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VOLUME I  
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**EVALUATION OF SHELL CHEMICAL COMPANY'S GROUND-WATER  
DBCP CONTROL SYSTEM AT ROCKY MOUNTAIN ARSENAL**

**FY 85/86**

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**VOLUME I  
REPORT**

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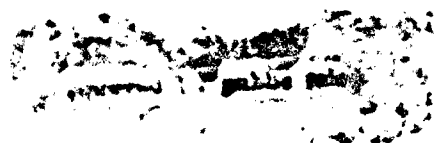
by

**Rocky Mountain Arsenal  
Information Center  
Commerce City, Colorado**

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**Program Manager Staff Office  
Program Manager, Rocky Mountain Arsenal  
Contamination Cleanup,  
Aberdeen Proving Ground, Maryland 21010-5401**

**June 1988**



# REPORT DOCUMENTATION PAGE

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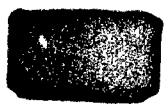
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13. ABSTRACT (Maximum 200 words) THIS STUDY IS PART OF A CONTINUING ASSESSMENT OF THE PERFORMANCE OF THE IRONDALE DBCP CONTROL SYSTEM IN PREVENTING THE OFF-POST MIGRATION OF CONTAMINATED GROUND WATER. IT COVERS THE PERIOD OF OCTOBER, 1984, THROUGH SEPTEMBER, 1986. THE PURPOSES OF THIS STUDY ARE TO: 1. DOCUMENT THE MONITORING DATA COLLECTED SINCE THE FY 84 REPORT 2. INCORPORATE THE DATA COLLECTED BY SHELL 3. INCORPORATE RELEVANT DATA COLLECTED UNDER OTHER INVESTIGATIVE PROGRAMS CONDUCTED BY THE ARMY DURING THE REPORT PERIOD 4. DOCUMENT THE CONTINUING EFFECTIVENESS OF THE SYSTEM IN PREVENTING OFF-POST MIGRATION OF DBCP CONTAMINATED GROUND WATER. PREPARATION OF THIS REPORT INCLUDED THE COLLECTION AND EVALUATION OF DATA FROM MONITORING WELLS, THE TREATMENT SYSTEM, AND SACSD PRODUCTION WELLS. THE DATA WERE USED TO DEVELOP WATER TABLE EVALUATION MAPS, GROUND WATER PROFILES, <div style="text-align: center; font-size: 24pt; font-weight: bold; margin-top: 10px;">94 1110 048</div>	DTIC QUALITY ASSURED 8
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**EXECUTIVE SUMMARY**

Introduction

This report is the fourth in a series prepared to document and assess the status and overall operational performance of the Irondale DBCF Control System. The report consist of two volumes; Volume I is the main text and includes the data bases developed to support the evaluation and assessments; and Volume II contains all of the hydrogeologic and contaminant distribution plates. This report covers the operating period from October 1984 to September 1986 (fiscal years (FY) 1985 through 1986).

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Monitoring Activities

Rocky Mountain Arsenal  
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 Commerce City, Colorado

Ground-Water

The ground-water monitoring programs conducted during FY 85-86 consisted of the collection of water samples for chemical analysis to define water quality and water elevation data. This was a cooperative effort between RMA and SCC personnel until January of 1986 when Shell assumed full responsibility for ground-water sampling and water-level measurements. The chemical analysis and water level data are maintained on the Program Manager, Rocky Mountain Arsenal Cleanup (PM, RMA) computer system and the Rocky Mountain Arsenal Information Center (RIC) computer. These data bases were used as the primary source for the ground-water assessments.

Plant Operations

Monitoring of the treatment plant included collection of data on influent and effluent flow quantities, and on quality of water at various points in the treatment system. Shell Chemical Co. (SCC) provided monthly summaries of total flow through the treatment plant to RMA. SCC personnel periodically collected samples of influent and effluent at the treatment plant for chemical analysis and provided monthly data summaries to RMA.

## Summary of Operational Effectiveness

The Irondale DBCP Control System was constructed for the primary purpose of eliminating the migration of DBCP contaminated ground-water off the Arsenal and into the Irondale community. In order to evaluate the system's ability to intercept and control ground-water flow, and to remove the DBCP in this flow to an acceptable level, a system operational assessment is needed.

### Ground-Water Flow and Elevations

The ground-water elevation maps (Plates 5 through 12, Volume II) indicate that the dewatering wells have produced a general depression in the ground-water levels near the center of the system. An area of elevated ground-water levels has been created immediately northwest of the line of recharge wells as a result of the recharge of treated water. This has produced a ground-water divide resulting in a local reversal in the ground-water gradient from the northwest to the southeast of the natural ground-water gradient. As a result of both conditions, ground water in the vicinity of the system tends to flow radially into the area bounded by the two rows of extraction wells, thus, providing the localized control of ground-water flow direction.

### Contamination Control Operations

The DBCP concentration maps indicate that the control system is intercepting the flow of DBCP contaminated ground water in this area. The data obtained from the analysis of influent and effluent samples from the treatment plant indicate that the plant is effectively removing DBCP, resulting in the recharge of contaminant-free water. The effectiveness of the control system is further evidenced by the fact that no DBCP concentrations above the detectable level were found in any of the ground-water samples collected from wells in the Irondale community. Thus, the data indicate that the Irondale DBCP Control System has been effective eliminating the migration of DBCP contaminated ground water off the arsenal in its area of influence during the FY85-86 time frame.

### System Reliability

System operating reliability is an important factor in the overall effectiveness of the system. Factors that appear to have affected the flow rate through the plant most during the study period included routine maintenance, equipment failures, and electrical power outages. The equipment failures were minor in nature, and usually resulted in a maximum of a few hours downtime. Some of the power failures resulted in downtimes of a longer duration. SCC estimated that electrical power failures represented approximately 64% of the system downtime in 1986. Carbon replacement, a major maintenance item, represented another 20%.

### Conclusions and Comments

The unconfined alluvial aquifer exhibited the approximate same seasonal flow fluctuation in FY85-86 as in prior years. Flow rates for both years are generally in the 1000 to 1550 gpm range. The Irondale DBCP Control System is intercepting much of the ground-water flow approaching from upgradient and is maintaining a consistent ground-water hydraulic gradient from the recharge wells towards the dewatering wells.

The Irondale DBCP Control System is effectively removing DBCP from the ground-water and reducing the off-post migration of ground-water contaminated with DBCP. The ground-water contours in the west and southwest portion of Section 33 are influenced by the pump rates of the SACWSD wells at sites 6 and 7. Increased pumping rates at these sites would be expected to result in increased influence on ground-water flow on the Arsenal in the vicinity of the system. There is a need to better define the ground-water flow in the western portion of Section 33 to accurately determine the influence of SAWSW wells on the flow toward the system and the fate of DBCP in that flow.

The overall effectiveness of the Irondale DBCP Control System is evidenced by the fact that no DBCP concentrations above the detectable level were found in any of the samples collected from the wells in the Irondale community during the FY85-86 time frame.

## PREFACE

This study was conducted as a cooperative effort by personnel from the Program Manager Staff Office for Rocky Mountain Arsenal Contamination Cleanup (PMSO), U. S. Army Engineer Waterways Experiment Station (WES), and Shell Chemical Company (SCC). Funding for participation by WES was provided by the Program Manager, Rocky Mountain Arsenal via Intra-Army Order Nos. 87-D-2 and 87-D-3. Mr. Edwin Berry served as Project Coordinator for the PMSO. Project management was provided by Messrs. David W. Strang, PMSO, Norman R. Francingues, WES Environmental Laboratory (EL), and James H. May, WES Geotechnical Laboratory (GL).

This study is part of a continuing assessment of the performance of the Irondale DBCP Control System at RMA. Previous work has been reported in three reports. The first report, "Evaluation of Shell Chemical Company's Ground-Water DBCP Control System, Rocky Mountain Arsenal, Colorado, Final Report Phase I," by Messrs. J. May and C. Whitten, documents system monitoring conducted during FY82. The second report, "Evaluation of Shell Chemical Company's Ground-Water DBCP Control System, Rocky Mountain Arsenal, Colorado, Final Report Phase II," by Messrs. J. May and C. Whitten, consolidates the system monitoring data collected over FY82 and FY83. The third report, "Evaluation of Shell Chemical Company's Ground-Water DBCP Control System, Rocky Mountain Arsenal, Colorado, Final Report," by Messrs. D. W. Thompson and C. Whitten, documents system monitoring conducted during FY84.

This report is the fourth operational assessment of the Irondale DBCP Control System at RMA. The contributing authors to this report were Messrs. Edwin W. Berry and Brian L. Anderson (PMSO), Jack H. Dildine, Douglas W. Thompson, Norman R. Francingues (WES-EL) and Paul Miller and William Murphy (WES-GL). This study and report were authorized by the Program Manager, Rocky Mountain Arsenal, COL Wallace N. Quintrell.

The authors acknowledge the support and assistance of the following people and organizations during this study: Mrs. Marsha Darnell, Ms. Darla McVann, and Mr. Bennis Washington, WES, Mr. Jack Pantleo, Mr. Jim Clark, and Ms. Dianna Reynolds, D. P. Associates, and personnel of the Rocky Mountain Arsenal Information Center (RIC).

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CONVERSION FACTORS, NON-SI TO SI (METRIC)  
UNITS OF MEASUREMENT

Non-SI units of measurement used in this report can be converted to  
SI (metric) units as follows:

<u>Multiply</u>	<u>By</u>	<u>To Obtain</u>
feet	0.3048	metres
feet per mile	0.1893935	metres per kilometre
gallons (US liquid)	3.785412	cubic decimetres
inches	2.54	centimetres



Evaluation of Shell Chemical Company's Ground-Water DBCP Control  
System at Rocky Mountain Arsenal

PART I: INTRODUCTION

Background

1. In March 1980, Nemagon\* (1,2 - Dibromo-3-Chloropane - DBCP) was discovered in some of the water wells producing from the alluvial aquifer in the Irondale community, which is located along the northwest boundary of Rocky Mountain Arsenal (RMA). The RMA and Shell Chemical Company (SCC) initiated a coordinated program to identify the source and define the migration route of the DBCP contaminated ground water.

2. Chemical and water level data from the limited number of existing monitoring wells, showed that DBCP-contaminated ground water was moving off RMA at the northwest corner of Section 33, and that the ground-water contamination on RMA extended northwest from the area of a railcar storage area in Section 3 (see Figure 1). DBCP was the only major contaminant detected in the ground-water samples collected from the monitoring wells.

3. In order to eliminate the migration of DBCP contaminated ground water from the Arsenal, SCC constructed a control system in the northwest corner of Section 33. This system, known as the Irondale DBCP Control System, was designed to dewater the alluvial aquifer, remove contaminants from the water, and inject the water back into the alluvial aquifer. The control system was placed in operation on 10 December 1981.

4. The control system has been upgraded several times. In 1984, the system was expanded to include 5 extraction and 6 recharge wells. During the summer of 1984, monitoring wells were constructed by the Army along 7th Avenue to allow for better definition of the DBCP distribution in the alluvial aquifer.

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\* Hereafter referred to as DBCP.

## ROCKY MOUNTAIN ARSENAL

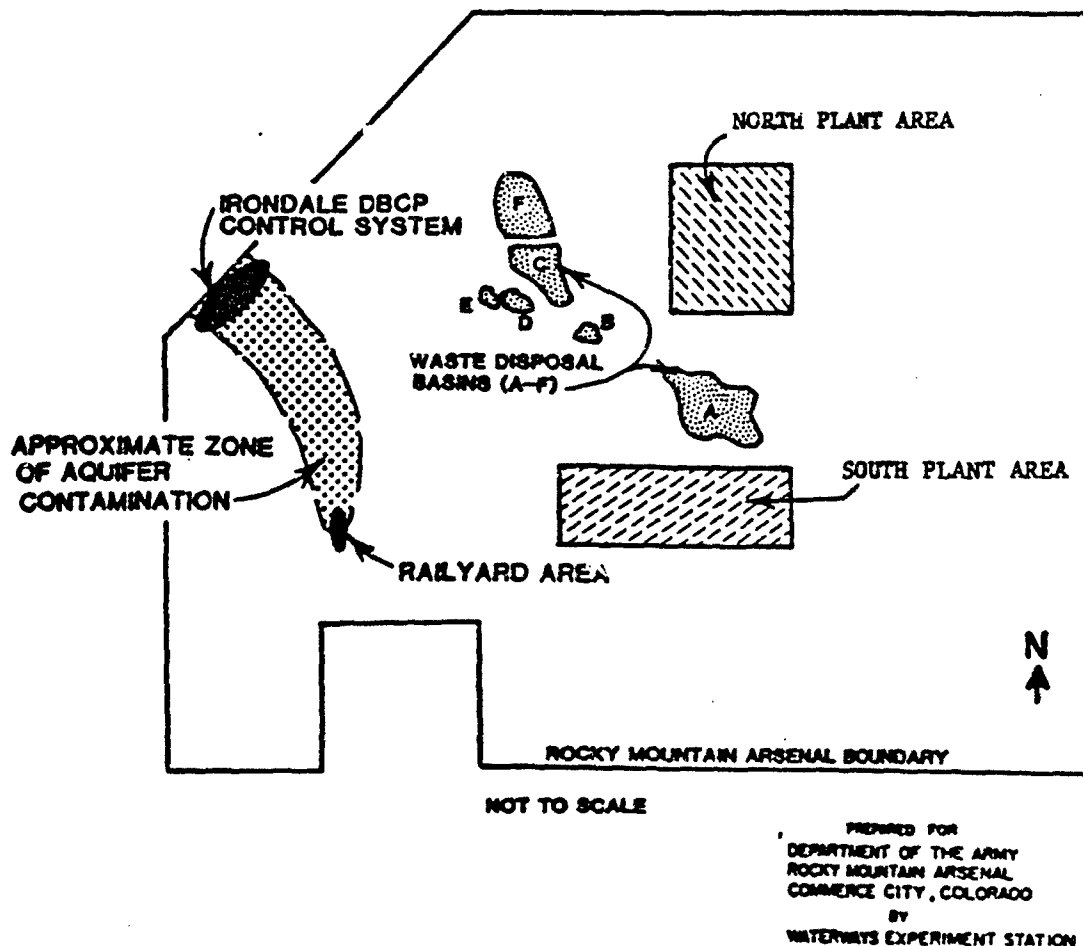


Figure 1. Approximate zone of aquifer contamination

### Control System Description

5. The control system is composed of two rows of ground-water extraction wells and one row of ground-water recharge wells. There are currently 38 extraction wells and 22 recharge wells. The layout of the wells in the system is illustrated in Figure 2 and more detail is shown on Plate 1, Volume II of this report. Row 1 of the extraction wells is 800 ft northwest of row 2, and the row of recharge wells is 600 ft northwest of the row 1

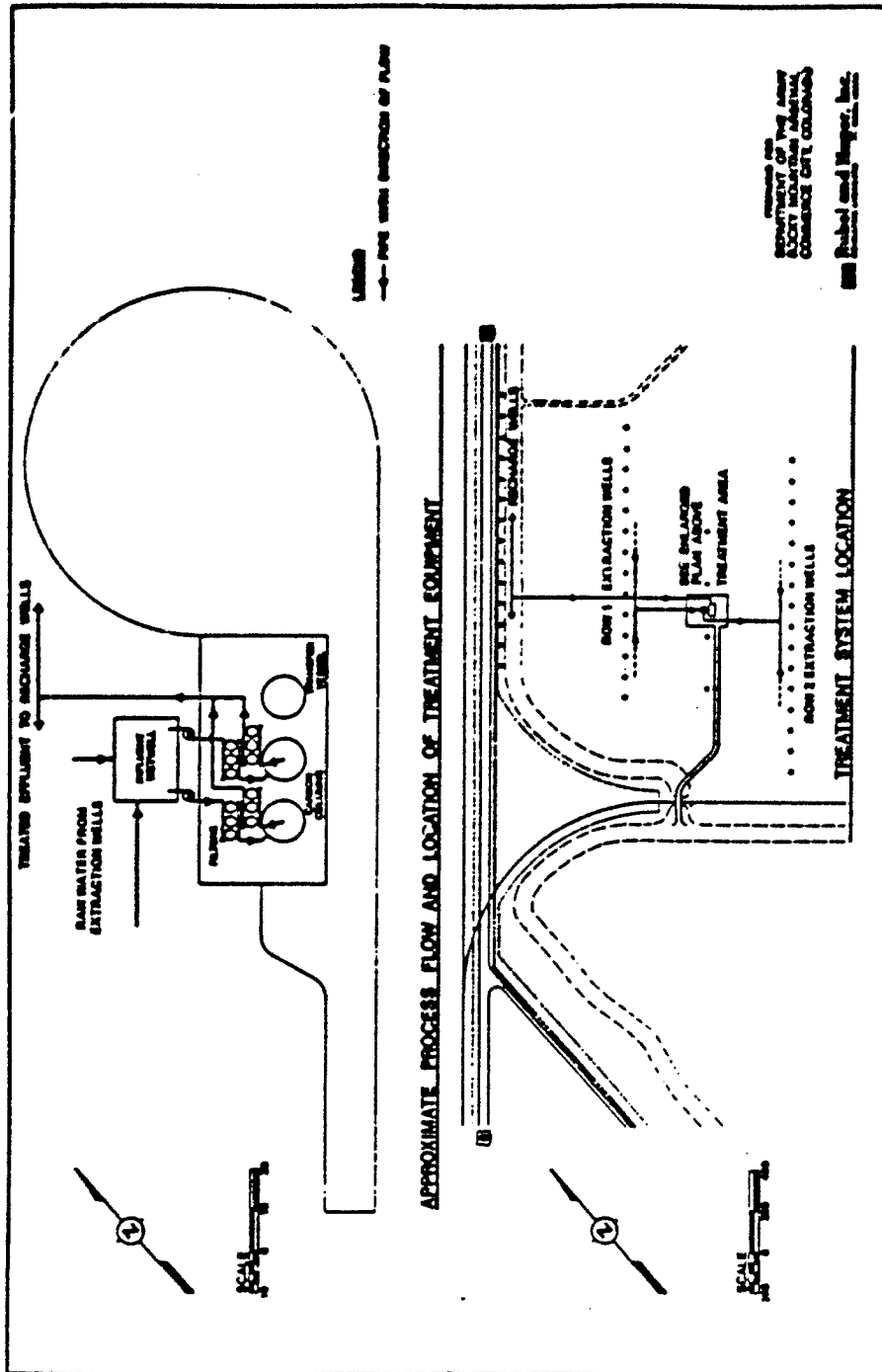


Figure 2. Plan view of the treatment system (after Rubel and Hager 1981)  
(See Plate 1 for well numbers)

extraction wells. The September report by Thompson and Whitten (1985) provides construction details on the extraction and recharge wells.

6. The treatment plant is located between the two rows of extraction wells (Figure 2). The design flow rate of the treatment plant is 1400 gpm. The extraction wells pump the contaminated ground water to the influent well. The water is then distributed to two separate 700 gpm treatment trains consisting of prefilters, a carbon adsorber, postfilters, and bag-type guard filters. First, the water is pumped through the prefilters to remove any suspended solids. Next, the water flows into the activated carbon columns where the contact time is 15 minutes at the designed flow rate. Then the water flows to the post filters and bag-type guard filters to remove carbon fines prior to flowing through the distribution system to the ground-water recharge wells. A flowmeter records the volume of water treated by each of the treatment trains.

7. The ground-water monitoring system consists of a number of monitoring wells (see Plate I), some of which were constructed by the Army prior to the construction of the control system, some by SCC, and recently, additional wells constructed by the Army's Program Manager for RMA under the RMA Contamination Clean-up Program. Most of the older wells typically consist of a 2-inch PVC casing with a 2-inch PVC well screen placed in the saturated zone of the alluvium. Certain wells were placed in clusters where thick alluvial aquifer was encountered. At cluster locations, the entire aquifer was screened using separate wells screened at discrete intervals. Many of the newer wells consist of a 4-inch PVC casing with a 4-inch PVC well screen placed in the saturated zone of the alluvium. In addition to the monitoring wells located on the Arsenal, private and public wells in the Irondale community are also monitored.

#### Historical monitoring

8. During the period from December 1981 through September 1983, the USAE Waterways Experiment Station (WES), RMA, and SCC conducted quarterly monitoring of water levels and water quality using available monitoring wells. The data collected were evaluated and the results presented in a report published by WES in December 1983 (Whitten and May). RMA requested that WES continue to participate in the program and prepare a summary, year-end report for FY84. The FY84 investigation included the collection and evaluation of data from monitoring wells, the treatment system, and the South Adams County Water and

Sanitation District (SACWSD) production wells over the period January 1984 through September 1984. The data collected were used to develop water table elevation maps, ground-water profiles, DBCP concentration maps, and summaries of pump rates by the control system and by the SACWSD wells. The results of the investigation were presented in a final draft report and prepared by WES in September 1985 (Thompson and Whitten, 1985).

9. In January 1986, SCC assumed full responsibility for the monitoring program associated with the Irondale System. This included quarterly measurements of ground-water levels and sample collection for water quality analyses. The data collected were used to develop water table elevation maps, DBCP concentration maps, and summaries of control system pump rates. The results of this monitoring and evaluation effort (Jan - Dec 1986) were presented in a report prepared by SCC (Swift and Chiang, 1987).

#### Purpose and Scope

10. The purposes of this report are to: (1) document the monitoring data collected since the FY84 report period; (2) incorporate the data collected by SCC; (3) incorporate relevant data collected under other investigative programs conducted by the Army during the report period; and (4) document the continuing effectiveness of the system in preventing the off-post migration of contaminated ground water. Preparation of this report included the collection and evaluation of data from numerous monitoring wells, the treatment system, and the SACWSD production wells covering the period October 1984 through September 1986 (FY85-86). The available data were used to develop water table elevation maps, ground-water profiles, DBCP concentration maps, and plots of water pumped (flow rate) by the control system versus time. These data have been reproduced and are appended to this report for reference. The maps and plots were used to document the operation of the system over the report period and to illustrate the effectiveness of the system.

## PART II: DATA COLLECTION AND PRESENTATION

### Ground-Water Monitoring

11. Prior to January 1986, the monitoring program for the Irondale DBCP Control System was conducted as a cooperative effort between RMA and SCC personnel (Whitten and May 1983). Subsequently, Shell assumed full responsibility for both ground-water sampling and water-level measurements (Thompson and Whitten 1985). Samples and water-level measurements were taken quarterly. The FY85 and FY86 data are reproduced and are located in Appendix A.

#### Water level measurements

12. All water-level measurements were taken using a battery-powered electrical probe that uses the slight electrical conductivity of water to sense the water surface. Water levels were converted to elevation using existing topographic surveys and well-casing survey data.

#### Ground-water sampling

13. SCC stated that the ground-water samples were collected using a bailing technique. Standing water in each well casing was evacuated and the well allowed to recover prior to sample collection. Sampling equipment was carefully cleaned prior to sampling of each well to prevent cross-contamination. The samples were transported to a contract analytical laboratory for chemical analysis. SCC transmitted the analytical results to RMA.

### Plant Operation Monitoring

14. SCC provided monthly summaries of total flow through the treatment plant to RMA. SCC personnel periodically collected samples of influent and effluent at the treatment plant for chemical analysis and provided monthly data summaries to RMA. The data summaries for FY85 and FY86 are reproduced and are located in Appendix B.

## PART III: DATA ANALYSIS

### Control System Operation

#### Flow through the treatment plant

15. Weekly water flow rates through each adsorber and the total weekly flow rates (effluent) for the Irondale DBCP Control System treatment plant are presented in graphical form in Figures 3 through 5 for FY85, and in Figures 6 through 8 for FY86.

16. During FY85, the average weekly flow rate through Adsorber 1 ranged from 550 to 750 gpm. The flow rate increased from approximately 550 gpm in October 1984 to around 700 gpm in early November 1984. The flow rate continued at a rate of around 700 gpm (except during early December 1984) until July 1985 when a downward trend is evident. The flow rate decreased through September to around 550 gpm. Flow rate through Adsorber 2 generally increased from approximately 525 gpm in October 1984 to a maximum of slightly in excess of 800 gpm in early May 1985. Thereafter, the flow rate decreased steadily to around 500 gpm by the end of September 1985. The maximum flow rate (effluent) through the system, around 1500 gpm, occurred in April and May, 1985.

17. During FY86, the flow rate through Adsorber 1 ranged from 500 to 700 gpm. The flow rate varied throughout the year with the lowest flow rates occurring in late October 1985 and August 1986. The highest flow rates occurred in late November 1985 and May 1986. Flow rate through Adsorber 2 ranged from approximately 300 gpm in late November 1985 to a maximum of approximately 775 gpm which occurred in January, February, and late April 1986. Flow rate generally decreased throughout the rest of the year to around 550 gpm in September 1986. The maximum flow rate (effluent) through the systems, around 1450 gpm, occurred in late April and early May 1986.

18. Factors that appear to have affected the flow rate through the plant most during the study period included routine maintenance, equipment failures, and electrical power outages. The equipment failures were minor in nature, and usually resulted in a maximum of a few hours downtime. Some of the power failures resulted in downtimes of longer duration. SCC estimated that electrical power failures represented approximately 64% of the system downtime in 1986. Carbon replacement, a major maintenance item, represented another 20%.

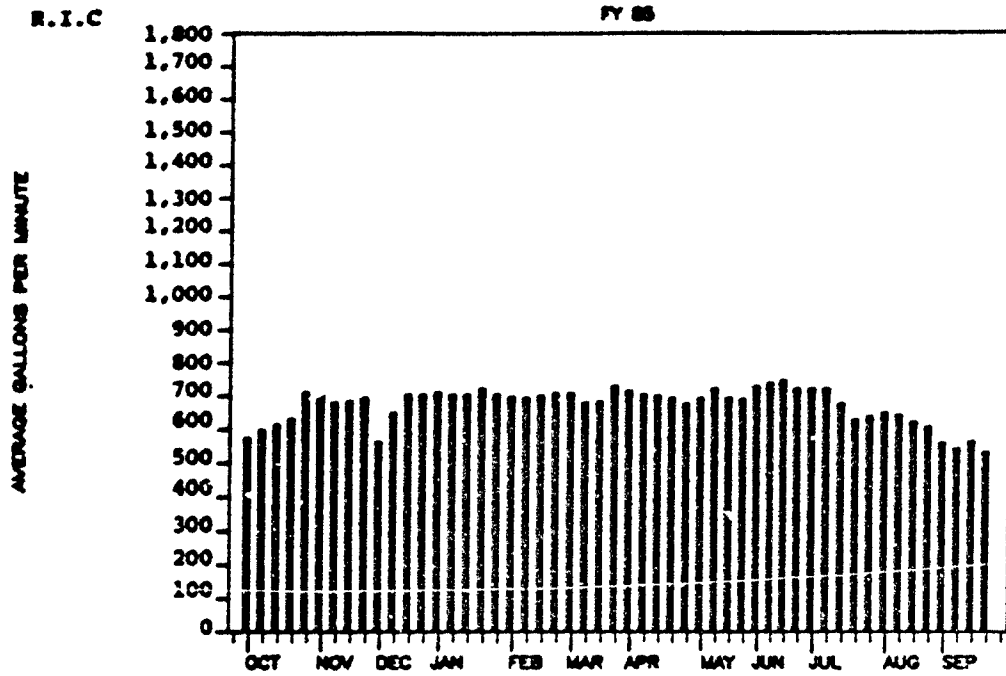


Figure 3. Adsorber 1 flow rate during FY85

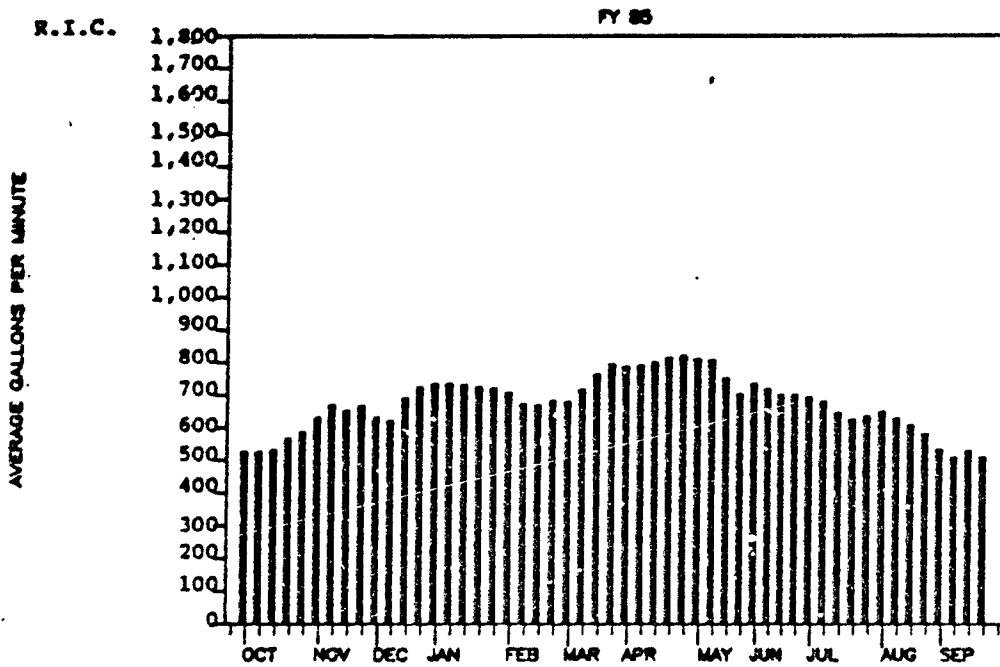


Figure 4. Adsorber 2 flow rate during FY85



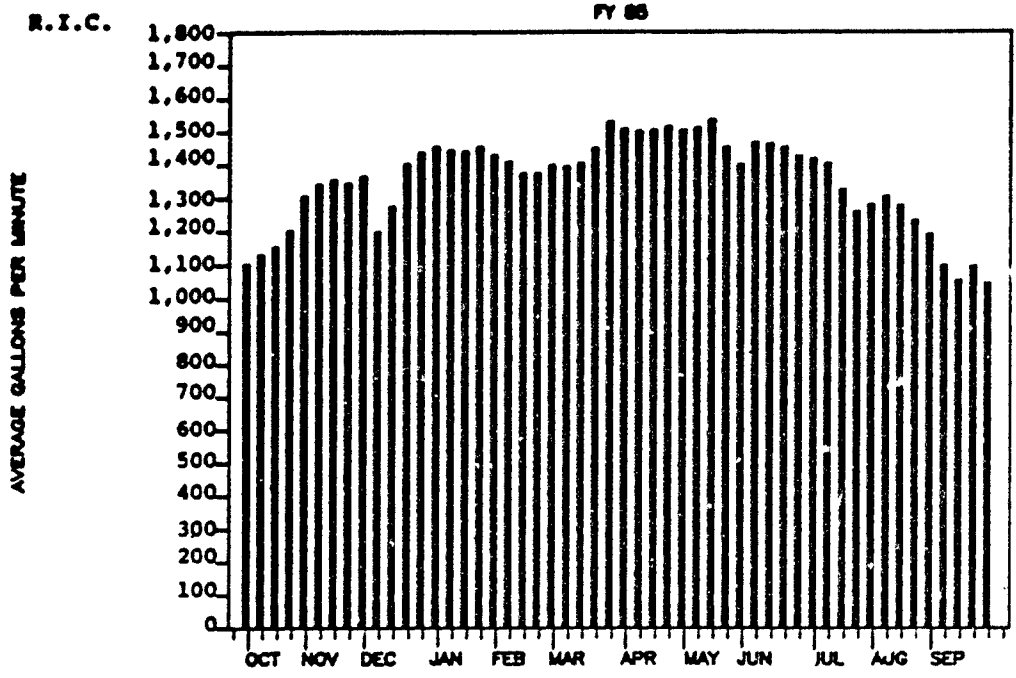


Figure 5. Effluent flow rate during FY85

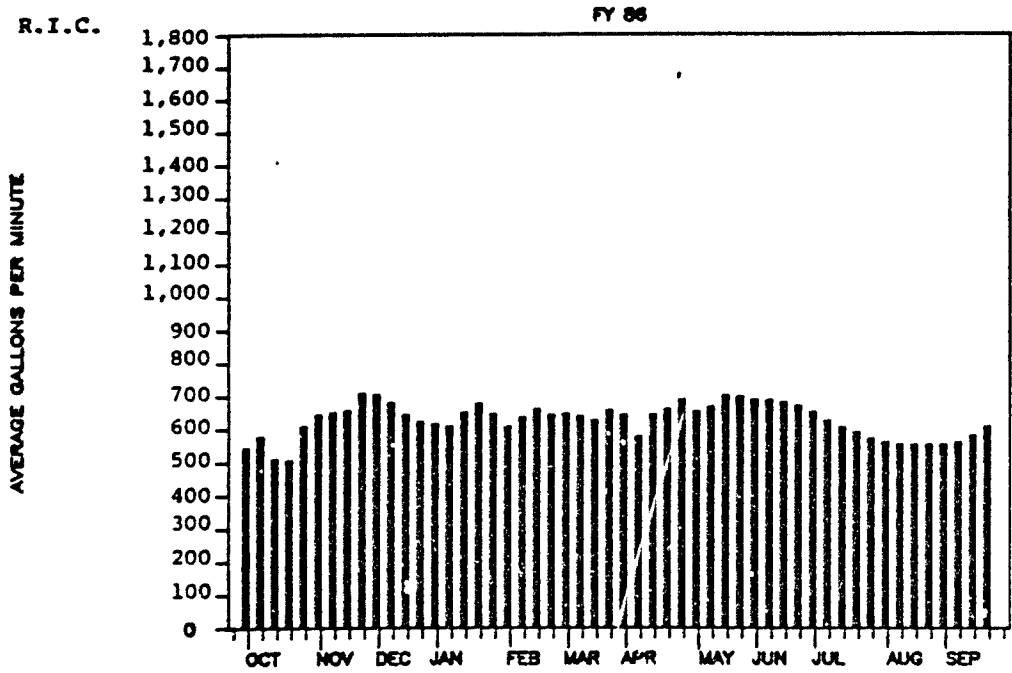


Figure 6. Adsorber 1 flow rate FY86

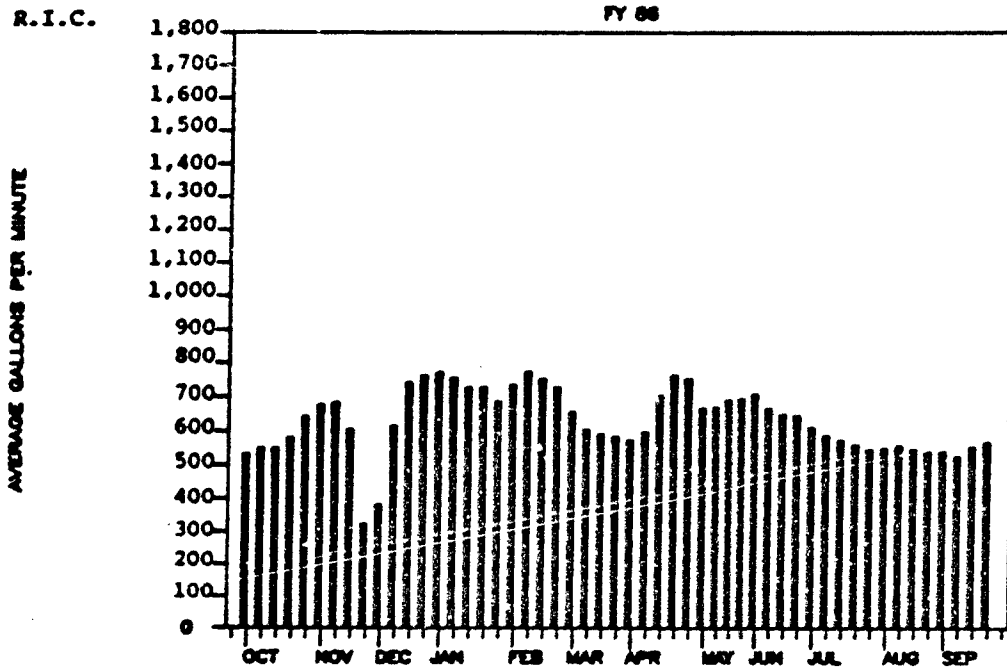


Figure 7. Adsorber 2 flow rate FY86

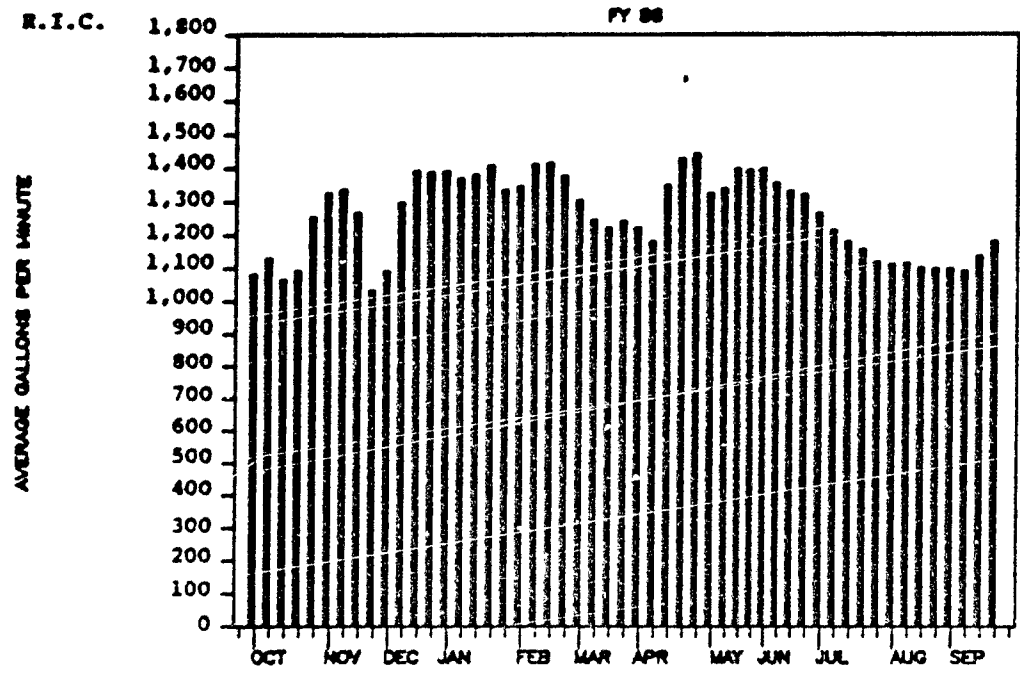


Figure 8. Effluent flow rate FY86

### DBCP removal

19. Influent and effluent DBCP concentrations for the treatment plant over FY85 and FY86 are summarized and are presented graphically in Figures 9 through 12. The graphs present the concentrations found for each sampling period, the average concentration for the year, and the maximum contaminant level (MCL) for DBCP which is 0.2 µg/l. The DBCP detection level is 0.06 µg/l.

20. Figure 9 presents the FY85 influent and effluent DBCP data for Adsorber 1. The maximum concentration found in the influent for the year was 0.4 µg/l. The rest of the concentrations found were at or below 0.3 µg/l. The average concentration for FY85 was 0.25 µg/l. DBCP concentrations in all the effluent samples were below the detection level of 0.2 µg/l.

21. Figure 10 presents the FY85 influent and effluent data for Adsorber 2. The maximum DBCP concentration in the influent was 0.3 µg/l. DBCP concentrations in all the effluent samples were below the detection level of 0.2 µg/l.

22. Figure 11 presents the FY86 influent and effluent DBCP data for Adsorber 1. The concentrations of DBCP ranged from the detection level to 0.42 µg/l. The average concentration for FY86 was 0.34 µg/l. DBCP concentration in all the effluent samples were below the detection level of 0.2 µg/l.

23. Figure 12 presents the FY86 influent and effluent data for Adsorber 2. The maximum DBCP concentration in the influent was 0.4 µg/l. The average concentration for FY86 was 0.3 µg/l. DBCP concentrations in all the effluent samples were below the detection level of 0.2 µg/l.

## Geology and Hydrogeology

### Geology of the Irondale System

24. The geologic units of interest in the evaluation of the Irondale DBCP Control System are the Tertiary Denver formation and the overlying Quaternary sediments (referred to as "the alluvium" in this report). Plate 1, Volume II of this report shows the location of the system, the wells, the sections, and profiles used in this evaluation.

25. The Denver formation. The Denver formation underlying the Arsenal is composed of interbedded shale, claystone, siltstone, sand, and sandstone with some low-grade coal, lignite, and carbonaceous shale. The water-producing zones within the Denver formation are composed generally of weakly cemented









sandstones or compact fine- to medium-grained sands. The sand or sandstone layers commonly are lens-shaped, are several inches to as much as 60 ft thick, and grade laterally and vertically into silts and clays. A map of the top of the Denver formation (the top of rock), based on boring log data, is presented as Plate 2. An area of generally low relief above elevation 5100 ft MSL (sections 4 and 33) is conspicuously incised by a large channel that enters the arsenal from the southwest in section 4, trends north, and exits the arsenal in the west central part of section 33. Tributaries to the main channel extend to the northeast in section 33 and to the southeast in sections 4 and 33. The Irondale DBCP Control System was installed almost entirely on the high flat area outside of the channel. The channel has been filled with Quaternary alluvium (described below).

26. The alluvium. The alluvium overlying the Denver formation is composed of clays, silts, sands, and gravels. Cross sections AA' and BB' (Plates 3 and 4, and Plate 1) portray the stratigraphy of the alluvium and show the approximate position of the top of the alluvial aquifer. Cross section AA' (Plate 3) includes positions of the water table for a high (April 1985) and a low (July 1985) period. The quality of boring logs available for the Irondale study area are generally poor and the description of aquifer soils correspondingly lacks detail. The alluvial aquifer is generally characterized as USCS soil type GW (well-graded gravel) or SW (well-graded sand). The alluvium apparently grades upwardly into finer grained sands or clays. The alluvial aquifer is deepest in the axis of the deep channel incised into the Denver formation, attaining a thickness of about 71 ft in well number 33018 near the boundary. In contrast, the aquifer outside the channel is as thin as 4 ft in well number 33007 (see Plate 3).

27. Alluvial aquifer ground water flow parameters were calculated previously (May, J. H., 1982) for the Irondale study area from data for two pump tests. The test conducted in the vicinity of the SACWSD wells, Site 7 (Plate 1) yielded a range of permeability (K) of 345 - 462 ft/day, a range of transmissivity (T) of 197,969 - 219,925 gpd/ft, and a range of storage coefficient (S) of 0.120 - 0.730 (indicative of unconfined conditions). The pump test conducted in the vicinity of well 33025 (Plate 1) yielded values for K of 231-2931 ft/day, for T of 3,038 - 247,507 gpd/ft, and for S of 0.0001 to 0.4153 (the aquifer responded in a semi-confined manner). Tests for permeability of Denver formation sands near the Northwest Boundary



Containment/Treatment System (USAE Omaha, 1986) provided a K value of approximately 0.1 ft/day for the Denver sand, which is three to four orders of magnitude smaller than the permeabilities calculated for the alluvium in the Irondale study area. The following paragraphs discuss the configuration of the water table in the study area and the effects on it from operation of the Irondale DBCP Control System and the SACWSD wells.

#### Ground-Water hydrology

28. Ground-water contour maps and ground-water profiles developed for this study define the areal ground-water regime, document effects of the system on ground-water flow, and illustrate the ability of the system to intercept contaminated ground water.

29. Contour maps of water levels in the alluvial aquifer, Plates 5-12, were constructed using quarterly readings from study area wells screened in the alluvium. Data for wells described as Denver wells, but whose screens were in contact with the alluvium, were also included in constructing the water level maps. Multiple readings for a well sometimes occurred for a given quarter. In such cases, the readings from the most common date for the quarter were used. If a common date was not available, the average of the multiple readings was used. The water levels were contoured on 1-ft intervals.

30. Three water level profiles along alignments shown on Plate 1, (Profiles I, II, and III) were selected along lines of indicator wells for the same quarters as ground-water contour maps.

31. Influences on ground-water levels. System operation (flow rates), precipitation, and operation of the South Adams County Water and Sanitation District (SACWSD) wells located southwest of the system were the primary influences on the ground-water levels in the area of the system during FY 85 and 86. The magnitude and timing of these influences is discussed in the following paragraphs.

32. System flow rates. Figure 13 is a plot of average system flow rates in gpm for weeks in FY 85 and 86. Flow rates for both years are generally in the 1000 to 1550 gpm range. Within this range, October 1984, September-October 1985, December 1985, and July-August 1986 are times of lower flow rates. Higher flow rates, within the range, are evident during April-May 1985.

33. Precipitation. Precipitation records for Rocky Mountain Arsenal near the Irondale Study area were not available for the period of this study.

R.I.C.

EFFLUENT -- FLOW RATE

FY 85

FY 86

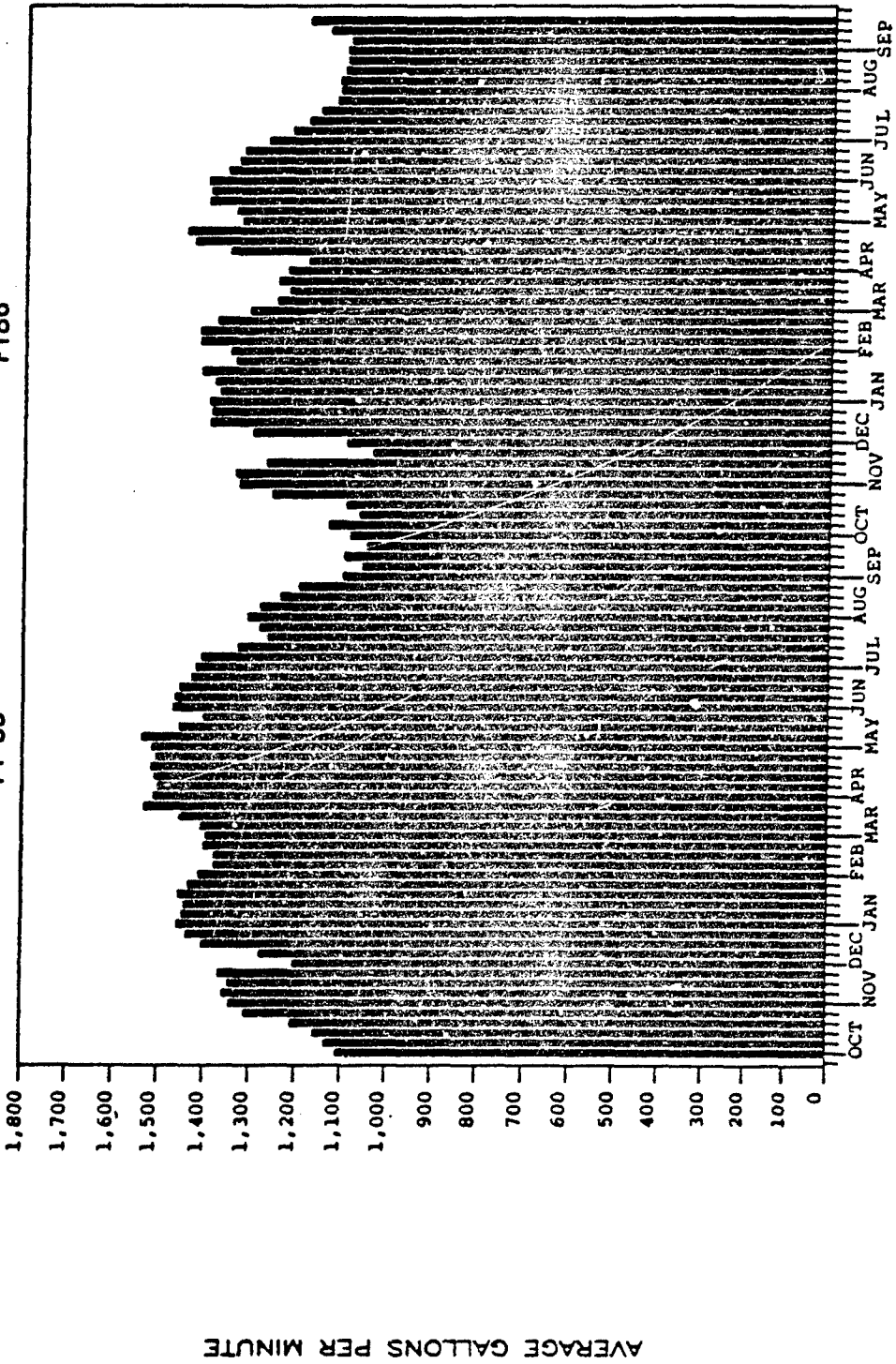


Figure 13. Irondale system flow rates for FY85 and FY86

AVERAGE GALLONS PER MINUTE

However, the National Weather Service at Stapleton Airport supplied monthly precipitation amounts (FY 71-86) for their observation station located just south of the Arsenal. The rainfall records, while not necessarily reflecting local storm events (the station is approximately 3-4 miles south of the Irondale DBCF Control System), provide a general indication of wet and dry years and seasons. Figure 14 provides monthly amounts and yearly totals of precipitation for the study period. Average precipitation for FY 71 through 86 is 15.0 inches/year. FY 84 was a near-average year followed by a wetter FY 85 and a relatively dry FY 86. For FYs 85 and 86, the graph indicates the wet months generally were April through September or October and the drier months were October or November through March. This has been a general trend for the last few years (FY 81-86).

34. South Adams County Water and Sanitation District wells. SACWSD wells at sites 6 and 7, Plate 1, are located southwest of the system and just west of the Arsenal boundary. Site 7 is along Quebec Street and site 6 is along Highway U. S. 6/Colorado 2. Figure 15 shows volume pumped by month for the two sites for the last quarter of FY 84 and all of FY 85 and 86. Pump rates are highest May through September of each year and for FY 85 and 86 range from 17.6 to 224.5 million gallons per month. The Irondale system flow rate for FY 85 and 86 is approximately 1300 gpm which equals 56.2 million gallons for a 30 day month.

35. Analysis of water level changes from profiles. Profiles I, II, and III, Figures 16-21 describe ground-water level changes along lines of indicator wells.

36. Profile I. Profile I, Figures 16 and 17, is a line of wells extending across Section 33 from well 04532 located near 7th Avenue to well 33576 at the Arsenal boundary. Following the general flow of ground water toward the system, the profile crosses the system between wells 33582 and 33576.

37. Water levels are generally lower in the first and fourth quarters of FY 85 and 86 than in the second and third quarters. Average water levels are higher in FY 85 than FY 86 reflecting the higher FY 85 precipitation. Across the system (wells 33582 to 33576) the low point occurs at well 33581 or 33007 between the southeastern or upgradient dewatering line and the recharge line. The profile consistently indicates a gradient from the recharge line towards the dewatering lines.

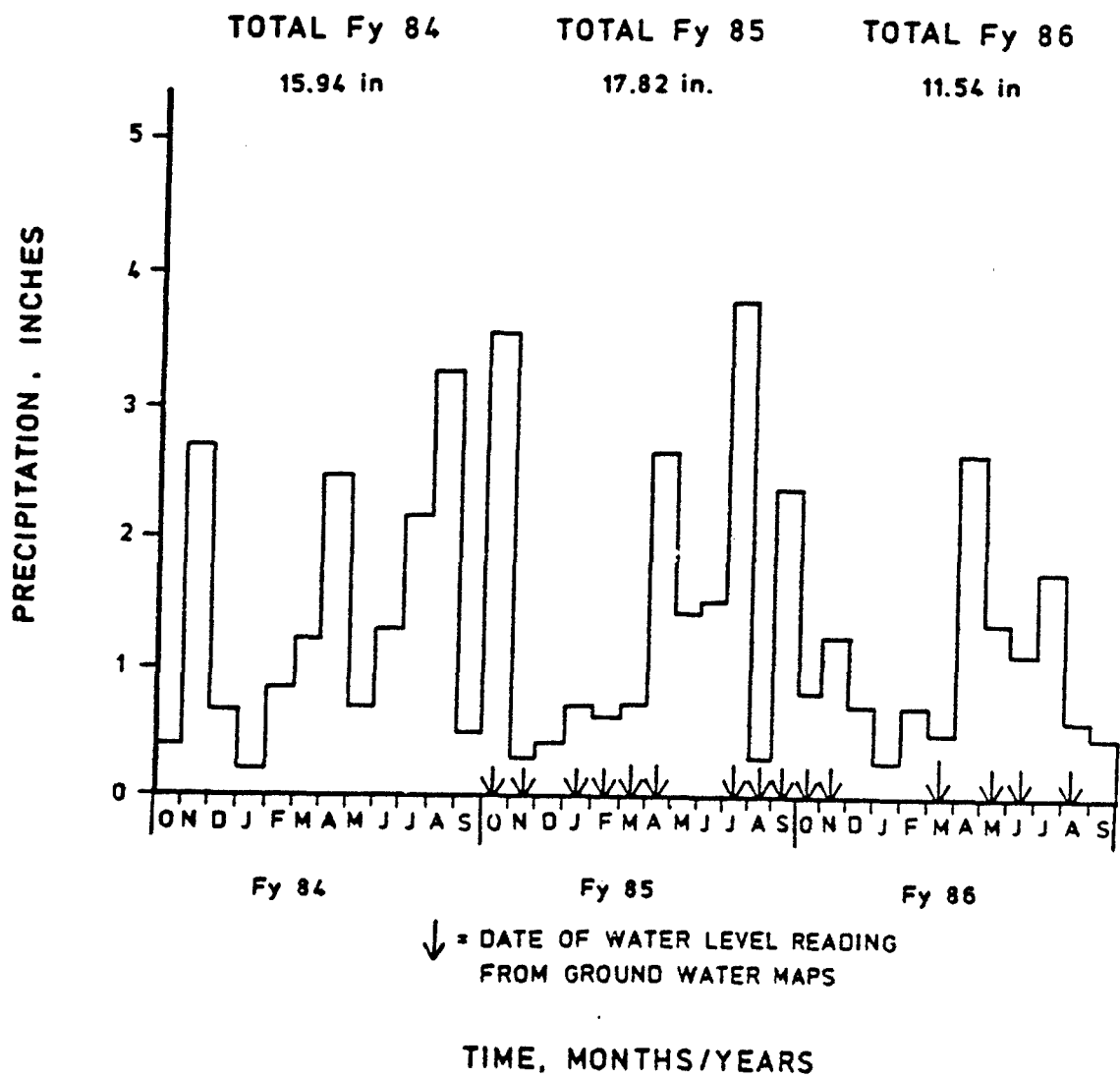


Figure 14. Precipitation measured by the National Weather Service, Stapleton Airport, Denver, Colorado

**SACWSD PUMP RATES  
(SITES 6 & 7 TOTAL FLOW RATE)**

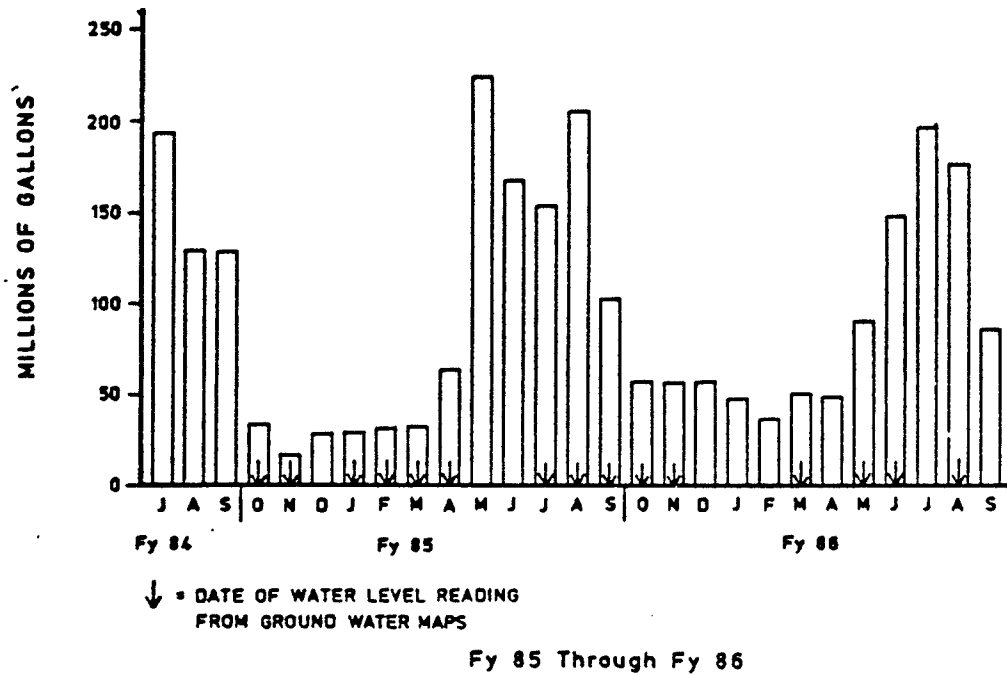


Figure 15. Pump rates for South Adams County Water and Sanitation well sites 6 and 7, July 1984-Sept 1986

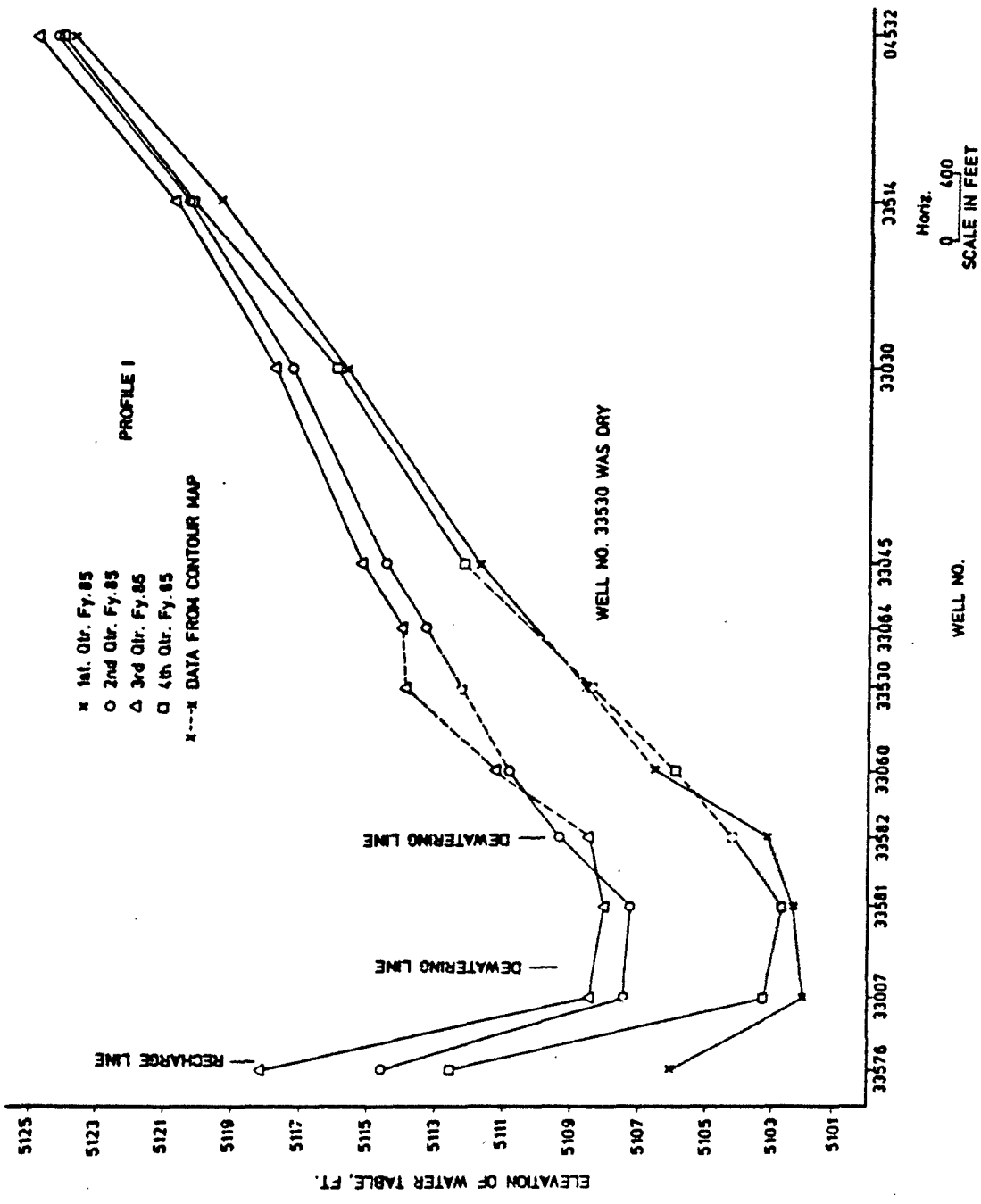
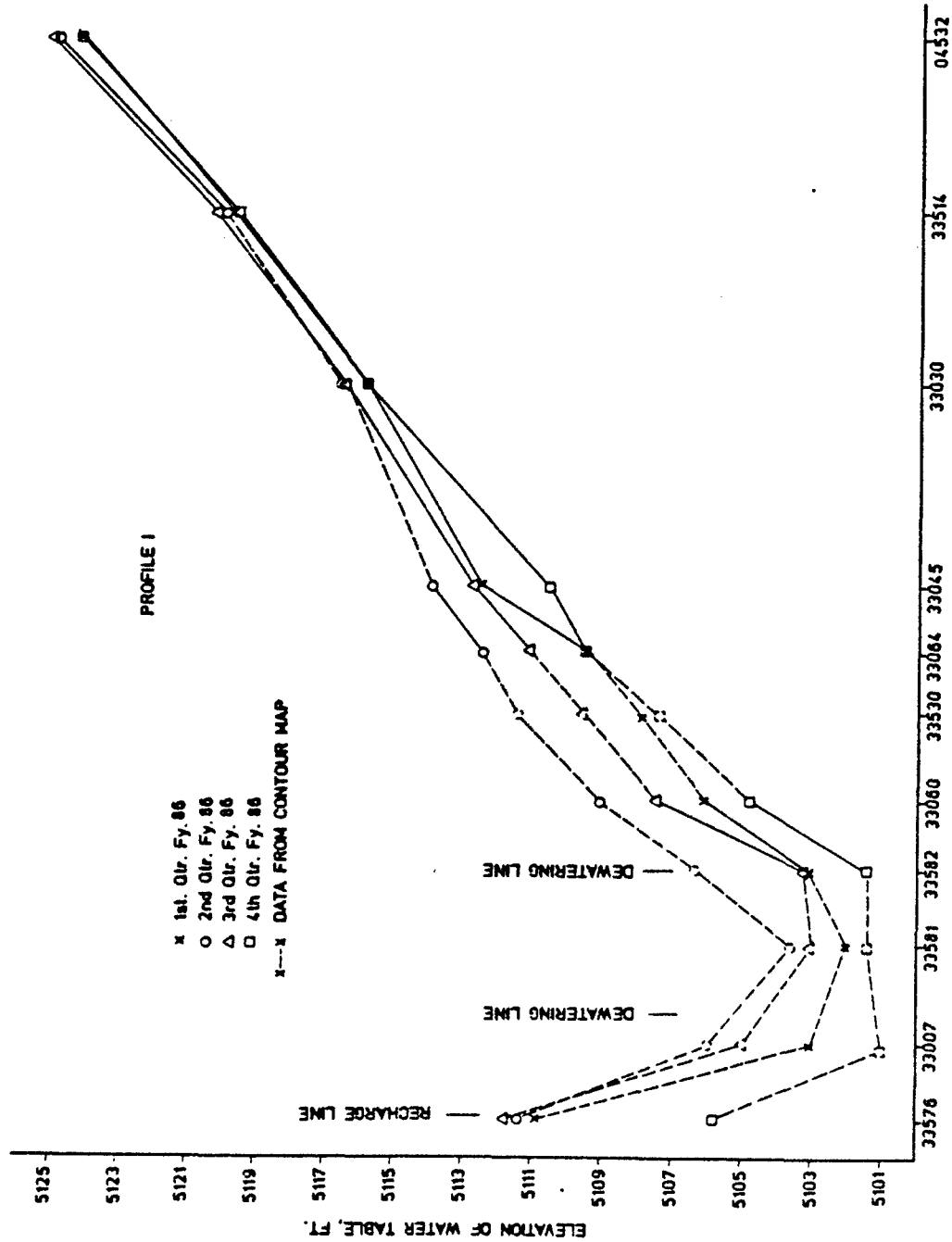


Figure 16. Profile I FY85



WELL NO.  
 Figure 17. Profile I FY86

38. Profile II. Profile II, Figures 18 and 19, is a line of wells which follows Profile I from well 04532 to 33030 then heads in a more northerly direction across the system to well 28503. As with Profile I, water levels are lower in FY 86 than FY 85 reflecting lower FY 86 precipitation. Additionally, as with Profile I, the trend for low water levels in the first quarter and fourth quarter and high levels in the second quarter and third quarter is present as is the consistent gradient from recharge to dewatering lines.

39. Profile III. Profile III, Figures 20 and 21, is a line of wells paralleling the Arsenal boundary along Quebec Street and Colorado Highway 2. It extends from well 33016 northward to well 33010, then northeastward to well 28018, passing between and parallel to the dewatering lines and recharge line.

40. The data of Profile III follow the trends of previous profiles with higher water levels in the second and third quarters of each FY and higher water levels in FY 85 than FY 86. There is limited data for the center portion of the profile (wells 33012 to 33003) for the last three quarters of FY 86. Profile III shows the cyclic influence of SACWSD wells near wells 33012 and 33018.

41. Analysis of water level changes from ground-water level maps. Ground-water contours, Plates 5-12, illustrate the annual trend shown by the profiles for FY 85 and 86, i.e. second and third quarters have higher water levels, first and fourth quarters have lower water levels. Water levels are also higher in FY 85 than in FY 86 reflecting the higher FY 85 precipitation.

42. Ground-water contours in the western and southwestern portion of Section 33 are influenced by the cyclic pumping rates of the SACWSD wells. The higher SACWSD pump rates in May through September, Figure 15, act to lower the water levels in this area during the first and fourth quarters for FY 85 and 86. Conversely, lower pump rates in October through April allow the water table to rise in the second and third quarters. This observation has been made over the past few years (Whitten and May 1983, Thompson and Whitten 1985). Also, contours 5120 and 5110 in the southwestern portion of Section 33 are farther north during the second and third quarters following the lower SACWSD pump rates of the first and second quarters. The ground-water contours (and profiles) tend to lag the SACWSD well pumping rate changes because ground-water level measurements are generally made at the start of each



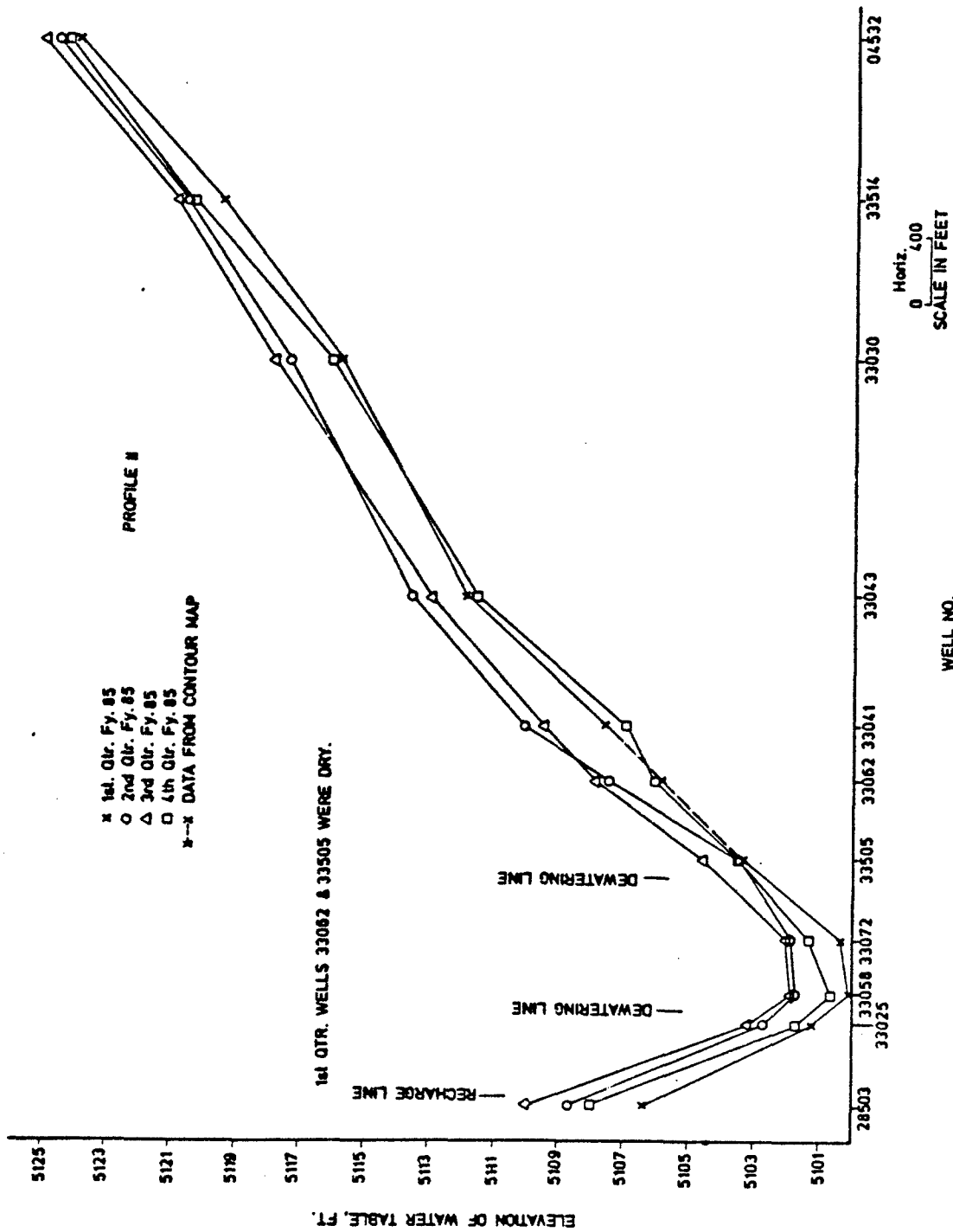
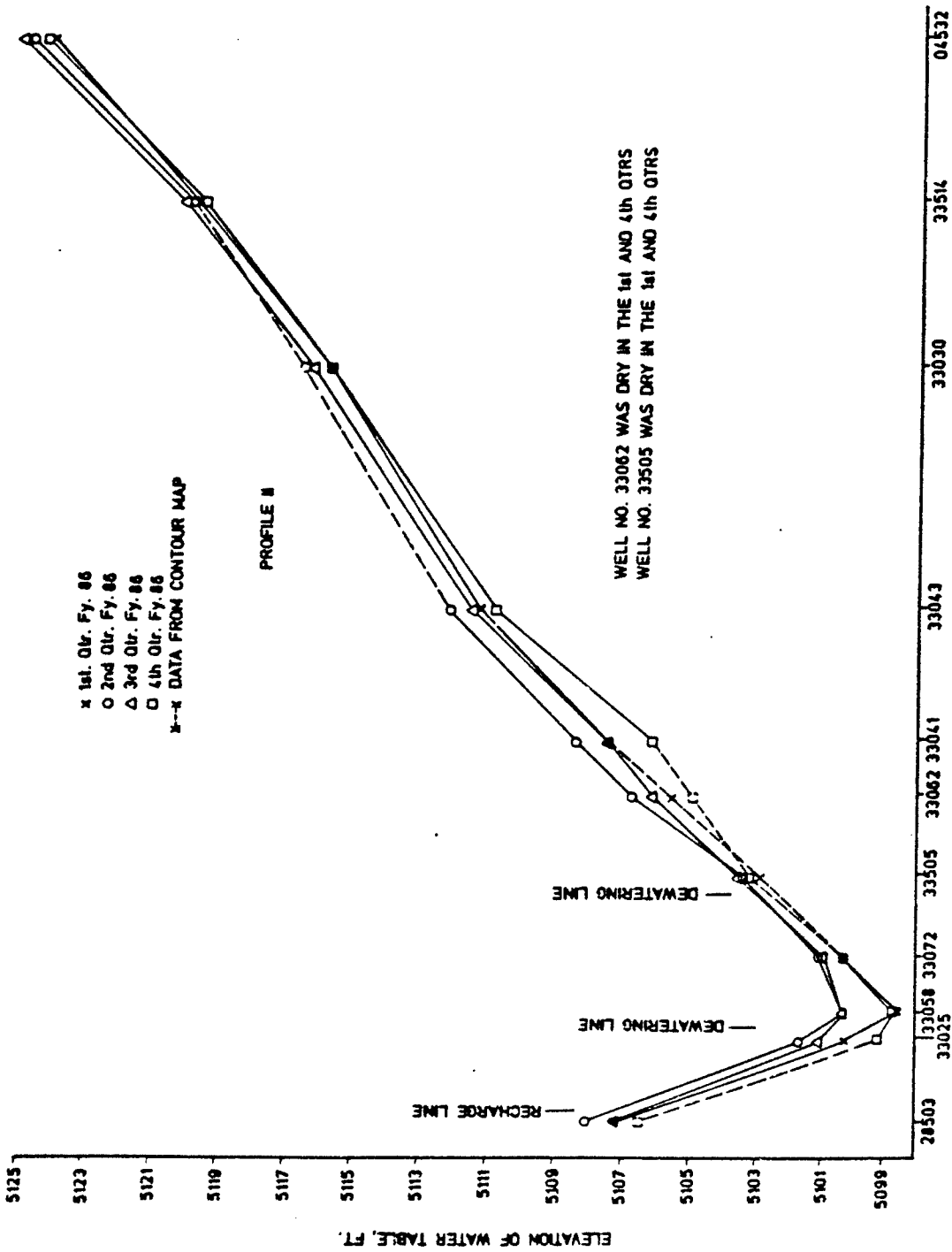


Figure 18. Profile II FY85



WELL NO. 33062 WAS DRY IN THE 1st AND 4th QTRS  
WELL NO. 33505 WAS DRY IN THE 1st AND 4th QTRS

Figure 19. Profile II FY86

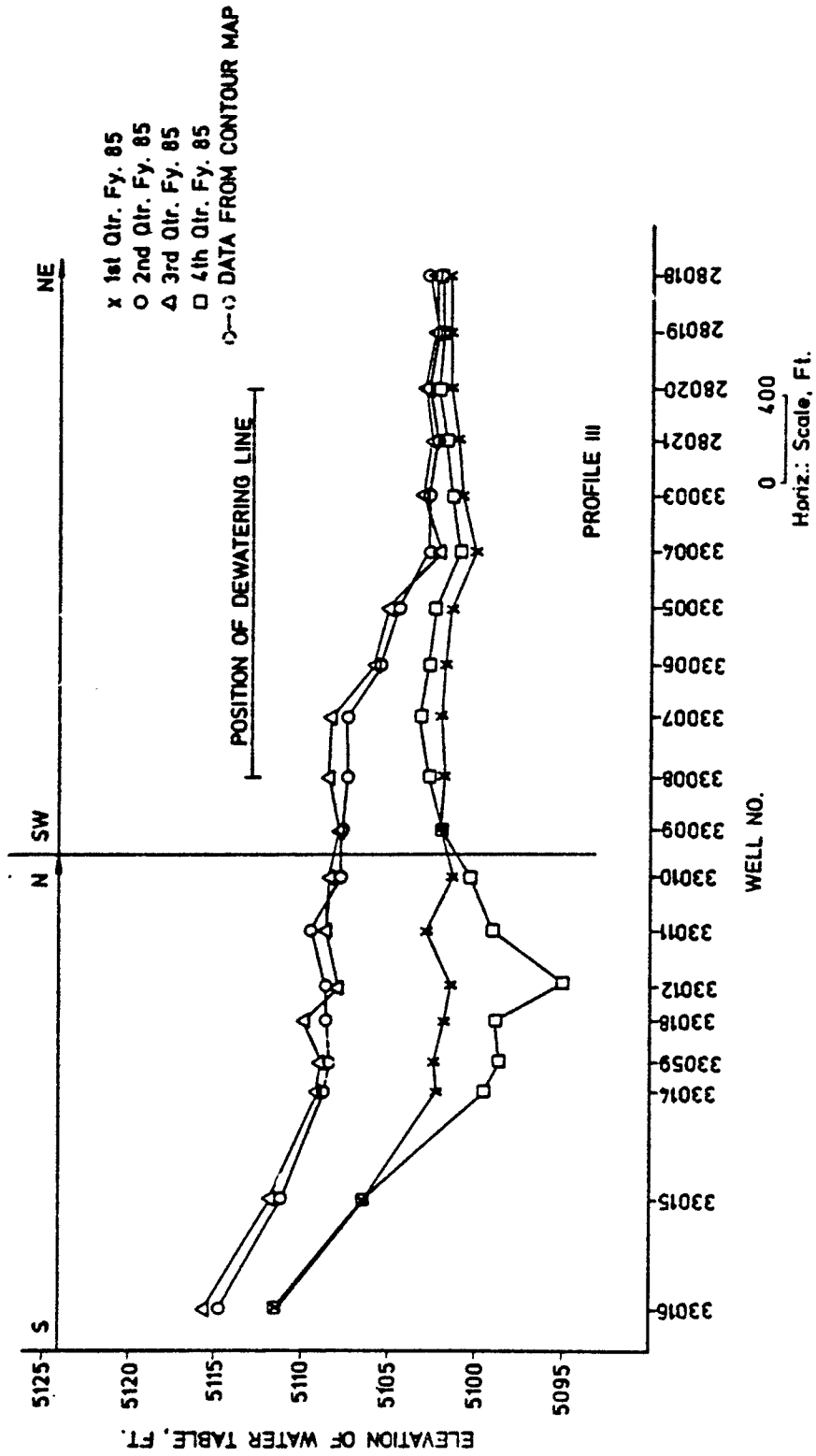


Figure 20. Profile III FY85

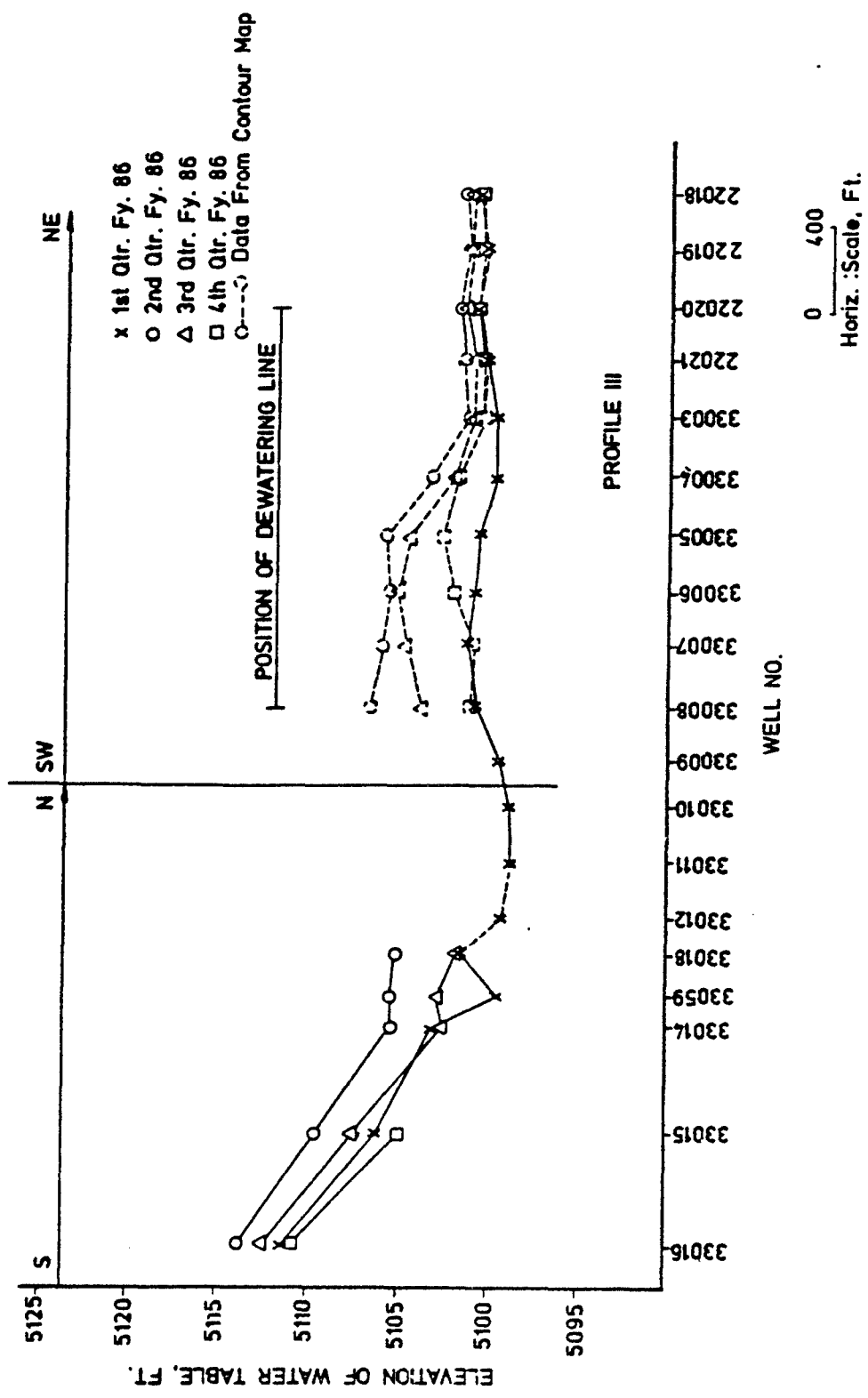


Figure 21. Profile III FY86

quarter (Figure 15) thus reflecting ground-water conditions of the previous quarter.

43. Ground-water contours in the vicinity of the system reflect system flow rates (Figure 13). Flow rates are relatively stable for FY 85 and 86 with periods of somewhat lower flow in the first and fourth quarters of each FY. The higher ground-water levels (elevation 5115 and higher) in the area of recharge wells during the second and third quarters are due to the higher system flow rates and correspondingly higher recharge rates. The area of lower water elevations (less than 5105) between the dewatering lines and recharge line are more extensive and lower during the first and fourth quarters of FY 85 and 86 though system flow rates are somewhat lower for these quarters. This is probably due to higher SACWSD well pump rates during the third and fourth quarters. During these quarters SACWSD wells intercept some of the ground water flowing northward along the western side of Section 33 which moves toward the system during periods of low SACWSD well pump rates. The effect of the SACWSD wells on the ground-water flow in this area could be better defined by additional monitoring wells in the area bounded by wells 33016, 33010, 33582, and 33045. If SACWSD pump rates increase, the effect on ground-water flow in the area of the system would increase.

#### Distribution of DBCP in the Ground Water

44. The DBCP ground-water concentration data obtained during the eight scheduled quarterly sampling periods in FY85 and FY86 were used to prepare concentration distribution maps for the study area. These distribution maps are presented on Plates 13 through 20 in Volume II of this report. During the 4th quarter of FY85 (Plate 16) only a few ground-water samples were collected in the study area. Insufficient data were available to construct isoconcentration lines for the quarter, and, therefore, the available data were point-plotted on the map (Plate 16).

45. The availability of data for each quarter from the same wells was generally good (with the exception of the 4th quarter of FY85). Thus, the isoconcentration lines appear fairly consistent from quarter to quarter. The maps are a visual representation of the concentration distribution of DBCP and do not necessarily define the limits of contaminant migration. In situations where contaminant concentrations are only slightly above the analytical

detection level (0.06 µg/l), such as in the Irondale study area, dilution becomes a significant factor effecting the extent of a contaminants distribution as defined by an isoconcentration line.

46. In reviewing the maps (Plates 13-20), it is evident that the DBCP distribution is very consistent through time with respect to its location in Sections 3 and 4 and in the southern half of Section 33. The DBCP distribution originates in the area of the railcar storage area in Section 3 as indicated by the significant concentrations of DBCP found associated with well 3-523. The narrow DBCP distribution plot extends northwest from this area across B Street, across 7th Avenue, and continues due northwest to the Irondale DBCP Control System area.

47. The DBCP distribution in the area of the Irondale DBCP Control System varies somewhat on a seasonal basis. During the 1st quarter of the fiscal year, DBCP is generally distributed from the southwest end of the first line of dewatering wells northeast approximately 3/4 of the length of the well line. During the second and third quarters, the DBCP distribution narrows to the center of the well line. During the fourth quarter, the DBCP distribution expands back southwest towards the end of the well line. This varying DBCP distribution coincides with the lowering and raising of the water table on the southwestern end of the Irondale DBCP Control System due to the cyclic pumping rates of the SACWSD wells. As the water table drops, the DBCP distribution moves to the southwest, and conversely, as the water table rises, the DBCP distribution narrows and moves northeast along the well line.\* On the basis of the observed relationship, any significant increase in pumping rates for the SACWSD wells could be expected to produce extreme variations in the DBCP distribution around and upgradient of the system.

#### FY85 DBCP concentrations

48. During the 1st quarter of FY85 (Plate 13) the concentration of DBCP in the sample collected from well 3-523 (in the railcar storage area) was 65 µg/l. During the 2nd quarter, the concentration associated with this well decreased to 21.8 µg/l but increased to 79 µg/l by the 3rd quarter. No 4th

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\* It should be noted that SCC reduces the pumping rates for the wells at the southwest end of the well lines during the 1st and 4th quarters of the fiscal year to reduce the potential for drawing the DBCP distribution further to the southwest. The changing DBCP distribution is probably due to a combination of dilution and a localized change in ground-water flow direction.

quarter data were available for this well. Downgradient in the distribution at well 4-26 (near the intersection of 7th Avenue and B Street) the DBCP concentration remained fairly constant during the FY85 with values of 13.1, 13.5 and 15.6  $\mu\text{g}/\text{l}$  reported for the 1st, 2nd, and 3rd quarters respectively.

49. DBCP concentrations decreased significantly from this point northward to the system. At well 4-13 (immediately south of 7th Avenue), the concentrations generally ranged between 2 and 3  $\mu\text{g}/\text{l}$  over the year. North of 7th Avenue in Section 33, only one sample with a DBCP concentrations in excess of 2  $\mu\text{g}/\text{l}$  was found during FY85. DBCP concentrations during the 1st quarter of FY85 in the dewatering wells along the southeastern dewatering line (line 2) ranged from less than 0.2  $\mu\text{g}/\text{l}$  at the northeast end to 1.5 to 1.9  $\mu\text{g}/\text{l}$  near the southwest end. Concentrations in dewatering wells along the northwestern dewatering line (line 1) were all below 1  $\mu\text{g}/\text{l}$ . The concentrations in all the dewatering wells decreased during the 2nd and 3rd quarter of FY85 as the distribution narrowed and moved to the northeast. By the 3rd quarter of FY85, (Plate 15) none of the wells along line 1 were found to contain DBCP above 0.2  $\mu\text{g}/\text{l}$ . No data were available for the 4th quarter.

50. No DBCP concentrations above 0.2  $\mu\text{g}/\text{l}$  were found in any of the monitoring wells immediately downgradient of the line of recharge wells during FY85. Likewise, no concentrations above 0.2  $\mu\text{g}/\text{l}$  were found in any of the monitored wells in the Irondale community.

#### FY86 DBCP concentrations

51. During FY86, the concentrations of DBCP reported for well 3-523 were 29, 25.5, 25.1, and 40.4  $\mu\text{g}/\text{l}$  for the 1st, 2nd, 3rd, and 4th quarters (Plates 17, 18, 19, and 20) respectively. These values present somewhat less of a variation than was found in FY85. Downgradient at well 4-26, the FY86 DBCP concentrations were generally higher by a factor of two than those found in FY85. The concentrations ranged from 21.5  $\mu\text{g}/\text{l}$  to 34.4  $\mu\text{g}/\text{l}$ . As in FY85, the DBCP concentrations found associated with well 4-13 in FY86 ranged between 2 and 3  $\mu\text{g}/\text{l}$ . There is approximately a 10-fold dilution of DBCP over the 1200 foot distance from well 4-26 to well 4-13.

52. North of 7th Avenue in Section 33, sample from well 33-30 were found to contain DBCP in concentrations greater than 3  $\mu\text{g}/\text{l}$  during the 1st and 2nd quarters of FY86. The same was true for well 33-44 during the 4th quarter of FY86. No other DBCP concentrations in excess of 3  $\mu\text{g}/\text{l}$  were found in Section 33 during FY 86.

53. During the 1st quarter of FY86 (Plate 17), DBCP concentrations in the dewatering wells along line 2 ranged from less than 0.2  $\mu\text{g}/\text{l}$  on the northeast end to 1.5  $\mu\text{g}/\text{l}$  in the center. During the 2nd quarter (Plate 18), the concentrations near the center of line 2 increased slightly to over 2  $\mu\text{g}/\text{l}$ . One dewatering well in the 1st quarter and two in the 2nd quarter, along line 1, were found to have DBCP concentrations above 0.2  $\mu\text{g}/\text{l}$ . By the 3rd quarter (Plate 19), when the DBCP distribution narrowed somewhat, DBCP concentrations in the line 1 dewatering wells were below 0.2  $\mu\text{g}/\text{l}$ . Also, during the 3rd quarter, the maximum concentrations found along line 2 decreased to less than 2.0  $\mu\text{g}/\text{l}$ . The maximum concentrations along line 2 increased slightly during the 4th quarter (Plate 20).

54. No DBCP concentrations above 0.2  $\mu\text{g}/\text{l}$  were found in any of the monitoring wells immediately downgradient of the line of recharge wells during FY86. Likewise, no concentrations above 0.2  $\mu\text{g}/\text{l}$  were found in any of the monitored wells in the Irondale community.

#### Vertical distribution of DBCP

55. There are two sets of cluster wells in the Irondale DBCP Control System study area that screen the total thickness of the alluvial aquifer in 10 foot intervals. These wells, 4-13 through 4-16 and 4-26 through 4-29 (increasing number corresponding to increasing depth) are located in the DBCP distribution such that DBCP concentrations above 0.2  $\mu\text{g}/\text{l}$  are generally found associated with the samples from the wells. Wells 4-13, 4-15, 4-26, and 4-28 are on SCC's quarterly sampling program. During FY85 and FY86, the data collected for these wells indicate a fairly consistent concentration ratio for the two well in each cluster during each sampling period. During FY85, the DBCP concentrations in well 4-15 were approximately 1.3 times the concentrations in well 4-13. The concentrations in well 4-26 ranged from 13 to 16 times the concentrations in well 4-28. During FY86, the DBCP concentrations in well 4-15 ranged from 1 to 1.5 times the concentrations in well 4-13. The concentrations in well 4-26 were approximately 50 times the concentrations



in 4-28 with the exception of the 3rd quarter when the ratio was in excess of 100.

56. During the 1st quarter of FY86, samples were collected from all four wells at each site. The DBCP concentrations found were 2.0, 6.5, 3.5, and 0.62  $\mu\text{g}/\text{l}$  for wells 4-13, 4-14, 4-15, and 4-16, respectively; and 34, 37, 0.73, and 0.71  $\mu\text{g}/\text{l}$  for wells 4-26, 4-27, 4-28, and 4-29, respectively. The data indicate that DBCP is distributed throughout the vertical extent of the alluvial aquifer in these areas. The DBCP concentrations found in the upper 30 feet of alluvial aquifer at the location of wells 4-13 thru 4-16 are of the same magnitude with the concentrations at the bottom of the alluvial aquifer being a order of magnitude lower. At the location of wells 4-26 through 4-29, the DBCP concentrations in the upper half of the alluvial aquifer are of the same magnitude while those in the lower half are greater than an order of magnitude lower. It is difficult to assess the significance or provide a definitive explanation of these data at this time due to the lack of control, and to the complex nature of ground-water flow in this area of the arsenal.

#### PART IV: EFFECTIVENESS OF THE CONTROL SYSTEM

57. The Irondale DBCP Control System was constructed for the primary purpose of eliminating the migration of DBCP contaminated ground water off the Arsenal and into the Irondale community. In order to evaluate the overall effectiveness of the operating system in achieving this purpose, the ability of the system to intercept contaminated ground-water flow and to remove DBCP from this flow must be assessed. The data collected during the FY85 and FY86 study periods indicate that the control system has been effective in achieving both objectives.

58. The ground-water elevation maps (Plates 5 through 12) indicate that the dewatering wells have produced a general depression in the ground-water levels near the center of the system. An area of elevated ground-water levels has been created immediately northwest of the line of recharge wells as a result of the recharge of treated water. This has produced a ground-water divide resulting in a local reversal in the ground-water gradient from the northwest to the southeast of the natural ground-water gradient. As a result of both conditions, ground water in the vicinity of the system tends to flow radially into the area bounded by the two rows of extraction wells, thus, providing the localized control of ground-water flow direction.

59. The DBCP concentration maps indicate that the control system is intercepting the flow of DBCP contaminated ground water in this area. The data obtained from the analysis of influent and effluent samples from the treatment plant indicate that the plant is effectively removing DBCP, resulting in the recharge of contaminant-free water. The effectiveness of the control system is further evidenced by the fact that no DBCP concentrations above the detectable level were found in any of the ground-water samples collected from wells in the Irondale community. Thus, the data indicate that the Irondale DBCP Control System has been effective eliminating the migration of DBCP contaminated ground water off the arsenal in its area of influence during the FY85-86 time frame.

## PART V: CONCLUSIONS

60. Based on the results of this study, the following conclusions have been drawn:

- a. The Irondale DBCP Control System is intercepting the alluvial ground-water flow approaching from upgradient.
- b. The system is maintaining a consistent ground-water hydraulic gradient from the recharge wells toward the dewatering wells.
- c. Ground-water contours in the west and southwestern portion of Section 33 are influenced by the pump rates of the SACWSD wells at sites 6 and 7. Increased pumping rates at these sites would be expected to result in an increased influence on ground-water flow on the Arsenal in the vicinity of the system.
- d. Better definition of ground-water flow in the western portion of Section 33 is needed to accurately determine the influence of SAWSD wells on flow toward the system and the fate of contaminants in that flow.
- e. The control system is successfully intercepting the flow of DBCP contaminated ground-water in this area of the Arsenal.
- f. The treatment plant is effectively removing DBCP from the ground-water resulting in the recharge of water below the detection level for DBCP.
- g. The overall effectiveness of the Irondale DBCP Control System is evidenced by the fact that no DBCP concentrations above the detectable level were found in any of the samples collected from wells in the Irondale Community during the FY85-86 time frame.

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APPENDIX A: U.S. ARMY IRONDALE WATER LEVEL AND WATER QUALITY  
DATA FY 85/86

R.I.C.                      FY85 & FY86 WATER LEVEL DATA

WELL NO ----	AQUIF TYPE -----	DATE -----	DEPTH (TOC) -----	WATER ELEV -----	SAT THICK -----	REMARKS -----
03001	ALL	10/10/84	75.72	5134.60	35.60	
		11/14/84	75.60	5134.72	35.72	
		12/17/84	75.50	5134.82	35.82	
		01/07/85	75.30	5135.02	36.02	
		03/18/85	75.00	5135.32	36.32	
		03/26/85	75.00	5135.32	36.32	
		07/02/85	74.90	5135.42	36.42	
		09/25/85	75.00	5135.32	36.32	
		10/08/85	75.22	5135.10	36.10	
		03/13/86	75.00	5135.32	36.32	
		05/31/86	75.60	5134.72	35.72	
		08/05/86	75.10	5135.22	36.22	
		03002	ALL	10/10/84	67.67	5128.74
11/14/84	67.50			5128.91	40.31	
01/07/85	67.22			5129.19	40.59	
03/26/85	66.90			5129.51	40.91	
07/02/85	66.50			5129.91	41.31	
09/25/85	66.80			5129.61	41.01	
10/08/85	67.30			5129.11	40.51	
05/31/86	66.50			5129.91	41.31	
08/05/86	67.10			5129.31	40.71	
03003	DEN	11/14/84	67.70	5130.29	39.91	
		03/26/85	67.00	5130.99	40.61	
		07/02/85	66.70	5131.29	40.91	
		09/25/85	66.90	5131.09	40.71	
		10/08/85	68.00	5129.99	39.61	
		03/13/86	67.70	5130.29	39.91	
03004	DEN	05/31/86	67.50	5130.49	40.11	
		11/14/84	69.00	5129.42	38.62	
		03/26/85	68.90	5129.52	38.72	
		07/02/85	68.90	5129.52	38.72	
		09/25/85	69.00	5129.42	38.62	
		03/13/86	71.60	5126.82	36.02	
		05/31/86	69.20	5129.22	38.42	
03005	ALL	08/05/86	69.30	5129.12	38.32	
		10/29/84	22.10	5175.11	39.33	
		11/14/84	22.10	5175.11	39.33	
		03/18/85	29.90	5167.31	31.53	
		03/26/85	21.90	5175.31	39.53	
		07/02/85	21.80	5175.41	39.63	
		09/25/85	21.50	5175.71	39.93	
		10/08/85	21.63	5175.58	39.80	
		03/13/86	22.40	5174.81	39.03	
		05/31/86	20.50	5176.71	40.93	
03006	DEN	08/05/86	20.50	5176.71	40.93	
		11/14/84	31.70	5166.11	30.00	
		03/26/85	31.50	5166.31	30.20	
		07/02/85	31.70	5166.11	30.00	
		09/25/85	31.60	5166.21	30.10	

R.I.C.                      FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
-----	-----	-----	-----	-----	-----	-----
03006	DEN	10/08/85	31.75	5166.06	29.95	
		03/13/86	31.00	5166.81	30.70	
		05/31/86	30.80	5167.01	30.90	
		08/05/86	30.80	5167.01	30.90	
03007	DEN	11/14/84	40.60	5157.01	21.19	
		03/26/85	40.20	5157.41	21.59	
		07/02/85	40.10	5157.51	21.69	
		09/25/85	40.00	5157.61	21.79	
		10/08/85	40.20	5157.41	21.59	
		05/31/86	57.00	5140.61	4.79	
		08/05/86	48.70	5148.91	13.09	
03008	ALL	10/01/84	62.92	5157.69		
		10/10/84	62.85	5157.76		
		11/14/84	62.70	5157.91		
		01/07/85	62.50	5158.11		
		03/26/85	62.50	5158.11		
		07/02/85	62.50	5158.11		
		09/25/85	62.50	5158.11		
		10/07/85	62.31	5158.30		
		03/13/86	62.70	5157.91		
		05/31/86	62.20	5158.41		
		08/05/86	62.80	5157.81		
03009	ALL	10/10/84	76.27	5134.51		
		01/07/85	75.88	5134.90		
		04/02/85	75.50	5135.28		
		06/26/85	75.40	5135.38		
		09/25/85	75.60	5135.18		
		10/08/85	75.85	5134.93		
		03/13/86	75.60	5135.18		
		05/31/86	75.20	5135.58		
08/05/86	75.60	5135.18				
03010	ALL	10/10/84	70.91	5135.35		
		01/07/85	70.56	5135.70		
		04/02/85	70.30	5135.96		
		06/26/85	70.20	5136.06		
		09/25/85	70.40	5135.86		
		11/09/85	70.50	5135.76		
		03/13/86	70.30	5135.96		
		05/31/86	69.70	5136.56		
08/13/86	70.30	5135.96				
03516	ALL	10/10/84	63.24	5124.66		
		01/07/85	62.72	5125.18		
		04/02/85	62.30	5125.60		
		06/26/85	62.50	5125.40		
		09/25/85	62.80	5125.10		
		11/09/85	62.80	5125.10		
		03/13/86	62.40	5125.50		
05/31/86	62.20	5125.70				
08/05/86	62.60	5125.30				

R.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOG)	WATER ELEV	SAT THICK	REMARKS
-----	-----	-----	-----	-----	-----	-----
03517	ALL	10/10/84	57.26	5124.88	15.78	
		01/07/85	56.85	5125.29	16.19	
		04/02/85	56.40	5125.74	16.64	
		06/26/85	56.40	5125.74	16.64	
		09/25/85	56.70	5125.44	16.34	
		11/09/85	56.90	5125.24	16.14	
		03/13/86	56.50	5125.64	16.54	
		05/31/86	56.30	5125.84	16.74	
		08/05/86	56.70	5125.44	16.34	
03518	ALL	10/10/84	48.94	5125.19	13.59	
		01/07/85	48.51	5125.62	14.02	
		04/02/85	48.00	5126.13	14.53	
		06/26/85	48.20	5125.93	14.33	
		09/25/85	48.50	5125.63	14.03	
		11/09/85	48.50	5125.63	14.03	
		03/13/86	48.10	5126.03	14.43	
		05/31/86	47.90	5126.23	14.63	
		08/05/86	48.30	5125.83	14.23	
03519	ALL	10/10/84	60.00	5125.42		DRY
		01/07/85	59.60	5125.82		DRY
		04/02/85	59.30	5126.12		DRY
		06/26/85	59.20	5126.22		DRY
		09/25/85	59.50	5125.92		DRY
		11/09/85	59.60	5125.82		DRY
		03/13/86	59.82	5125.60		DRY
		05/31/86	59.00	5126.42		DRY
		08/05/86	59.40	5126.02		DRY
03522	ALL	10/10/84	72.34	5131.92	7.02	
		01/07/85	71.95	5132.31	7.41	
		04/02/85	71.60	5132.66	7.76	
		06/26/85	71.50	5132.76	7.86	
		09/25/85	71.80	5132.46	7.56	
		11/09/85	72.00	5132.26	7.36	
		03/13/86	71.90	5132.36	7.46	
		05/31/86	71.30	5132.96	8.06	
		08/05/86	71.70	5132.56	7.66	
03523	ALL	10/01/84	66.49	5140.69	12.49	
		10/10/84	66.50	5140.68	12.48	
		01/07/85	66.12	5141.06	12.86	
		04/02/85	65.90	5141.28	13.08	
		06/26/85	65.80	5141.38	13.18	
		09/25/85	65.90	5141.28	13.08	
		10/08/85	66.10	5141.08	12.88	
		03/13/86	65.90	5141.28	13.08	
		05/31/86	65.40	5141.78	13.58	
08/05/86	65.80	5141.38	13.18			
03526	ALL	10/10/84	63.09	5124.09		
		01/07/85	62.60	5124.58		
		04/02/85	62.10	5125.08		



K. I. C. FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
03526	ALL	06/26/85	62.40	5124.78		
		09/25/85	62.80	5124.38		
		11/09/85	62.70	5124.48		
		03/13/86	62.40	5124.78		
		05/31/86	62.10	5125.08		
		08/05/86	62.50	5124.68		
04001	ALL	10/10/84	59.35	5124.60		
		11/14/84	58.80	5125.15		
		03/26/85	57.60	5126.35		
		06/26/85	58.30	5125.65		
		09/25/85	58.80	5125.15		
		10/08/85	58.80	5125.15		
		03/07/86	57.80	5126.15		
		05/31/86	57.70	5126.25		
		08/06/86	58.60	5125.35		
04002	ALL	10/10/84	51.35	5121.85		
		01/07/85	49.93	5123.27		
		04/02/85	49.40	5123.80		
		06/26/85	50.40	5122.80		
		09/25/85	51.00	5122.20		
		10/08/85	51.10	5122.10		
		03/07/86	49.60	5123.60		
		05/31/86	49.70	5123.50		
		08/06/86	50.80	5122.40		
04003	ALL	10/10/84	53.70	5121.63		
		01/07/85	52.17	5123.16		
		04/02/85	51.60	5123.13		
		06/26/85	52.60	5122.13		
		09/25/85	53.20	5121.53		
04004	ALL	10/10/84	51.46	5120.85		
		01/07/85	49.89	5122.42		
		04/02/85	49.40	5122.91		
		06/26/85	50.50	5121.81		
		09/25/85	51.00	5121.31		
		10/08/85	51.20	5121.11		
		03/07/86	49.80	5122.51		
		05/31/86	50.00	5122.31		
		08/06/86	51.00	5121.31		
04007	ALL	10/10/84	52.64	5121.25	26.55	
		11/14/84	51.80	5122.09	27.39	
		01/07/85	0.00	0.00		PLUGGED
		03/26/85	52.00	5121.89	27.19	
		06/26/85	51.90	5121.99	27.29	
		09/25/85	52.40	5121.49	26.79	
		10/08/85	52.30	5121.59	26.89	
		03/07/86	50.80	5123.09	28.39	
		05/31/86	51.30	5122.59	27.89	
		08/06/86	52.40	5121.49	26.79	
		04008	DEN	11/14/84	53.50	5121.73

## R.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO -----	AQUIF TYPE -----	DATE -----	DEPTH (TOC) -----	WATER ELEV -----	SAT THICK -----	REMARKS -----
04008	DEN	03/26/85	53.80	5121.43	26.63	
		06/26/85	53.00	5122.23	27.43	
		09/25/85	53.10	5122.13	27.33	
		10/08/85	53.70	5121.53	26.73	
		03/07/86	52.40	5122.83	28.03	
		05/31/86	52.80	5122.43	27.63	
		08/06/86	53.30	5121.93	27.13	
04009	DEN	11/14/84	62.40	5112.56	17.86	
		03/26/85	62.10	5112.86	18.16	
		06/26/85	62.00	5112.96	18.26	
		09/25/85	62.00	5112.96	18.26	
		10/08/85	62.10	5112.86	18.16	
		03/07/86	77.70	5097.26	2.56	
		05/31/86	54.80	5120.16	25.46	
08/06/86	88.30	5086.66				
04010	ALL	10/10/84	69.05	5126.52	19.92	
		10/31/84	68.90	5126.67	20.07	
		11/14/84	68.90	5126.67	20.07	
		01/07/85	68.26	5127.31	20.71	
		03/18/85	67.70	5127.87	21.27	
		03/26/85	67.70	5127.87	21.27	
		06/26/85	67.90	5127.67	21.07	
		09/25/85	68.20	5127.37	20.77	
		10/08/85	68.60	5126.97	20.37	
		03/07/86	67.60	5127.97	21.37	
		05/31/86	67.40	5128.17	21.57	
08/05/86	68.40	5127.17	20.57			
04011	DEN	11/14/84	68.50	5126.63	20.03	
		03/26/85	67.30	5127.83	21.23	
		06/26/85	67.50	5127.63	21.03	
		09/25/85	67.60	5127.53	20.93	
		10/08/85	0.00	0.00		DRY
		03/07/86	68.30	5126.83	20.23	
05/31/86	67.60	5127.53	20.93			
04012	DEN	11/14/84	78.40	5117.16	10.56	
		03/26/85	78.10	5117.46	10.86	
		06/26/85	75.10	5120.46	13.86	
		09/25/85	75.00	5120.56	13.96	
		10/08/85	78.50	5117.06	10.46	
		03/07/86	78.40	5117.16	10.56	
05/31/86	78.40	5117.16	10.56			
04013	ALL	10/03/84	70.50	5122.19	33.09	
		10/10/84	70.55	5122.14	33.04	
		10/26/84	70.38	5122.31	33.21	
		01/07/85	69.70	5122.99	33.89	
		02/14/85	69.50	5123.19	34.09	
		04/02/85	69.30	5123.39	34.29	
		06/26/85	69.70	5122.99	33.89	
		09/25/85	70.30	5122.39	33.29	

R. I. C.                      FY85 & FY86 WATER LEVEL DATA

WELL NO -----	AQUIF TYPE -----	DATE -----	DEPTH (TOC) -----	WATER ELEV -----	SAT THICK -----	REMARKS -----
04013	ALL	10/08/85	70.10	5122.59	33.49	
		03/07/86	69.60	5123.09	33.99	
		05/31/86	69.50	5123.19	34.09	
		08/05/86	70.00	5122.69	33.59	
04014	ALL	10/03/84	70.40	5122.23	33.03	
		10/26/84	70.30	5122.33	33.13	
		02/14/85	69.60	5123.03	33.83	
		10/08/85	70.20	5122.43	33.23	
		03/07/86	69.30	5123.33	34.13	
		05/31/86	69.20	5123.43	34.23	
		08/05/86	70.00	5122.63	33.43	
04015	ALL	10/03/84	70.30	5122.35	33.15	
		10/08/85	70.20	5122.45	33.25	
		03/07/86	69.20	5123.45	34.25	
		05/31/86	69.20	5123.45	34.25	
		08/05/86	70.00	5122.65	33.45	
04016	ALL	10/03/84	70.50	5122.20	33.10	
		10/08/85	70.20	5122.50	33.40	
		03/07/86	69.30	5123.40	34.30	
		05/31/86	69.40	5123.30	34.20	
		08/05/86	70.00	5122.70	33.60	
04017	ALL	10/03/84	63.80	5123.37	19.97	
		10/10/84	63.85	5123.32	19.92	
		01/07/85	63.15	5124.02	20.62	
		02/14/85	62.80	5124.37	20.97	
		04/02/85	62.70	5124.47	21.07	
		06/26/85	62.90	5124.27	20.87	
		09/25/85	63.40	5123.77	20.37	
		11/09/85	63.30	5123.87	20.47	
		03/07/86	62.80	5124.37	20.97	
		05/31/86	62.80	5124.37	20.97	
		08/05/86	63.50	5123.67	20.27	
04018	ALL	10/03/84	64.20	5123.27	19.87	
04019	ALL	10/03/84	63.10	5124.09	17.99	
		10/10/84	63.30	5123.89	17.79	
		10/26/84	63.26	5123.93	17.83	
		01/07/85	62.71	5124.48	18.38	
		02/14/85	62.50	5124.69	18.59	
		04/02/85	62.30	5124.89	18.79	
		06/26/85	62.40	5124.79	18.69	
		09/25/85	62.80	5124.39	18.29	
		10/08/85	62.90	5124.29	18.19	
		03/07/86	62.40	5124.79	18.69	
		05/31/86	62.30	5124.89	18.79	
08/05/86	62.70	5124.49	18.39			
04020	ALL	10/03/84	63.20	5123.91	18.01	
		10/08/85	62.80	5124.31	18.41	

R.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
-----	-----	-----	-----	-----	-----	-----
04020	ALL	03/07/86	62.50	5124.61	18.71	
		05/31/86	62.20	5124.91	19.01	
		08/05/86	62.60	5124.31	18.41	
04021	ALL	10/03/84	71.80	5121.52	30.32	
		10/10/84	71.75	5121.57	30.37	
		01/07/85	70.77	5122.55	31.35	
		02/19/85	70.50	5122.82	31.62	
		04/02/85	70.30	5123.02	31.82	
		06/26/85	70.80	5122.52	31.32	
		09/25/85	71.50	5121.82	30.62	
		03/07/86	70.50	5122.82	31.62	
		05/31/86	70.80	5122.52	31.32	
		08/05/86	71.40	5121.92	30.72	
		04022	ALL	10/03/84	71.50	5121.61
02/19/85	70.20			5122.91	31.61	
04023	ALL	10/03/84	71.70	5121.61	30.31	
04024	ALL	10/02/84	72.00	5120.55	16.65	
		10/10/84	71.70	5120.85	16.95	
		10/26/84	71.52	5121.03	17.13	
		01/07/85	70.60	5121.95	18.05	
		02/19/85	70.30	5122.25	18.35	
		04/02/85	70.10	5122.45	18.55	
		06/26/85	70.70	5121.85	17.95	
		09/25/85	71.50	5121.05	17.15	
		10/08/85	71.20	5121.35	17.45	
		03/07/86	70.30	5122.25	18.35	
		05/31/86	70.50	5122.05	18.15	CASE BROKEN
		08/05/86	71.20	5121.35	17.45	
		04025	ALL	10/02/84	71.50	5120.76
02/19/85	70.00			5122.26	18.16	
10/08/85	71.16			5119.24	15.14	
03/07/86	70.10			5120.30	16.20	
05/31/86	68.10			5122.30	18.20	
08/05/86	69.10			5121.30	17.20	MEAS @GRND
04026	ALL	10/02/84	65.80	5126.38	35.18	
		10/10/84	65.85	5126.33	35.13	
		01/07/85	65.30	5126.88	35.68	
		02/19/85	65.10	5127.08	35.88	
		04/02/85	64.90	5127.28	36.08	
		06/26/85	65.00	5127.18	35.98	
		09/25/85	65.40	5126.78	35.58	
		10/08/85	65.50	5126.68	35.48	
		03/07/86	64.90	5127.28	36.08	
		05/31/86	64.80	5127.38	36.18	
04027	ALL	10/02/84	65.70	5126.38	35.18	
		02/19/85	65.30	5126.78	35.58	

R.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOG)	WATER ELEV	SAT THICK	REMARKS
-----	-----	-----	-----	-----	-----	-----
04027	ALL	10/08/85	65.80	5126.28	35.08	
		03/07/86	65.10	5126.98	35.78	
		05/31/86	65.20	5126.88	35.68	
		08/05/86	65.60	5126.48	35.28	
04028	ALL	10/02/84	65.60	5126.34	35.14	
		10/08/85	65.60	5126.34	35.14	
		03/07/86	66.00	5125.94	34.74	
		05/31/86	64.80	5127.14	35.94	
04029	ALL	10/02/84	65.80	5126.22	35.22	
		10/08/85	65.60	5126.42	35.42	
		03/07/86	65.00	5127.02	36.02	
		05/31/86	64.90	5127.12	36.12	
04030	ALL	10/02/84	65.95	5133.37	39.87	
		10/22/84	65.93	5133.39	39.89	
		01/07/85	65.61	5133.71	40.21	
		02/13/85	65.60	5133.72	40.22	
04031	ALL	04/02/85	65.30	5134.02	40.52	
		06/26/85	65.10	5134.22	40.72	
		09/25/85	65.30	5134.02	40.52	
		10/08/85	65.50	5133.82	40.32	
		03/07/86	65.00	5134.32	40.82	
		05/31/86	64.50	5134.82	41.32	
		08/05/86	65.10	5134.22	40.72	
		10/02/84	65.85	5133.34	39.84	
		10/22/84	65.80	5133.39	39.89	
		02/13/85	65.40	5133.79	40.29	
04032	ALL	10/08/85	65.40	5133.79	40.29	
		03/07/86	64.90	5134.29	40.79	
		05/31/86	64.80	5134.39	40.89	
		08/05/86	65.00	5134.19	40.69	
		10/02/84	64.95	5133.32	39.82	
		10/10/84	65.05	5133.22	39.72	
		10/22/84	65.18	5133.09	39.59	
04033	ALL	02/13/85	65.00	5133.27	39.77	
		10/08/85	64.50	5133.77	40.27	
		03/07/86	64.00	5134.27	40.77	
		05/31/86	63.70	5134.57	41.07	
		08/05/86	64.10	5134.17	40.67	
		10/02/84	65.95	5133.46	39.86	
		10/08/85	65.70	5133.71	40.11	
04035	ALL	03/07/86	65.10	5134.31	40.71	
		05/31/86	64.90	5134.51	40.91	
		08/05/86	65.30	5134.11	40.51	
		03/07/86	0.00	0.00		NOT FOUND
		05/31/86	0.00	0.00		NOT FOUND

R. I. C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
-----	-----	-----	-----	-----	-----	-----
04524	ALL	10/10/84	60.95	5138.26	11.26	
		11/14/84	60.80	5138.41	11.41	
		01/07/85	60.62	5138.59	11.59	
		03/26/85	60.40	5138.81	11.81	
		04/02/85	60.40	5138.81	11.81	
		07/01/85	60.25	5138.96	11.96	
		09/25/85	60.40	5138.81	11.81	
		10/08/85	60.40	5138.81	11.81	
		03/07/86	59.90	5139.31	12.31	
		05/31/86	59.50	5139.71	12.71	
		08/05/86	59.90	5139.31	12.31	
04525	ALL	10/10/84	62.32	5138.75	9.95	
		01/07/85	61.96	5139.11	10.31	
		04/02/85	61.70	5139.37	10.57	
		07/01/85	61.50	5139.57	10.77	
		09/25/85	61.70	5139.37	10.57	
		11/09/85	61.70	5139.37	10.57	
		03/07/86	61.20	5139.87	11.07	
		05/31/86	61.00	5140.07	11.27	
		08/05/86	61.30	5139.77	10.97	
04527	ALL	10/10/84	63.76	5123.45		
		01/07/85	63.10	5124.11		
		04/02/85	62.50	5124.71		
		07/01/85	62.70	5124.51		
		09/25/85	63.10	5124.11		
		11/09/85	63.30	5123.91		
		05/31/86	62.60	5124.61		
		08/05/86	63.10	5124.11		
04528	ALL	10/10/84	69.50	5122.35		
		01/07/85	68.75	5123.10		
		04/02/85	68.20	5123.65		
		07/01/85	68.60	5123.25		
		09/25/85	69.10	5122.75		
		11/09/85	69.10	5122.75		
		03/07/86	68.40	5123.45		
		05/31/86	68.40	5123.45		
08/05/86	68.90	5122.95				
04529	ALL	10/10/84	71.60	5121.67		
		01/07/85	70.68	5122.59		
		04/02/85	70.30	5122.97		
		07/01/85	70.70	5122.57		
		09/25/85	71.30	5121.97		
		11/09/85	71.30	5121.97		
		03/07/86	70.60	5122.67		
		05/31/86	70.50	5122.77		
08/05/86	71.10	5122.17				
04532	ALL	10/10/84	65.51	5123.94		
		11/14/84	65.20	5124.25		
		01/07/85	64.82	5124.63		

R.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO .....	AQUIF TYPE .....	DATE .....	DEPTH (TOC) .....	WATER ELEV .....	SAT THICK .....	REMARKS .....
04532	ALL	03/26/85	64.50	5124.95		
		04/02/85	64.50	5124.95		
		07/01/85	64.70	5124.75		
		09/25/85	65.20	5124.25		
		11/09/85	65.20	5124.25		
		03/07/86	64.50	5124.95		
		05/31/86	64.30	5125.15		
		08/05/86	65.00	5124.45		
28001	ALL	11/11/85	0.00	0.00		NOT FOUND
		03/10/86	0.00	0.00		NOT FOUND
		06/10/86	0.00	0.00		NOT FOUND
		08/11/86	0.00	0.00		NOT FOUND
28002	ALL	10/14/85	30.90	5096.82	23.22	
		03/10/86	31.40	5096.32	22.72	
		03/12/86	31.45	5096.27	22.67	
		06/13/86	31.50	5096.22	22.62	
		08/07/86	31.70	5096.02	22.42	
28003	ALL	11/11/85	37.70	5096.87	23.17	
		03/10/86	38.00	5096.57	22.87	
		03/12/86	38.00	5096.57	22.87	
		06/13/86	38.00	5096.57	22.87	
		08/07/86	37.90	5096.67	22.97	
28004	ALL	11/11/85	43.80	5097.24	23.24	
		03/10/86	44.00	5097.04	23.04	
		03/12/86	43.99	5097.05	23.05	
		06/13/86	44.20	5096.84	22.84	
		08/07/86	43.80	5097.24	23.24	
28005	ALL	11/16/84	38.00	5099.15	23.35	
		04/01/85	38.10	5098.09	22.29	
		07/08/85	38.00	5098.19	22.39	
		09/30/85	38.20	5097.99	22.19	
		10/14/85	38.30	5097.89	22.09	
		03/10/86	38.60	5097.59	21.79	
		03/12/86	38.68	5097.51	21.71	
		06/13/86	38.70	5097.49	21.69	
		08/07/86	38.80	5097.39	21.59	
28006	ALL	11/11/85	37.00	5098.19	22.39	
		03/10/86	37.20	5097.99	22.19	
		03/12/86	37.26	5097.93	22.13	
		06/13/86	37.40	5097.79	21.99	
		08/07/86	37.10	5098.09	22.29	
28007	ALL	11/11/85	37.30	5098.62	21.02	
		03/10/86	37.70	5098.22	20.62	
		06/13/86	37.80	5098.12	20.52	
		08/07/86	37.60	5098.32	20.72	
28008	ALL	10/11/85	39.30	5098.66	18.16	

R.I.C. FY85 & FY86 WATER LEVEL DATA						
WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
-----	-----	-----	-----	-----	-----	-----
28008	ALL	03/10/86	39.50	5098.46	17.96	
		06/13/86	39.50	5098.46	17.96	
		08/07/86	39.70	5098.26	17.76	
28009	ALL	10/07/84	32.91	5100.94	20.94	
		01/07/85	33.21	5100.64	20.64	
		04/02/85	33.00	5099.82	19.82	
		07/08/85	33.00	5099.82	19.82	
		09/30/85	33.30	5099.52	19.52	
		03/10/86	33.70	5099.12	19.12	
		06/13/86	33.70	5099.12	19.12	
		08/07/86	33.60	5099.22	19.22	
28010	ALL	10/31/84	36.30	5100.14	17.04	
		02/28/85	36.40	5100.04	16.94	
28011	ALL	11/11/85	40.10	5099.89	18.79	
		03/10/86	40.10	5099.89	18.79	
		06/13/86	40.50	5099.49	18.39	
		08/06/86	40.40	5099.59	18.49	
28012	ALL	10/08/84	33.79	5100.73	15.33	
		11/16/84	34.00	5100.52	15.12	
		01/07/85	33.97	5100.55	15.15	
		04/01/85	33.80	5100.72	15.32	
		07/08/85	23.90	5110.62	25.22	
		09/30/85	34.10	5100.42	15.02	
		10/11/85	34.30	5100.22	14.82	MUDDY
		03/10/86	34.40	5100.12	14.72	
		06/13/86	34.80	5099.72	14.32	
		08/06/86	34.40	5100.12	14.72	
		28013	ALL	11/11/85	37.30	5100.05
03/10/86	37.00			5100.05	12.55	
06/13/86	37.20			5100.15	12.35	
08/06/86	37.30			5100.05	12.25	
28014	ALL	10/08/84	44.08	5100.60	15.10	
		11/11/85	44.60	5100.08	14.58	
		06/13/86	44.70	5099.98	14.48	
		08/06/86	44.80	5099.88	14.38	
28015	ALL	10/08/84	44.55	5102.04	16.64	
		01/07/85	44.26	5102.33	16.93	
		04/02/85	44.00	5101.60	16.20	
		07/08/85	44.30	5101.30	15.90	
		09/30/85	44.80	5100.80	15.40	
		10/11/85	45.10	5100.50	15.10	
		03/10/86	44.90	5100.70	15.30	
		06/13/86	45.00	5100.60	15.20	
28016	ALL	10/08/84	44.67	5101.21	10.41	
		01/07/85	44.27	5101.61	10.81	



## R.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO -----	AQUIF TYPE -----	DATE -----	DEPTH (TOC) -----	WATER ELEV -----	SAT THICK -----	REMARKS -----
28016	ALL	04/02/85	43.90	5101.98	11.18	
		07/08/85	44.30	5101.58	10.78	
		09/30/85	45.00	5100.88	10.08	
28017	ALL	10/08/84	44.37	5102.18	10.88	
		01/07/85	43.82	5102.73	11.43	
		04/02/85	43.60	5102.02	10.72	
		07/08/85	43.80	5101.82	10.52	
		09/30/85	44.70	5100.92	9.62	
28018	ALL	10/08/84	47.32	5101.44	8.44	
		11/16/84	47.10	5101.66	8.66	
		01/07/85	46.56	5102.20	9.20	
		04/01/85	46.30	5102.46	9.46	
		07/08/85	46.60	5102.16	9.16	
		09/30/85	47.60	5101.16	8.16	
		10/11/85	47.80	5100.96	7.96	
		03/10/86	47.10	5101.66	8.66	
		06/13/86	47.50	5101.26	8.26	
		08/06/86	47.80	5100.96	7.96	
28019	ALL	10/08/84	45.93	5101.55	10.05	
		01/07/85	45.10	5102.38	10.88	
		04/02/85	44.90	5102.58	11.08	
		07/08/85	45.20	5102.28	10.78	
		09/30/85	46.20	5101.28	9.78	
28020	ALL	10/08/84	42.36	5101.50	10.80	
		11/16/84	42.00	5101.86	11.16	
		01/07/85	40.90	5102.96	12.26	
		04/02/85	40.30	5103.06	12.36	
		07/08/85	41.60	5102.26	11.56	
		09/30/85	42.70	5101.16	10.46	
		10/11/85	42.80	5101.06	10.36	
		03/10/86	41.90	5101.96	11.26	
		06/13/86	42.10	5101.76	11.06	
		08/06/86	42.90	5100.96	10.26	
28021	ALL	10/08/84	43.31	5100.99	7.99	
		11/16/84	42.90	5101.40	8.40	
		01/07/85	41.80	5102.50	9.50	
		04/01/85	41.70	5102.60	9.60	
		07/08/85	42.40	5101.90	8.90	
		09/30/85	43.50	5100.80	7.80	
		10/11/85	43.80	5100.50	7.50	
		03/10/86	42.60	5101.70	8.70	
		06/13/86	42.70	5101.60	8.60	
		08/06/86	43.60	5100.70	7.70	
28022	ALL	10/08/84	39.85	5103.73	15.93	
		11/16/84	39.80	5103.78	15.98	
		01/07/85	39.80	5103.78	15.98	
		04/01/85	39.60	5103.98	16.18	
		07/08/85	39.60	5103.98	16.18	

R.I.C. FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
-----	-----	-----	-----	-----	-----	-----
28022	ALL	09/30/85	39.90	5103.68	15.88	
		10/14/85	40.00	5103.58	15.78	
		03/10/86	40.00	5103.58	15.78	
		06/13/86	40.00	5103.58	15.78	
		08/06/86	40.20	5103.38	15.58	
28023	ALL	10/08/84	35.28	5098.95	18.75	
		10/31/84	35.50	5098.73	18.53	
		11/16/84	35.50	5098.73	18.53	
		01/07/85	35.53	5098.70	18.50	
		02/28/85	35.80	5098.43	18.23	
		04/01/85	35.50	5098.73	18.53	
		07/08/85	35.40	5098.83	18.63	
		09/30/85	35.60	5098.63	18.43	
		10/14/85	35.90	5098.33	18.13	
		03/10/86	36.10	5098.13	17.93	
		03/12/86	36.19	5098.04	17.84	
		06/13/86	35.20	5099.03	18.83	
		08/07/86	36.00	5098.23	18.03	
28024	ALL	11/16/84	35.50	5098.71	18.51	
		04/01/85	35.50	5098.71	18.51	
		07/08/85	35.40	5098.81	18.61	
		09/30/85	35.60	5098.61	18.41	
		10/14/85	35.90	5098.31	18.11	
		03/10/86	36.10	5098.11	17.91	
		03/12/86	36.18	5098.03	17.83	
		08/07/86	37.00	5097.21	17.01	
28025	DEN	11/16/84	37.50	5097.21	17.01	
		04/01/85	37.60	5097.11	16.91	
		07/08/85	37.90	5096.81	16.61	
		09/30/85	37.50	5097.21	17.01	
		10/14/85	37.90	5096.81	16.61	
		03/10/86	38.00	5096.71	16.51	
		03/12/86	38.04	5096.67	16.47	
		06/13/86	38.40	5096.31	16.11	
08/07/86	38.50	5096.21	16.01			
28026	DEN	11/16/84	37.40	5099.41	19.11	
		04/01/85	37.50	5097.14	16.84	
		07/08/85	37.70	5096.94	16.64	
		09/30/85	37.70	5096.94	16.64	
		10/14/85	37.80	5096.84	16.54	
		03/10/86	38.00	5096.64	16.34	
		03/12/86	38.05	5096.59	16.29	
		06/13/86	38.30	5096.34	16.04	
08/07/86	38.40	5096.24	15.94			
28027	ALL	10/08/84	39.45	5101.15	9.75	
		10/31/84	39.50	5101.10	9.70	
		11/16/84	39.30	5101.30	9.90	
		01/07/85	38.99	5101.61	10.21	
		02/28/85	38.90	5101.70	10.30	

R.I.C. FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
28027	ALL	04/01/85	38.80	5101.80	10.40	
		07/08/85	39.00	5101.60	10.20	
		09/30/85	38.80	5101.80	10.40	
		10/11/85	39.90	5100.70	9.30	
		03/10/86	39.60	5101.00	9.60	
		06/13/86	39.80	5100.80	9.40	
		08/07/86	40.10	5100.50	9.10	
28028	DEN	11/16/84	40.30	5101.97	10.27	
		04/01/85	41.00	5101.27	9.57	
		07/08/85	41.10	5101.17	9.47	
		09/30/85	41.70	5100.57	8.87	
		10/11/85	41.80	5100.47	8.77	
		03/10/86	41.70	5100.57	8.87	
		06/13/86	42.00	5100.27	8.57	
08/06/86	42.00	5100.27	8.57			
28029	DEN	11/16/84	43.00	5098.53	6.83	
		04/01/85	42.60	5098.93	7.23	
		07/08/85	42.70	5098.83	7.13	
		09/30/85	43.20	5098.33	6.63	
		10/11/85	43.30	5098.23	6.53	
		03/10/86	43.10	5098.43	6.73	CASE BROKEN
		06/13/86	43.60	5097.93	6.23	
08/06/86	43.60	5097.93	6.23			
28030	ALL	11/11/85	42.20	5100.95		
		03/10/86	41.20	5101.95		
		06/13/86	41.30	5101.85		
		08/06/86	42.40	5100.75		
28503	ALL	10/08/84	49.08	5106.42	12.52	
		01/07/85	46.75	5108.75	14.85	
		04/02/85	45.50	5110.00	16.10	
		07/08/85	47.50	5108.00	14.10	
		09/30/85	48.60	5106.90	13.00	
		11/11/85	48.40	5107.10	13.20	
		03/10/86	47.40	5108.10	14.20	
		06/13/86	48.30	5107.20	13.30	
28513	ALL	10/08/84	36.66	5105.02	7.62	
		01/07/85	35.43	5106.25	8.85	
		04/02/85	35.40	5106.28	8.88	
		07/08/85	36.10	5105.58	8.18	
		09/30/85	38.30	5103.38	5.98	
		11/11/85	37.60	5104.08	6.68	
		03/10/86	36.60	5105.08	7.68	
		06/13/86	37.00	5104.68	7.28	
08/06/86	39.00	5102.68	5.28			
33001	ALL	10/08/84	55.08	5114.68	23.08	
		11/14/84	54.80	5114.96	23.36	
		12/19/84	54.80	5114.96	23.36	
		01/08/85	54.49	5115.27	23.67	

R.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
-----	-----	-----	-----	-----	-----	-----
33001	ALL	03/19/85	54.20	5115.56	23.96	
		04/02/85	54.20	5115.56	23.96	
		07/01/85	54.50	5115.26	23.66	
		10/01/85	54.80	5114.96	23.36	
		10/10/85	54.80	5114.96	23.36	
		03/07/86	54.40	5115.36	23.76	
		06/13/86	54.70	5115.06	23.46	
		08/13/86	54.70	5115.06	23.46	
33002	ALL	10/08/84	46.34	5117.76	66.66	
		10/22/84	45.89	5118.21	67.11	
		11/14/84	45.20	5118.90	67.80	
		01/07/85	44.26	5119.84	68.74	
		03/19/85	43.70	5120.40	69.30	
		04/02/85	43.80	5120.30	69.20	
		07/01/85	45.70	5118.40	67.30	
		10/01/85	46.30	5117.80	66.70	
		10/11/85	46.00	5118.10	67.00	
		03/07/86	44.60	5119.50	68.40	
		06/09/86	45.10	5119.00	67.90	
		08/07/86	47.10	5117.00	65.90	
33003	ALL	10/08/84	54.55	5100.99	9.79	
		01/07/85	52.75	5102.79	11.59	
		04/02/85	52.40	5103.14	11.94	
		07/01/85	54.00	5101.54	10.34	
		10/01/85	55.50	5100.04	8.84	
33004	ALL	10/08/84	49.76	5100.10	7.50	
		11/14/84	49.30	5100.56	7.96	
		01/07/85	48.62	5101.24	8.64	
		04/02/85	47.70	5102.16	9.56	
		07/01/85	48.80	5101.06	8.46	
		10/01/85	50.00	5099.86	7.26	
33005	ALL	10/08/84	49.97	5101.54	5.74	
		01/07/85	46.97	5104.54	8.74	
		04/02/85	46.30	5105.21	9.41	
		07/01/85	49.00	5102.51	6.71	
		10/01/85	50.70	5100.81	5.01	
33006	ALL	10/08/84	55.75	5101.52	6.22	
		11/14/84	53.60	5103.67	8.37	
		01/07/85	51.73	5105.54	10.24	
		04/02/85	51.40	5105.87	10.57	
		07/01/85	54.50	5102.77	7.47	
		10/01/85	56.20	5101.07	5.77	
33007	ALL	10/08/84	53.68	5101.99	7.09	
		01/07/85	48.13	5107.54	12.64	
		04/02/85	47.20	5108.47	13.57	
		07/01/85	52.40	5103.27	8.37	
		10/01/85	54.30	5101.37	6.47	
33008	ALL	10/08/84	54.25	5101.65	7.75	

R. I. C.                      FY85 & FY86 WATER LEVEL DATA						
WELL NO -----	AQUIF TYPE -----	DATE -----	DEPTH (TOC) -----	WATER ELEV -----	SAT THICK -----	REMARKS -----
33008	ALL	11/14/84	50.70	5105.20	11.30	
		01/07/85	48.46	5107.44	13.54	
		04/02/85	47.30	5108.60	14.70	
		07/01/85	53.10	5102.80	8.90	
		10/01/85	55.00	5100.90	7.00	
33009	ALL	10/08/84	55.82	5102.09	11.79	
		01/07/85	50.10	5107.81	17.51	
		04/02/85	48.90	5107.93	17.63	
		07/01/85	54.80	5102.03	11.73	
		10/01/85	57.00	5099.83	9.53	
33010	ALL	10/08/84	53.95	5101.17	5.97	
		11/14/84	48.80	5106.32	11.12	
		01/07/85	47.34	5107.78	12.58	
		04/02/85	46.70	5108.42	13.22	
		07/01/85	54.70	5100.42	5.22	
33011	ALL	10/08/84	50.35	5102.90	31.20	
		01/07/85	43.79	5109.46	37.76	
		04/02/85	43.50	5108.69	36.99	
		07/01/85	53.10	5099.09	27.39	
		10/01/85	53.20	5098.99	27.29	
33012	ALL	10/08/84	63.73	5101.40	67.30	
		01/07/85	56.48	5108.65	74.55	
		04/02/85	56.20	5107.92	73.82	
		07/01/85	69.10	5095.02	60.92	
		09/25/85	67.60	5096.52	62.42	
33014	ALL	10/08/84	57.82	5102.33	39.13	
		01/07/85	51.32	5108.83	45.63	
		04/02/85	51.00	5109.15	45.95	
		07/01/85	60.70	5099.45	36.25	
		09/25/85	60.80	5099.35	36.15	
		11/09/85	56.90	5103.25	40.05	
		03/11/86	54.80	5105.35	42.15	
		06/13/86	57.60	5102.55	39.35	
33015	ALL	10/08/84	49.15	5106.37	37.97	
		11/14/84	53.90	5101.62	33.22	
		01/07/85	44.47	5111.05	42.65	
		04/02/85	43.60	5111.92	43.52	
		07/01/85	49.00	5106.52	38.12	
		09/25/85	50.40	5105.12	36.72	
		10/09/85	49.45	5106.07	37.67	
		03/07/86	46.00	5109.52	41.12	
		06/13/86	48.00	5107.52	39.12	
		08/07/86	50.50	5105.02	36.62	
33016	ALL	10/08/84	46.87	5111.37	35.47	
		01/07/85	43.50	5114.74	38.84	
		04/02/85	42.60	5115.64	39.74	

R.I.C. FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
33016	ALL	07/01/85	46.60	5111.64	35.74	
		09/25/85	47.60	5110.64	34.74	
		10/10/85	46.97	5111.27	35.37	
		03/07/86	44.50	5113.74	37.84	
		06/06/86	45.70	5112.54	36.64	
		08/07/86	47.40	5110.84	34.94	
33017	ALL	10/08/84	58.67	5116.35	35.05	
		11/14/84	57.50	5117.52	36.22	
		01/07/85	56.46	5118.56	37.26	
		02/14/85	56.00	5119.02	37.72	
		04/02/85	55.60	5119.42	38.12	
		07/01/85	57.60	5117.42	36.12	
		09/25/85	58.60	5116.42	35.12	
		10/11/85	58.10	5115.20	33.90	
		03/07/86	54.70	5118.60	37.30	CASE BROKEN
		06/13/86	56.00	5117.30	36.00	
		08/07/86	57.20	5116.10	34.80	MEAS @GRND
		33018	ALL	10/08/84	66.80	5101.84
10/31/84	63.60			5105.04	65.54	
11/14/84	63.60			5105.04	65.54	
01/07/85	60.08			5108.56	69.03	
03/19/85	59.80			5108.84	69.34	
04/02/85	58.80			5109.84	70.34	
07/01/85	69.70			5098.94	59.44	
09/25/85	69.90			5098.74	59.24	
10/09/85	66.90			5101.74	62.24	
03/11/86	63.30			5105.34	65.84	CASE BROKEN
06/13/86	66.70			5101.94	62.44	
33019	ALL			10/09/85	66.60	5101.93
		03/11/86	63.20	5105.33	65.83	
		06/13/86	66.40	5102.13	62.63	
33020	ALL	10/09/85	66.70	5101.82	62.52	
		03/11/86	63.20	5105.32	66.02	
		06/13/86	0.00	0.00		CAN'T READ
33021	ALL	10/09/85	66.20	5101.94	62.74	
		03/11/86	63.00	5105.14	65.94	
		06/13/86	66.80	5101.34	62.14	
33022	ALL	10/09/85	65.80	5101.92	63.12	
		03/11/86	62.60	5105.12	66.32	
		06/06/86	65.20	5102.52	63.72	
33023	ALL	10/09/85	65.10	5101.90	63.40	
		03/11/86	61.60	5105.40	66.90	
		06/06/86	64.20	5102.80	64.30	
33024	ALL	10/08/84	65.21	5102.06	63.76	
		10/09/85	65.30	5101.97	63.67	
		03/11/86	62.10	5105.17	66.87	

R.I.C.		FY85 & FY86 WATER LEVEL DATA				
WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
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33024	ALL	06/13/86	65.50	5101.77	63.47	
33025	ALL	11/14/84	55.50	5101.34	9.34	
		01/07/85	54.09	5102.75	10.75	
		03/19/85	53.60	5103.24	11.24	
		04/02/85	53.50	5103.34	11.34	
		07/01/85	55.10	5101.74	9.74	
		09/25/85	56.60	5100.24	8.24	
		10/11/85	56.60	5100.24	8.24	
		03/11/86	55.10	5101.74	9.74	
		06/11/86	55.70	5101.14	9.14	
		08/08/86	56.70	5100.14	8.14	
33026	DEN	11/14/84	55.60	5101.62	10.02	
		04/02/85	54.00	5103.22	11.62	
		07/01/85	54.50	5102.72	11.12	
		09/25/85	56.00	5101.22	9.62	
		10/11/85	56.50	5100.72	9.12	
		03/11/86	55.50	5101.72	10.12	
		06/11/86	55.60	5101.62	10.02	
		08/08/86	56.10	5101.12	9.52	
33027	DEN	11/14/84	54.80	5101.51	10.71	
		04/02/85	53.30	5103.01	12.21	
		07/01/85	53.80	5102.51	11.71	
		09/25/85	54.00	5102.31	11.51	
		10/11/85	55.60	5100.71	9.91	
		03/11/86	54.80	5101.51	10.71	
		06/11/86	55.70	5100.61	9.81	
		08/08/86	55.40	5100.91	10.11	
33028	DEN	11/14/84	130.60	5038.71		
		04/02/85	131.10	5038.21		
		07/01/85	130.70	5038.61		
		09/25/85	130.70	5038.61		
		10/09/85	130.00	5039.31		
		03/11/86	0.00	0.00		MUDDY DRY
		06/11/86	131.50	5037.81		
		08/07/86	131.00	5038.31		
33029	DEN	11/14/84	80.10	5089.27	48.97	
		04/02/85	78.00	5091.37	51.07	
		07/01/85	78.90	5090.47	50.17	
		09/25/85	78.70	5090.67	50.37	
		10/09/85	80.60	5088.77	48.47	
		03/11/86	80.20	5089.17	48.87	
		06/12/86	80.00	5089.37	49.07	
		08/07/86	80.50	5088.87	48.57	
33030	ALL	10/08/84	58.55	5115.51	16.51	
		10/31/84	57.90	5116.16	17.16	
		11/14/84	57.90	5116.16	17.16	
		01/07/85	56.70	5117.36	18.36	
		02/14/85	56.50	5117.56	18.56	

R.I.C. FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
33030	ALL	03/19/85	56.20	5117.86	18.86	
		04/02/85	56.20	5117.86	18.86	
		07/01/85	58.00	5116.06	17.06	
		09/25/85	58.60	5115.46	16.46	
		10/10/85	58.20	5115.86	16.86	
		06/12/86	57.60	5116.46	17.46	
		08/07/86	58.20	5115.86	16.86	
33031	DEN	11/14/84	66.20	5108.91	9.91	
		04/02/85	65.20	5109.91	10.91	
		07/01/85	65.40	5109.71	10.71	
		09/25/85	65.20	5109.91	10.91	
		10/10/85	66.40	5108.71	9.71	
		03/07/86	66.30	5108.81	9.81	
		06/12/86	66.10	5109.01	10.01	
08/07/86	66.20	5108.91	9.91			
33032	DEN	11/14/84	66.20	5113.66	14.86	
		04/02/85	65.30	5109.05	10.25	
		07/01/85	65.60	5108.75	9.95	
		09/25/85	65.60	5108.75	9.95	
		10/10/85	66.50	5107.85	9.05	
		03/07/86	66.30	5108.05	9.25	
		06/06/86	66.20	5108.15	9.35	
08/07/86	66.60	5107.75	8.95			
33033	ALL	10/08/84	0.00	0.00		DRY
		11/14/84	44.90	5105.64	10.24	
		01/08/85	40.75	5109.79	14.39	
		04/02/85	40.40	5110.14	14.74	
		07/01/85	40.50	5110.04	14.64	
		09/25/85	40.80	5109.74	14.34	
		10/10/85	41.00	5109.54	14.14	
		03/07/86	40.80	5109.74	14.34	
		06/13/86	40.80	5109.74	14.34	
		08/08/86	41.00	5109.54	14.14	
33034	DEN	11/14/84	42.10	5109.53	14.03	
		04/02/85	41.70	5109.93	14.43	
		07/01/85	41.60	5110.03	14.53	
		09/25/85	42.00	5109.63	14.13	
		10/10/85	42.20	5109.43	13.93	
		03/07/86	42.20	5109.43	13.93	
		08/08/86	42.20	5109.43	13.93	
33035	DEN	11/14/84	42.60	5109.05	13.75	
		04/02/85	42.30	5109.35	14.05	
		07/01/85	42.40	5109.25	13.95	
		09/25/85	42.50	5109.15	13.85	
		10/10/85	42.70	5108.95	13.65	
		03/07/86	42.60	5109.05	13.75	
		06/13/86	42.50	5109.15	13.85	
08/08/86	42.70	5108.95	13.65			
33038	ALL	10/08/84	67.78	5103.68		



R.I.C. FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
33038	ALL	01/08/85	67.39	5104.07		
		04/02/85	66.90	5104.56		
		07/01/85	67.70	5103.76		
		09/25/85	67.60	5103.86		
		11/09/85	67.80	5103.66		
		03/11/86	67.90	5103.56		
		08/07/86	67.90	5103.56		
33039	ALL	10/08/84	54.65	5104.71		
		01/08/85	52.63	5106.73		
		04/02/85	52.20	5107.16		
		07/01/85	54.40	5104.96		
		09/25/85	54.90	5104.46		
		11/09/85	54.10	5105.26		
		03/11/86	53.50	5105.86		
		06/12/86	54.00	5105.36		
33040	ALL	10/08/84	74.93	5107.01		
		01/08/85	73.23	5108.71		
		04/02/85	72.80	5108.13		
		07/01/85	74.50	5106.43		
		09/25/85	75.00	5105.93		
		11/09/85	74.50	5106.43		
		03/07/86	73.60	5107.33		
		06/12/86	74.20	5106.73		
33041	ALL	10/08/84	71.15	5107.64		
		01/08/85	68.73	5110.06		
		04/02/85	68.30	5109.53		
		07/01/85	70.88	5106.95		
		09/25/85	71.40	5106.43		
		11/09/85	70.40	7.43		
		03/07/86	69.30	5108.53		
		06/12/86	70.30	5107.53		
33042	ALL	10/08/84	57.05	5108.81		
		01/08/85	53.99	5111.87		
		04/02/85	43.50	5121.33		
		07/01/85	56.90	5107.93		
		09/25/85	57.50	5107.33		
		11/09/85	56.20	5108.63		
		03/07/86	53.60	5111.23		
		06/12/86	55.10	5109.73		
33043	ALL	10/08/84	60.50	5111.86		
		01/08/85	58.73	5113.63		
		04/02/85	58.40	5112.98		
		07/01/85	59.80	5111.58		
		09/25/85	60.40	5110.98		
		11/09/85	60.00	5111.38		

R. I. C.                      FY85 & FY86 WATER LEVEL DATA						
WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
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33043	ALL	03/07/86	59.10	5112.28		
		06/12/86	59.80	5111.58		
		08/07/86	60.50	5110.88		
33044	ALL	10/08/84	63.91	5111.07		
		01/08/85	60.94	5114.04		
		04/02/85	60.40	5114.58		
		07/01/85	63.70	5111.28		
		09/25/85	64.30	5110.68		
		11/09/85	63.00	5111.98		
		03/11/86	62.00	5112.98		
		06/12/86	62.80	5112.18		
		08/08/86	64.60	5110.38		
33045	ALL	10/08/84	65.63	5111.75		
		01/07/85	62.77	5114.61		
		04/02/85	62.10	5115.28		
		07/01/85	65.10	5112.28		
		09/25/85	56.20	5121.18		
		11/09/85	64.80	5112.58		
		03/07/86	63.40	5113.98		
		06/12/86	64.60	5112.78		
		08/07/86	66.80	5110.58		
33046	ALL	10/08/84	60.00	5115.97		
		01/07/85	58.00	5117.97		
		02/14/85	57.80	5118.17		
		04/02/85	57.50	5118.47		
		07/01/85	59.30	5116.67		
		09/25/85	60.10	5115.87		
		10/11/85	59.80	5116.17		
		03/07/86	58.30	5117.67		
		06/12/86	58.90	5117.07		
33047	ALL	10/08/84	70.68	5119.71		
		11/14/84	70.00	5120.39		
		01/07/85	69.42	5120.97		
		02/14/85	69.20	5121.19		
		04/02/85	68.90	5121.49		
		07/01/85	69.90	5120.49		
		10/01/85	70.70	5119.69		
		10/11/85	0.00	0.00		DRY
		03/07/86	69.40	5120.99		
33051	ALL	10/08/84	55.88	5101.21		
		04/02/85	53.60	5103.49		
33053	ALL	11/09/85	55.40	5102.64	3.64	
33054	ALL	10/08/84	56.66	5101.11		
		01/07/85	55.04	5102.73		

R.I.C. FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
33054	ALL	04/02/85	54.60	5103.17	0.37	
		07/01/85	56.10	5101.67		
		10/01/85	57.60	5100.17		
		11/09/85	57.20	5100.57		
		03/11/86	55.50	5102.27		
		06/11/86	56.60	5101.17		
		08/08/86	57.60	5100.17		
33057	ALL	10/08/84	51.56	5100.09		
		01/07/85	50.40	5101.25		
		04/02/85	49.90	5101.75		
		07/01/85	51.30	5100.35		
		10/01/85	52.70	5098.95		
		03/11/86	51.60	5100.05		
		06/11/86	51.80	5099.85		
		08/08/86	52.60	5099.05		
		33058	ALL	10/08/84	48.48	5100.15
01/07/85	46.89			5101.74		
04/02/85	46.70			5101.93		
07/01/85	48.00			5100.63		
10/01/85	49.20			5099.43		
11/09/85	49.00			5099.63		
03/11/86	48.30			5100.33		
06/11/86	48.30			5100.33		
08/08/86	49.00			5099.63		
33059	ALL	10/08/84	60.27	5102.46		
		04/02/85	53.70	5109.03		
		07/01/85	64.00	5098.73		
		10/01/85	63.10	5099.63		
		03/11/86	57.20	5105.53		
		06/11/86	59.80	5102.93		
33060	ALL	10/08/84	53.92	5106.57	18.17	
		01/08/85	49.62	5110.87	22.47	
		04/02/85	49.20	5111.29	22.89	
		07/01/85	54.50	5105.99	17.59	
		10/01/85	54.80	5105.69	17.29	
		10/10/85	54.00	5106.49	18.09	
		03/11/86	51.40	5109.09	20.69	
		06/12/86	53.00	5107.49	19.09	
33061	ALL	10/10/85	54.00	5106.53	18.33	
		03/11/86	51.30	5109.23	21.03	
		06/12/86	53.10	5107.43	19.23	
		08/07/86	55.80	5104.73	16.53	
33062	ALL	10/08/84	71.90	5103.42	7.92	DRY
		01/08/85	67.86	5107.46	11.96	
		04/02/85	67.40	5107.92	12.42	
		07/01/85	69.20	5106.12	10.62	
		10/01/85	72.00	5103.32	7.82	DRY

R. I. C.                      FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
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33062	ALL	10/10/85	0.00	0.00		DRY
		03/11/86	68.50	5106.82	11.32	
		06/12/86	69.10	5106.22	10.72	DRY @72.2'
		08/07/86	0.00	0.00		
33063	ALL	10/10/85	69.30	5105.72	10.22	
		03/11/86	67.80	5107.22	11.72	
		06/12/86	68.50	5106.52	11.02	
		08/07/86	69.80	5105.22	9.72	
33064	ALL	10/08/84	53.01	5110.18	61.68	
		01/07/85	49.79	5113.40	64.90	
		04/02/85	49.10	5114.09	65.59	
		07/01/85	52.90	5110.29	61.79	
		10/01/85	53.80	5109.39	60.89	
		10/10/85	52.90	5110.29	61.79	
		03/07/86	50.70	5112.49	63.99	
		06/11/86	52.00	5111.19	62.69	
33065	ALL	10/10/85	52.80	5110.40	62.00	
		03/07/86	50.50	5112.70	64.30	
		06/11/86	52.00	5111.20	62.80	
		08/07/86	53.90	5109.30	60.90	
33066	ALL	10/10/85	52.80	5110.20	61.80	
		03/07/86	50.60	5112.40	64.00	
		06/11/86	52.00	5111.00	62.60	
		08/07/86	53.80	5109.20	60.80	
33067	ALL	10/10/85	53.40	5109.85	61.45	
		03/07/86	51.00	5112.25	63.85	
		06/11/86	52.50	5110.75	62.35	
		08/07/86	54.10	5109.15	60.75	
33068	ALL	10/10/85	53.50	5109.90	61.40	
		03/07/86	51.30	5112.10	63.60	
		06/11/86	52.60	5110.80	62.30	
		08/07/86	55.00	5108.40	59.90	
33069	ALL	10/10/85	53.20	5109.87	61.37	
		03/07/86	50.80	5112.27	63.77	
		06/11/86	52.30	5110.77	62.27	
		08/07/86	54.50	5108.57	60.07	
33070	ALL	10/08/84	53.41	5101.61	1.81	
		01/07/85	51.08	5103.94	4.14	
		04/02/85	50.60	5104.42	4.62	
		07/01/85	52.50	5102.52	2.72	
		10/01/85	53.80	5101.22	1.42	
		11/09/85	52.70	5102.32	2.52	
		03/11/86	51.90	5103.12	3.32	
		06/11/86	52.30	5102.72	2.92	
		08/08/86	49.70	5105.32	5.52	

## R.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO .....	AQUIF TYPE .....	DATE .....	DEPTH (TOC) .....	WATER ELEV .....	SAT THICK .....	REMARKS .....	
33071	ALL	10/08/84	52.17	5100.89		DRY	
		01/07/85	50.13	5102.93	1.93		
		04/02/85	49.60	5103.46	2.46		
		07/02/85	51.10	5101.96	0.96		
		10/01/85	52.60	5100.46			DRY
		11/09/85	51.90	5101.16	0.16		
		03/11/86	50.60	5102.46	1.46		
		06/11/86	51.20	5101.86	0.86		
		08/08/86	52.20	5100.86			DRY
33072	ALL	10/08/84	52.72	5100.38	1.78		
		01/07/85	51.22	5101.88	3.28		
		04/02/85	50.90	5102.20	3.60		
		07/02/85	51.80	5101.30	2.70		
		10/01/85	52.90	5100.20	1.60		
		11/09/85	52.70	5100.40	1.80		
		03/11/86	52.00	5101.10	2.50		
		06/11/86	52.10	5101.00	2.40		
		08/08/86	52.80	5100.30	1.70		
33073	ALL	10/08/84	44.85	5100.44	3.64		
		01/07/85	43.44	5101.85	5.05		
		04/02/85	43.20	5102.09	5.29		
		07/02/85	44.00	5101.29	4.49		
		10/01/85	45.00	5100.29	3.49		
		11/09/85	44.90	5100.39	3.59		
		03/11/86	44.20	5101.09	4.29		
		06/11/86	44.20	5101.09	4.29		
		08/08/86	44.90	5100.39	3.59		
33500	ALL	10/08/84	45.85	5106.15	10.55		
		01/07/85	40.54	5111.46	15.86		
		04/02/85	38.80	5113.20	17.60		
		07/02/85	43.00	5109.00	13.40		
		10/01/85	47.20	5104.80	9.20		
		11/09/85	44.20	5107.80	12.20		
		03/11/86	43.00	5109.00	13.40		
		06/06/86	43.60	5108.40	12.80		
		08/08/86	46.90	5105.10	9.50		
33501	ALL	10/08/84	36.46	5115.16	20.86		
		01/07/85	34.19	5117.43	23.13		
		04/02/85	31.60	5120.02	25.72		
		07/02/85	34.80	5116.82	22.52		
		10/01/85	38.10	5113.52	19.22		
		11/09/85	34.40	5117.22	22.92		
		03/11/86	34.00	5117.62	23.32		
		06/11/86	34.20	5117.42	23.12		
		08/08/86	36.90	5114.72	20.42		
33502	ALL	10/08/84	48.08	5112.43	19.53		
		01/07/85	46.48	5114.03	21.13		
		04/02/85	44.20	5115.33	22.43		
		07/02/85	47.50	5112.03	19.13		

R.I.C. FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
33502	ALL	10/01/85	49.80	5109.73	16.83	
		11/12/85	49.40	5110.13	17.23	
		03/11/86	47.50	5112.03	19.13	
		06/11/86	47.90	5111.63	18.73	
		08/08/86	49.40	5110.13	17.23	
33505	ALL	10/08/84	0.00	0.00		DRY
		01/08/85	63.22	5103.84	0.44	
		04/02/85	62.50	5104.56	1.16	
		07/02/85	63.60	5103.46	0.06	
		10/01/85	63.70	5103.36		DRY
		11/09/85	0.00	0.00		DRY
		03/11/86	63.60	5103.46	0.06	
		06/12/86	63.50	5103.56	0.16	
33506	ALL	10/08/84	47.53	5101.93	4.03	
		01/08/85	46.35	5103.11	5.21	
		04/02/85	45.90	5103.56	5.66	
		07/02/85	46.60	5102.86	4.96	
		10/01/85	47.20	5102.26	4.36	
		11/09/85	47.40	5102.06	4.16	
		03/11/86	46.70	5102.76	4.86	
		06/12/86	46.70	5102.76	4.86	
33507	ALL	10/08/84	45.20	5101.45	0.85	
		01/08/85	44.21	5102.44	1.84	
		04/02/85	43.90	5102.75	2.15	
		07/02/85	44.20	5102.45	1.85	
		10/01/85	45.00	5101.65	1.05	
		11/09/85	45.10	5101.55	0.95	
		03/07/86	44.10	5102.55	1.95	
		06/11/86	44.50	5102.15	1.55	
33508	ALL	10/08/84	0.00	0.00		DRY
		01/08/85	0.00	0.00		DRY
		04/02/85	0.00	0.00		DRY
		07/02/85	0.00	0.00		DRY @54'
		10/01/85	0.00	0.00		DRY @54'
		11/09/85	0.00	0.00		DRY
		03/11/86	0.00	0.00		DRY
		06/11/86	0.00	0.00		DRY
33509	ALL	10/08/84	46.99	5103.06	4.36	
		01/08/85	46.26	5103.79	5.09	
		04/02/85	46.00	5104.05	5.35	
		07/02/85	46.20	5103.85	5.15	
		10/01/85	46.90	5103.15	4.45	
		11/09/85	47.00	5103.05	4.35	
		03/07/86	46.50	5103.55	4.85	
		06/11/86	46.70	5103.35	4.65	

R. I. C.                      FY85 & FY86 WATER LEVEL DATA

WELL NO -----	AQUIF TYPE -----	DATE -----	DEPTH (TOC) -----	WATER ELEV -----	SAT THICK -----	REMARKS -----
33509	ALL	08/08/86	47.10	5102.95	4.25	
33510	ALL	10/08/84	48.15	5106.39	4.19	
		01/08/85	47.05	5107.49	5.29	
		04/02/85	46.70	5107.84	5.64	
		07/02/85	47.40	5107.14	4.94	
		10/01/85	48.00	5106.54	4.34	
		11/09/85	46.60	5107.94	5.74	
		03/07/86	47.20	5107.34	5.14	
		06/12/86	47.40	5107.14	4.94	
		08/08/86	48.10	5106.44	4.24	
33511	ALL	10/08/84	46.65	5106.71	3.31	
		01/08/85	45.93	5107.43	4.03	
		04/02/85	45.60	5107.76	4.36	
		07/02/85	46.10	5107.26	3.86	
		10/01/85	46.40	5106.96	3.56	
		11/09/85	46.40	5106.96	3.56	
		03/07/86	46.00	5107.36	3.96	
		06/12/86	46.20	5107.16	3.76	
		08/08/86	46.60	5106.76	3.36	
33512	ALL	10/08/84	48.88	5107.28	2.58	
		01/08/85	48.49	5107.67	2.97	
		04/02/85	48.30	5107.86	3.16	
		07/02/85	48.50	5107.66	2.96	
		10/01/85	48.70	5107.46	2.76	
		11/09/85	48.60	5107.56	2.86	
		03/07/86	48.60	5107.56	2.86	
		06/12/86	48.80	5107.36	2.66	
		08/08/86	48.90	5107.26	2.56	
33514	ALL	10/08/84	57.30	5119.52		
		01/07/85	56.36	5120.46		
		04/02/85	55.90	5120.92		
		07/02/85	56.40	5120.42		
		10/01/85	57.00	5119.82		
		10/10/85	56.90	5119.92		
		03/11/86	56.80	5120.02		
		06/12/86	56.50	5120.32		
		08/07/86	57.10	5119.72		
33530	ALL	10/08/84	0.00	0.00		DRY
		01/07/85	0.00	0.00		DRY
		04/02/85	53.50	5113.97		
		07/02/85	53.20	5114.27		MUD
		10/01/85	0.00	0.00		MUD @53.2'
		11/09/85	0.00	0.00		DRY
		03/11/86	52.60	5114.87		
		06/12/86	53.30	5114.17		DRY
		08/07/86	0.00	0.00		DRY @62.00
33531	ALL	10/08/84	0.00	0.00		RECORDER
		11/14/84	52.90	5111.32		

R.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
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33531	ALL	01/07/85	0.00	0.00		RECORDER
		04/02/85	50.94	5113.28		
		07/02/85	55.10	5109.12		
		10/01/85	56.10	5108.12		
		11/09/85	54.10	5110.12		
		03/11/86	52.70	5111.52		
		06/12/86	54.10	5110.12		
		08/07/86	56.10	5108.12		
33533	ALL	10/08/84	45.15	5101.56	3.56	
		01/08/85	44.18	5102.53	4.53	
		04/02/85	43.80	5102.91	4.91	
		07/02/85	44.40	5102.31	4.31	
		09/30/85	45.00	5101.71	3.71	
		11/09/85	45.10	5101.61	3.61	
		03/07/86	44.20	5102.51	4.51	
		06/11/86	44.40	5102.31	4.31	
		08/07/86	45.00	5101.71	3.71	
33534	ALL	10/08/84	56.93	5103.10	4.90	
		01/08/85	56.01	5104.02	5.82	
		04/02/85	55.70	5103.31	5.11	
		07/02/85	56.00	5103.01	4.81	
		09/30/85	56.70	5102.31	4.11	
		11/09/85	56.80	5102.21	4.01	
		03/07/86	56.20	5102.81	4.61	
		06/06/86	55.30	5103.71	5.51	
		08/07/86	55.80	5103.21	5.01	
33576	ALL	10/08/84	48.31	5106.08	9.98	
		01/07/85	39.78	5114.61	18.51	
		04/02/85	36.20	5118.19	22.09	
		07/02/85	41.80	5112.59	16.49	
		09/30/85	50.30	5104.09	7.99	
		11/09/85	43.60	5110.79	14.69	
		03/11/86	43.20	5111.19	15.09	
		06/11/86	42.60	5111.79	15.69	
		08/08/86	48.60	5105.79	9.69	
33577	ALL	10/08/84	52.32	5103.85	7.55	
		01/07/85	46.85	5109.32	13.02	
		04/02/85	45.40	5110.77	14.47	
		07/02/85	50.20	5105.97	9.67	
		09/30/85	53.20	5102.97	6.67	
		11/09/85	50.90	5105.27	8.97	
		06/11/86	50.10	5106.07	9.77	
		08/08/86	52.90	5103.27	6.97	
33578	ALL	10/08/84	52.22	5102.98	8.78	
		01/07/85	46.58	5108.62	14.42	
		04/02/85	45.40	5109.80	15.60	
		07/02/85	50.50	5104.70	10.50	
		09/30/85	53.10	5102.10	7.90	
33579	ALL	10/08/84	55.48	5101.50	5.20	



R.I.C.                      FY85 & FY86 WATER LEVEL DATA

WELL NO -----	AQUIF TYPE -----	DATE -----	DEPTH (TOC) -----	WATER ELEV -----	SAT THICK -----	REMARKS -----
33579	ALL	01/07/85	49.19	5107.79	11.49	
		04/02/85	48.30	5108.68	12.38	
		07/02/85	54.90	5102.08	5.78	
		09/30/85	56.00	5100.98	4.68	
		11/09/85	54.30	5102.68	6.38	
		03/11/86	51.70	5105.28	8.98	
		06/11/86	53.70	5103.28	6.98	
		08/08/86	56.70	5100.28	3.98	
33580	ALL	10/08/84	54.80	5101.77	5.67	
		01/07/85	51.82	5104.75	8.65	
		04/02/85	51.40	5105.17	9.07	
		07/02/85	54.00	5102.57	6.47	
		09/30/85	55.20	5101.37	5.27	
		11/09/85	54.20	5102.37	6.27	
		03/11/86	52.90	5103.67	7.57	
		06/11/86	53.60	5102.97	6.87	
08/08/86	54.90	5101.67	5.57			
33581	ALL	10/08/84	57.04	5102.30	5.10	
		01/07/85	52.00	5107.34	10.14	
		04/02/85	51.30	5108.04	10.84	
		07/02/85	56.90	5102.44	5.24	
		09/30/85	57.80	5101.54	4.34	
33582	ALL	10/08/84	50.00	5103.23	8.23	
		01/08/85	43.83	5109.40	14.40	
		04/02/85	43.50	5109.73	14.73	
		07/02/85	50.70	5102.53	7.53	
		09/30/85	51.60	5101.63	6.63	
		11/09/85	50.10	5103.13	8.13	
		06/11/86	50.00	5103.23	8.23	
		08/08/86	51.80	5101.43	6.43	
33583	ALL	10/08/84	49.91	5104.59	8.89	
		01/07/85	44.00	5110.50	14.80	
34001	ALL	11/14/84	27.20	5161.86		DRY
		03/26/85	21.50	5167.56	1.20	
		07/01/85	21.00	5168.06	1.70	
		09/30/85	20.90	5168.16	1.80	
34002	ALL	10/08/84	70.73	5121.13	15.33	
		11/14/84	70.60	5121.26	15.46	
		01/07/85	70.34	5121.52	15.72	
		03/26/85	70.00	5121.86	16.06	
		07/01/85	70.00	5121.86	16.06	
		09/30/85	70.20	5121.66	15.86	
		10/14/85	70.40	5121.46	15.66	
		03/13/86	70.00	5121.86	16.06	
		06/12/86	69.90	5121.96	16.16	
		08/06/86	70.00	5121.86	16.06	
34003	DEN	11/14/84	71.90	5121.85	15.45	

B.I.C.

## FY85 &amp; FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
34003	DEN	03/26/85	71.60	5121.17	14.77	
		07/01/85	71.50	5121.27	14.87	
		09/30/85	71.60	5121.17	14.77	
		10/14/85	71.80	5120.97	14.57	
		06/12/86	71.50	5121.27	14.87	
		08/06/86	71.50	5121.27	14.87	
34004	DEN	11/14/84	72.10	5120.48	14.28	
		03/26/85	71.90	5120.68	14.48	
		07/01/85	71.80	5120.78	14.58	
		09/30/85	71.80	5120.78	14.58	
		10/14/85	71.90	5120.68	14.48	
		03/13/86	72.00	5120.58	14.38	
		06/12/86	71.80	5120.78	14.58	
		08/06/86	71.80	5120.78	14.58	
34005	ALL	10/08/84	68.36	5115.44	4.94	
		11/01/84	68.30	5115.50	5.00	
		11/14/84	68.30	5115.50	5.00	
		01/07/85	68.12	5115.68	5.18	
		03/19/85	67.80	5116.00	5.50	
		03/26/85	67.80	5116.00	5.50	
		07/01/85	67.50	5116.30	5.80	
		09/30/85	67.60	5116.20	5.70	
		10/14/85	67.70	5116.10	5.60	
		03/13/86	67.50	5116.30	5.80	
		06/12/86	67.30	5116.50	6.00	
		08/06/86	67.50	5116.30	5.80	
		34006	DEN	11/14/84	68.60	5115.59
03/26/85	68.00			5116.19	5.79	
07/01/85	67.80			5116.39	5.99	
09/30/85	67.80			5116.39	5.99	
10/14/85	68.10			5116.09	5.69	
03/13/86	67.80			5116.39	5.99	
06/12/86	67.70			5116.49	6.09	
08/06/86	67.90			5116.29	5.89	
34007	DEN	11/14/84	68.80	5115.81	5.21	
		03/26/85	68.70	5115.91	5.31	
		07/01/85	68.20	5116.41	5.81	
		09/30/85	68.10	5116.51	5.91	
		10/14/85	68.20	5116.41	5.81	
		03/13/86	67.90	5116.71	6.11	
		06/12/86	67.70	5116.91	6.31	
		08/06/86	67.60	5117.01	6.41	
34008	ALL	10/08/84	0.00	0.00		PLUGGED @55'
		11/01/84	55.30	5110.31	30.21	
		11/14/84	55.30	5110.31	30.21	
		01/07/85	55.08	5110.53	30.43	
		03/19/85	55.00	5110.61	30.51	
		03/26/85	55.00	5110.61	30.51	
		07/01/85	55.00	5110.61	30.51	

R.I.C. FY85 & FY86 WATER LEVEL DATA

WELL NO	AQUIF TYPE	DATE	DEPTH (TOC)	WATER ELEV	SAT THICK	REMARKS
34008	ALL	09/30/85	55.00	5110.61	30.51	
		10/14/85	55.20	5110.41	30.31	
		03/13/86	55.10	5110.51	30.41	
		06/12/86	54.90	5110.71	30.61	
		08/06/86	54.90	5110.71	30.61	
34009	DEN	11/14/84	56.60	5110.59	30.29	
		03/26/85	56.30	5110.89	30.59	
		07/01/85	56.30	5110.89	30.59	
		09/30/85	56.20	5110.99	30.69	
		10/15/85	56.50	5110.69	30.39	
		03/13/86	56.30	5110.89	30.59	
		06/12/86	56.40	5110.79	30.49	
		08/06/86	56.30	5110.89	30.59	
34010	DEN	11/14/84	56.20	5110.63	30.53	
		03/26/85	56.00	5110.83	30.73	
		07/01/85	55.90	5110.93	30.83	
		09/30/85	55.80	5111.03	30.93	
		10/16/85	56.20	5110.63	30.53	
		03/11/86	56.40	5110.43	30.33	
		06/12/86	56.00	5110.83	30.73	
		08/06/86	56.10	5110.73	30.63	
34515	ALL	10/08/84	46.68	5119.89	20.69	
		11/14/84	46.60	5119.97	20.77	
		01/07/85	46.22	5120.35	21.15	
		03/26/85	45.80	5120.77	21.57	
		07/02/85	46.00	5120.57	21.37	
		09/30/85	46.20	5120.37	21.17	
		11/09/85	46.30	5120.27	21.07	
		03/13/86	46.00	5120.57	21.37	
		06/12/86	46.00	5120.57	21.37	
		08/06/86	46.10	5120.47	21.27	

R.I.C.

WATER QUALITY DATA FROM  
MONITORING WELLS FOR FY85 & FY86

WELL NO.	AQUI TYPE	SAMPLE DATE	LAB	ANALYTE	*** BOOL	MEASUREMENT CONCEN	*** UOM
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03002	ALL	11/11/85	ED	DBCP	LT	0.130	UGL
		09/25/86	ED	DBCP	LT	0.130	UGL
03008	ALL	11/06/85	ED	DBCP	LT	0.130	UGL
		08/27/86	ED	DBCP	LT	0.130	UGL
03009	ALL	10/28/85	ED	DBCP		2.560	UGL
03010	ALL	11/12/85	ED	DBCP	LT	0.130	UGL
03523	ALL	10/29/85	ED	DBCP		50.000	UGL
04013	ALL	10/03/84	RM	DBCP	LT	0.200	UGL
		12/03/85	ED	DBCP		2.960	UGL
04015	ALL	10/03/84	RM	DBCP		1.500	UGL
		12/03/85	ED	DBCP		3.480	UGL
04026	ALL	10/02/84	RM	DBCP		13.100	UGL
		10/17/85	ED	DBCP		33.800	UGL
04028	ALL	10/02/84	RM	DBCP		0.890	UGL
		10/18/85	ED	DBCP		0.725	UGL
28027	ALL	10/31/84	RM	DBCP	LT	0.200	UGL
		02/28/85	RM	DBCP	LT	0.200	UGL
		05/29/85	RM	DBCP	LT	0.200	UGL
		08/27/85	RM	DBCP	LT	0.200	UGL
		01/04/86	ED	DBCP	LT	0.130	UGL
		06/04/86	ED	DBCP	LT	0.130	UGL
		09/02/86	ED	DBCP	LT	0.130	UGL
33018	ALL	10/31/84	RM	DBCP	LT	0.200	UGL
		03/19/85	RM	DBCP	LT	0.200	UGL
		06/18/85	RM	DBCP	LT	0.200	UGL
		11/13/85	ED	DBCP	LT	0.130	UGL
33019	ALL	10/31/85	ED	DBCP	LT	0.130	UGL
33020	ALL	11/01/85	ED	DBCP	LT	0.130	UGL
33021	ALL	11/05/85	ED	DBCP	LT	0.130	UGL
33022	ALL	11/13/85	ED	DBCP	LT	0.130	UGL
		06/06/86	ED	DBCP	LT	0.130	UGL
		09/03/86	ED	DBCP	LT	0.130	UGL

R. I. C.

WATER QUALITY DATA FROM  
MONITORING WELLS FOR FY85 & FY86

WELL NO.	AQUI TYPE	SAMPLE DATE	LAB	ANALYTE	*** BOOL	MEASUREMENT CONCEN	*** UOM
33024	ALL	11/07/85	ED	DBCP	LT	0.130	UGL
		06/09/86	ED	DBCP	LT	0.130	UGL
		09/03/86	ED	DBCP	LT	0.130	UGL
33030	ALL	10/31/84	RM	DBCP		1.870	UGL
		03/19/85	RM	DBCP		1.080	UGL
		06/18/85	RM	DBCP		0.650	UGL
		09/17/85	RM	DBCP		2.700	UGL
		11/13/85	ED	DBCP		6.170	UGL
		06/03/86	ED	DBCP		1.900	UGL
33033	ALL	11/22/85	ED	DBCP	LT	0.130	UGL
		02/03/86	ED	DBCP	LT	0.130	UGL
		09/24/86	ED	DBCP	LT	0.130	UGL
33046	ALL	10/30/85	ED	DBCP	LT	0.130	UGL
33047	ALL	10/30/85	ED	DBCP	LT	0.130	UGL
33060	ALL	11/01/85	ED	DBCP	LT	0.130	UGL
		06/04/86	ED	DBCP	LT	0.130	UGL
		08/28/86	ED	DBCP		0.306	UGL
33061	ALL	11/18/85	ED	DBCP	LT	0.130	UGL
		06/09/86	ED	DBCP	LT	0.130	UGL
		08/28/86	ED	DBCP		0.604	UGL
33063	ALL	11/05/85	ED	DBCP		1.670	UGL
		11/05/85	ED	DBCP		1.490	UGL
33514	ALL	11/05/85	ED	DBCP	LT	0.130	UGL
34002	ALL	11/19/85	ED	DBCP	LT	0.130	UGL
		06/18/86	ED	DBCP	LT	0.130	UGL
		09/19/86	ED	DBCP	LT	0.130	UGL
34005	ALL	11/01/84	RM	DBCP	LT	0.200	UGL
		03/19/85	RM	DBCP	LT	0.200	UGL
		06/18/85	RM	DBCP	LT	0.200	UGL
		09/17/85	RM	DBCP	LT	0.200	UGL
		11/19/85	ED	DBCP	LT	0.130	UGL
34515	ALL	06/09/86	ED	DBCP	LT	0.130	UGL
		08/28/86	ED	DBCP	LT	0.130	UGL
BOLLE		10/26/84	RM	DBCP		0.670	UGL
		01/24/85	RM	DBCP		0.460	UGL

R.I.C.

WATER QUALITY DATA FROM  
MONITORING WELLS FOR FY85 & FY86

WELL NO.	AQUI TYPE	SAMPLE DATE	LAB	ANALYTE	*** BOOL	MEASUREMENT CONCEN	*** UOM
BOLLE		07/25/85	RM	DBCP		0.330	UGL
		10/24/85	RM	DBCP		0.260	UGL
		12/06/85	ED	DBCP		0.312	UGL
		03/12/86	ED	DBCP		0.299	UGL
		07/01/86	ED	DBCP		0.332	UGL
		09/04/86	ED	DBCP		0.328	UGL
CIII		10/26/84	RM	DBCP	LT	0.200	UGL
		01/24/85	RM	DBCP	LT	0.200	UGL
		07/25/85	RM	DBCP	LT	0.200	UGL
		10/24/85	RM	DBCP	LT	0.200	UGL
		12/06/85	ED	DBCP	LT	0.130	UGL
		03/12/86	ED	DBCP	LT	0.130	UGL
		07/01/86	ED	DBCP	LT	0.130	UGL
		09/09/86	ED	DBCP	LT	0.130	UGL

APPENDIX B: SHEIL CHEMICAL CO. IRONDALE CHEMICAL AND FLOW  
DATA FY 85/86

R.I.C.

IRONDALE BOUNDARY TREATMENT PLANT  
FY85 & FY86 CHEMICAL DATA

LOCATION	ANALYTE	SAMPLE DATE	CONC.	UOM
-----	-----	-----	-----	---
V101I	DBCP	10/08/84	0.29	UGL
		10/22/84	0.24	UGL
		11/12/84	0.20	UGL
		11/26/84	0.30	UGL
		12/10/84	0.40	UGL
		12/17/84	P	UGL
		01/14/85	0.30	UGL
		01/28/85	0.30	UGL
		02/11/85	0.29	UGL
		02/25/85	0.23	UGL
		03/11/85	0.27	UGL
		03/25/85	0.26	UGL
		04/08/85	0.20	UGL
		04/22/85	0.20	UGL
		05/10/85	P	UGL
		05/30/85	P	UGL
		06/10/85	B	UGL
		06/24/85	P	UGL
		07/08/85	P	UGL
		08/12/85	P	UGL
		08/26/85	0.22	UGL
		09/09/85	0.28	UGL
		09/23/85	0.28	UGL
		10/14/85	0.26	UGL
		10/28/85	0.28	UGL
		11/11/85	0.32	UGL
		11/25/85	0.38	UGL
		12/09/85	0.34	UGL
		12/23/85	0.28	UGL
		01/13/86	0.31	UGL
		01/27/86	0.32	UGL
		02/10/86	0.39	UGL
		02/24/86	P	UGL
		03/10/86	0.23	UGL
		03/25/86	0.40	UGL
		04/14/86	0.39	UGL
		04/28/86	0.35	UGL
		05/12/86	0.29	UGL
		05/27/86	0.33	UGL
		06/09/86	0.36	UGL
		06/23/86	0.35	UGL
		07/14/86	0.35	UGL
		07/28/86	0.32	UGL
		08/11/86	0.42	UGL
		08/25/86	0.37	UGL
		09/08/86	0.41	UGL
		09/22/86	0.42	UGL

B - < .06 UGL    D - dry    P - between .06 and .2 UGL



R.I.C.

IRONDALE BOUNDARY TREATMENT PLANT  
FY85 & FY86 CHEMICAL DATA

LOCATION	ANALYTE	SAMPLE DATE	CONC.	UOM
-----	-----	-----	-----	---
V101E	DBCP	10/08/84	B	UGL
		10/22/84	B	UGL
		11/12/84	B	UGL
		11/26/84	B	UGL
		12/10/84	P	UGL
		12/17/84	B	UGL
		12/26/84	B	UGL
		01/14/85	B	UGL
		01/28/85	B	UGL
		02/11/85	B	UGL
		02/25/85	B	UGL
		03/11/85	B	UGL
		03/25/85	B	UGL
		04/08/85	B	UGL
		04/22/85	B	UGL
		05/10/85	B	UGL
		05/30/85	B	UGL
		06/10/85	B	UGL
		06/24/85	B	UGL
		07/08/85	B	UGL
		08/12/85	B	UGL
		08/26/85	B	UGL
		09/09/85	B	UGL
		09/23/85	B	UGL
		10/14/85	B	UGL
		10/28/85	B	UGL
		11/11/85	B	UGL
		11/25/85	B	UGL
		12/09/85	B	UGL
		12/23/85	B	UGL
		01/13/86	B	UGL
		01/27/86	B	UGL
		02/10/86	B	UGL
		02/24/86	B	UGL
		03/10/86	B	UGL
		03/25/86	B	UGL
		04/14/86	B	UGL
		04/28/86	B	UGL
		05/12/86	B	UGL
		05/27/86	B	UGL
		06/09/86	B	UGL
		06/23/86	B	UGL
		07/14/86	B	UGL
		07/28/86	B	UGL
		08/11/86	B	UGL
		08/25/86	B	UGL
		09/08/86	B	UGL
		09/22/86	B	UGL

B - < .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

IRONDALE BOUNDARY TREATMENT PLANT  
FY85 & FY86 CHEMICAL DATA

LOCATION	ANALYTE	SAMPLE DATE	CONC.	UCM
-----	-----	-----	-----	----
V102I	DBCP	10/08/84	0.28	UGL
		10/22/84	0.23	UGL
		11/12/84	P	UGL
		11/26/84	0.20	UGL
		12/10/84	0.30	UGL
		12/17/84	P	UGL
		01/14/85	0.30	UGL
		01/28/85	0.30	UGL
		02/11/85	0.27	UGL
		02/25/85	0.20	UGL
		03/11/85	0.27	UGL
		03/25/85	0.24	UGL
		04/08/85	P	UGL
		04/22/85	0.20	UGL
		05/10/85	P	UGL
		05/30/85	P	UGL
		06/10/85	B	UGL
		06/24/85	P	UGL
		07/08/85	P	UGL
		08/12/85	P	UGL
		08/26/85	P	UGL
		09/09/85	0.23	UGL
		09/23/85	0.26	UGL
		10/14/85	0.26	UGL
		10/28/85	0.27	UGL
		11/11/85	0.27	UGL
		11/25/85	0.32	UGL
		12/09/85	0.31	UGL
		12/23/85	0.26	UGL
		01/13/86	0.29	UGL
		01/27/86	0.29	UGL
		02/10/86	0.28	UGL
		02/24/86	F	UGL
		03/10/86	0.26	UGL
		03/25/86	0.39	UGL
		04/14/86	0.33	UGL
		04/28/86	0.30	UGL
		05/12/86	0.26	UGL
		05/27/86	0.32	UGL
		06/09/86	0.30	UGL
		06/23/86	0.28	UGL
		07/14/86	0.27	UGL
		07/28/86	0.33	UGL
		08/11/86	0.32	UGL
		08/25/86	0.35	UGL
		09/08/86	0.40	UGL
		09/22/86	0.40	UGL

B - < .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

IRONDALE BOUNDARY TREATMENT PLANT  
FY85 & FY86 CHEMICAL DATA

LOCATION .....	ANALYTE .....	SAMPLE DATE .....	CONC. .....	UOM ...
V102E	DBCP	10/08/84	B	UGL
		10/22/84	B	UGL
		11/12/84	B	UGL
		11/26/84	B	UGL
		12/10/84	P	UGL
		12/17/84	B	UGL
		12/26/84	B	UGL
		01/14/85	B	UGL
		01/28/85	B	UGL
		02/11/85	B	UGL
		02/25/85	B	UGL
		03/11/85	B	UGL
		03/25/85	B	UGL
		04/08/85	B	UGL
		04/22/85	B	UGL
		05/10/85	B	UGL
		05/30/85	B	UGL
		06/10/85	B	UGL
		06/24/85	B	UGL
		07/08/85	B	UGL
		08/12/85	B	UGL
		08/26/85	B	UGL
		09/09/85	B	UGL
		09/23/85	B	UGL
		10/14/85	B	UGL
		10/28/85	B	UGL
		11/11/85	B	UGL
		11/25/85	B	UGL
		12/09/85	B	UGL
		12/23/85	B	UGL
		01/13/86	B	UGL
		01/27/86	B	UGL
		02/10/86	B	UGL
		02/24/86	B	UGL
		03/10/86	B	UGL
		03/25/86	B	UGL
		04/14/86	B	UGL
		04/28/86	B	UGL
		05/12/86	B	UGL
		05/27/86	B	UGL
		06/09/86	B	UGL
		06/23/86	B	UGL
		07/14/86	B	UGL
		07/28/86	B	UGL
		08/11/86	B	UGL
		08/25/86	B	UGL
		09/08/86	B	UGL
		09/22/86	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

 IRONDALE BOUNDARY MONITORING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL -----	ANALYTE -----	SAMPLE DATE -----	CONC. -----	UOM ---
03002	DBCP	10/12/84	B	UGL
03009	DBCP	10/12/84	1.56	UGL
		01/18/85	0.40	UGL
		04/17/85	0.82	UGL
		10/21/85	1.76	UGL
		01/15/86	1.76	UGL
		04/18/86	1.01	UGL
		07/23/86	1.60	UGL
03010	DBCP	10/12/84	B	UGL
03523	DBCP	10/12/84	65.00	UGL
		01/18/85	21.80	UGL
		04/17/85	79.00	UGL
		10/21/85	29.00	UGL
		01/15/86	25.50	UGL
		04/18/86	25.10	UGL
		07/23/86	40.40	UGL
03526	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
		07/23/86	B	UGL
04013	DBCP	01/18/85	2.00	UGL
		04/17/85	2.50	UGL
		10/21/85	1.83	UGL
		01/15/86	2.65	UGL
		04/18/86	2.08	UGL
		07/23/86	2.70	UGL
04015	DBCP	01/18/85	2.50	UGL
		04/17/85	3.20	UGL
		10/21/85	1.96	UGL
		01/15/86	3.73	UGL
		04/18/86	3.19	UGL
		07/23/86	4.20	UGL
04026	DBCP	01/18/85	13.50	UGL
		04/17/85	15.60	UGL
		10/21/85	23.90	UGL
		01/15/86	21.50	UGL
		04/18/86	30.82	UGL
		07/23/86	34.40	UGL
04028	DBCP	01/18/85	1.00	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

 IRONDALE BOUNDARY MONITORING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL .....	ANALYTE .....	SAMPLE DATE .....	CONC. .....	UOM ....
04028	DBCP	04/17/85	0.96	UGL
		10/21/85	0.51	UGL
		01/15/86	0.45	UGL
		04/18/86	0.25	UGL
		07/23/86	0.55	UGL
04527	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
		07/23/86	B	UGL
04528	DBCP	10/12/84	B	UGL
		01/18/85	0.20	UGL
		04/17/85	P	UGL
		10/21/85	P	UGL
		01/15/86	P	UGL
		04/18/86	P	UGL
04529	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
28021	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
28503	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
28513	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

 IRONDALE BOUNDARY MONITORING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL	ANALYTE	SAMPLE DATE	CONC.	UOM
----	-----	-----	-----	---
28513	DBCP	10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
		07/23/86	B	UGL
33004	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
33008	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		04/18/86	B	UGL
33030	DBCP	10/12/84	2.51	UGL
		01/18/85	1.60	UGL
		04/17/85	0.40	UGL
		10/21/85	3.19	UGL
		01/15/86	3.27	UGL
		04/18/86	1.05	UGL
33033	DBCP	07/23/86	2.48	UGL
		10/12/84	D	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		10/12/84	D	UGL
		10/12/84	0.36	UGL
		01/18/85	0.20	UGL
		04/17/85	P	UGL
		10/21/85	P	UGL
		01/15/86	0.57	UGL
		04/18/86	0.62	UGL
		07/23/86	0.30	UGL
33040	DBCP	10/12/84	0.28	UGL
		01/18/85	0.30	UGL
		04/17/85	B	UGL
		10/21/85	0.50	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

 IRONDALE BOUNDARY MONITORING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL -----	ANALYTE -----	SAMPLE DATE -----	CONC. -----	UOM ---
33040	DBCP	01/15/86	1.14	UGL
		04/18/86	0.39	UGL
33041	DBCP	10/12/84	0.48	UGL
		01/18/85	0.60	UGL
		04/17/85	1.22	UGL
		10/21/85	0.61	UGL
		01/15/86	0.66	UGL
		04/18/86	0.60	UGL
		07/23/86	0.71	UGL
33042	DBCP	10/12/84	1.32	UGL
		01/18/85	1.80	UGL
		04/17/85	0.64	UGL
		10/21/85	1.09	UGL
		01/15/86	1.61	UGL
		04/18/86	2.82	UGL
33043	DBCP	10/12/84	0.29	UGL
		01/18/85	0.30	UGL
		04/17/85	0.33	UGL
		10/21/85	P	UGL
		01/15/86	0.90	UGL
		04/18/86	0.58	UGL
		07/23/86	0.34	UGL
33044	DBCP	10/12/84	1.31	UGL
		01/18/85	0.80	UGL
		04/17/85	1.32	UGL
		10/21/85	1.46	UGL
		01/15/86	1.33	UGL
		04/18/86	1.17	UGL
		07/23/86	3.08	UGL
33045	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		04/18/86	B	UGL
33046	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		04/18/86	B	UGL
33059	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R. I. C.

 IRONDALE BOUNDARY MONITORING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL -----	ANALYTE -----	SAMPLE DATE -----	CONC. -----	UOM ---
33059	DBCP	10/21/85	B	UGL
		04/18/86	B	UGL
33060	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		04/18/86	B	UGL
33062	DBCP	10/12/84	D	UGL
		01/18/85	1.70	UGL
		04/17/85	1.28	UGL
		01/15/86	1.39	UGL
		04/18/86	2.23	UGL
33064	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		04/18/86	B	UGL
33070	DBCP	10/12/84	0.68	UGL
		01/18/85	P	UGL
		04/17/85	B	UGL
		10/21/85	0.36	UGL
		12/05/85	0.43	UGL
		01/15/86	0.65	UGL
		04/18/86	B	UGL
		07/23/86	0.42	UGL
33071	DBCP	10/12/84	B	UGL
		01/18/85	0.20	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	P	UGL
		07/23/86	B	UGL
33072	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
33073	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL



R.I.C.

 IRONDALE BOUNDARY MONITORING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL -----	ANALYTE -----	SAMPLE DATE -----	CONC. -----	UOM ---
33073	DBCP	10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	P	UGL
		07/23/86	B	UGL
33500	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
33501	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
		07/23/86	B	UGL
33502	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
33506	DBCP	10/12/84	P	UGL
		01/18/85	0.30	UGL
		04/17/85	P	UGL
		10/21/85	P	UGL
		01/15/86	P	UGL
		04/18/86	P	UGL
		07/23/86	P	UGL
33507	DBCP	10/12/84	B	UGL
		01/18/85	P	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
33509	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

 IRONDALE BOUNDARY MONITORING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL	ANALYTE	SAMPLE DATE	CONC.	UOM
----	-----	-----	-----	---
33510	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
		07/23/86	B	UGL
33512	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
07/23/86	B	UGL		
33530	DBCP	10/12/84	D	UGL
		10/12/84	P	UGL
		01/18/85	P	UGL
		04/17/85	P	UGL
		10/21/85	B	UGL
		01/15/86	P	UGL
		04/18/86	P	UGL
07/23/86	B	UGL		
33534	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
04/18/86	B	UGL		
33577	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		04/18/86	B	UGL
33578	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

IRONDALE BOUNDARY MONITORING WELL  
FY85 & FY86 CHEMICAL DATA

WELL	ANALYTE	SAMPLE DATE	CONC.	UOM
----	-----	-----	-----	---
33578	DBCP	04/18/86	B	UGL
33579	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		04/18/86	B	UGL
33580	DBCP	10/12/84	0.56	UGL
		01/18/85	P	UGL
		04/17/85	P	UGL
		10/21/85	P	UGL
		12/05/85	0.21	UGL
		01/15/86	0.24	UGL
		04/18/86	B	UGL
		07/23/86	B	UGL
33581	DBCP	10/12/84	0.26	UGL
		01/18/85	P	UGL
		04/17/85	P	UGL
		10/21/85	P	UGL
		12/05/85	P	UGL
		01/15/86	P	UGL
		04/18/86	B	UGL
		07/23/86	B	UGL
33582	DBCP	10/12/84	P	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	P	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
		07/23/86	0.20	UGL
33583	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/17/85	B	UGL
		10/21/85	B	UGL
		04/18/86	B	UGL
BOLLE	DBCP	10/25/84	0.45	UGL
		01/24/85	0.40	UGL
		04/29/85	0.42	UGL
		10/24/85	0.29	UGL
		02/13/86	0.29	UGL
		04/15/86	0.22	UGL
		07/17/86	0.21	UGL
C	DBCP	10/25/84	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R. I. C.

 IRONDALE BOUNDARY MONITORING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL	ANALYTE	SAMPLE DATE	CONC.	UOM
----	-----	-----	-----	----
C	DBCP	01/24/85	B	UGL
		04/29/85	B	UGL
		10/24/85	B	UGL
		04/15/86	B	UGL
		07/17/86	B	UGL
CIII	DBCP	10/25/84	P	UGL
		01/24/85	B	UGL
		04/29/85	B	UGL
		10/24/85	B	UGL
		02/13/86	B	UGL
		04/15/86	B	UGL
M-1	DBCP	10/25/84	B	UGL
		01/24/85	E	UGL
		04/29/85	B	UGL
		10/24/85	B	UGL
		02/13/86	B	UGL
		04/15/86	B	UGL
		07/17/86	B	UGL
M-2	DBCP	10/25/84	B	UGL
		04/29/85	B	UGL
		10/24/85	B	UGL
		04/15/86	B	UGL
		07/17/86	B	UGL
M-3	DBCP	10/25/84	B	UGL
		10/24/85	B	UGL
		02/13/86	B	UGL
		04/15/86	B	UGL
		07/17/86	B	UGL
		10/25/84	B	UGL
		01/24/85	B	UGL
		04/29/85	B	UGL
		10/24/85	B	UGL
		02/13/86	B	UGL
		04/15/86	B	UGL
		07/17/86	B	UGL
		M-5	DBCP	10/25/84
01/24/85	B			UGL
04/29/85	B			UGL
10/24/85	B			UGL
04/15/86	B			UGL
07/17/86	B			UGL
M-6	DBCP	10/11/84	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

IRONDALE BOUNDARY MONITORING WELL  
FY85 & FY86 CHEMICAL DATA

WELL	ANALYTE	SAMPLE DATE	CONC.	UOM
-----	-----	-----	-----	---
M-6	DBCP	01/18/85	B	UGL
		04/17/85	B	UGL
		10/16/85	B	UGL
		01/14/86	B	UGL
		04/17/86	B	UGL
		07/23/86	B	UGL

B - < .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

 IRONDALE BOUNDARY DEWATERING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL	ANALYTE	SAMPLE DATE	CONC.	UOM
----	-----	-----	-----	---
33302	DBCP	10/12/84	B	UGL
		01/16/85	B	UGL
		04/16/85	B	UGL
		10/21/85	B	UGL
		01/15/86	P	UGL
		04/18/86	0.28	UGL
		07/17/86	P	UGL
33304	DBCP	10/12/84	B	UGL
		01/16/85	B	UGL
		04/16/85	P	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
		07/17/86	B	UGL
33306	DBCP	10/12/84	B	UGL
		01/16/85	B	UGL
		04/16/85	B	UGL
		10/21/85	B	UGL
33308	DBCP	10/12/84	B	UGL
		01/16/85	B	UGL
		04/16/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
		07/17/86	B	UGL
33310	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/16/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/18/86	B	UGL
		07/17/86	B	UGL
33312	DBCP	10/12/84	P	UGL
		01/18/85	B	UGL
		04/16/85	B	UGL
		10/21/85	P	UGL
		01/15/86	P	UGL
		04/18/86	B	UGL
		07/16/86	B	UGL
33314	DBCP	10/12/84	B	UGL
		01/18/85	B	UGL
		04/16/85	B	UGL
		10/21/85	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R.I.C.

IRONDALE BOUNDARY DEWATERING WELL  
FY85 & FY86 CHEMICAL DATA

WELL	ANALYTE	SAMPLE DATE	CONC.	UOM
----	-----	-----	-----	---
33314	DBCP	01/15/86	B	UGL
		04/18/86	B	UGL
		07/16/86	B	UGL
33316	DBCP	10/12/84	0.81	UGL
		01/14/85	1.20	UGL
		04/10/85	1.02	UGL
		10/21/85	0.92	UGL
		01/15/86	1.29	UGL
		04/17/86	1.72	UGL
		07/16/86	1.19	UGL
33318	DBCP	10/12/84	0.48	UGL
		01/14/85	0.60	UGL
		04/10/85	0.63	UGL
		10/21/85	0.69	UGL
		01/15/86	0.73	UGL
		04/17/86	0.45	UGL
33320	DBCP	07/16/86	0.33	UGL
		01/15/86	0.21	UGL
		04/17/86	P	UGL
33322	DBCP	07/16/86	P	UGL
		10/12/84	B	UGL
		01/14/85	B	UGL
		04/10/85	B	UGL
33324	DBCP	10/21/85	B	UGL
		10/12/84	B	UGL
		01/14/85	B	UGL
		04/10/85	B	UGL
		10/14/85	B	UGL
		10/12/84	1.87	UGL
		12/17/84	1.50	UGL
		01/15/85	0.90	UGL
		04/10/85	B	UGL
		10/21/85	1.46	UGL
		01/15/86	2.12	UGL
		04/17/86	1.39	UGL
		07/16/86	2.49	UGL
		33327	DBCP	10/12/84
01/15/85	0.70			UGL
04/10/85	B			UGL
10/21/85	0.58			UGL
01/15/86	1.11			UGL
04/17/86	1.14			UGL
07/16/86	1.19	UGL		

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL

R. I. C.

 IRONDALE BOUNDARY DEWATERING WELL  
 FY85 & FY86 CHEMICAL DATA

WELL	ANALYTE	SAMPLE DATE	CONC.	UOM
----	-----	-----	-----	----
33329	DBCP	10/12/84	1.66	UGL
		01/15/85	P	UGL
		04/09/85	B	UGL
		10/21/85	1.22	UGL
		01/15/86	1.80	UGL
		04/17/86	0.47	UGL
		07/16/86	1.78	UGL
33331	DBCP	10/12/84	1.47	UGL
		01/15/85	B	UGL
		04/09/85	B	UGL
		10/21/85	0.98	UGL
		01/15/86	0.58	UGL
		04/17/86	P	UGL
		07/15/86	0.80	UGL
33332	DBCP	10/12/84	1.27	UGL
		01/15/85	B	UGL
		04/09/85	B	UGL
		10/21/85	0.89	UGL
		12/05/85	0.23	UGL
		10/12/84	P	UGL
		12/27/84	B	UGL
		04/16/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/17/86	B	UGL
		07/16/86	B	UGL
		33334	DBCP	10/12/84
01/17/85	B			UGL
04/16/85	B			UGL
10/21/85	B			UGL
04/01/86	B			UGL
10/12/84	B			UGL
12/27/84	B			UGL
01/17/85	B			UGL
04/16/85	B			UGL
10/21/85	B			UGL
01/15/86	B			UGL
04/01/86	B			UGL
07/16/86	B			UGL
33336	DBCP			10/12/84
		12/27/84	B	UGL
		01/17/85	B	UGL
		04/09/85	B	UGL
		10/21/85	0.27	UGL
		12/05/85	B	UGL

B - &lt; .06 UGL    D - dry    P - between .06 and .2 UGL



R.I.C.

IRONDALE BOUNDARY DEWATERING WELL  
FY85 & FY86 CHEMICAL DATA

WELL	ANALYTE	SAMPLE DATE	CONC.	UOM
.....	.....	.....	.....	---
33329	DBCP	10/12/84	1.66	UGL
		01/15/85	P	UGL
		04/09/85	B	UGL
		10/21/85	-1.22	UGL
		01/15/86	1.80	UGL
		04/17/86	0.47	UGL
		07/16/86	1.78	UGL
33331	DBCP	10/12/84	1.47	UGL
		01/15/85	B	UGL
		04/09/85	B	UGL
		10/21/85	0.98	UGL
		01/15/86	0.58	UGL
		04/17/86	P	UGL
		07/15/86	0.80	UGL
33332	DBCP	10/12/84	1.27	UGL
		01/15/85	B	UGL
		04/09/85	B	UGL
		10/21/85	0.89	UGL
		12/05/85	0.23	UGL
		10/12/84	P	UGL
		12/27/84	B	UGL
		04/16/85	B	UGL
		10/21/85	B	UGL
		01/15/86	B	UGL
		04/17/86	B	UGL
		07/16/86	B	UGL
		33334	DBCP	10/12/84
01/17/85	B			UGL
04/16/85	B			UGL
10/21/85	B			UGL
04/01/86	B			UGL
10/12/84	B			UGL
12/27/84	B			UGL
01/17/85	B			UGL
04/16/85	B			UGL
10/21/85	B			UGL
01/15/86	B			UGL
04/01/86	B			UGL
07/16/86	B			UGL
33336	DBCP	10/12/84	0.59	UGL
		12/27/84	B	UGL
		01/17/85	B	UGL
		04/09/85	B	UGL
		10/21/85	0.27	UGL
		12/05/85	B	UGL

B = < .06 UGL    D = Dry    P = between .06 and .2 UGL

128  
122  
20

01

R.I.C.

IRONDALE BOUNDARY DEWATERING WELL  
FY85 & FY86 CHEMICAL DATA

WELL .....	ANALYTE .....	SAMPLE DATE .....	CONC. .....	UOM ---
33336	DBCP	01/15/86	B	UCL
		04/01/86	B	UCL
		07/15/86	0.58	UCL
33337	DBCP	10/12/84	P	UCL
		12/27/84	B	UCL
		01/17/85	B	UCL
		04/09/85	B	UCL
		10/21/85	P	UCL
		12/05/85	B	UCL
		04/01/86	B	UCL
		10/12/84	B	UCL
		01/17/85	B	UCL
		04/09/85	B	UCL
		10/21/85	B	UCL
		12/05/85	B	UCL
		01/15/86	B	UCL
		04/01/86	B	UCL
		07/15/86	P	UCL

B = < .06 UCL    D = dry    P = between .06 and .2 UCL

R.I.C.

IRONDALE BOUNDARY TREATMENT PLANT  
FY 85 WEEKLY AVG. FLOWS FOR ADSORBERS

DATE	----- 1 ----- GPM	----- 2 ----- GPM	----- TOTAL ----- GPM
10/07/84	578.00	530.00	1108.00
10/14/84	607.14	531.14	1133.28
10/21/84	619.43	538.29	1157.72
10/28/84	636.57	570.71	1207.28
11/04/84	716.29	593.86	1310.15
11/11/84	708.43	634.71	1343.14
11/18/84	684.00	673.43	1357.43
11/25/84	688.00	658.00	1346.00
12/02/84	696.43	669.86	1366.29
12/09/84	568.00	636.57	1204.57
12/16/84	652.57	625.14	1277.71
12/23/84	709.86	693.43	1403.29
12/30/84	709.57	728.57	1438.14
01/06/85	716.86	740.00	1456.86
01/13/85	707.86	740.00	1447.86
01/20/85	707.86	735.71	1443.57
01/27/85	724.86	730.00	1454.86
02/03/85	708.00	725.71	1433.71
02/10/85	700.43	711.43	1411.86
02/17/85	699.71	678.14	1377.85
02/24/85	704.43	673.43	1377.86
03/03/85	712.57	689.29	1401.86
03/10/85	712.43	685.43	1397.86
03/17/85	686.00	722.43	1408.43
03/24/85	688.57	765.14	1453.71
03/31/85	734.00	796.57	1530.57
04/07/85	718.57	792.00	1510.57
04/14/85	710.00	794.14	1504.14
04/21/85	705.57	804.29	1509.86
04/28/85	697.29	820.00	1517.29
05/05/85	682.71	823.71	1506.42
05/12/85	699.71	815.86	1515.57
05/19/85	727.43	810.43	1537.86
05/26/85	699.57	756.43	1456.00
06/02/85	695.29	710.00	1405.29
06/09/85	730.86	738.43	1469.29
06/16/85	744.29	721.86	1466.15
06/23/85	749.29	706.71	1456.00
06/30/85	723.57	707.14	1430.71
07/07/85	723.71	697.43	1421.14
07/14/85	724.43	684.00	1408.43
07/21/85	679.71	649.71	1329.42
07/28/85	634.29	631.29	1265.58

R.I.C.

IRONDALE BOUNDARY TREATMENT PLANT  
FY 85 WEEKLY AVG. FLOWS FOR ADSORBERS

DATE	----- 1 ----- GPM	----- 2 ----- GPM	----- TOTAL ----- GPM
08/04/85	644.29	640.43	1284.72
08/11/85	654.29	654.14	1308.43
08/18/85	648.00	634.29	1282.29
08/25/85	625.57	611.86	1237.43
09/01/85	610.57	586.43	1197.00
09/08/85	565.57	536.57	1102.14
09/15/85	545.71	513.57	1059.28
09/22/85	366.86	532.71	1099.57
09/30/85	536.00	513.50	1049.50

R.I.C.

IRONDALE BOUNDARY TREATMENT PLANT  
FY 85 QUARTERLY AVG. FLOWS FOR ADSORBERS

DATE	----- 1 ----- GPM	----- 2 ----- GPM	----- TOTAL ----- GPM
1st QTR	659.18	621.82	1281.00
2nd QTR	707.97	722.56	1430.53
3rd QTR	714.17	769.31	1483.47
4th QTR	627.62	606.61	1234.22
ANNUAL	677.24	680.08	1357.30

R. I. C.

IRONDALE BOUNDARY TREATMENT PLANT  
 FY 86 WEEKLY AVG. FLOWS FOR ADSORBERS

DATE	1 GPM	2 GPM	TOTAL GPM
10/07/85	548.57	537.14	1085.71
10/14/85	581.14	553.57	1134.71
10/21/85	512.29	555.29	1067.58
10/28/85	508.71	587.00	1095.71
11/04/85	610.29	648.43	1258.72
11/11/85	647.71	681.57	1329.28
11/18/85	652.71	686.57	1339.28
11/25/85	661.71	610.00	1271.71
12/02/85	711.86	327.14	1039.00
12/09/85	709.14	387.14	1096.28
12/16/85	683.86	617.71	1301.57
12/23/85	648.14	745.14	1393.28
12/30/85	625.29	766.29	1391.58
01/06/86	618.14	778.14	1396.28
01/13/86	613.14	761.29	1374.43
01/20/86	652.71	732.00	1384.71
01/27/86	681.71	731.43	1413.14
02/03/86	649.14	690.86	1340.00
02/10/86	614.00	738.00	1352.00
02/17/86	638.71	778.14	1416.85
02/24/86	662.29	755.29	1417.58
03/03/86	647.29	733.29	1380.58
03/10/86	649.57	660.00	1309.57
03/17/86	641.86	609.86	1251.72
03/24/86	630.71	594.57	1225.28
03/31/86	659.14	589.57	1248.71
04/07/86	647.86	579.57	1227.43
04/14/86	581.86	602.43	1184.29
04/21/86	645.14	709.86	1355.00
04/28/86	665.86	765.86	1431.72
05/05/86	691.71	756.29	1448.00
05/12/86	658.71	671.71	1330.42
05/19/86	669.14	673.00	1342.14
05/26/86	707.00	694.71	1401.71
06/02/86	700.86	696.57	1397.43
06/09/86	692.29	710.57	1402.86
06/16/86	691.57	669.43	1361.00
06/23/86	684.00	652.57	1336.57
06/30/86	675.14	650.71	1325.85
07/07/86	657.29	615.71	1273.00
07/14/86	627.57	594.00	1221.57
07/21/86	609.43	577.00	1186.43
07/28/86	595.86	564.71	1160.57

R.I.C.

IRONDALE BOUNDARY TREATMENT PLANT  
FY 86 WEEKLY AVG. FLOWS FOR ADSORBERS

DATE	----- 1 ----- GPM	----- 2 ----- GPM	----- TOTAL ----- GPM
08/04/86	574.00	550.29	1124.29
08/11/86	563.29	554.43	1117.72
08/18/86	559.71	560.14	1119.85
08/25/86	559.14	548.86	1108.00
09/01/86	558.29	544.29	1102.58
09/08/86	557.57	545.43	1103.00
09/15/86	563.71	531.29	1095.00
09/22/86	585.14	557.00	1142.14
09/30/86	614.25	571.50	1185.75

R.I.C.

WRODALE BOUNDARY TREATMENT PLANT  
FY 80 QUARTERLY AVG. FLOWS FOR ADSORBERS

DATE	----- 1 ----- GPM	----- 2 ----- GPM	----- TOTAL ----- GPM
1st QTR	623.19	592.54	1215.72
2nd QTR	642.95	704.03	1346.98
3rd QTR	670.09	679.48	1349.57
4th QTR	586.56	562.67	1149.22
ANNUAL	630.70	634.68	1265.38