WEST KERN WATER DISTRICT

GROUNDWATER MANAGEMENT PLAN

FEBRUARY, 1997

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I. INTRODUCTION

"The mission of the West Kern Water District is to provide to its customers a reliable supply of excellent quality water and other services, in a planned, efficient, cost effective and environmentally responsible manner, while promoting public awareness of water issues."

A. General

The preparation of a Groundwater Management Plan (the Plan) has been authorized by the Board of Directors of the West Kern Water District (District) by Resolution (Appendix 1), in compliance with the provisions of AB 3030, the Groundwater Management Act, California Water Code Sections 10750, et. seq., (the Act). The objectives of the Plan are to:

- ▲ Protect the quality of the District's groundwater basin
- ▲ Promote and improve existing monitoring activities
- ▲ Enable the District to identify and implement the necessary means to preserve and enhance our groundwater resource.

The District was formed in May, 1959 under the County Water District Act, California Water Code, §30,000, et seq.,and includes the incorporated cities of Taft and Maricopa, together with the Westside communities of South Taft, Taft Heights, Ford City, Dustin Acres, Valley Acres, Fellows, Derby Acres, Tupman and McKittrick. The District has a service area of approximately 250 square miles in western Kern County (Exhibit A), with an estimated population of 20,000-25,000. Domestic water is served to approximately 6,500 domestic customers. Approximately 400 connections serve major industrial users. The District's water supply is obtained from groundwater wells located 15 miles northeast of Taft in the Tupman area.

B. *Purpose and Goals*

West Kern Water District recognizes the importance of its groundwater resource and has developed the plan to provide the District's Board of Directors the information necessary to effectively manage the groundwater supply.

The Plan recognizes the importance of understanding the conditions that influence the groundwater basin and that proactive management of the water supplies must be continued. Achieving this goal will require the effective management of both surface and groundwater supplies.

The initial focus of the Plan will be the accumulation and evaluation of data relative to the quantity and quality of groundwater. Information developed will enable the District to promote activities necessary to reduce long-term groundwater level decline. Many of the tasks to be identified are currently underway and may need to be expanded. Other activities will require further study prior to implementation. The Plan is flexible, allowing updating to respond to additional information gathered through monitoring programs.

The Plan preparation is being funded by West Kern Water District. Future activities to fully implement the Plan may require additional funding sources. The Act allows for the levying of groundwater assessments or fees under certain circumstances and according to specific procedures. Prior to instituting a fee structure, the District must hold an election on whether or not to proceed with the enactment of the assessments. The Act provides that a majority of votes cast at the election will be required to implement an additional funding assessment. At the November, 1996 General Election, Proposition 218, amending the California Constitution, was passed. That proposition, among other things, provides that any new assessments by a special district shall be approved by a two-thirds vote of the voters. If there is any conflict between Proposition 218, and the Act, Proposition 218 governs.

C. *Institutional Requirements*

The District operates in an area where the basin has not been adjudicated, nor has the state legislature authorized any special management districts. Groundwater accounts for approximately one-third of the water used within the state, and the increasing demands placed on the limited water supplies require in depth evaluation of groundwater usage.

D. *Plan Organization*

This "Groundwater Management Plan" is organized into six chapters.

Chapter I. INTRODUCTION:

- ▲ Contains background and historical information about the District.
- ▲ Purpose and goals of preparing the Plan.
- ▲ The institutional framework under which the District is generating the Plan.
- ▲ Organizational details of the Plan.

Chapter II. WATER SUPPLY REVIEW:

- ▲ A summary of the current and projected water supply and demand for the area.
- ▲ Definitions and explanations of the physical and contractual structure of the District's water supply.
- ▲ An outline of expected future demands.

Chapter III. GEOLOGIC AND HYDROGEOLOGIC SETTING:

- ▲ Review of the geologic and hydrogeologic conditions providing the physical framework for the District's water supply.

Chapter IV. WATER QUALITY:

- ▲ Existing groundwater and surface water quality conditions.
- ▲ The institutional requirements and objectives of the District.
- ▲ The current threats to the quality of the District's groundwater supply.

Chapter V. GROUNDWATER CONDITIONS:

- ▲ The current groundwater levels.
- ▲ Groundwater movement in the aquifer providing the District's supply.
- ▲ A discussion of the effects and benefits of regional groundwater recharge efforts.

Chapter VI. ACTION ITEMS:

- ▲ A summary of future actions and studies to be undertaken to meet the District's water supply objectives.

II. WATER SUPPLY REVIEW

A. *Groundwater*

The District's wellfield is located in the Tupman area, about 15 miles northeast of Taft. The total peak production capacity of the six active wells is **99** acre feet per day. Maximum daily usage averages approximately **41.5** acre feet. District wells have the current capability to pump a sufficient amount of water to meet peak daily demands as well as expected future growth. However, the ability of the wells to continue to pump water at present capacity is dependent on the health of the local aquifer. This is discussed in more detail in Chapter V of this Plan.

In 1965, the District entered into an agreement with Buena Vista Water Storage District (BVWSD) to limit District net groundwater withdrawals from the basin to **3,000** acre feet per year, based on historic withdrawals prior to 1966. The District is required to recharge the basin for amounts pumped in excess of **3,000** acre feet per year. Average recharge has been approximately **11,250** acre feet per year for the years 1979 - 1996.

The District has contracted with the Kern County Water Agency (KCWA) to receive State Water Project (SWP) entitlement. This entitlement is delivered to BVWSD, which uses the water in lieu of pumping local groundwater, thereby recharging the groundwater basin and providing the District with additional pumping rights through in lieu groundwater exchange (see Section C, *Sources of Supply*). Deliveries of SWP Water to BVWSD has averaged **25,066** acre feet per year from 1984-1996. Deliveries in excess of **11,250** acre feet have resulted in a water bank owned by the District (See Exhibit D).

B. Monitoring Efforts

The District monitors water levels and total production at each well on a monthly basis. Water levels from wells in the vicinity of the District's wellfield are monitored in a joint effort with the KCWA.

Chemical water quality samples are taken as required under Federal and State Drinking Water Standards. General mineral, general physical, and inorganic chemical analyses are conducted every three years, and latest test results were in compliance with State standards. Volatile Organic and synthetic organic chemical analyses are also conducted once every three years, and current test results were non-detectable for these organic chemicals. Radiological testing is done at each well once every four years, for four consecutive quarters and has also been in compliance. Current average test results for each of these constituents are listed on Exhibit C.

The District has collected and maintained historical monitoring data on a monthly basis since 1976.

Raw water well samples are also collected on a monthly basis from each operating well for bacteriological analysis. Total trihalomethane analysis is being conducted on a quarterly basis and is consistently below the state standard. The District is currently in compliance with all water quality standards.

C. Sources of Supply

In 1965, the District entered into an agreement with Buena Vista Water Storage District which allows the District to pump **3,000** acre feet per year of local groundwater from its wellfield. The **3,000** acre feet per year is based on historical usage, and cannot be banked from year to year. Therefore, the District uses this water first in any given year.

The District contracted with KCWA in 1966 to obtain water through the SWP. KCWA holds a master contract with the State to receive water from the SWP. WKWD and 15 other local water districts, called member units,

subcontracts with KCWA. The District's SWP entitlement is currently 25,000 acre feet per year. An additional 10,000 acre feet per year is available to the District under the interruptible SWP contract during wet years when high-flow water is available from the Delta.

The District receives the majority of its SWP water by exchange with BVWSD as an in-lieu groundwater pumping/groundwater banking exchange program. BVWSD, part of which is located south of and northwest of the District's wellfield, typically obtains water from the Kern River and from local groundwater pumping. In the exchange, BVWSD takes District SWP water from the California Aqueduct for its needs instead of pumping local groundwater. The District, in turn, can then pump or bank a volume of water equivalent to that which BVWSD would otherwise have pumped.

As part of the exchange agreement, BVWSD can turn back SWP water in extremely wet years, when it can meet its needs through Kern River supplies. In these years, the District is unable to pump or bank SWP supplies which are turned back by BVWSD.

The District also has two turnouts along the California Aqueduct, which have been used to deliver untreated, diverted water from the aqueduct to industrial customers.

Delivery of the District's SWP entitlement is dependent on the availability of SWP supplies. Historically, the SWP has been subject to cutbacks during drought years. SWP contracts total about 4.2 million acre feet annually, but the project has not been completed and existing facilities deliver only about 2.3 million acre feet of firm supply annually. The SWP is continuously subject to supply shortages, which in turn, affect deliveries to the District.

Since the early 1970's, the District's water requirements have generally been less than SWP supplies delivered via the exchange with BVWSD. The District can accumulate this banked water from year-to-year. The average volume of water banked by the District since 1979 is 11,468 acre feet per

year. The total water currently banked, as of the end of the 1995-96 water year, is estimated at **216,503** acre feet. Exhibit D depicts the District's Historic Groundwater Banking Program.

D. Future Demands

A Water Supply Plan was developed for the District in 1989. This plan evaluated the adequacy of the District's long-term supplies based on projected demands for the District and upon projected deliveries from the SWP and the local groundwater basin. A key assumption in this evaluation was that the District would be able to continue operating in the same manner, regardless of increased local pressure on the groundwater basin due to frequent shortages in SWP deliveries. A survey of local oil companies, reviewing the historical and projected oil production activities for fields within the District service area, indicates that oil production has or soon will reach its peak, after which production will drop steadily. The study also indicated that no appreciable growth is expected in domestic water sales due to limited availability of land for urban development.

The 1989 study compared production capability, banked water volumes, and future demands, and concluded that District supplies, in spite of potential shortages in the SWP deliveries, were adequate to meet projected needs. This assumes the District can continue to operate its groundwater exchange program in the same manner which it has done historically, and assumes that the exchange program results in a direct benefit to the groundwater basin. Based on the analysis, it was concluded that the District need not pursue additional sources of water and may consider the sale of some water presently banked.

E. Surface Water

The surface water indirectly available to the District consists of in-lieu surface water delivered to BVWSD and credited to the District for recharge.

This water is either California State Aqueduct water or high-flow Kern River water. The surface water is not currently used as a domestic water supply source.

III. GEOLOGIC AND HYDROGEOLOGIC SETTING

A. General

An initial step in developing a groundwater management plan is the review of existing data that is available to determine groundwater conditions in the basin. Compilation of this technical information forms the foundation of the groundwater management plan, and is necessary for implementation of the plan.

This chapter is a compilation of information taken from several sources listed in *reference section, page 26.*

B. Geologic and Hydrogeologic Framework

The District produces groundwater from its wellfield in the Tupman area, about 15 miles northeast of Taft. The aquifer is a part of a larger groundwater basin located in the southeastern portion of the Great Valley geomorphic province, a northwest-southeast trending geologic region approximately 400 miles long and 50 miles wide that occupies the central part of California. In simple terms, the geologic history and geometry of the valley is one of a continually sinking basin being filled with sediment. The sediment was supplied to the basin by the rising Coast Ranges (San Emidio Mountains) to the west, the Transverse Ranges (Tehachapi Mountains) to the south, and the Sierra Nevada to the east. The southern-half of this elongate valley, of which the District's basin is a part, is referred to as the San Joaquin Valley.

The San Joaquin Valley is a large, deep asymmetric sedimentary basin. The valley consists of several interconnected depositional basins, grossly separated by a basement high known as the Bakersfield Arch, which trends roughly along and parallel to the Kern River. The geologic units underlying the valley, and which are present underneath the District's wellfield area, are

generally grouped into three broad categories (*Dale and others, 1966*). These include the crystalline rocks of pre-Tertiary age (> 65 million years old), the marine sedimentary rocks of Tertiary age (from 65 million to roughly 20 million years old), and the continental sedimentary deposits of Tertiary and Quaternary age (20 million years old to present).

Generally, the crystalline rocks and the marine deposits are nonwater-bearing rocks in this area, and play no significant role in the ability of the District to produce groundwater.

Overlying the crystalline rocks and the marine sedimentary rocks is a thick sequence of continental, semiconsolidated to unconsolidated sediments. These continental sediments are several thousand feet thick in the thickest portions of the basin, near the central part of the San Joaquin Valley. Along the fringe of the basin, or on top of the Bakersfield Arch, the sediments are considerably thinner.

In the area of the District's wellfield, the continental rocks consist of the Plio-Pleistocene Tulare Formation, a thick sequence of water-laiden sands, silts, and clays. Throughout much of the San Joaquin Valley, the Tulare Formation contains a regionally extensive lacustrine or lakebed clay, generally referred to as the E-clay or Corcoran Clay, that serves as a confining layer separating the shallow semiconfined to unconfined aquifer system from a deeper confined aquifer system. Although some of the earlier investigations placed the E-clay into the area of the District's wellfield, it is generally considered to be absent in this vicinity.

The water-producing portion of the groundwater basin is within the upper sections of the continental deposits and the overlying alluvium. In the vicinity of the District's wellfield, the usable portion of the basin is typically marked as the base of the fresh water, which is defined as groundwater having electrical conductivity of less than 3,000 micromhos per centimeter (*Page, 1976*). In the area of the District's wellfield, the thickness of the fresh

water deposits is reported to be approximately 1,100 feet thick, or 800 feet below mean sea level, (msl).

The hydro geology of the basin above the base of fresh water is an alluvial fan complex deposited by the Kern River. The Kern River Fan is a large composite alluvial fan extending across the southern San Joaquin Valley from east of Bakersfield to the Elk Hills. The units that make up the continental deposits are more conveniently subdivided into lithologic and hydrogeologic units, on the basis of similar properties. Three classification units have been identified (*Dale, 1966*), including:

1. Fine sand to clay unit, which underlies a large part of the Kern River Fan, and lies unconformably on the erosional surface of nonwater-bearing Miocene rocks.
2. Gravel and clay unit, consisting of well-rounded boulders from the crystalline rocks in a matrix of sand and clay. This unit represents the very poorly sorted fan deposits of the Tulare Formation in the Elk Hills area, and appears to be the primary aquifer from which the District's wells pump water.
3. Gravel to medium sand unit, which represents the recent alluvial fan deposits. Although typically very permeable, the permanent groundwater table lies below this unit in the area of the District's wellfield. The highly permeable nature of this unit has significant implications, however, for surface recharge and conjunctive use potential in the region.

The District's groundwater basin is everywhere considered to be unconfined, however the heterogeneity of the alluvial fan complex results in thin, discontinuous lenses of clay that may retard vertical percolation of groundwater, thus creating isolated perched water systems. Numerous borings and monitoring wells drilled by the California Department of Water Resources demonstrates the unconfined nature and vertical communication of the aquifer (*DWR, 1990*). These same investigations, however, identified a

large anomalous area located in the area near the intersection of the Kern River and Interstate 5, in the vicinity of the eastern edge of the District's property. The monitoring wells in this area contain large amounts of clay with apparent very low transmissivity and highly confined conditions.

IV. WATER QUALITY

A. Groundwater Quality

Overall, groundwater quality within the District's groundwater basin is excellent. A summary of the well water quality is presented in Exhibit C.

The water quality of the District's wells represents a family of water that is typical of water recharged by the Kern River. The water is typically a sodium bicarbonate water of low Total Dissolved Solids (TDS), although the upper portion of the aquifer contains a thin interval of calcium bicarbonate water, as indicated in several of DWR's multiple completion monitoring wells (30/25-22R, 30/26-6L, 30/26-16R and 30/26-19B; DWR, 1990).

The water chemistry of the Kern River water tends to be a calcium-sodium bicarbonate type. The calcium bicarbonate water recharged from the river apparently undergoes an ion exchange process as it infiltrates the deeper parts of the aquifer, changing it to a sodium bicarbonate type.

B. Water Quality Requirements/Objectives

A primary objective of the Plan is to maintain a dependable, high quality municipal and industrial water supply. Increasingly stringent drinking water standards require diligence in prosecuting current activities, and effective long-range planning, to insure continued compliance.

An important activity identified in the Plan is the increased monitoring of groundwater in the District's wellfield area. This monitoring information will be collected and utilized to evaluate the best management practices to identify, reduce and/or eliminate any known contamination. The proliferation of water production and monitoring wells throughout the Kern River Fan area, increases the risk of cross aquifer contamination that can occur through abandoned wells and the improper sealing of new wells. All provisions of the water well standards of Kern County and the Department of Water Resources

must be enforced. In addition, it may be advantageous to request that water well construction standards be modified to exceed those presently mandated.

In an effort to insure the quality of both surface water and groundwater, and since natural minerals occur in low concentrations, the major thrust of the water quality monitoring and recommended construction practices will be to prevent contamination from off-site sources or above ground activities. The Plan provides a mechanism that will help achieve these long-term goals.

C. *Current Threats to Groundwater Quality*

The District's boundaries encompass one of the world's largest petroleum producing areas. The contamination of District's groundwater, both actual and potential, by various entities engaged in petroleum production activities are part of an on-going assessment and evaluation by District's staff and outside consultants. The District is working independently, and in cooperation with public agencies and oil companies, to address and correct any contamination threats to its groundwater.

V. GROUNDWATER CONDITIONS

A. Groundwater Levels and Movement

The District has monitored and recorded groundwater levels in its production water wells on a regular basis for several years. Additionally, the DWR and the KCWA have monitored water levels in wells in the vicinity of the District's wellfield as part of the Kern Water Bank efforts. Compilation of District data, DWR, and KCWA data, has provided an understanding of the groundwater flow patterns and trends in water levels in this area.

A map of the District's wellfield property is attached as Exhibit F. Based on historical District data, a series of water level hydrographs of District wells was produced, which shows long-term trends of well water levels. Based on DWR and KCWA data, a series of groundwater contour maps were made depicting both the groundwater surface elevations and changes in groundwater levels (See Exhibits G-1 through G-18). Water level hydrographs for each of the District's wells were produced, showing trends in standing water levels in the wells since the mid-1960's (See Exhibits G-1 through G-9. As shown on the hydrographs, all of the wells show dramatic declines in water levels from an historic high level in the winter of 1970. A steep decline in water levels was seen until the wells reached a low point in 1979 to 1982, when water levels began to rise. Water levels increased consistently in each of the wells until 1984, when once again water levels started declining, reaching and passing the 1979-1982 low point, and establishing historic low marks in 1992 to 1994. The wells for which data is currently recorded, show a significant rise in water levels since 1994.

The decline in water levels since the 1960's is not necessarily directly related to either historical production from the District's wells or to rainfall. A graphic showing District groundwater production since 1979 is presented as Exhibit G-10, showing relatively constant production of approximately 16,000 acre feet per year (AFY) from 1979 to 1988, when production started a

gradual declining trend to the present production volume of less than 12,000 AFY.

The dramatic recovery of water levels in the District's wells since 1994 is attributed to several factors. First, is the demand has dropped off slightly the last three years. Second, is the end of the drought, with higher than average rainfall, resulting in above-average recharge. Third, and probably of most importance, is that the Kern Water Bank was in operation over the past two years, with apparently more than 0.5 million acre feet of water spread as recharge by the Kern Water Authority. It appears clear that the District is realizing the benefit of the banking operations taking place north and northeast of the wellfield.

Regional groundwater flow patterns are represented by the water level contour maps shown on Exhibits G-11 through G-14. The maps show a continued deepening of the pumping depression caused by production from the District's wellfield (shown particularly on the Spring 1986 and Spring 1994 maps). These patterns show groundwater flow towards the wellfield from the west, south, and east. The influence of the Kern River recharge is apparent from the groundwater recharge to the wellfield from the east.

Apparent significant groundwater production north of the map area, however, has resulted in groundwater flow from south to north, flowing away from the District's wellfield towards the Buena Vista Water Storage District and the Rosedale-Rio Bravo Water Storage District.

Exhibit G-14, showing water level elevations for Spring 1996, illustrate the dramatic effect of two years of high-volume groundwater spreading in the Kern Water Bank. The groundwater recharge in the area located north of the wellfield, and north of Interstate 5, created a recharge source with positive implications for the District's wellfield.

The decline in water levels over the thirty-year period shown on the hydrographs and water level contour maps indicate the manifestations of a regional groundwater overdraft condition, whereby groundwater pumpage

has significantly exceeded recharge. Exhibits G-15 through G-18 show the net change in water levels, as described earlier and quantified in Tables 1 through 4. As shown on the maps, the District's wellfield production has created a pumping depression that has affected regional groundwater flow patterns. On the positive side, the map showing net change between 1994 and 1996 illustrates the far-reaching benefits of the groundwater banking efforts of the Kern Water Bank.

Based on the data discussed above, coupled with aquifer parameters such as hydraulic conductivity and storage capacity, determinations can be made of the estimated quantity of inflow and/or outflow of groundwater within the area of influence of the District's wellfield. This will be an important water management tool useful to the District in developing long-term planning decisions, and should be accomplished as part of the identified **Action Items**.

The collection of this data will be continued with the Plan. The information that can be prepared will include maps of spring and fall water elevations, depths to groundwater, and changes in groundwater levels over time. In addition, the groundwater reports can include estimates of changes in groundwater storage, water delivered, and water use. This will allow an evaluation of the management activities to be made.

The water quality monitoring being proposed as one of the **Action Items**, will be used to augment the information obtained through the historical water level readings. The water quality samples will be taken in critical areas adjacent to known locations of contamination. With the compilation of the quality tests, and the groundwater level measurement, the District will improve its ability to effectively manage its groundwater supply.

This information can also be used to provide the additional data needed to establish programs to reduce the movement of any known contaminates. With the information gathered through the Plan, an additional future **Action Item** could include the analysis of the potential benefits of creating a

hydraulic barrier or modification of the District's pumping regime to reduce or impede the migration of any contamination.

B. Regional Groundwater Recharge Efforts

In areas of conjunctive use, groundwater recharge is a critical part of the overall Plan. The information gathered from the water level contour maps indicates a continuous review of banking practices must be performed to enable the District to gain the maximum benefit of its groundwater banking and water exchange efforts, and to continue to cost-effectively produce groundwater for many years to come.

To address this issue, the District should investigate the potential impacts of the Kern Water Bank on water levels in its wellfield. The recent recharge efforts of the Bank have resulted in significant rises in water levels. What is unknown at this point, however, is the potential impact on the wellfield during the Bank's extraction cycles, particularly since these cycles will coincide with periods of heavy demand on the District's supplies.

With respect to the groundwater exchange and banking efforts with BVWSD, it is important for the District to continue to pursue active recharge programs that result in positive water level and water quality results. The District's goal has always been to make every effort to compel the most beneficial use of its water supply by recharging the underground wellfield area. As a complement to the District's local recharge program, one of the **Action Items** is to also continue evaluation of groundwater banking in areas surrounding the wellfield area by other entities, and provide an active voice in these endeavors.

VI. ACTION ITEMS

A. Groundwater Management Program

There have been several **Action Items** identified for the Plan and those items will be implemented according to the District's Rules and Regulations (see Exhibit H), as amended from time to time. To have a successful Plan, it is not necessary to implement all of the **Action Items** identified. Some items would be required only as a last resort due to the occurrence of emergency conditions within the District's Basin Plan Area. It is important that all the potential **Action Items** be identified, and contingency plans developed, in the event any one of them becomes necessary. It is recommended that some items be implemented immediately, while investigations into other items should begin upon approval of the DRAFT Plan. Additional **Action Items** may be defined and will require implementation as a result of these investigations, subsequent to Board approval and public hearings. If funding is necessary to implement a portion of the Plan, the District will follow the procedure outlined in section I.B. By implementing the management activities listed in the Plan, the District can preserve its groundwater resource.

B. Hydrogeologic Basin Assessment

A comprehensive investigation and assessment of the District's aquifer and basin area of influence needs to be performed to accomplish the following:

- ▲ Compilation of historical data
- ▲ Determine and quantify the hydraulic parameters and characteristics of the basin that govern groundwater flow (and contaminant transport)
- ▲ Evaluate the recharge and discharge components of the basin that affect the ability of the District to pump water

The large size of the basin and diversity of political boundaries precludes effective overall groundwater basin management. Identification of the Plan Area (the area of the basin that affects the District's wellfield or is affected by the District, including the Kern Water Bank), should be delineated and understood.

An understanding of the operation of the Kern Water Bank and its relationship to District wellfield operations is necessary. This can only be accomplished with a detailed assessment of hydrogeologic characteristics of the basin.

C. Conjunctive Use Program

The District has historically practiced conjunctive water use, integrating surface and groundwater supplies, to meet current and future demand. Continuing this proactive approach will require an objective review of past and future procedures, including a review and assessment of:

- ▲ The effectiveness of past surface water recharge efforts.
- ▲ The effectiveness and impacts of recharge efforts conducted by neighboring groundwater users.
- ▲ The role the District will take in future conjunctive use programs.
- ▲ The continuing participation in banking and exchange programs currently in effect.
- ▲ The siting and construction of new or additional recharge facilities.
- ▲ District efforts to maximize the amount and quality of surface water available for recharge purposes.
- ▲ Programs that stress water conservation efforts throughout the District.
- ▲ Existing and new domestic irrigation methods.
- ▲ Reuse of industrial water.
- ▲ Encouraging the use of domestic water saving devices.

The District's current, documented Water Conservation Plan will be evaluated on an annual basis and modified as needed.

D. Wellfield Evaluation

The physical soundness of the District's production wells should be evaluated and documented, and an understanding developed of the structural integrity of each well and temporal changes in each well's production capability. A regular rehabilitation maintenance program should be designed and implemented as necessary.

The close proximity of the active wells in the wellfield has created a significant pumping depression that resulted in increased lifts, which results in increased pumping costs and other potential hydraulic problems. Pumping levels are below the top of the perforations, thus creating a condition for cascading water, which can increase well clogging and rapidly diminish the well's production capability. As part of the long-term planning and evaluation program, the siting of new production wells to mitigate mutual interference problems, while maintaining or increasing production, will be evaluated.

E. Monitoring Plan

- ▲ Continue monitoring water levels and sampling for water quality testing on a routine basis.
- ▲ Prepare maps depicting the information gathered through the monitoring phase.
- ▲ Develop reports quantifying the water demands, surface water, and groundwater supplies.
- ▲ Evaluate the need for expansion of the existing monitoring plan and monitoring network to adequately track groundwater gradient effects and potential wellfield contamination issues.

Summaries of these issues will assist the District in evaluating the effectiveness of the various elements of the program.

F. Groundwater Contamination Management

Groundwater contamination is one of the District's greatest concerns relating to protection of source water. Contamination originates from a number of sources or activities, such as leaking petroleum storage and distribution facilities or the application of fertilizers or pesticides. Monitoring and pursuit of effective remediation of contamination must be actively implemented.

Effective control of contamination problems will require:

- ▲ Coordinated efforts between all regulatory agencies
- ▲ Source control
- ▲ A comprehensive understanding of the regional hydrogeology
- ▲ Identifying sources of contamination.

G. Wellhead and Aquifer Protection

The federal Wellhead Protection Program was established by Section 1428 of the Safe Drinking Water Act Amendments of 1986, to protect groundwater sources of public drinking water supplies from contamination, and eliminate the need for costly treatment to meet drinking water standards. The program is based on the concept of development and application of land-use controls, and other preventative measures to protect groundwater.

A Wellhead Protection Area (WHPA) is defined as, "The surface and subsurface area surrounding a water well or wellfield supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield." The WHPA may also be the recharge area that provides the water to a well or wellfield.

Elements of the Wellhead Protection Program shall:

- ▲ Determine the roles of various state and local agencies.
- ▲ Prepare a summary of how the WHP goal will be achieved.

- ▲ Delineate Wellhead Protection Areas based on hydrogeologic information.
- ▲ Identify potential sources of contamination.
- ▲ Develop management approaches.
- ▲ Establish contingency plan.
- ▲ Develop new well drilling standards.
- ▲ Encourage public participation.

Because the District's wellfield is located within an active oilfield production area, the attendant problems associated with oilfield operations must be evaluated, as well as the effectiveness of implementing a meaningful Well Head Protection Program.

H. Well Construction, Abandonment Plan

Abandoned wells are a potential source of groundwater contamination and pose a serious physical hazard to humans and animals.

Minimum standards for the destruction of wells are specified in Department of Water Resources Bulletins 74-81 and 74-90. The District will evaluate working through the Department of Water Resources and the County of Kern to upgrade standards for construction and abandonment of water wells.

I. Coordination with Land Use and Regulatory Agencies

The formation of a groundwater management district involves the development of relationships and communication strategies with various state and federal regulatory agencies. Groundwater planning, as defined in AB 3030, is a State-led activity. The State Water Resources Control Board, as the lead State water agency responsible for maintaining water quality standards, provides the framework and direction for California's groundwater protection efforts. National policy direction is provided by the Environmental Protection Agency, which gives national guidance in State-led efforts. Local

agencies should consider working with these entities in actually designing and implementing their groundwater protection program.

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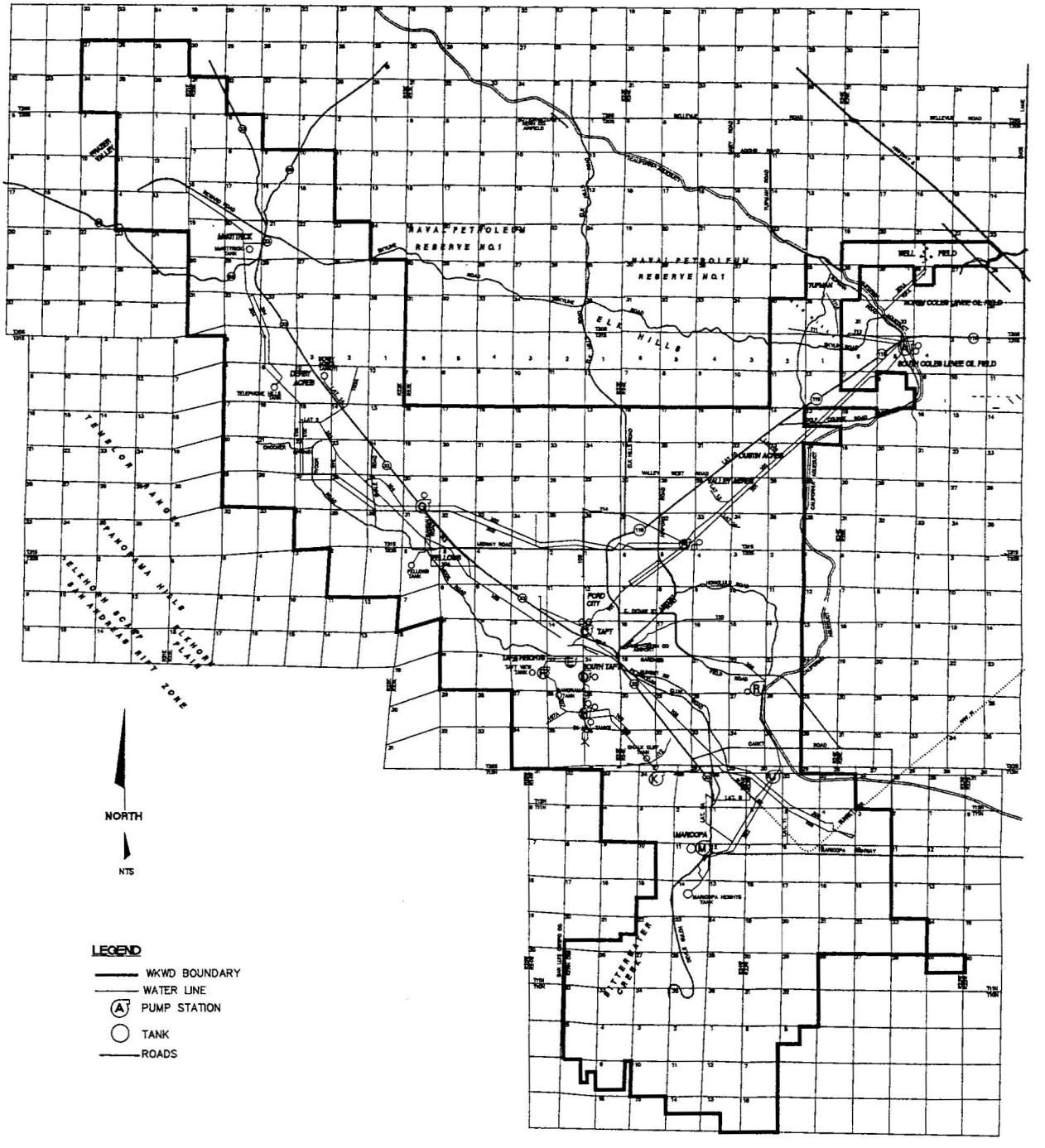
EXHIBIT A



SHEET 1 OF 1	T. TURLEY	OTHER	J. PEARSON	
JOB NO.: N/A	G. MELTON	M. WADDLE	B. HODGES	

DISTRICT BOUNDARY MAP

WEST KERN WATER DISTRICT

CAD FILENAME	DRAWN BY:	DATE:	SCALE:
LAFCO2.DWG	JMW	9/25/95	1"=15000'

West Kern water district

P.O. Box MM • Taft, CA 93268-0024
805 763-3151 • FAX 805 765-4271

1	9/25/95	DISTRICT BOUNDARY MAP	JMW	TTT

EXHIBIT B

District Supply and Demands

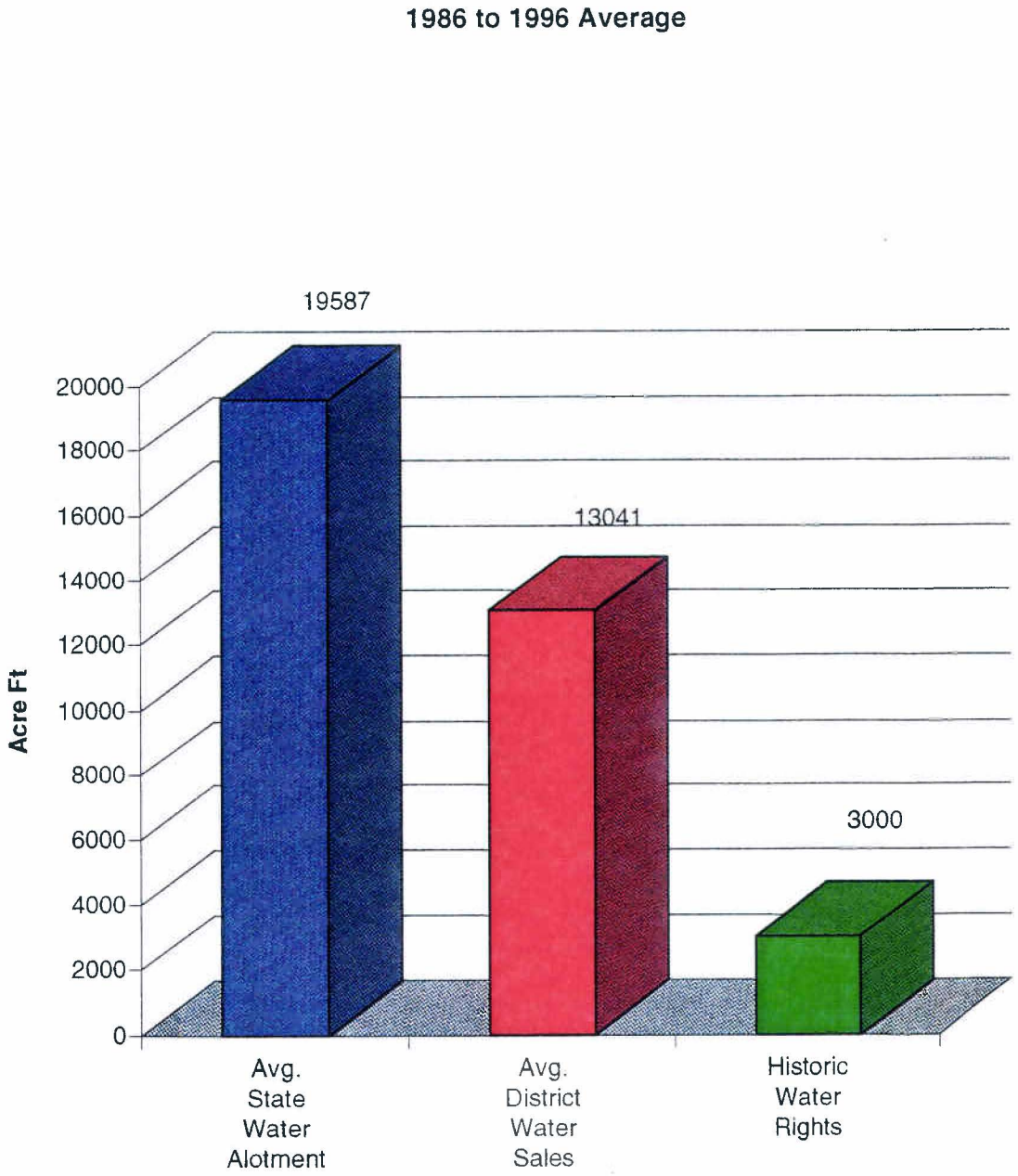


EXHIBIT C

W.K.W.D. WATER QUALITY REPORT 1996

TESTING FOR PRIMARY STANDARDS	UNITS	CA State Standards MCL	WKWD SYSTEM
CLARITY			
Turbidity	TU	1-5 Units	0
MICROBIOLOGICAL	% tests		
Coliform Bacteria	positive	5%	0.27%
Number of Samples			1,097
ORGANIC CHEMICALS			
Total Trihalomethanes	ug/l	100	4.92
Endrin	ug/l	2.0	ND
Lindane	ug/l	0.2	ND
Methoxyclor	ug/l	40.0	ND
Toxaphene	ug/l	3.0	ND
2,4-D	ug/l	70.0	ND
2,4,5-TP (Silvex)	ug/l	50.0	ND
Atrazine	ug/l	3.0	ND
Benzene	ug/l	1.0	ND
Carbon Tetrachloride	ug/l	0.50	ND
1,2-Dibromo-3-chloropropane	ug/l	0.20	0.055
1,4-Dichlorobenzene	ug/l	5.0	ND
1,2-Dichloroethane	ug/l	0.50	ND
1,1-Dichloroethylene	ug/l	6.0	ND
1,3-Dichloropropane	ug/l	0.00	ND
Ethylbenzene	ug/l	700	ND
Ethylene Dibromide	ug/l	0.05	ND
Molinate	ug/l	20.0	ND
Monochlorobenzene	ug/l	70.0	ND
Simazine	ug/l	4.0	ND
1,1,2,2,-Tetrachloroethane	ug/l	1.0	ND
Tetrachloroethylene	ug/l	5.0	ND
Thiobencarb	ug/l	1.0	ND
1,1,1-Trichloroethane	ug/l	200	ND
1,1,2-Trichloroethane	ug/l	5.0	ND
Trichloroethylene	ug/l	5.0	ND
Dibromochloropropane	ug/l	0.2	ND
Bentazon	ug/l	18	ND
Vinyl Chloride	ug/l	0.5	ND
Xylenes	ug/l	1,750	ND
Cis-1,2-Dichloroethylene	ug/l	6.0	ND
Trans-1,2-Dichloroethylene	ug/l	10.0	ND
1,1-Dichloethane	ug/l	5.0	ND
1,2-Dichloropropane	ug/l	0.5	ND
Trichlorofluoromethane (Freon 11)	ug/l	150	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1,200	ND
RADIOACTIVITY			
Gross Alpha Particle Activity	pCi/l	15	5.2

TESTING FOR PRIMARY STANDARDS	UNITS	CA State Standards MCL	WKWD SYSTEM
INORGANIC CHEMICALS			
Aluminum	ug/l	1,000.0	ND
Arsenic	ug/l	50.0	0.0083
Barium	ug/l	1,000.0	ND
Cadmium	ug/l	5.0	ND
Chromium	ug/l	50.0	ND
Mercury	ug/l	2.0	ND
Nitrate	ug/l	45.0	0.87
Selenium	ug/l	50.0	0.0019
Lead	ug/l	50.0	ND
Fluoride	mg/l	1.6	0.37
Silver	mg/l	0.05	ND

TESTING FOR SECONDARD STANDARDS	UNITS	CA. State Standards MCL	WKWD SYSTEM
INORGANIC CHEMICALS			
Color	units	15	1
Conductivity	umhos	2,200	367.3
Copper	ug/l	1,000	0.01
MBAS	ug/l	500	0.045
Iron	ug/l	300	0.025
Manganese	ug/l	50	0.02
Zinc	ug/l	5,000	0.02
Chloride	mg/l	600	46.5
Silver	ug/l	100	0.0019
Sulfate	mg/l	600	51.7
Total Dissolved Solids	mg/l	1,500	290

ADDITIONAL CONSTITUENTS			
pH	units	NS	8.05
Odor-Threshold	units	3.0	ND
Hardness	mg/l	200	37.8
Sodium	mg/l	350	54.4
Calcium	mg/l	NS	7.85
Potassium	mg/l	NS	0.56
Magnesium	mg/l	NS	1.15
Total Alkalinity	mg/l	NS	82.2

GLOSSARY OF TERMS

HARDNESS = The CA Standard of 200 MCL is considered to be medium-hard; 50-100 mg/l is very soft

MCL = Maximum Contaminant Level

mg/l = Milligrams Per Liter (parts per million)

ug/l = Micrograms Per Liter (parts per billion)

ND = None Detected

NS = No Standard

pCi/l = Pico Curies Per Liter

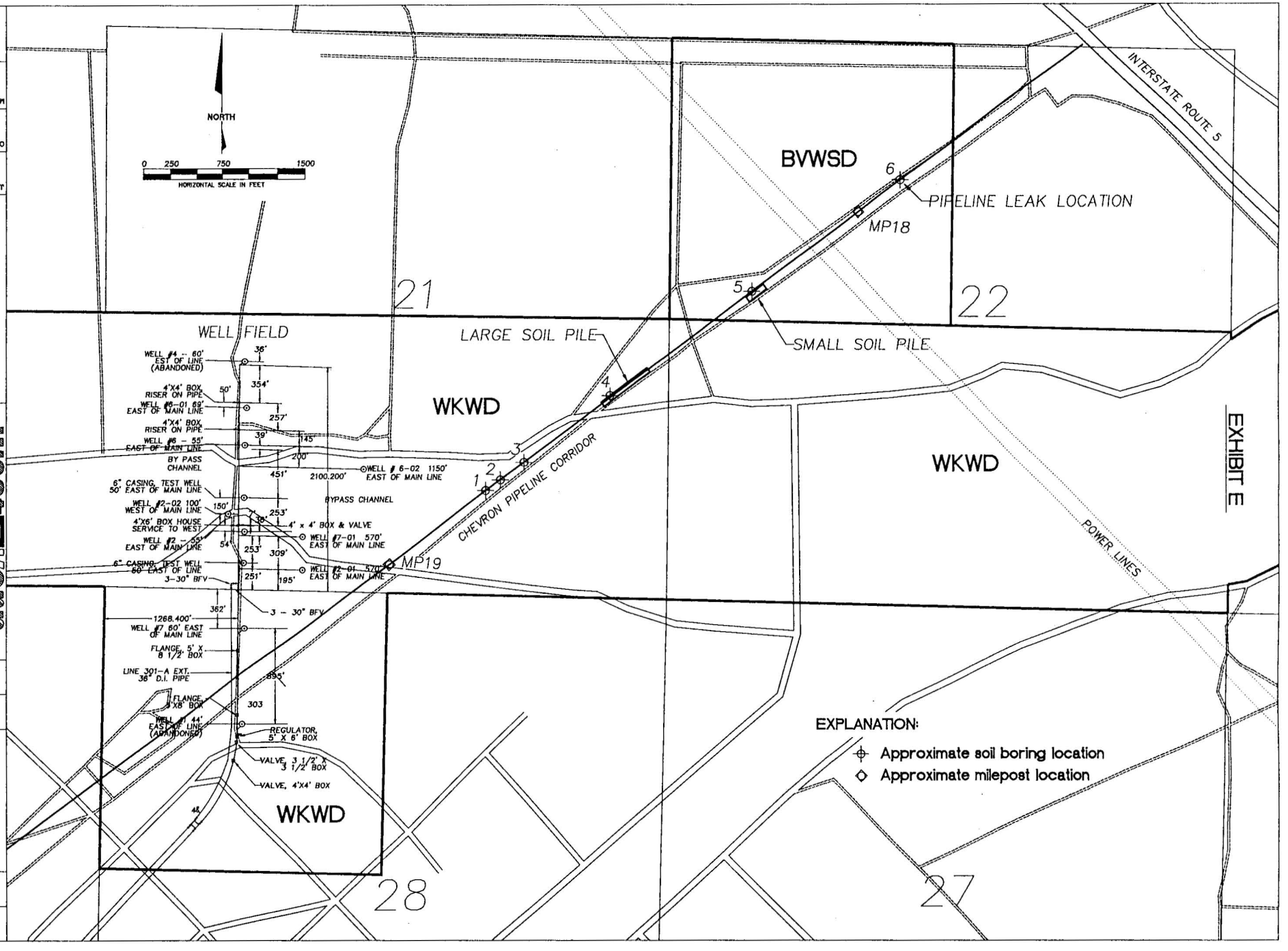
pH = Optimal Range for Neutrality is 6.6 - 8.5

umhos = micromhos per centimeter

EXHIBIT D

WEST KERN WATER DISTRICT
HISTORICAL GROUNDWATER BANKING PROGRAM

Water Year	Purchased Water: S.W.P. Entitlement	S.W.P. Interruptable	Tehachapi Cummings	Buena Vista	Other Sources	Water Purch. During Year	Water Sold During Year	Banked Water End Of Year
1979								14,065
79 - 80			553	11,736	11,501	23,790	14,033	25,633
80 - 81			1,237	9,684	6,207	17,128	15,812	29,093
81 - 82			1,448	9,275	8,420	19,143	16,771	33,508
82 - 83			816	22,041	2,807	25,664	15,256	45,633
83 - 84			3,212	18,735		21,947	15,988	53,495
84 - 85	17,797		2,662			20,459	17,403	58,529
85 - 86	27,995		5,272			33,267	16,731	76,401
86 - 87	19,342		3,950			23,292	15,504	86,024
87 - 88	19,935		4,750			24,685	16,681	95,794
88 - 89	23,570		5,564			29,134	13,068	113,408
89 - 90	24,348		6,100			30,448	10,228	135,102
90 - 91	24,348		5,477			29,825	10,948	155,488
91 - 92	10,465	32	1,792			12,289	14,755	155,408
92 - 93	9,496		5,310			14,806	12,335	160,137
93 - 94	19,523	5,387	2,325			27,235	12,317	174,484
94 - 95	19,838	5,465	5,050			30,353	11,334	194,956
95 - 96	25,000	0	0			25,000	13,239	216,503
Total	241,657	10,884	55,518			408,465		
Avg. Since 84	20,138	907	4,021			25,066	84 - 96 Growth Rate	13,165



LOCATION OF BORINGS
ALONG CHEVRON
PIPELINE CORRIDOR
SEC 21-22-28, T30S, R25E

J. PEARSON	B. HODGES
OTHER	T. TURLEY
M. WADDLE	G. MELTON

SHEET 1 OF 1
JOB NO.: 93-185Z

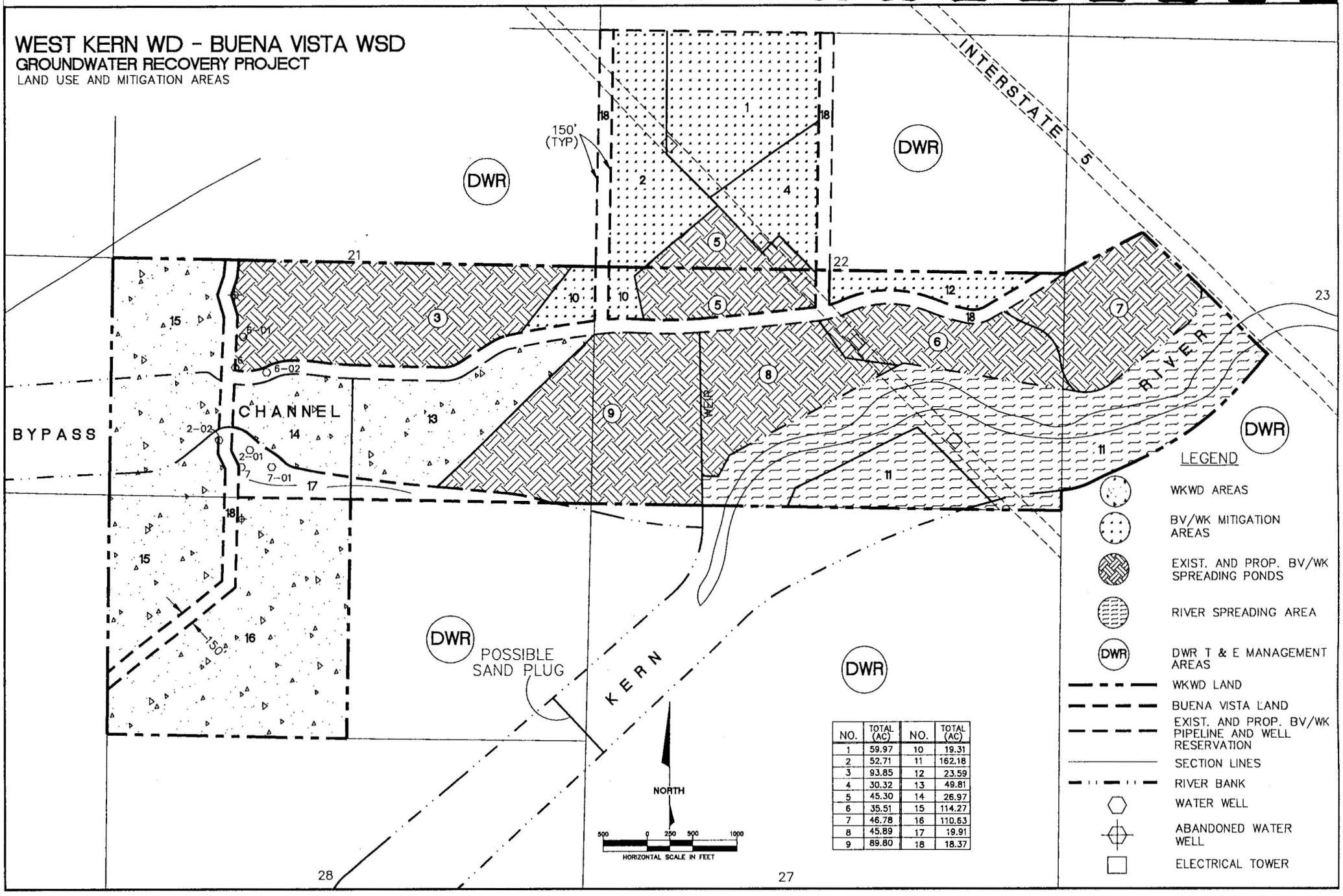
1	7/6/94	APPROX. LOCATION OF BORINGS	JMW	LS

West Kern Water District
P.O. Box MM
Taft, CA 93268-0024
805 763-3151 • FAX 805 765-4271

WEST KERN WD - BUENA VISTA WSD

GROUNDWATER RECOVERY PROJECT

LAND USE AND MITIGATION AREAS



NO.	TOTAL (AC)	NO.	TOTAL (AC)
1	59.97	10	19.31
2	52.71	11	162.18
3	93.85	12	23.59
4	30.32	13	49.81
5	45.30	14	26.97
6	35.51	15	114.27
7	46.78	16	110.63
8	45.89	17	19.91
9	89.80	18	18.37

EXHIBIT F

EXHIBIT G-1

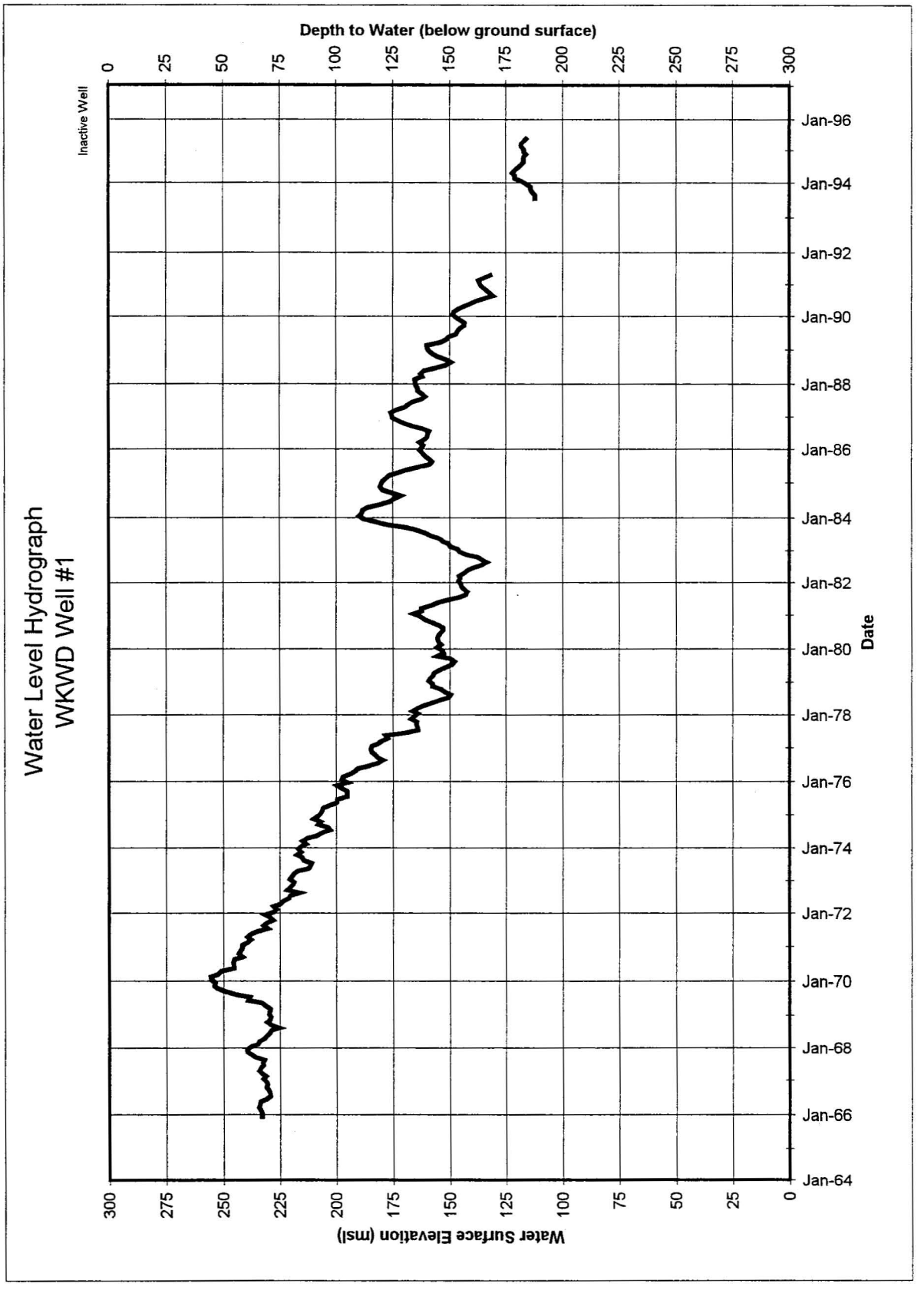
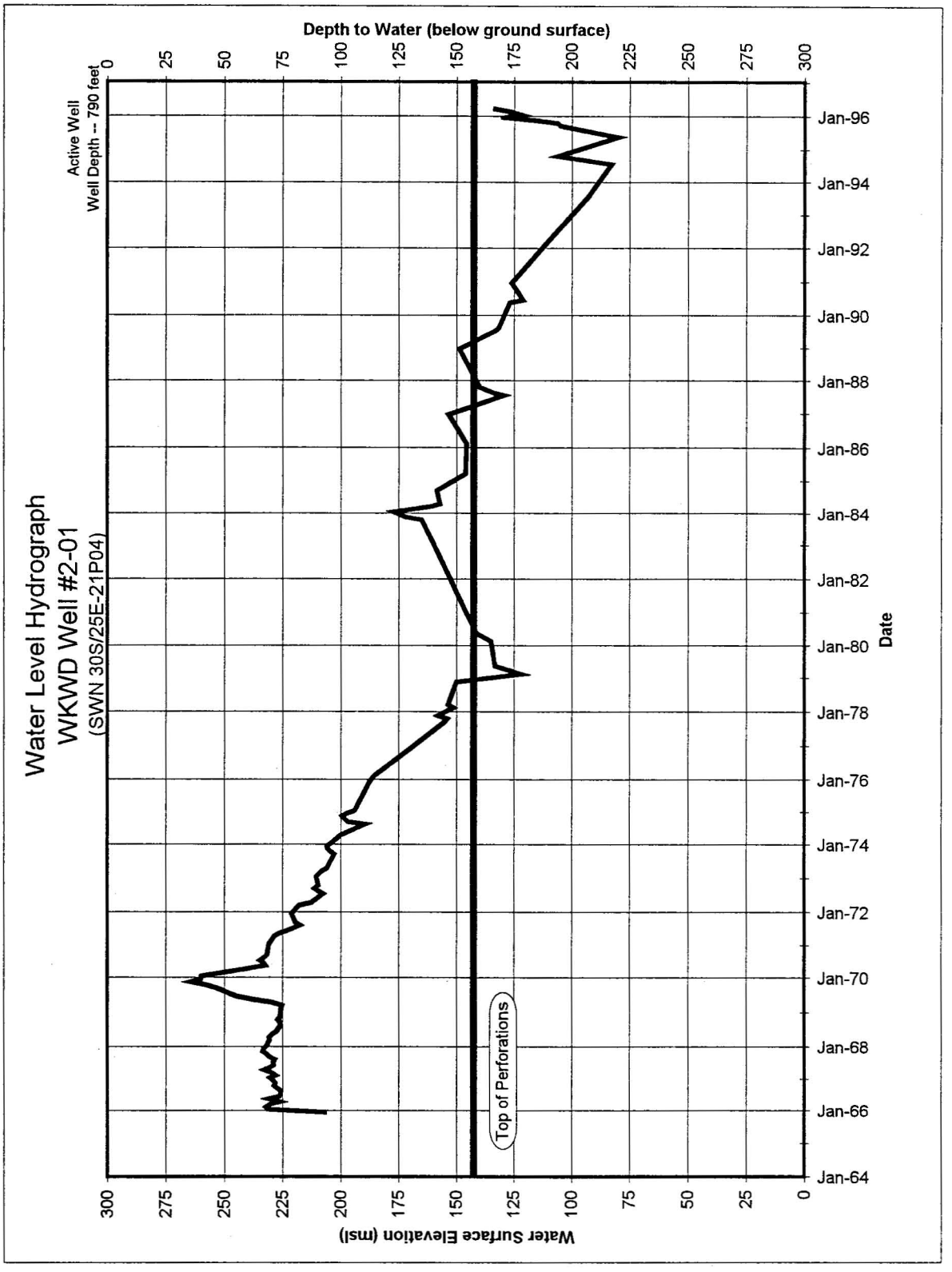

Water Level Hydrograph
WKWD Well #1
Depth to Water (below ground surface)
0
25
50
75
100
125
150
175
200
225
250
275
300
Inactive Well
Jan-96
Jan-94
Jan-92
Jan-90
Jan-88
Jan-86
Jan-84
Jan-82
Jan-80
Jan-78
Jan-76
Jan-74
Jan-72
Jan-70
Jan-68
Jan-66
Jan-64
Date
Water Surface Elevation (msl)

EXHIBIT G-2


Water Level Hydrograph
WKWD Well #2-01
(SWN 30S/25E-21P04)
Depth to Water (below ground surface)
Active Well
Well Depth -- 790 feet
0
25
50
75
100
125
150
175
200
225
250
275
300
Jan-96
Jan-94
Jan-92
Jan-90
Jan-88
Jan-86
Jan-84
Jan-82
Jan-80
Jan-78
Jan-76
Jan-74
Jan-72
Jan-70
Jan-68
Jan-66
Jan-64
Date
Top of Perforations
Water Surface Elevation (msl)

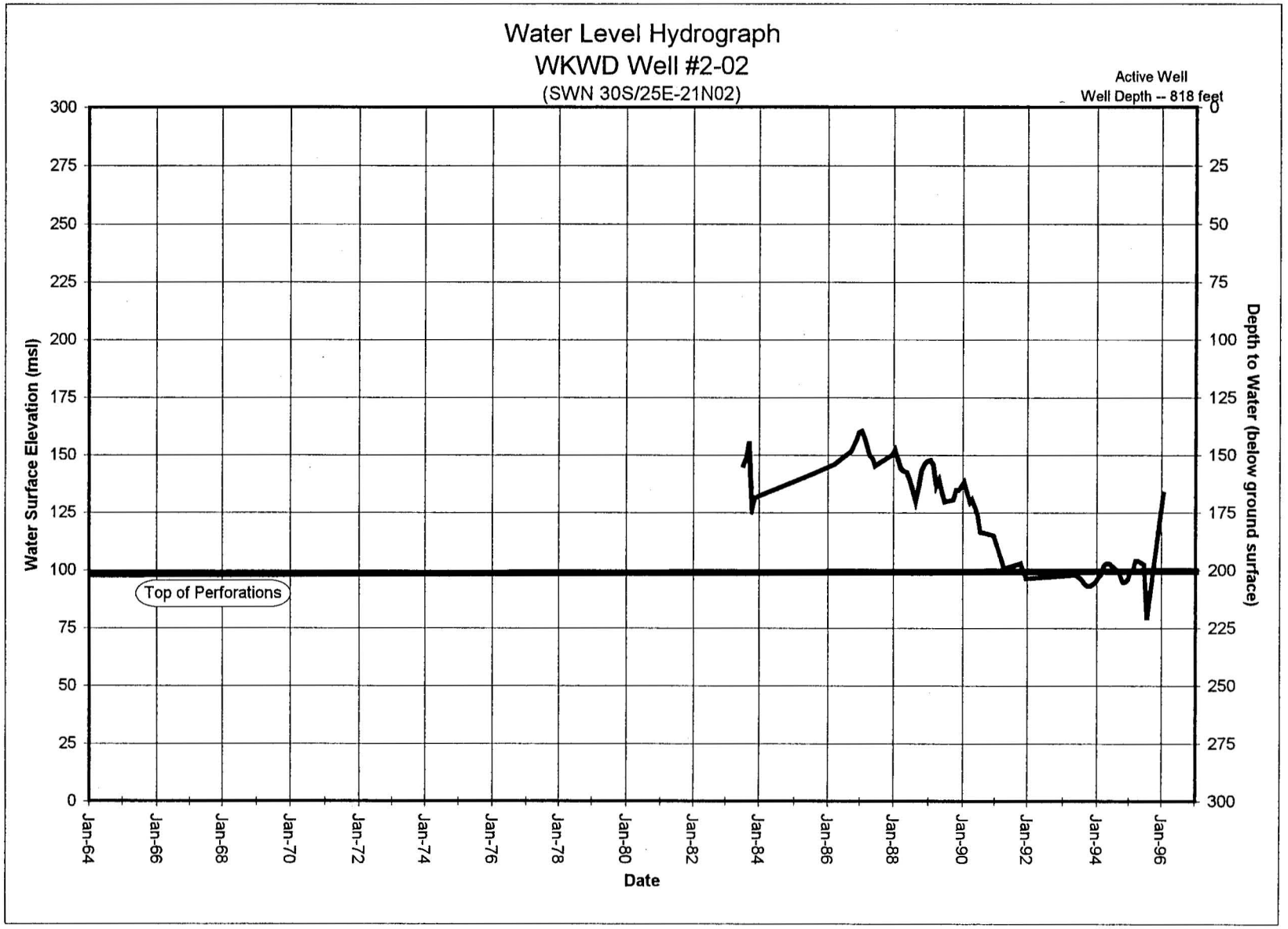

Water Level Hydrograph
WKWD Well #2-02
(SWN 30S/25E-21N02)
Active Well
Well Depth -- 818 feet
Water Surface Elevation (msl)
Depth to Water (below ground surface)
Top of Perforations
Date
300
275
250
225
200
175
150
125
100
75
50
25
0
Jan-64
Jan-66
Jan-68
Jan-70
Jan-72
Jan-74
Jan-76
Jan-78
Jan-80
Jan-82
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96

EXHIBIT G-3

EXHIBIT G-4

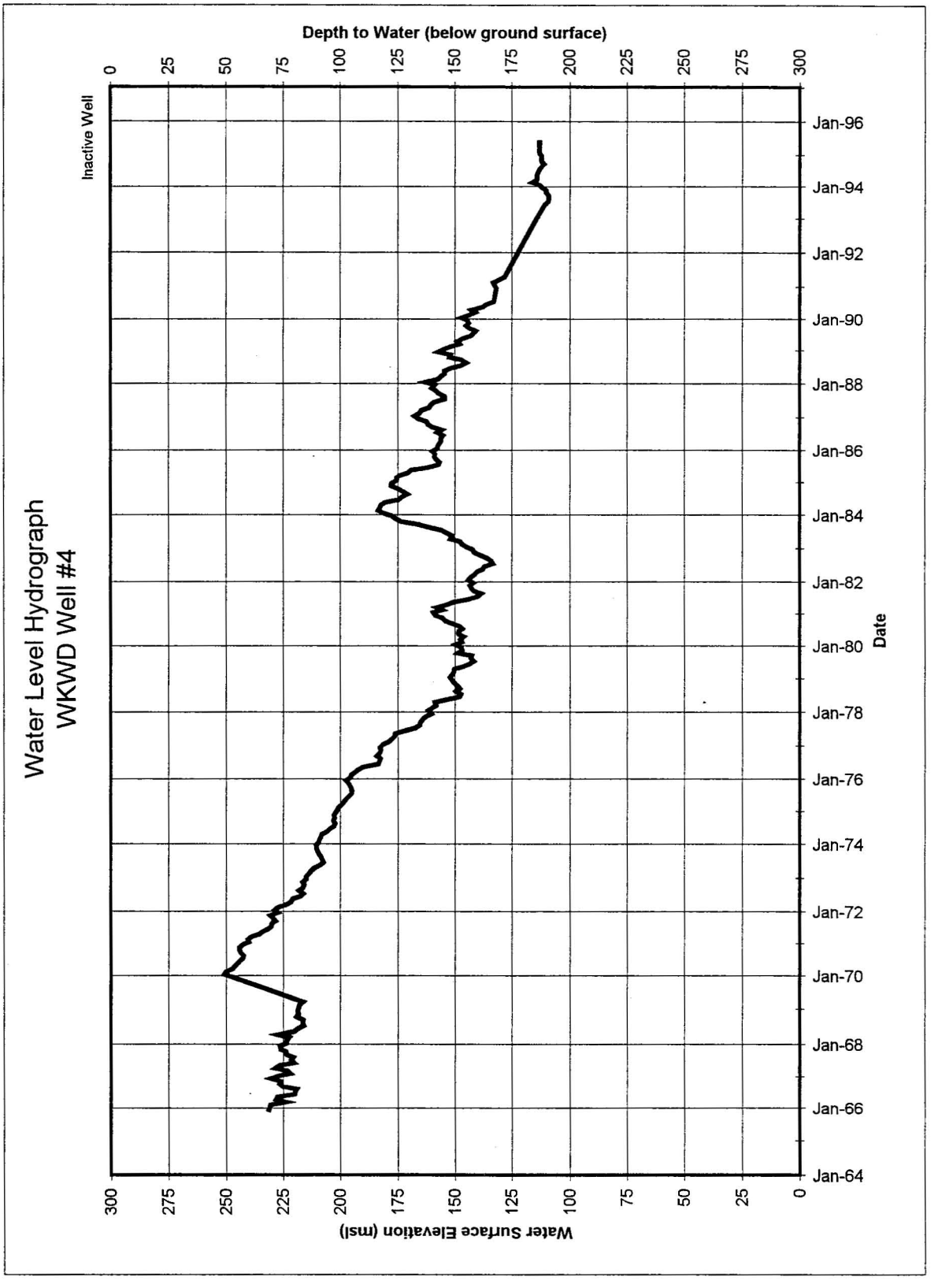

Water Level Hydrograph
WKWD Well #4
Depth to Water (below ground surface)
0
25
50
75
100
125
150
175
200
225
250
275
300
Inactive Well
Jan-96
Jan-94
Jan-92
Jan-90
Jan-88
Jan-86
Jan-84
Jan-82
Jan-80
Jan-78
Jan-76
Jan-74
Jan-72
Jan-70
Jan-68
Jan-66
Jan-64
Date
Water Surface Elevation (msl)

EXHIBIT G-5

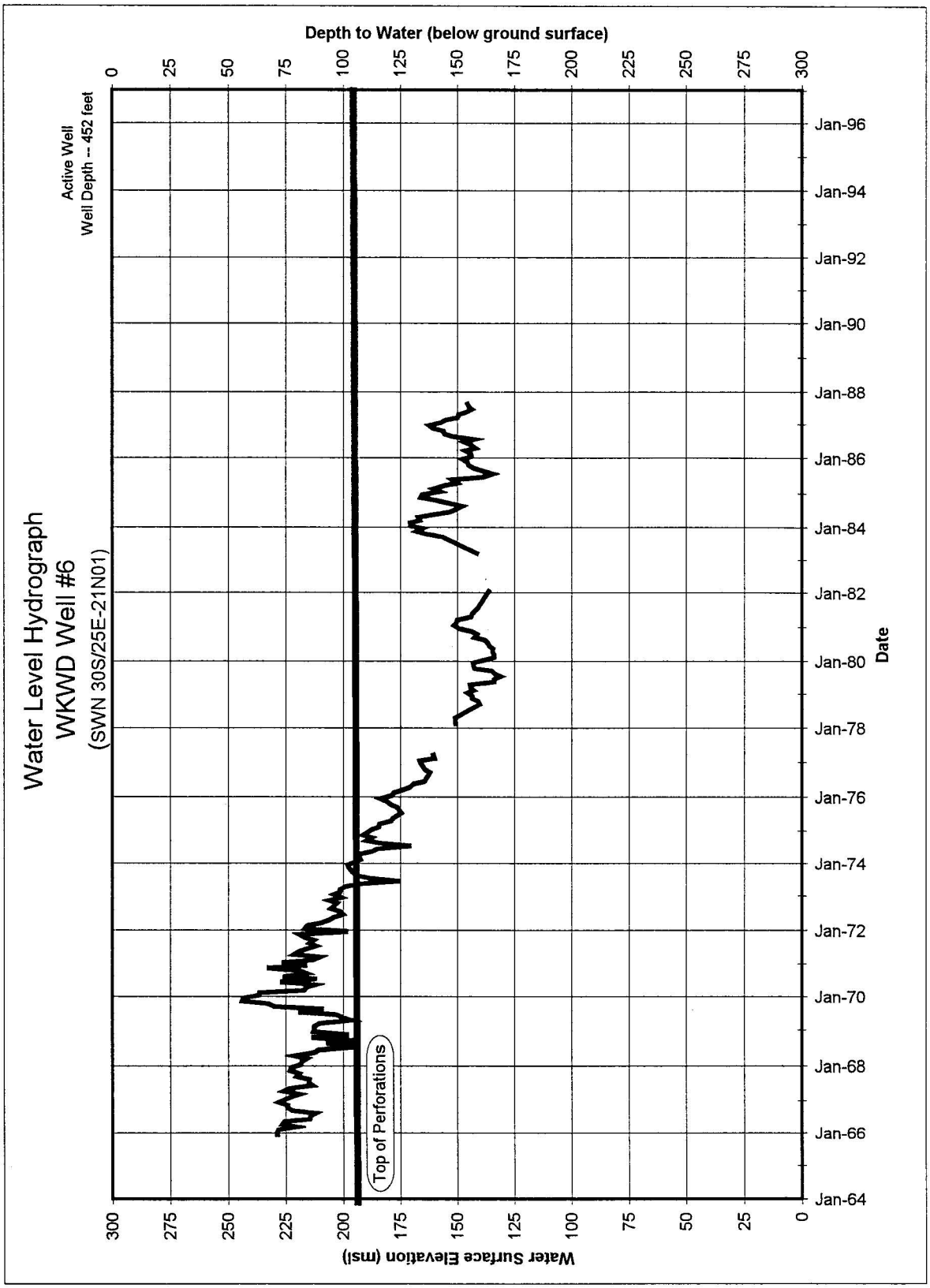

Water Level Hydrograph
WKWD Well #6
(SWN 30S/25E-21N01)
Active Well
Well Depth -- 452 feet
Depth to Water (below ground surface)
0
25
50
75
100
125
150
175
200
225
250
275
300
Jan-96
Jan-94
Jan-92
Jan-90
Jan-88
Jan-86
Jan-84
Jan-82
Jan-80
Jan-78
Jan-76
Jan-74
Jan-72
Jan-70
Jan-68
Jan-66
Jan-64
Date
Top of Perforations
Water Surface Elevation (msl)

EXHIBIT G-6

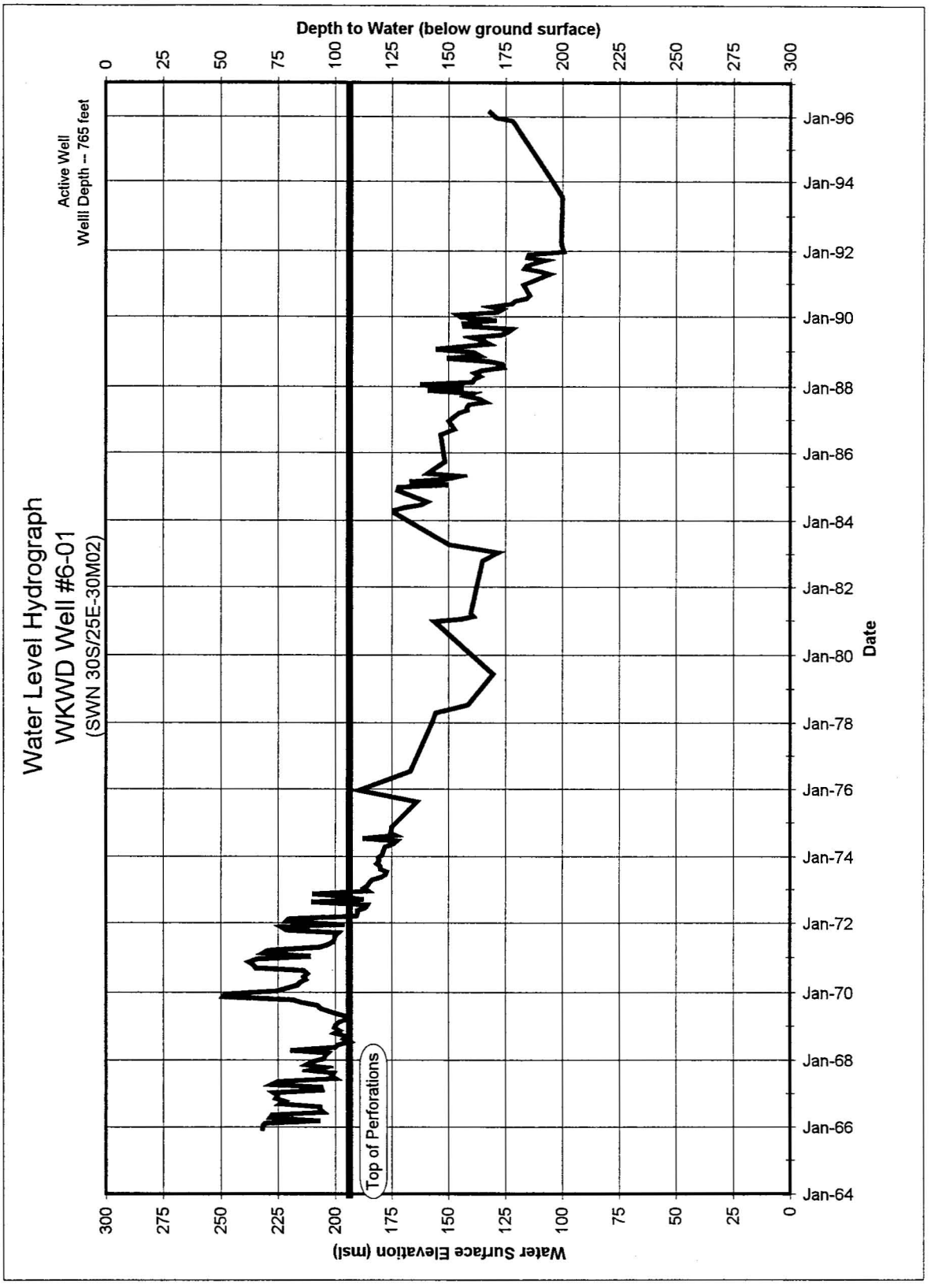

Water Level Hydrograph
WKWD Well #6-01
(SWN 30S/25E-30M02)
Active Well
Welll Depth -- 765 feet
Depth to Water (below ground surface)
0
25
50
75
100
125
150
175
200
225
250
275
300
Jan-96
Jan-94
Jan-92
Jan-90
Jan-88
Jan-86
Jan-84
Jan-82
Jan-80
Jan-78
Jan-76
Jan-74
Jan-72
Jan-70
Jan-68
Jan-66
Jan-64
Date
Top of Perforations
Water Surface Elevation (msl)

EXHIBIT G-7

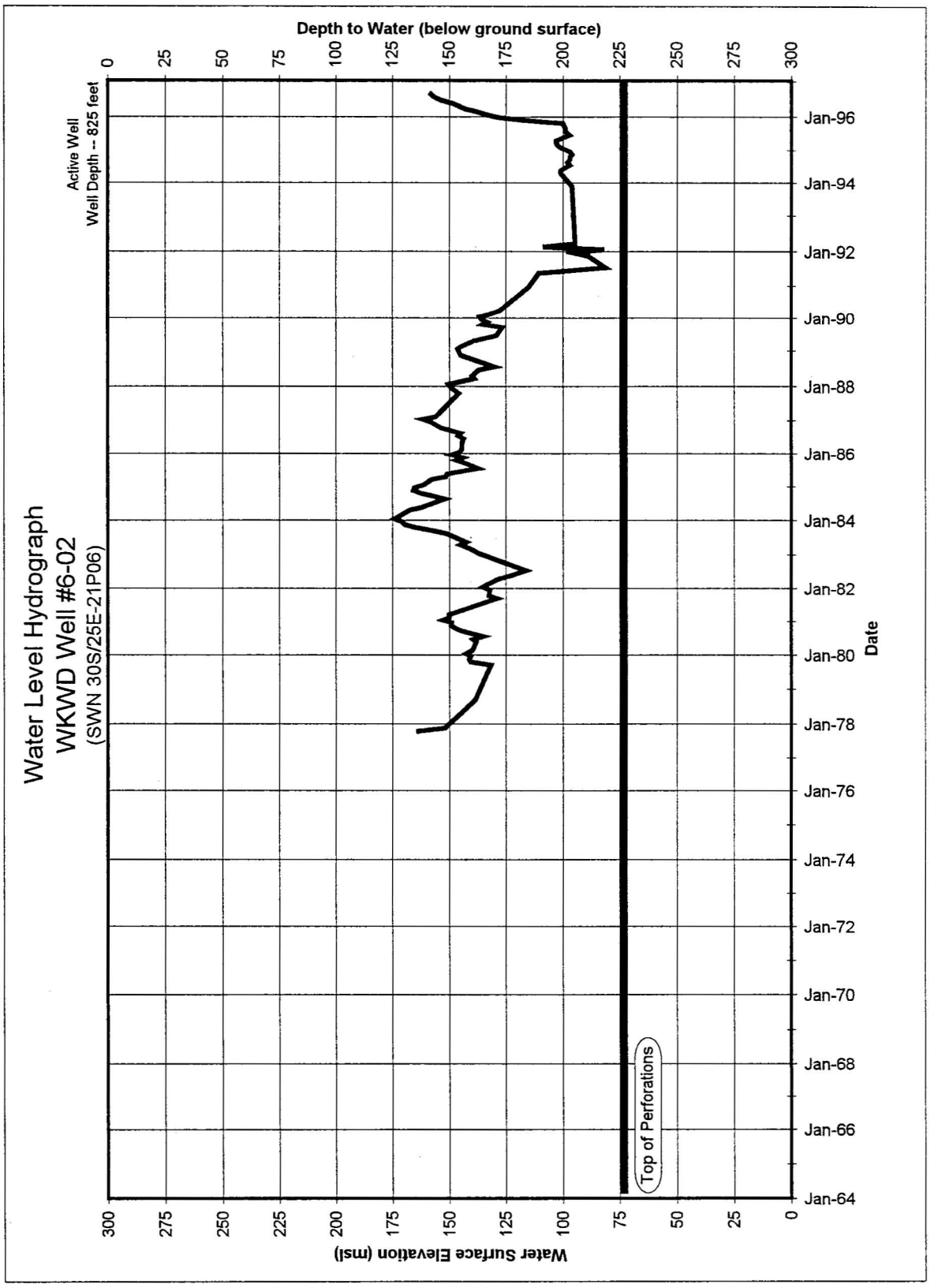

Water Level Hydrograph
WKWD Well #6-02
(SWN 30S/25E-21P06)
Active Well
Well Depth -- 825 feet
Depth to Water (below ground surface)
0
25
50
75
100
125
150
175
200
225
250
275
300
Water Surface Elevation (msl)
Jan-96
Jan-94
Jan-92
Jan-90
Jan-88
Jan-86
Jan-84
Jan-82
Jan-80
Jan-78
Jan-76
Jan-74
Jan-72
Jan-70
Jan-68
Jan-66
Jan-64
Date
Top of Perforations

EXHIBIT G-8

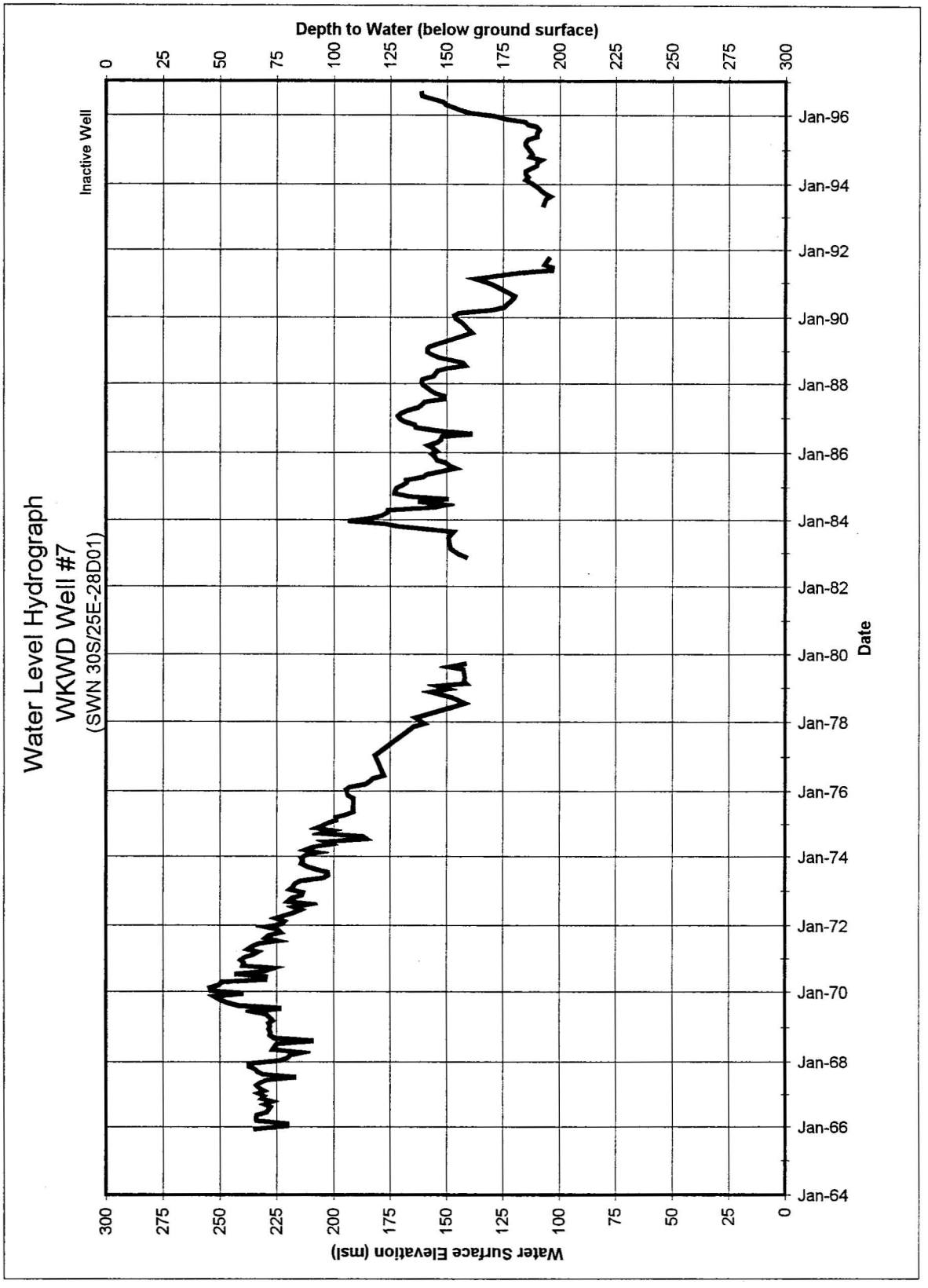

Water Level Hydrograph
WKWD Well #7
(SWN 30S/25E-28D01)
Inactive Well
Depth to Water (below ground surface)
0
25
50
75
100
125
150
175
200
225
250
275
300
Water Surface Elevation (msl)
300
275
250
225
200
175
150
125
100
75
50
25
0
Jan-96
Jan-94
Jan-92
Jan-90
Jan-88
Jan-86
Jan-84
Jan-82
Jan-80
Jan-78
Jan-76
Jan-74
Jan-72
Jan-70
Jan-68
Jan-66
Jan-64
Date

EXHIBIT G-9

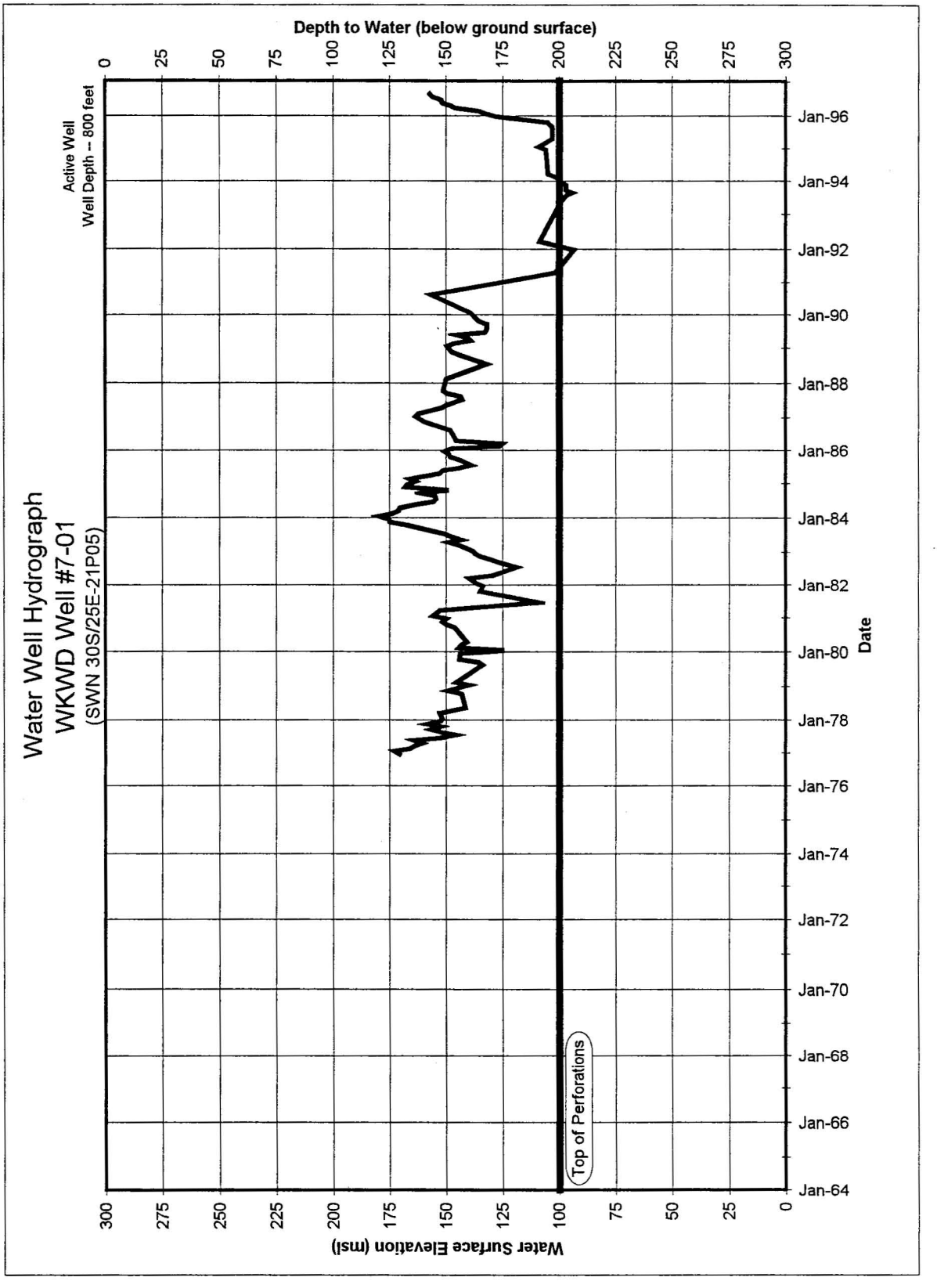
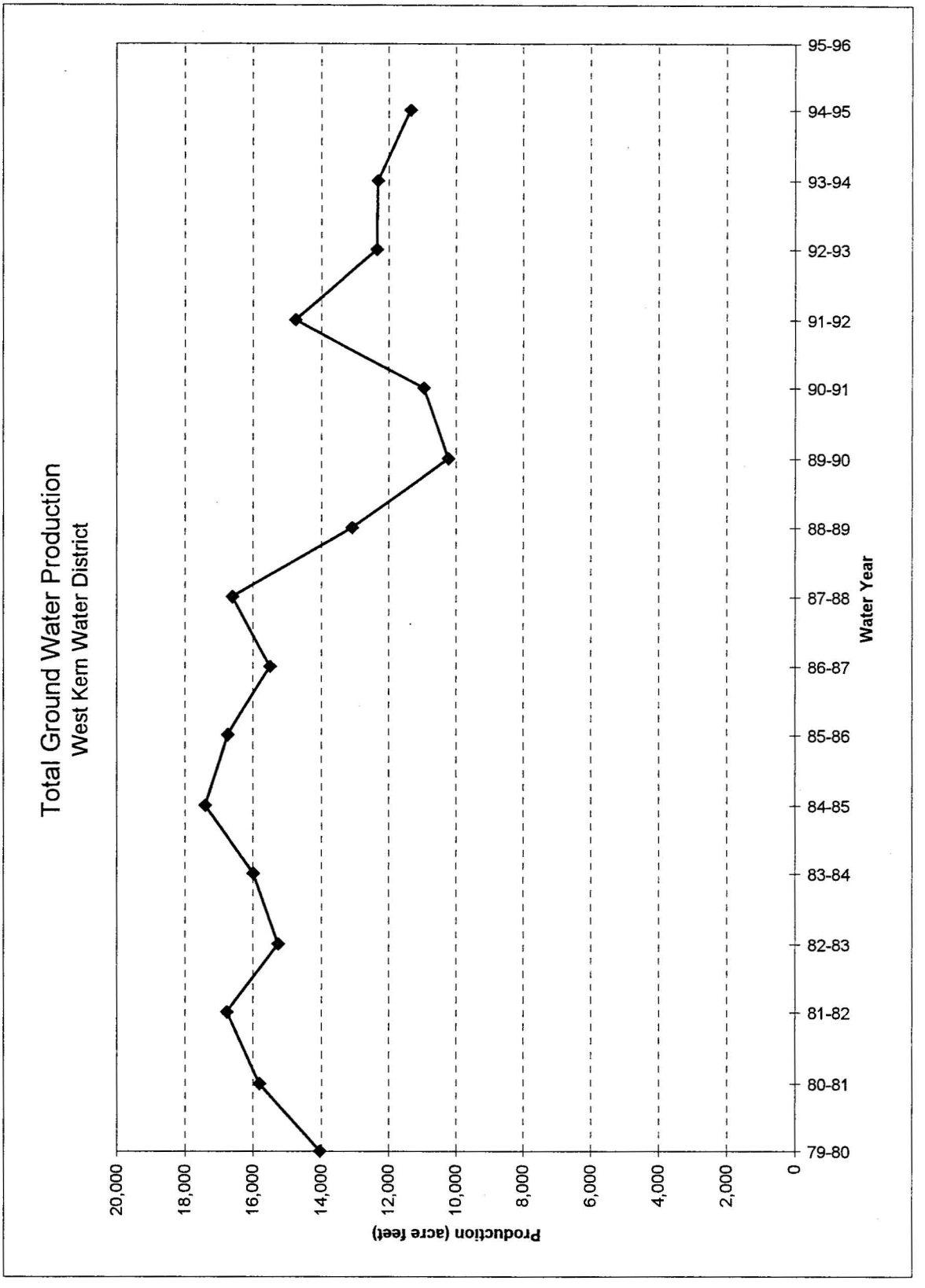

Water Well Hydrograph
WKWD Well #7-01
(SWN 30S/25E-21P05)
Depth to Water (below ground surface)
0
25
50
75
100
125
150
175
200
225
250
275
300
Active Well
Well Depth -- 800 feet
Jan-96
Jan-94
Jan-92
Jan-90
Jan-88
Jan-86
Jan-84
Jan-82
Jan-80
Jan-78
Jan-76
Jan-74
Jan-72
Jan-70
Jan-68
Jan-66
Jan-64
Date
Top of Perforations
Water Surface Elevation (msl)

EXHIBIT G-10


Total Ground Water Production
West Kern Water District
Production (acre feet)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Water Year
95-96
94-95
93-94
92-93
91-92
90-91
89-90
88-89
87-88
86-87
85-86
84-85
83-84
82-83
81-82
80-81
79-80

NORTH

1/2 0 1/4 1/2 1

HORIZONTAL SCALE IN MILES

INTERSTATE 5

Cal. Edison Elec. Lines & Towers

WKWD WELL FIELD PROPERTY

KERN RIVER

LEGEND

200 Water Level Contour

A1 ● Well Location

Limit of Area of Study

REV NO.	DATE	DESCRIPTION	DRAWN BY	CHK'D BY

westkern water district
Taft, CA 93268-0024
FAX 805 765-4271
P.O. Box MM
805 763-3151

GROUND WATER SURFACE ELEVATION MAP
Spring 1976

ISSUE	AS NOTED
DATE	1/22/97
DRAWN BY	TCB
CAD FILENAME	96-71-1974

J. PEARSON	B. HODGES
M. WADDLE	G. MELTON
T. TURLEY	OTHER

EXHIBIT G11

NORTH

1/2 0 1/4 1/2 1

HORIZONTAL SCALE IN MILES

160 160 170 180 190 200 210 220 230 240

170 180 90

WKWD WELL FIELD PROPERTY

KERN RIVER

So Cal Edison Elec. Lines & Towers

INTERSTATE 5

LEGEND

200 Water Level Contour

A1 Well Location

Limit of Area of Study

REV. NO.	DATE	DESCRIPTION	DRAWN BY	CHK'D BY

West Kern water district
Taft, CA 93268-0024
FAX 805 765-4271
P.O. Box MM
805 763-3151

GROUND WATER SURFACE ELEVATION MAP
Spring 1986

SCALE AS NOTED

DATE 1/22/87

DRAWN BY TCB

CHK'D BY

DATE PLOTTED 05-71-1974

J. PEARSON	B. HODGES
M. WADDLE	G. MELTON
T. TURLEY	OTHER

EXHIBIT G12

NORTH

1/2 0 1/4 1/2 1

HORIZONTAL SCALE IN MILES

120 130 140 150 160 170 180 190 110

INTERSTATE 5

So. Cal. Edison Elec. Lines & Towers

WKWD WELL FIELD PROPERTY

KERN RIVER

G1 F1 P1 R1 C1 A1 E1 J1 L1 B1 C2 Q1 4 6-01 6-02 2-02 7-01 2-01

LEGEND

200 Water Level Contour

A1 ● Well Location

Limit of Area of Study

REV. NO.	DATE	DESCRIPTION	DRAWN BY	CHK'D BY

West Kern water district
P.O. Box MM
Taft, CA 93268-0024
805 763-3151
FAX 805 765-4271

GROUND WATER SURFACE ELEVATION MAP
Spring 1994

SCALE: AS NOTED

DATE: 1/22/97

DRAWN BY: TCS

CAD FILENAME: 96-71-1974

J. PEARSON	B. HODGES
M. WADDLE	G. MELTON
T. TURLEY	OTHER

EXHIBIT G13

NORTH

1/2 0 1/4 1/2 1

HORIZONTAL SCALE IN MILES

140 150 160 170 180 190 200 210 240 270 270 260 250 240 230 220 210 200 190 180 170 160 150 140

WKWD WELL FIELD PROPERTY

KERN RIVER

So Cal Edison Elec Lines & Towers

INTERSTATE 5

LEGEND

200 — Water Level Contour

A1 • Well Location

Limit of Area of Study

REV NO.	DATE	DESCRIPTION	DRAWN BY	CHK'D BY

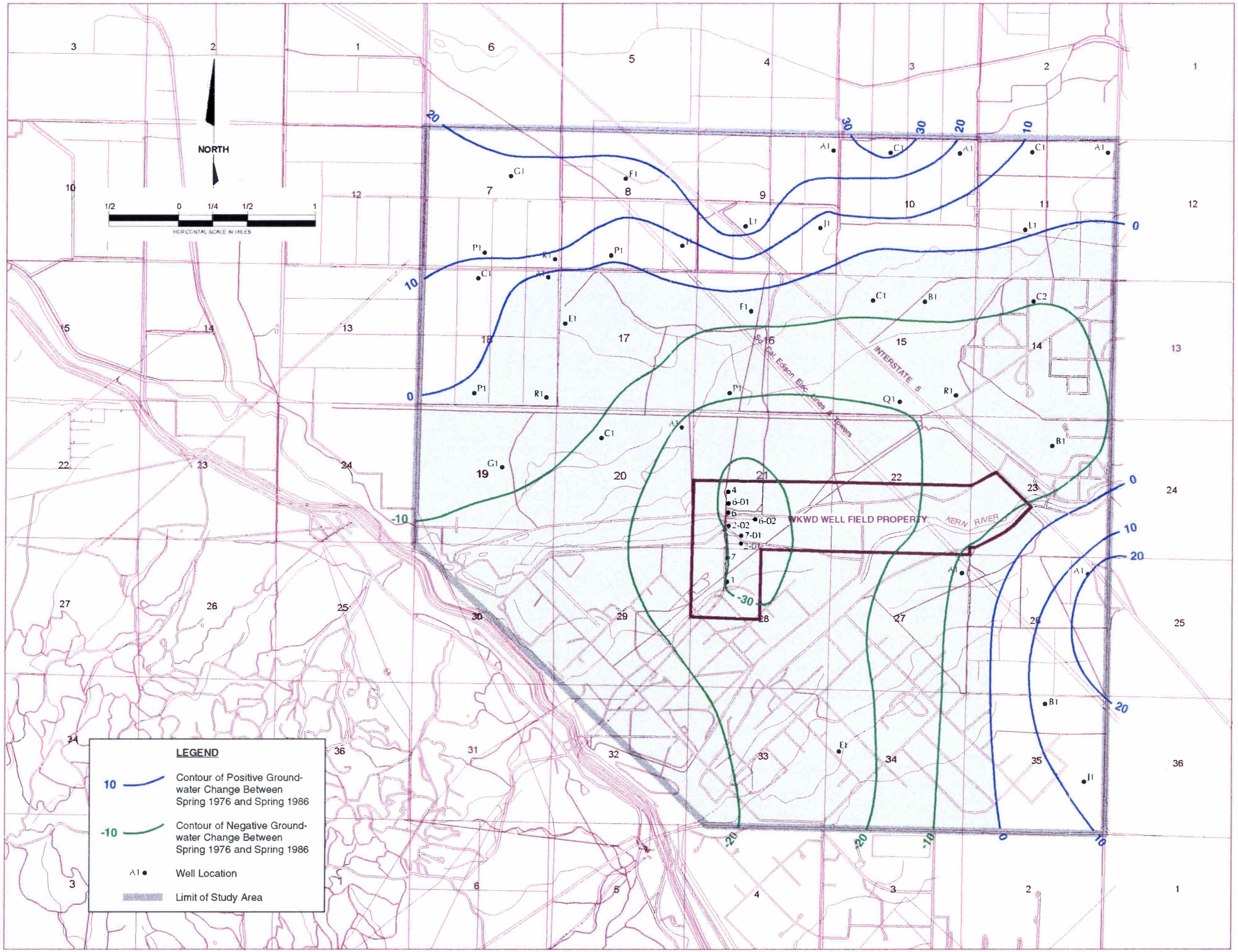
WEST KERN water district
Taft, CA 93268-0024
FAX 805 765-4271
P.O. Box MM
805 763-3151

GROUND WATER SURFACE ELEVATION MAP
Spring 1996

SCALE: AS NOTED
DATE: 1/22/97
DRAWN BY: TCB
CAD FILENAME: 89-71-1974

J. PEARSON	B. HODGES
M. WADDLE	G. MELTON
T. TURLEY	OTHER

EXHIBIT G14



REV. NO.	DATE	DESCRIPTION	DRAWN BY	CHK'D BY

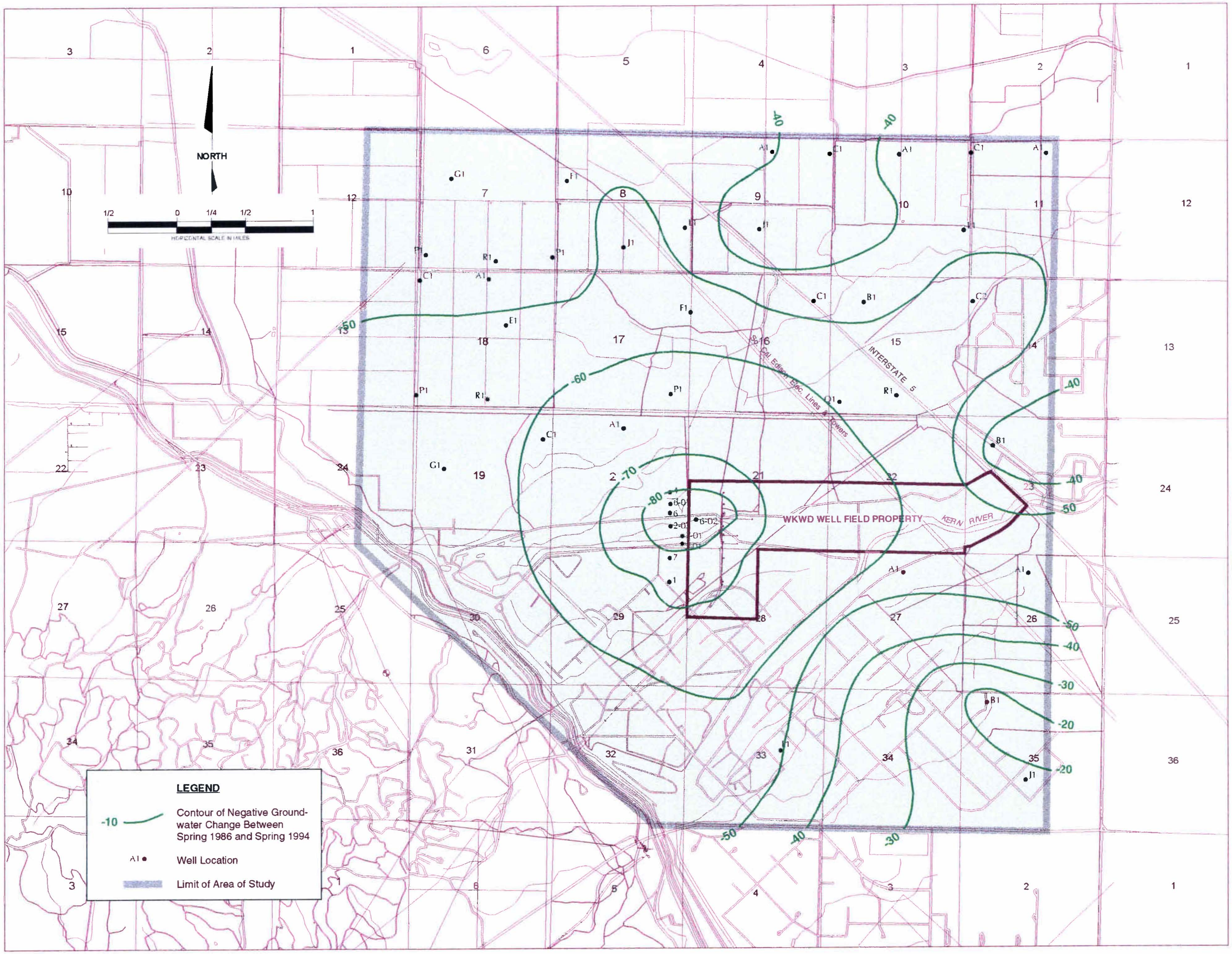
west kern water district
P.O. Box MM
Taft, CA 93268-0024
805 763-3151
FAX 805 765-4271

CHANGE IN GROUNDWATER ELEVATION
Spring 1976 to Spring 1986

SCALE: AS NOTED
DATE: 1/22/97
DRAWN BY: TCB
CAD FILENAME: 96-71-1974

J. PEARSON	B. HODGES
M. WADDLE	G. MELTON
T. TURLEY	OTHER

EXHIBIT G15



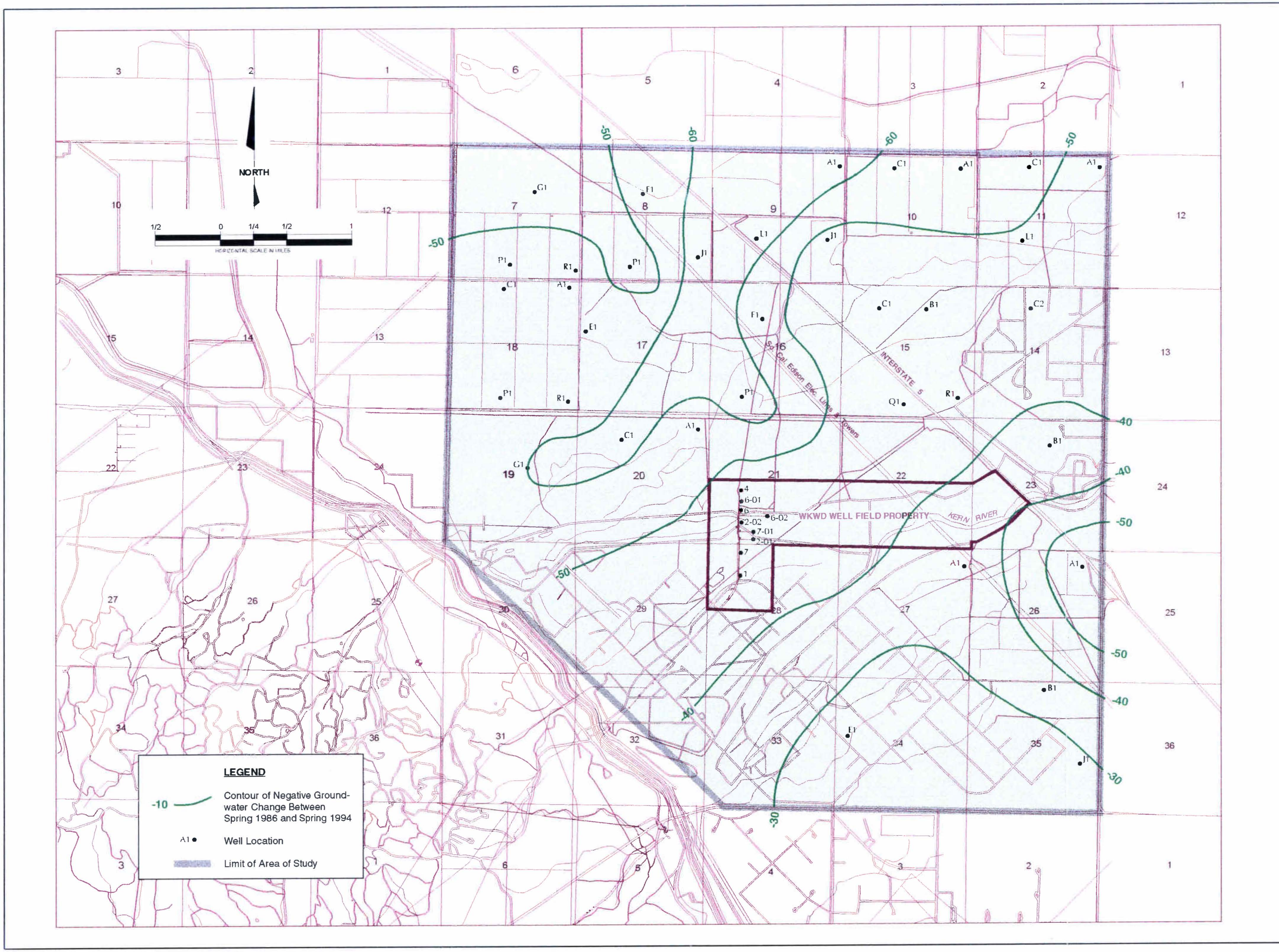
REV. NO.	DATE	DESCRIPTION	DRAWN BY	CHK'D BY

westkern water district
P.O. Box MM Taft, CA 93268-0024
805 763-3151 FAX 805 765-4271

CHANGE IN GROUNDWATER ELEVATION
Spring 1976 to Spring 1994

J. PEARSON	B. HODGES
M. WADDLE	G. MELTON
T. TURLEY	OTHER

EXHIBIT G16



REV. NO.	DATE	DESCRIPTION	DRAWN BY	CHK'D BY

West Kern water district
P.O. Box MM
Taft, CA 93268-0024
805 763-3151
FAX 805 765-4271

CHANGE IN GROUNDWATER ELEVATION
Spring 1986 to Spring 1994

CAD FILENAME 96-71-1974 · DRAWN BY TCB · DATE 1/22/97 · SCALE AS NOTED

J. PEARSON	B. HODGES
M. WADDLE	G. MELTON
T. TURLEY	OTHER

EXHIBIT G17

NORTH

HORIZONTAL SCALE IN MILES
1/2 0 1/4 1/2 1

LEGEND

120 — Contour of Positive Groundwater Change Between Spring 1994 and Spring 1996

A1 • Well Location

Limit of Study Area

WKWD WELL FIELD PROPERTY

KERN RIVER

So Cal Edison Elec. Lines & Towers

INTERSTATE 5

REV. NO.	DATE	DESCRIPTION	DRAWN BY	CHK'D BY

West Kern water district
Taft, CA 93268-0024
FAX 805 765-4271
P.O. Box MM
805 763-3151

CHANGE IN GROUNDWATER ELEVATION
Spring 1994 to Spring 1996

SCALE: AS NOTED

DATE: 1/22/97

DRAWN BY: TCB

DAD FILENAME: 96-71-1974

J. PEARSON	B. HODGES
M. WADDLE	G. MELTON
T. TURLEY	OTHER

EXHIBIT G18

EXHIBIT "H"

GROUNDWATER MANAGEMENT PLAN

RULES AND REGULATIONS

TO IMPLEMENT THE

GROUNDWATER MANAGEMENT PLAN

OF

WEST KERN WATER DISTRICT

1. **Rules and Regulations Governing Distribution of Water and Maintenance of Distribution System of West Kern Water District:**

The Rules and Regulations adopted by the District on May 27, 1997 and attached hereto as Exhibit "H" are hereby incorporated in these Rules and Regulations.

2. **Water Monitoring**

(a) **Semi-annual Groundwater Level Measurement**: At least twice per year, District shall provide staff at its expense to monitor and measure the depth to standing groundwater at well sites within District. In its sole discretion, District shall select the number and location of well sites. District shall prepare maps as required by the Plan.

(b) **Water Quality Sampling and Testing**: District along with other local agencies as defined in Water Code Section 1075g,

("Local Agencies") shall implement a water sampling and monitoring program for water quality purposes in accordance with a Memorandum of Understanding entered into by District and those Local Agencies.

3. **Direct Recharge**: When feasible, District will consider delivery of water to recharge basins owned and maintained by Local Agencies within the District. All such deliveries of recharge water shall be at the discretion of District Board of Directors ("Board of Directors"). The Local Agency owning the recharge basin shall be liable for any damages connected with or arising out of transportation use, storage or recharge of such water. District shall be responsible for any damage to Agency resulting from the intentional or negligent acts of District or its employees or agents.

4. **Indirect Recharge**:

   (a) **Canal Recharge**: District shall endeavor to monitor and evaluate recharge from canals when appropriate, as determined by District. Canals with good recharge capabilities will be evaluated for potential use as groundwater recharge facilities to receive recharge water during the off-irrigation season.

   (b) **Surface Water/Groundwater Pumping**: The District shall continue to divert and deliver surface water supplies of the

District to reduce groundwater pumping.

5. **Water Conservation - Water Regulation**: District's policies and procedures promote the beneficial use of water. Specific examples include instantaneous (orifice type of metering) flow measurements at all turnouts; with propeller meters at all turnouts associated with current or future pipeline projects. The District shall continue to promote policies that enhance water conservation policies. The District Board of Directors has the authority to adopt water conservation and water regulation policies for the District. If Agency adopts and enforces a water conservation plan within its boundaries, such Plan shall be effective to the extent it is not inconsistent with the District's Plan.

6. **Exportation of Groundwater**: After the adoption hereof, exportation and sale of groundwater shall only occur if such amounts exported and sold are excess to District's water supply needs and will not result in a significant net loss to District's total water supply. Minor amounts of urban drainage shall not be considered groundwater exportation subject to this paragraph.

7. **Well Drilling and Abandonment**: District will work with the agencies of jurisdiction in amending the water well ordinance applicable within the District to require a minimum of fifty (50) foot annular seal on all gravel packed wells.

8. **Groundwater Banking**: District shall endeavor to promote advantageous groundwater banking projects. The Board of Directors has the authority to control the destination of the District's California Aqueduct water under appropriate licenses.

9. **Intra-district Water Transfer**: District annually adopts a specific policy to address the issue of internal water transfers within the District. The District desires to reduce pumping from the groundwater by better utilization of surface water supplies. The Board of Directors has the authority to control the destination of the District's California Aqueduct water under appropriate licenses.

10. **Inter-district Water Transfer**: District shall endeavor to promote advantageous water transfers (water transfers that increase the water supply available within the District) between the District and other entities. The Board of Directors has the authority to initiate such transfers.

11. **Reduction in Groundwater Outflow**: The District's current water entitlement allocations result in additional pumping in the south and southwesterly areas of the District which may reduce groundwater outflow under certain circumstances. The groundwater outflow from the District is principally to the south and west. Existing surface water along with supplemental water, when available, will be used to improve the groundwater barrier along the

perimeter of the District to reduce the amount of outflow. The Board of Directors has the authority to adjust water entitlement allocations.

12. **Pumping Restrictions**: Only under special circumstances would pumping restrictions be imposed. The Board of Directors shall not impose such restrictions until after consulting with Local Agencies and holding a mandatory public hearing at least sixty (60) days prior to the effective date of such restrictions.

13. **Additional Water Supply and Storage**: The Board of Directors could impose such action only by Resolution.

14. **Redistribution of Surface Water**: The Board of Directors could impose such action by Resolution adopted after a mandatory public hearing held at least sixty (60) days prior to imposing such action.

RESOLUTION NO. 95-05

RESOLUTION OF THE BOARD OF DIRECTORS OF THE WEST KERN WATER DISTRICT FOR THE INTENTION TO DRAFT A GROUNDWATER MANAGEMENT PLAN IN COMPLIANCE WITH ASSEMBLY BILL 3030

WHEREAS, in 1992 the California Legislature adopted AB 3030, effective January 1, 1993, and embodied in the California Water Code, Sections 10750, et seq., which permits local agencies to work cooperatively to manage groundwater resources within their jurisdictions; and

WHEREAS, Sections 10753 of the Water Code authorizes any local agency, whose service area includes a groundwater basin, or a portion of a groundwater basin, not subject to groundwater management pursuant to other provisions of law or court order, to adopt and implement a groundwater management plan; and

WHEREAS, pursuant to the requirements of the Groundwater Management Act a noticed hearing was held to allow for public participation and comment on the District's intention to draft a groundwater management plan;

WHEREAS, the Board of Directors has determined that it is in the best interest of the District and its customers to draft a groundwater management plan;

NOW, THEREFORE, BE IT RESOLVED as follows:

1. That the District's staff draft a groundwater management program, including plans and regulations to implement and enforce said plan, all as authorized by the Groundwater Management Act (California Water Code, Sections 10750, et seq.).

2. After the proposed groundwater management program is drafted, the District's staff is directed to present said plan to the Board of Directors and the public at a second noticed hearing for the purpose of consideration of the adoption of said plan.

All of the foregoing being upon the motion of Director McNinch, seconded by Director Hartman and carried by the following vote:

AYES: President Bob G. Bledsoe
Director Donna M. Hartman
Director Christopher H. McNinch
Director Stephen J. Steinhoffer

NOES: None

ABSENT: Director Richard M. Casagrande

ABSTAIN: None

I HEREBY CERTIFY that the foregoing Resolution is the resolution of the Board of Directors of the West Kern Water District as duly passed and adopted at a legally convened meeting held the 28th day of November, 1995.

WITNESS my hand and the official seal of said Board of Directors this 29th day of November, 1995.

Bob G. Bledsoe, President of the Board of Directors of West Kern Water District

SECRETARY'S CERTIFICATE

I, Jerry W. Pearson, being the appointed secretary of the West Kern Water District, do hereby certify that the above and foregoing Resolution 95-05 was duly adopted by the Board of Directors of said District at a legally convened meeting of said Board held on the 28th day of November, 1995, that the above and foregoing is a full, true, and correct copy of RESOLUTION 95-05, and that the same has not been amended or repealed.

ATTEST:

JERRY W. PEARSON, Secretary of the Board of Directors of the West Kern Water District

(SEAL)