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LATHAM & WATKINS LLP

July 9, 2008

File No. 030137-0012

DOCKET
07-AFC-3

DATE JUL 09 2008

RECD. JUL 10 2008

VIA FEDEX

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-3
1516 Ninth Street, MS-4
Sacramento, California 95814-5512

Re: CPV Sentinel Energy Project: Docket No. 07-AFC-3

Dear Sir/Madam:

Pursuant to California Code of Regulations, title 20, sections 1209, 1209.5, and 1210, enclosed herewith for filing please find Applicant's Responses to Groundwater Workshop – Additional July 3, 2008 Data Requests.

Please note that the enclosed submittal was also filed today via electronic mail to your attention.

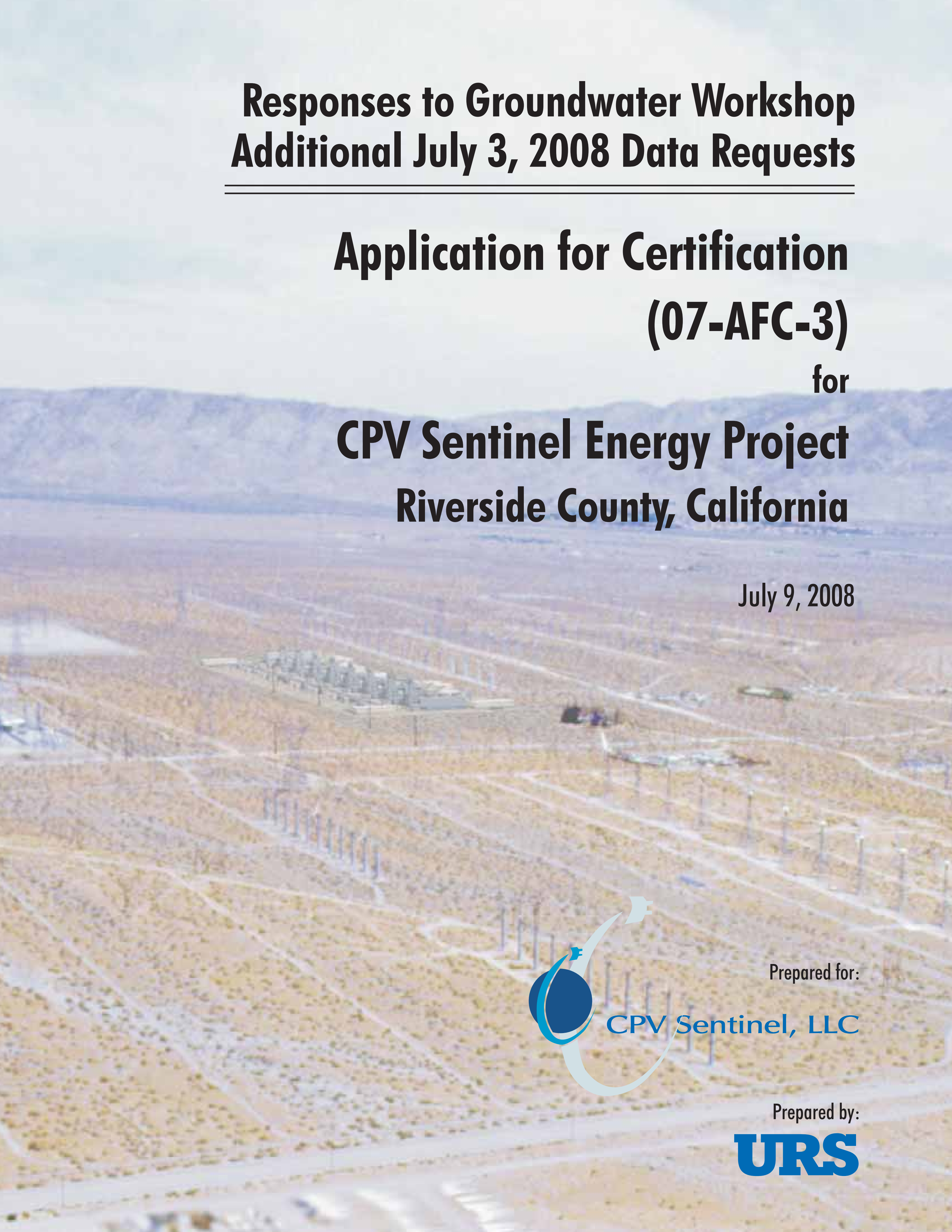
Very truly yours,

Paul E. Kihm
Senior Paralegal

Enclosure

cc: CEC 07-AFC-3 Proof of Service List (w/encl. via e-mail)
Michael J. Carroll, Esq. (w/ encl.)

OC\960510.1



Responses to Groundwater Workshop Additional July 3, 2008 Data Requests

Application for Certification (07-AFC-3)

for

CPV Sentinel Energy Project

Riverside County, California

July 9, 2008

Prepared for:

CPV Sentinel, LLC

Prepared by:

URS

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RESPONSES TO GROUNDWATER WORKSHOP DATA REQUESTS (SET 2, JULY 3, 2008)

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LIST OF ACRONYMS AND ABBREVIATIONS USED IN RESPONSES

afy	acre-feet per year
bgs	below ground surface
CEC	California Energy Commission
CVWD	Coachella Valley Water District
DWA	Desert Water Agency
ft^2/day	square feet per day
gpd/ft	gallons per day per foot
gpm	gallons per minute
gpm/ft	gallons per minute per foot
MSWD	Mission Springs Water District
Sc	specific capacity
T	transmissivity

BACKGROUND

A Groundwater Workshop for the CPV Sentinel Energy Project (07-AFC-3) was held on Thursday, June 12, 2008, with a continuation held on June 20, 2008. The purpose of the June 12, 2008 workshop was to allow the Applicant to present a groundwater flow model developed by its consultant, URS Corporation (URS), for the project's proposed groundwater use. This groundwater flow model was first presented to the California Energy Commission (CEC) on January 24, 2008. The CEC had recently added new groundwater staff as well as a groundwater consultant to the CPV Sentinel Energy Project review team, and this workshop and its continuation were held to facilitate review by the new CEC personnel. The CPV groundwater flow model was developed to evaluate the net effects of project-specific pumping and recharge volume and timing variations on the groundwater levels in the Mission Creek Subbasin.

In late May/early June 2008 the CEC hired an outside consultant, John L. Fio, a Principal Hydrogeologist with HydroFocus, Inc., to assist them in the evaluation of groundwater issues. After Mr. Fio's initial review of available reports, CEC submitted questions via email to the Applicant on groundwater evaluations and groundwater modeling work completed to date in preparation for the June 12, 2008 CEC Workshop. URS responded to those questions via email on June 10, 2008. The CEC submitted additional questions to URS on June 11, 2008. They were discussed in the June 12, 2008 workshop and the June 20, 2008 workshop continuation. Responses to the additional June 11, 2008 CEC questions were submitted to the CEC on June 27, 2008. After review of those responses the CEC submitted a request for "additional follow-up information" in an email dated July 3, 2008 (CEC Data Requests 1 through 7 as outlined below). This Response to Additional Data Requests is intended to answer the remaining questions and provide documentation necessary for the CEC to compete their evaluations on groundwater-related issues.

1. GHB – The GHB conductance of 100 square feet per day per foot is not clear. For example, the conductance specified in the GHB input file for the model cell at row = 3 and column = 3 is 1,229,052 ft2/day. As defined by MODFLOW, conductance is calculated using the formula K*A/L, where K is the hydraulic conductivity; A is the area of the interface between the model and external boundary and is calculated as the product of the model cell width (which is variable in this model) and height (1,000 feet corresponding to the saturated thickness simulated by the model); and, L is the length between the model cell interface and the prescribed external head. "A" is defined by the model grid; please report the values of K and L used to calculate the GHB conductance.

RESPONSE

The conductance used in the general-head boundary (the western boundary) was set to 100 square feet per day (ft^2/day) per foot, which is for the unit length of the west boundary (saturated thickness of 1,000 feet). For unit length (1.0 foot) along the west boundary, the cross section is 1,000 square feet, thus K*A/L = 100 (ft^2/day), or K/L = 0.1 (1/day). So, for the unit length of west boundary, the boundary flux is q = 100*(H – H1) (ft^2/day), where H is the calculated head at the cell and H1 is the specified reference head at the external boundary.

The effects of western boundary on the model simulations are very small for this superposition model because the volumes of project pumping and recharge are the same, and the distance from the project site to the western boundary is relatively long. The water budget summaries (see Appendix B, Tables 4-21) confirm that all inflows induced by project-specific pumping/recharge are less than 1.0 percent of the project-specific pumping/recharge for all stress periods. The averaged inflow from the western boundary caused by project-specific pumping/recharge is less than 0.4 percent of the project-specific pumping/recharge for Scenarios 1 and 2, and is practically zero for Scenario 3. These factors indicate that the model results are not sensitive to the western boundary condition.

DATA REQUEST

2. Table 1 reports 17 transmissivity values for wells in the subbasin. Some of the values are from Slade (2000), who estimated transmissivity by multiplying the specific capacity by 2000. What are the sources for the other values? Were the other values estimated from specific capacity data or are they aquifer test results? It would be helpful to also report in Table 1 the T values for the well locations based on their corresponding location on Tyley's map (i.e., the T value specified in the model at the location corresponding to the well site).

RESPONSE

Table 1 (attached) has been updated and footnoted with respect to the sources of the data, which include Geotechnical Consultants (1979) and Slade (2002). The transmissivity (T) data for MSWD #23 was calculated by URS from 1978 data provided by Geotechnical Consultants (1979). All 17 T values listed were derived from specific capacity test data. We are not aware of any data from long-term aquifer tests. A new column also has been added to Table 1 that includes the corresponding T zone values from Figure 4 in Tyley (1974) and updated URS Figures 1 and 2 (attached). This also includes corresponding T values at the location of the non-public supply wells listed, although as far as we know, there are no known specific test data from these wells, most of which are shallow (less than 300 feet total depth).

As included in the June 27, 2008 Responses to Groundwater Workshop Data Request (Response to Data Request 3) and discussed in more detail in Response to July 3, 2008 Data Requests 4 and 6 below, most of the Slade (2000) average theoretical T values and the range of theoretical T values for local wells are typically higher than the Tyley T values. In addition, a comparison of Tyley's T distribution (see Figures 2 and 3 – attached) using more recent data indicates that Tyley's T distribution errs on the conservative low side.

URS also has included a Technical Memorandum on the Step-Drawdown and Aquifer Test Results from the CPV Test Well Program as Appendix A. The pilot boring for CPV Test Well PW-1 was drilled to 1,465 feet below ground surface (bgs) without reaching the bottom of sedimentary deposits in this portion of the Mission Creek Subbasin. PW-1 was designed and constructed based on data obtained during the boring program and was competed as a 16-inch-diameter well in a 26-inch boring with screen intervals (0.060 slot louvered screen) from 400 to 680, 720 to 860, 1,000 to 1,040 and 1,100 to 1,180 feet bgs. The static water level is 328 feet bgs. The results from the June 2008 PW-1 step-drawdown tests indicate specific capacities of 110.47 gallons per minute per foot of drawdown (gpm/ft) at a pumping rate of 538 gallons per minute (gpm); 101.60 gpm/ft at 827 gpm; 97.71 gpm/ft at 1,108 gpm; and 93.72 gpm/ft at 1,432 gpm. The step-drawdown test was followed by a 72-hour constant-rate pumping test (at a pumping rate of 1,192 gpm), followed by water level recovery monitoring. The results of the constant-rate pumping and recovery data analysis indicate that T values range from 395,000 to 448,000 gpd/ft with a geometric mean of 423,573 gpd/ft (see Appendix A, Table 3). The results of this test indicate that Tyley's T values in this area of the basin (reported at 50,000 gpd/ft) are about 8 times too low, further supporting the supposition that the Tyley T distribution errs on the conservative low side.

DATA REQUEST

3. If possible, can you please provide a copy of Appendix 3 to Slade's 2000 report (District Active Well Pumping Data and Specific Capacity Trend Diagrams), including Table 3-1 cited in the response.

RESPONSE

Table 3-1 from Slade (2000) is included as Attachment 1. URS is still in the process of obtaining the Appendix 3 from Slade (2000) and will forward it to the CEC upon receipt.

DATA REQUEST

4. Figure 1 shows the locations of the wells reported in Table 1; Figure 2 shows well locations relative to Tyley's T distribution map (the T distribution simulated by the model); and Figure 3 shows well locations, posts some of the T values from Table 1, and provides an interpretive distribution of T in the basin based on some of the T values from Table 1. Why were not all of the values posted and utilized in Figure 3? I noted the disregarded values tend to be the "low" T values relative to the Tyley T distribution (DHSCWD #13, #14, and #16 and MSWD #23). The T value for MSWD #27 is also missing from Figure 3.

RESPONSE

URS has included updated versions of Table 1 and Figures 1, 2, and 3. All of the available T values are now posted on Figure 3, including MSWD #27 with a T value of 285,000 gallons per day per foot (gpd/ft). As noted on the figure, not all of the values were used because some of those values were considered questionable in light of more recent data from nearby wells. Most of the wells that were not included had smaller diameters and were shallower, older wells with relatively lower pumping rates. These were near larger-diameter and deeper, newer wells with higher pumping rates. Most of the wells installed before 1970 were 8 to 10 inches in diameter, and before 1969 none of the wells was screened or perforated deeper than 400 feet bgs. Most of the wells installed between 1970 and 1993 had diameters of 14 to 16 inches with boring depths up to 1,200 feet bgs and screen intervals ranging to depths of 1,080 feet bgs. Note that MSWD #27, which has a total depth of 400 bgs with the bottom of the screen interval at 380 feet bgs, is the one exception to this well set. Some of the T values shown on Figure 3 appear to be representative of improved well drilling, design, and development techniques with time.

Specific explanations for several T values for wells plotted on Figure 3 that were not used in the T distribution are outlined below. These wells are DHSCWD well numbers 13, 14, 16, and 20.

- DHSCWD #13 was an 8-inch-diameter well with a reported T value of 97,200 gpd/ft. Although this transmissivity is not abnormally low for this unconsolidated alluvium, it is much less than the reported T value of 368,900 gpd/ft for MSWD #29 about 1 mile to the east and the T values of 206,500 and 297,400 gpd/ft from MSWD #22 and #24 to the northeast. Accordingly, because the T value for DHSCWD #13 was less than a quarter to half of the value of the surrounding more recent and larger-diameter wells, its T value was not included in the Figure 3 T distribution contouring.

- DHSCWD #14 was a 12-inch diameter, 410-foot-deep well that yielded only 72 gallons per minute (gpm) and had a calculated T of only 21,200 gpd/ft. About 1 mile north of DHSCWD #14 are three wells (MSWD #23, 28, and 30) that all have calculated T values above 100,000 gpd/ft, depths ranging from 800 to 1,200 feet, and perforated intervals ranging from 536 to 1,080 feet bgs. Less than ½ mile east of DHSCWD #14 are two wells (MSWD #22 and 24) that have calculated T values of over 200,000 gpd/ft and well yields from 1,181 to 1,421gpm. These depths of thee wells are 807 and 810 feet bgs, respectively, with perforated intervals ranging from 390 to 790 feet bgs. MSWD #29, which is about 1 mile southeast of DHSCWD #14, has a calculated T value of 368,900 gpd/ft and yields 1,950 gpm. Perforations in MSWD #29 range from 410 to 1,050 feet bgs. Because DHSCWD #14 is between these wells with much higher T values and no hydrogeologic evidence is available which could justify its low T value, it was treated as erroneous and was not included in the Figure 3 T distribution contouring.

- DHSCWD #16 was an 8-inch-diameter, 167-foot-deep well with a reported T value of 39,000 gpd/ft. This well is bounded by three wells (DHSCWD #21 and MSWD #27 and #31) to the south and southwest that have reported T values ranging from 232,300 to 345,000 gpd/ft. Northeast of DHSCWD #16, three wells (CVWD #3405, #3408, and #3410) have reported T values ranging from 182,000 to 222,000 gpd/ft. Because no hydrogeologic information is available to justify the low T value of DHSCWD #16 among local wells exhibiting much higher T values, coupled with the fact that the diameter of this well is much narrower and the well is shallower than the surrounding wells, it also was treated as erroneous and was not included in the Figure 3 T distribution contouring.

- DHSCWD #20 was a 7-inch-diameter well yielding only 26 gpm with a calculated T value of only 11,600 gpd/ft. Well DHSCWD #21 is less than ¾ mile southwest of DHSCWD #20 and yields 382 gpm with a T value of 232,300 gpd/ft. Due east of DHSCWD #20, three wells belonging to the Coachella Valley Water District (CVWD #3405, 3408, and 3410) have calculated T values of 182,000, 212,000, and 222,000 gpd/ft, respectively. MSWD #29, which is about 1½ miles northeast of DHSCWD #20, yields about 1,950 gpm with a T value of 368,900 gpd/ft. Because DHSCWD #20 was among all of these wells with T values mostly over 100,000 gpd/ft and some of which had T values over 300,000 gpd/ft, and there is no evidence available which would justify its low T value, it was treated as erroneous and was not included in the Figure 3 T distribution contouring.

DATA REQUEST

5. It appears one of the wells listed in Table 1 is missing from Figure 1 (MSWD#20). It has the lowest T value reported in Table 1 (11,600 gpd/ft) – this well should be posted or an explanation given for why it could not be located or should not be considered.

RESPONSE

As noted in the response to Data Request 4, MSWD #20 (reported as DHSCWD #20) is now included in Table 1 and Figures 1, 2, and 3. While the DHSCWD #20 T value is reported in Figure 3, it was treated as erroneous and was not included in the T distribution contouring for reasons given above.

DATA REQUEST

6. Tyley's T values are lower than the new values reported in Table 1 (the median value of the comparison ranges from about 2 to 1, depending on the Tyley contour interval the well is located in). However, resolution of #2, #3, and #4 above is required to assess the statement "Tyley T values is now thought to represent an extremely low case and is certain to overpredict impacts to nearby wells". The statement seems questionable given the uncertainty in natural systems and the methods employed to estimate T. Tyley and Slade's (2000) T values rely on specific capacity test results. Tyley multiplied specific capacity by 1800 whereas Slade multiplied specific capacity by 2000, so T values estimated from the same specific capacity value by these two methods will vary by about 10%. The theoretical range in the multiplier is 1500 to 2000 (1800 plus or minus about 15%), and the range observed by Thomasson (1960) was 1300 to 2200 (1800 plus or minus about 25%). Razack and Huntley (Journal of Groundwater, 1991, v. 29, n. 6) analyzed 215 specific capacity and T data pairs from a basin and concluded that the actual transmissivity could only be approximated from specific capacity data within a factor of 4 at a 90% confidence level. Furthermore, specific capacity is an uncertain value in itself, as it's value can be influenced by the pumping rate, duration of pumping, well construction, well age, etc., which are all factors not considered in the calculation of T (Thomasson 1960). A sensitivity analysis is therefore still valuable and should be reported to represent uncertainty in T. The data and analysis presented justifies using an uncertainty level substantially less than one order of magnitude; reporting the results from model runs using 2T and 0.5T seem to me to provide a reasonable range (where T is the Tyley transmissivity values specified in the model).

RESPONSE

In response to this Data Request, URS has run all three project scenarios at baseline, where the T values were equal to Tyley (1974); Sensitivity 1, which is half of Tyley's T values; and Sensitivity 2, which is two times Tyley's T values. Each scenario and case — Baseline, Sensitivity 1, and Sensitivity 2 — were also run under isotropic ratios of 1:1 and 2:1 (Ty/Tx). The results are included in the Appendix B Tables and Figures. The basic assumptions for the models and a description of Scenarios 1, 2, and 3 are outlined below.

Basic Assumptions: Three project pumping wells, recharge at the Desert Water Agency (DWA) Basins, no recharge at the Horton Wastewater Treatment Ponds, Variable T values (per Baseline, Sensitivity 1 and Sensitivity 2 above), and recharge from the DWA Basins reaches the water table after 1 year.

Scenario 1: Pumping at 1,100 acre-feet per year (afy) and recharging at the DWA Basins 1,100 afy. The simulation time was extended to 35 years to simulate recovery of the aquifer system after the project ends its pumping and recharge activities. In the Appendix A Tables and Figures, the model results are presented at year 30 (time of greatest project-specific influence on water level change) and at year 35 (5 years after project shutdown).

Scenario 2: Pumping at 1,100 afy and recharging at the DWA Basins 5,500 afy at the start of every fifth year. The recharge at the DWA Basins is 0 afy in other years. The simulation time was the same as for Scenario 1 along with presentation of model results at years 30 and 35.

Scenario 3: Pumping at 2,059 gallons per minute (maximum project pumping) for 4 months to reach a total volume of 1,100 af with no recharge at the DWA Basins. The simulation time for

Scenario 3 is 1 year. Appendix A includes a presentation of model results at month 4 (the time of the greatest project-specific influence on water level changes) and month 12.

The three project scenarios are directed at evaluating potential changes in Mission Creek Subbasin water levels in response to an extreme range of operating conditions. The scenarios were created to conservatively analyze potential adverse impacts from periods of maximum pumping and also extended periods without recharge. This is appropriately bounded by pumping 1,100 afy and delaying recharge by up to 5 years following periods of maximum pumping. These scenarios for pumping and recharge create conservatism in the analysis of potential impacts are noted below:

- Anticipated pumping over the 30-year life of the power plant is expected to average approximately 16,500 af compared to the 33,000 af pumped in the simulations.

- The volume of recharge will, over time, exceed the volume of pumping by at least 8 percent compared to the balanced recharge and pumping used in the simulations.

- Since the inception of the Metropolitan/DWA exchange agreement, there has never been a 5-year period without recharge deliveries to DWA. The simulations presume that a long-term interruption of recharge deliveries would occur during a similarly unlikely period of 5 years maximum project-specific pumping.

While URS recognizes the range of T values that have been derived by others by using variable multipliers to specific capacity test data, the answers provided to Data Requests 2, 3, and 4 support the supposition that Tyley's T distribution errs on the conservative low side. Use of data available since 1970 suggests that the use of the Tyley T distribution and values in the CPV model is considered a reasonable and conservative approximation of T values within the Mission Creek Subbasin. In evaluating this further, URS produced Table 2 (attached), which includes a comparison of the reported T values in Table 1 and Figure 3 to three theoretical value sets. Table 1 includes a column with the factors used to multiply the specific capacity (Sc) of a well to obtain a T value. For the Geotechnical Consultants (1979) T values, the multiplier ranged from 1,337 to 2,093. Slade (2000) T values were derived by applying a multiplier of 2,000. Given the range of multipliers from available literature, three data sets were created:

- Set 1 equals the Sc times 1,500
- Set 2 equals the Sc times 1,800
- Set 3 equals the Sc times 2,000

In four of six cases for the smaller diameter and shallower wells installed on or before 1963, the various theoretical T values were well below Tyley's T Zone value. As explained in the response to Data Request 4, these four wells, DHSCWD #13, #14, #16, and #20, were considered erroneous in light of data from more recent nearby wells. The two exceptions are DHSCWD #11 and DHSCWD #21, where the theoretical T values were greater than Tyley's T values. For the larger diameter and deeper wells installed from 1969 to 1993, the theoretical values for Set 1 ranged from 1.07 (MSWD #27) to 2.77 (MSWD #29) times higher than the corresponding Tyley T zone value. The theoretical T values for Set 2 ranged from 1.28 (MSWD #27) to 3.32 (MS #29) times higher than the corresponding Tyley T zone value. The theoretical T values for Set 3 ranged from 1.43 (MSWD #27) to 3.69 (MS #29) times higher than the corresponding Tyley T zone value. The CVWD wells were not included in this evaluation because there is not a lot of available information on date drilled or construction specifications. In any event, the three data sets for these wells indicted a range of multipliers when compared with Tyley's T zone value. These ranged from 0.68 to 2.12 times the Tyley T zone value.

URS' selection of Tyley's T distribution for the CPV groundwater flow model was based on review of all data available at the time of modeling. This assessment of Tyley's T distribution continues to support that this distribution is reasonable with respect to basin geology and depositional trends. Post-Tyley data and project specific drilling indicate that not only is Tyley's T distribution reasonable but that it is somewhat conservative in that actual T values, at least in the project-specific pumping and recharge areas (i.e., upper Mission Creek Subbasin), are considerably higher (by a factor of approximately 2 or more). In fact, the results of the CPV Test Well Program constant-rate pumping and recovery tests include T values ranging from 395,000 to 448,000 gpd/ft with a geometric mean of 423,573 gpd/ft (see Appendix A Table 3). Tyley's T value in this area of the basin was 50,000 gpd/ft, or about 8 times lower that that derived from the PW-1 aquifer test. URS believes that use of Tyley's T values in the CPV is conservative and produces an impact that may be greater than what would actually occur. Moreover, the conservative T values from Tyley add to the conservatism from the input values for pumping and recharge to create scenarios that are exceptionally conservative for an evaluation of potential project-specific impacts to the basin. Accordingly, URS believes that running Tyley's T distribution at one half (Sensitivity 1 Models Runs in Appendix B) misrepresents natural conditions whereby the results systematically over-predict impacts to nearby wells. URS believes that use of T distributions equal to Tyley's is quite conservative and that T values equal to two times Tyley may more accurately represent natural conditions in the basin.

7. I would like copies of the model input files to all reported simulations as a means to answer additional questions I may have during completion of my review. The previous model files provided were extremely useful to my initial review effort, as I was able to quickly confirm model features not explained fully in the documentation (for example, the use of constant head cells and the horizontal anisotropy ratio of 5 – the model now considers anisotropy ratio's of 1 and 2).

RESPONSE

The model input files will be provided as a confidential submittal to the CEC to facilitate review and answer questions for the reasons outlined in Data Request 7.

REFERENCES

Geotechnical Consultants, 1979. Hydrogeologic Investigation, Mission Creek Subbasin within Desert Hot Springs County Water District.

Slade, Richard C. and Associates, 2000. Final Hydrogeologic Evaluation, Well Siting, and Recharge Potential Feasibility Study, Mission Creek Groundwater Subbasin Riverside.

Tyley, Stephen J., 1974. Analog Model Study of the Ground-Water Basin of the Upper Coachella Valley, U.S. Geological Survey Water-Supply Paper 2027, 77 pp.

Table 1

Well Data and Transmissivities for Wells in the Mission Creek Subbasin of the Upper Coachella Valley

Well Number	DWR Well Number	Date Drilled (year)	Well Depth (feet)	Well Diameter (inches)	Screen Intervals (Depth in feet bgs)	Well Yield gpm (gpm)	Transmissivity (T) (gpd/ft)	Corresponding T Zone Tyley (1974)[e] (gpd/ft)
DHSCWD #11[a]	2S/5E-31L1 (Abandoned)	1954	288	10	220-285	75	66,700[a]	50,000
DHSCWD #12[a]	2S/4E-25N1 (Abandoned)	1954	370	8	320-370			100,000
DHSCWD #13[a]	2S/4E-35Q1 (Abandoned)	1954	540	8	185-217, 265-380	192	97,200[a]	200,000
DHSCWD #14[a]	2S/4E-35B1 (Inactive)	1955	410	12	250-400	72	21,200[a]	100,000
DHSCWD #15[a]	3S/4E-11L1 (Destroyed)		128	8		16		200,000
DHSCWD #16[a]	3S/4E-11K2 (Destroyed)	1955	167	8		201	39,100[a]	200,000
DHSCWD #20[a]	3S/4E-11B1 (Destroyed)	1956	210	7	150-210	26	11,600[a]	200,000
DHSCWD #21[a]	3S/4E-11M1 (Destroyed)	1963	302	10	170-210	382	232,300[a]	100,000
MSWD #22[a]	2S/4E-36D1	1970	807	14	390-780	1181	206,500[a]	100,000
MSWD #23[a]	2S/4E-23N1 (Abandoned)	1969	830	12	536-830	74	114,603[c]	50,000
MSWD #24[a]	2S/4E-36-D2	1973	810	14	400-790	1421	297,400[a]	100,000
MSWD #27[b]	3S/4E-11L2	1980	400	14	180-380	1196	285,000[b]	200,000
MSWD #28[b]	2S/4E-26D1	1989	900	14	590-890	1894	123,400[b]	50,000
MSWD #29[b]	2S/4E-36K1	1992	1190	16	410-930, 970-1050	1950	368,900[b]	100,000
MSWD #30[b]	2S/4E-23N2	1992	1200	16	640-1080	1239	147,000[b]	50,000
MSWD #31[b]	3S/4E-11L4	1993	1200	16	270-470, 650-670, 920-970, 980-1000	2410	345,000[b]	200,000
CVWD #3405[b]	3S/4E-12C1		490		200-480		182,000[b]	200,000
CVWD #3406[b]	3S/4E-12B1 (Inactive)				180-220			100,000
CVWD #3407[b]	3S/4E-12H1 (Inactive)							
CVWD #3408[b]	3S/4E-12B2		503		270-500		212,000[b]	100,000
CVWD #3409[b]	3S/4E-12H2		1010					100,000
CVWD #3410[b]	3S/4E-12F1						222,000[b]	200,000
Non-Public Supplies[d]	2S/4E-25B1				160-190			Not in Subbasin
	2S/4E-24Q1		251		160-251			Not in Subbasin
	2S/4E-27R1				410-440			100,000
	2S/4E-34A1				390-610			100,000
	3S/4E-2D1				272-300			100,000
	3S/4E-2E1		286		255-283			100,000
	3S/4E-10J1		300					100,000
	3S/4E-10M1				160-400			50,000
	3S/4E-11B2				141-211			200,000
	3S/4E-12D				110-150			200,000
	3S/5E-7F1				118-200			100,000

[a] Geotechnical Consultants (1979) Plate 11, plus well data from report
[b] Slade, Richard C. (2000), Page 30, plus well data from report
[c] Calculated from 1978 data in Geotechnical Consultants (1979) Plate 11
[d] United States Geological Survey - well data
[e] Corresponding Transmissivity Zone from Figure 4 Tyley (1974) and URS Figure 2 (this submittal)

Table 2

Transmissivity Evaluation for Wells in the Mission Creek Subbasin of the Upper Coachella Valley

Well Number	DWR Well Number	Well Yield gpm (gpm)	Transmissivity (T) (gpd/ft)		Factor Used to Calculate[f] T	Theoretical Value Set 1 (Sc x 1,500) T[g]	Theoretical Value Set 2 (Sc x 1,800) T[g]	Theoretical Value Set 3 (Sc x 2,000) T[g]	Corresponding T Zone Tyley (1974)[e] (gpd/ft)
DHSCWD #11[a]	2S/5E-31L1 (Abandoned)	75	66,700	a	1,803	55,491	66,589	73,988	50,000
DHSCWD #12[a]	2S/4E-25N1 (Abandoned)								100,000
DHSCWD #13[a]	2S/4E-35Q1 (Abandoned)	192	97,200	a	1,767	82,513	99,015	110,017	200,000
DHSCWD #14[a]	2S/4E-35B1 (Inactive)	72	21,200	a	1,797	17,696	21,235	23,595	100,000
DHSCWD #15[a]	3S/4E-11L1 (Destroyed)	16							200,000
DHSCWD #16[a]	3S/4E-11K2 (Destroyed)	201	39,100	a	1,955	30,000	36,000	40,000	200,000
DHSCWD #20[a]	3S/4E-11B1 (Destroyed)	26	11,600	a	1,812	9,603	11,523	12,804	200,000
DHSCWD #21[a]	3S/4E-11M1 (Destroyed)	382	232,300	a	2,093	166,484	199,780	221,978	100,000
MSWD #22[a]	2S/4E-36D1	1181	206,500	a	1,377	224,946	269,935	299,927	100,000
MSWD #23[a]	2S/4E-23N1 (Abandoned)	74	114,603	c	1,926	89,255	107,106	119,006	50,000
MSWD #24[a]	2S/4E-36-D2	1421	297,400	a	1,792	248,940	298,728	331,920	100,000
MSWD #27[b]	3S/4E-11L2	1196	285,000	b	2,000	213,750	256,500	285,000	200,000
MSWD #28[b]	2S/4E-26D1	1894	123,400	b	2,000	92,550	111,060	123,400	50,000
MSWD #29[b]	2S/4E-36K1	1950	368,900	b	2,000	276,675	332,010	368,900	100,000
MSWD #30[b]	2S/4E-23N2	1239	147,000	b	2,000	110,250	132,300	147,000	50,000
MSWD #31[b]	3S/4E-11L4	2410	345,000	b	2,000	258,750	310,500	345,000	200,000
CVWD #3405[b]	3S/4E-12C1		182,000	b	2,000	136,500	163,800	182,000	200,000
CVWD #3406[b]	3S/4E-12B1 (Inactive)								100,000
CVWD #3407[b]	3S/4E-12H1 (Inactive)								
CVWD #3408[b]	3S/4E-12B2		212,000	b	2,000	159,000	190,800	212,000	100,000
CVWD #3409[b]	3S/4E-12H2								100,000
CVWD #3410[b]	3S/4E-12F1		222,000	b	2,000	166,500	199,800	222,000	200,000
Non-Public Supplies[d]	2S/4E-25B1								Not in Subbasin
	2S/4E-24Q1								Not in Subbasin
	2S/4E-27R1								100,000
	2S/4E-34A1								100,000
	3S/4E-2D1								100,000
	3S/4E-2E1								100,000
	3S/4E-10J1								100,000
	3S/4E-10M1								50,000
	3S/4E-11B2								200,000
	3S/4E-12D								200,000
	3S/5E-7F1								100,000

[a] Geotechnical Consultants (1979) Plate 11, plus well data from report

[b] Slade, Richard C. (2000), Page 30, plus well data from report

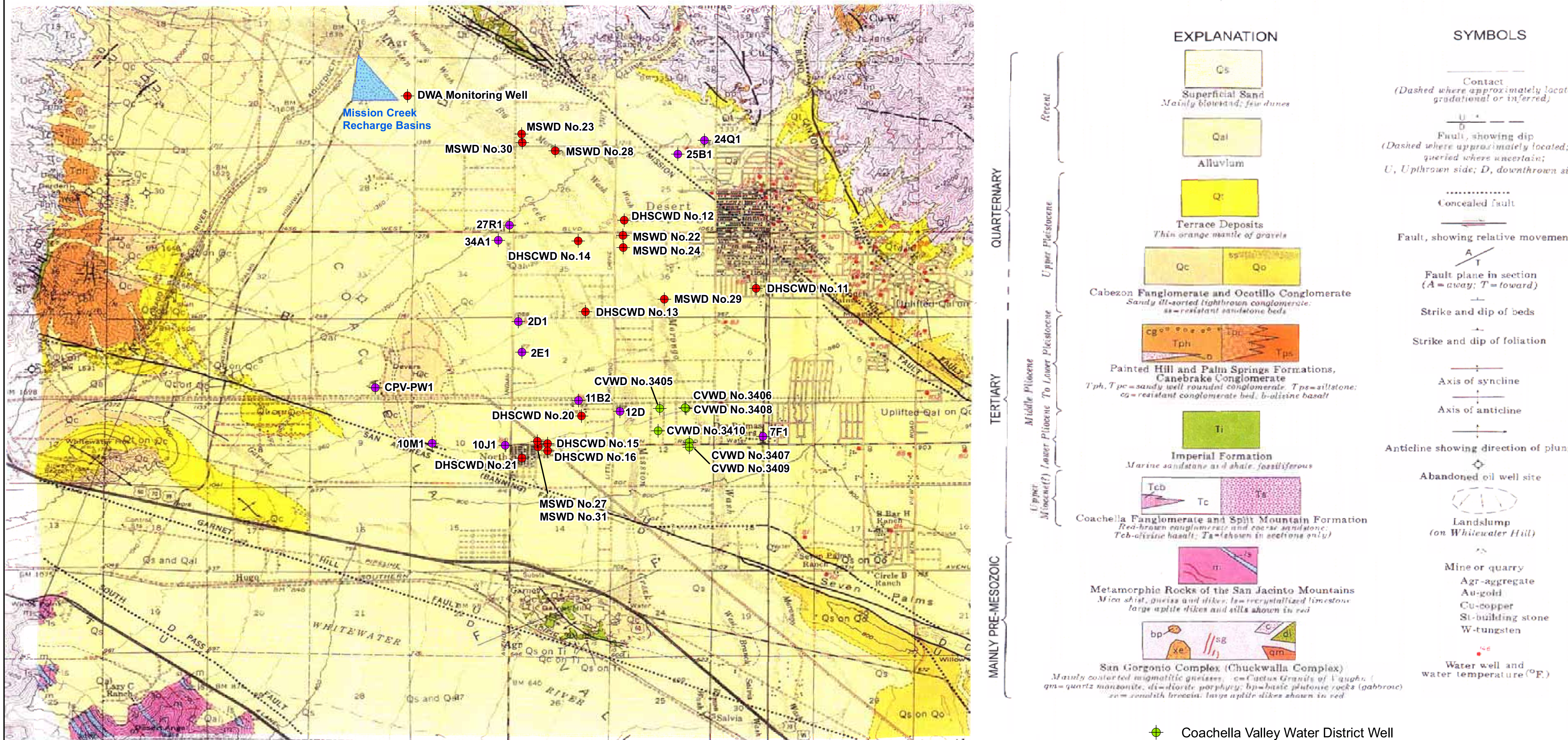
[c] Calculated from 1978 data in Geotechnical Consultants (1979) Plate 11

[d] United States Geological Survey - well data

[e] Corresponding Transmissivity Zone from Figure 4 Tyley (1974) and URS Figure 2 (this submittal)

[f] The factors shown are from Geotechnical Consultants 1979 and Slade 2000 (i.e., specific capacity x multiplier)

[g] Theortical Sets 1, 2 and 3 are devrived from the reported T value divided by the factor used to calculate to come up with the specific capacity (Sc) which is in turn multiplied by the new factor (Set 1 = 1,500, Set 2 = 1,800 and Set 3 = 2,000)



REFERENCE: State of California, The Resources Agency, Department of Conservation, Division of Mines and Geology, Desert Hot Springs Area, Riverside County, California, 1968, Special Report 94 by R.J. Proctor

Well Data is Included on Table 1

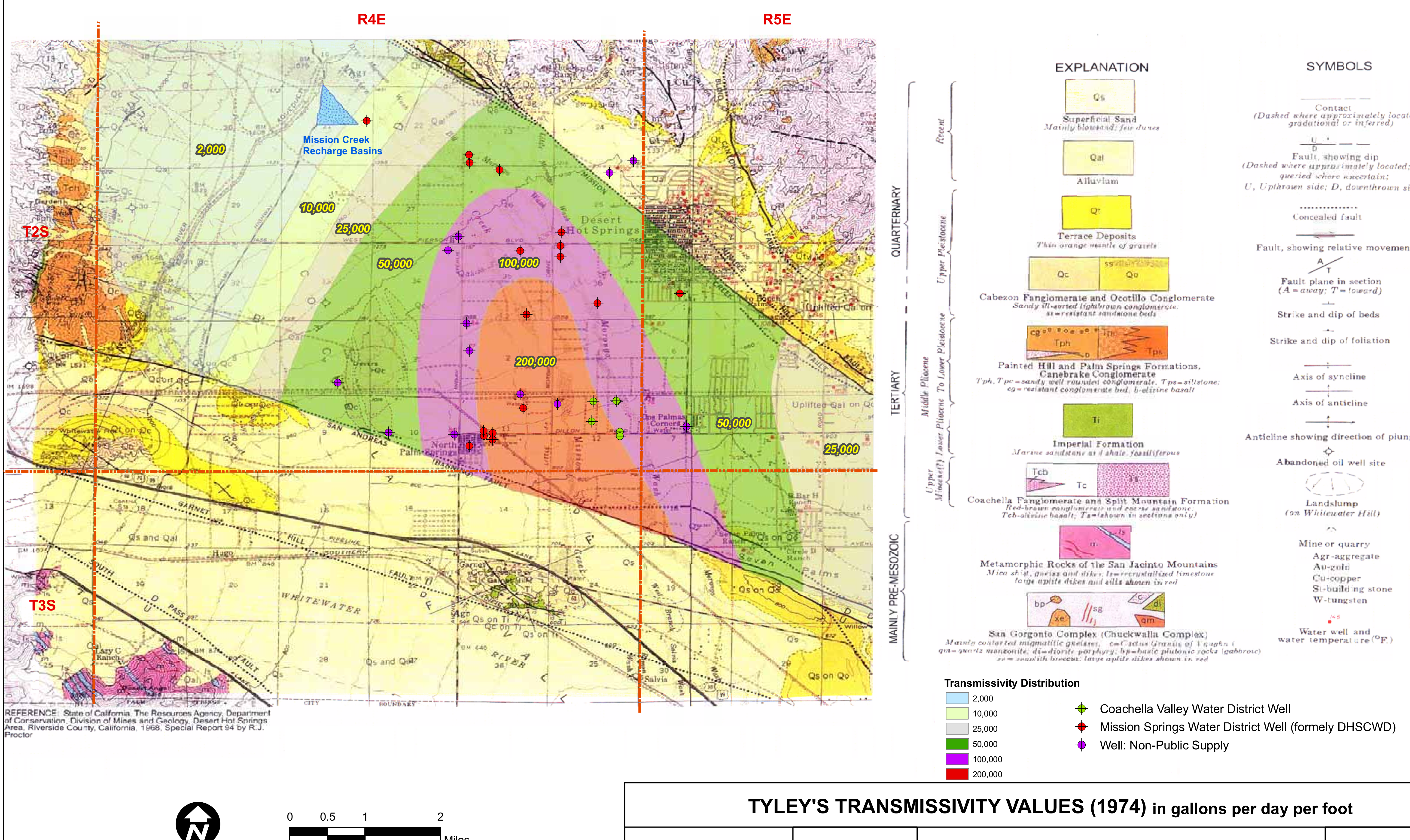
- Coachella Valley Water District Well
- Mission Springs Water District Well (formely DHSCWD)
- Well: Non-Public Supply

0 0.5 1 2 Miles

MISSION CREEK SUBBASIN

Project: No.: 28067168.40000	Date: July 2008	Project: CPV Sentinel Energy Project	Figure: 1

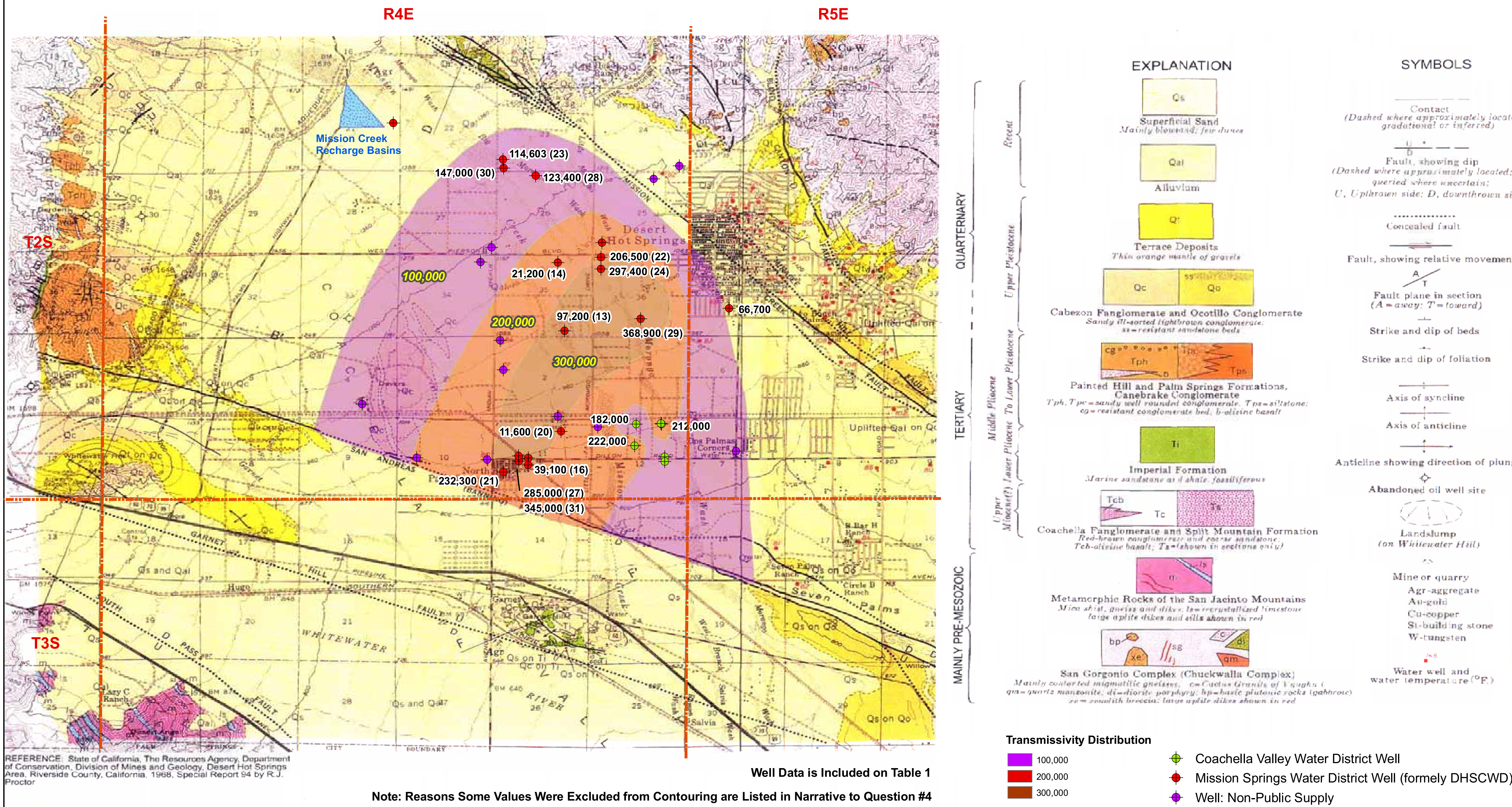
URS



TYLEY'S TRANSMISSIVITY VALUES (1974) in gallons per day per foot

Project: No.: 28067168.40000	Date: July 2008	Project: CPV Sentinel Energy Project	Figure: 2

URS



0 0.5 1 2 Miles

MOST RECENT TRANSMISSIVITY VALUES in gallons per day per foot

Project: No.: 28067168.40000	Date: July 2008	Project: CPV Sentinel Energy Project	Figure: 3

URS

Attachment 1
From Slade (2000)
Appendix 3

Table 3-1
Summary of Pumping Data
Active District Wells

Well No.	Screen Intervals (ft)	Total Length of Screen (ft)	Date	Pumping Rate (gpm)	Drawdown (ft)	Specific Capacity (gpm/ft ddn)	Theoretical Transmissivity (gpd/ft)	Yield Factor (gpm/ft perfs)
22	390-780	390	5/10/70	2300	20	115.0	230,000	5.9
			8/17/72	1216	11.5	105.7	211,478	3.1
			7/17/73	1196	10.6	112.8	225,660	3.1
			9/9/74	1206	11.4	105.8	211,579	3.1
			7/15/76	1214	10	121.4	242,800	3.1
			3/31/80	1110	11.8	94.1	188,136	2.8
			10/14/80	1105.8	11.6	95.3	190,655	2.8
			11/19/81	1055	9.8	107.7	215,306	2.7
			12/3/82	975	9.5	102.6	205,263	2.5
			11/7/84	1030	10.9	94.5	188,991	2.6
			7/8/86	945	11.2	84.4	168,750	2.4
			12/23/87	933	10.3	90.6	181,165	2.4
			5/15/89	940	10.1	93.1	186,139	2.4
			4/2/90	1877	19.3	97.3	194,508	4.8
			2/4/91	1821	18	101.2	202,333	4.7
			3/19/92	1798	17.4	103.3	206,667	4.6
			5/19/93	1656	16.1	102.9	205,714	4.2
			6/29/94	1679	16.2	103.6	207,284	4.3
			10/3/95	1595	15.5	102.9	205,806	4.1
			5/9/98	1809	12.7	142.4	284,882	4.6
24	400-790	390	8/73	2500	15	166.7	333,333	6.4
			6/26/75	1469	11.5	127.7	255,478	3.8
			7/21/78	1421	11.5	123.6	247,130	3.6
			2/26/79	453	12.2	37.1	74,262	1.2
			10/9/79	1374	12.6	109.0	218,095	3.5
			10/14/80	1398	11	127.1	254,182	3.6
			10/9/81	1343	9.1	147.6	295,165	3.4
			3/16/82	1665	11.7	142.3	284,615	4.3
			12/3/82	1634	12.5	130.7	261,440	4.2
			1/12/84	1712	12.6	135.9	271,746	4.4
			11/7/84	1626	12.2	133.3	266,557	4.2
			7/8/86	1520	11.9	127.7	255,462	3.9
			12/28/87	1512	12	126.0	252,000	3.9
			5/15/89	1443	11.7	123.3	246,667	3.7
			4/2/90	2545	19.8	128.5	257,071	6.5
			2/4/91	2465	19	129.7	259,474	6.3
			3/19/92	2454	23.8	103.1	206,218	6.3
			5/19/93	2015	17.3	116.5	232,948	5.2
			8/19/94	2398	15	159.9	319,733	6.1
			10/3/95	1663	13.3	125.0	250,075	4.3
			10/14/97	2104	13.2	159.4	318,788	5.4

Attachment 1 Continued
Fran Slade (2000)
Appendix 3

Table 3-1
Summary of Pumping Data
Active District Wells

Well No.	Screen Intervals (ft)	Total Length of Screen (ft)	Date	Pumping Rate (gpm)	Drawdown (ft)	Specific Capacity (gpm/ft ddn)	Theoretical Transmissivity (gpd/ft)	Yield Factor (gpm/ft perfs)
25	330-455	125	6/1/72	819	24	34.1	68,250	6.6
			6/19/74	218	5.9	36.9	73,898	1.7
			7/23/75	209	6.2	33.7	67,419	1.7
			8/5/76	187	4.9	38.2	76,327	1.5
			7/6/77	181	5.3	34.2	68,302	1.4
			7/21/78	169	4.8	35.2	70,417	1.4
			10/9/79	452	15.4	29.4	58,701	3.6
			10/14/80	477.8	9.8	48.8	97,510	3.8
			10/9/81	458	12.4	36.9	73,871	3.7
			12/3/82	468	13.8	33.9	67,826	3.7
			1/6/84	456	13.7	33.3	66,569	3.6
			11/27/84	468	14.2	33.0	65,915	3.7
			7/3/86	468	13.8	33.9	67,826	3.7
			1/19/88	455	14	32.5	65,000	3.6
			5/15/89	453	13.7	33.1	66,131	3.6
			3/21/90	445	13.5	33.0	65,926	3.6
			2/4/91	445	13.6	32.7	65,441	3.6
			3/19/92	442	13.6	32.5	65,000	3.5
			5/3/93	462	13.8	33.5	66,957	3.7
			10/20/95	439	13.5	32.5	65,037	3.5
			10/29/97	459	12.8	35.9	71,719	3.7
26	225-553	328	6/19/74	261	2.3	113.5	226,957	0.8
			7/16/75	261	1.5	174.0	348,000	0.8
			8/5/76	261	2.3	113.5	226,957	0.8
			7/22/77	251	2.5	100.4	200,800	0.8
			7/21/78	260	1.9	136.8	273,684	0.8
			10/9/79	253.8	2.2	115.4	230,727	0.8
			10/14/80	250	2	125.0	250,000	0.8
			10/9/81	252.6	2.7	93.6	187,111	0.8
			12/3/82	260	1.3	200.0	400,000	0.8
			4/20/84	337	2.4	140.4	280,833	1.0
			12/14/84	324	2.3	140.9	281,739	1.0
			7/3/86	475	3.3	143.9	287,879	1.4
			1/19/88	477	2.7	176.7	353,333	1.5
			5/15/89	506	2.7	187.4	374,815	1.5
			3/21/90	512	2.7	189.6	379,259	1.6
			2/4/91	450	2.4	187.5	375,000	1.4
			3/19/92	447	2.5	178.8	357,600	1.4
			5/3/93	461	1.9	242.6	485,263	1.4
			10/20/95	455	2.5	182.0	364,000	1.4
			10/29/97	424	2.5	169.6	339,200	1.3

Attachment 1 Continued
Power Study (2020)
Appendix 3

Table 3-1
Summary of Pumping Data
Active District Wells

Well No.	Screen Intervals (ft)	Total Length of Screen (ft)	Date	Pumping Rate (gpm)	Drawdown (ft)	Specific Capacity (gpm/ft ddn)	Theoretical Transmissivity (gpd/ft)	Yield Factor (gpm/ft perfs)
27	180-380	200	11/19/81	840.4	7	120.1	240,114	4.2
			11/12/82	848	6.1	139.0	278,033	4.2
			12/23/83	825	6.3	131.0	261,905	4.1
			7/13/84	825	6.3	131.0	261,905	4.1
			11/14/84	903	6.4	141.1	282,188	4.5
			7/8/86	1602	10.4	154.0	308,077	8.0
			1/19/88	1508	9.5	158.7	317,474	7.5
			5/12/89	1460	9.5	153.7	307,368	7.3
			3/9/90	1445	9.5	152.1	304,211	7.2
			2/4/91	1367	9	151.9	303,778	6.8
			8/19/94	1398	8.7	160.7	321,379	7.0
			10/13/95	1241	13	95.5	190,923	6.2
			12/5/97	1280	7.8	164.1	328,205	6.4
28	590-890	300	5/23/89	2050	30	68.3	136,667	6.8
			3/1/90	701	12.9	54.3	108,682	2.3
			9/10/90	2138	35.6	60.1	120,112	7.1
			2/4/91	2115	34.7	61.0	121,902	7.1
			3/19/92	2015	33.4	60.3	120,659	6.7
			5/19/93	2070	34.7	59.7	119,308	6.9
			6/16/94	2024	30	67.5	134,933	6.7
			9/22/95	1979	32.3	61.3	122,539	6.6
			10/14/97	1957	31.1	62.9	125,852	6.5
29	410-930 970-1050	600	5/8/92	2597	14	185.5	371,000	4.3
			6/24/94	1719	9.2	186.8	373,696	2.9
			10/13/95	1744	8.1	215.3	430,617	2.9
			10/14/97	1742	11.6	150.2	300,345	2.9
30	640-1080	440	8/11/92	2500	37	67.6	135,135	5.7
			5/7/93	925	12.7	72.8	145,669	2.1
			6/16/94	915	11.5	79.6	159,130	2.1
			9/15/95	920	13.9	66.2	132,374	2.1
			10/14/97	935	11.5	81.3	162,609	2.1
31	270-470 650-670 920-940 980-1000	260	1/28/93	3000	12	250.0	500,000	11.5
			10/13/95	2160	11.2	192.9	385,714	8.3
			10/14/97	2069	27.5	75.2	150,473	8.0

APPENDIX A
TECHNICAL MEMORANDUM STEP-DRAWDOWN AND AQUIFER TEST RESULTS FOR WELL PW-1 – CPV SENTINEL TEST WELL PROGRAM

TECHNICAL MEMORANDUM
STEP-DRAWDOWN AND AQUIFER TEST RESULTS FOR WELL PW-1
CPV Sentinel Test Well Program
Riverside County, California

PROJECT BACKGROUND AND OBJECTIVES

An aquifer testing program was performed in June 2008 at the CPV Sentinel project site located in North Palm Springs, Riverside County, California. The aquifer testing program was intended to provide data for estimating aquifer parameters, including transmissivity (T), hydraulic conductivity (K), and specific capacity (SC). These values establish the hydraulic parameters of the aquifer system in the vicinity of CPV Sentinel test well PW-1 and observation well OBS-1. These data also can be used to evaluate aquifer performance under a variety of possible groundwater extraction and recharge scenarios.

TEST WELLS

The testing was performed using recently installed CPV test well PW-1 and an existing domestic supply well, now known as OBS-1, located approximately 220 feet east-northeast of well PW-1. PW-1 was drilled and constructed in spring 2008 by WDC Exploration & Wells of Woodland, California, under URS supervision. A completion report for the test well program is being prepared and will include the PW-1 boring and geophysical log, construction log and details, a well development log, and grain size analyses results. The report also will include an updated version of this memorandum, summarizing the step-drawdown and pumping test data, analyses, and results. OBS-1 was installed in 2003 by Sixkiller Drilling, of Thermal, California, and was used for domestic supply until about 2005. URS performed a rigorous search of available sources and could not locate a boring log for OBS-1. Construction details for both wells are summarized in Table 1.

TESTING PROGRAM

The aquifer testing program consisted of four components:

- Background water level monitoring;
- Step-drawdown test;
- Constant-discharge test; and
- Recovery test.

Each component is described below.

Background Water Level Monitoring

Background water level monitoring was conducted at 15-minute intervals using dedicated pressure transducers that were installed in PW-1 and OBS-1. Background monitoring was performed for approximately 2 weeks in May 2008 in OBS-1. In addition, background water level measurements were collected in both wells for approximately 24 hours immediately prior to commencing the step-drawdown test. Results from the background monitoring provided data for evaluating temporal water level fluctuations. Results from the background monitoring in OBS-1 are shown as a hydrograph on Figure 1.

Water levels varied in OBS-1 by up to 0.5 foot during the background monitoring period in May 2008. Shorter-term fluctuations averaged about 0.2 foot. Closer examination of the data indicates a diurnal pattern, suggesting that groundwater pumping from a nearby well is occurring during the night. Such pumping appears to influence water levels in PW-1 and OBS-1 and may have contributed to measured drawdowns. In general, the water level fluctuations in PW-1 are insignificant in comparison with drawdowns occurring during the constant-discharge test (i.e., PW-1 pumping drawdown was 13.9 feet with background fluctuation of less than 0.2 foot). However, these fluctuations are more significant when considering measured drawdowns in OBS-1 during the constant-discharge test. This fluctuation did not appear to impact the recovery at OBS-1 because the majority of the recovery occurred over a much shorter time period in comparison to that over which the background fluctuations occurred (i.e., over a period of many hours).

Step-Drawdown Test

A turbine pump was installed in well PW-1 to a depth of approximately 709 feet below ground surface (bgs) by South West Pump & Drilling, Inc. (South West), of Coachella, California. A step-drawdown test was performed in PW-1 on June 20, 2008, by URS and South West, to provide information for evaluating a sustainable pumping rate for the constant-discharge test and to estimate the specific capacity of the well. A 10-inch-diameter steel discharge pipe conveyed extracted groundwater from the well to a 16-acre sprinkler system located north of PW-1. The test included four 90-minute steps, performed sequentially at progressively higher pumping rates. Water levels were measured with pressure transducers. A conductivity-based water level meter also was used to manually monitor and record water levels at periodic intervals. Results from the four tests are shown on Figure 2 and are summarized in Table 2.

Constant-Discharge Test

The constant-discharge test was performed between June 21 and 24, 2008, by URS and South West to provide data for estimating aquifer properties. Prior to the start of pumping, the static depths to groundwater in wells PW-1 and OBS-1 were measured with dedicated, conductivity-based water level meters. Water levels also were measured using pressure transducers.

An approximate groundwater pumping rate of 1,200 gallons per minute (gpm) was selected for the constant-discharge test based on the maximum capacity of the discharge sprinkler system. The pumping rate was monitored at the wellhead using a totalizing flow meter that provided instantaneous pumping rate measurements at 3-second intervals. An in-line flow totalizer also was monitored for estimating average pumping rate over time.

Pumping at PW-1 was initiated at 9:00 a.m. on June 21, 2008. Pumping was terminated at 9:05 a.m. on June 24, 2008, after 72 hours of continuous pumping. Pumping rates were adjusted periodically to maintain an approximately constant discharge rate. Water levels in PW-1 and

OBS-1 were monitored throughout the pumping period using dedicated pressure transducers and conductivity-based water level meters.

A total of 13.9 and 1.7 feet of drawdown were measured in wells PW-1 and OBS-1, respectively, after 72 hours of pumping. An average pumping rate of 1,192 gpm was maintained for the duration of the pumping test, with a short-term variation of +/- 5 percent.

Recovery Test

After cessation of pumping, water level recovery rates were measured in PW-1 for about 27 hours and in OBS-1 for about 72 hours. The recovery test provided a set of independent data for estimating aquifer properties. Data from recovery tests commonly are considered more reliable than data from constant-discharge tests because water level turbulence associated with pumping does not occur.

ANALYSIS OF AQUIFER PARAMETERS

Early-time water level data from the pumping well initially were examined for validity using the method of Shafer (1978). Application of this method indicated that data collected after about 1 minute following startup of pumping were valid for inclusion in the subsequent analysis.

Data collected during the pumping portion of the test were post-processed using Win-Situ and Excel and imported into AQTESOLV™ version 3.01 (Duffield, 2000) for analysis.

Drawdown data in both wells collected during the pumping portion of the constant-discharge test were analyzed using the Cooper-Jacob method (1946), corrected for unconfined conditions. Data plots for wells PW-1 and OBS-1 are shown on Figures 3 and 4, respectively.

Recovery data were analyzed using the method of Theis (1935). Data plots for wells PW-1 and OBS-1 are shown on Figures 5 and 6, respectively. It should be noted that early-time recovery data from well PW-1 were affected by backflow of water into the well from the discharge system.

Calculated transmissivity data are presented in Table 3. The values are in close agreement and range from 395,000 to 448,000 gallons per day per foot (gpd/ft). The transmissivity values calculated from the drawdown data in OBS-1 have the largest variation from the values calculated from data collected in the other well and may reflect, in part, the influence of nearby pumping or other factors. The calculated geometric mean transmissivity value is 424,000 gpd/ft.

Assuming a conservative saturated aquifer thickness of 602 feet, based on summation of the depth to first water (approximately 328 feet bgs) and the top of the uppermost screen (400 feet bgs) plus the individual well screen segments (which are adjacent to the more permeable aquifer intervals encountered during drilling), hydraulic conductivity values were calculated from the transmissivity data, and are presented in Table 3. The calculated geometric mean value of hydraulic conductivity is 3.3×10^{-2} centimeter per second (cm/s). Available reports suggest that aquifer thickness exceeds 1,000 feet in this part of the Mission Springs Subbasin. Moreover, the pilot boring for PW-1 was drilled to 1,465 feet bgs without encountering the base of sedimentary deposits. Reliable storativity values could not be calculated from the tests. The values summarized in Table 3 are interpreted to be representative of subsurface materials present in the vicinity of PW-1 and OBS-1.

Attachments:

REFERENCES

Cooper, H.H. and Jacob, C.E., 1946. A generalized graphical method for evaluating formation constants and summarizing well field history. Transactions, American Geophysical Union, Vol. 27, No. 4.

Duffield, G.M., 2000. AQTESOLV® for Windows® 95/98/NT, Version 3.01-Professional, HydroSOLVE, Inc.

Shafer, D.C., 1978. Effect of casing storage on pumping test data. Johnson Driller Journal, Johnson Division, St. Paul, MN, Jan/Feb.

Theis, C.E., 1935. The relation between lowering of the piezometric surface and rate and duration of discharge of a well using groundwater storage." *Transactions of the American Geophysical Union*, 16, 519-524.

TABLE 1
Well Construction Details
CPV Sentinel Test Well Program
Riverside County, California

Feature	PW-1	OBS-1
Borehole Depth (feet bgs)	1,210 [1]	Unknown
Well Casing Depth (feet bgs)	1,200	488
Well Casing Diameter (in)	16	8
Borehole Diameter (in)	26	Unknown
Conductor Casing Depth (feet bgs)	49.5 [2]	Unknown
Conductor Casing Diameter (in)	30	Unknown
Conductor Casing Borehole Diameter (in)	36	Unknown
Screen Interval(s) (feet bgs) PW-1: 0.060-inch slot size, louvered screen	400-680 720-860 1,000-1,040 1,110-1,180	Unknown
Filter Pack Interval (feet bgs) PW-1: SRI 8x16 gravel pack	60-1,210	Unknown
Static Water Level (feet bmp) - June 20, 2008	327.26 [3]	337.28 [4]

Notes:
1. Depth of pilot hole boring for PW-1 was 1,465 feet bgs.
2. Conductor casing was sealed in place with a 10-sack cement-sand slurry.
3. Measuring point for PW-1 was the top of an I-beam placed on top of the well casing to support the pump head during the aquifer testing program.
4. Measuring point for OBS-1 was the top of the steel casing.

Abbreviations:
bgs = below ground surface
bmp = below measuring point
in = inches

TABLE 2

PW-1 Step-Drawdown Test Results [1]

CPV Sentinel Test Well Program

Riverside County, California

Step	Duration (min)	Pumping Rate (gpm)	Drawdown (feet)	Specific Capacity (gpm/foot drawdown)
1	90	538	4.87	110.47
2	90	827	8.14	101.60
3	90	1,108	11.34	97.71
4	90	1,432	15.28	93.72

Note:

1. The PW-1 step-drawdown test was conducted on June 20, 2008, by URS and South West Pump & Drilling, Inc., of Coachella, California.

Abbreviations:

gpm = gallons per minute

min = minutes

TABLE 3

Calculated Aquifer Parameter Values [1,2]

CPV Sentinel Test Well Program

Riverside County, California

Well	T from Constant-Discharge Test (gpd/ft)	T from Recovery Test [3] (gpd/ft)	K from Constant-Discharge Test [4] (cm/s)	K from Recovery Test [3,4] (cm/s)
PW-1	395,000	426,000	3.09E-02	3.34E-02
OBS-1	448,000	427,000	3.51E-02	3.35E-02
Geometric Mean	**423,573**		**3.32E-02**	

Notes:

1. The 72-hour pumping portion of the constant-discharge test was conducted from June 21, 2008, at 9:00 a.m. through June 24, 2008, at 9:05 a.m.
2. The average pumping rate in PW-1 during the constant-discharge test was 1,192 gpm.
3. Recovery monitoring was conducted for 27 hours in PW-1 and 72 hours in OBS-1.
4. K was calculated by dividing T by 602 feet, which is considered a conservative aquifer thickness based on first encountered groundwater at approximately 328 feet bgs to the top of the screen plus the screen intervals (see memo text for more detail).

Abbreviations:

bgs = below ground surface

cm/s = centimeter per second

gpd/ft = gallons per day per foot

gpm = gallons per minute

K = hydraulic conductivity

T = transmissivity

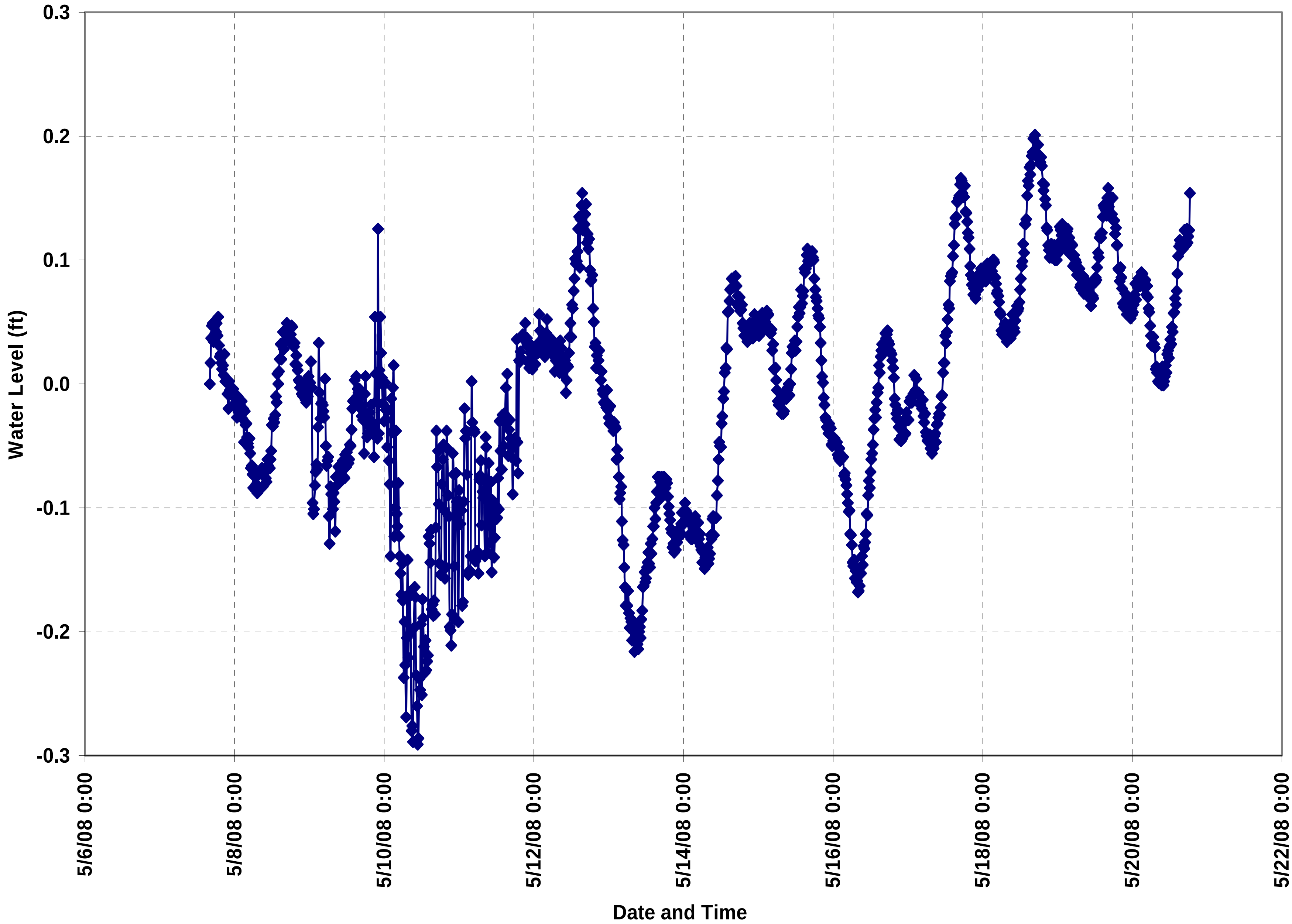


Figure 1: OBS-1 Background Water Level Monitoring Hydrograph

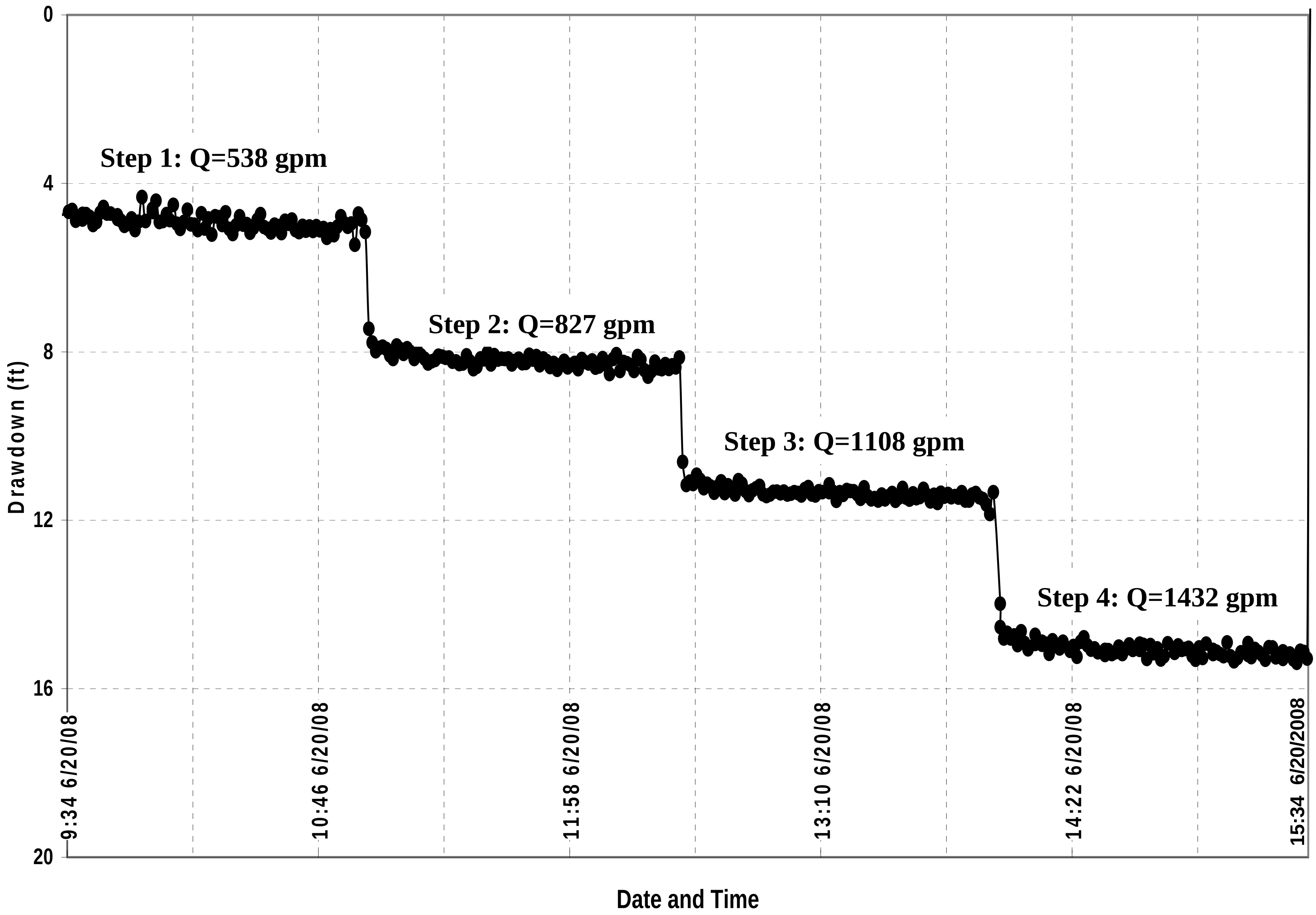
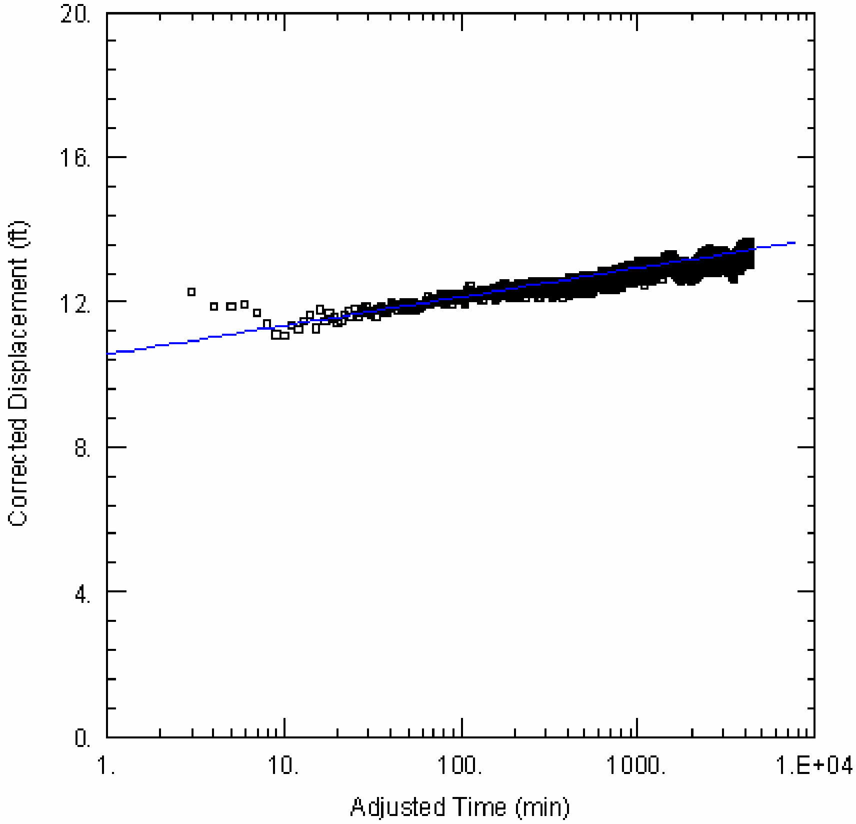


Figure 2: PW-1 Step-Drawdown Test Data Plot



DRAWDOWN TEST

Data Set: X:\...\PW-1 Drawdown Cooper-Jacob.aqt
Date: 07/07/08 Time: 19:28:52

PROJECT INFORMATION

Company: URS
Test Location: Ocatillo
Test Well: PW-1
Test Date: June 21

AQUIFER DATA

Saturated Thickness: 602. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

Observation Wells

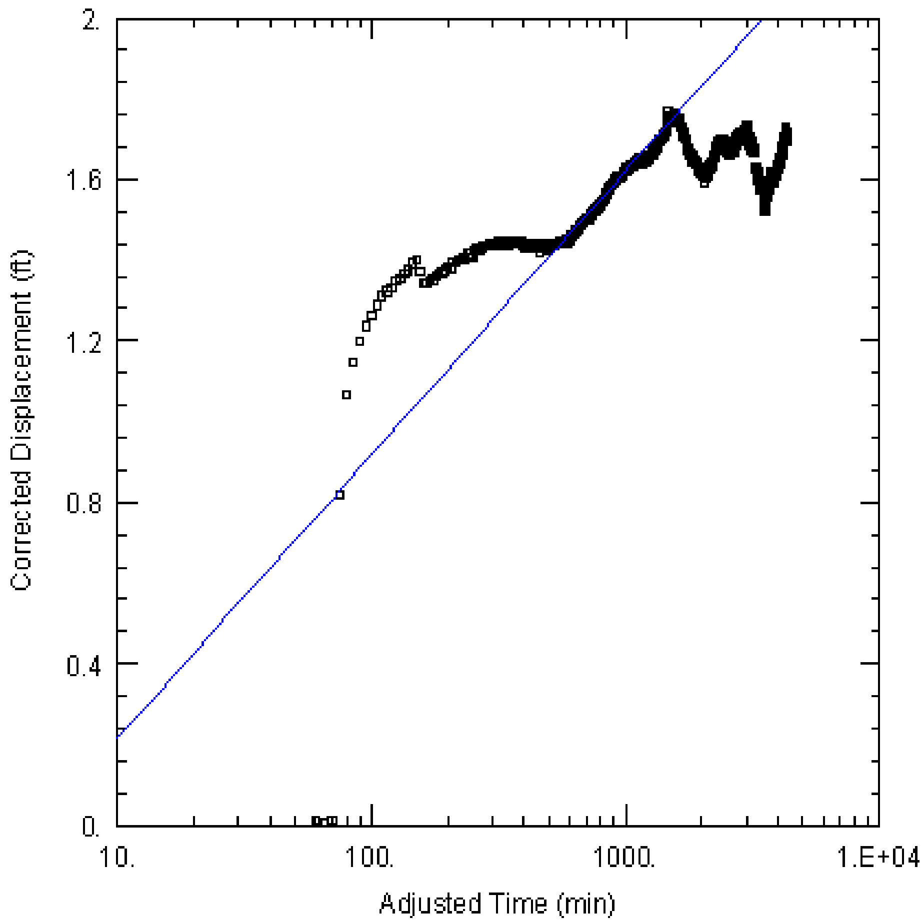
Well Name	X (ft)	Y (ft)
▫ PW-1	1	220

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 3.947E+05 gal/day/ft S = 9.882E-17

Figure 3: PW-1 Drawdown (6/21/08– 6/24/08) – Cooper Jacob Solution



WELL TEST ANALYSIS

Data Set: X:\...\OBS-1 Cooper-Jacob.aqt
Date: 07/07/08 Time: 19:36:11

AQUIFER DATA

Saturated Thickness: 602. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

Observation Wells

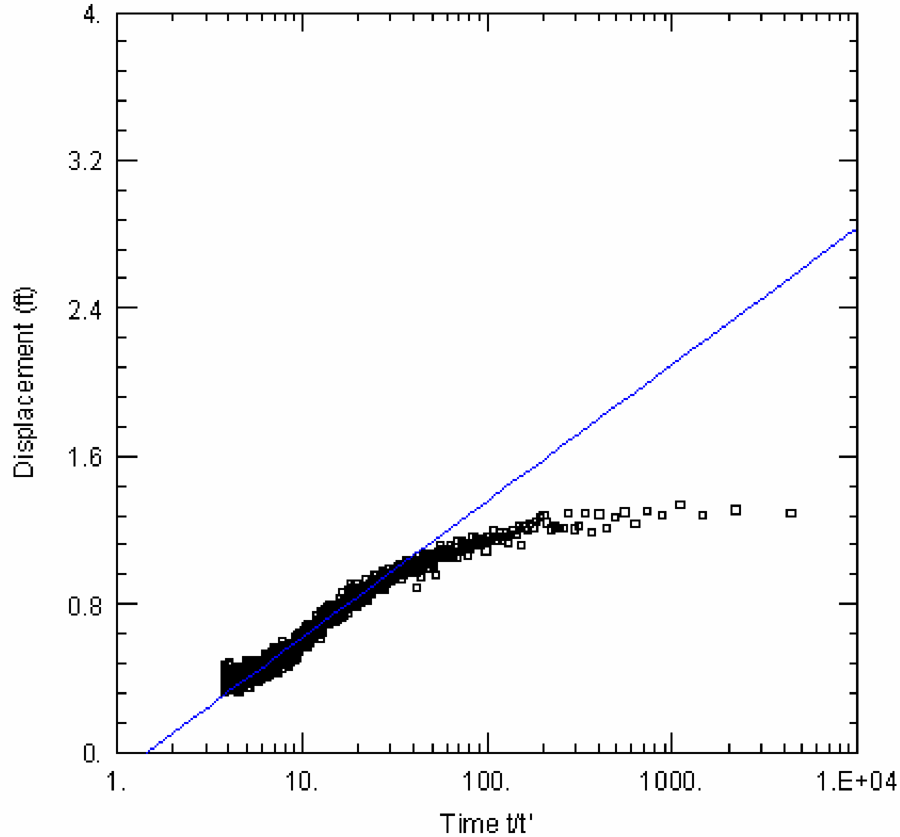
Well Name	X (ft)	Y (ft)
▫ OBS-1	220	0

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 4.479E+05 gal/day/ft S = 0.009525

Figure 4: OBS -1 Drawdown (6/21/08– 6/24/08) – Cooper Jacob Solution



DRAWDOWN TEST

Data Set: X:\...\PW-1 Recovery.aqt
Date: 07/07/08 Time: 19:40:39

PROJECT INFORMATION

Company: URS
Test Location: Ocatillo
Test Well: PW-1
Test Date: June 21

AQUIFER DATA

Saturated Thickness: 602. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

Observation Wells

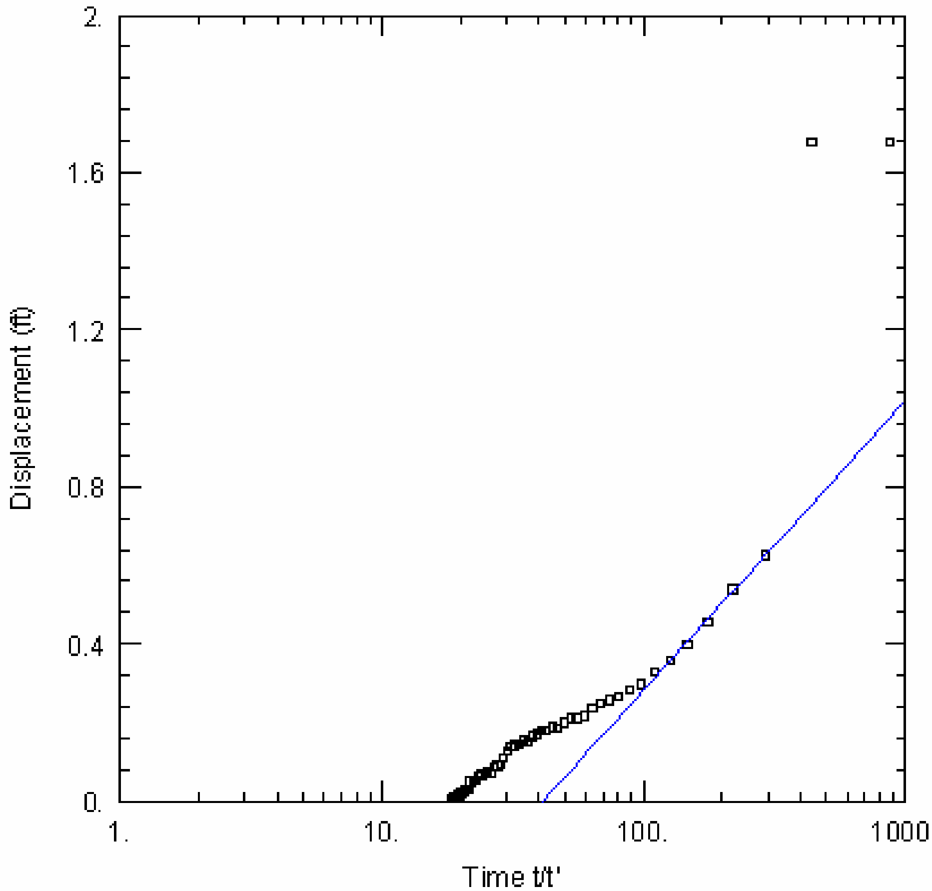
Well Name	X (ft)	Y (ft)
▫ PW-1	1	0

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 4.262E+05 gal/day/ft S' = 1.453

Figure 5: PW-1 Recovery (6/24/08– 6/25/08) – Theis Solution (Recovery)



WELL TEST ANALYSIS

Data Set: X:\...\OBS-1 Recovery.aqt
Date: 07/07/08 Time: 19:44:13

AQUIFER DATA

Saturated Thickness: 602. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
▫ OBS-1	220	0

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 4.274E+05 gal/day/ft S' = 41.55

Figure 6: OBS-1 Recovery (6/24/08– 6/27/08) – Theis Solution (Recovery)

APPENDIX B
ADDITIONAL GROUNDWATER MODELING RUNS (BASELINE EQUALS TYLEY T DISTRIBUTION; SENSITIVITY 1 (½ OF TYLEY T DISTRIBUTION), AND SENSITIVITY 2 (2 TIMES TYLEY T DISTRIBUTION)

Table 1: Summary of Simulation Results – Baseline (Tyley's T)

Location	Scenario 1		Scenario 2		Scenario 3	
	Ty/Tx=1.0	Ty/Tx=2.0	Ty/Tx=1.0	Ty/Tx=2.0	Ty/Tx=1.0	Ty/Tx=2.0
Project Pumping Wells						
maximum drawdown (ft)	15.8	11.3	16.5	12.1	27.0	20.4
time to maximum drawdown (year)	7 - 30	7 - 30	30 (5 yr cycle)	30 (5 yr cycle)	4 (months)	4 (months)
drawdown at 35 years (ft)	1.1	0.3	1.2	0.2	2.7 (12 months)	2.1 (12 months)
DWA Recharge Basin						
maximum water level rise (ft)	21.6	14.5	62	46	0	0.1
time to maximum water level rise (year)	10 - 31	9 - 31	31 (5 yr cycle)	31 (5 yr cycle)	-	12 (months)
water level rise at 35 years (ft)	3.7	1.6	5.5	2.8	0	0.1 (12 months)
Wells 27 and 31						
maximum drawdown (ft)	2.8	1.6	3.4	2.3	0.6	0.5
time to maximum drawdown (year)	20 - 30	16 - 30	30	30	12 (months)	12 (months)
drawdown at 35 years (ft)	1.0	0.3	1.2	0.3	0.6 (12 months)	0.5 (12 months)
Wells 28 and 30						
maximum drawdown (ft)	-1.8	-0.4	-2.1	1.6	0.1	0.2
time to maximum drawdown (year)	31	31	32	5	12 (months)	12 (months)
drawdown at 35 years (ft)	-0.9	-0.2	-1.5	-0.5	0.1 (12 months)	0.2 (12 months)
Well 22						
maximum drawdown (ft)	0.8	0.8	1.6	1.6	0.1	0.1
drawdown at 35 years (ft)	0.3	0.2	0.2	0.2	0.1 (12 months)	0.1 (12 months)
Well 24						
maximum drawdown (ft)	1.0	0.9	1.8	1.7	0.1	0.1
drawdown at 35 years (ft)	0.4	0.3	0.4	0.3	0.1 (12 months)	0.1 (12 months)
Well 29						
maximum drawdown (ft)	1.2	1.0	2.0	1.7	0.1	0.1
drawdown at 35 years (ft)	0.5	0.4	0.6	0.4	0.1 (12 months)	0.1 (12 months)
Well 32						
maximum drawdown (ft)	2.4	1.4	3.1	2.0	0.4	0.3
drawdown at 35 years (ft)	1.0	0.4	1.2	0.4	0.4 (12 months)	0.3 (12 months)
CVWD Wells						
maximum drawdown (ft)	2.3	1.3	3.0	1.9	0.2	0.2
drawdown at 35 years (ft)	1.1	0.5	1.4	0.6	0.2 (12 months)	0.2 (12 months)

Scenario 1: Pump=1,100 afy, Recharge = 1,100 afy (DWA only)
Scenario 2: Pump=1,100 afy, Recharge = 5,500 af (every 5 years, DWA only)
Scenario 3: Pump=2,059 gpm (for 4 months, total pumped volume = 1,100 af), No recharge

Table 2: Summary of Simulation Results – Sensitivity 1 (Half Tyley's T)

Location	Scenario 1		Scenario 2		Scenario 3	
	Ty/Tx=1.0	Ty/Tx=2.0	Ty/Tx=1.0	Ty/Tx=2.0	Ty/Tx=1.0	Ty/Tx=2.0
Project Pumping Wells						
maximum drawdown (ft)	31.3	22.3	32.0	23.1	47.3	35.4
time to maximum drawdown (year)	15 - 30	10 - 30	20 - 30	15 - 30	4 (months)	4 (months)
drawdown at 35 years (ft)	4.5	1.7	4.5	1.8	4.8 (12 months)	3.9 (12 months)
DWA Recharge Basin						
maximum water level rise (ft)	42.2	28.7	104.5	78.7	0	0
time to maximum water level rise (year)	20 - 31	15 - 31	31 (5 yr cycle)	31 (5 yr cycle)	-	-
water level rise at 35 years (ft)	11.0	5.3	14.9	8.0	0	0.0
Wells 27 and 31						
maximum drawdown (ft)	4.9	2.7	5.5	3.3	0.4	0.4
time to maximum drawdown (year)	20 - 30	20 - 30	20 - 30	20 - 30	12 (months)	12 (months)
drawdown at 35 years (ft)	2.8	1.1	3.2	1.4	0.4 (12 months)	0.4 (12 months)
Wells 28 and 30						
maximum drawdown (ft)	-3.6	-0.9	-3.6	1.4	0.1	0
time to maximum drawdown (year)	31	32	33	5	12 (months)	-
drawdown at 35 years (ft)	-2.6	-0.6	-3.2	-0.9	0.1 (12 months)	0.0
Well 22						
maximum drawdown (ft)	1.2	1.2	1.9	1.9	0.0	0.1
drawdown at 35 years (ft)	0.7	0.7	0.8	0.8	0.0	0.1 (12 months)
Well 24						
maximum drawdown (ft)	1.6	1.4	2.3	2.0	0.0	0.0
drawdown at 35 years (ft)	1.0	0.8	1.3	1.0	0.0	0.0
Well 29						
maximum drawdown (ft)	1.9	1.5	2.6	2.1	0.0	0.0
drawdown at 35 years (ft)	1.4	1.0	1.7	1.3	0.0	0.0
Well 32						
maximum drawdown (ft)	4.1	2.3	4.8	2.9	0.2	0.2
drawdown at 35 years (ft)	2.7	1.2	3.1	1.4	0.2 (12 months)	0.2 (12 months)
CVWD Wells						
maximum drawdown (ft)	3.9	2.0	4.4	2.7	0.1	0.1
drawdown at 35 years (ft)	2.8	1.3	3.3	1.6	0.1 (12 months)	0.1 (12 months)

Scenario 1: Pump=1,100 afy, Recharge = 1,100 afy (DWA only)
Scenario 2: Pump=1,100 afy, Recharge = 5,500 af (every 5 years, DWA only)
Scenario 3: Pump=2,059 gpm (for 4 months, total pumped volume = 1,100 af), No recharge

Table 3: Summary of Simulation Results – Sensitivity 2 (Double Tyley's T)

Location	Scenario 1		Scenario 2		Scenario 3	
	Ty/Tx=1.0	Ty/Tx=2.0	Ty/Tx=1.0	Ty/Tx=2.0	Ty/Tx=1.0	Ty/Tx=2.0
Project Pumping Wells						
maximum drawdown (ft)	8.0	5.8	8.8	6.8	15.5	11.8
time to maximum drawdown (year)	10 - 30	10 - 30	30 (5 yr cycle)	30 (5 yr cycle)	4 (months)	4 (months)
drawdown at 35 years (ft)	0.2	0	0.1	0	1.5 (12 months)	1.1 (12 months)
DWA Recharge Basin						
maximum water level rise (ft)	10.9	7.3	36.2	26.8	0.1	0.3
time to maximum water level rise (year)	20 - 31	20 - 31	31 (5 yr cycle)	31 (5 yr cycle)	12 (months)	12 (months)
water level rise at 35 years (ft)	1.1	0.4	1.9	1.0	0.1 (12 months)	0.3 (12 months)
Wells 27 and 31						
maximum drawdown (ft)	1.6	0.9	2.3	1.8	0.6	0.5
time to maximum drawdown (year)	15 - 30	15 - 30	30 (5 yr cycle)	30 (5 yr cycle)	8 (months)	8 (months)
drawdown at 35 years (ft)	0.3	0.1	0.3	0	0.5 (12 months)	0.5 (12 months)
Wells 28 and 30						
maximum drawdown (ft)	-0.9	-0.2	1.6	1.8	0.3	0.4
time to maximum drawdown (year)	31	31	5	5	12 (months)	12 (months)
drawdown at 35 years (ft)	-0.3	-0.1	-0.7	-0.4	0.3 (12 months)	0.4 (12 months)
Well 22						
maximum drawdown (ft)	0.6	0.6	1.5	1.6	0.3	0.3
drawdown at 35 years (ft)	0.2	0.0	-0.1	-0.1	0.3 (12 months)	0.3 (12 months)
Well 24						
maximum drawdown (ft)	0.7	0.6	1.6	1.6	0.3	0.3
drawdown at 35 years (ft)	0.2	0.1	0.0	-0.1	0.3 (12 months)	0.3 (12 months)
Well 29						
maximum drawdown (ft)	0.8	0.6	1.6	1.5	0.2	0.2
drawdown at 35 years (ft)	0.2	0.1	0.1	0.0	0.2 (12 months)	0.2 (12 months)
Well 32						
maximum drawdown (ft)	1.4	0.8	2.1	1.7	0.4	0.4
drawdown at 35 years (ft)	0.3	0.1	0.3	0.0	0.4 (12 months)	0.4 (12 months)
CVWD Wells						
maximum drawdown (ft)	1.4	0.8	2.0	1.6	0.3	0.3
drawdown at 35 years (ft)	0.4	0.1	0.4	0.1	0.3 (12 months)	0.3 (12 months)

Scenario 1: Pump=1,100 afy, Recharge = 1,100 afy (DWA only)
Scenario 2: Pump=1,100 afy, Recharge = 5,500 af (every 5 years, DWA only)
Scenario 3: Pump=2,059 gpm (for 4 months, total pumped volume = 1,100 af), No recharge

Table 4: Water Volumetric Budget and Mass Balance of Baseline Simulation – Tyley's T (Scenario 1, Isotropic)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131340.8	-0.2	0.0	-54.6	0	-131346.0	-60.1	-0.046%	-0.50	-0.05%
2	101496.1	-101578.8	0.0	-37.1	131406.0	-131346.0	-59.8	-0.026%	-1.00	-0.033%
3	80100.5	-80221.5	0.0	1.0	131406.0	-131346.0	-60.1	-0.028%	-1.51	-0.031%
4	63972.4	-64154.8	0.0	62.2	131406.0	-131346.0	-60.2	-0.031%	-2.01	-0.031%
5	51924.9	-52189.1	0.0	144.1	131406.0	-131346.0	-60.1	-0.033%	-2.52	-0.031%
6	42815.7	-43176.7	0.0	240.3	131406.0	-131346.0	-60.8	-0.035%	-3.03	-0.032%
7	35824.2	-36288.1	0.0	343.3	131406.0	-131346.0	-60.6	-0.036%	-3.53	-0.033%
8	30380.5	-30947.2	0.0	445.5	131406.0	-131346.0	-61.2	-0.038%	-4.05	-0.033%
9	26085.8	-26747.7	0.0	541.1	131406.0	-131346.0	-60.9	-0.039%	-4.56	-0.034%
10	22656.2	-23403.2	0.0	625.8	131406.0	-131346.0	-61.3	-0.040%	-5.07	-0.034%
11	19887.9	-20706.2	0.0	697.1	131406.0	-131346.0	-61.2	-0.040%	-5.58	-0.035%
12	17629.8	-18505.3	0.0	753.9	131406.0	-131346.0	-61.7	-0.041%	-6.10	-0.035%
13	15771.8	-16689.6	0.0	795.9	131406.0	-131346.0	-62.0	-0.042%	-6.62	-0.036%
14	14228.3	-15174.7	0.0	823.6	131406.0	-131346.0	-62.9	-0.043%	-7.15	-0.036%
15	12936.2	-13897.7	0.0	838.8	131406.0	-131346.0	-62.7	-0.043%	-7.67	-0.036%
16	11844.8	-12810.5	0.0	842.4	131406.0	-131346.0	-63.3	-0.044%	-8.20	-0.037%
17	10916.6	-11875.6	0.0	835.8	131406.0	-131346.0	-63.2	-0.044%	-8.73	-0.037%
18	10121.0	-11064.5	0.0	821.5	131406.0	-131346.0	-62.0	-0.044%	-9.25	-0.038%
19	9434.8	-10355.1	0.0	798.6	131406.0	-131346.0	-61.7	-0.044%	-9.77	-0.038%
20	8837.1	-9728.5	0.0	769.6	131406.0	-131346.0	-61.9	-0.044%	-10.29	-0.038%
21	8315.0	-9171.6	0.0	735.3	131406.0	-131346.0	-61.3	-0.044%	-10.80	-0.038%
22	7854.5	-8672.6	0.0	696.9	131406.0	-131346.0	-61.2	-0.044%	-11.31	-0.039%
23	7446.8	-8222.9	0.0	655.2	131406.0	-131346.0	-61.0	-0.044%	-11.82	-0.039%
24	7082.2	-7814.5	0.0	610.9	131406.0	-131346.0	-61.5	-0.044%	-12.34	-0.039%
25	6756.2	-7441.8	0.0	564.4	131406.0	-131346.0	-61.2	-0.044%	-12.85	-0.039%
26	6461.5	-7099.5	0.0	516.6	131406.0	-131346.0	-61.5	-0.044%	-13.37	-0.039%
27	6195.3	-6783.7	0.1	467.8	131406.0	-131346.0	-60.6	-0.044%	-13.88	-0.039%
28	5951.9	-6491.1	0.1	417.4	131406.0	-131346.0	-61.8	-0.045%	-14.39	-0.040%
29	5730.1	-6219.1	0.2	367.6	131406.0	-131346.0	-61.2	-0.044%	-14.91	-0.040%
30	5525.6	-5965.0	0.3	317.5	131406.0	-131346.0	-61.8	-0.045%	-15.42	-0.040%
31	3227.1	-134958.1	0.4	263.2	131406.0	0	-61.4	-0.045%	-15.94	-0.040%
32	102399.4	-102657.2	0.5	195.9	0	0	-61.4	-0.060%	-16.45	-0.040%
33	80109.5	-80280.3	0.7	109.0	0	0	-61.2	-0.076%	-16.96	-0.041%
34	63375.8	-63437.3	0.8	-1.1	0	0	-61.8	-0.098%	-17.48	-0.042%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 1: Pump=1,100 afy, Recharge = 1,100 afy (DWA Only)

Table 5: Water Volumetric Budget and Mass Balance of Baseline Simulation – Tyley's T (Scenario 1, Anisotropic Ratio=2)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131339.8	-0.2	0.0	-54.0	0	-131346.0	-60.4	-0.046%	-0.51	-0.05%
2	84190.2	-84275.3	0.0	-35.0	131406.0	-131346.0	-60.2	-0.028%	-1.01	-0.035%
3	58240.3	-58365.0	0.0	4.4	131406.0	-131346.0	-60.3	-0.032%	-1.51	-0.034%
4	41915.9	-42101.7	0.0	65.5	131406.0	-131346.0	-60.5	-0.035%	-2.02	-0.034%
5	31366.7	-31630.6	0.0	143.9	131406.0	-131346.0	-60.1	-0.037%	-2.53	-0.035%
6	24298.4	-24651.5	0.0	232.6	131406.0	-131346.0	-60.5	-0.039%	-3.03	-0.035%
7	19398.7	-19843.5	0.0	324.2	131406.0	-131346.0	-60.6	-0.040%	-3.54	-0.036%
8	15897.9	-16430.8	0.0	412.2	131406.0	-131346.0	-60.7	-0.041%	-4.05	-0.036%
9	13327.7	-13940.7	0.0	492.2	131406.0	-131346.0	-61.0	-0.042%	-4.56	-0.037%
10	11394.0	-12076.2	0.0	560.9	131406.0	-131346.0	-61.3	-0.043%	-5.07	-0.037%
11	9908.4	-10647.3	0.0	617.4	131406.0	-131346.0	-61.6	-0.043%	-5.59	-0.038%
12	8744.7	-9527.9	0.0	661.2	131406.0	-131346.0	-62.1	-0.044%	-6.11	-0.038%
13	7818.1	-8632.6	0.0	692.8	131406.0	-131346.0	-61.8	-0.044%	-6.63	-0.039%
14	7067.4	-7903.2	0.0	713.1	131406.0	-131346.0	-62.7	-0.045%	-7.15	-0.039%
15	6451.4	-7298.1	0.0	724.0	131406.0	-131346.0	-62.8	-0.045%	-7.68	-0.040%
16	5938.5	-6787.5	0.0	726.3	131406.0	-131346.0	-62.8	-0.045%	-8.20	-0.040%
17	5506.6	-6350.2	0.0	721.2	131406.0	-131346.0	-62.5	-0.045%	-8.73	-0.040%
18	5137.5	-5970.1	0.0	709.8	131406.0	-131346.0	-62.9	-0.046%	-9.25	-0.040%
19	4820.0	-5635.7	0.0	693.2	131406.0	-131346.0	-62.5	-0.046%	-9.78	-0.041%
20	4543.4	-5337.5	0.0	672.3	131406.0	-131346.0	-61.9	-0.045%	-10.30	-0.041%
21	4299.3	-5069.4	0.0	647.6	131406.0	-131346.0	-62.5	-0.046%	-10.82	-0.041%
22	4083.5	-4825.4	0.0	620.1	131406.0	-131346.0	-61.8	-0.045%	-11.34	-0.041%
23	3889.1	-4601.9	0.0	590.4	131406.0	-131346.0	-62.4	-0.046%	-11.86	-0.041%
24	3715.0	-4395.5	0.0	558.8	131406.0	-131346.0	-61.7	-0.045%	-12.38	-0.042%
25	3556.3	-4203.6	0.1	525.7	131406.0	-131346.0	-61.5	-0.045%	-12.89	-0.042%
26	3411.5	-4024.6	0.1	491.4	131406.0	-131346.0	-61.7	-0.046%	-13.41	-0.042%
27	3277.9	-3856.7	0.2	456.5	131406.0	-131346.0	-62.1	-0.046%	-13.93	-0.042%
28	3155.3	-3698.0	0.3	421.0	131406.0	-131346.0	-61.4	-0.045%	-14.45	-0.042%
29	3041.3	-3548.4	0.4	385.2	131406.0	-131346.0	-61.5	-0.046%	-14.96	-0.042%
30	2935.0	-3406.4	0.5	349.3	131406.0	-131346.0	-61.6	-0.046%	-15.48	-0.042%
31	1669.5	-133446.0	0.7	308.2	131406.0	0	-61.6	-0.046%	-15.99	-0.042%
32	84567.3	-84882.5	0.9	253.4	0	0	-61.0	-0.072%	-16.50	-0.043%
33	58087.2	-58328.1	1.0	178.5	0	0	-61.4	-0.105%	-17.02	-0.044%
34	41441.7	-41586.8	1.2	82.5	0	0	-61.4	-0.148%	-17.53	-0.045%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 1: Pump=1,100 afy, Recharge = 1,100 afy (DWA Only)

Table 6: Water Volumetric Budget and Mass Balance of Baseline Simulation – Tyley's T (Scenario 2, Isotropic)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131340.8	-0.2	0.0	-54.6	0	-131346.0	-60.1	-0.046%	-0.50	-0.05%
2	131322.4	0.0	0.0	-36.6	0.0	-131346.0	-60.2	-0.046%	-1.01	-0.046%
3	131282.1	0.0	0.0	3.9	0.0	-131346.0	-60.0	-0.046%	-1.51	-0.046%
4	131213.3	0.0	0.0	72.4	0.0	-131346.0	-60.3	-0.046%	-2.02	-0.046%
5	131115.8	0.0	0.0	169.9	0.0	-131346.0	-60.3	-0.046%	-2.52	-0.046%
6	49959.3	-575995.0	0.0	291.3	657029.8	-131346.0	-60.7	-0.009%	-3.03	-0.027%
7	192792.7	-61934.0	0.0	426.8	0.0	-131346.0	-60.4	-0.031%	-3.54	-0.027%
8	142817.0	-12096.7	0.0	565.0	0.0	-131346.0	-60.7	-0.042%	-4.04	-0.028%
9	136923.8	-6335.9	0.0	697.1	0.0	-131346.0	-61.1	-0.044%	-4.56	-0.030%
10	134525.3	-4059.1	0.0	818.7	0.0	-131346.0	-61.1	-0.045%	-5.07	-0.031%
11	22896.1	-549568.7	0.0	927.1	657029.8	-131346.0	-61.7	-0.009%	-5.59	-0.025%
12	186928.1	-56663.1	0.0	1019.2	0.0	-131346.0	-61.8	-0.033%	-6.10	-0.026%
13	141568.4	-11376.8	0.0	1092.5	0.0	-131346.0	-61.9	-0.043%	-6.62	-0.026%
14	136692.9	-6556.3	0.0	1146.8	0.0	-131346.0	-62.5	-0.045%	-7.15	-0.027%
15	134724.7	-4626.3	0.0	1185.7	0.0	-131346.0	-61.9	-0.046%	-7.66	-0.028%
16	13884.8	-540840.6	0.0	1209.8	657029.8	-131346.0	-62.2	-0.009%	-8.19	-0.025%
17	184668.8	-54607.1	0.0	1221.9	0.0	-131346.0	-62.4	-0.034%	-8.71	-0.025%
18	142128.2	-12065.9	0.0	1221.2	0.0	-131346.0	-62.5	-0.044%	-9.23	-0.026%
19	136055.3	-5980.8	0.0	1209.0	0.0	-131346.0	-62.6	-0.046%	-9.76	-0.026%
20	134497.3	-4402.1	0.0	1188.5	0.0	-131346.0	-62.3	-0.046%	-10.28	-0.027%
21	9973.1	-536881.9	0.0	1162.5	657029.8	-131346.0	-62.5	-0.009%	-10.80	-0.025%
22	183270.0	-53118.2	0.0	1131.4	0.0	-131346.0	-62.8	-0.034%	-11.33	-0.025%
23	142262.7	-12073.7	0.0	1094.6	0.0	-131346.0	-62.4	-0.044%	-11.85	-0.026%
24	135536.9	-5305.6	0.0	1052.4	0.0	-131346.0	-62.2	-0.046%	-12.37	-0.026%
25	134258.0	-3981.5	0.0	1007.5	0.0	-131346.0	-62.0	-0.046%	-12.89	-0.027%
26	7873.5	-534580.8	0.1	961.9	657029.8	-131346.0	-61.6	-0.009%	-13.41	-0.025%
27	182294.9	-51925.7	0.1	915.3	0.0	-131346.0	-61.4	-0.034%	-13.92	-0.025%
28	142098.0	-11679.7	0.2	866.2	0.0	-131346.0	-61.3	-0.043%	-14.44	-0.025%
29	135165.4	-4695.8	0.3	815.0	0.0	-131346.0	-61.1	-0.045%	-14.95	-0.026%
30	134048.8	-3528.1	0.4	763.7	0.0	-131346.0	-61.3	-0.045%	-15.46	-0.026%
31	4209.3	-662009.7	0.5	709.2	657029.8	0	-61.0	-0.009%	-15.97	-0.025%
32	175016.3	-175719.9	0.7	642.1	0	0	-60.8	-0.035%	-16.48	-0.025%
33	118305.1	-118918.8	0.8	550.7	0	0	-62.1	-0.052%	-17.00	-0.025%
34	89986.4	-90480.4	1.0	431.4	0	0	-61.5	-0.068%	-17.52	-0.026%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 2: Pump=1,100 afy, Recharge = 5,500 af (every 5 years, DWA only)

Table 7: Water Volumetric Budget and Mass Balance of Baseline Simulation – Tyley's T (Scenario 2, Anisotropic Ratio=2)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131339.8	-0.2	0.0	-54.0	0	-131346.0	-60.4	-0.046%	-0.51	-0.05%
2	131320.1	0.0	0.0	-34.2	0.0	-131346.0	-60.1	-0.046%	-1.01	-0.046%
3	131276.2	0.0	0.0	9.5	0.0	-131346.0	-60.3	-0.046%	-1.51	-0.046%
4	131203.4	0.0	0.0	82.1	0.0	-131346.0	-60.5	-0.046%	-2.02	-0.046%
5	131101.7	0.0	0.0	183.9	0.0	-131346.0	-60.4	-0.046%	-2.53	-0.046%
6	26828.1	-552879.8	0.0	307.2	657029.8	-131346.0	-60.6	-0.009%	-3.04	-0.027%
7	179222.4	-48376.6	0.0	439.2	0.0	-131346.0	-61.0	-0.034%	-3.55	-0.028%
8	138117.8	-7400.7	0.0	567.6	0.0	-131346.0	-61.3	-0.044%	-4.06	-0.029%
9	134440.1	-3840.5	0.0	685.1	0.0	-131346.0	-61.3	-0.045%	-4.57	-0.030%
10	132751.8	-2258.2	0.0	790.9	0.0	-131346.0	-61.5	-0.046%	-5.09	-0.032%
11	12558.1	-539187.7	0.0	883.7	657029.8	-131346.0	-62.1	-0.009%	-5.61	-0.026%
12	181289.5	-50965.6	0.0	960.3	0.0	-131346.0	-61.7	-0.034%	-6.13	-0.026%
13	138830.4	-8564.7	0.0	1018.3	0.0	-131346.0	-61.9	-0.044%	-6.65	-0.027%
14	134134.7	-3909.7	0.0	1059.1	0.0	-131346.0	-61.9	-0.046%	-7.16	-0.028%
15	132785.2	-2589.3	0.0	1087.8	0.0	-131346.0	-62.3	-0.047%	-7.69	-0.029%
16	7932.4	-534786.1	0.0	1107.6	657029.8	-131346.0	-62.3	-0.009%	-8.21	-0.025%
17	180642.8	-50476.8	0.0	1117.2	0.0	-131346.0	-62.8	-0.035%	-8.73	-0.026%
18	139535.7	-9368.5	0.0	1115.4	0.0	-131346.0	-63.3	-0.045%	-9.27	-0.026%
19	133721.6	-3543.6	0.0	1104.6	0.0	-131346.0	-63.4	-0.047%	-9.80	-0.027%
20	132654.1	-2460.7	0.0	1089.4	0.0	-131346.0	-63.2	-0.047%	-10.33	-0.028%
21	5899.8	-532718.2	0.0	1072.0	657029.8	-131346.0	-62.6	-0.009%	-10.85	-0.025%
22	179957.6	-49725.7	0.0	1050.8	0.0	-131346.0	-63.2	-0.035%	-11.38	-0.026%
23	139575.7	-9316.7	0.1	1024.0	0.0	-131346.0	-63.0	-0.045%	-11.91	-0.026%
24	133456.1	-3165.4	0.1	992.3	0.0	-131346.0	-62.9	-0.047%	-12.43	-0.027%
25	132526.4	-2203.5	0.2	960.0	0.0	-131346.0	-62.9	-0.047%	-12.96	-0.027%
26	4767.6	-531443.7	0.3	929.0	657029.8	-131346.0	-63.0	-0.010%	-13.49	-0.025%
27	179414.1	-49027.8	0.4	897.2	0.0	-131346.0	-62.2	-0.034%	-14.01	-0.026%
28	139434.9	-9014.0	0.5	861.9	0.0	-131346.0	-62.8	-0.045%	-14.54	-0.026%
29	133240.6	-2781.5	0.7	823.8	0.0	-131346.0	-62.4	-0.047%	-15.06	-0.026%
30	132415.8	-1919.6	0.9	786.6	0.0	-131346.0	-62.3	-0.047%	-15.58	-0.027%
31	2639.2	-660479.6	1.1	747.1	657029.8	0	-62.5	-0.009%	-16.11	-0.025%
32	165954.5	-166711.6	1.3	693.3	0	0	-62.4	-0.037%	-16.63	-0.026%
33	101681.0	-102358.1	1.6	613.3	0	0	-62.1	-0.061%	-17.15	-0.026%
34	69211.8	-69778.1	1.9	502.5	0	0	-61.9	-0.089%	-17.67	-0.027%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 2: Pump=1,100 afy, Recharge = 5,500 af (every 5 years, DWA only)

Table 8: Water Volumetric Budget and Mass Balance of Baseline Simulation – Tyley's T (Scenario 3, Isotropic)

Time (months)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	393828.2	-15.3	0.0	-26.0	0	-393831.0	-44.0	-0.011%	-0.03	-0.01%
2	393828.7	-0.7	0.0	-26.0	0.0	-393831.0	-29.0	-0.007%	-0.05	-0.009%
3	393830.6	-0.3	0.0	-25.9	0.0	-393831.0	-26.6	-0.007%	-0.07	-0.008%
4	393828.1	-0.2	0.0	-25.9	0.0	-393831.0	-28.9	-0.007%	-0.09	-0.008%
5	176294.4	-176300.6	0.0	-25.9	0.0	0.0	-32.1	-0.018%	-0.11	-0.009%
6	130377.0	-130379.1	0.0	-25.9	0.0	0.0	-28.0	-0.021%	-0.13	-0.010%
7	105618.4	-105620.1	0.0	-25.9	0.0	0.0	-27.5	-0.026%	-0.15	-0.011%
8	89122.8	-89124.0	0.0	-25.9	0.0	0.0	-27.0	-0.030%	-0.17	-0.012%
9	77097.7	-77098.3	0.0	-25.9	0.0	0.0	-26.4	-0.034%	-0.19	-0.013%
10	67907.1	-67905.8	0.0	-25.9	0.0	0.0	-24.6	-0.036%	-0.21	-0.013%
11	60548.3	-60537.9	0.0	53.4	0.0	0.0	63.7	0.105%	-0.16	-0.010%
12	54462.8	-54462.8	0.0	53.4	0.0	0.0	53.4	0.098%	-0.12	-0.008%

Scenario 3: Pump=2,059 gpm (for 4 months, total pumped volume = 1,100 af), No recharge

Table 9: Water Volumetric Budget and Mass Balance of Baseline Simulation – Tyley's T (Scenario 3, Anisotropic Ratio=2)

Time (months)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	393824.8	-13.8	0.1	-26.0	0	-393831.0	-46.0	-0.012%	-0.03	-0.01%
2	393826.6	-0.8	0.1	-26.0	0.0	-393831.0	-31.1	-0.008%	-0.05	-0.010%
3	393829.3	-0.1	0.1	-26.0	0.0	-393831.0	-27.8	-0.007%	-0.07	-0.009%
4	393825.2	-0.1	0.1	-26.0	0.0	-393831.0	-31.8	-0.008%	-0.10	-0.009%
5	180779.4	-180782.8	0.1	-26.0	0.0	0.0	-29.3	-0.016%	-0.12	-0.009%
6	135112.9	-135114.5	0.1	-25.9	0.0	0.0	-27.5	-0.020%	-0.13	-0.010%
7	109527.8	-109529.2	0.1	-25.9	0.0	0.0	-27.3	-0.025%	-0.15	-0.011%
8	91959.6	-91960.3	0.1	-25.9	0.0	0.0	-26.6	-0.029%	-0.17	-0.012%
9	79001.0	-79003.2	0.1	-25.9	0.0	0.0	-28.1	-0.036%	-0.19	-0.013%
10	69043.6	-69044.7	0.1	-25.9	0.0	0.0	-27.0	-0.039%	-0.21	-0.013%
11	61053.1	-61043.2	0.0	53.3	0.0	0.0	63.2	0.103%	-0.17	-0.010%
12	54416.6	-54415.0	0.0	53.4	0.0	0.0	54.9	0.101%	-0.13	-0.008%

Scenario 3: Pump=2,059 gpm (for 4 months, total pumped volume = 1,100 af), No recharge

Table 10: Water Volumetric Budget and Mass Balance of Sensitivity 1 – Half Tyley's T (Scenario 1, Isotropic)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131344.8	-0.3	0.0	-59.0	0	-131346.0	-60.5	-0.046%	-0.51	-0.05%
2	117061.2	-117123.2	0.0	-58.1	131406.0	-131346.0	-60.1	-0.024%	-1.01	-0.032%
3	103115.4	-103180.0	0.0	-55.2	131406.0	-131346.0	-59.8	-0.026%	-1.51	-0.029%
4	90358.6	-90429.6	0.0	-49.1	131406.0	-131346.0	-60.1	-0.027%	-2.02	-0.029%
5	79395.3	-79476.9	0.0	-38.1	131406.0	-131346.0	-59.7	-0.028%	-2.52	-0.029%
6	70117.7	-70216.4	0.0	-21.0	131406.0	-131346.0	-59.8	-0.030%	-3.02	-0.029%
7	62274.1	-62396.4	0.0	2.7	131406.0	-131346.0	-59.7	-0.031%	-3.52	-0.029%
8	55616.6	-55769.8	0.0	33.3	131406.0	-131346.0	-60.0	-0.032%	-4.02	-0.029%
9	49931.2	-50122.2	0.0	70.4	131406.0	-131346.0	-60.6	-0.033%	-4.53	-0.030%
10	45047.3	-45280.6	0.0	113.1	131406.0	-131346.0	-60.2	-0.034%	-5.03	-0.030%
11	40829.9	-41110.9	0.0	160.5	131406.0	-131346.0	-60.5	-0.035%	-5.54	-0.031%
12	37168.8	-37501.0	0.0	211.3	131406.0	-131346.0	-60.9	-0.036%	-6.05	-0.031%
13	33974.9	-34359.5	0.0	264.0	131406.0	-131346.0	-60.6	-0.037%	-6.56	-0.031%
14	31175.5	-31613.8	0.0	317.5	131406.0	-131346.0	-60.9	-0.037%	-7.07	-0.032%
15	28712.7	-29204.2	0.0	370.6	131406.0	-131346.0	-60.9	-0.038%	-7.58	-0.032%
16	26537.2	-27080.4	0.0	422.4	131406.0	-131346.0	-60.8	-0.038%	-8.09	-0.032%
17	24608.1	-25201.3	0.0	472.1	131406.0	-131346.0	-61.2	-0.039%	-8.60	-0.033%
18	22891.8	-23531.7	0.0	518.9	131406.0	-131346.0	-61.0	-0.039%	-9.11	-0.033%
19	21359.4	-22042.8	0.0	562.3	131406.0	-131346.0	-61.1	-0.040%	-9.62	-0.033%
20	19987.3	-20710.9	0.0	602.1	131406.0	-131346.0	-61.5	-0.040%	-10.14	-0.034%
21	18755.7	-19515.2	0.0	637.9	131406.0	-131346.0	-61.6	-0.041%	-10.65	-0.034%
22	17647.1	-18438.0	0.0	669.7	131406.0	-131346.0	-61.3	-0.041%	-11.17	-0.034%
23	16645.6	-17464.6	0.0	697.3	131406.0	-131346.0	-61.8	-0.042%	-11.69	-0.035%
24	15739.1	-16581.6	0.0	720.6	131406.0	-131346.0	-61.8	-0.042%	-12.20	-0.035%
25	14916.4	-15778.5	0.0	740.2	131406.0	-131346.0	-61.9	-0.042%	-12.72	-0.035%
26	14168.6	-15046.0	0.0	755.4	131406.0	-131346.0	-62.1	-0.042%	-13.24	-0.035%
27	13486.4	-14376.1	0.0	767.4	131406.0	-131346.0	-62.4	-0.043%	-13.76	-0.035%
28	12863.3	-13761.3	0.0	775.9	131406.0	-131346.0	-62.2	-0.043%	-14.29	-0.036%
29	12292.4	-13195.7	0.0	781.0	131406.0	-131346.0	-62.2	-0.043%	-14.81	-0.036%
30	11768.0	-12674.0	0.0	783.1	131406.0	-131346.0	-62.9	-0.044%	-15.34	-0.036%
31	7132.0	-139382.6	0.0	782.0	131406.0	0	-62.6	-0.045%	-15.86	-0.036%
32	118360.0	-119200.3	0.0	777.6	0	0	-62.7	-0.053%	-16.38	-0.037%
33	102805.5	-103636.7	0.0	768.8	0	0	-62.5	-0.060%	-16.91	-0.037%
34	88975.4	-89792.3	0.0	754.5	0	0	-62.4	-0.070%	-17.43	-0.038%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 1: Pump=1,100 afy, Recharge = 1,100 afy (DWA Only)

Table 11: Water Volumetric Budget and Mass Balance of Sensitivity 1 – Half Tyley's T (Scenario 1, Anisotropic Ratio=2)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131345.1	-0.3	0.0	-59.0	0	-131346.0	-60.1	-0.046%	-0.50	-0.05%
2	103901.7	-103964.1	0.0	-57.9	131406.0	-131346.0	-60.3	-0.026%	-1.01	-0.033%
3	83137.4	-83202.7	0.0	-54.6	131406.0	-131346.0	-60.0	-0.028%	-1.51	-0.031%
4	67080.3	-67152.5	0.0	-47.7	131406.0	-131346.0	-59.9	-0.030%	-2.01	-0.031%
5	54931.4	-55015.5	0.0	-35.8	131406.0	-131346.0	-59.9	-0.032%	-2.52	-0.031%
6	45679.6	-45781.7	0.0	-17.9	131406.0	-131346.0	-60.0	-0.034%	-3.02	-0.032%
7	38526.9	-38653.1	0.0	6.3	131406.0	-131346.0	-59.9	-0.035%	-3.52	-0.032%
8	32918.4	-33075.3	0.0	36.8	131406.0	-131346.0	-60.2	-0.037%	-4.02	-0.033%
9	28457.0	-28650.1	0.0	72.7	131406.0	-131346.0	-60.4	-0.038%	-4.53	-0.033%
10	24865.6	-25099.0	0.0	113.0	131406.0	-131346.0	-60.4	-0.039%	-5.04	-0.034%
11	21937.9	-22215.2	0.0	156.6	131406.0	-131346.0	-60.8	-0.040%	-5.55	-0.034%
12	19527.5	-19850.2	0.0	202.2	131406.0	-131346.0	-60.5	-0.040%	-6.05	-0.034%
13	17522.1	-17891.2	0.0	248.6	131406.0	-131346.0	-60.6	-0.041%	-6.56	-0.035%
14	15838.3	-16253.9	0.0	294.7	131406.0	-131346.0	-61.0	-0.041%	-7.07	-0.035%
15	14413.3	-14873.7	0.0	339.5	131406.0	-131346.0	-61.0	-0.042%	-7.58	-0.036%
16	13197.2	-13700.1	0.0	382.5	131406.0	-131346.0	-60.5	-0.042%	-8.09	-0.036%
17	12151.4	-12695.1	0.0	422.8	131406.0	-131346.0	-60.9	-0.042%	-8.60	-0.036%
18	11247.3	-11828.3	0.0	460.1	131406.0	-131346.0	-60.8	-0.043%	-9.11	-0.037%
19	10460.0	-11075.1	0.0	494.2	131406.0	-131346.0	-60.9	-0.043%	-9.62	-0.037%
20	9770.2	-10416.4	0.0	524.9	131406.0	-131346.0	-61.3	-0.043%	-10.13	-0.037%
21	9163.3	-9836.7	0.0	552.1	131406.0	-131346.0	-61.3	-0.043%	-10.65	-0.037%
22	8626.2	-9323.5	0.0	575.9	131406.0	-131346.0	-61.5	-0.044%	-11.16	-0.038%
23	8149.0	-8866.3	0.0	596.3	131406.0	-131346.0	-61.1	-0.044%	-11.67	-0.038%
24	7721.8	-8457.1	0.0	613.1	131406.0	-131346.0	-62.2	-0.045%	-12.20	-0.038%
25	7339.2	-8088.4	0.0	627.1	131406.0	-131346.0	-62.2	-0.045%	-12.72	-0.038%
26	6994.6	-7754.7	0.0	638.1	131406.0	-131346.0	-62.1	-0.045%	-13.24	-0.039%
27	6682.4	-7451.0	0.0	645.8	131406.0	-131346.0	-62.7	-0.045%	-13.76	-0.039%
28	6399.9	-7173.7	0.0	651.5	131406.0	-131346.0	-62.4	-0.045%	-14.29	-0.039%
29	6142.1	-6918.8	0.0	654.7	131406.0	-131346.0	-62.1	-0.045%	-14.81	-0.039%
30	5905.5	-6683.8	0.0	655.7	131406.0	-131346.0	-62.6	-0.045%	-15.33	-0.039%
31	3459.2	-135582.1	0.0	654.4	131406.0	0	-62.6	-0.046%	-15.85	-0.040%
32	104836.7	-105549.0	0.0	650.4	0	0	-61.9	-0.059%	-16.37	-0.040%
33	83170.0	-83874.6	0.0	642.6	0	0	-62.1	-0.074%	-16.89	-0.041%
34	66491.3	-67183.2	0.0	629.5	0	0	-62.4	-0.093%	-17.42	-0.041%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 1: Pump=1,100 afy, Recharge = 1,100 afy (DWA Only)

Table 12: Water Volumetric Budget and Mass Balance of Sensitivity 1 – Half Tyley's T (Scenario 2, Isotropic)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131344.8	-0.3	0.0	-59.0	0	-131346.0	-60.5	-0.046%	-0.51	-0.05%
2	131344.0	0.0	0.0	-58.1	0.0	-131346.0	-60.1	-0.046%	-1.01	-0.046%
3	131341.1	0.0	0.0	-55.2	0.0	-131346.0	-60.0	-0.046%	-1.51	-0.046%
4	131334.6	0.0	0.0	-48.8	0.0	-131346.0	-60.2	-0.046%	-2.02	-0.046%
5	131323.2	0.0	0.0	-37.3	0.0	-131346.0	-60.1	-0.046%	-2.52	-0.046%
6	82016.6	-607741.2	0.0	-19.2	657029.8	-131346.0	-60.1	-0.008%	-3.03	-0.026%
7	221460.5	-90180.8	0.0	6.4	0.0	-131346.0	-59.9	-0.027%	-3.53	-0.026%
8	159755.7	-28509.6	0.0	40.0	0.0	-131346.0	-59.9	-0.037%	-4.03	-0.027%
9	142084.8	-10880.1	0.0	81.3	0.0	-131346.0	-60.1	-0.042%	-4.53	-0.028%
10	137778.9	-6622.8	0.0	129.4	0.0	-131346.0	-60.5	-0.044%	-5.04	-0.029%
11	47786.7	-573713.9	0.0	183.3	657029.8	-131346.0	-60.2	-0.009%	-5.54	-0.024%
12	207299.1	-76255.1	0.0	241.7	0.0	-131346.0	-60.4	-0.029%	-6.05	-0.024%
13	153537.7	-22555.1	0.0	302.9	0.0	-131346.0	-60.5	-0.039%	-6.56	-0.025%
14	141458.0	-10538.3	0.0	365.6	0.0	-131346.0	-60.7	-0.043%	-7.06	-0.026%
15	138433.9	-7577.4	0.0	428.5	0.0	-131346.0	-61.0	-0.044%	-7.58	-0.027%
16	31120.1	-557355.5	0.0	490.4	657029.8	-131346.0	-61.2	-0.009%	-8.09	-0.024%
17	198271.5	-67537.3	0.0	550.3	0.0	-131346.0	-61.4	-0.031%	-8.60	-0.024%
18	149517.8	-18840.6	0.0	607.5	0.0	-131346.0	-61.4	-0.041%	-9.12	-0.025%
19	140405.1	-9781.0	0.0	661.1	0.0	-131346.0	-60.8	-0.043%	-9.63	-0.025%
20	138106.6	-7532.8	0.0	710.9	0.0	-131346.0	-61.4	-0.044%	-10.14	-0.026%
21	22122.5	-548624.1	0.0	756.4	657029.8	-131346.0	-61.4	-0.009%	-10.66	-0.024%
22	193100.2	-62613.4	0.0	797.4	0.0	-131346.0	-61.9	-0.032%	-11.17	-0.024%
23	147495.1	-17044.3	0.0	833.8	0.0	-131346.0	-61.3	-0.041%	-11.69	-0.024%
24	139431.3	-9012.6	0.0	865.7	0.0	-131346.0	-61.6	-0.044%	-12.20	-0.025%
25	137561.3	-7170.3	0.0	893.1	0.0	-131346.0	-61.9	-0.045%	-12.72	-0.025%
26	16866.4	-543528.3	0.0	916.1	657029.8	-131346.0	-62.1	-0.009%	-13.24	-0.024%
27	189968.9	-59619.5	0.0	934.6	0.0	-131346.0	-62.0	-0.032%	-13.76	-0.024%
28	146329.1	-15995.1	0.0	948.9	0.0	-131346.0	-63.1	-0.043%	-14.29	-0.024%
29	138611.6	-8288.7	0.0	959.8	0.0	-131346.0	-63.2	-0.045%	-14.82	-0.025%
30	137031.8	-6715.8	0.0	967.2	0.0	-131346.0	-62.8	-0.046%	-15.35	-0.025%
31	8555.1	-666618.9	0.0	971.0	657029.8	0	-63.1	-0.009%	-15.88	-0.024%
32	183000.6	-184034.3	0.0	971.9	0	0	-61.7	-0.034%	-16.39	-0.024%
33	133546.5	-134575.4	0.0	967.1	0	0	-61.8	-0.046%	-16.91	-0.024%
34	111190.0	-112207.9	0.0	956.3	0	0	-61.6	-0.055%	-17.43	-0.025%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 2: Pump=1,100 afy, Recharge = 5,500 af (every 5 years, DWA only)

Table 13: Water Volumetric Budget and Mass Balance of Sensitivity 1 – Half Tyley's T (Scenario 2, Anisotropic Ratio=2)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131345.1	-0.3	0.0	-59.0	0	-131346.0	-60.1	-0.046%	-0.50	-0.05%
2	131343.6	0.0	0.0	-57.8	0.0	-131346.0	-60.2	-0.046%	-1.01	-0.046%
3	131340.7	0.0	0.0	-54.5	0.0	-131346.0	-59.7	-0.046%	-1.51	-0.046%
4	131333.0	0.0	0.0	-47.2	0.0	-131346.0	-60.2	-0.046%	-2.01	-0.046%
5	131320.2	0.0	0.0	-34.3	0.0	-131346.0	-60.1	-0.046%	-2.52	-0.046%
6	53980.0	-579709.5	0.0	-14.3	657029.8	-131346.0	-60.1	-0.008%	-3.02	-0.026%
7	196643.3	-65370.9	0.0	13.4	0.0	-131346.0	-60.3	-0.031%	-3.52	-0.027%
8	145254.9	-14017.8	0.0	48.7	0.0	-131346.0	-60.2	-0.041%	-4.03	-0.028%
9	137722.6	-6527.8	0.0	91.0	0.0	-131346.0	-60.2	-0.044%	-4.53	-0.029%
10	135361.3	-4214.9	0.0	139.1	0.0	-131346.0	-60.5	-0.045%	-5.04	-0.030%
11	26031.1	-551966.9	0.0	191.6	657029.8	-131346.0	-60.4	-0.009%	-5.55	-0.025%
12	190321.3	-59283.3	0.0	247.1	0.0	-131346.0	-60.9	-0.032%	-6.06	-0.025%
13	143254.2	-12272.8	0.0	304.1	0.0	-131346.0	-60.6	-0.042%	-6.56	-0.026%
14	137657.4	-6733.4	0.0	361.1	0.0	-131346.0	-60.9	-0.044%	-7.07	-0.027%
15	135675.8	-4808.0	0.0	417.1	0.0	-131346.0	-61.2	-0.045%	-7.59	-0.028%
16	16008.2	-542224.1	0.0	471.0	657029.8	-131346.0	-61.2	-0.009%	-8.10	-0.024%
17	187379.9	-56617.2	0.0	522.1	0.0	-131346.0	-61.2	-0.033%	-8.61	-0.025%
18	143443.8	-12729.1	0.0	569.9	0.0	-131346.0	-61.3	-0.043%	-9.13	-0.025%
19	136866.5	-6195.9	0.0	614.0	0.0	-131346.0	-61.4	-0.045%	-9.64	-0.026%
20	135295.4	-4665.0	0.0	654.1	0.0	-131346.0	-61.5	-0.045%	-10.16	-0.027%
21	11356.0	-537791.8	0.0	690.1	657029.8	-131346.0	-61.9	-0.009%	-10.67	-0.024%
22	185459.6	-54896.9	0.0	722.1	0.0	-131346.0	-61.3	-0.033%	-11.19	-0.025%
23	143276.8	-12742.6	0.0	750.1	0.0	-131346.0	-61.7	-0.043%	-11.70	-0.025%
24	136143.1	-5633.3	0.0	774.2	0.0	-131346.0	-62.0	-0.045%	-12.22	-0.026%
25	134852.7	-4363.4	0.0	794.6	0.0	-131346.0	-62.1	-0.046%	-12.74	-0.026%
26	8811.4	-535368.3	0.0	811.4	657029.8	-131346.0	-61.7	-0.009%	-13.26	-0.024%
27	184188.2	-53728.9	0.0	824.7	0.0	-131346.0	-62.0	-0.033%	-13.78	-0.025%
28	142972.2	-12524.2	0.0	835.2	0.0	-131346.0	-62.8	-0.044%	-14.31	-0.025%
29	135578.7	-5137.3	0.0	842.8	0.0	-131346.0	-61.9	-0.045%	-14.82	-0.025%
30	134480.0	-4043.8	0.0	847.2	0.0	-131346.0	-62.6	-0.046%	-15.35	-0.026%
31	4729.5	-662671.5	0.0	849.4	657029.8	0	-62.7	-0.009%	-15.88	-0.024%
32	177306.9	-178217.7	0.0	848.5	0	0	-62.3	-0.035%	-16.40	-0.025%
33	121432.4	-122338.6	0.0	843.4	0	0	-62.8	-0.051%	-16.92	-0.025%
34	93638.7	-94533.9	0.0	832.6	0	0	-62.7	-0.066%	-17.45	-0.026%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 2: Pump=1,100 afy, Recharge = 5,500 af (every 5 years, DWA only)

Table 14: Water Volumetric Budget and Mass Balance of Sensitivity 1 – Half Tyley's T (Scenario 3, Isotropic)

Time (months)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	393834.5	-18.0	0.0	-25.9	0	-393831.0	-40.4	-0.010%	-0.03	-0.01%
2	393829.6	-1.5	0.0	-25.9	0.0	-393831.0	-28.7	-0.007%	-0.05	-0.009%
3	393832.1	-0.4	0.0	-25.9	0.0	-393831.0	-25.2	-0.006%	-0.07	-0.008%
4	393831.0	-0.2	0.0	-25.9	0.0	-393831.0	-26.1	-0.007%	-0.08	-0.008%
5	176424.5	-176430.7	0.0	-25.9	0.0	0.0	-32.0	-0.018%	-0.11	-0.009%
6	123992.4	-123997.5	0.0	-25.9	0.0	0.0	-30.9	-0.025%	-0.13	-0.010%
7	98414.6	-98418.1	0.0	-25.8	0.0	0.0	-29.3	-0.030%	-0.15	-0.011%
8	82765.5	-82770.9	0.0	-25.8	0.0	0.0	-31.3	-0.038%	-0.17	-0.012%
9	71847.9	-71850.5	0.0	-25.8	0.0	0.0	-28.4	-0.040%	-0.19	-0.013%
10	63688.3	-63692.5	0.0	-25.8	0.0	0.0	-30.0	-0.047%	-0.21	-0.014%
11	57323.7	-57314.7	0.0	53.5	0.0	0.0	62.5	0.109%	-0.17	-0.011%
12	52114.8	-52111.5	0.0	53.5	0.0	0.0	56.8	0.109%	-0.13	-0.008%

Scenario 3: Pump=2,059 gpm (for 4 months, total pumped volume = 1,100 af), No recharge

Table 15: Water Volumetric Budget and Mass Balance of Sensitivity 1 – Half Tyley's T (Scenario 3, Anisotropic Ratio=2)

Time (months)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	393831.0	-16.0	0.0	-25.9	0	-393831.0	-41.9	-0.011%	-0.03	-0.01%
2	393833.7	-1.2	0.0	-25.9	0.0	-393831.0	-24.4	-0.006%	-0.05	-0.008%
3	393830.1	-0.5	0.0	-25.9	0.0	-393831.0	-27.3	-0.007%	-0.07	-0.008%
4	393827.4	-0.3	0.0	-25.9	0.0	-393831.0	-29.8	-0.008%	-0.09	-0.008%
5	173575.0	-173577.8	0.0	-25.9	0.0	0.0	-28.6	-0.017%	-0.11	-0.009%
6	126406.3	-126409.7	0.0	-25.9	0.0	0.0	-29.3	-0.023%	-0.13	-0.010%
7	101669.8	-101673.8	0.0	-25.9	0.0	0.0	-29.8	-0.029%	-0.15	-0.011%
8	86023.2	-86024.8	0.0	-25.9	0.0	0.0	-27.4	-0.032%	-0.17	-0.012%
9	74965.8	-74967.6	0.0	-25.9	0.0	0.0	-27.7	-0.037%	-0.19	-0.012%
10	66568.2	-66570.0	0.0	-25.9	0.0	0.0	-27.6	-0.041%	-0.21	-0.013%
11	59821.9	-59816.6	0.0	53.4	0.0	0.0	58.7	0.098%	-0.16	-0.010%
12	54231.3	-54227.5	0.0	53.4	0.0	0.0	57.3	0.105%	-0.12	-0.008%

Scenario 3: Pump=2,059 gpm (for 4 months, total pumped volume = 1,100 af), No recharge

Table 16: Water Volumetric Budget and Mass Balance of Sensitivity 2 – Double Tyley's T (Scenario 1, Isotropic)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131297.6	-0.1	0.0	-12.0	0	-131346.0	-60.4	-0.046%	-0.51	-0.05%
2	81289.9	-81521.1	0.0	110.9	131406.0	-131346.0	-60.3	-0.028%	-1.01	-0.035%
3	55163.6	-55577.0	0.0	292.7	131406.0	-131346.0	-60.7	-0.033%	-1.52	-0.034%
4	39058.4	-39672.5	0.0	493.4	131406.0	-131346.0	-60.7	-0.036%	-2.03	-0.035%
5	28803.4	-29600.7	0.0	675.6	131406.0	-131346.0	-61.8	-0.038%	-2.55	-0.035%
6	22045.9	-22984.6	0.0	817.0	131406.0	-131346.0	-61.7	-0.040%	-3.06	-0.036%
7	17448.0	-18479.7	0.0	909.2	131406.0	-131346.0	-62.6	-0.042%	-3.59	-0.037%
8	14228.5	-15305.2	0.0	953.7	131406.0	-131346.0	-63.1	-0.043%	-4.12	-0.037%
9	11910.9	-12992.0	0.0	958.9	131406.0	-131346.0	-62.2	-0.043%	-4.64	-0.038%
10	10199.2	-11251.6	0.0	930.7	131406.0	-131346.0	-61.7	-0.043%	-5.16	-0.038%
11	8902.6	-9902.8	0.0	878.1	131406.0	-131346.0	-62.1	-0.044%	-5.68	-0.039%
12	7897.9	-8828.2	0.1	808.3	131406.0	-131346.0	-62.0	-0.044%	-6.20	-0.039%
13	7102.4	-7950.3	0.2	726.6	131406.0	-131346.0	-61.2	-0.044%	-6.71	-0.040%
14	6457.9	-7217.3	0.4	637.5	131406.0	-131346.0	-61.6	-0.044%	-7.22	-0.040%
15	5927.1	-6593.5	0.6	544.6	131406.0	-131346.0	-61.1	-0.044%	-7.74	-0.040%
16	5481.4	-6053.2	1.0	449.1	131406.0	-131346.0	-61.7	-0.045%	-8.25	-0.040%
17	5102.8	-5580.2	1.4	354.4	131406.0	-131346.0	-61.6	-0.045%	-8.77	-0.041%
18	4775.8	-5160.0	1.9	260.7	131406.0	-131346.0	-61.6	-0.045%	-9.29	-0.041%
19	4490.4	-4784.2	2.5	169.1	131406.0	-131346.0	-62.1	-0.046%	-9.81	-0.041%
20	4239.8	-4445.1	3.3	80.3	131406.0	-131346.0	-61.7	-0.045%	-10.32	-0.041%
21	4016.9	-4137.3	4.2	-5.1	131406.0	-131346.0	-61.4	-0.045%	-10.84	-0.042%
22	3818.1	-3856.7	5.2	-87.8	131406.0	-131346.0	-61.1	-0.045%	-11.35	-0.042%
23	3639.0	-3599.7	6.5	-166.8	131406.0	-131346.0	-61.1	-0.045%	-11.86	-0.042%
24	3477.9	-3363.4	7.9	-242.8	131406.0	-131346.0	-60.4	-0.045%	-12.37	-0.042%
25	3331.0	-3145.4	9.5	-315.2	131406.0	-131346.0	-60.2	-0.045%	-12.87	-0.042%
26	3197.5	-2943.9	11.3	-384.6	131406.0	-131346.0	-59.8	-0.045%	-13.37	-0.042%
27	3074.8	-2757.2	13.3	-450.6	131406.0	-131346.0	-59.7	-0.045%	-13.87	-0.042%
28	2962.5	-2583.8	15.4	-514.1	131406.0	-131346.0	-60.1	-0.045%	-14.38	-0.042%
29	2858.9	-2422.7	17.8	-574.4	131406.0	-131346.0	-60.5	-0.045%	-14.88	-0.042%
30	2763.4	-2272.6	20.3	-631.6	131406.0	-131346.0	-60.5	-0.045%	-15.39	-0.042%
31	1287.2	-132043.8	23.0	-733.6	131406.0	0	-61.3	-0.046%	-15.91	-0.043%
32	81662.3	-80840.7	25.9	-907.6	0	0	-60.1	-0.074%	-16.41	-0.043%
33	55341.8	-54293.3	29.0	-1138.0	0	0	-60.5	-0.112%	-16.92	-0.044%
34	39239.3	-37947.1	32.1	-1384.6	0	0	-60.2	-0.159%	-17.42	-0.045%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 1: Pump=1,100 afy, Recharge = 1,100 afy (DWA Only)

Table 17: Water Volumetric Budget and Mass Balance of Sensitivity 2 – Double Tyley's T (Scenario 1, Anisotropic Ratio=2)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131294.0	-0.1	0.0	-8.7	0	-131346.0	-60.8	-0.046%	-0.51	-0.05%
2	63170.8	-63406.7	0.0	115.5	131406.0	-131346.0	-60.5	-0.031%	-1.02	-0.037%
3	36413.7	-36823.9	0.0	289.5	131406.0	-131346.0	-60.8	-0.036%	-1.53	-0.037%
4	23023.1	-23616.5	0.0	472.2	131406.0	-131346.0	-61.2	-0.040%	-2.04	-0.037%
5	15781.7	-16534.2	0.0	631.3	131406.0	-131346.0	-61.2	-0.041%	-2.55	-0.038%
6	11573.3	-12445.0	0.0	750.1	131406.0	-131346.0	-61.6	-0.043%	-3.07	-0.039%
7	8967.8	-9915.3	0.0	825.4	131406.0	-131346.0	-62.1	-0.044%	-3.59	-0.040%
8	7260.8	-8245.4	0.0	861.8	131406.0	-131346.0	-62.9	-0.045%	-4.12	-0.040%
9	6088.4	-7077.1	0.0	866.0	131406.0	-131346.0	-62.8	-0.045%	-4.64	-0.041%
10	5246.4	-6215.3	0.0	846.2	131406.0	-131346.0	-62.7	-0.046%	-5.17	-0.041%
11	4614.9	-5546.6	0.1	808.6	131406.0	-131346.0	-63.1	-0.046%	-5.70	-0.042%
12	4124.4	-5005.7	0.2	758.5	131406.0	-131346.0	-62.5	-0.046%	-6.22	-0.042%
13	3731.8	-4554.1	0.4	700.1	131406.0	-131346.0	-61.9	-0.046%	-6.74	-0.042%
14	3407.7	-4166.8	0.8	636.3	131406.0	-131346.0	-62.1	-0.046%	-7.26	-0.042%
15	3134.9	-3827.9	1.2	569.5	131406.0	-131346.0	-62.4	-0.046%	-7.78	-0.043%
16	2901.3	-3526.3	1.6	501.6	131406.0	-131346.0	-61.9	-0.046%	-8.30	-0.043%
17	2696.8	-3254.0	2.3	433.6	131406.0	-131346.0	-61.4	-0.046%	-8.81	-0.043%
18	2514.8	-3006.1	3.0	366.5	131406.0	-131346.0	-61.9	-0.046%	-9.33	-0.043%
19	2352.4	-2778.7	3.9	300.7	131406.0	-131346.0	-61.8	-0.046%	-9.85	-0.043%
20	2206.8	-2570.2	4.9	237.1	131406.0	-131346.0	-61.5	-0.046%	-10.37	-0.043%
21	2074.7	-2377.9	6.1	175.2	131406.0	-131346.0	-62.0	-0.046%	-10.89	-0.044%
22	1955.3	-2200.6	7.5	116.3	131406.0	-131346.0	-61.5	-0.046%	-11.40	-0.044%
23	1847.0	-2037.1	9.1	59.4	131406.0	-131346.0	-61.7	-0.046%	-11.92	-0.044%
24	1748.5	-1885.9	10.8	5.8	131406.0	-131346.0	-60.9	-0.046%	-12.43	-0.044%
25	1657.7	-1746.3	12.7	-45.1	131406.0	-131346.0	-61.0	-0.046%	-12.94	-0.044%
26	1574.5	-1617.0	14.7	-93.5	131406.0	-131346.0	-61.3	-0.046%	-13.45	-0.044%
27	1498.0	-1496.9	17.0	-139.1	131406.0	-131346.0	-61.0	-0.046%	-13.96	-0.044%
28	1427.9	-1386.1	19.3	-182.0	131406.0	-131346.0	-60.8	-0.046%	-14.47	-0.044%
29	1363.4	-1283.1	21.9	-222.4	131406.0	-131346.0	-60.2	-0.045%	-14.98	-0.044%
30	1303.0	-1187.9	24.5	-260.6	131406.0	-131346.0	-61.1	-0.046%	-15.49	-0.044%
31	640.2	-131787.1	27.4	-346.7	131406.0	0	-60.2	-0.046%	-15.99	-0.044%
32	63408.1	-62994.4	30.4	-504.1	0	0	-60.1	-0.095%	-16.50	-0.045%
33	36654.9	-36038.5	33.4	-709.5	0	0	-59.6	-0.166%	-17.00	-0.046%
34	23350.2	-22524.6	36.5	-922.4	0	0	-60.3	-0.269%	-17.50	-0.047%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 1: Pump=1,100 afy, Recharge = 1,100 afy (DWA Only)

Table 18: Water Volumetric Budget and Mass Balance of Sensitivity 2 – Double Tyley's T (Scenario 2, Isotropic)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131297.6	-0.1	0.0	-12.0	0	-131346.0	-60.4	-0.046%	-0.51	-0.05%
2	131164.0	0.0	0.0	121.8	0.0	-131346.0	-60.1	-0.046%	-1.01	-0.046%
3	130939.3	0.0	0.0	345.9	0.0	-131346.0	-60.8	-0.046%	-1.52	-0.046%
4	130644.8	0.0	0.0	639.8	0.0	-131346.0	-61.4	-0.047%	-2.03	-0.046%
5	130307.2	0.0	0.0	977.1	0.0	-131346.0	-61.7	-0.047%	-2.55	-0.046%
6	23052.3	-550080.6	0.0	1282.1	657029.8	-131346.0	-62.4	-0.009%	-3.07	-0.027%
7	174769.0	-44979.9	0.0	1493.6	0.0	-131346.0	-63.3	-0.036%	-3.60	-0.028%
8	136888.6	-7214.6	0.0	1609.6	0.0	-131346.0	-62.3	-0.045%	-4.13	-0.030%
9	133285.4	-3668.8	0.0	1666.7	0.0	-131346.0	-62.7	-0.046%	-4.65	-0.031%
10	131694.6	-2124.4	0.0	1712.9	0.0	-131346.0	-62.9	-0.047%	-5.18	-0.032%
11	10786.7	-538262.2	0.0	1727.9	657029.8	-131346.0	-63.8	-0.010%	-5.71	-0.026%
12	178669.3	-49071.4	0.1	1684.4	0.0	-131346.0	-63.5	-0.035%	-6.24	-0.027%
13	138011.6	-8320.7	0.3	1591.7	0.0	-131346.0	-63.1	-0.045%	-6.77	-0.028%
14	133384.3	-3591.6	0.5	1489.6	0.0	-131346.0	-63.1	-0.047%	-7.30	-0.029%
15	132129.7	-2266.9	0.9	1419.6	0.0	-131346.0	-62.7	-0.047%	-7.83	-0.029%
16	6984.7	-534086.5	1.3	1354.5	657029.8	-131346.0	-62.2	-0.009%	-8.35	-0.026%
17	178253.2	-48229.4	1.9	1257.9	0.0	-131346.0	-62.5	-0.035%	-8.87	-0.026%
18	138568.6	-8420.7	2.6	1133.3	0.0	-131346.0	-62.2	-0.045%	-9.39	-0.027%
19	133268.0	-3002.1	3.5	1014.6	0.0	-131346.0	-62.1	-0.046%	-9.91	-0.028%
20	132245.3	-1904.6	4.6	939.0	0.0	-131346.0	-61.6	-0.046%	-10.43	-0.028%
21	5125.1	-531752.5	5.9	875.4	657029.8	-131346.0	-62.3	-0.009%	-10.95	-0.026%
22	177563.4	-47073.7	7.5	786.3	0.0	-131346.0	-62.4	-0.035%	-11.48	-0.026%
23	138549.5	-7948.2	9.3	672.5	0.0	-131346.0	-62.9	-0.045%	-12.00	-0.026%
24	133104.3	-2400.1	11.4	567.7	0.0	-131346.0	-62.7	-0.047%	-12.53	-0.027%
25	132264.1	-1501.8	13.7	507.3	0.0	-131346.0	-62.6	-0.047%	-13.05	-0.027%
26	4036.8	-530259.5	16.3	460.8	657029.8	-131346.0	-61.8	-0.009%	-13.57	-0.026%
27	177028.1	-46152.1	19.2	388.6	0.0	-131346.0	-62.1	-0.035%	-14.09	-0.026%
28	138436.8	-7466.9	22.4	291.8	0.0	-131346.0	-61.9	-0.045%	-14.61	-0.026%
29	132946.0	-1889.7	25.8	203.3	0.0	-131346.0	-60.5	-0.045%	-15.12	-0.027%
30	132251.9	-1155.7	29.5	159.1	0.0	-131346.0	-61.2	-0.046%	-15.63	-0.027%
31	1979.7	-659185.4	33.5	81.4	657029.8	0	-61.1	-0.009%	-16.14	-0.025%
32	161965.5	-161954.4	37.7	-109.3	0	0	-60.6	-0.037%	-16.65	-0.026%
33	97590.0	-97277.3	42.1	-416.1	0	0	-61.2	-0.063%	-17.16	-0.026%
34	65582.4	-64905.8	46.8	-784.2	0	0	-60.9	-0.094%	-17.67	-0.027%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 2: Pump=1,100 afy, Recharge = 5,500 af (every 5 years, DWA only)

Table 19: Water Volumetric Budget and Mass Balance of Sensitivity 2 – Double Tyley's T (Scenario 2, Anisotropic Ratio=2)

Time (years)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	131294.0	-0.1	0.0	-8.7	0	-131346.0	-60.8	-0.046%	-0.51	-0.05%
2	131153.9	0.0	0.0	131.5	0.0	-131346.0	-60.6	-0.046%	-1.02	-0.046%
3	130921.9	0.0	0.0	362.7	0.0	-131346.0	-61.4	-0.047%	-1.53	-0.046%
4	130621.2	0.0	0.0	663.1	0.0	-131346.0	-61.8	-0.047%	-2.05	-0.047%
5	130277.0	0.0	0.0	1007.1	0.0	-131346.0	-61.9	-0.047%	-2.57	-0.047%
6	14265.0	-541304.9	0.0	1294.2	657029.8	-131346.0	-62.0	-0.009%	-3.09	-0.028%
7	173715.3	-43898.1	0.0	1465.4	0.0	-131346.0	-63.4	-0.036%	-3.62	-0.029%
8	134125.5	-4385.7	0.0	1543.9	0.0	-131346.0	-62.2	-0.046%	-4.14	-0.030%
9	131577.3	-1880.5	0.0	1587.0	0.0	-131346.0	-62.2	-0.047%	-4.66	-0.031%
10	130552.7	-916.9	0.1	1647.9	0.0	-131346.0	-62.2	-0.047%	-5.18	-0.032%
11	7033.9	-534456.3	0.2	1675.6	657029.8	-131346.0	-62.8	-0.009%	-5.71	-0.027%
12	176621.4	-46971.0	0.4	1632.7	0.0	-131346.0	-62.4	-0.035%	-6.23	-0.027%
13	135795.8	-6058.3	0.8	1544.9	0.0	-131346.0	-62.8	-0.046%	-6.76	-0.028%
14	131754.6	-1939.5	1.3	1466.1	0.0	-131346.0	-63.4	-0.048%	-7.29	-0.029%
15	130907.8	-1067.7	1.9	1441.2	0.0	-131346.0	-62.8	-0.047%	-7.82	-0.030%
16	4606.1	-531765.8	2.7	1410.7	657029.8	-131346.0	-62.5	-0.009%	-8.34	-0.026%
17	176169.1	-46219.1	3.8	1329.9	0.0	-131346.0	-62.2	-0.035%	-8.86	-0.026%
18	136171.7	-6112.3	5.1	1219.3	0.0	-131346.0	-62.2	-0.045%	-9.38	-0.027%
19	131736.4	-1588.4	6.6	1128.9	0.0	-131346.0	-62.4	-0.047%	-9.91	-0.028%
20	131046.1	-869.9	8.4	1099.4	0.0	-131346.0	-61.9	-0.047%	-10.42	-0.028%
21	3359.0	-530185.2	10.6	1070.0	657029.8	-131346.0	-61.9	-0.009%	-10.94	-0.026%
22	175695.2	-45417.9	13.0	994.2	0.0	-131346.0	-61.6	-0.035%	-11.46	-0.026%
23	136250.1	-5872.7	15.8	891.3	0.0	-131346.0	-61.5	-0.045%	-11.97	-0.027%
24	131674.2	-1218.9	18.8	810.3	0.0	-131346.0	-61.6	-0.046%	-12.49	-0.027%
25	131109.8	-639.1	22.2	792.1	0.0	-131346.0	-61.0	-0.046%	-13.00	-0.028%
26	2628.8	-529174.0	25.9	774.1	657029.8	-131346.0	-61.5	-0.009%	-13.52	-0.026%
27	175370.6	-44826.7	29.9	710.8	0.0	-131346.0	-61.3	-0.035%	-14.03	-0.026%
28	136275.4	-5644.9	34.2	620.3	0.0	-131346.0	-61.0	-0.045%	-14.54	-0.026%
29	131618.8	-924.9	38.7	552.3	0.0	-131346.0	-61.0	-0.046%	-15.05	-0.027%
30	131146.4	-450.9	43.4	546.3	0.0	-131346.0	-60.8	-0.046%	-15.56	-0.027%
31	1315.8	-658946.2	48.5	490.9	657029.8	0	-61.3	-0.009%	-16.08	-0.025%
32	151132.8	-151547.7	53.6	299.6	0	0	-61.7	-0.041%	-16.59	-0.026%
33	78359.5	-78469.0	59.0	-10.3	0	0	-60.8	-0.078%	-17.10	-0.026%
34	46246.5	-46003.4	64.6	-368.7	0	0	-61.0	-0.133%	-17.61	-0.027%
35	50902.9	-50834.9	1.0	-130.5	0	0	-61.5	-0.121%	-18.00	-0.043%

Scenario 2: Pump=1,100 afy, Recharge = 5,500 af (every 5 years, DWA only)

Table 20: Water Volumetric Budget and Mass Balance of Sensitivity 2 – Double Tyley's T (Scenario 3, Isotropic)

Time (months)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	393826.2	-13.4	0.1	-26.1	0	-393831.0	-44.2	-0.011%	-0.03	-0.01%
2	393827.6	-0.5	0.1	-26.1	0.0	-393831.0	-29.9	-0.008%	-0.05	-0.009%
3	393827.8	-0.3	0.1	-26.0	0.0	-393831.0	-29.4	-0.007%	-0.07	-0.009%
4	393827.3	0.0	0.1	-26.0	0.0	-393831.0	-29.7	-0.008%	-0.09	-0.008%
5	185744.9	-185748.5	0.1	-25.9	0.0	0.0	-29.4	-0.016%	-0.11	-0.009%
6	138623.3	-138626.0	0.1	-25.7	0.0	0.0	-28.3	-0.020%	-0.13	-0.010%
7	110719.3	-110723.5	0.1	-25.3	0.0	0.0	-29.4	-0.027%	-0.15	-0.011%
8	91531.1	-91538.6	0.1	-24.6	0.0	0.0	-32.0	-0.035%	-0.18	-0.012%
9	77219.0	-77228.9	0.1	-23.6	0.0	0.0	-33.4	-0.043%	-0.20	-0.013%
10	66148.6	-66153.4	0.1	-21.9	0.0	0.0	-26.6	-0.040%	-0.22	-0.014%
11	57398.6	-57395.2	0.0	59.3	0.0	0.0	62.7	0.109%	-0.17	-0.011%
12	50339.6	-50347.3	0.0	62.3	0.0	0.0	54.6	0.108%	-0.14	-0.008%

Scenario 3: Pump=2,059 gpm (for 4 months, total pumped volume = 1,100 af), No recharge

Table 21: Water Volumetric Budget and Mass Balance of Sensitivity 2 – Double Tyley's T (Scenario 3, Anisotropic Ratio=2)

Time (months)	Storage In (ft^3/day, "+")	Storage Out (ft^3/day, "-")	Fixed-Head Boundary Inflow (ft^3/day, "+")	GHD Boundary Inflow (ft^3/day, "+")	DWA Recharge Inflow (ft^3/day, "+")	Project Pumping Outflow (ft^3/day, "-")	Inflow-Outflow (ft^3/day)	Mass Balance Discrepency	Cumulative (Inflow-Outflow) (acre-ft^2)	Cumulative Mass Balance Discrepency
1	393824.5	-12.8	0.1	-26.2	0	-393831.0	-45.4	-0.012%	-0.03	-0.01%
2	393831.6	-0.2	0.1	-26.1	0.0	-393831.0	-25.7	-0.007%	-0.05	-0.009%
3	393828.8	-0.1	0.1	-26.1	0.0	-393831.0	-28.3	-0.007%	-0.07	-0.008%
4	393828.7	0.0	0.1	-26.0	0.0	-393831.0	-28.2	-0.007%	-0.09	-0.008%
5	190761.7	-190766.0	0.1	-25.9	0.0	0.0	-30.1	-0.016%	-0.11	-0.009%
6	141255.6	-141259.7	0.1	-25.6	0.0	0.0	-29.6	-0.021%	-0.13	-0.010%
7	111303.7	-111310.2	0.1	-25.1	0.0	0.0	-31.6	-0.028%	-0.15	-0.011%
8	90592.4	-90597.9	0.1	-24.3	0.0	0.0	-29.7	-0.033%	-0.17	-0.012%
9	75190.6	-75195.2	0.1	-23.0	0.0	0.0	-27.5	-0.037%	-0.19	-0.013%
10	63337.6	-63348.1	0.1	-21.0	0.0	0.0	-31.5	-0.050%	-0.21	-0.014%
11	54051.5	-54055.5	0.0	60.5	0.0	0.0	56.5	0.104%	-0.18	-0.011%
12	46610.0	-46620.2	0.0	64.1	0.0	0.0	54.0	0.116%	-0.14	-0.008%

Scenario 3: Pump=2,059 gpm (for 4 months, total pumped volume = 1,100 af), No recharge

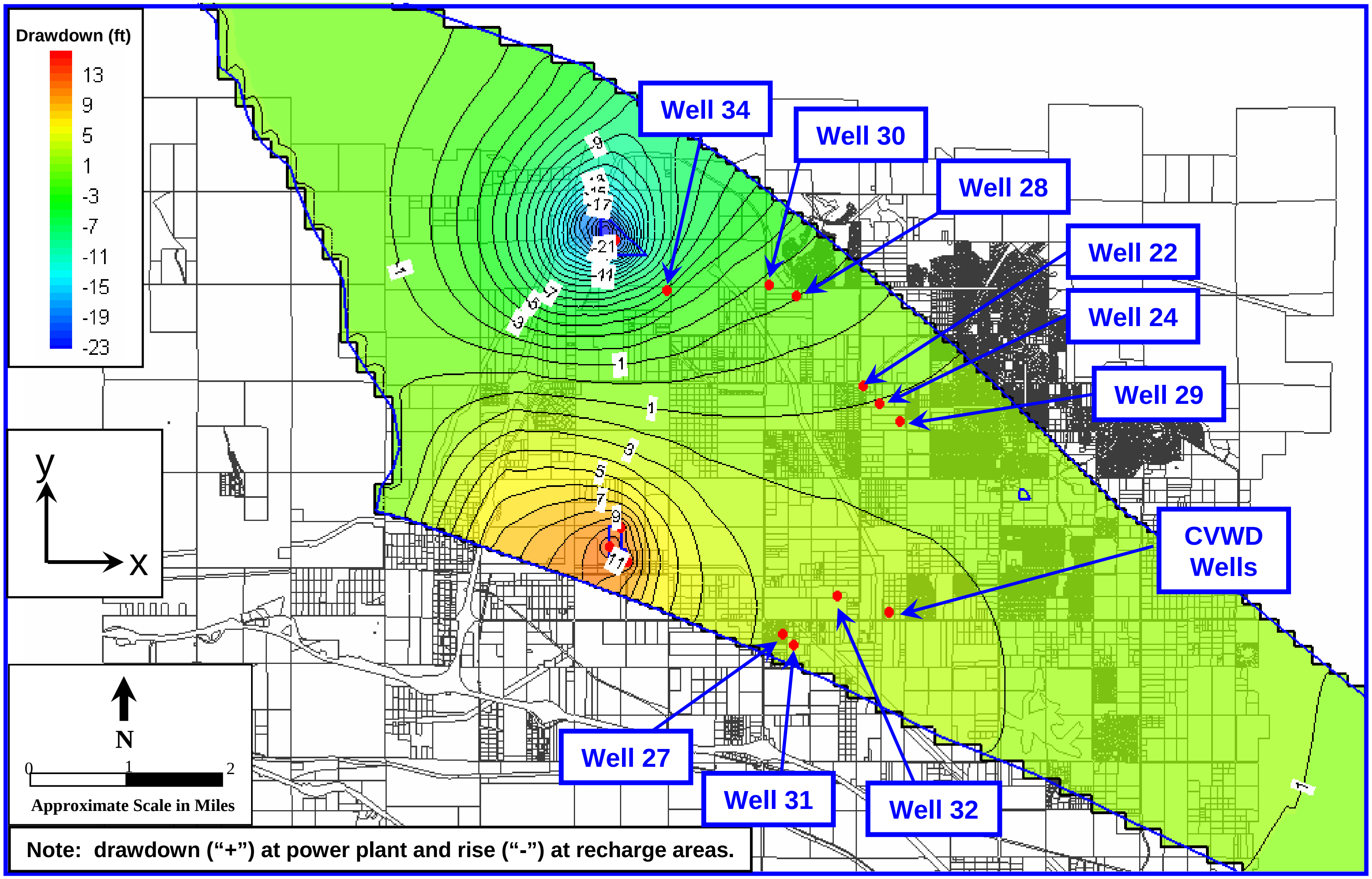


Figure 1: Contour Map of Simulated Groundwater Level Changes at 30 Years – Baseline Simulation (Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy; Case A: Anisotropy Ratio = 1.0)

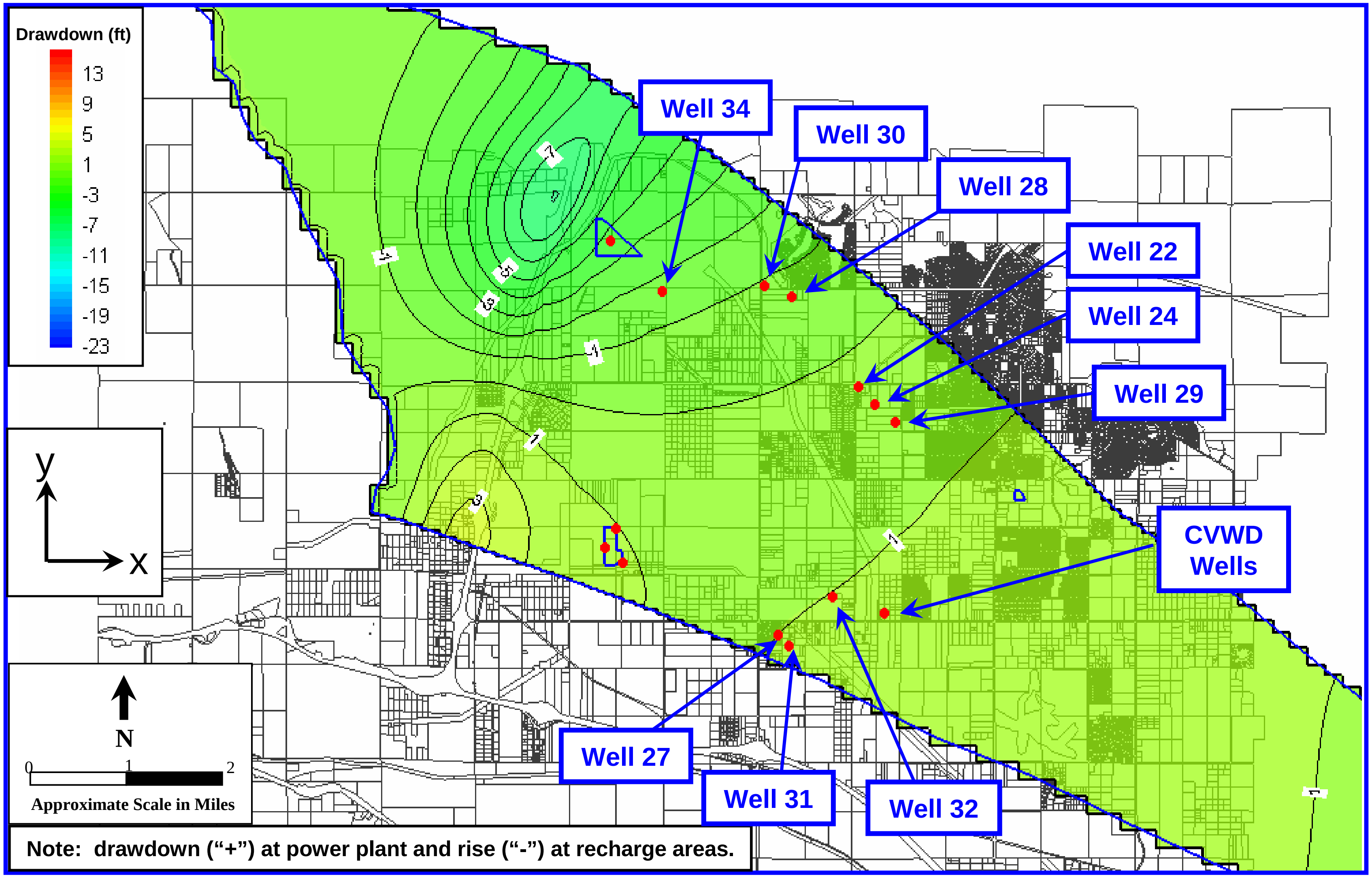


Figure 2: Contour Map of Simulated Groundwater Level Changes at 35 Years – Baseline Simulation (Tyley’s T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy; Case A: Anisotropy Ratio = 1.0)

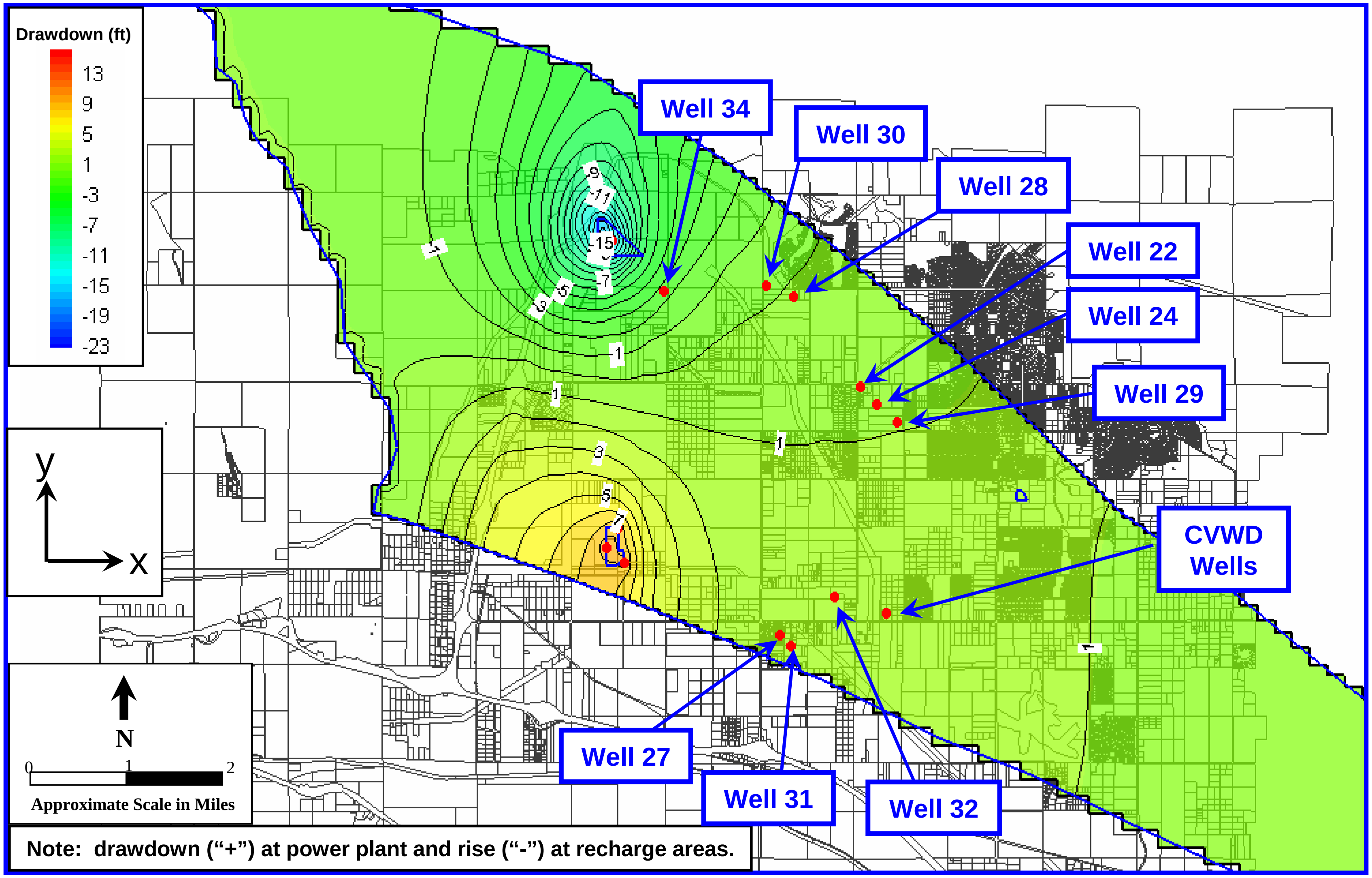


Figure 3: Contour Map of Simulated Groundwater Level Changes at 30 Years – Baseline Simulation (Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy; Case B: Anisotropy Ratio = 2.0)

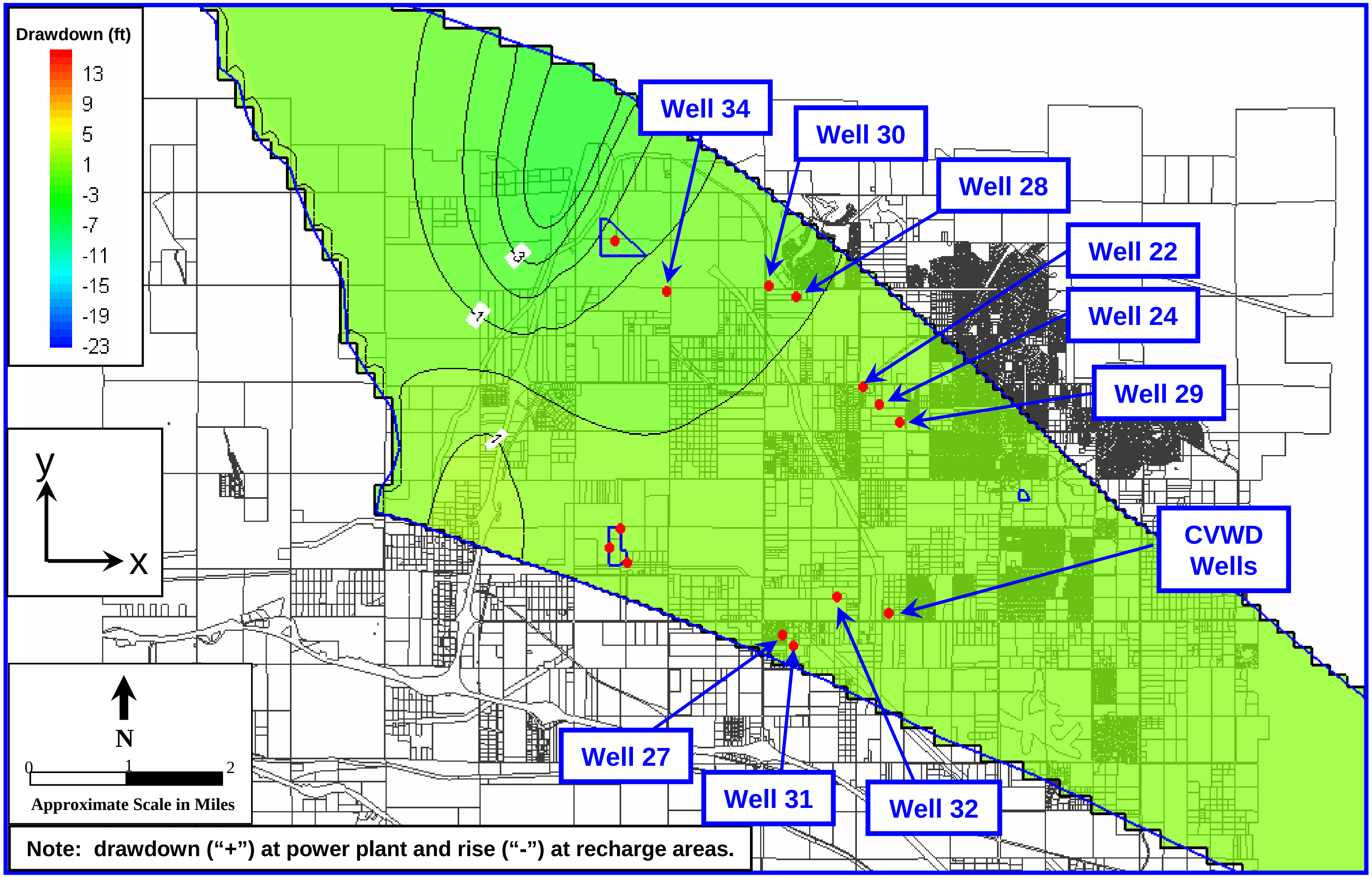


Figure 4: Contour Map of Simulated Groundwater Level Changes at 35 Years – Baseline Simulation (Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy; Case B: Anisotropy Ratio = 2.0)

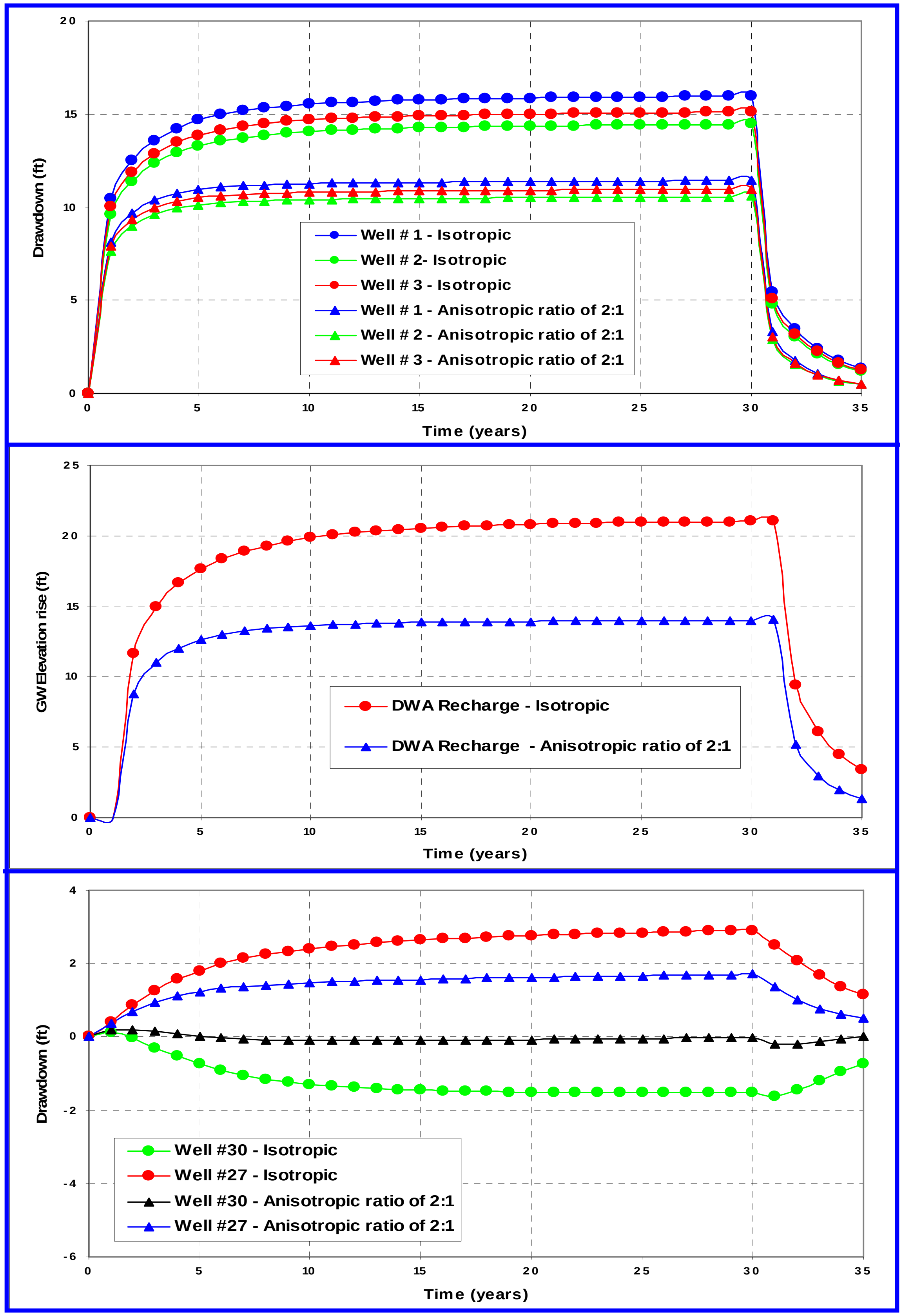


Figure 5: Simulated Groundwater Level Change versus Time at Project Pumping Wells, DWA Recharge Basin and MSWD Wells 27 and 30 - Baseline Simulation (Tyley's T) (Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy)

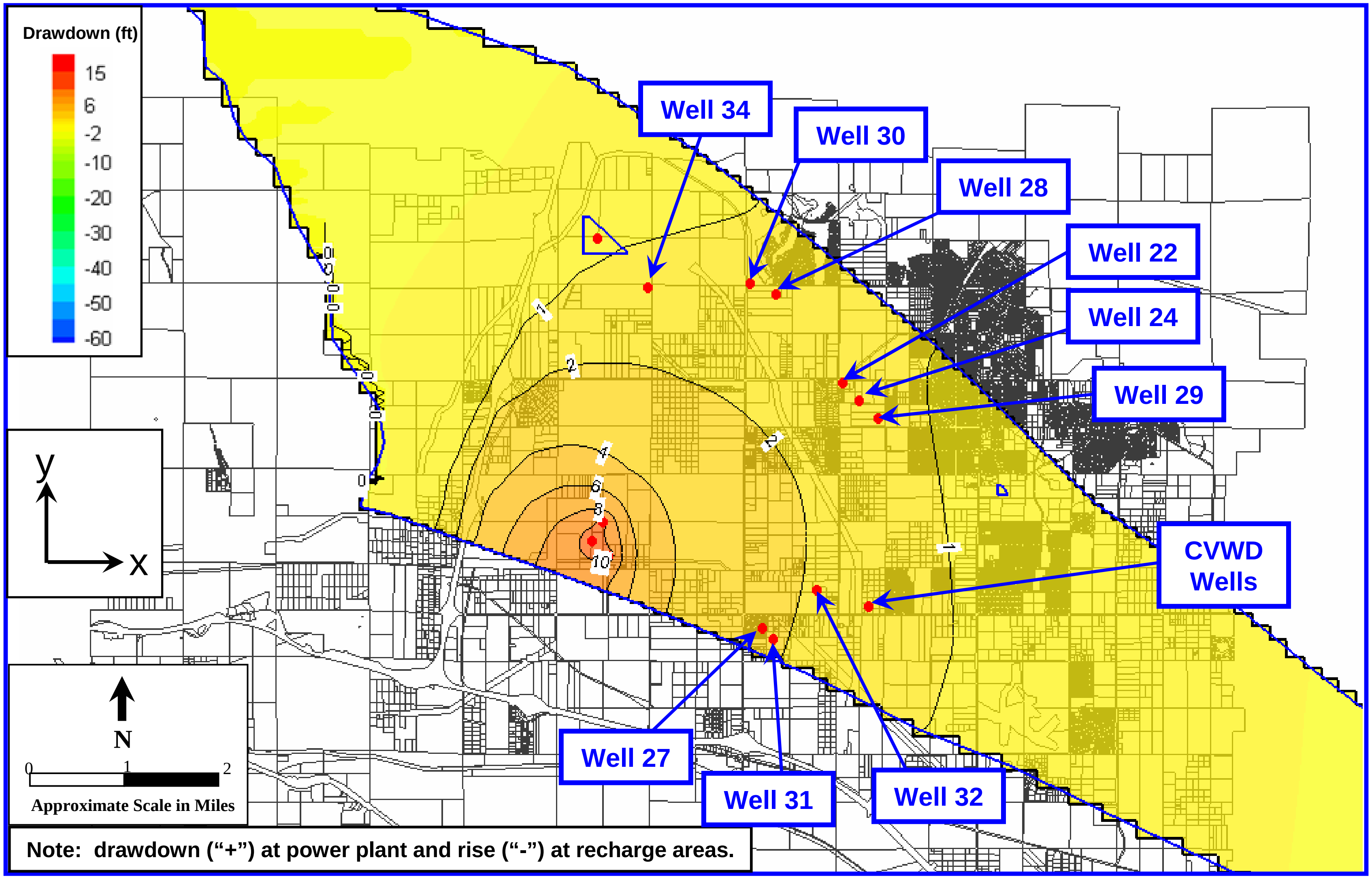


Figure 6: Contour Map of Simulated Groundwater Level Changes at 5 Years – Baseline Simulation (Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

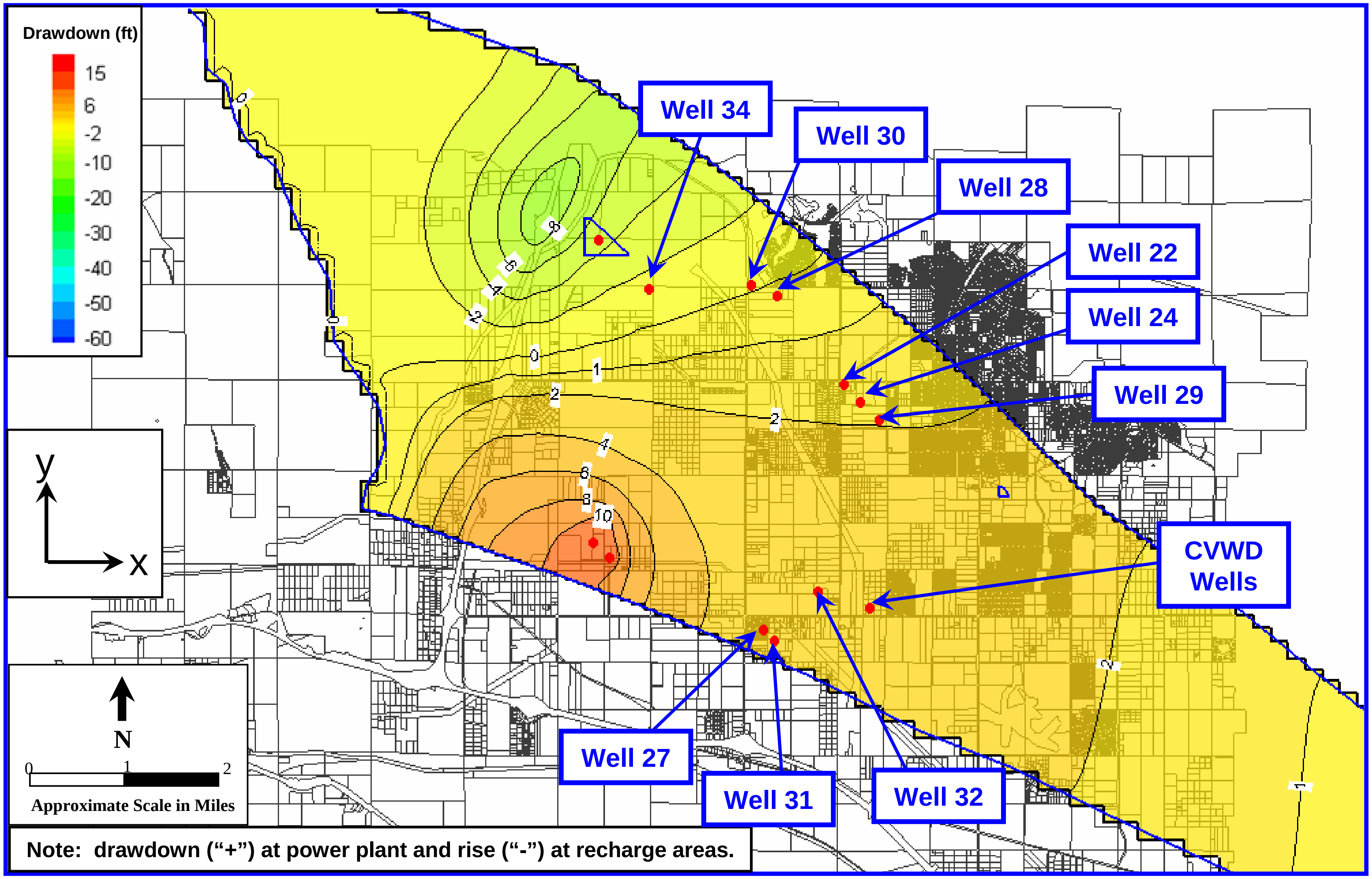


Figure 7: Contour Map of Simulated Groundwater Level Changes at 30 Years – Baseline Simulation (Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

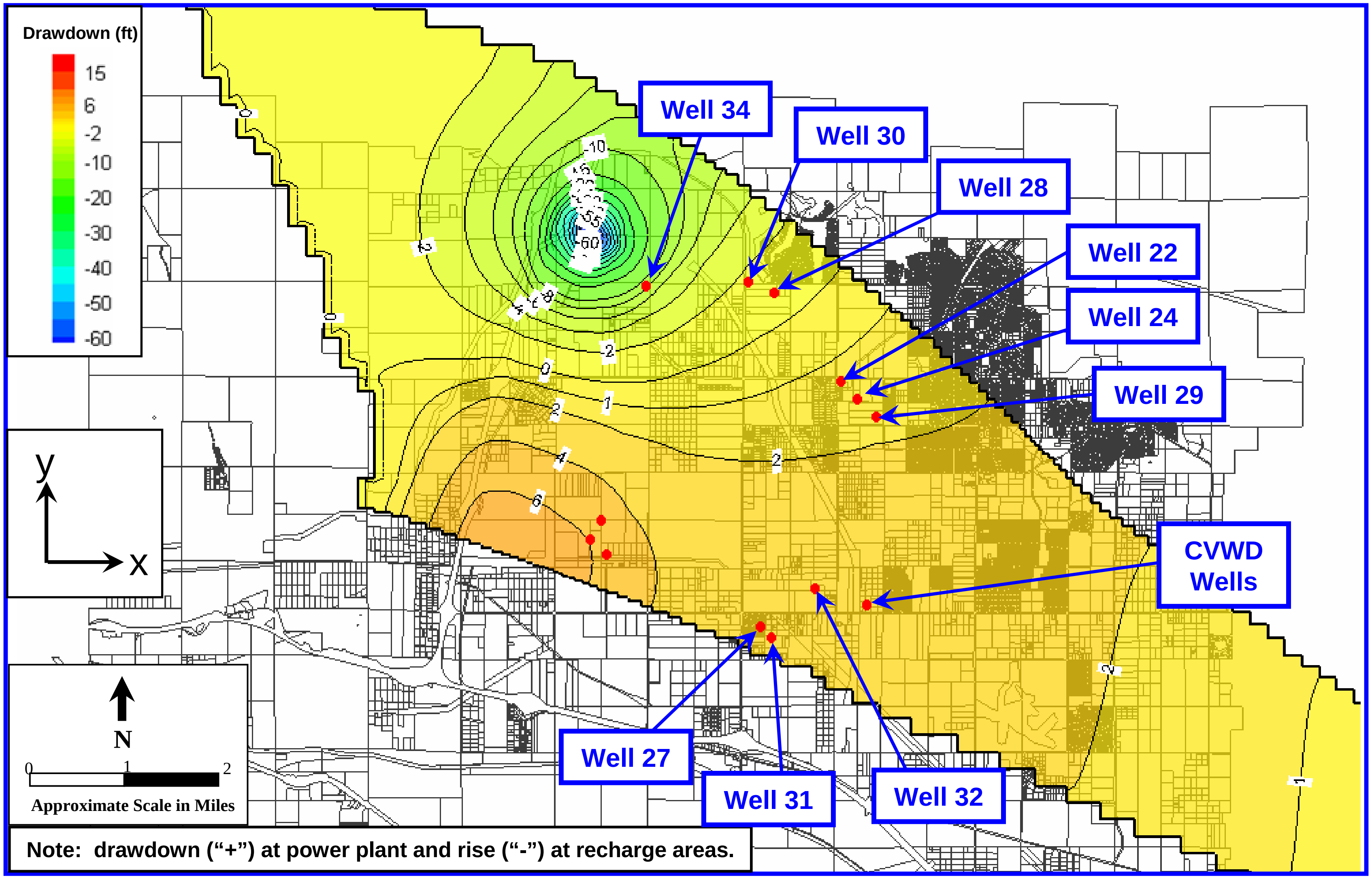


Figure 8: Contour Map of Simulated Groundwater Level Changes at 31 Years – Baseline Simulation (Tyley’s T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

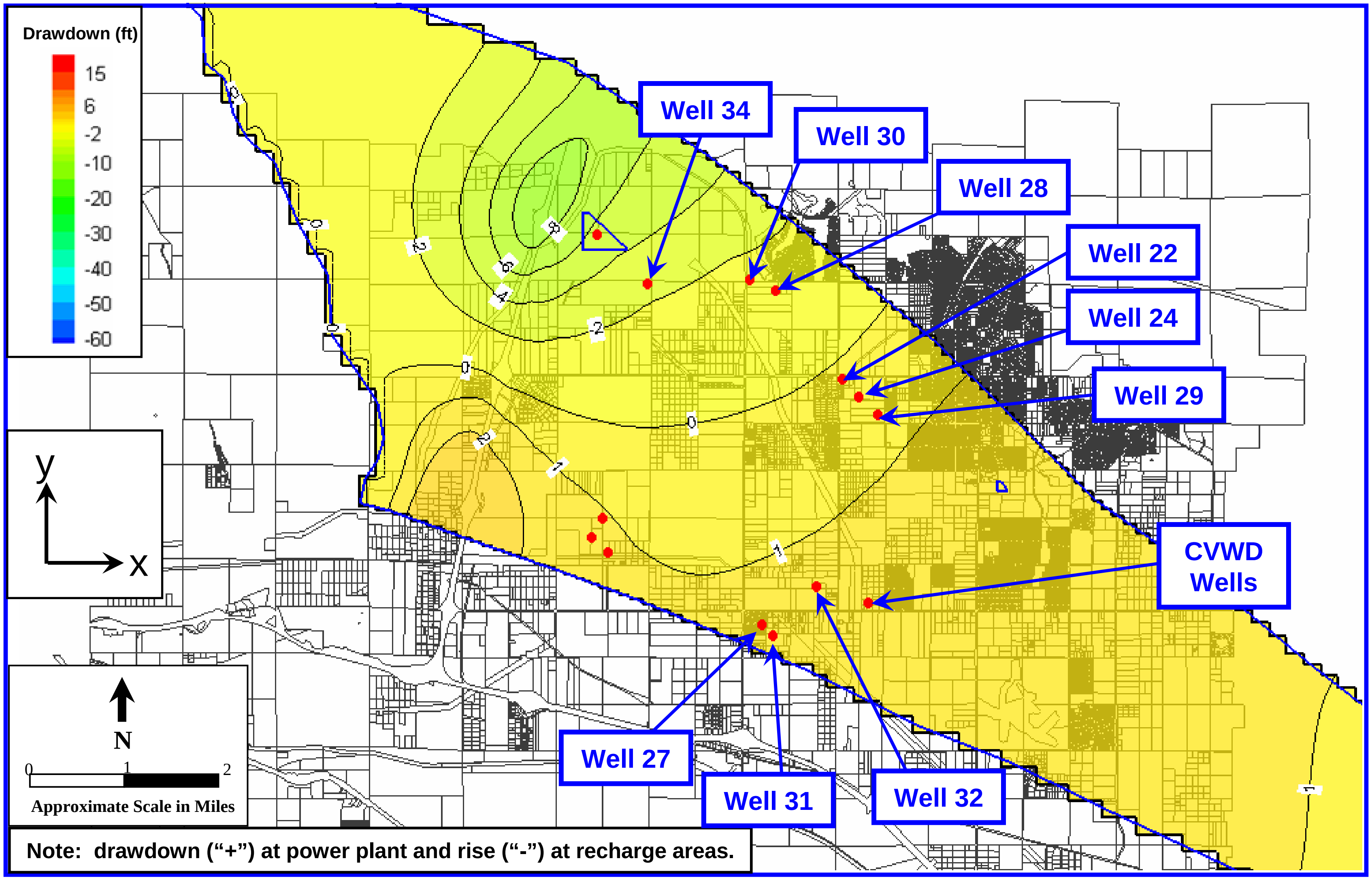


Figure 9: Contour Map of Simulated Groundwater Level Changes at 35 Years – Baseline Simulation (Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

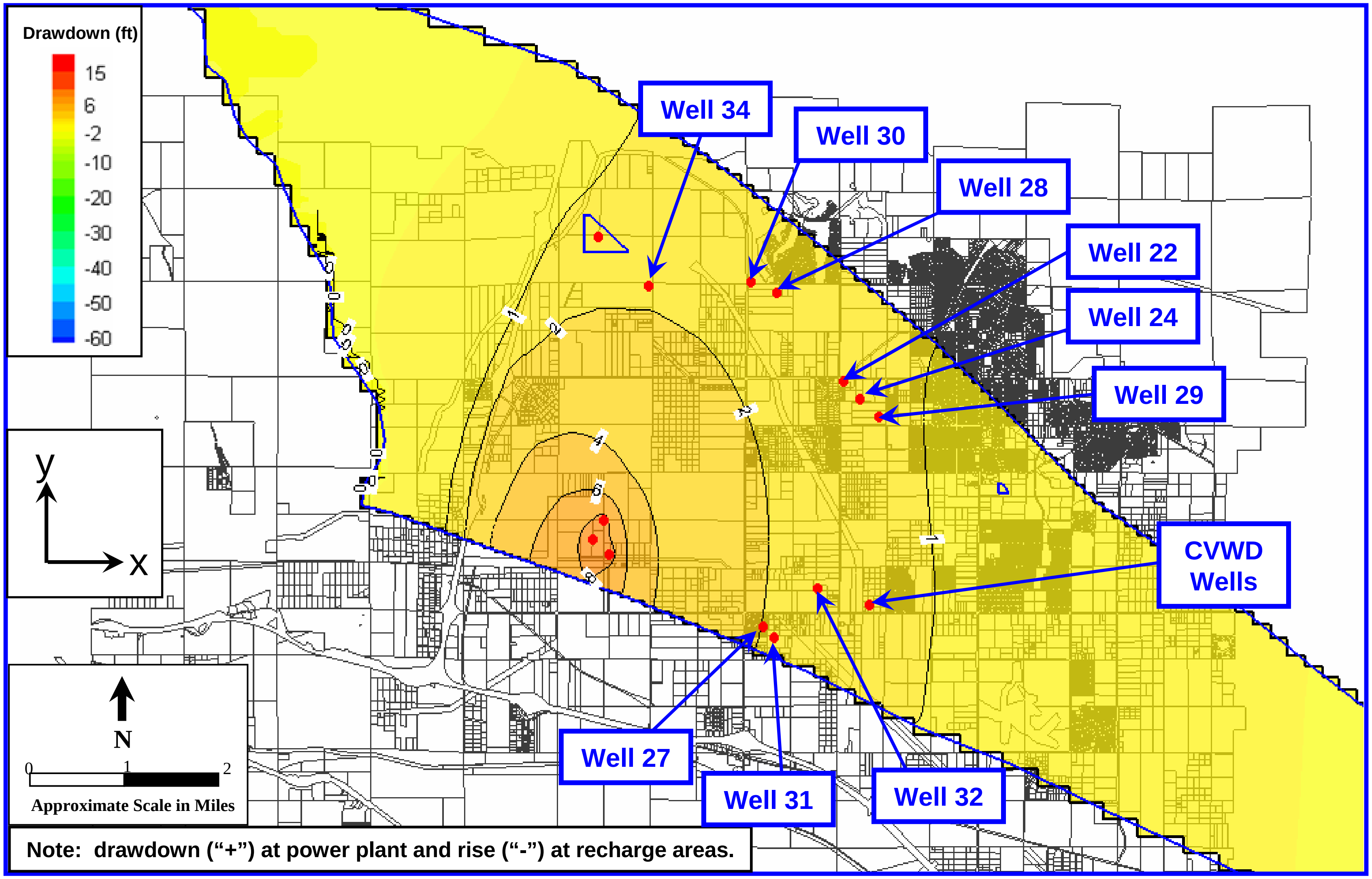


Figure 10: Contour Map of Simulated Groundwater Level Changes at 5 Years – Baseline Simulation (Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

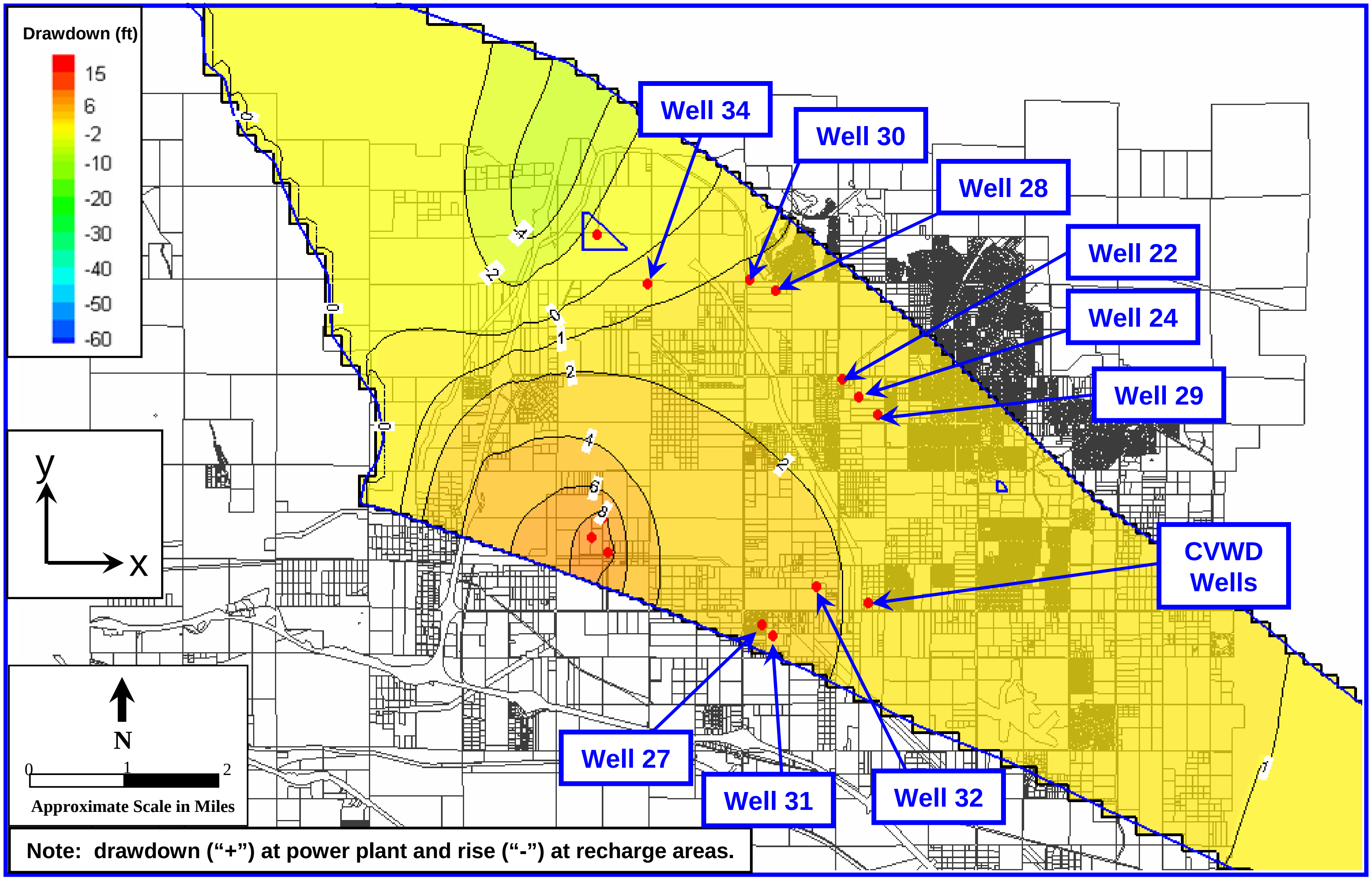


Figure 11: Contour Map of Simulated Groundwater Level Changes at 30 Years – Baseline Simulation (Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

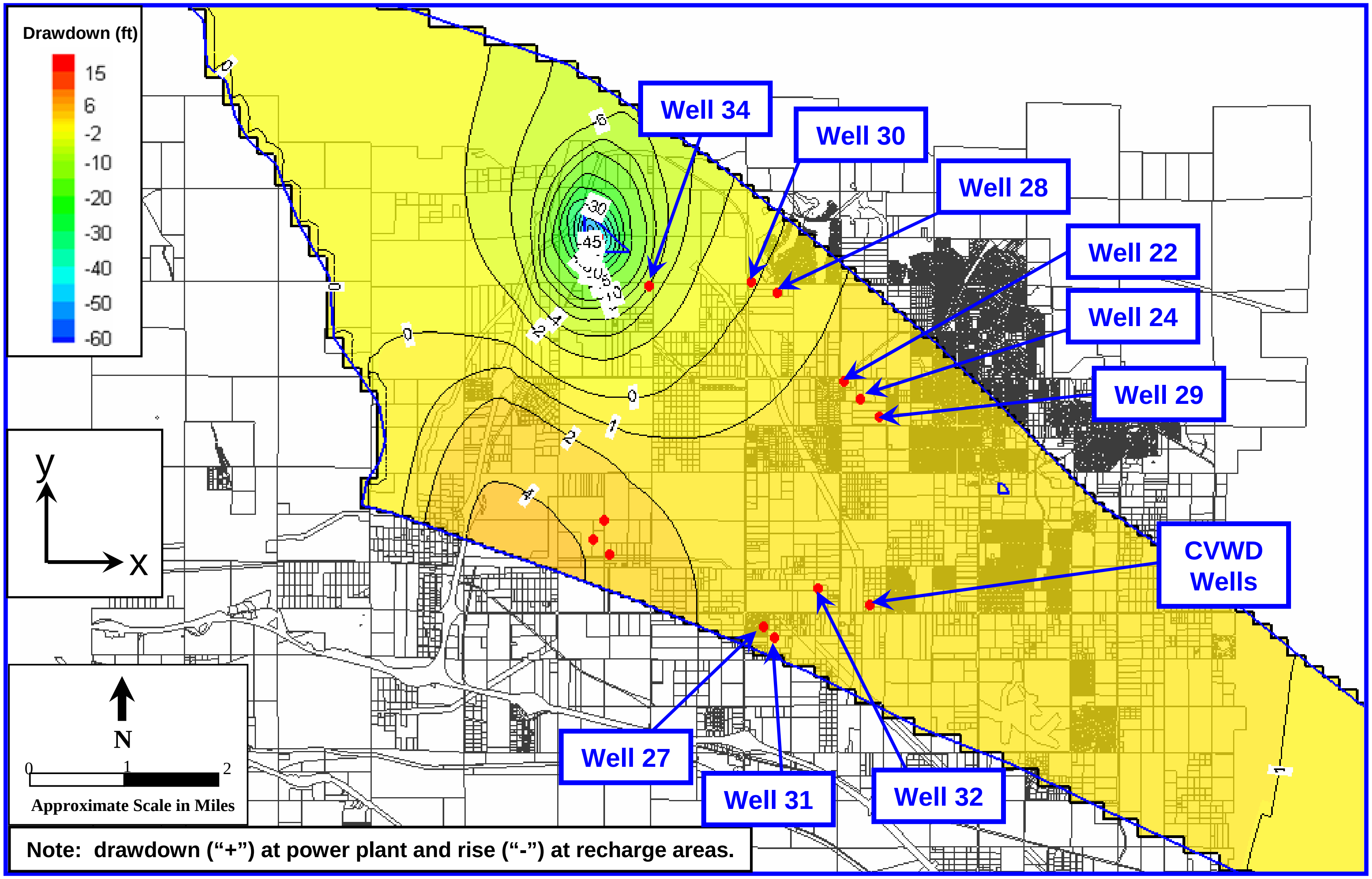


Figure 12: Contour Map of Simulated Groundwater Level Changes at 31 Years – Baseline Simulation (Tyley’s T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

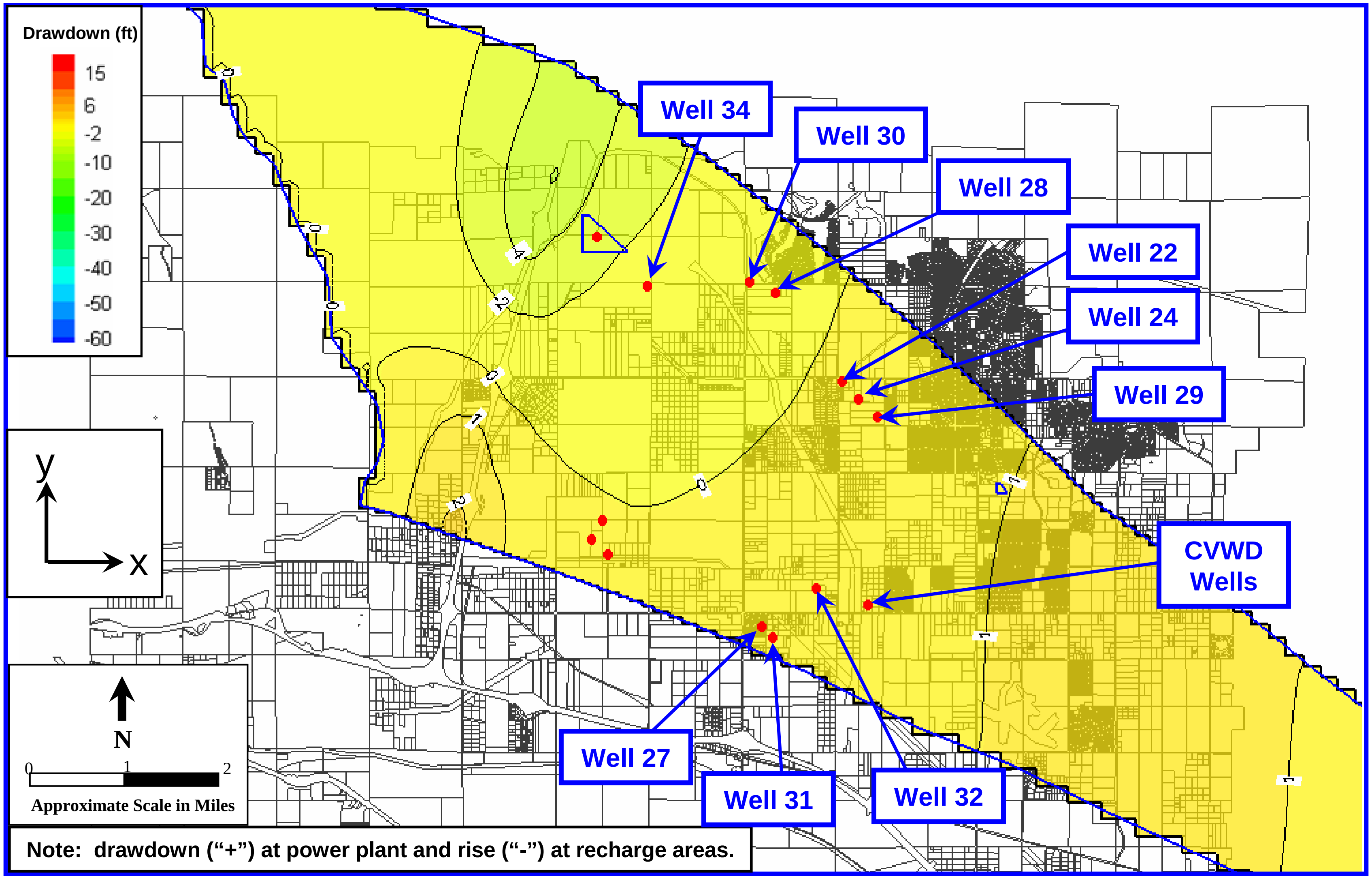


Figure 13: Contour Map of Simulated Groundwater Level Changes at 35 Years – Baseline Simulation (Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

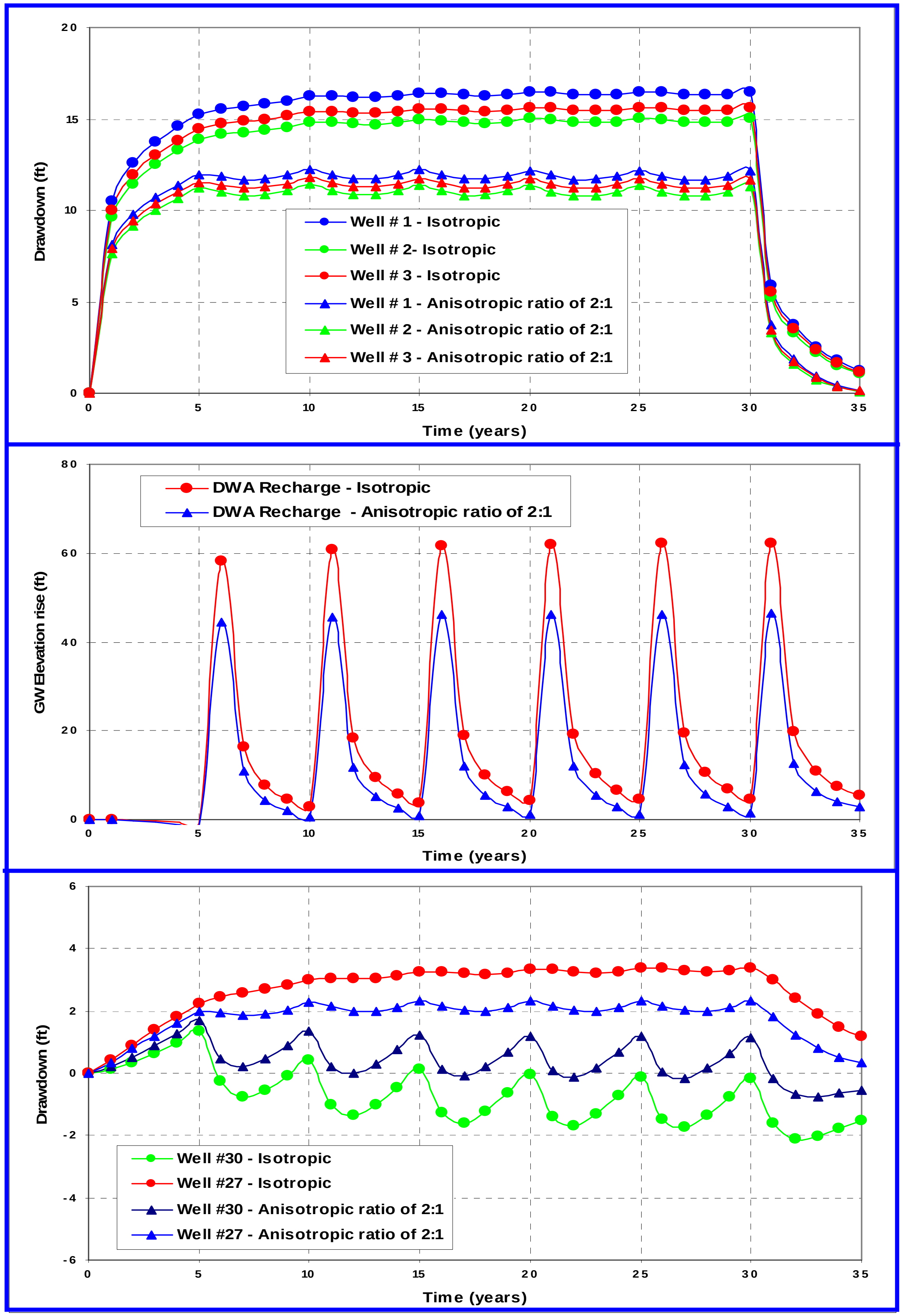


Figure 14: Simulated Groundwater Level Change versus Time at Project Pumping Wells, DWA Recharge Basin and MSWD Wells 27 and 30 - Baseline Simulation (Tyley's T) (Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years)

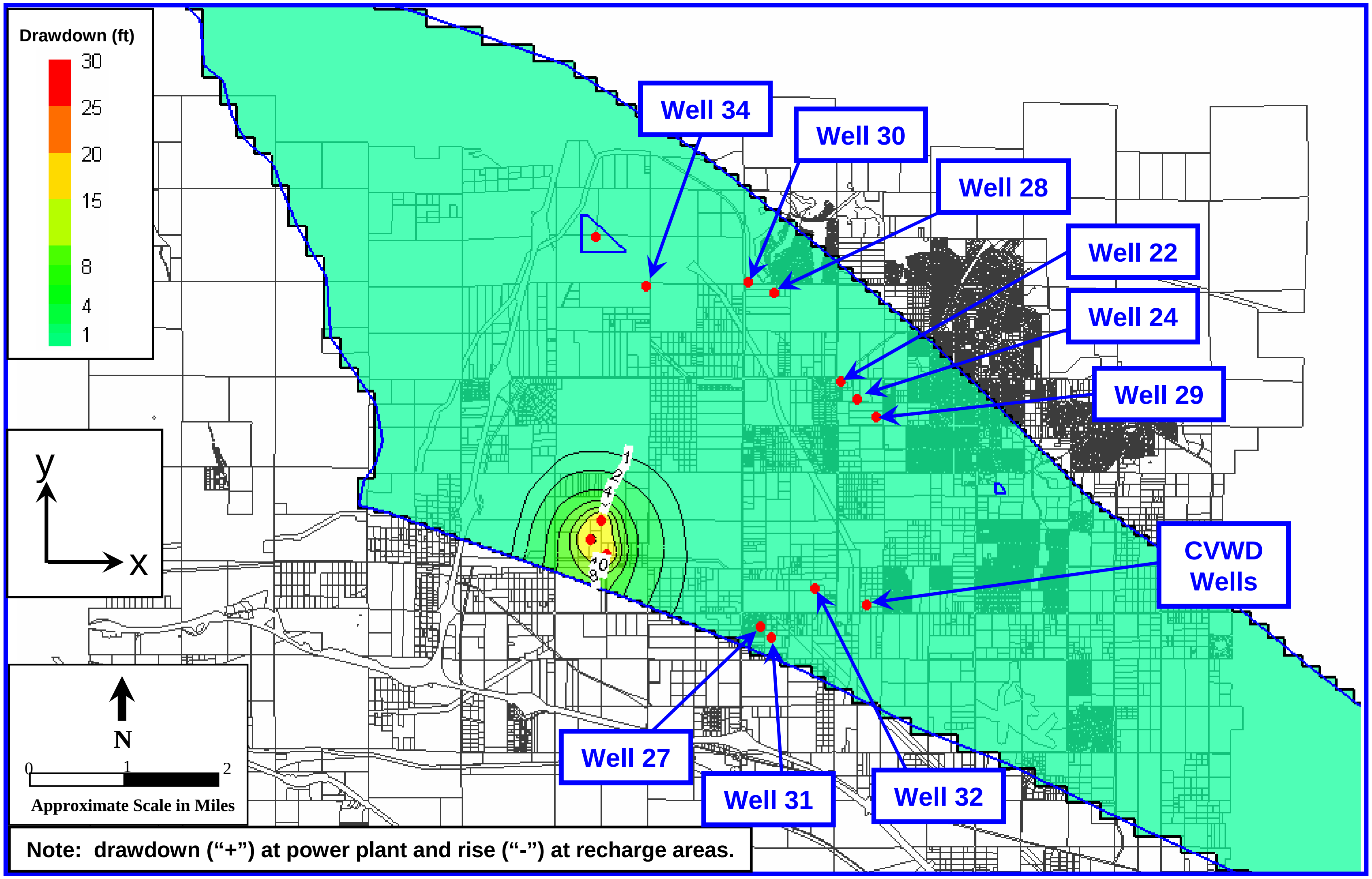


Figure 15: Contour Map of Simulated Groundwater Level Changes at 4 Months – Baseline Simulation (Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af; Case A: Anisotropy Ratio =1.0)

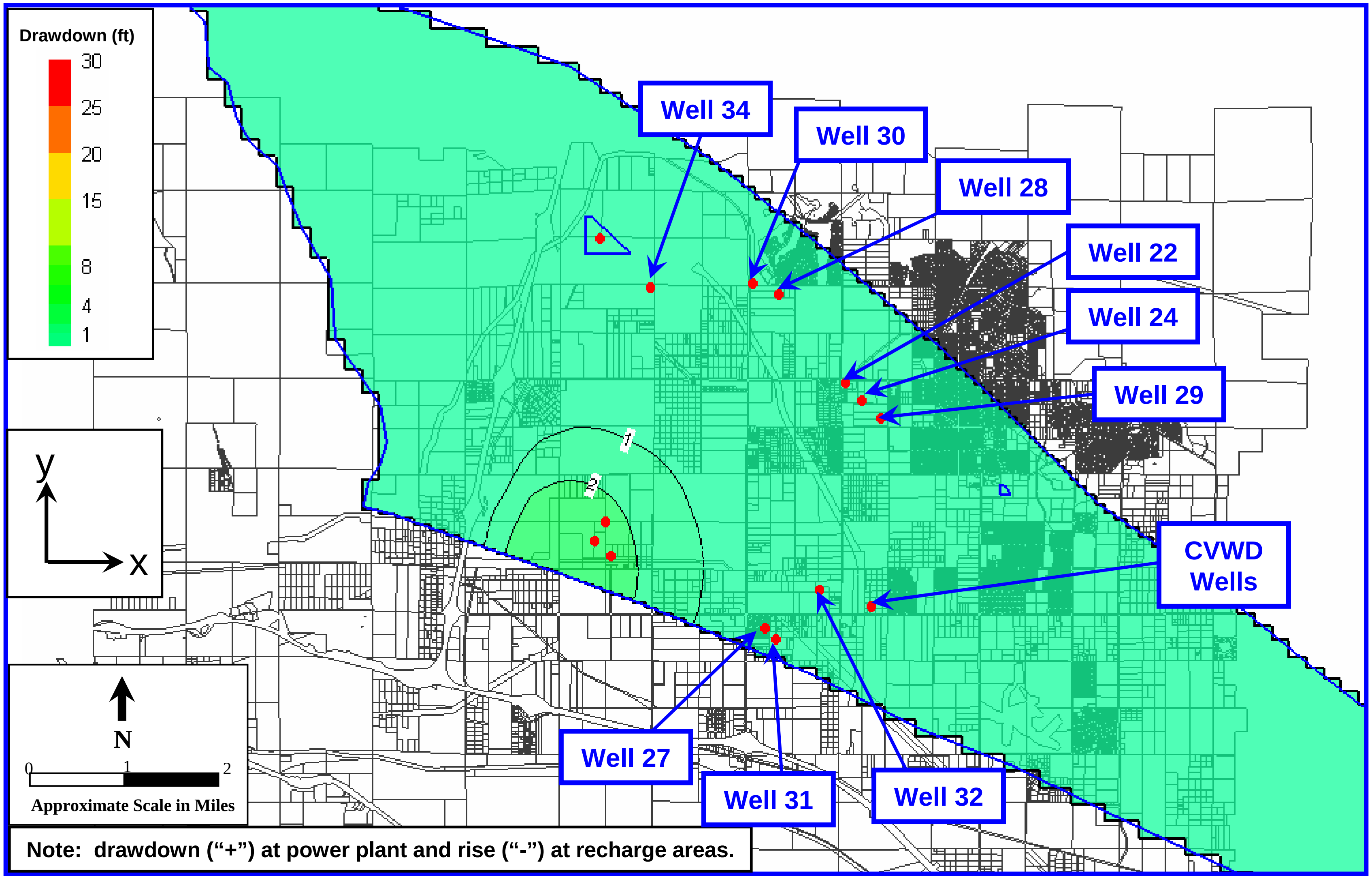


Figure 16: Contour Map of Simulated Groundwater Level Changes at 12 Months – Baseline Simulation (Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af; Case A: Anisotropy Ratio =1.0)

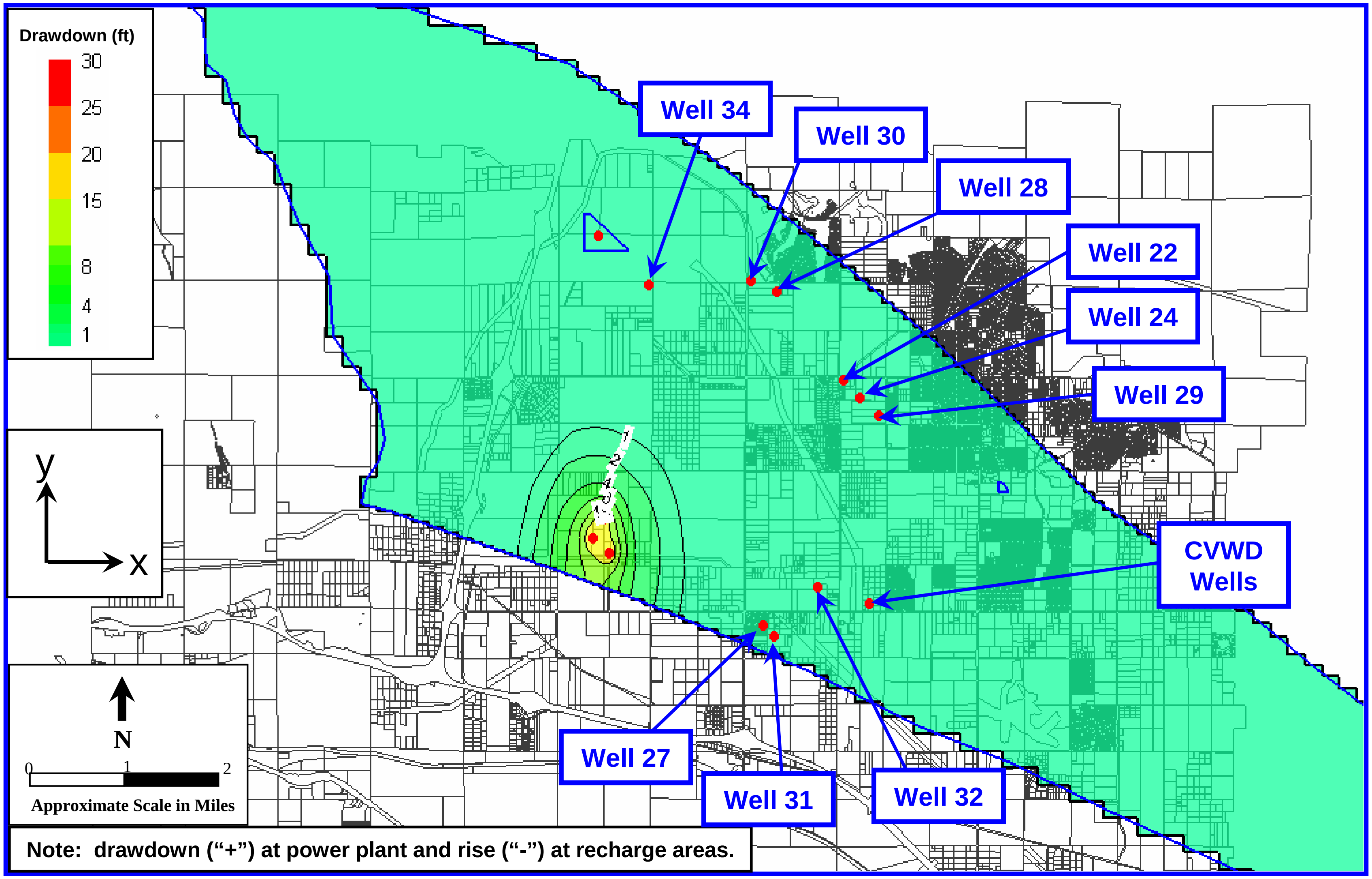


Figure 17: Contour Map of Simulated Groundwater Level Changes at 4 Months – Baseline Simulation (Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af; Case B: Anisotropy Ratio =2.0)

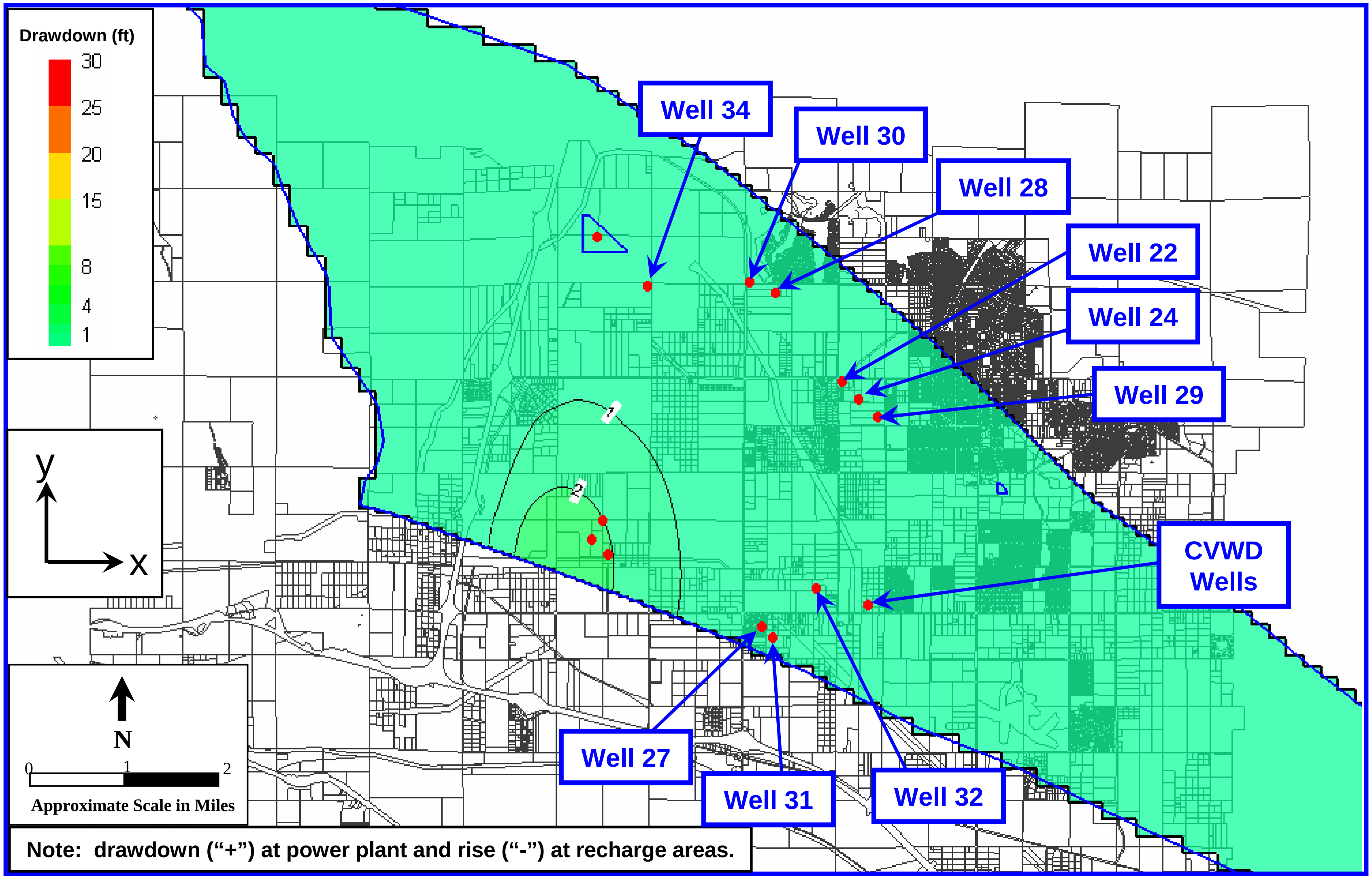


Figure 18: Contour Map of Simulated Groundwater Level Changes at 12 Months – Baseline Simulation (Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af; Case B: Anisotropy Ratio =2.0)

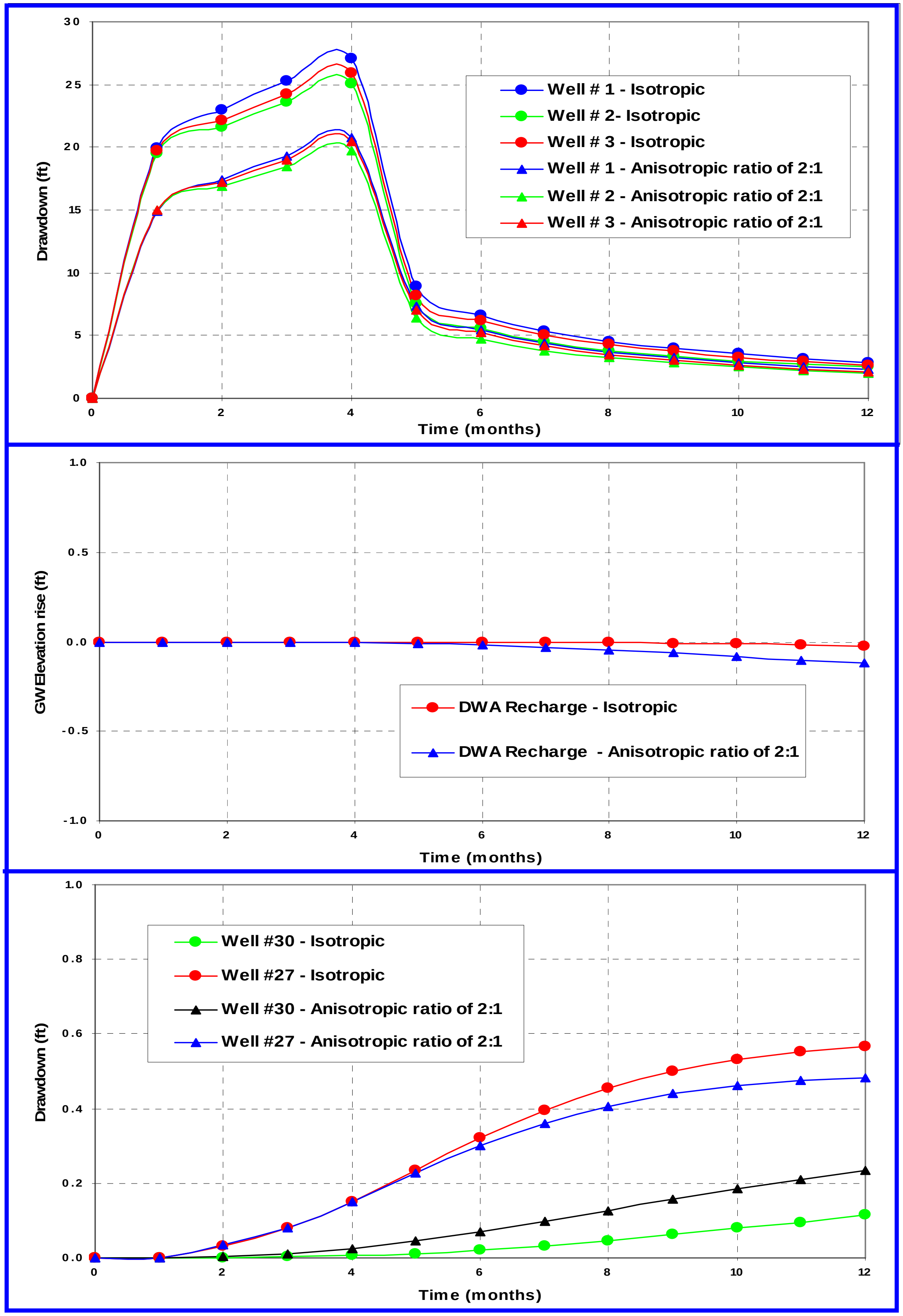


Figure 19: Simulated Groundwater Level Change versus Time at Project Pumping Wells, DWA Recharge Basin and MSWD Wells 27 and 30 - Baseline Simulation (Tyley's T) (Scenario 3: Pumping = 2,059 pgm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af)

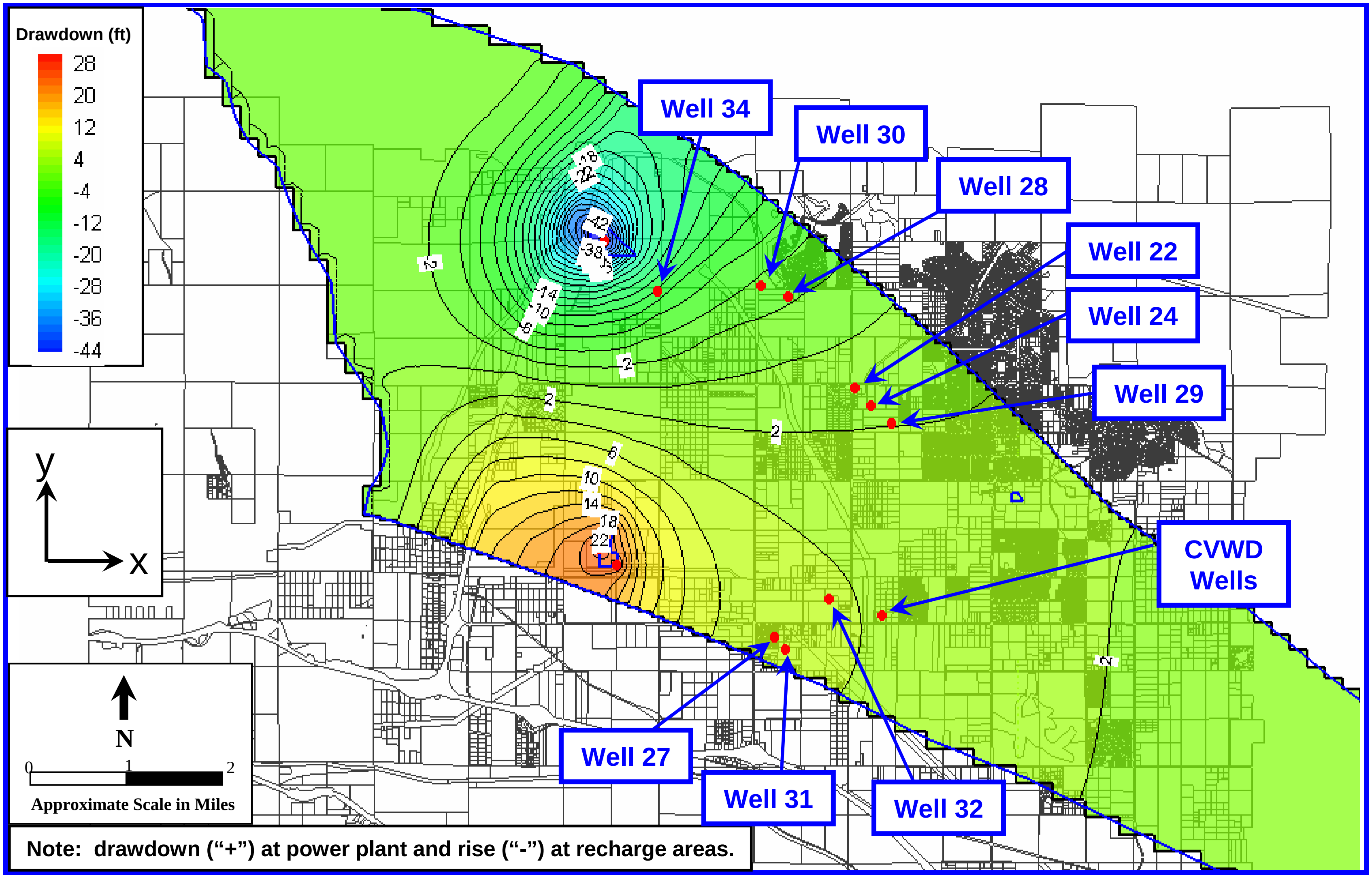


Figure 20: Contour Map of Simulated Groundwater Level Changes at 30 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy, Case A: Anisotropy Ratio = 1.0)

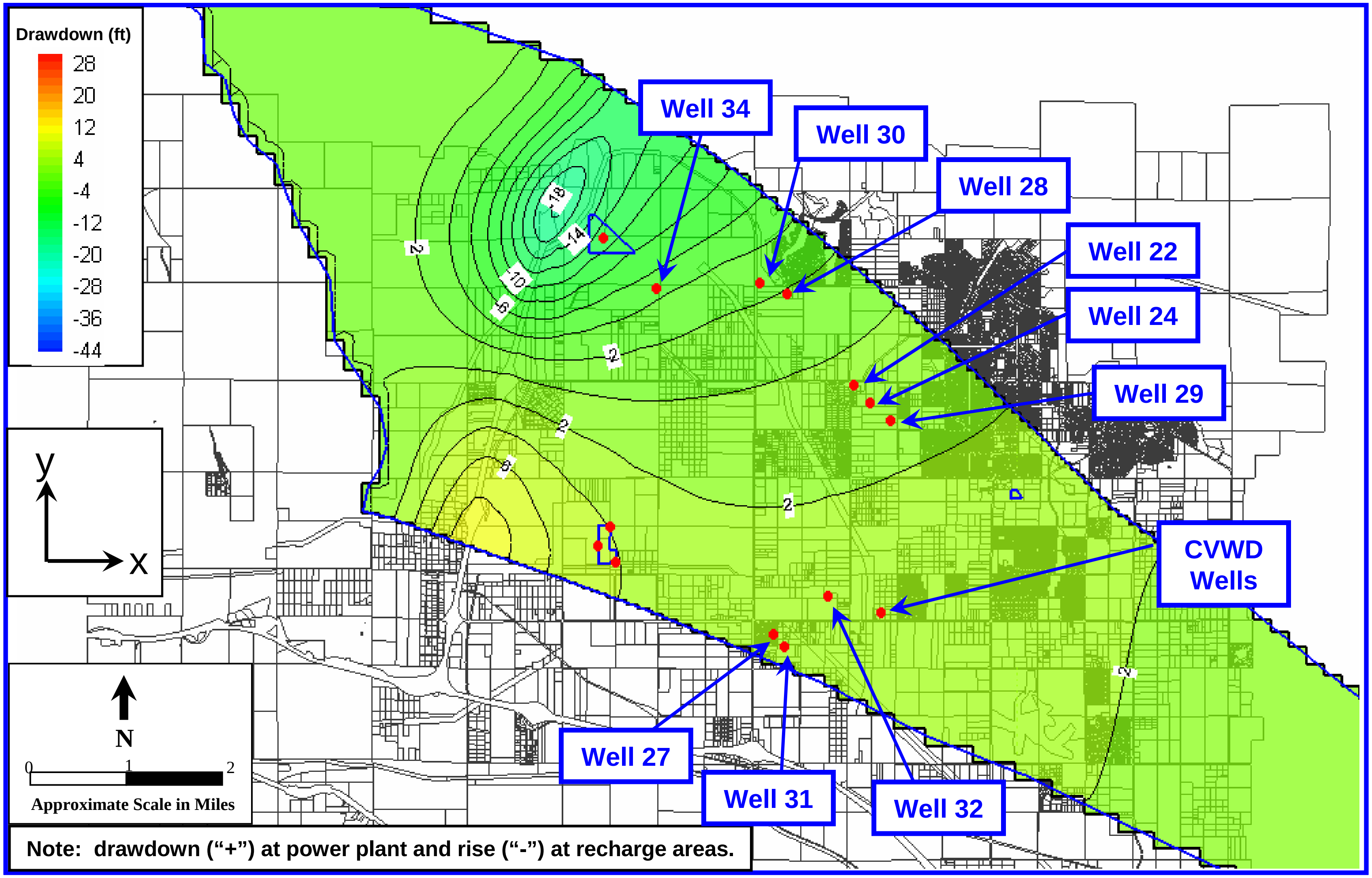


Figure 21: Contour Map of Simulated Groundwater Level Changes at 35 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy, Case A: Anisotropy Ratio = 1.0)

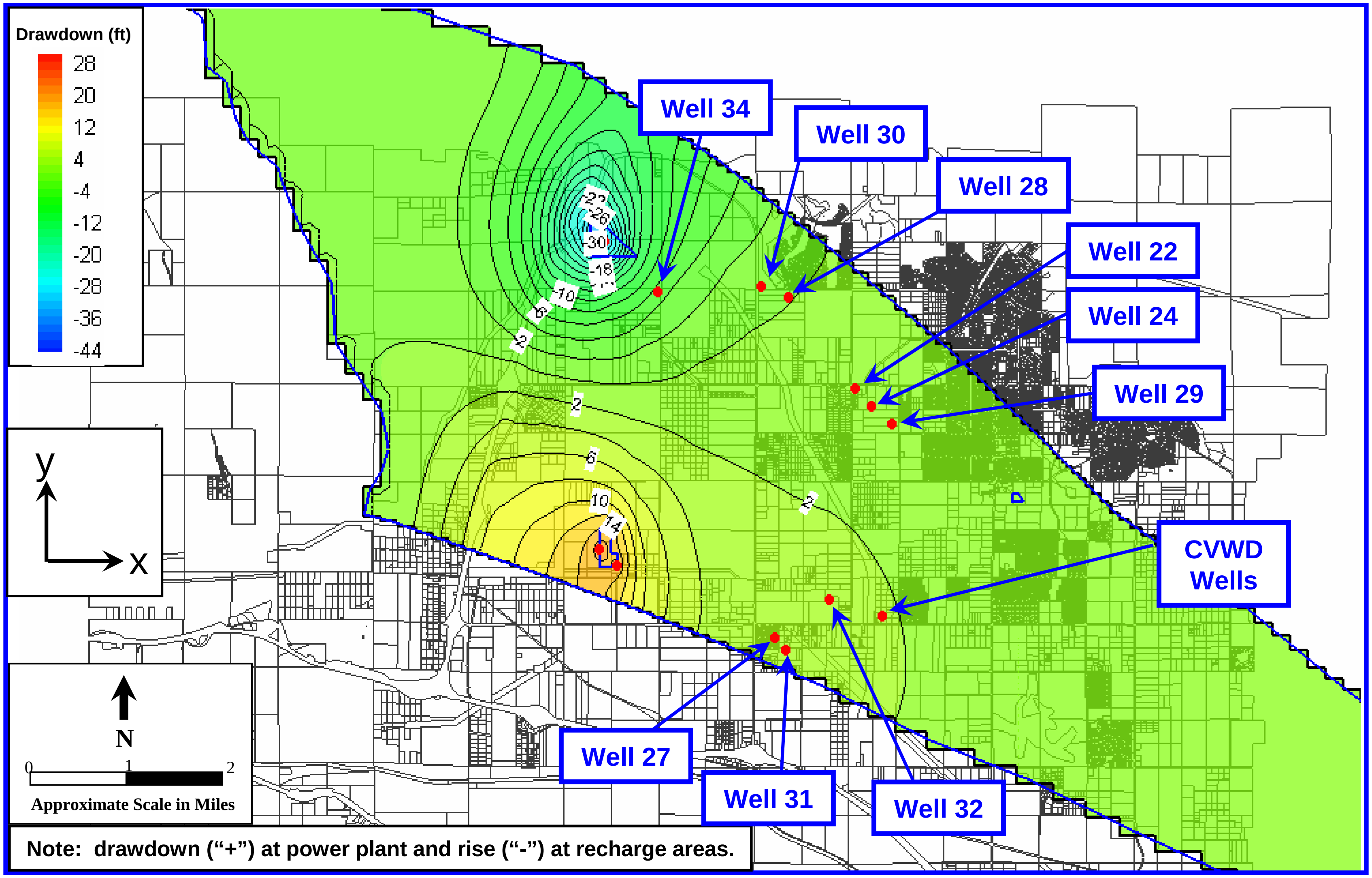


Figure 22: Contour Map of Simulated Groundwater Level Changes at 30 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy, Case B: Anisotropy Ratio = 2.0)

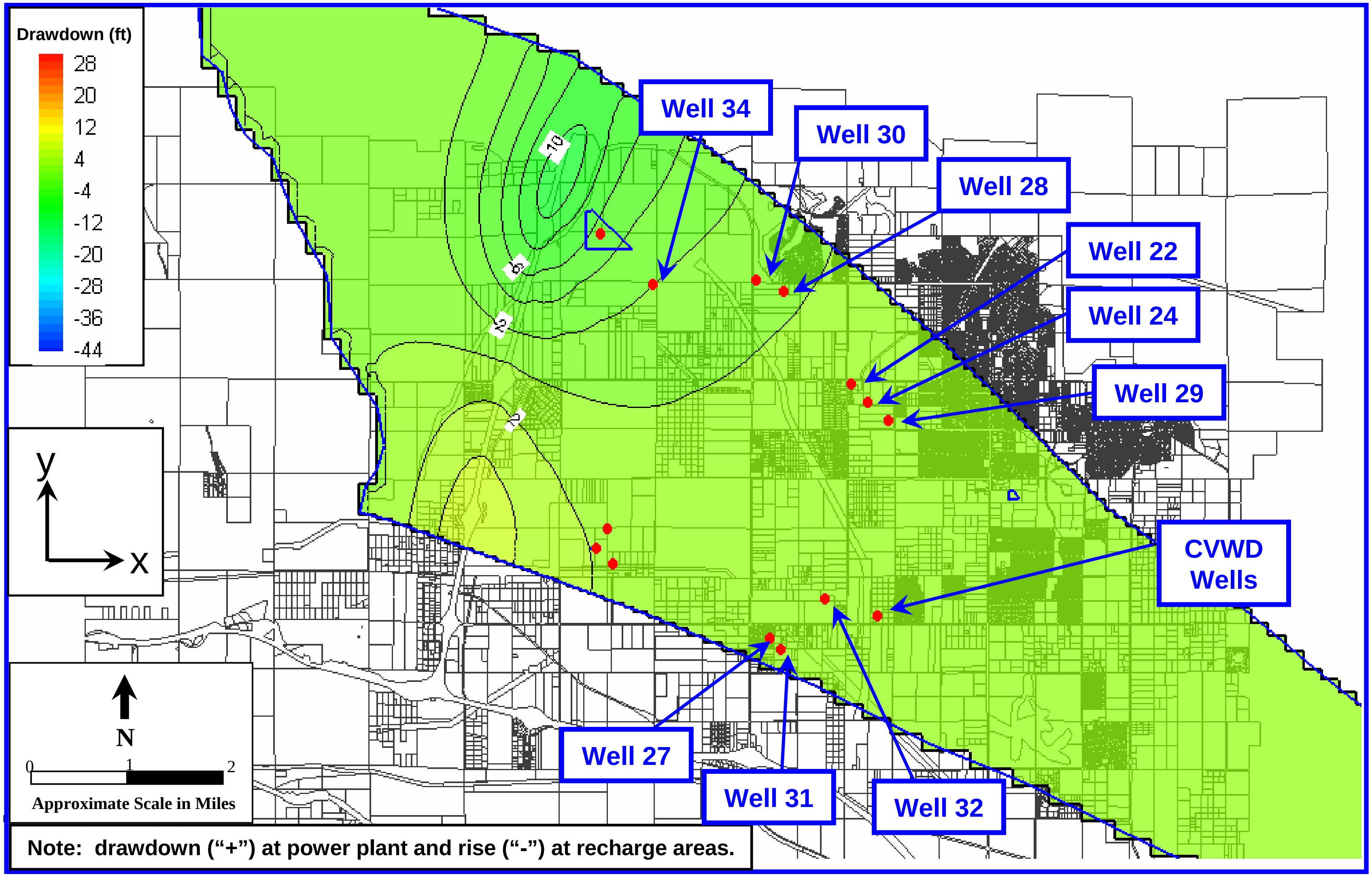


Figure 23: Contour Map of Simulated Groundwater Level Changes at 35 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy, Case B: Anisotropy Ratio = 2.0)

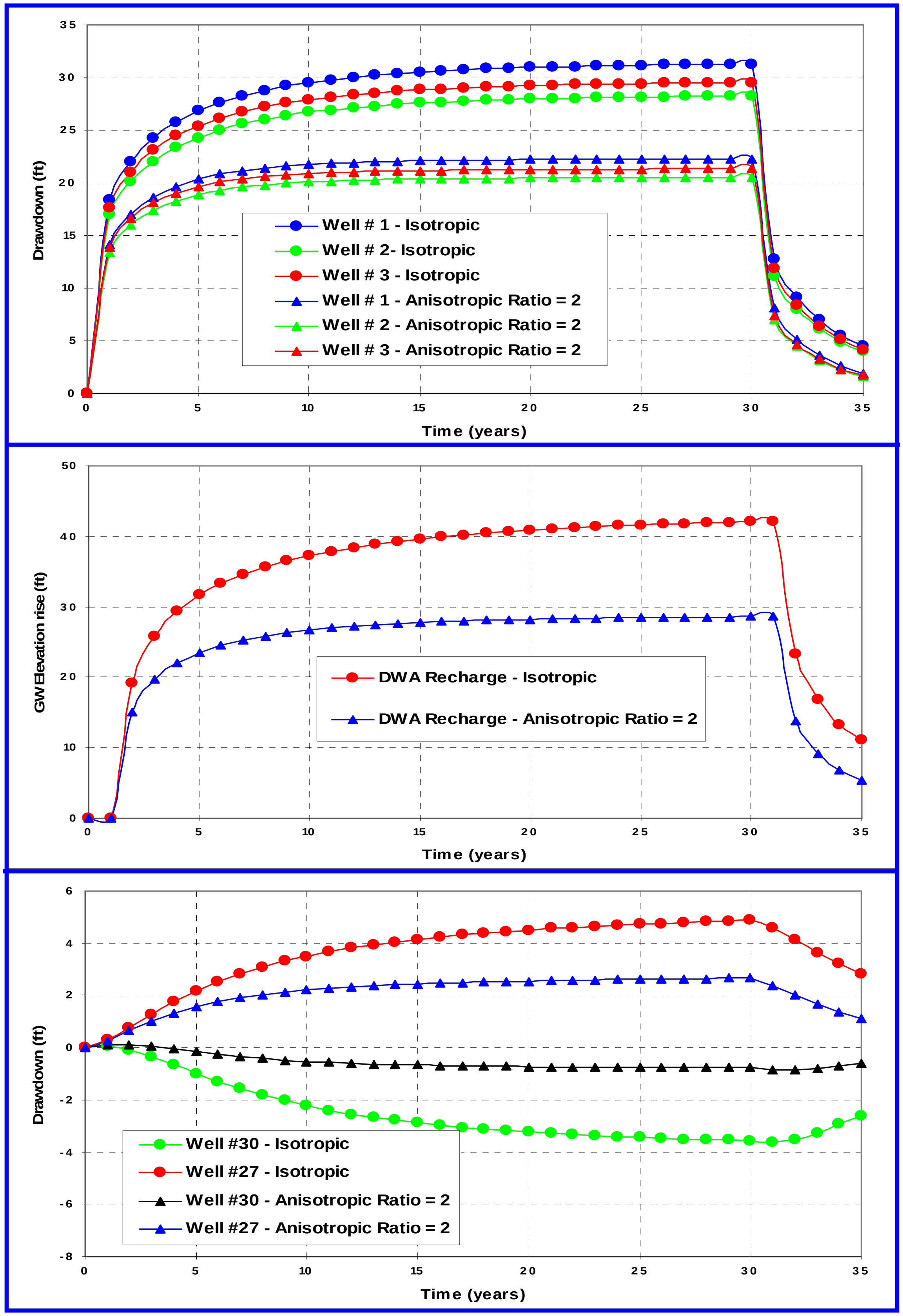


Figure 24: Simulated Groundwater Level Change versus Time at Project Pumping Wells, DWA Recharge Basin and MSWD Wells 27 and 30 - Sensitivity 1 (Half Tyley's T) (Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy)

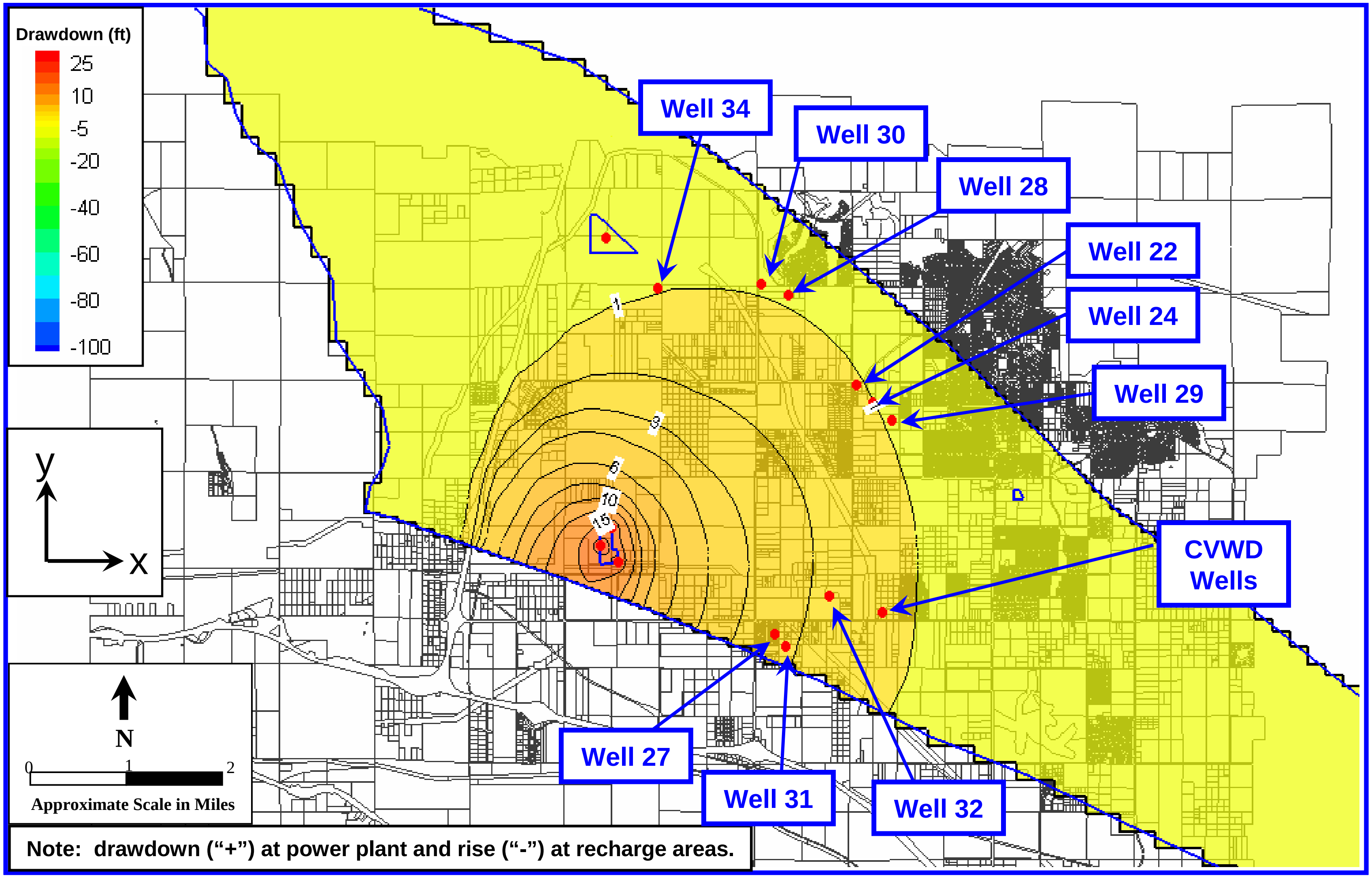


Figure 25: Contour Map of Simulated Groundwater Level Changes at 5 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

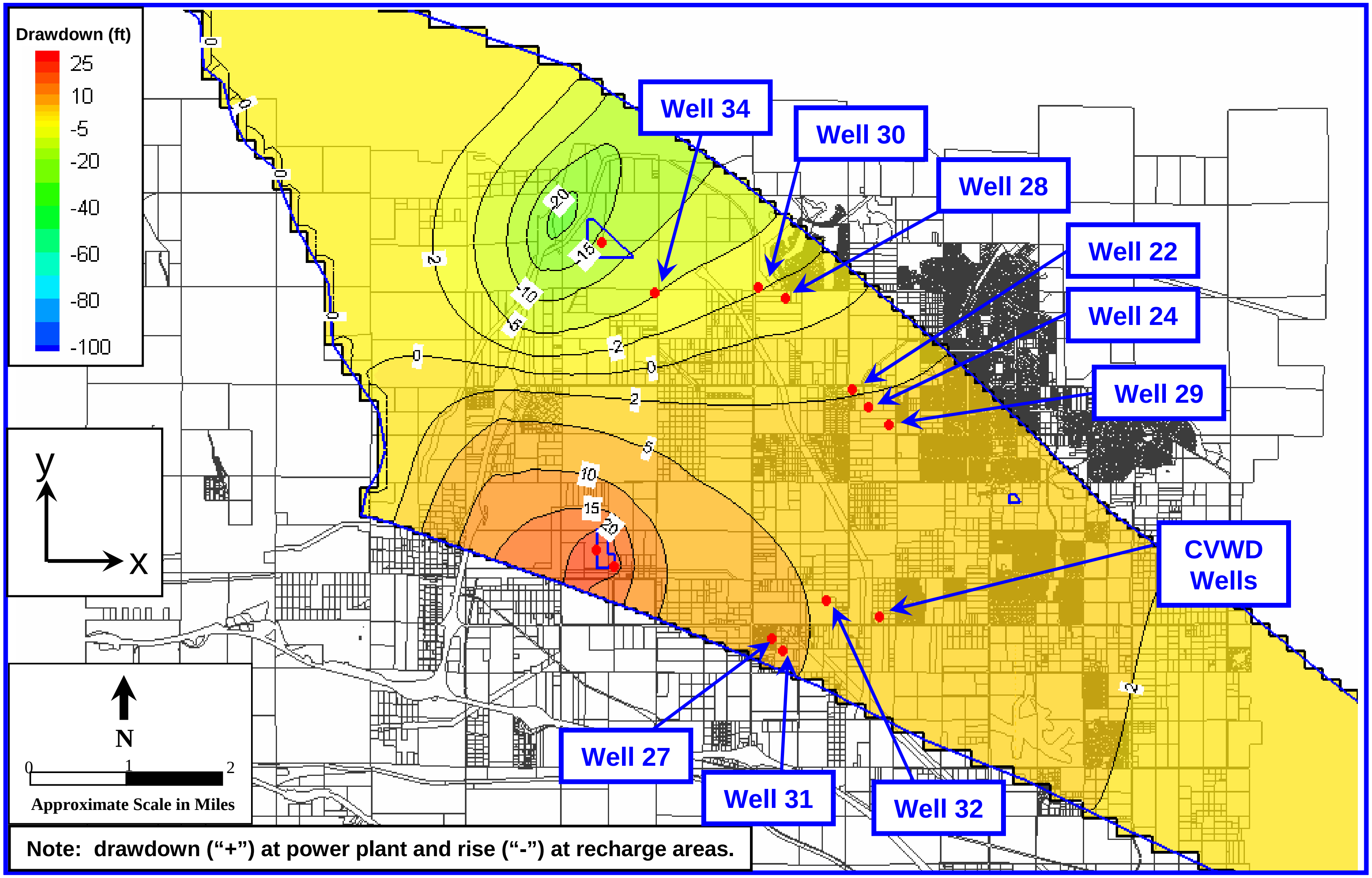


Figure 26: Contour Map of Simulated Groundwater Level Changes at 30 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

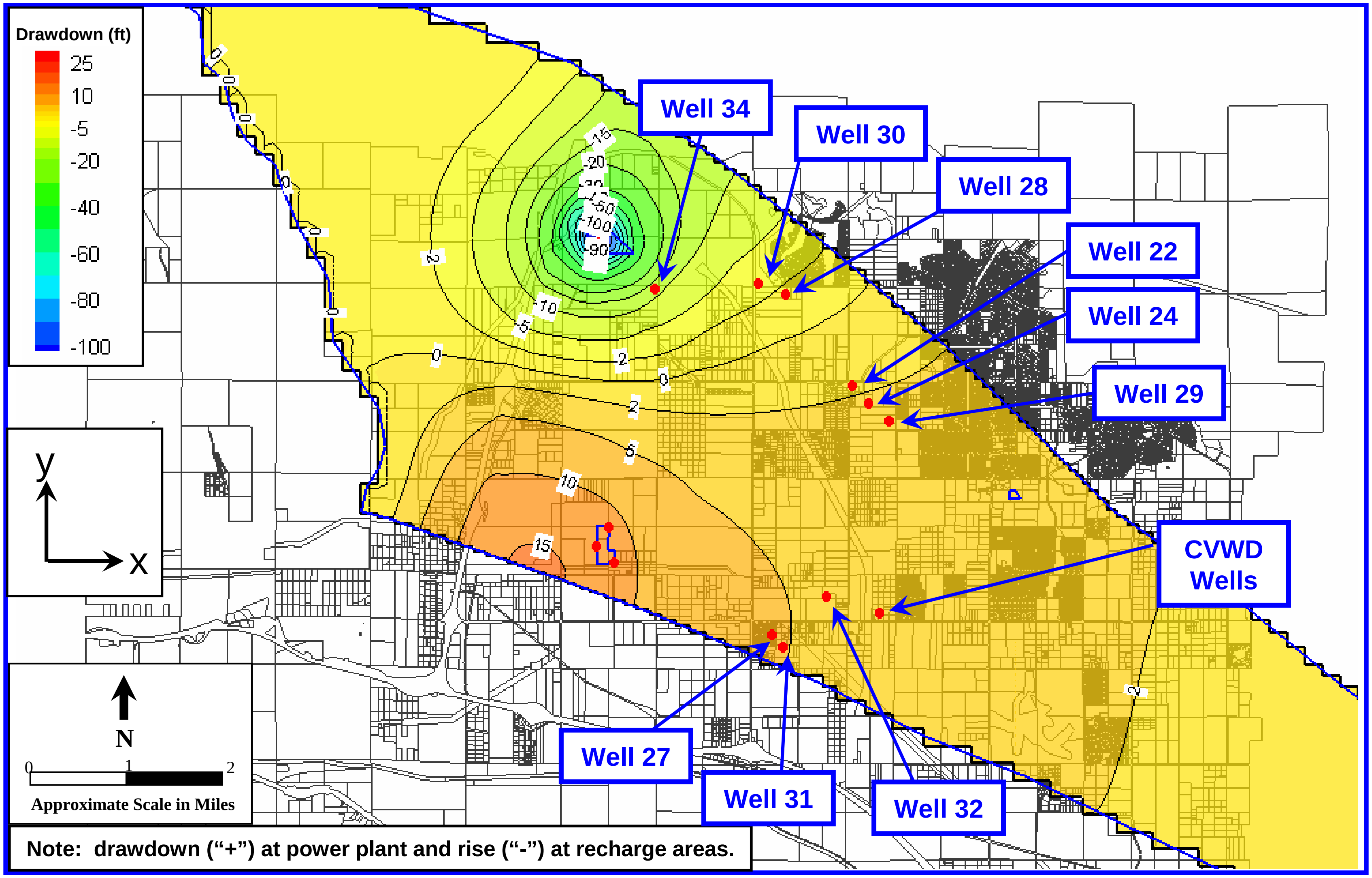


Figure 27: Contour Map of Simulated Groundwater Level Changes at 31 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

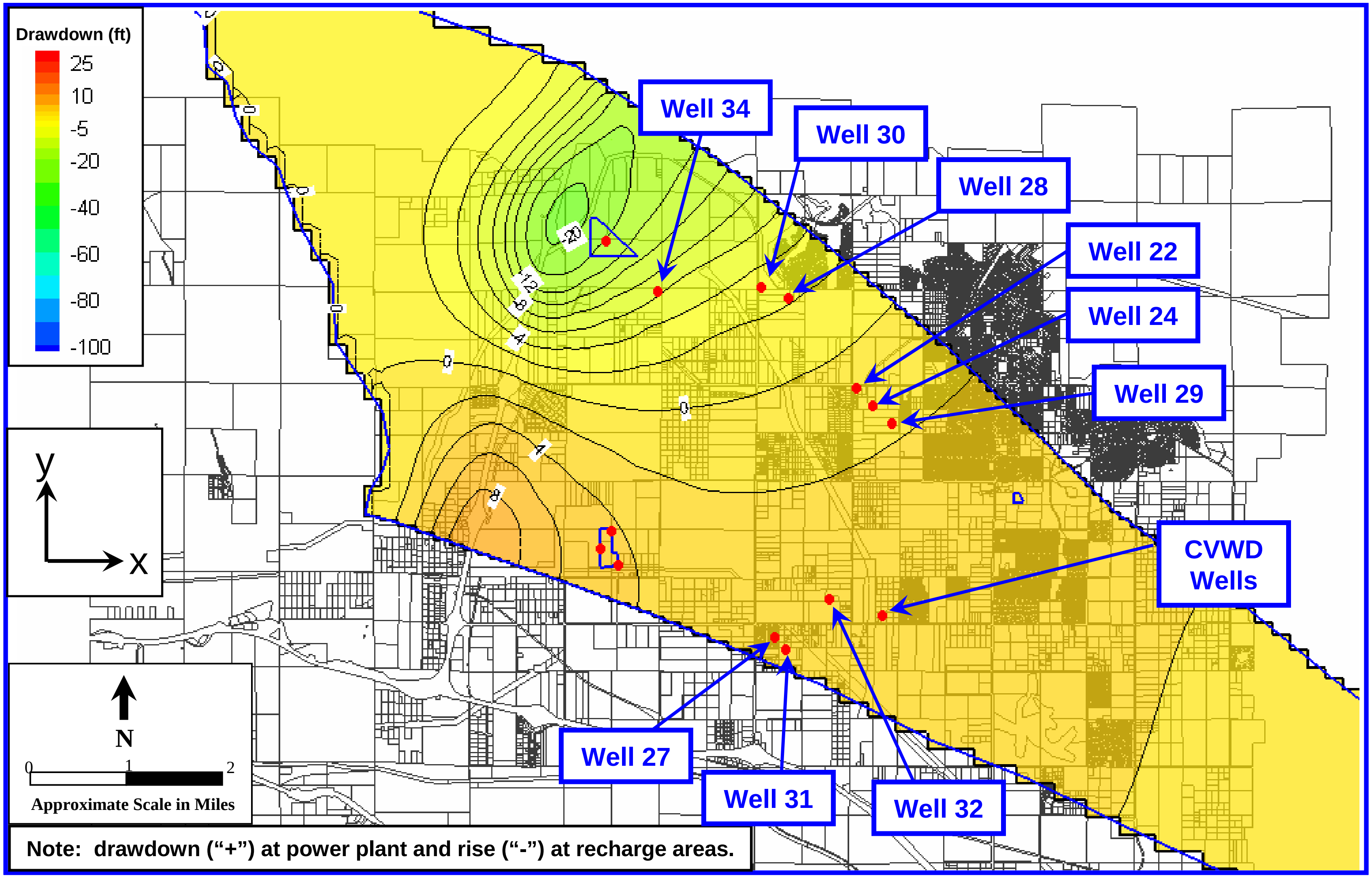


Figure 28: Contour Map of Simulated Groundwater Level Changes at 35 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

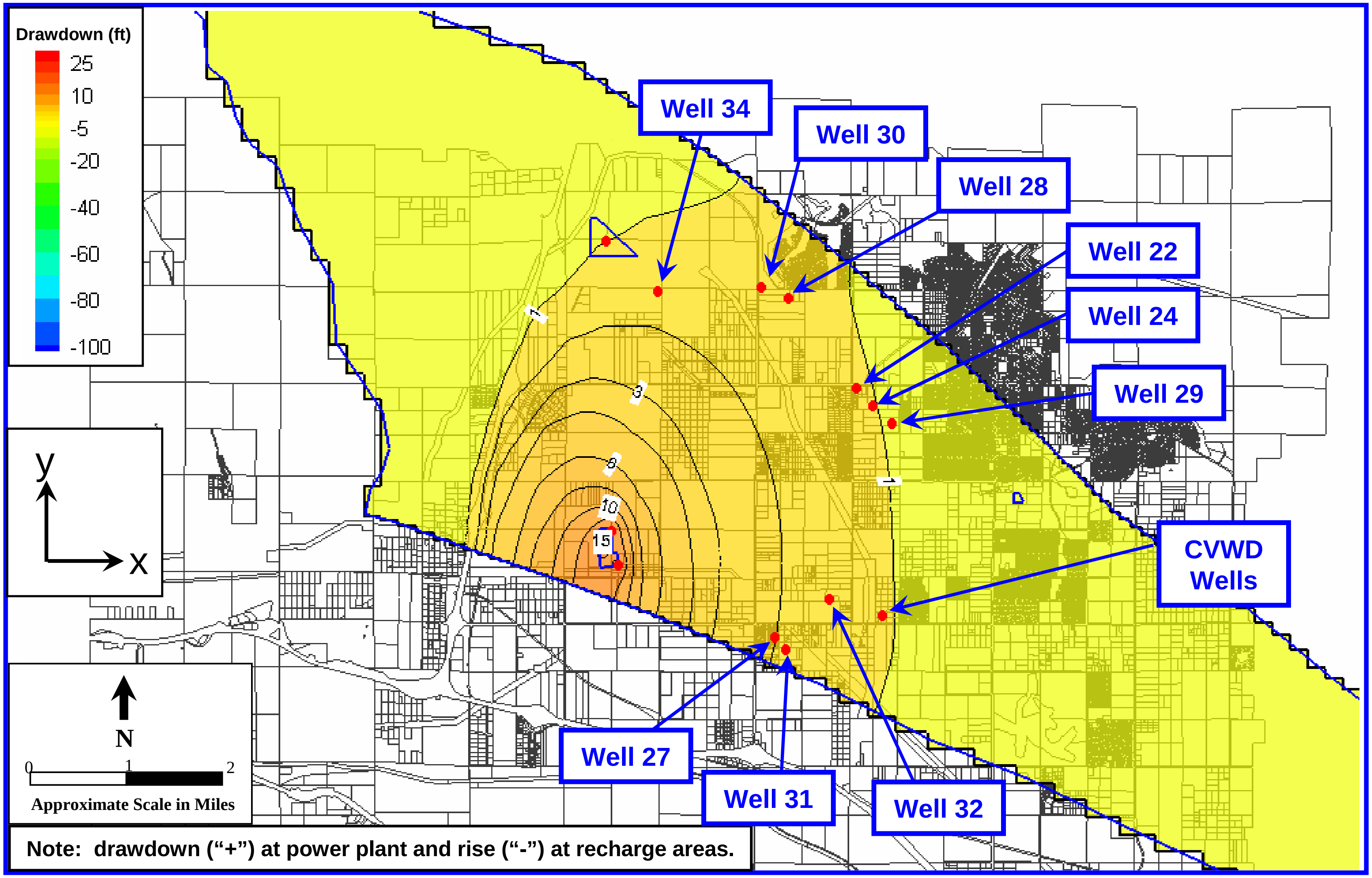


Figure 29: Contour Map of Simulated Groundwater Level Changes at 5 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

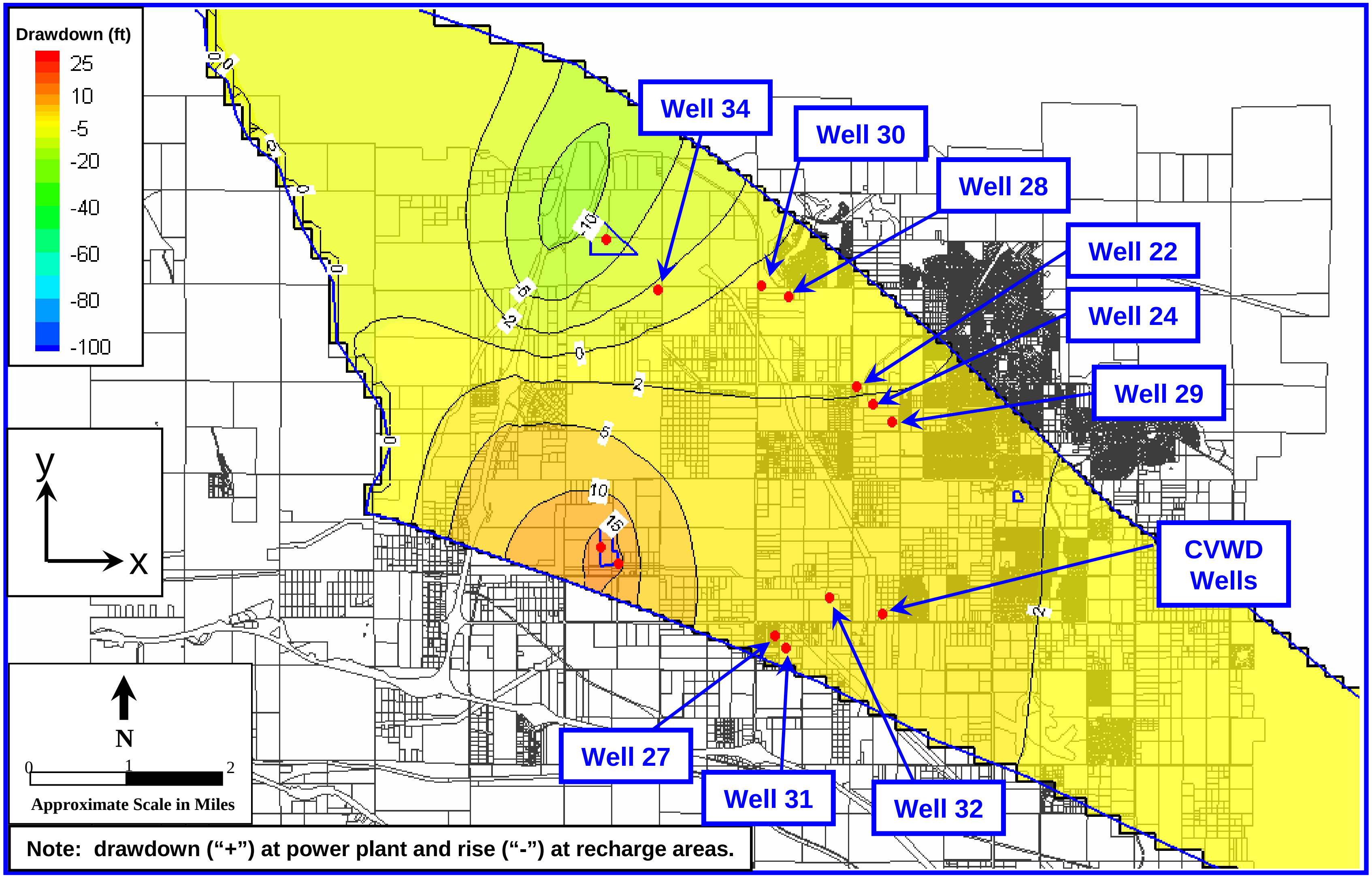


Figure 30: Contour Map of Simulated Groundwater Level Changes at 30 Years – Sensitivity 1 (Half Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

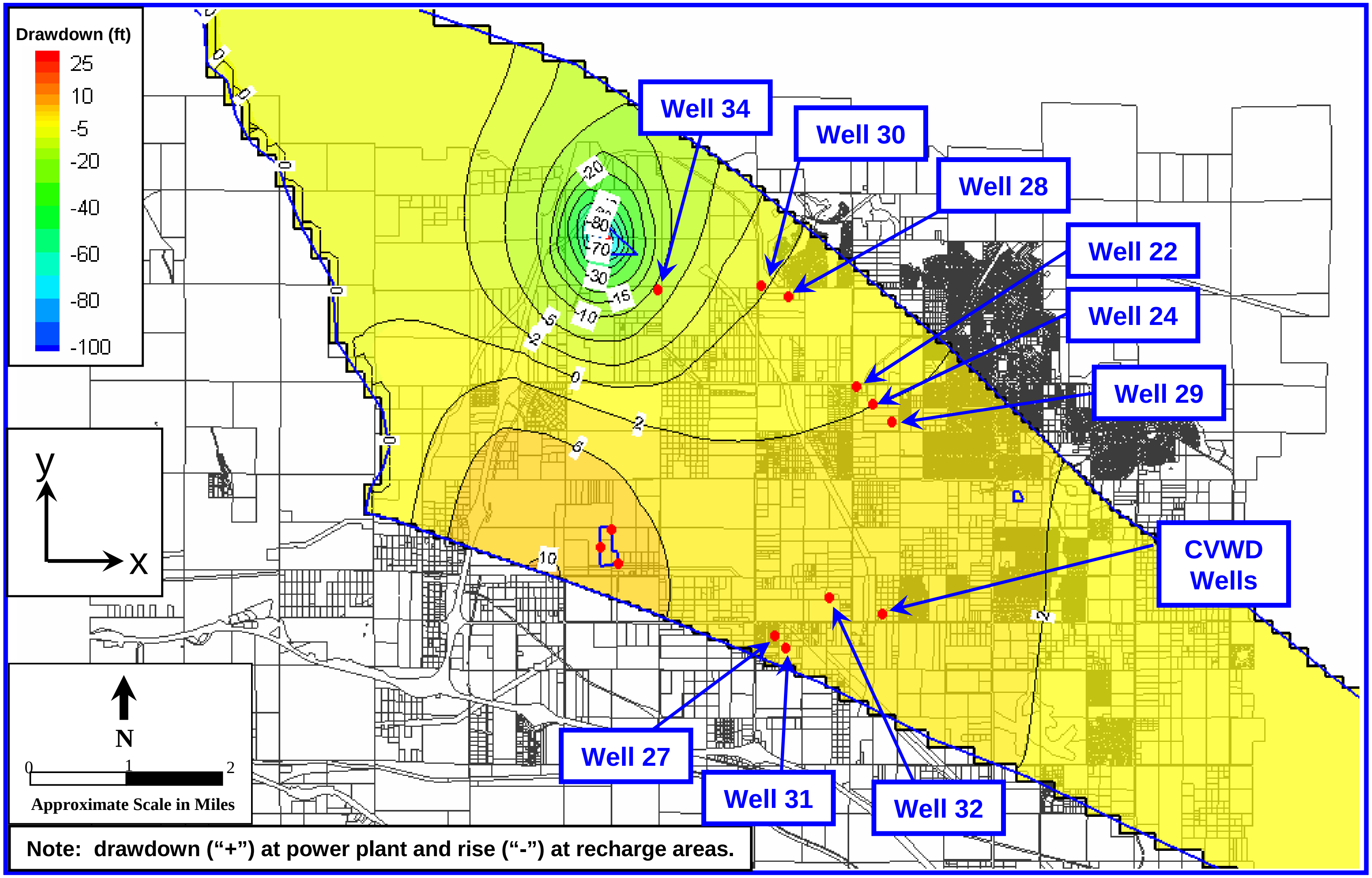


Figure 31: Contour Map of Simulated Groundwater Level Changes at 31 Years – Sensitivity 1 (Half Tyley’s T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

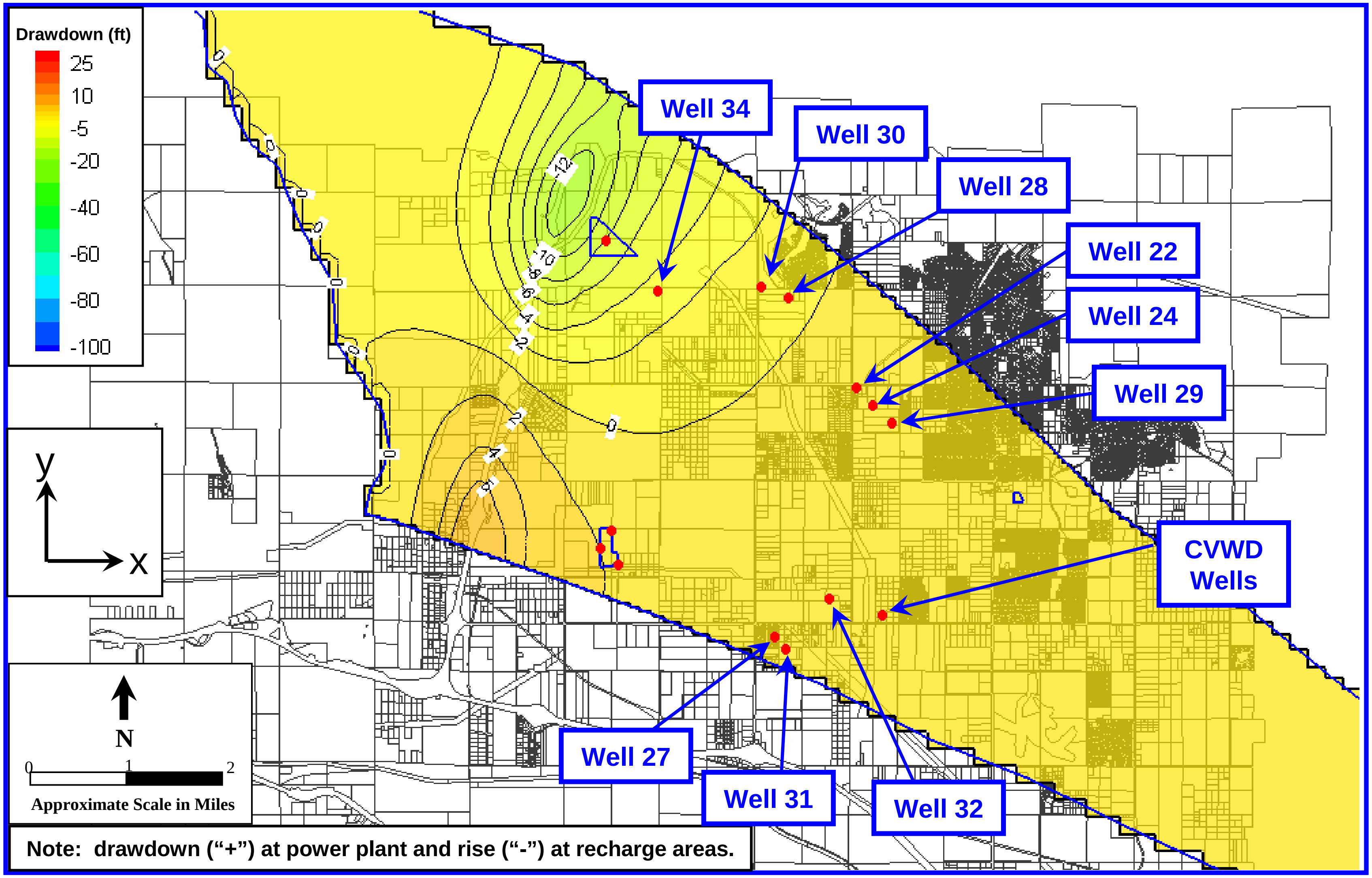


Figure 32: Contour Map of Simulated Groundwater Level Changes at 35 Years – Sensitivity 1 (Half Tyley’s T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

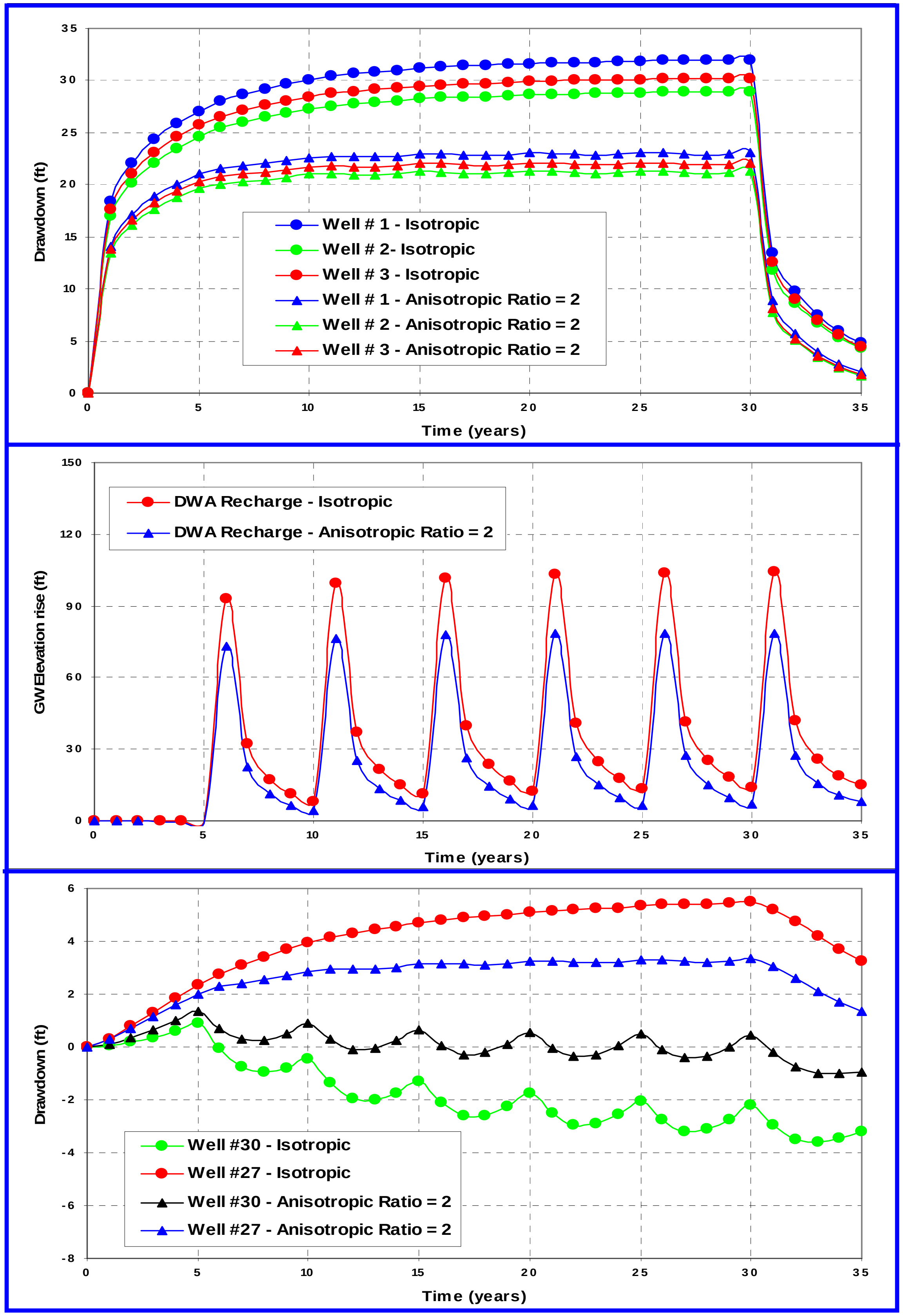


Figure 33: Simulated Groundwater Level Change versus Time at Project Pumping Wells, DWA Recharge Basin and MSWD Wells 27 and 30 - Sensitivity 1 (Half Tyley's T)
(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years)

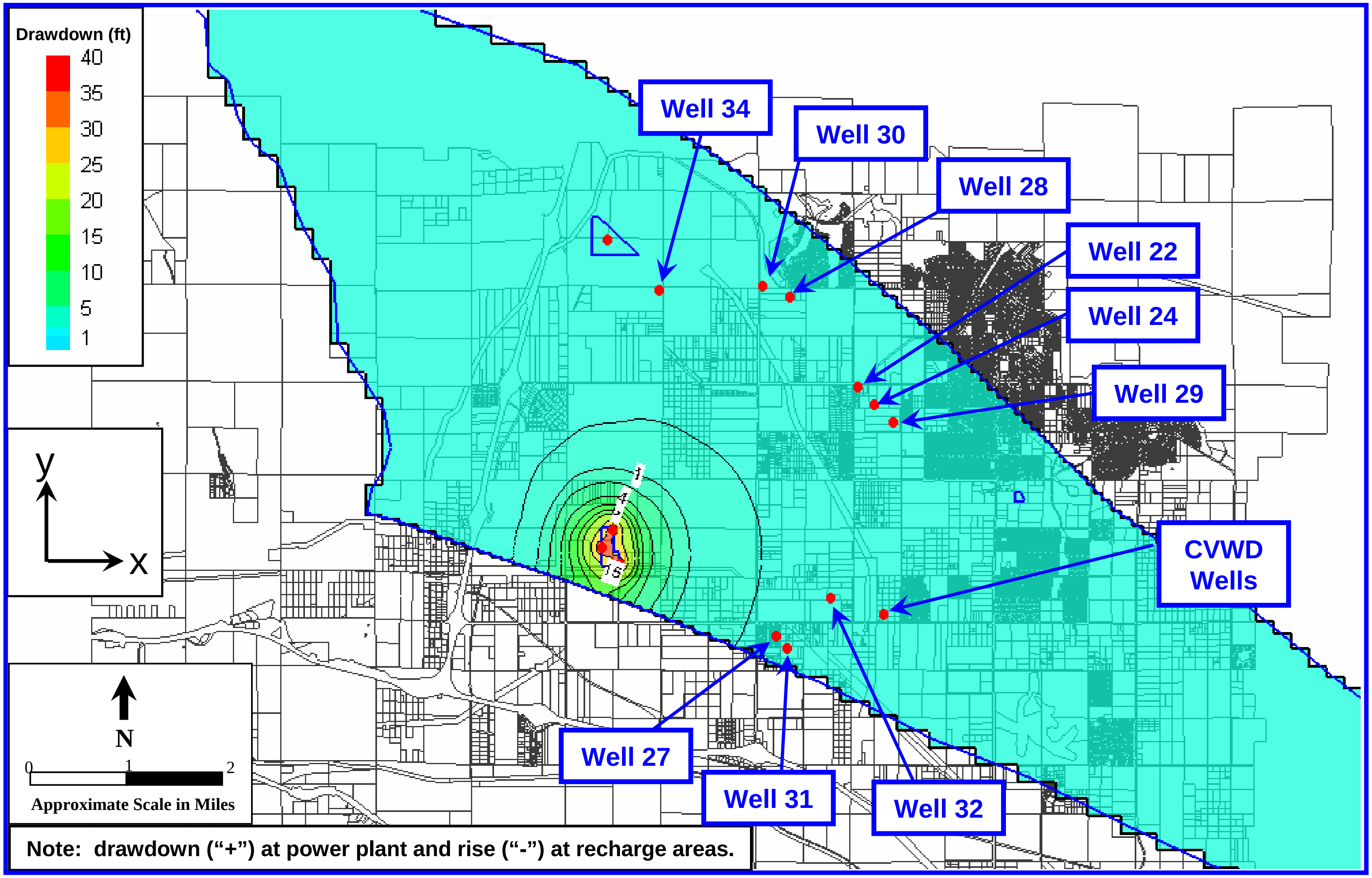


Figure 34: Contour Map of Simulated Groundwater Level Changes at 4 Months – Sensitivity 1 (Half Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af, Case A: Anisotropy Ratio =1.0)

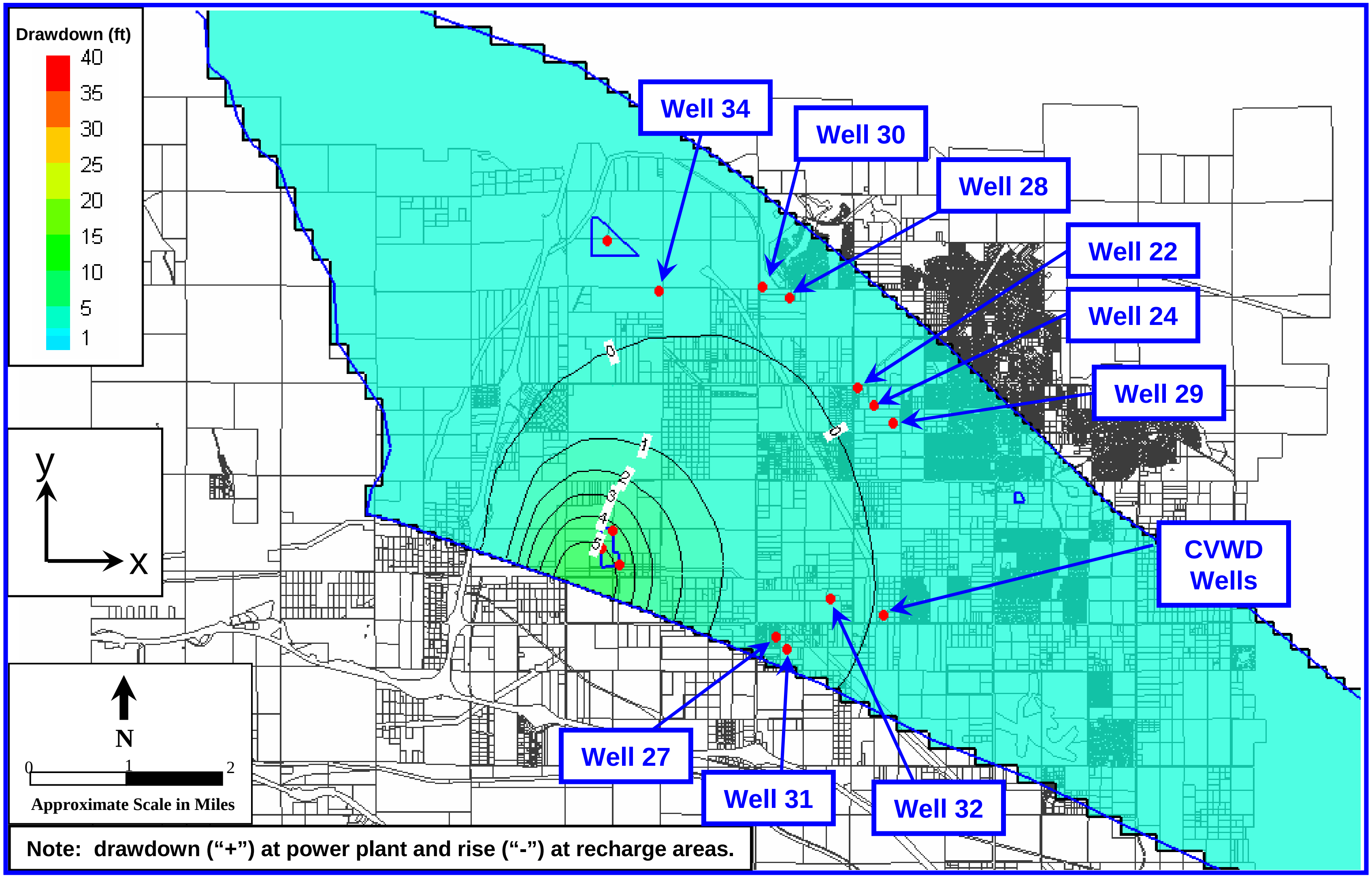


Figure 35: Contour Map of Simulated Groundwater Level Changes at 12 Months – Sensitivity 1 (Half Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af, Case A: Anisotropy Ratio =1.0)

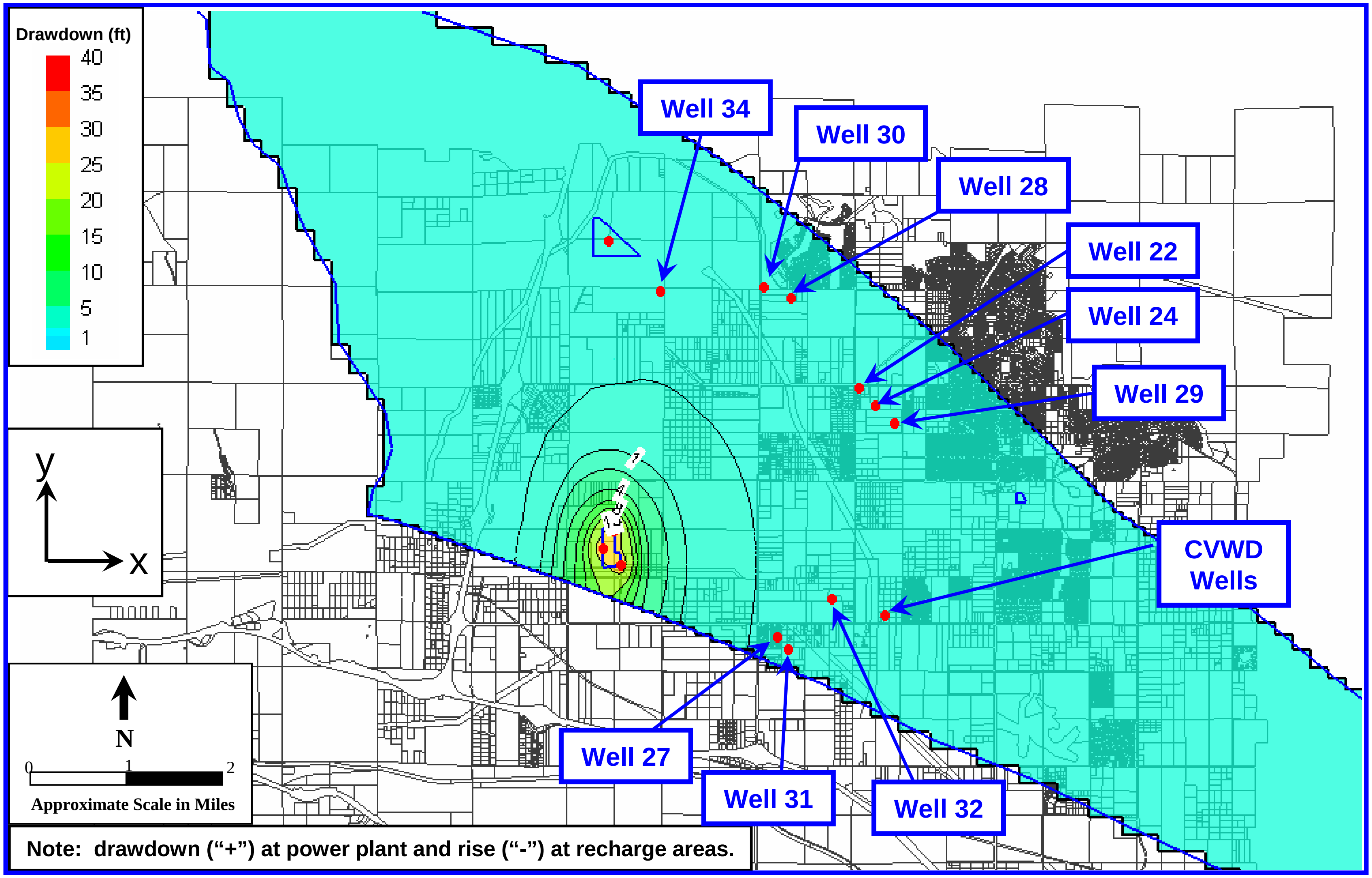


Figure 36: Contour Map of Simulated Groundwater Level Changes at 4 Months – Sensitivity 1 (Half Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af, Case B: Anisotropy Ratio =2.0)

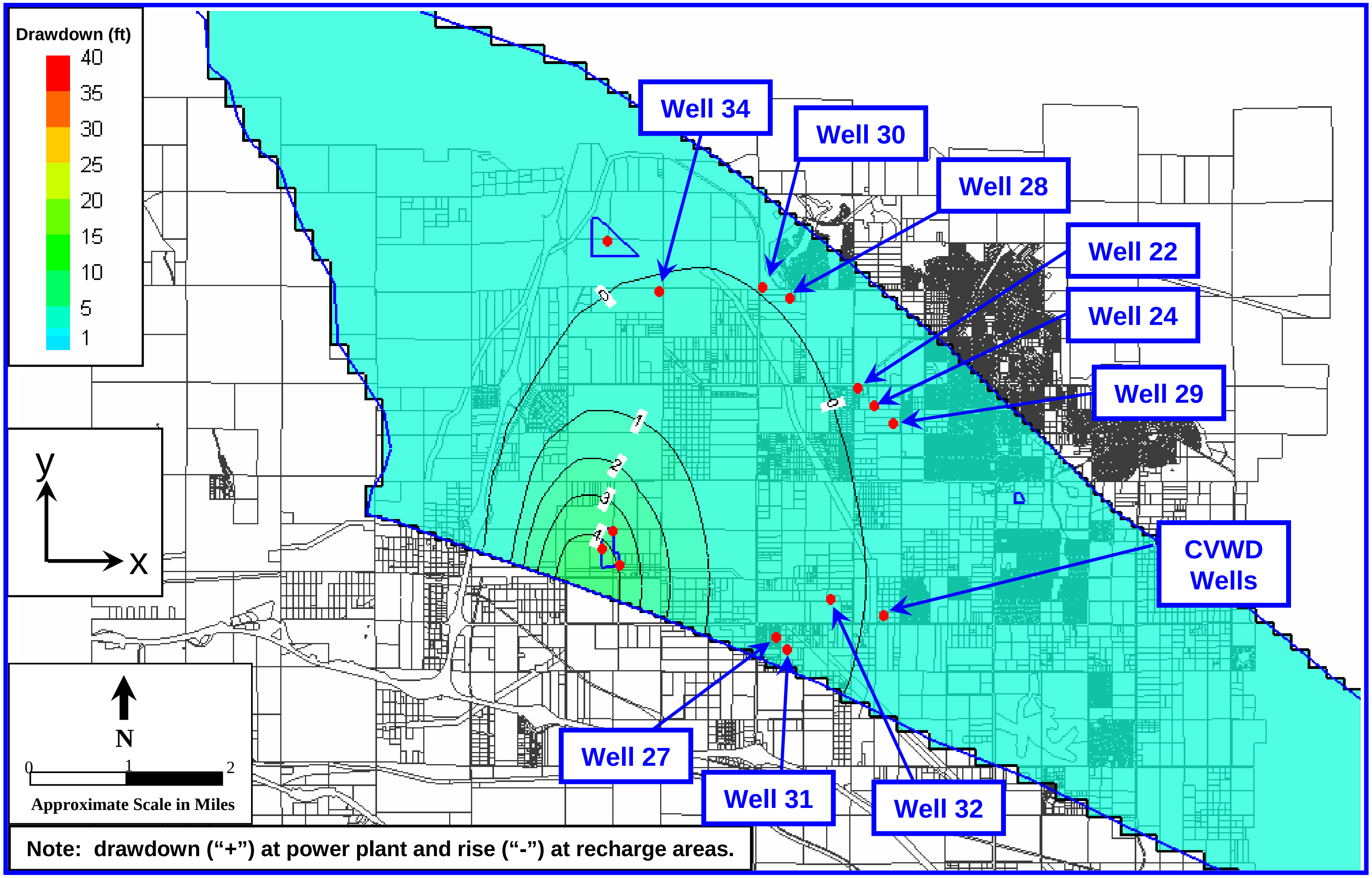


Figure 37: Contour Map of Simulated Groundwater Level Changes at 12 Months – Sensitivity 1 (Half Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af, Case B: Anisotropy Ratio =2.0)

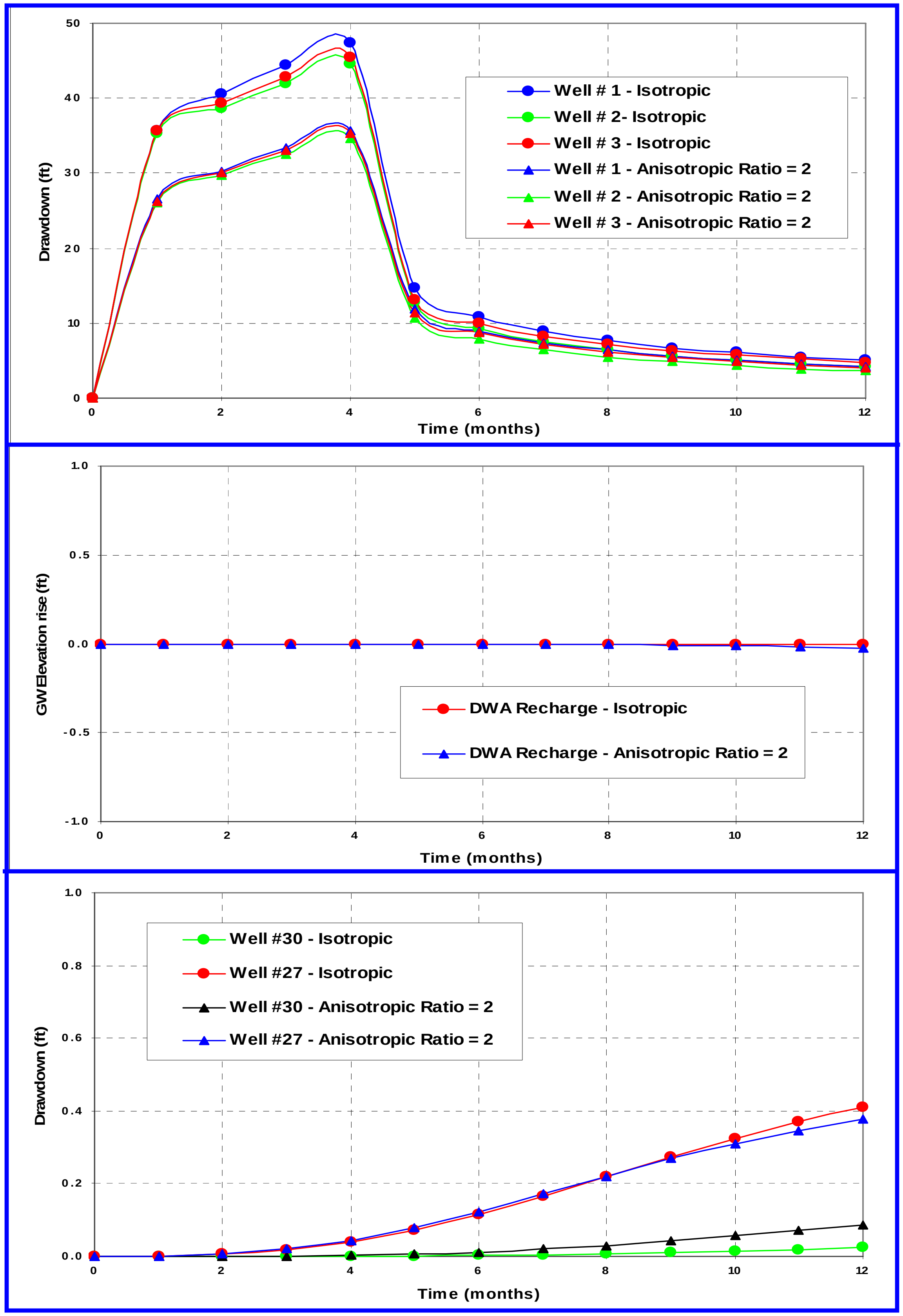


Figure 38: Simulated Groundwater Level Change versus Time at Project Pumping Wells, DWA Recharge Basin and MSWD Wells 27 and 30 - Sensitivity 1 (Half Tyley's T) (Scenario 3: Pumping = 2,059 pgm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af)

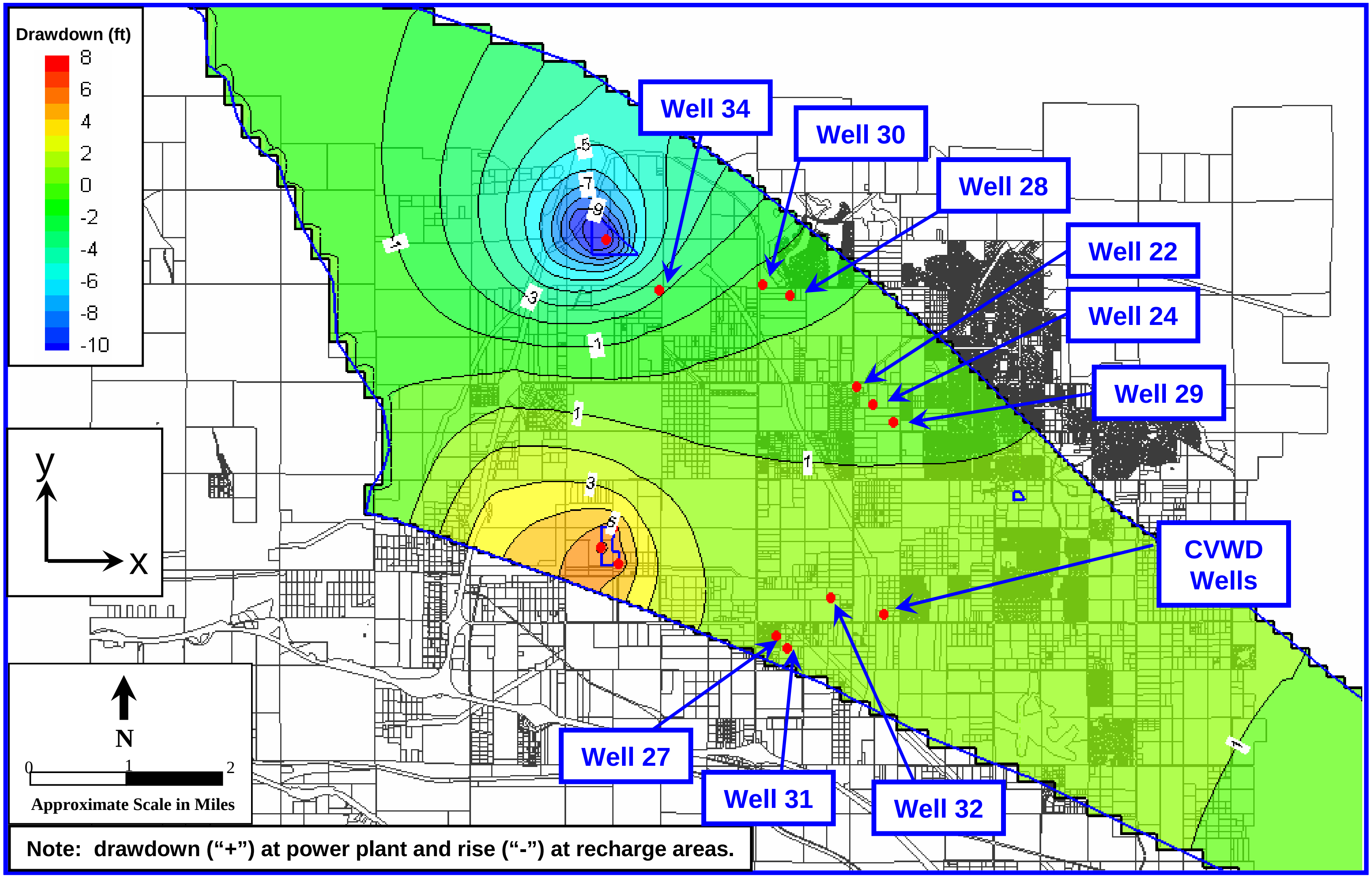


Figure 39: Contour Map of Simulated Groundwater Level Changes at 30 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy, Case A: Anisotropy Ratio = 1.0)

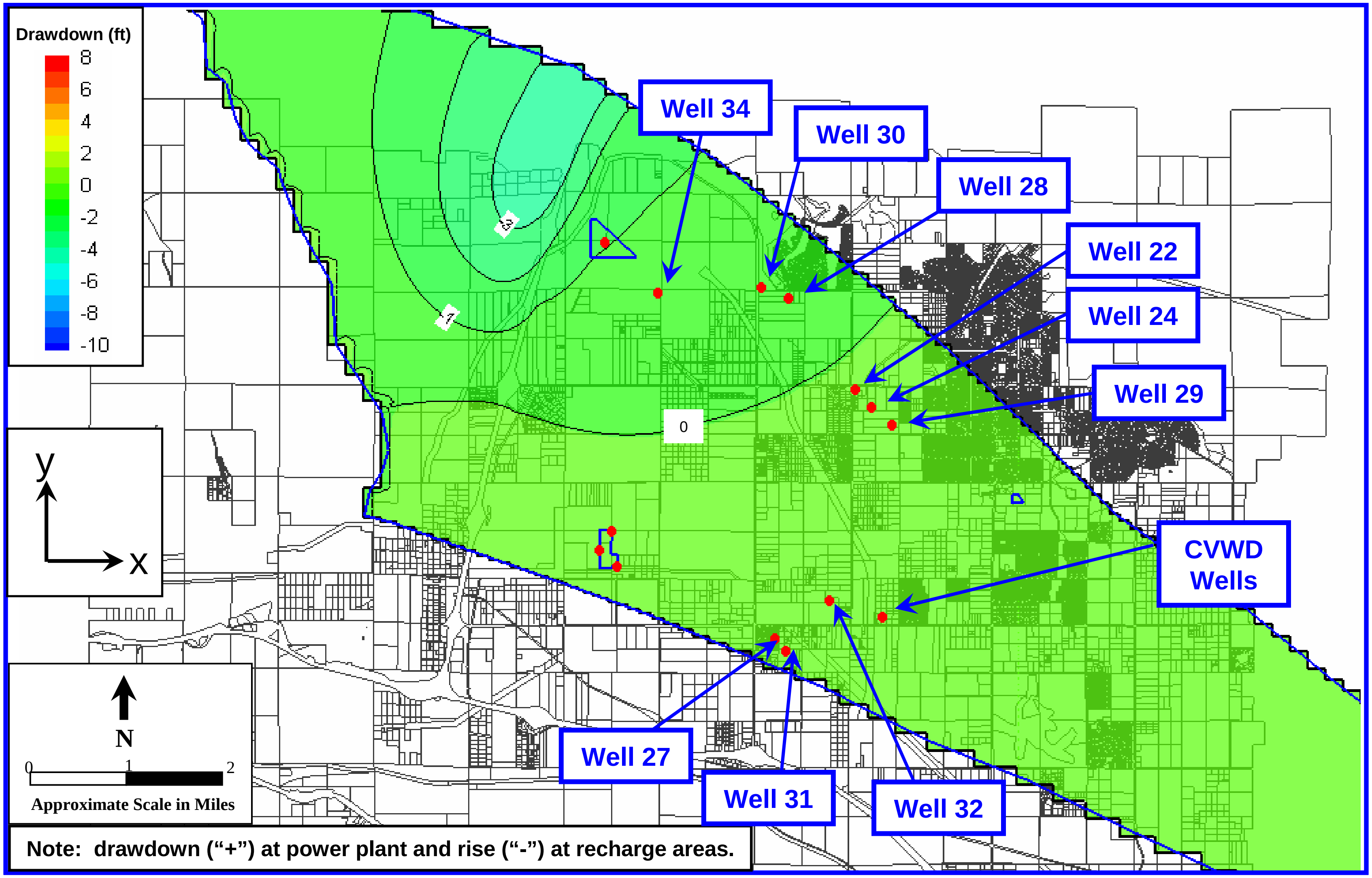


Figure 40: Contour Map of Simulated Groundwater Level Changes at 35 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy, Case A: Anisotropy Ratio = 1.0)

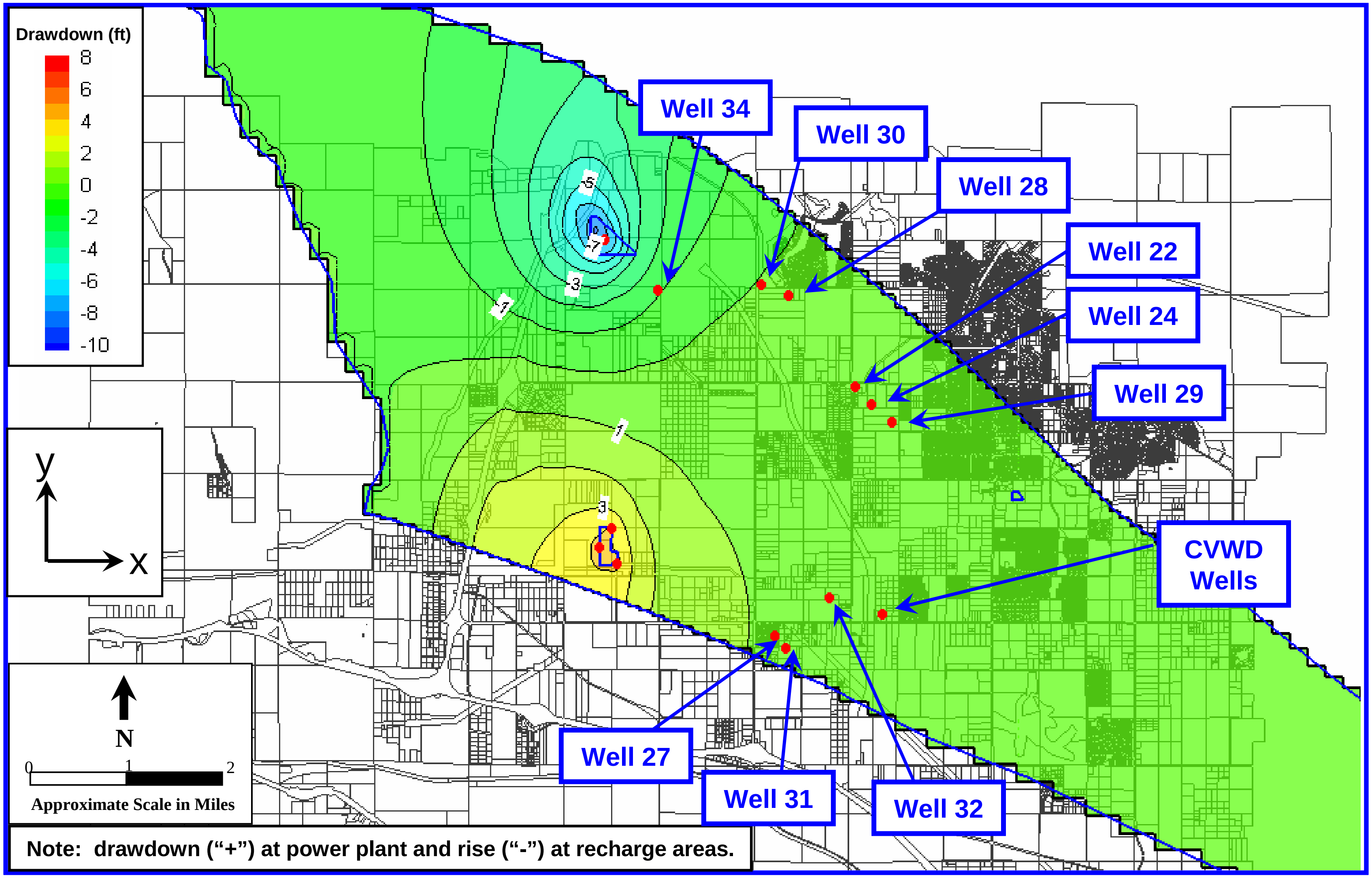


Figure 41: Contour Map of Simulated Groundwater Level Changes at 30 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy, Case B: Anisotropy Ratio = 2.0)

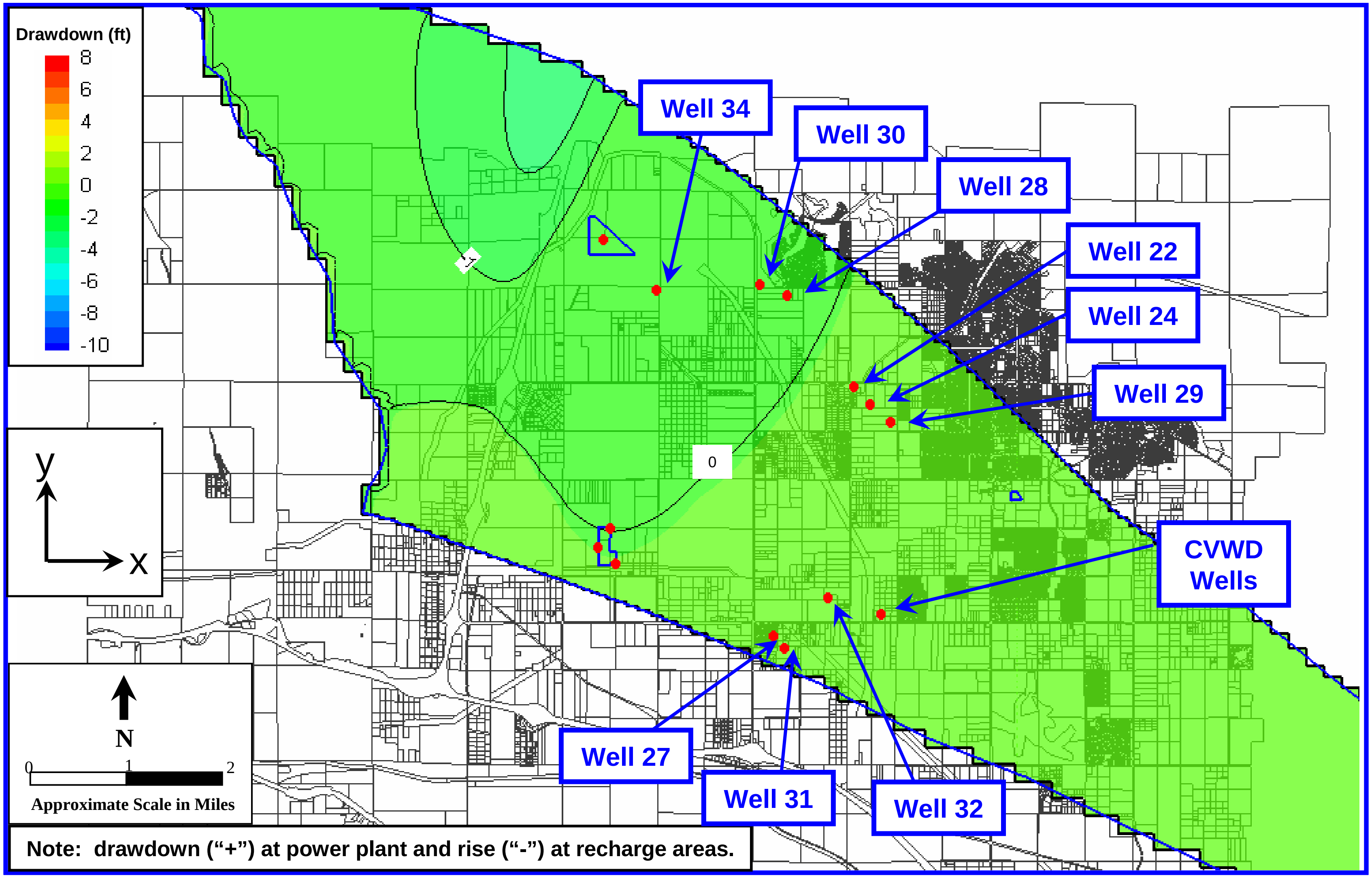


Figure 42: Contour Map of Simulated Groundwater Level Changes at 35 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy, Case B: Anisotropy Ratio = 2.0)

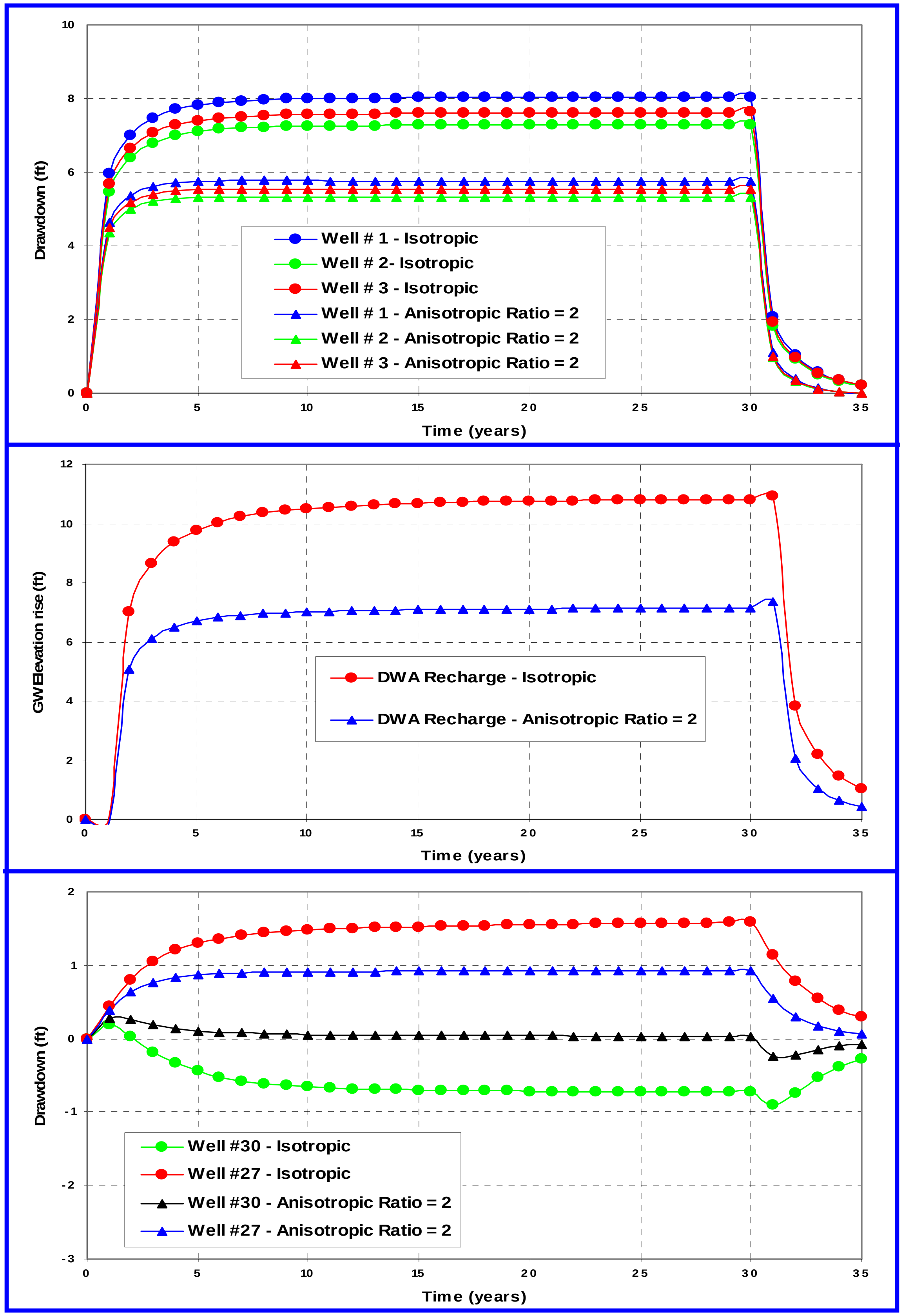


Figure 43: Simulated Groundwater Level Change versus Time at Project Pumping Wells, DWA Recharge Basin and MSWD Wells 27 and 30 - Sensitivity 2 (Double Tyley's T) (Scenario 1: Pumping = 1,100 afy, Recharge = 1,100 afy)

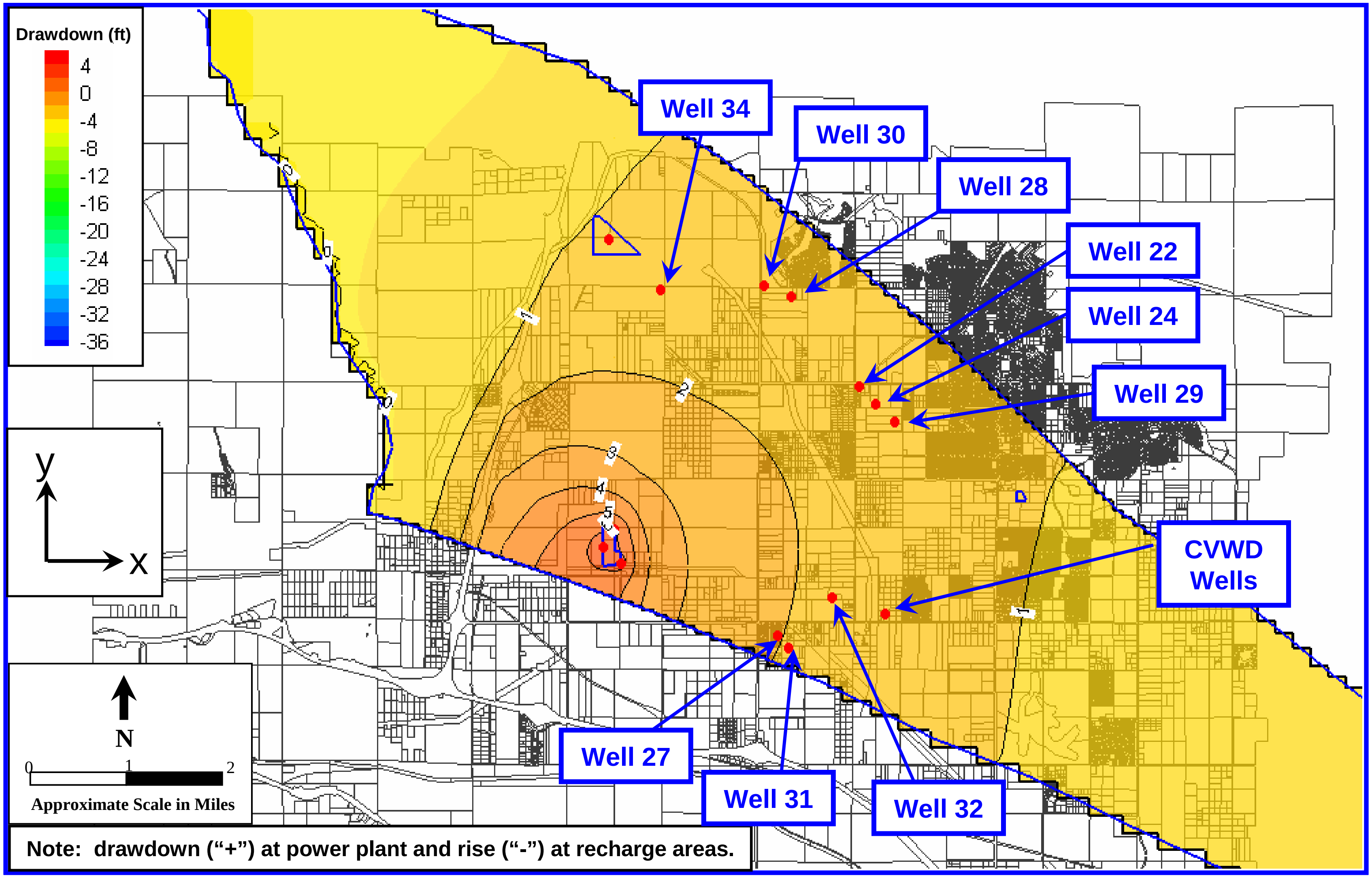


Figure 44: Contour Map of Simulated Groundwater Level Changes at 5 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

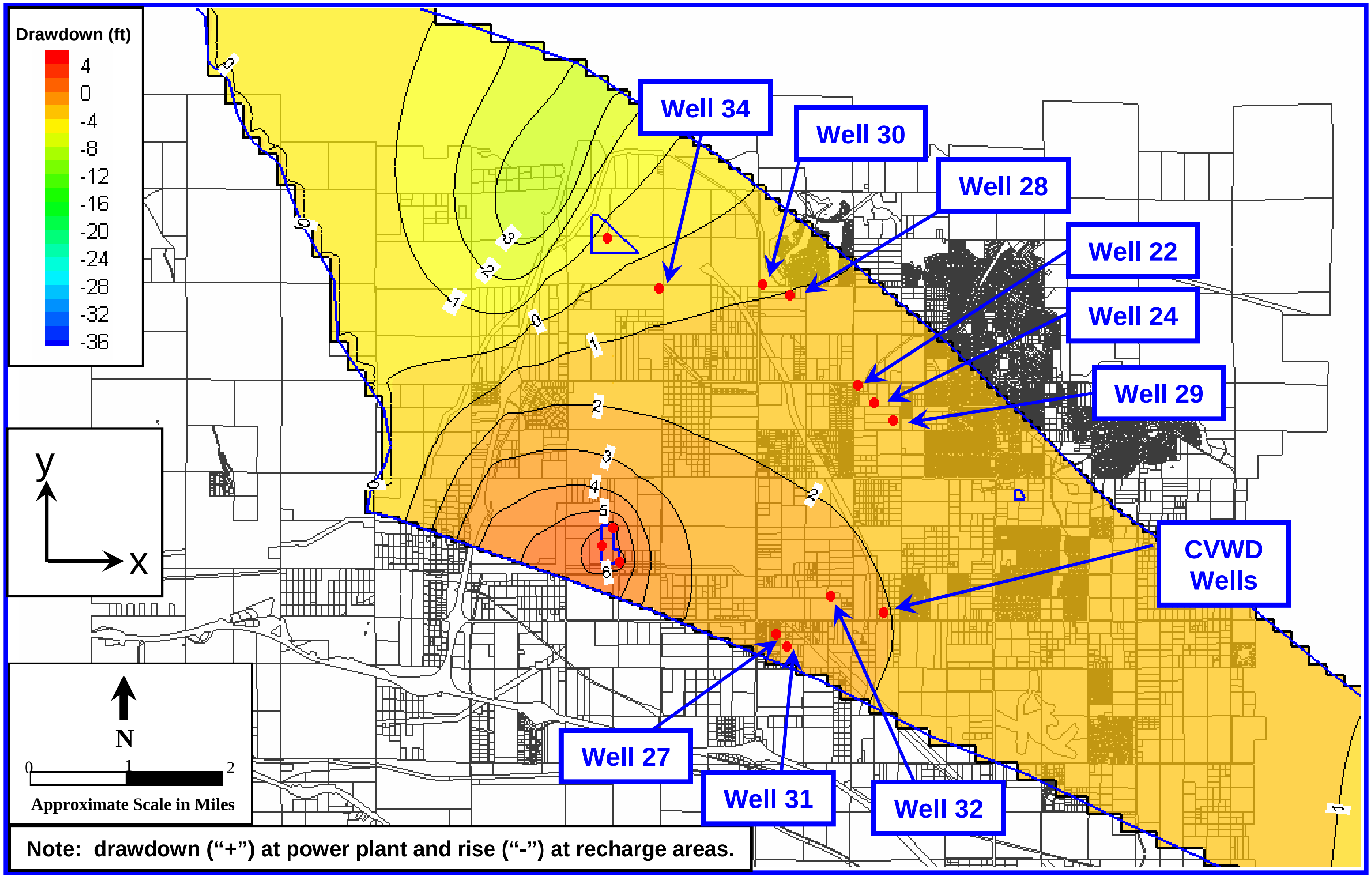


Figure 45: Contour Map of Simulated Groundwater Level Changes at 30 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

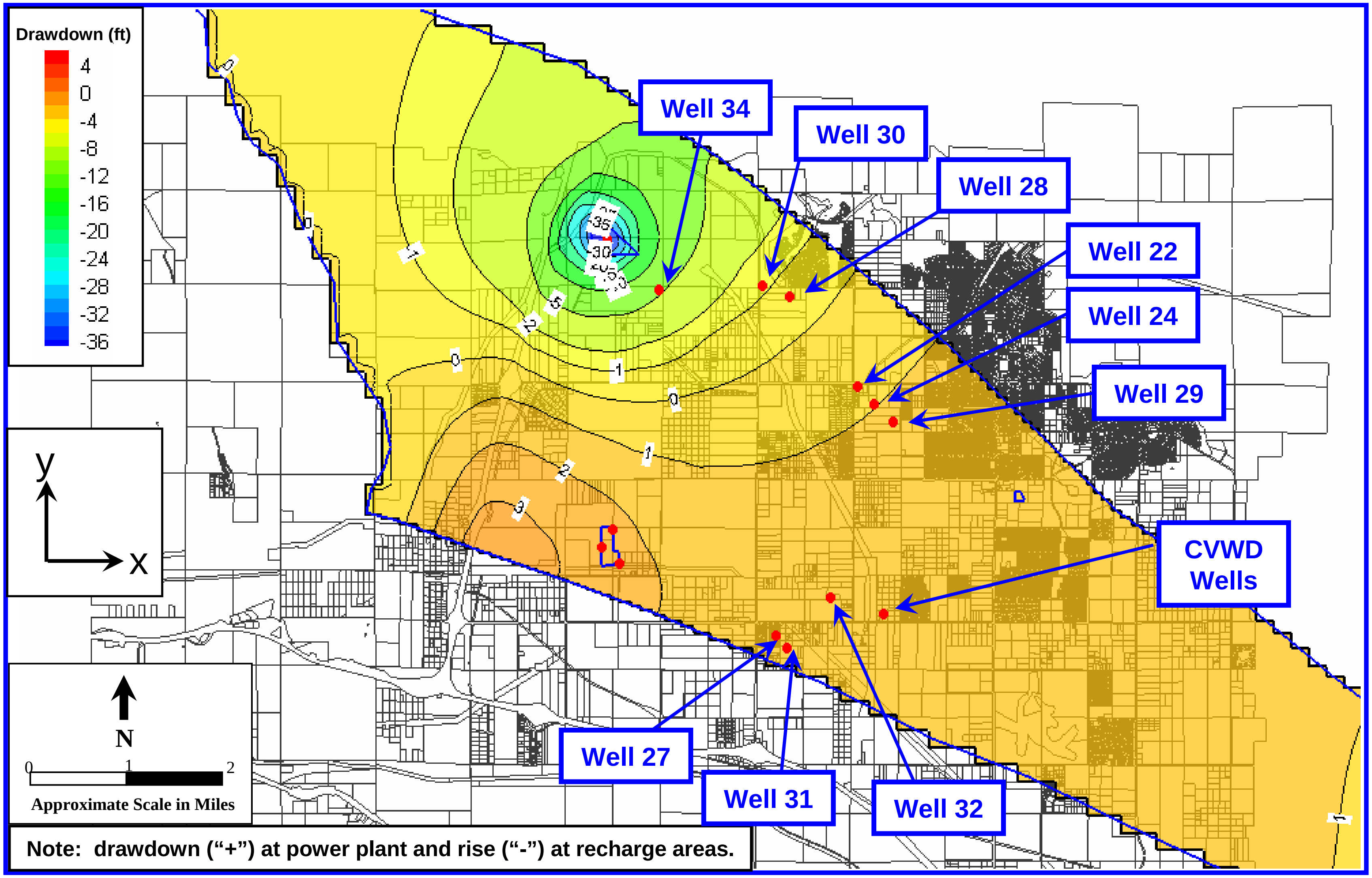


Figure 46: Contour Map of Simulated Groundwater Level Changes at 31 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

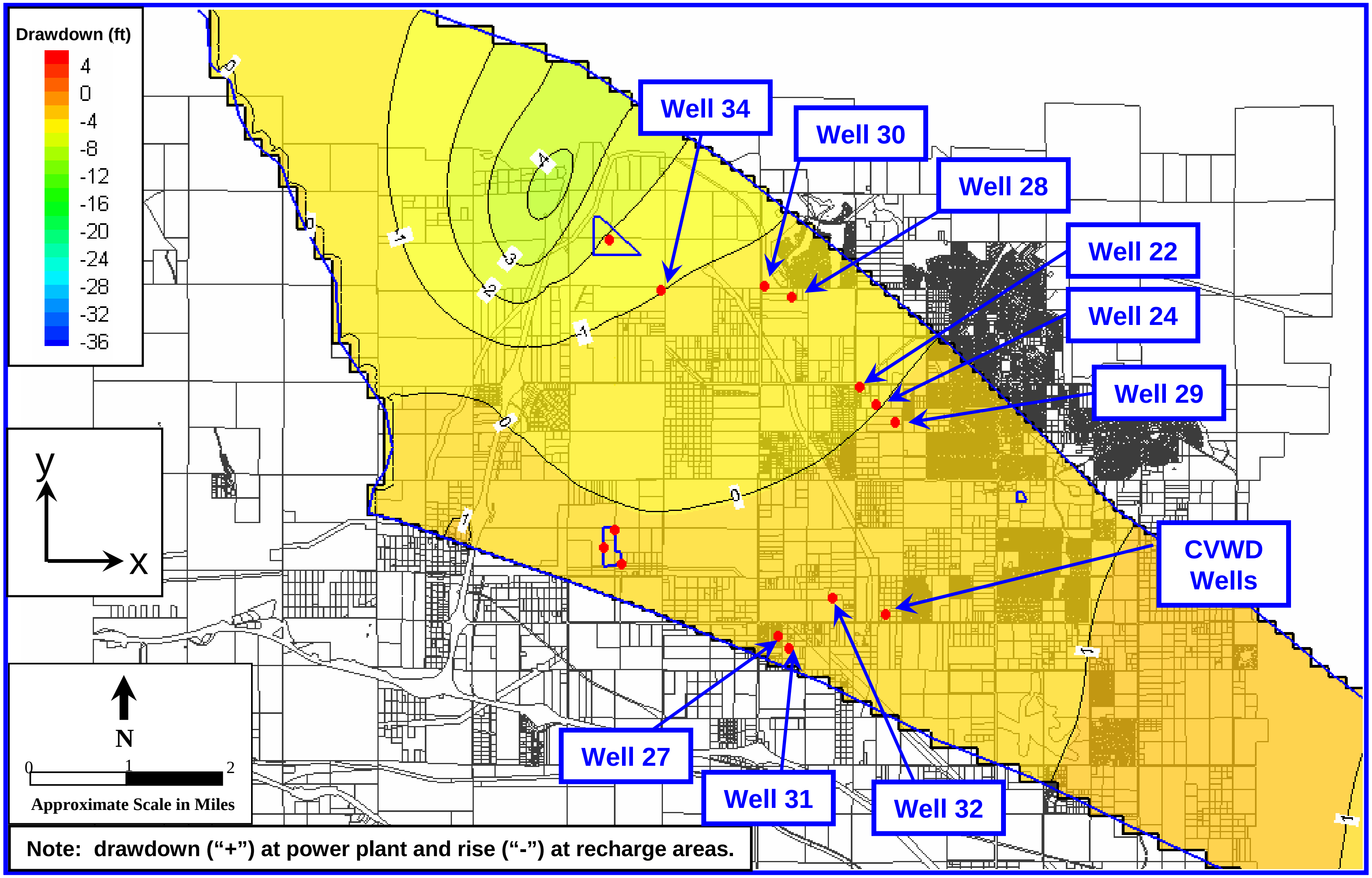


Figure 47: Contour Map of Simulated Groundwater Level Changes at 35 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case A: Anisotropy Ratio = 1.0)

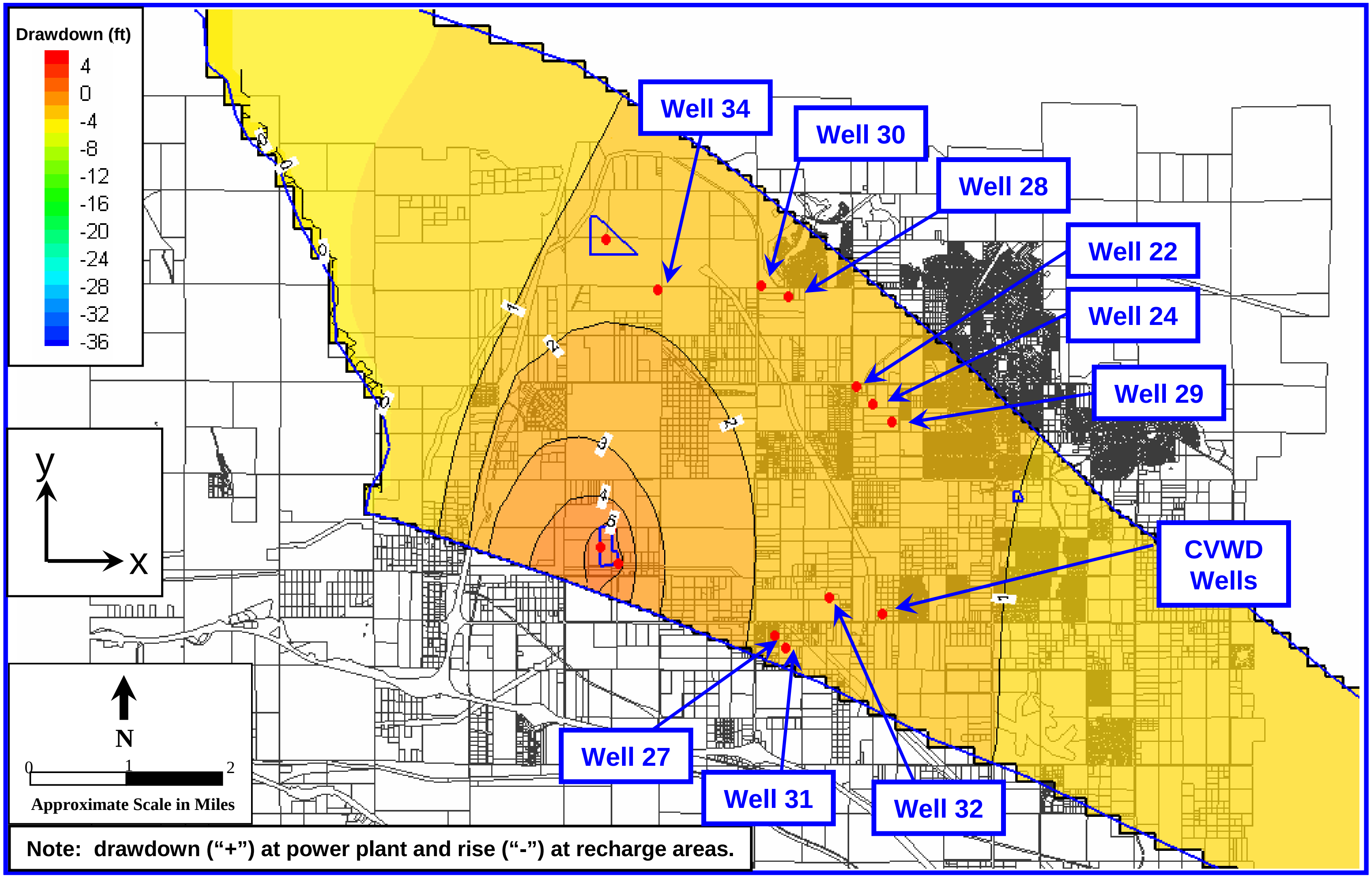


Figure 48: Contour Map of Simulated Groundwater Level Changes at 5 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

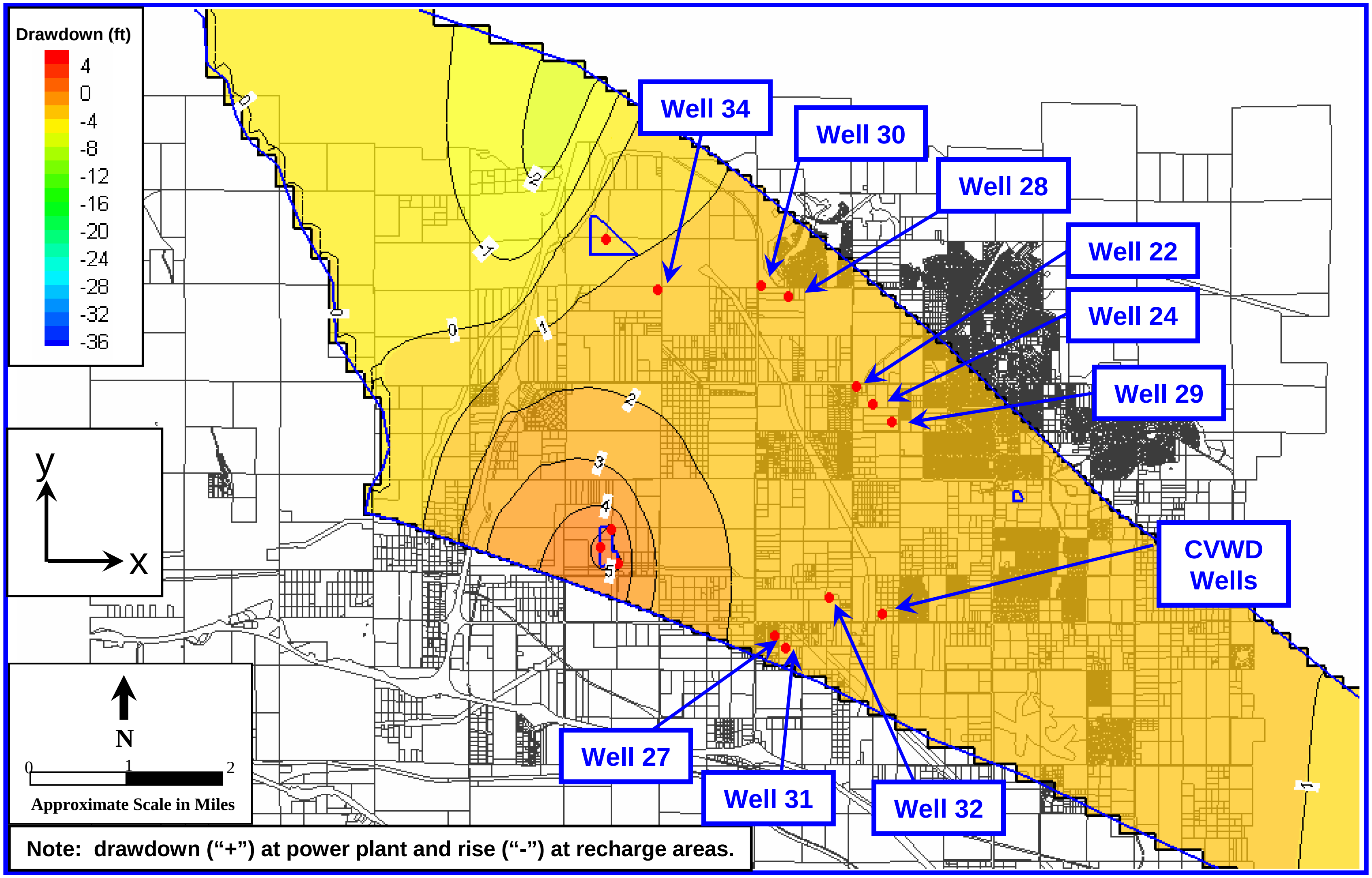


Figure 49: Contour Map of Simulated Groundwater Level Changes at 30 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

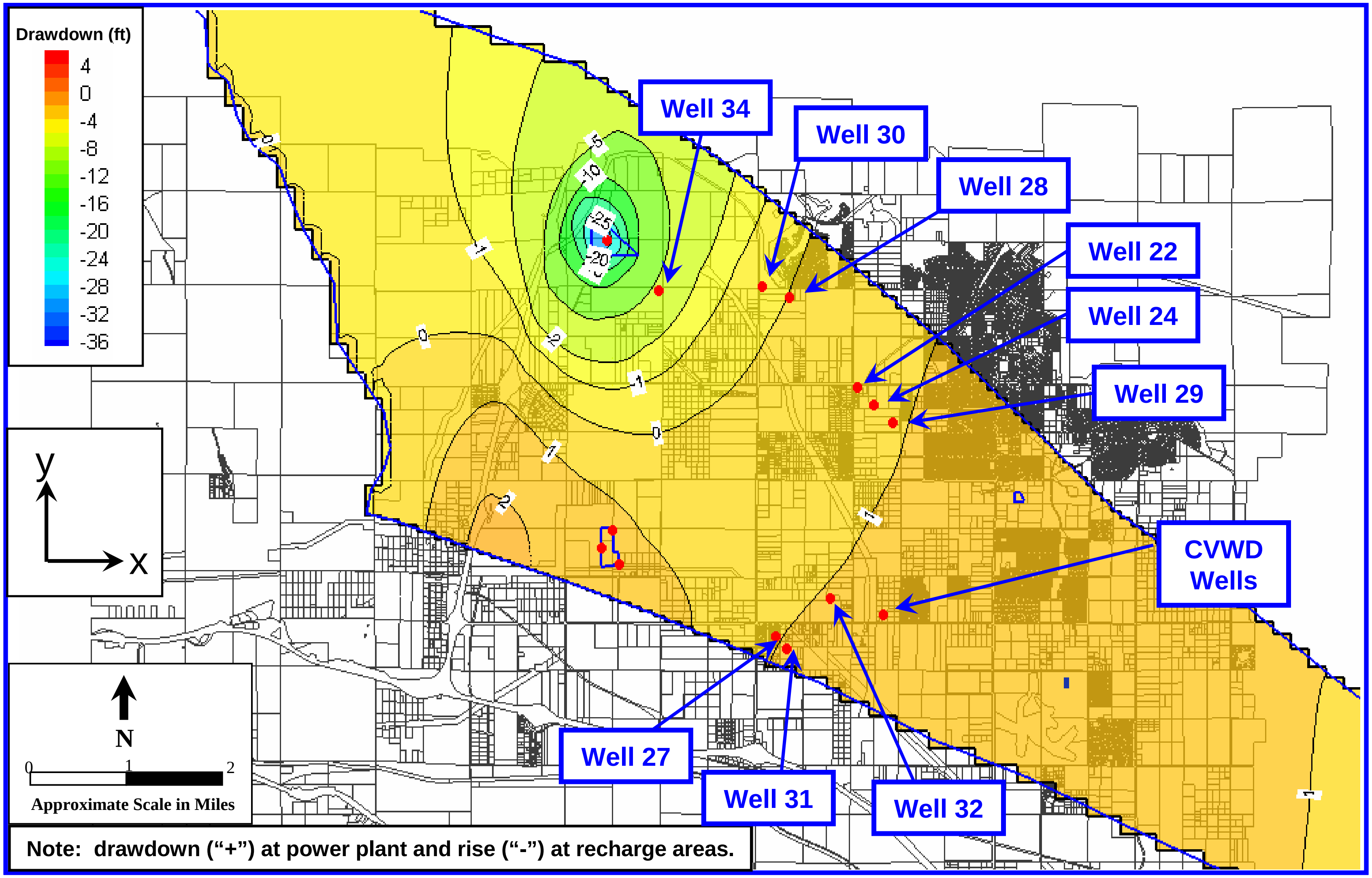


Figure 50: Contour Map of Simulated Groundwater Level Changes at 31 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

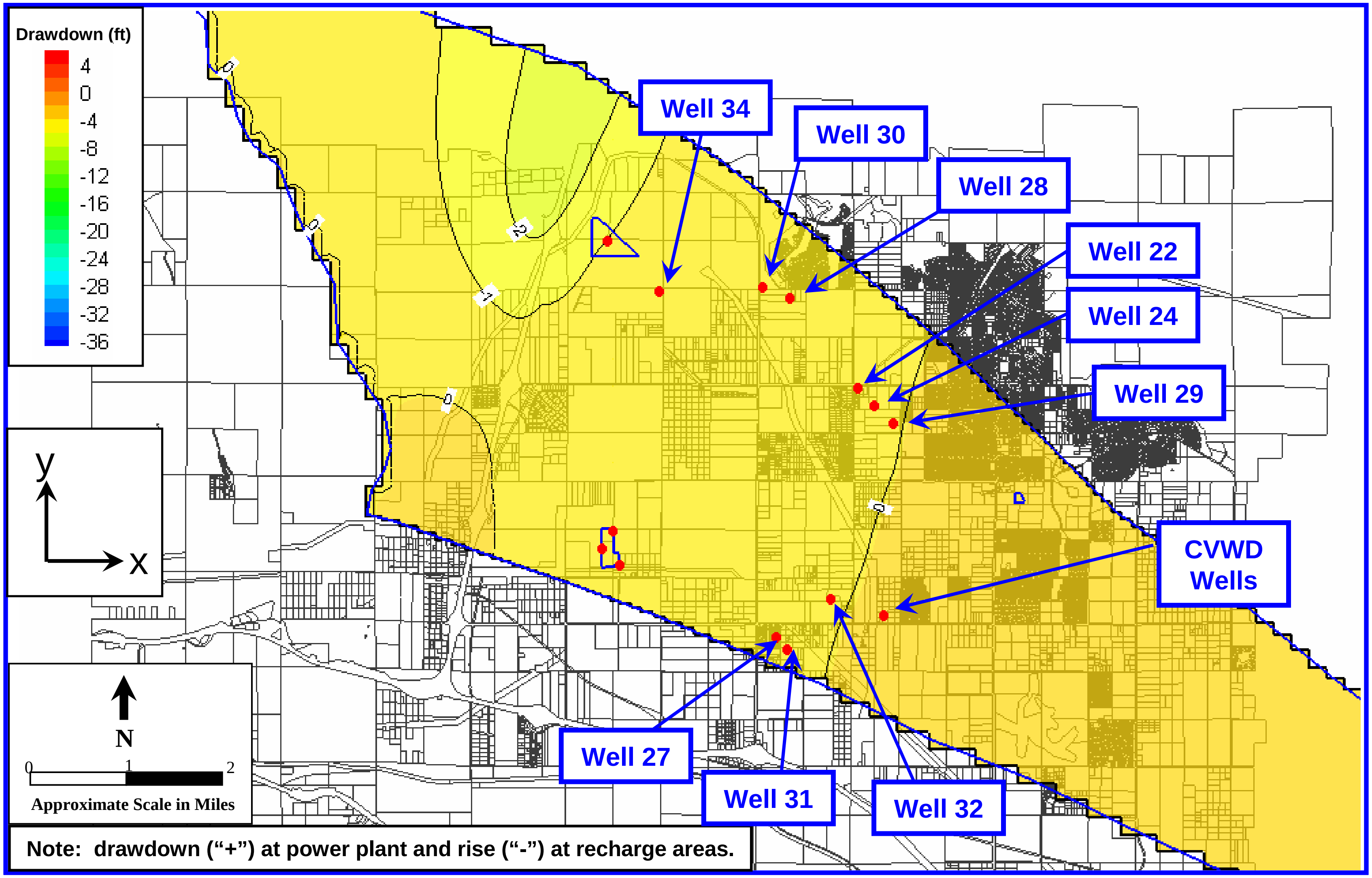


Figure 51: Contour Map of Simulated Groundwater Level Changes at 35 Years – Sensitivity 2 (Double Tyley's T)

(Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years; Case B: Anisotropy Ratio = 2.0)

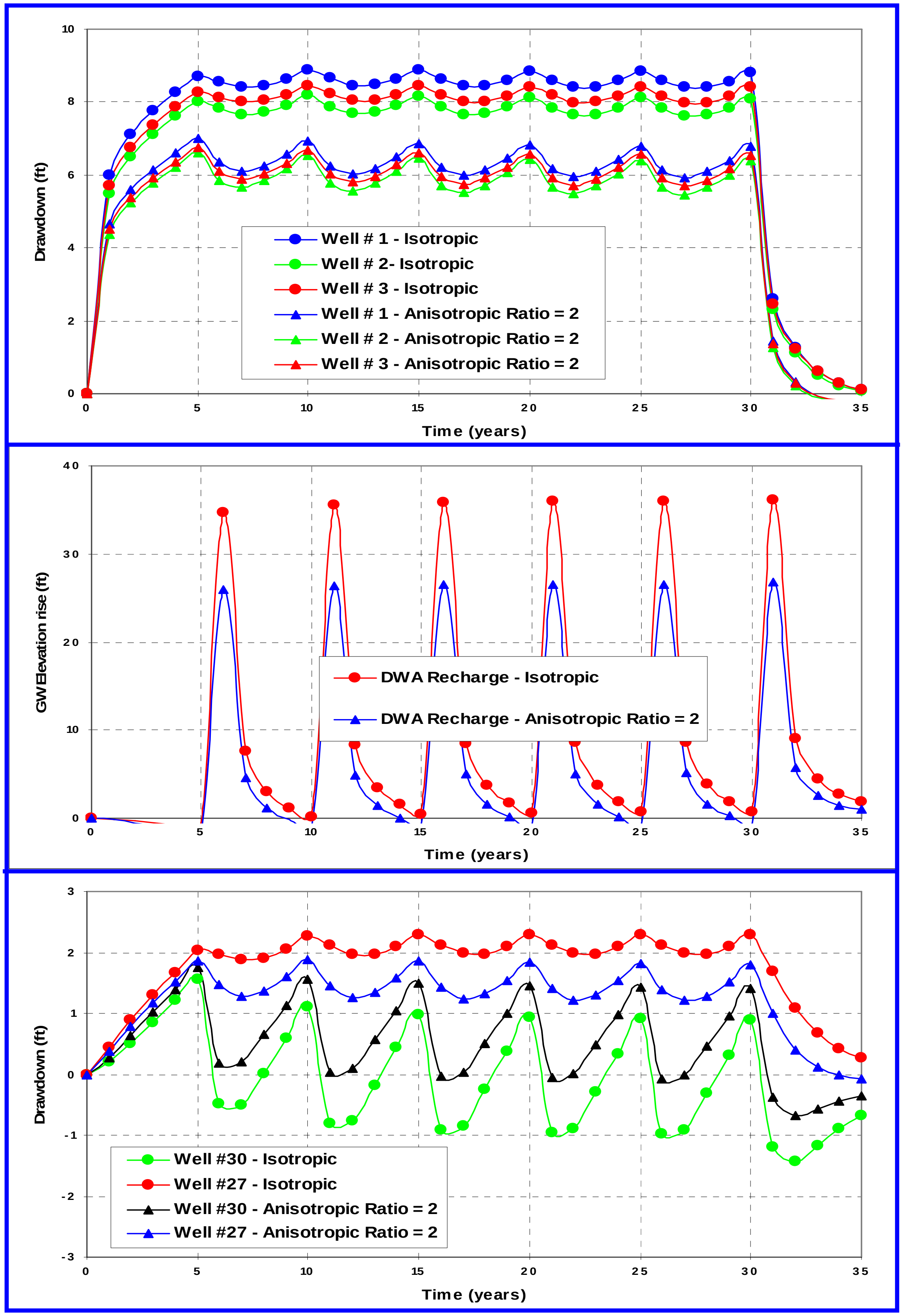


Figure 52: Simulated Groundwater Level Change versus Time at Project Pumping Wells, DWA Recharge Basin and MSWD Wells 27 and 30 - Sensitivity 2 (Double Tyley's T) (Scenario 2: Pumping = 1,100 afy, Recharge = 5,500 af Every 5 Years)

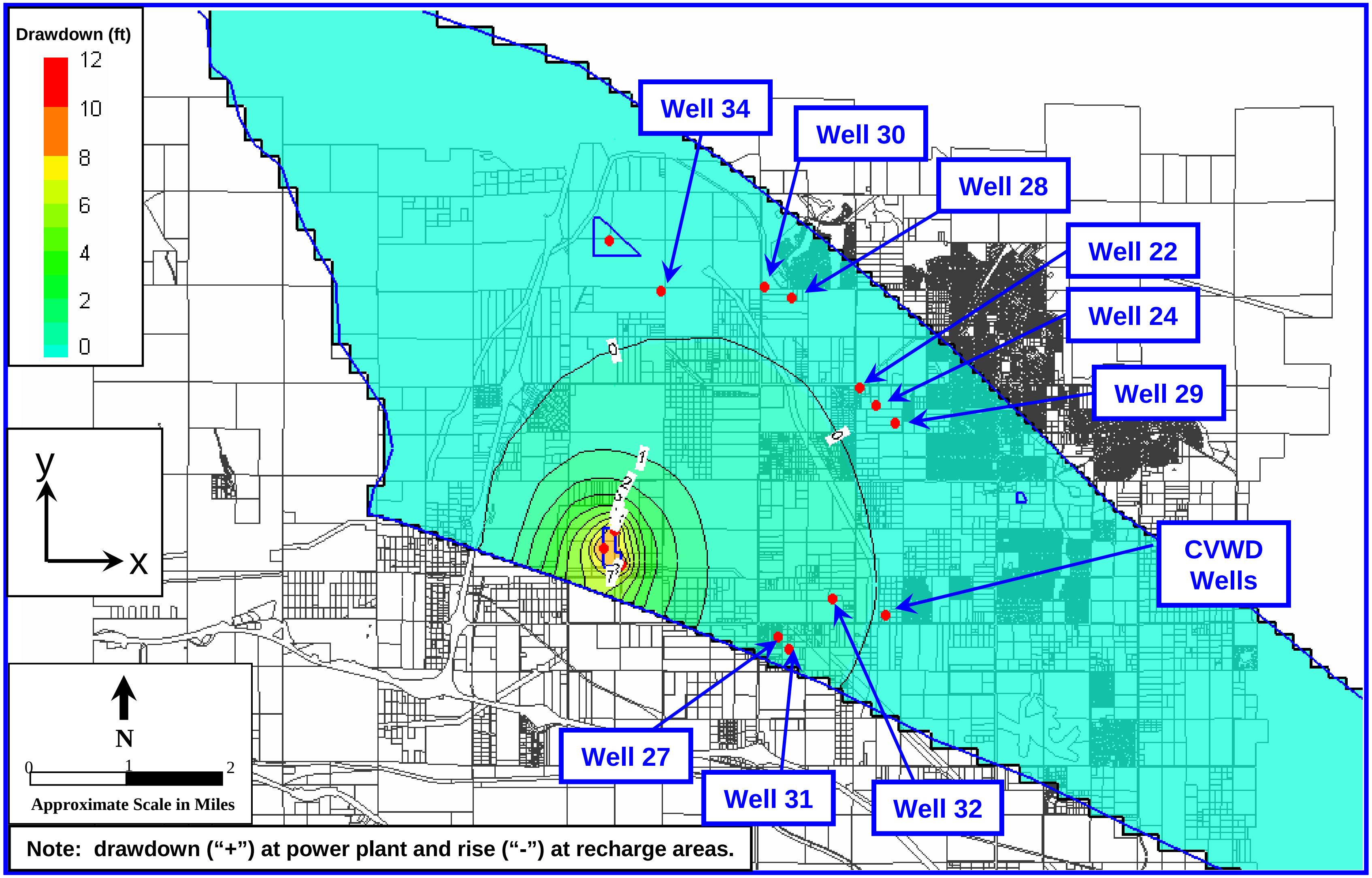


Figure 53: Contour Map of Simulated Groundwater Level Changes at 4 Months – Sensitivity 2 (Double Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af, Case A: Anisotropy Ratio =1.0)

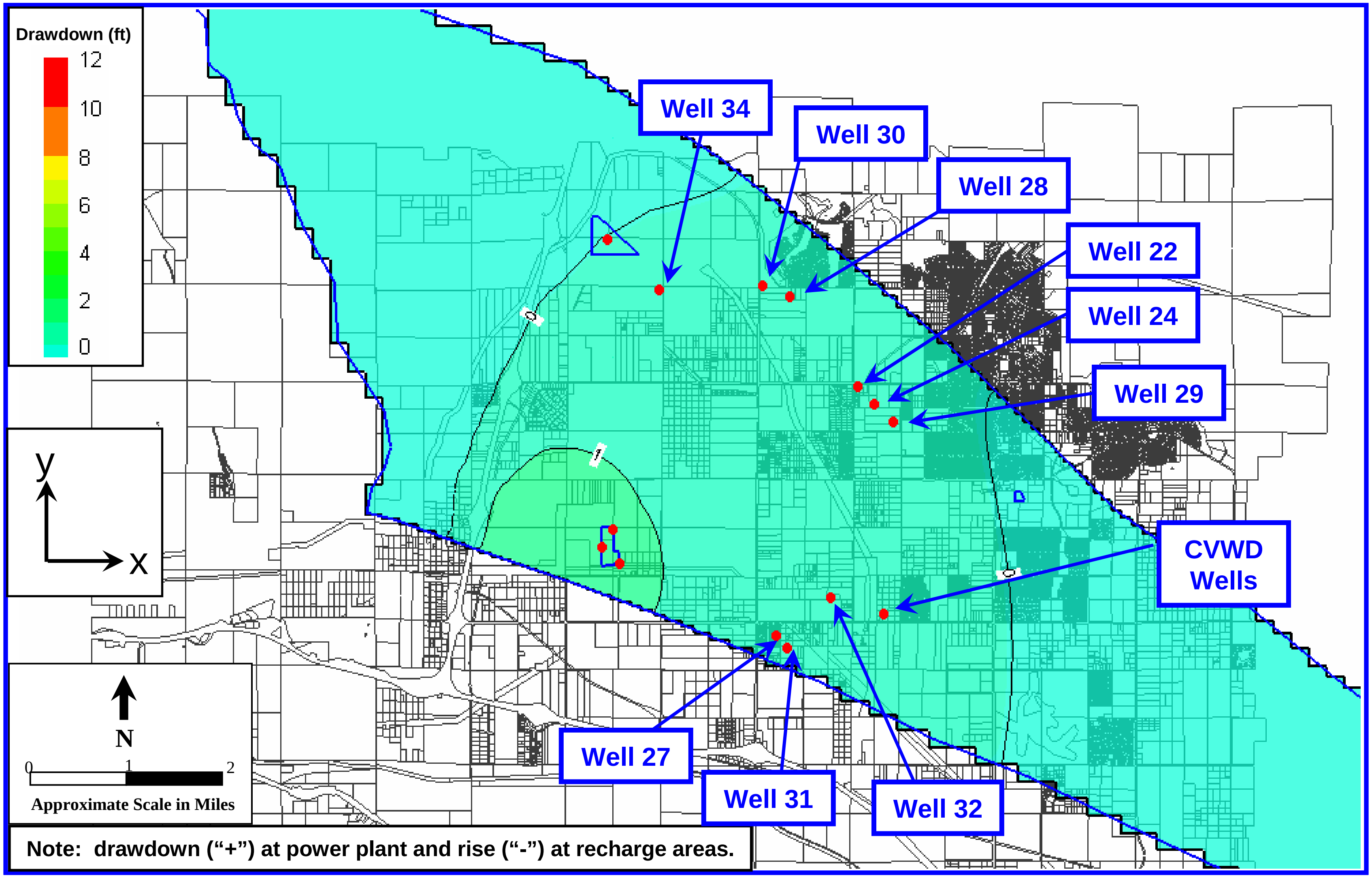


Figure 54: Contour Map of Simulated Groundwater Level Changes at 12 Months – Sensitivity 2 (Double Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af, Case A: Anisotropy Ratio =1.0)

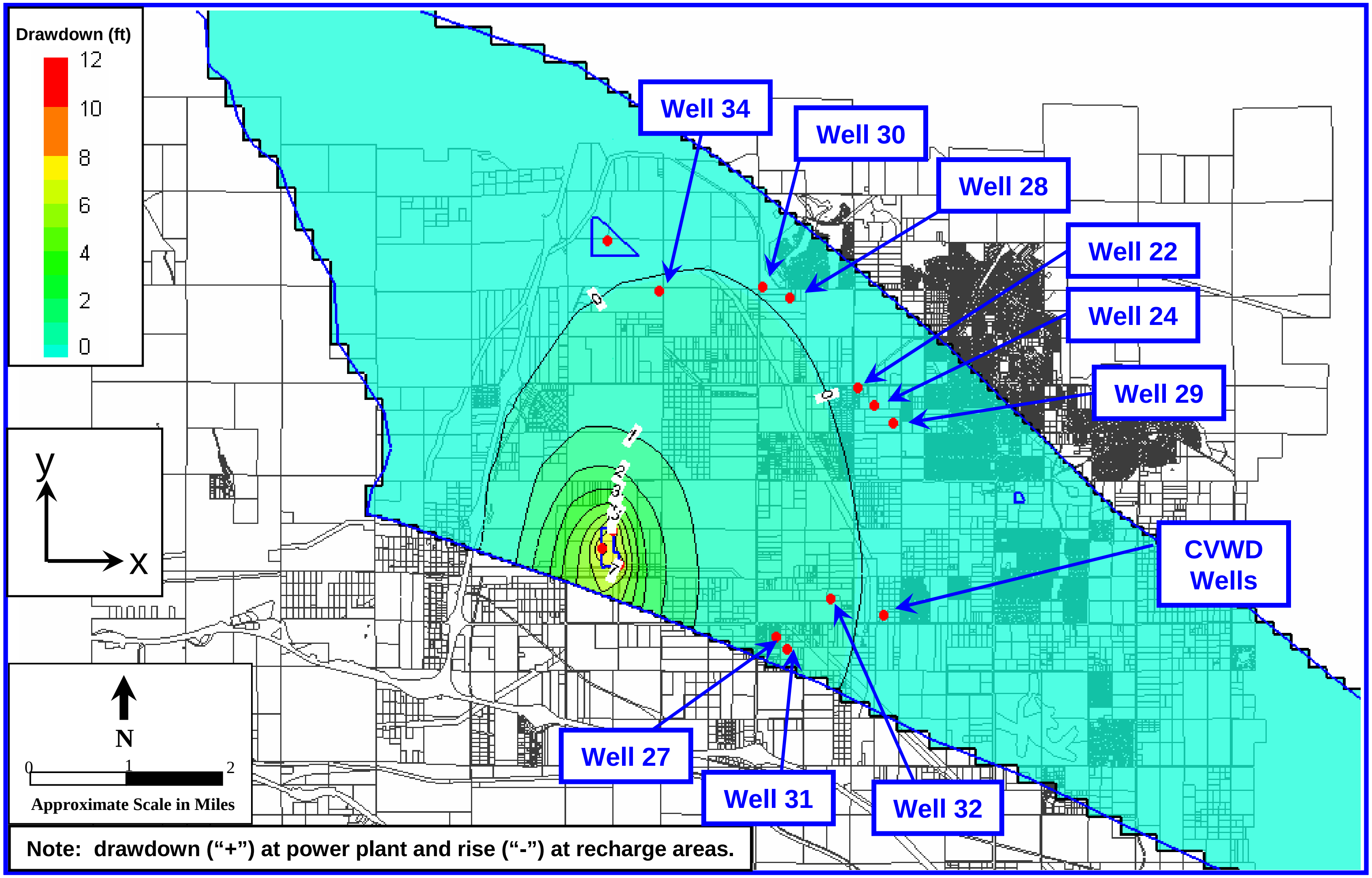


Figure 55: Contour Map of Simulated Groundwater Level Changes at 4 Months – Sensitivity 2 (Double Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af, Case B: Anisotropy Ratio =2.0)

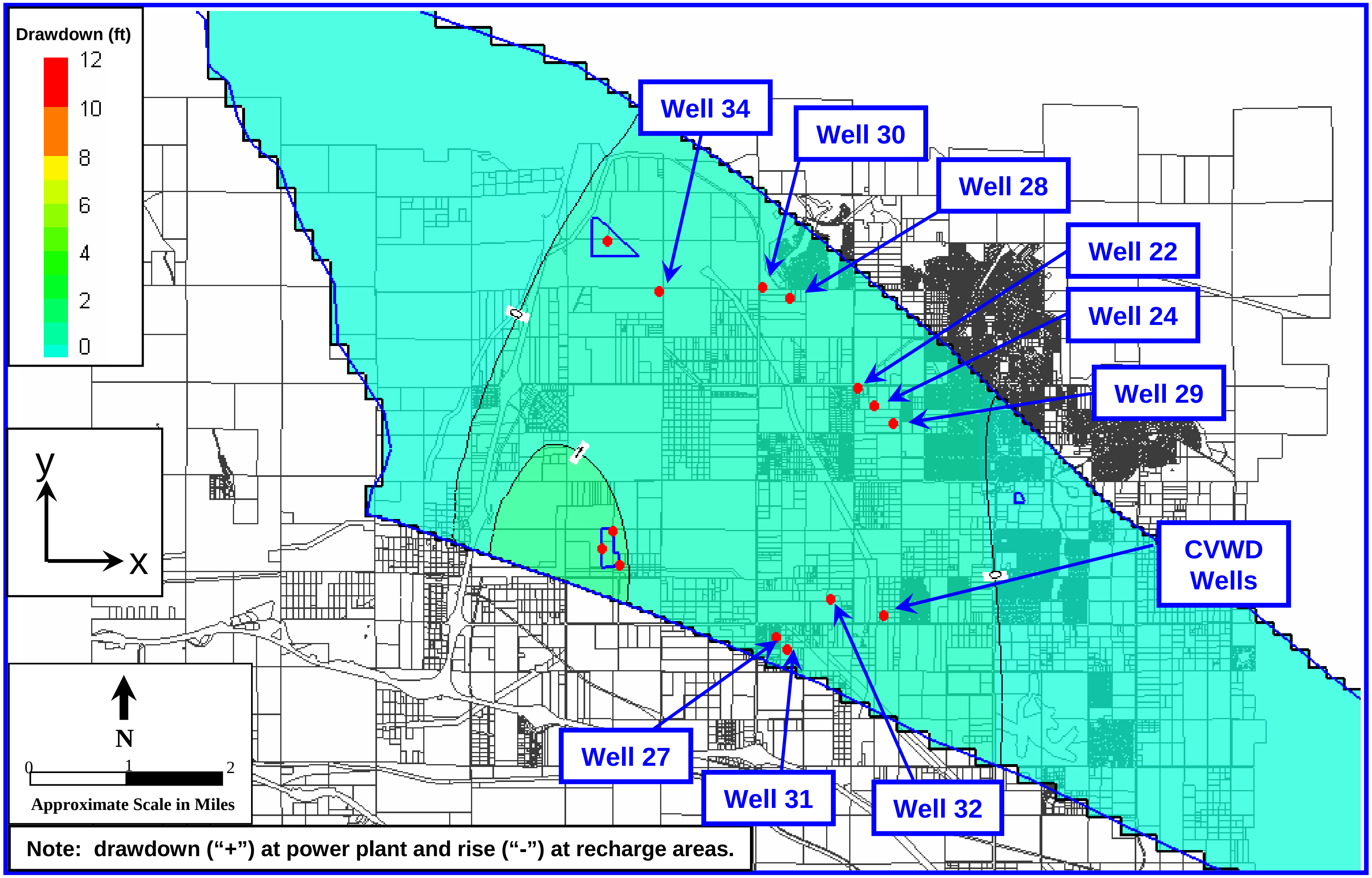


Figure 56: Contour Map of Simulated Groundwater Level Changes at 12 Months – Sensitivity 2 (Double Tyley's T)

(Scenario 3: Pumping = 2,059 gpm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af, Case B: Anisotropy Ratio =2.0)

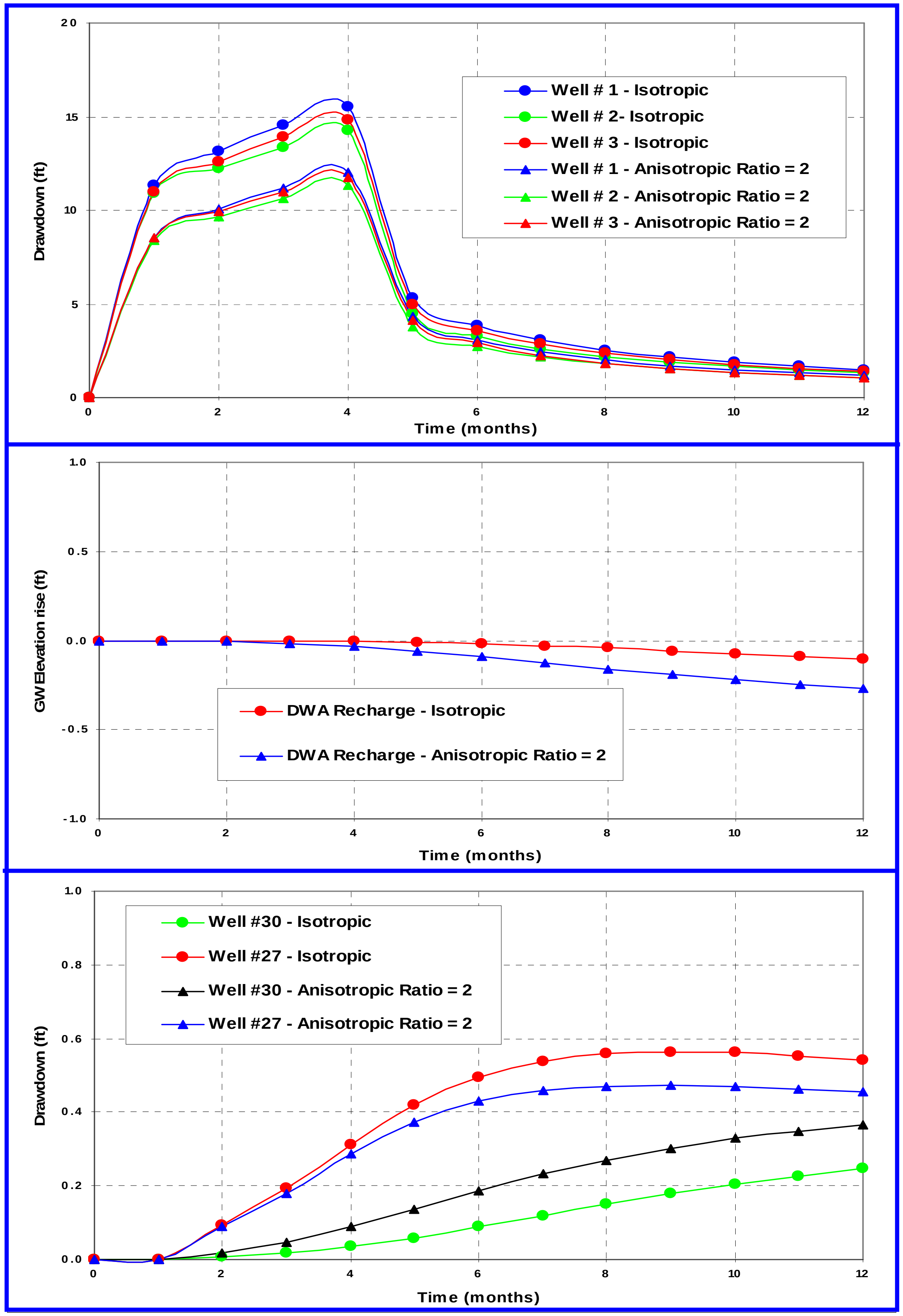


Figure 57: Simulated Groundwater Level Change versus Time at Project Pumping Wells, DWA Recharge Basin and MSWD Wells 27 and 30 - Sensitivity 2 (Double Tyley's T) (Scenario 3: Pumping = 2,059 pgm for 4 Months, No Recharge, Total Pumped Volume = 1,100 af)

STATE OF CALIFORNIA
ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

In the Matter of:	)	Docket No. 07-AFC-3
	)	
Application for Certification, for the CPV SENTINEL ENERGY PROJECT	))	**ELECTRONIC PROOF OF SERVICE LIST**
	)	
	)	(October 15, 2007]
	)	

☒ Transmission via electronic mail and by depositing one original signed document with FedEx overnight mail delivery service at Costa Mesa, California with delivery fees thereon fully prepaid and addressed to the following:

DOCKET UNIT

CALIFORNIA ENERGY COMMISSION
Attn: DOCKET NO. 07-AFC-3
1516 Ninth Street, MS-4
Sacramento, California 95814-5512
docket@energy.state.ca.us

☒ Transmission via electronic mail addressed to the following:

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CPV SENTINEL ENERGY PROJECT
CEC Docket No. 07-AFC-3

DECLARATION OF SERVICE

I, Paul Kihm, declare that on July 9, 2008, I deposited a copy of the attached:

RESPONSES TO GROUNDWATER WORKSHOP – ADDITIONAL JULY 3, 2008 DATA REQUESTS

with FedEx overnight mail delivery service at Costa Mesa, California with delivery fees thereon fully prepaid and addressed to the California Energy Commission. I further declare that transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service List above.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July 9, 2008, at Costa Mesa, California.

Paul Kihm

OC\952322.1