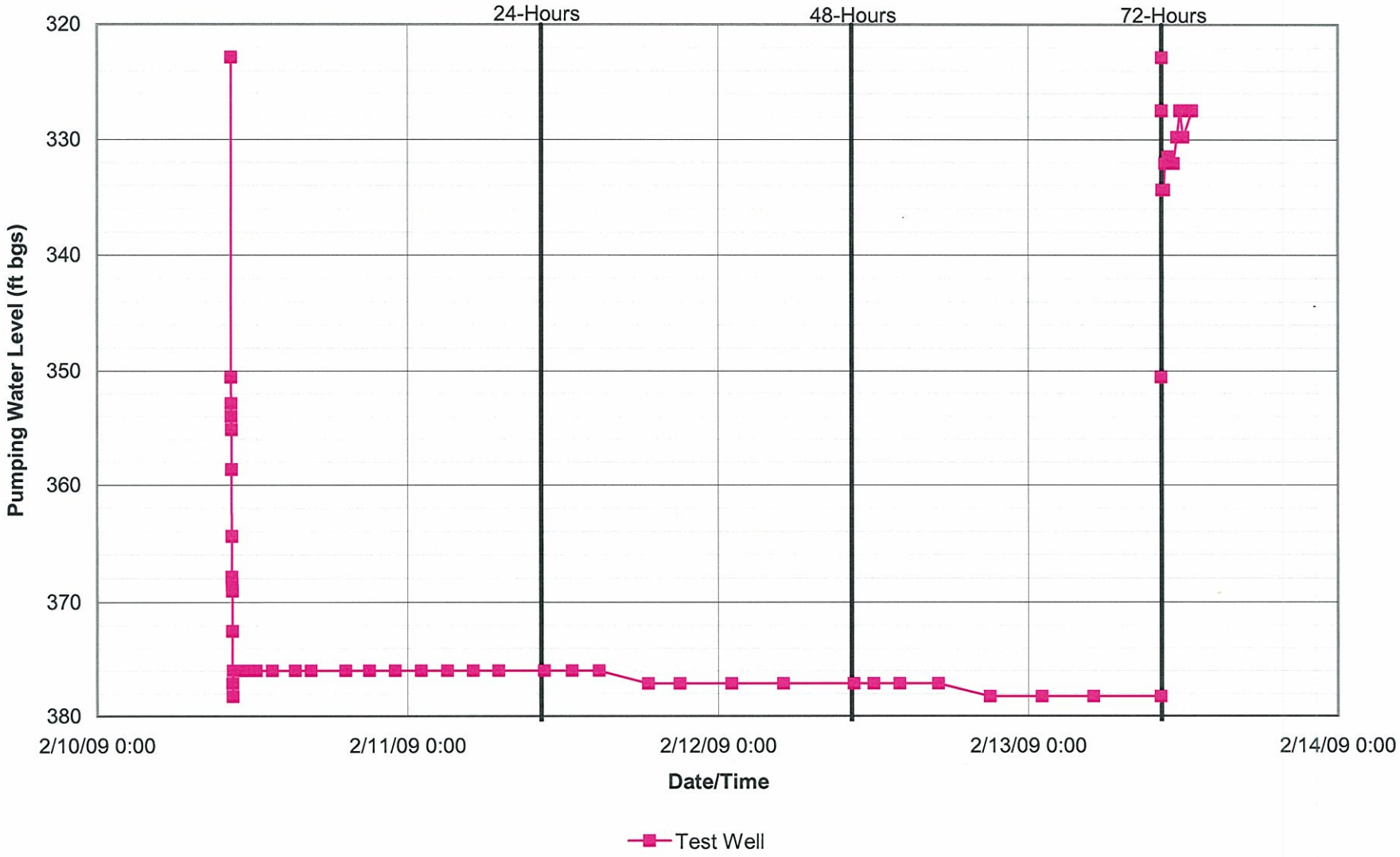
AQUIFER CONSTANT-RATE TEST DATA

Project: Anderson Ag Well Test	Project No.:		Static Water Level (feet bls): 327.03
Well Location: Coalinga, CA	Well No.: Ag Monitoring Well		Measuring Point : TOC
Well Diameter: 16"	Measured By: MJD		Elevation Measuring Point (feet bls):
Pump Setting: —	Pump On: Date 10 Feb 09	Time: 1019	Available Drawdown:
Screen Interval(s): —	Pump Off: Date 13 Feb 09	Time: 1015	Distance From Pumping Well:
How Q Measured: —	Duration of Aquifer Test: 72 Hours		Initial Totalizer Reading:

Time of Measure-ment	Time Since Pumping Started (t) (minutes)	Recovery Time (t') (minutes)	t/t'	Sounder Reading (feet)	Correction (feet)	Water Level (feet)	Drawdown (feet)	Discharge (gpm)	Specific Capacity (gpm/ft)	Totalizer Reading (gallons)	Remarks
0912				327.03	327.03		0				SWL
1130				327.04			0.01				
1505				327.02			0				
2120				327.07			0.04				
0321				327.11			0.08				
~	Sounder Broken						~				

APPENDIX B

San Juaquin Solar Hydrid 1 & 2 Aquifer Test
Pumping Well Data



San Juaquin Solar Hydrid 1 & 2 Aquifer Test
Monitoring Well Data