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EXHIBIT 15 tabbies

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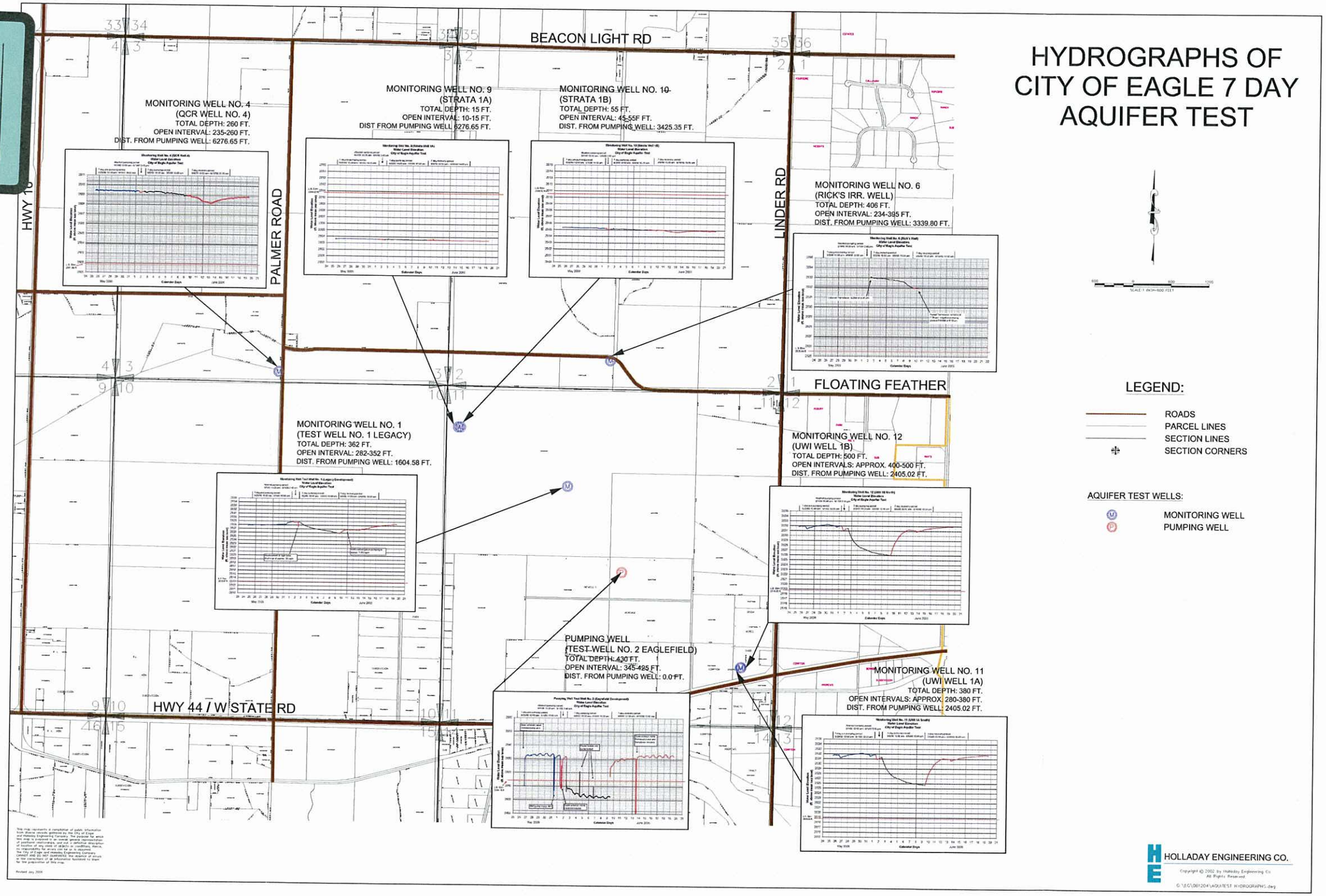
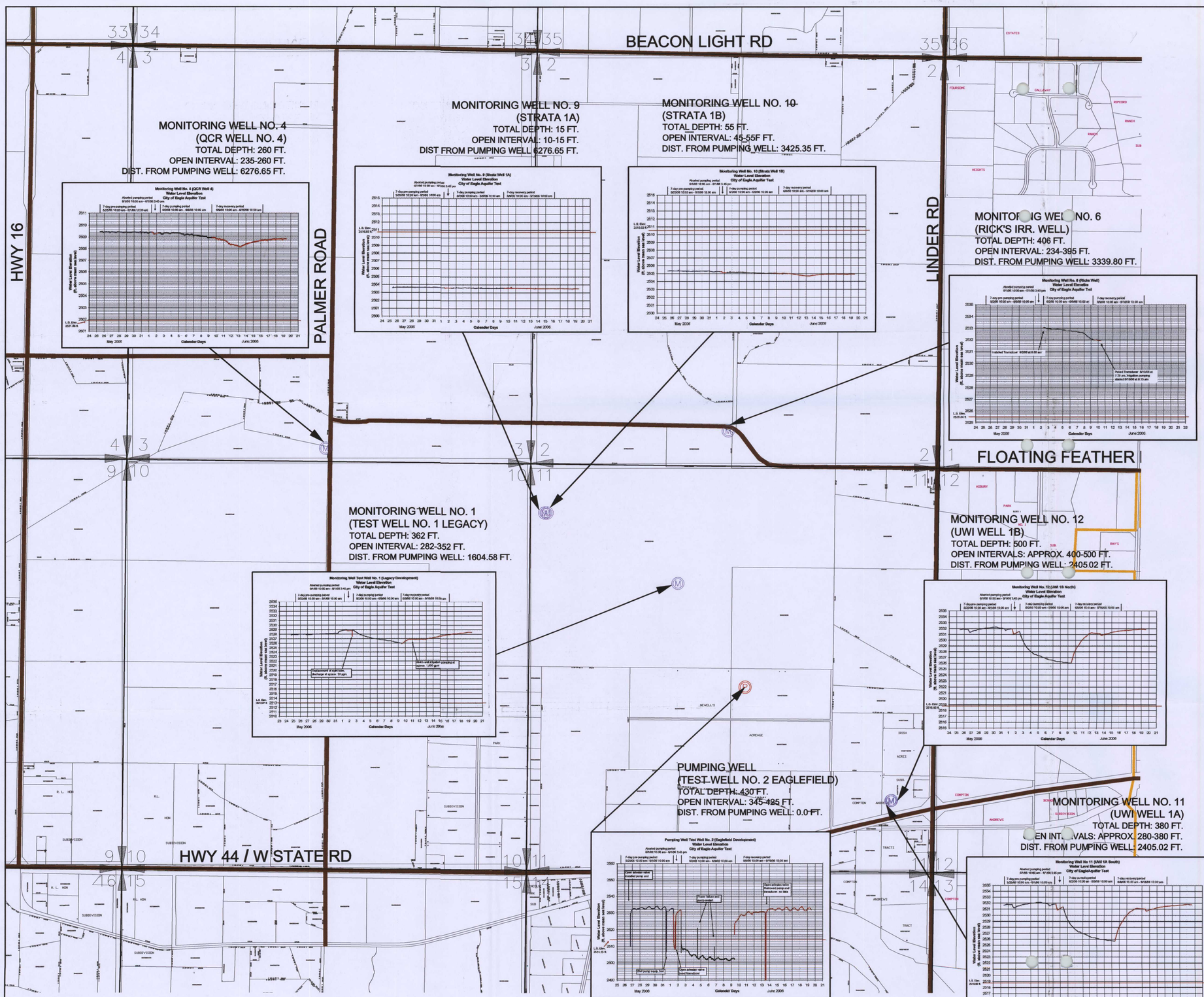
HYDROGRAPHS OF CITY OF EAGLE 7 DAY AQUIFER TEST



HYDROGRAPHS OF CITY OF EAGLE 7 DAY AQUIFER TEST



LEGEND:

- ROADS
- PARCEL LINES
- SECTION LINES
- SECTION CORNERS

AQUIFER TEST WELLS:

- MONITORING WELL
- PUMPING WELL

This map represents a compilation of public information from diverse records gathered by the City of Eagle and Holladay Engineering Company. The purpose for which this map is prepared is an overall general representation of positional relationships, and not a definitive description of location of any class of objects or conditions. Hence, no responsibility for errors can be or is assumed. The City of Eagle and Holladay Engineering Company CANNOT AND DO NOT GUARANTEE the absence of errors or the corrections of all information furnished to them for the preparation of this map.

Revised July 2006

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Exhibit 15

SCANLAN ENGINEERING

Groundwater and Environmental Engineering

August 9, 1995

Mr. Dan Brown
United Water Idaho
P.O. 7488
Boise, ID 8370

Subject: Aquifer Test at Floating Feather Well

Dear Dan:

At your request, I supervised an aquifer pumping test at the Floating Feather Well (a.k.a New Crandlemire Well) on July 28-30, 1995. The results of the test suggest that pumping of the well at the maximum rate and volume proposed under water right permit 63-12192 should not significantly impact neighboring wells and water rights. Details of the test are provided in the following paragraphs and test data are provided in the appendices.

DESCRIPTION OF THE TEST PROCEDURE

The test consisted of pumping the Floating Feather municipal supply well for a continuous period of approximately 51 hours at an average rate of 1,500 gpm. Pumping began at 14:49 hours on July 28 and stopped at 18:00 hours on July 30. Pumping rate fluctuated during the first 20 minutes of the test, and then was held constant at 1,500 gpm (±25 gpm) for the remainder of the test.

Water levels were monitored before, during, and after the test at the Floating Feather Well and at the following observation points: Crandlemire Irrigation Well, Vail Domestic Well, Miller Domestic Well, Chase Domestic Well, and Chase Irrigation Well. Well locations are shown on Figure 1. As discussed later in this report, the observation wells were completed in the shallow unconfined aquifer (above 60 feet), upper confined aquifer zone (110 to 170 feet), or the lower confined aquifer zone (170 to 335 feet).

Water-levels were measured by Terry Scanlan (Scanlan Engineering) and Mike Guilbert (Boise State University). Roger Dittus (United Water) assisted with water-level measurements during the first hour of the test. Water levels were measured using electric-line well sounders. Separate sounders were dedicated to each well during the test period to avoid measurement variations from different equipment. Water-level data are tabulated and plotted in Appendix A.

Measuring point elevations for the Floating Feather, Crandlemire Irrigation, Vail, and Miller Wells were surveyed to determine relative groundwater elevations. The

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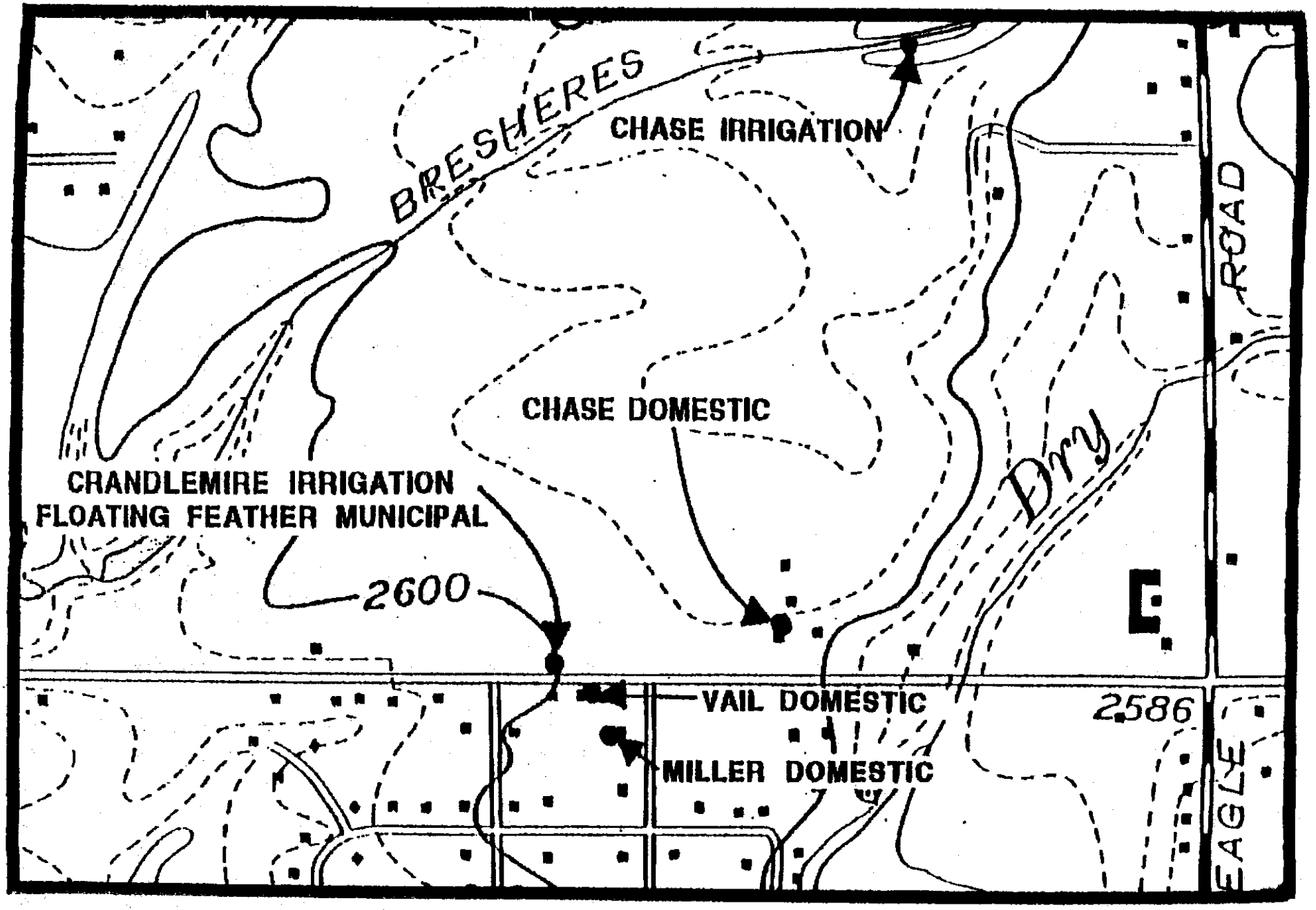

FIGURE 1
WELL LOCATION MAP
FLOATING FEATHER AQUIFER PUMPING TEST

reference datum for the measuring points was the concrete pad on the north side of the Crandlemire Irrigation Well. An elevation of 2599.0 feet was assumed for this point.

Pumping equipment consisted of the permanent line-shaft turbine pump and 125 hp hollow-shaft electric motor. Flow rate was measured with a Fischer-Porter magnetic flow meter located at the wellhead.

The water produced during the test was discharged into the 12-inch water main along Floating Feather Road, and then diverted into a pasture approximately one-quarter mile west of the well. A portion of the flow was also discharged at the well head into the Eagle Middle School irrigation system to provide turf irrigation during the test. The diversion point to irrigation was located upstream of the flow meter. Pumping rate was held constant during irrigation by maintaining a constant pump discharge pressure. The required discharge pressure was periodically checked by turning off the flow to irrigation and determining the pump discharge pressure required to produce 1500 gpm. The discharge pressure at the 1500 gpm pumping rate dropped slowly through the test as the water level in the well declined and the pumping lift correspondingly increased.

Weather during the test was highly variable. The first day of the test (July 28) was extremely hot, with a high temperature of 102°F. Thunderstorms began on that evening, and continued intermittently through the afternoon of July 29. The evening of July 29 was clear and cool, as was the day of July 30. This variable weather pattern resulted in fluctuating barometric pressures which may have effected water levels somewhat. The changing weather also may have influenced the demand from local wells for irrigation water.

PRE-TEST IRRIGATION PUMPING AND RECOVERY

The water level in the Floating Feather well prior to the start of the test was recovering from previous irrigation pumping by the adjacent Crandlemire Irrigation Well. The Crandlemire Irrigation Well pump was turned off at 9:30 on the morning of July 28, allowing for 5 hours and 19 minutes of recovery before the start of the Floating Feather test. The water-level recovery rate at the Floating Feather Well prior to the start of Floating Feather test pumping was slow, with less than 3 inches of recovery measured during the 90 minutes prior to the start of test pumping.

The Crandlemire Irrigation Well pump was off throughout the Floating Feather well pumping period. The Crandlemire Irrigation Well reportedly had been pumped (for irrigation of the Middle School site and pasture at the Crandlemire property) during daytime hours only for several weeks before the start of the Floating Feather test. However, it was apparently pumped throughout the night of July 27-28, before the start of the Floating Feather test. The pump was throttled, and probably producing about 800 gpm when operating. Given the daytime only operation, the average pumping rate from the well for the period prior to the test was probably about 600 gpm. This estimated rate appears reasonable, as most of the Crandlemire property was planted in grain, and therefore did not receive irrigation for several weeks prior to the test.

However, because the well was pumped through the evening prior to the test, the average pumping rate on the day before the test was probably in the range of 700 to 900 gpm.

WATER LEVEL OBSERVATION POINTS AND RESPONSES TO TEST PUMPING

The wells monitored as part of this test are described individually below, and well logs for several of the wells are included in Appendix B.

Floating Feather Well. The Floating Feather Well is located at the southeast corner of the Eagle Middle School site, and was drilled in May 1995 as a municipal supply well. The well is 346 feet deep. It is completed with 18-inch casing from 2.5 feet above ground surface to 171 feet, 14-inch casing and stainless steel screen from 171 to 340 feet, and silica sand filter pack from 171 feet to 346 feet. The well annulus above 171 feet is sealed with bentonite. Total screen length is 100 feet, with screens located in intervals between 183 feet and 340 feet. The Floating Feather Well had not been pumped prior to this aquifer test, except for initial development pumping and testing following drilling.

Water levels were measured through a water-level sounding tube. The measuring point was the top of the sounding tube, located approximately 2.75 feet above ground surface and 0.25 feet above the top of the well casing. The measuring point elevation was 2601.6.

Static water level in the Floating Feather Well at the start of the test was 44.20 feet (elevation 2557.4). The pumping water level at the end of the test period was 73.63 feet. Total drawdown was 29.43 feet. Specific capacity was 51 gpm per foot of drawdown.

The semi-logarithmic plot of drawdown suggest that the transmissivity of the aquifer tapped by the Floating Feather Well is approximately 150,000 gpd/ft. The semi-logarithmic recovery plot indicates a short-term transmissivity of approximately 125,000 gpd/ft, and a long-term apparent transmissivity of approximately 160,000 gpd/ft. These transmissivity values are reasonable when compared with the specific capacity. The higher long-term apparent transmissivity might indicate leakage from overlying or underlying aquifer zones.

Crandlemire Irrigation Well. The Crandlemire Irrigation Well is located approximately 65 feet southeast of the Floating Feather Well, within the same well lot. The Crandlemire Irrigation Well was drilled in 1990, and has been used since that time as the irrigation source for the Crandlemire property (including the portion now occupied by the Middle School). The well taps the same aquifer zones as the Floating Feather Well. It is equipped with an oil-lubricated line-shaft turbine pump (Layne 12RKBH, 4 stage, 8.80-inch trim) and 75 hp motor, rated to produce approximately 1000 gpm at 80 psi discharge pressure. United Water will abandon the well at the end of the 1995 irrigation season.

The measuring point for water levels was the lower edge of the discharge head, located approximately 1.0 feet above ground surface and 0.25 feet from the top of the well casing. Measuring point elevation was approximately 2600.2. Water-level measurement was complicated by a 3-foot thick layer of pump oil floating above the water. The electric line well sounder measured the top of the water, in the vicinity of the oil-water interface. The accuracy of the measurement was not good because of the variability of the electrical signal measured by the well sounder at the oil-water interface.

Static water level (i.e., the oil-water interface) in the Crandlemire Well at the start of the test was 45.3 feet. The estimated static depth to the top of the oil layer was approximately 42.3 feet (elevation 2557.9). The water level at the end of the test period was 56.9 feet; total drawdown was about 11.6 feet. Water-level fluctuations during the test period are attributed to measurement difficulties caused by the oil layer floating above the water.

The semi-logarithmic plots of drawdown and recovery show responses at the Crandlemire Well that are nearly identical to the responses measured at the Floating Feather Well, with approximately 150,000 gpd/ft transmissivity for the drawdown period, a short-term transmissivity on recovery of approximately 125,000 gpd/ft, and a long-term apparent transmissivity on recovery of approximately 160,000 gpd/ft. Calculated storage coefficient is approximately 0.0001. Note that the 11.6 feet of drawdown measured at the well can be modeled with the Theis Equation using a transmissivity of 160,000 gpd/ft and a storage coefficient of 0.0005. These values appear to best approximate the local aquifer hydraulic parameters.

Vail Domestic Well. The Vail Domestic Well is located approximately 250 feet southeast of the Floating Feather Well, at 725 West Floating Feather Road. It is reported to be approximately 110 to 120 feet deep. The Vails were out of town throughout the test period. As a result, the well was not pumped during the test period and provided an excellent monitoring point for the upper confined aquifer zone. A log for this well was not located in IDWR files.

Measuring point for water levels was the top of the well casing, at an approximate elevation of 2601.8 feet. Static water level at the start of the Floating Feather test was 39.0 feet (elevation 2562.8). The water level at the end of the test period was 40.4 feet; total drawdown was about 1.4 feet. Water-level fluctuations during the test period suggest that the well is probably influenced by the pumping of other local wells or by barometric pressure changes.

The response of the Vail Well indicates an indirect connection to the aquifers tapped by the Floating Feather and Crandlemire Wells. Although the water level in the well responds to pumping of the Floating Feather and Crandlemire Wells, the calculated drawdown at the Vail Well would have been 8.7 feet if the aquifer zone tapped by the Vail Well was directly connected to the zones tapped by the Floating Feather Well. Both the test response and the water-level elevations suggest that the upper confined aquifer zone

tapped by the Vail Well leaks downward to provide a portion of the recharge to the lower confined aquifer zone.

Miller Domestic Well. The Miller Domestic Well is located approximately 500 feet southeast of the Floating Feather Well, at 1235 Downing Street. It is reported to be 60 feet deep. A log for this well was not located in IDWR files.

The well was pumped almost continuously for lawn sprinkling during the first day of the test, and for about an hour or two early each morning (for domestic use on July 29 and for automatic sprinklers on July 30) during the remainder of the test period. The Millers were out of town from the morning of July 29 through the end of the test pumping period, and the pump did not operate except for the automatic sprinkling during this period. The well provided a good monitoring point for the shallow aquifer during the latter stages of the test.

Measuring point for water levels was the top of the well casing, at an approximate elevation of 2601.3 feet. Static water level at the start of the test could not be accurately determined because the well was pumping. However, the depth to water later in the test period appeared to be about 30.0 feet (elevation 2571.3 feet). There was no detectable water-level response at the Miller Well attributable to Floating Feather Well test pumping.

on Hill

Chase Domestic Well. The Chase Domestic Well is located approximately 1,000 feet east of the Floating Feather Well. The well is 112 feet deep, and appears to tap the same zone as the Vail Well. It was pumped throughout the test period for continuous stockwater flow and periodic lawn irrigation. The pump system is equipped with a hydropneumatic tank, and the pump cycled continuously through the test period. The cycle length varied depending on demand. Due to the constant cycling of the well, the observation data from this well was qualitative rather than quantitative. Measuring point for water levels was the top of the well casing.

Depths to water ranged from approximately 40.8 to 46.5 feet. Evaluation of water-level plots suggest that there was approximately 1.5 feet of drawdown in the Chase Domestic Well during the Floating Feather Well test.

The response of the Chase Domestic Well was similar to the response of the Vail Well, and indicates an indirect connection to the aquifers tapped by the Floating Feather and Crandlemire Wells. Although the water level in the well responds to pumping of the Floating Feather Well, the calculated drawdown at the Chase Domestic Well would have been about 5.7 feet if the aquifer zone tapped by the Chase Domestic Well was directly connected to the zones tapped by the Floating Feather Well.

Chase Irrigation Well. The Chase Irrigation Well is 338 feet deep, with screens located between 144 and 324 feet. The well taps similar zones as the Floating Feather and Crandlemire Wells. It is located approximately 2,750 feet northeast of the Floating Feather Well. The well is equipped with a 25-horsepower oil-lubricated pump that

discharges into an adjacent irrigation ditch. The well has a very thick layer of pump oil floating on the water, which complicated water-level measurement. The repeatability of measurements was poor. Measuring point for water levels was the lower edge of the measurement tube.

The Chase Irrigation Well was pumped continuously throughout the test period, except for a brief shutdown that occurred sometime between 10:30 and 12:30 on July 30. According to Bill Chase, the well had been pumped continuously for approximately 10 days prior to the test.

Measured water levels (at the oil-water interface) ranged from 74.3 to 76.45 feet. Evaluation of data plots suggest that approximately one foot of drawdown occurred at the Chase Irrigation Well during the test period.

Using the aquifer parameters calculated at the Crandlemire Well (T=160,000 gpd/ft and S=0.0005), the anticipated drawdown at the Chase Well would have been approximately 3.5 feet. The difference in measured response versus calculated response can be attributed to one or more factors. These factors include (1) the Chase Irrigation Well did not adequately recover from pre-test Crandlemire Well pumping, so that the effective pumping rate of the Floating Feather Well was only about 900 gpm (i.e., the 1500 gpm Floating Feather pump rate minus the 600 gpm average Crandlemire pump rate), (2) the effective aquifer transmissivity at the Chase Well is greater than 160,000 gpd/ft because the Chase Well taps sand units within both the upper and lower confined aquifer zones, and (3) leakage from overlying and underlying aquifer zones results in a higher effective storage coefficient (perhaps 0.005 instead of 0.0005) at the Chase Well.

CHARACTERIZATION OF LOCAL HYDROGEOLOGY

Interpretation of well logs, water-level elevations, and responses to test pumping suggest that there are three aquifer zones above a depth of about 350 feet in the Eagle Middle School vicinity. Each of these zones are tapped by the wells monitored during this test. For the purposes of this discussion, these zones can be considered the shallow unconfined aquifer (Miller Well), upper confined aquifer zone (Vail and Chase Domestic Wells) and the lower confined aquifer zone (Floating Feather, Crandlemire Irrigation, and Chase Irrigation Wells). All three of the zones consist of permeable sand and gravel layers. The zones are separated by clay and silt layers. These aquifer zones are shown schematically on Figure 2 and briefly described below. Note that additional deep confined aquifer zones are undoubtedly present beneath the site below a depth of 350 feet.

Shallow Unconfined Aquifer Zone

The shallow aquifer zone is found between the approximate depths of 25 and 60 feet. The shallow aquifer zone is likely a water-table (unconfined) aquifer, where the water table serves as the upper boundary of the aquifer. The lower boundary of the aquifer is a section of clay approximately 50 feet thick.

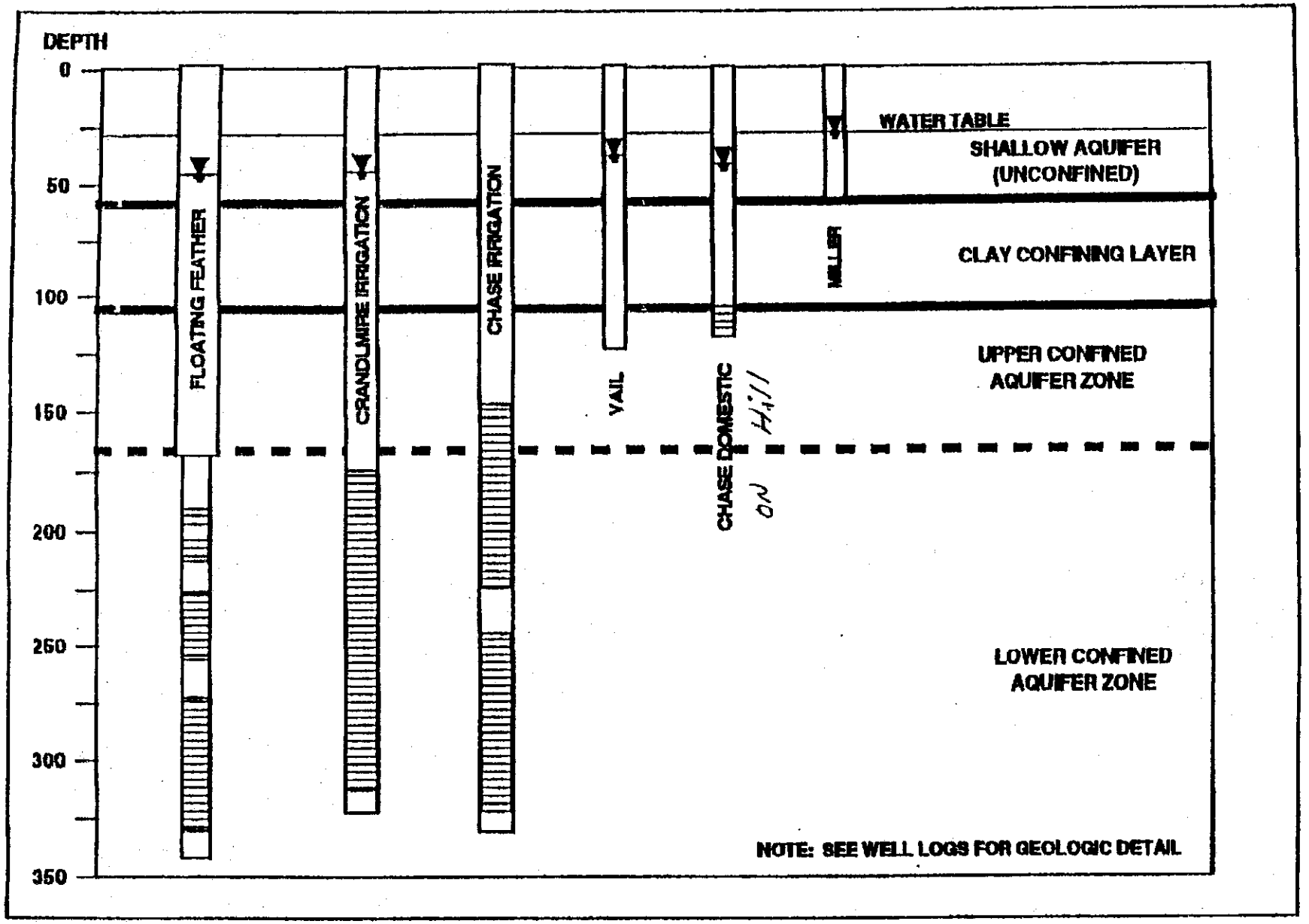

FIGURE 2
CONCEPTUAL HYDROGEOLOCIC CROSS SECTION
FLOATING FEATHER WELL VICINITY

Approximate water-table elevation (based on a static water level of 30.0 feet in the Miller Well) is 2571.3 feet. The shallow aquifer zone is recharged by irrigation canal leakage, and infiltration of irrigation and precipitation.

Upper Confined Aquifer Zone

The upper confined aquifer zone extends from approximately 100 to 170 feet. The geology suggests that it is a confined aquifer, bounded on the top by the nominal 50-foot thick clay zone (found between about 50 and 115 feet, depending on well location) and on the bottom by several less distinct clay layers. It is likely that these lower clay layers constitute a leaky confining layer between the upper confined aquifer zone and the lower confined aquifer zone.

Approximate piezometric water surface elevation in the upper confined aquifer zone is 2562.8 feet, based on a static depth to water of 39.0 feet in the Vail Well. The water surface elevation is 8.5 feet below the shallow aquifer water table elevation measured in the nearby Miller Well.

The upper confined aquifer zone is probably recharged by leakage from the shallow aquifer.

Lower Confined Aquifer Zone

The lower confined aquifer zone is found from a depth of about 170 feet to depths of more than 335 feet. This aquifer zone is tapped by a several high capacity local wells in the Middle School vicinity, including the Floating Feather Well, Crandlemire Irrigation Well, and Chase Irrigation Well. The Chase Irrigation Well appears to also tap portions of the upper confined aquifer zone in addition to the lower confined aquifer zone.

Approximate piezometric surface elevation in the upper confined aquifer zone is 2557.4 feet, based on a static depth to water of 44.2 feet in the Floating Feather Well. This water level is approximately 5 feet below the water level in the upper confined aquifer zone, as measured in the Vail Well. This 5-foot water level difference suggest that the upper confined aquifer zone is probably leaking downward into the lower confined aquifer zone, at least during the irrigation season.

Additional sand aquifer zones are likely present below the lower confined aquifer zone described herein. These deeper aquifer zones are probably in partial hydraulic connection with the lower confined aquifer tapped by the Floating Feather Well.

ANALYSIS OF FUTURE IMPACTS RESULTING FROM FLOATING FEATHER WELL PUMPING

Analysis of pumping test data and water-level plots suggest that water levels in all of the wells monitored, except for the Miller Well, are influenced by pumping of the Floating

Feather Well. The amount of future water-level interference will be dependent upon the rate and duration of Floating Feather Well pumping, and upon the depth of each well, and the distance of each well from the Floating Feather Well.

The proposed water right permit associated with the Floating Feather Well allows for a maximum diversion rate of 5.0 cfs (2,245 gpm) and a maximum annual diversion volume (in combination with all other water rights) from the Crandlemire and Floating Feather Wells of 533.9 acre feet. The maximum annual diversion volume is equal to the existing irrigation diversion volume permitted for the Crandlemire Well. Therefore, the annual volume pumped from the Floating Feather Well will not exceed the volume currently permitted from the Crandlemire Well (which is scheduled for permanent abandonment in the fall of 1995).

The annual volume limitation will minimize the potential impacts of pumping the Floating Feather Well. Under worst-case (i.e., maximum pumping rate) conditions, the well could only be pumped for 54 days at the 5.0 cfs diversion rate before the annual diversion volume limit would be reached. Alternatively, the well could be pumped for 365 days each year, but at an average rate of only 330 gpm. The impact of the longer duration but lower pumping rate would be less than the impact of the high rate, short duration scenario.

Anticipated interference impacts to local wells are discussed below based on the worst-case scenario of continuous pumping at 2,245 gpm for 54 days.

Floating Feather Well. Estimated drawdown at the Floating Feather Well after 54 days of pumping at 2,245 gpm would be 50 feet (i.e., pumping level of 94 feet assuming a static water level of 44 feet). Well pumps can be set to depths of more than 150 feet in the Floating Feather Well. Therefore, the well can be operated under the "worst case" scenario described above without approaching maximum yield conditions.

Vail Well. Projection of the Vail Well water-level trend on the semi-logarithmic plot (depth to water versus elapsed pumping time) suggests that there would be approximately 2.8 feet of drawdown in the Vail Well following 54 days of pumping the Floating Feather Well at 1,500 gpm. At a 2,245 gpm Floating Feather pumping rate, the Vail Well drawdown would proportionately increase to 4.1 feet. The 4.1 feet of interference drawdown would lower the static water level from about 39 feet to about 43 feet.

The Vail Well is reported to be approximately 110 feet deep and has a pumping water level of about 4 feet below the static water level. Water-level declines of several tens of feet could occur without significant impacts to production from the well, provided that the pump is set deep enough. Therefore, no significant impacts are anticipated as a result of future Floating Feather Well pumping.

Miller Well. The Miller Well is 60 feet deep, with a 50-foot pump setting. The pumping level is approximately 12 feet below the static water level. Therefore, the

pump will break suction at static water levels below about 38 feet. Given the current static water level of 30 feet, water-level declines in excess of about 8 feet will impact the Miller Well. Mr. Miller's records indicate that the static water level was 36 feet at the time of pump replacement in March 1992, suggesting that only 2 feet of well interference at that time would have caused problems.

There was no discernible water-level effect at the Miller Well resulting from the two-day pumping test, and significant water-level interference would not be expected from additional Floating Feather Well pumping. However, it is possible that some water-level decline in the shallow aquifer could occur due to downward leakage to the upper confined aquifer zone. The magnitude of this decline cannot be accurately determined from the available data.

Future water-level monitoring at the Miller Well is warranted to determine if pumping levels are approaching the pump setting depth. Five feet of additional pump setting depth may also be warranted in the future.

Chase Domestic. The Chase Domestic Well is completed in the same aquifer zone as the Vail Well. Long-term well interference impacts at the Chase Domestic Well resulting from the pumping of the Floating Feather Well are anticipated to be similar to the 4 feet calculated for the Vail Well. The Chase Domestic Well is 112 feet deep and currently has a pumping level of about 46 feet (approximately 5 feet below the static water level). Water level declines of several tens of feet could occur without significant impacts to production from this well, provided that the pump is set deep enough. Therefore, no significant impacts are anticipated at the Chase Domestic Well as a result of future Floating Feather Well pumping.

Chase Irrigation Well. Water-level interference at the Chase Irrigation Well during the test period appeared to be about 1 foot, which was less than anticipated based on the hydraulic parameters calculated from the Crandlemire Well response. Calculated drawdown using these same aquifer parameters (i.e., T=160,000 gpd/ft and S=0.0005) for the worst-case Floating Feather pumping conditions (54 days at 2245 gpm) result in a calculated 10.5 feet of water-level interference at the Chase Irrigation Well. This should be considered a maximum value, as the measured test response suggests that the actual value (under the worst-case pumping scenario) will more likely be in the range of 3 to 6 feet.

The top of the uppermost screen in the Chase Irrigation Well is at a depth of 144 feet. Since the well is constructed with 16-inch casing and screen to total depth, a pump can be set below the uppermost screen, and the pumping water level can be drawn down to below 130 feet without overpumping the well. Thus, assuming that the pumping level is currently at about 70 feet, an additional five feet of interference drawdown will not significantly impact the potential yield from the well. However, five feet of interference drawdown will increase the pumping lift by about 7 percent, and may correspondingly decrease the discharge from the existing pump by about 7 percent. This 7 percent decrease would occur during the latter part of the 54-day worst-case pumping period.

During the remainder of the irrigation season, the Floating Feather Well pump would be off, and Chase Well pumping levels (and pumping rates) would be higher than in past years when the Crandlemire Irrigation Well was pumping to irrigation at approximately 1,000 gpm. These higher pumping levels (and discharge rates) at the Chase Irrigation well would likely offset the lower pumping levels (and discharge rates) experienced during the worst-case pumping period, so that the overall average lift and pumping rate at the Chase Well would not change significantly relative to recent years when the Crandlemire Well was operating. Thus, significant impacts to the Chase Irrigation Well are not anticipated.

CONCLUSIONS

Analysis of the Floating Feather Well pumping test data indicates that only minor well interference impacts will be experienced in local wells. Given the annual pumping volume limitation proposed in Permit 63-12192, the impacts should not differ significantly from historic water-level impacts caused by past irrigation pumping of the Crandlemire Irrigation Well.

RECOMMENDATIONS

Monitoring of water levels in the Floating Feather Well vicinity is warranted. Proposed monitoring points would be the Floating Feather Well (lower confined aquifer zone), Vail Well (upper confined aquifer zone), and Miller Well (shallow unconfined aquifer). Pumping rates and volumes at the Floating Feather Well should be documented for correlation with future water-level changes.

Please contact me with any questions regarding this test.

Sincerely,

Terry M. Scanlan

Terry M. Scanlan, P.E., P.G.
Engineer/Hydrogeologist

cc: David Tuthill
Marvin Miller
Delmar Vail
Eleanor Chase

PROFESSIONAL ENGINEER REGISTERED 6266 STATE OF IDAHO TERRY M. SCANLAN

LICENSED PROFESSIONAL GEOLOGIST TERRY M. SCANLAN 646 STATE OF IDAHO

RESULTS OF THE 30-DAY PUMPING TEST AND AQUIFER ANALYSIS

Prepared for

FLOATING FEATHER HILLS, INC.

REGISTERED PROFESSIONAL GEOLOGIST
CHARLES F. FEAST
588
STATE OF IDAHO

Prepared by

CH2M HILL
Boise, Idaho

June 1991
BOI31684.A1

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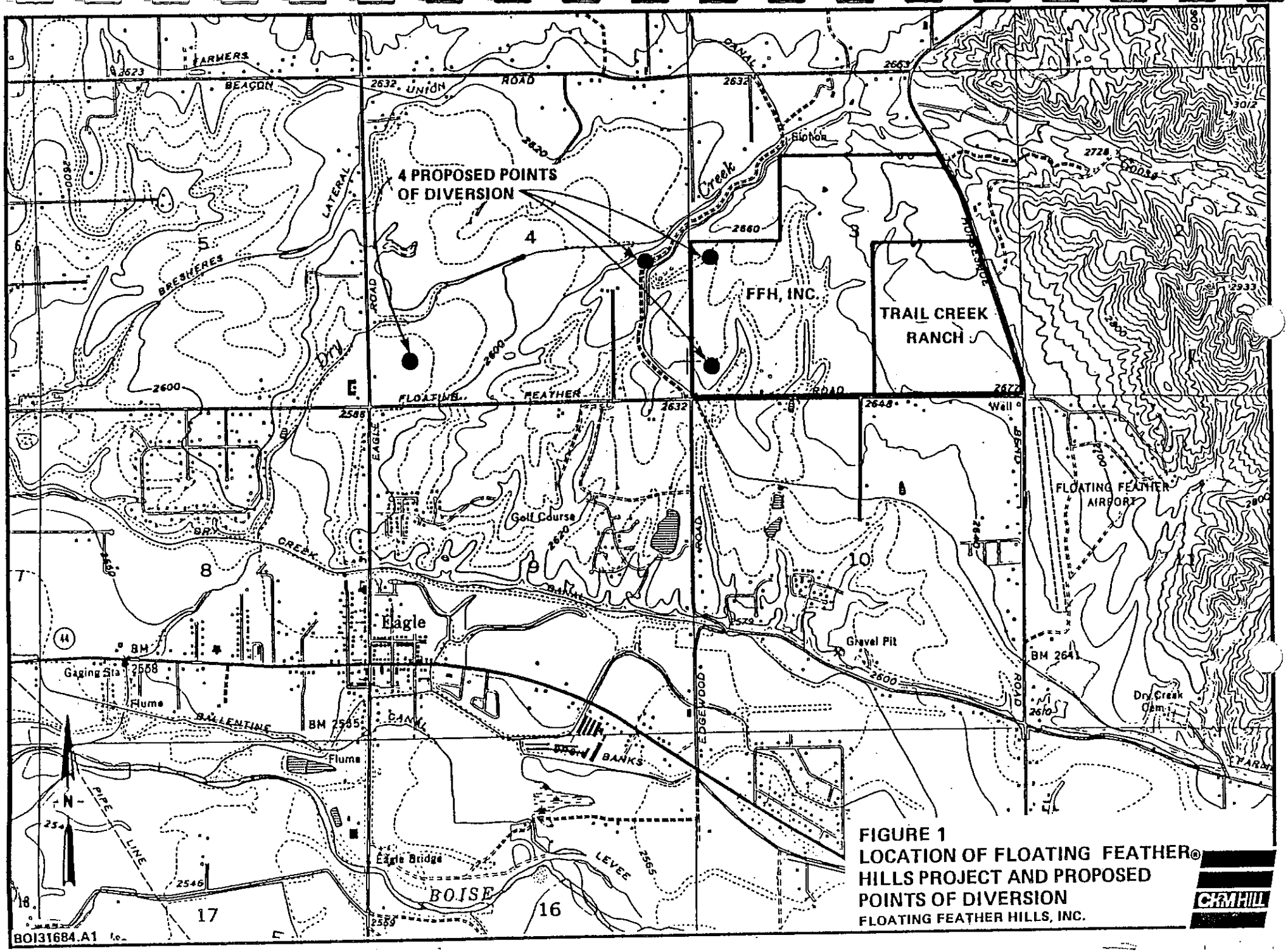

FIGURE 1
LOCATION OF FLOATING FEATHER® HILLS PROJECT AND PROPOSED POINTS OF DIVERSION
FLOATING FEATHER HILLS, INC.

CH2M HILL

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INTRODUCTION

Floating Feather Hills, Inc. (FFH, Inc.) filed Application No. 63-11413 to divert 5 cubic feet per second (cfs) of groundwater to supply potable water service, fire protection, and limited irrigation flow for a proposed housing development north of Floating Feather Road, northeast of Eagle, Idaho. The application was subsequently amended to include supplying water to an adjoining proposed development known as Trail Creek Ranch. The water rights application identifies four possible points of diversion for groundwater. The properties to be served and proposed points of diversion are shown in Figure 1. A copy of the water rights application is provided in Appendix A

Approximately 90 protests to the FFH, Inc. water rights application were filed with the Idaho Department of Water Resources (IDWR) by concerned area residents. In response to these protestants and because of limited information on the hydrologic characteristics of the aquifers in the area, FFH, Inc. agreed to install a test/production well and conduct a long-term (30-day) aquifer test. The purpose of the test was to obtain direct information on aquifer characteristics and to use that information to evaluate the impact the proposed groundwater diversions may have on the water resources of the area.

Mr. Sherl Chapman, consulting geologist, Boise, Idaho, was retained by FFH, Inc. to design, install, and test the test/production well and to determine the maximum pumping rate and pump requirements for the pumping test. CH2M HILL was retained to conduct the long-term pumping test, analyze the data, and evaluate long-term pumping effects on the aquifer.

This report presents the findings, analysis, and conclusions from the installation of the test well, the aquifer test, and evaluation of potential effects stemming from the proposed groundwater withdrawals.

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SUMMARY AND CONCLUSIONS

SUMMARY

The FFH, Inc. test/production well was drilled and installed to 415 feet into a thick sequence of bedded sands and sandy clays. The well produces a sustained 750 gallons per minute and is capable of producing 900 gallons per minute for shorter durations.

The aquifer is characterized as a thick, complexly bedded water table system. Near the production well and for early pumping periods gravity drainage is significant and must be accounted for when analyzing water level responses in observation wells. The effect of gravity drainage diminishes with distance and time. The sources of recharge to the aquifer were listed but insufficient data exist to quantify recharge. Lateral inflow from the aquifer margin to the north and east and seepage from canal and irrigation laterals are probably the most significant sources of water.

The aquifer test was a success by many indicators. The cooperation of local residents and well owners allowed a good evaluation of the aquifer over a large area. The production well, test pumping equipment, and observation wells all performed well during the test with no significant problems, interruptions, or loss of data. Only one 1-hour interruption of pumping over a 30-day period was experienced because of an electrical power surge.

Water level data from eight observation wells and the production well were collected during the test. Water level recorders were installed on three wells and the U.S. Geological Survey (USGS) maintained their recorder on one of the eight observation wells. Initial water levels were collected beginning up to 2 weeks before the test in some wells and continued through the recovery period about 2 weeks after the pump was shut off.

The aquifer characteristics of transmissivity (T) and storage coefficient (S) were determined from the water level responses recorded at the production well and four observation wells. Observed drawdowns ranged from about 4 feet to less than 1 foot.

EAGLE HILLS GOLF COURSE WELL

The Eagle Hills Golf Course (EHGC) has two wells about 50 feet from each other. The pump was pulled from the northerly of the two wells. This is an 8-inch-diameter well approximately 175 feet deep. A water level recorder was installed on the EHGC well on March 20, 1991.

Although only one Eagle Hills Golf Course well was used as an observation well, provisions were made to provide the golf course water from the production well to avoid use of the second well. This was accomplished by a "tee", gate valve and additional aluminum pipe installed at the discharge end of the production well discharge pipe. Approximately 200 gpm was provided to the golf course during the test. The pump was reinstalled in the EHGC well on May 6, 1991.

HOLGATE WELL

The Holgate well is a 6-inch-diameter well approximately 171 feet deep. The pump was pulled, repaired, and reinstalled in the Holgate well on March 19, 1991. During installation the pump cable was securely fastened to the discharge pipe so that water level measurement probes would not become tangled. The Holgate well supplies domestic and livestock water to three residences and ranching operations. Although occasionally water level measurements were delayed because the well was in use, periodic pumping of the Holgate well did not interfere with collecting valid water level data during the test.

EICHHORN WELL

The Eichhorn well is an old 4-inch-diameter well 70 to 90 feet deep. A deep jet pump set at about 70 feet could not be removed and, consequently, this well was equipped with a temporary 3/4-inch PVC water level measurement tube. The tube extended from the top of the pump to ground surface. The top of the well is approximately 5 feet below ground level in a pump house. The Eichhorn well remained in service during the entire pumping and recovery tests. This well serves one residence and rarely was the pump on when a water level measurement was to be taken.

FLOATING FEATHER IRRIGATION DISTRICT WELL

The Floating Feather Irrigation District (FFID) well is an existing 12-inch irrigation well approximately 270 feet deep. An access port on the north side allowed lowering a water level probe to the water without pulling or modifying the pump. However, the well has a significant amount of pump oil on the water column, which hindered getting valid water level measurement and required extensive cleaning of the water level probe each time it was lowered into the well. To avoid fouling the water level probe, this well was equipped with a temporary airline and pressure gage to allow measurement of water levels. This approach limited the sensitivity of water level measurements to about 0.5 foot.

DAY WELL

The Day well is an unused private well located in the Sage Acres Subdivision. This is a 6-inch-diameter well approximately 230 feet deep. A replacement well about 40 feet north of this well was in use periodically during the test. A water level recorder was installed in the Day well on March 23, 1991. A temporary fence was constructed around the well to protect the recorder from livestock. IDWR has continued to operate the water level recorder on the Day well after the test ended.

USGS WELL

The USGS well is a dedicated long-term observation well for this area. Operation of the water level recorder and data collection is provided by cooperative agreement between the USGS and IDWR.

WATER LEVEL MEASUREMENTS

The Day, Hormachea, and Eagle Hills Golf Course wells were equipped with Stevens Type F water level recorders. The recorders were placed on the wells 4 days to 2 weeks before the test began. The recorders were provided by IDWR and were equipped with electric quartz clocks provided by FFH, Inc. The clocks had a maximum pen travel of 2 days per chart, or 1/2 hour per chart division. Vertical gearing was 2:1;

PUMPING TEST RESULTS

PRETEST WATER LEVEL TRENDS

Figures 6 through 13 are hydrographs showing the depth to water versus time for all observation wells (except the USGS well) and the production well throughout the entire test period. A separate hydrograph figure was not produced for the USGS well; however, the full water level charts are provided in Appendix C.

In Holgate, Carson, Hormachea, and EHGC wells, a definite trend of declining water levels was identified prior to the test. This trend ranges from 0.02 foot/day (ft/d) in the Hormachea and EHGC wells to 0.07 ft/d in the Holgate well. A declining water level trend was also indicated in the Eichhorn well but pretest water level data were insufficient to define the rate of decline. Insufficient data were obtained to determine pretest trends in the FFID and production well. No sustained pretest trend could be identified at the Day and USGS wells despite good water level data from the recorders installed on these wells.

No meaningful pretest water level trends could be established for the production well because the water level datum changed too frequently during the final well completion and because of the pretest pumping during development and production pump installation. Based on the assumption that water levels in the production well and the Holgate well were similar, the pretest water level trend shown in Figure 6 is the trend at the Holgate well superimposed to this well.

Although shown as constant linear trends throughout the test period, the pretest water level trends can probably only realistically be extended out 20,000 to 30,000 minutes into the test (April 10 to 15) at which point water was run in the Farmers Union Canal. Leakage from the canal would cause a flattening of the decline or rising water level trends when it finally reaches the aquifer. This may explain why, as shown in Figures 6, 8, 9, and 10, water levels recovered above the predicted water level based on the pretest trend. The effects of declining water levels and adjusted drawdowns are discussed in the section entitled Aquifer Analysis.

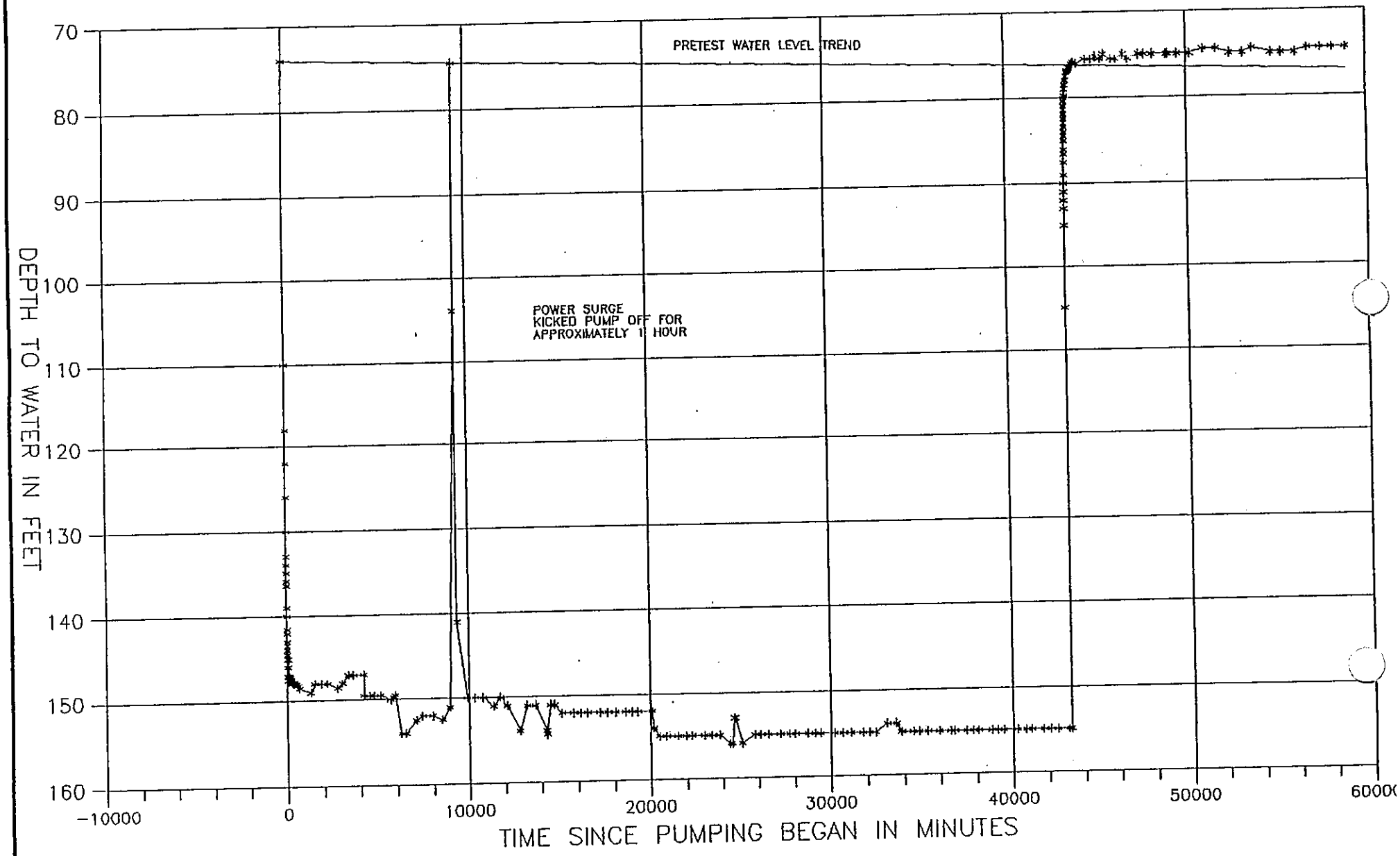

FIGURE 6
PRODUCTION WELL HYDROGRAPH
FLOATING FEATHER HILLS, INC.

CH2M HILL

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TABLE 1
SUMMARY OF AQUIFER CHARACTERISTICS FROM PUMPING TEST ANALYSIS
FLOATING FEATHER HILLS, INC.

WELL	RADIUS (FT)	DIRECTION	METHOD OF ANALYSIS: CHOW SEMI-LOG TIME DRAWDOWN TRANS. (GPD/FT)	CHOW STORAGE COEF	CHOW NOTES	THEIS NON-EQUILIBRIUM LOG-LOG TIME DRAWDOWN TRANS. (GPD/FT)	THEIS STO.COEF.	THEIS NOTES	BOULTON (PRICKETT) DELAYED YIELD TRANS. (GPD/FT)	BOULTON STORAGE COEF.	BOULTON NOTES	JACOBS SEMI-LOG TIME DRAWDOWN TRANS. (GPD/FT)	JACOBS STORAGE COEF.	JACOBS NOTES	JACOBS SEMI-LOG RECOVERY TRANS. (GPD/FT)	JACOBS STORAGE COEF.	JACOBS NOTES	SUMMARY BY WELL
PRODUCTION	1	N/A	NO FIT	N/A		NO FIT	N/A		NO FIT	N/A		11,986	N/A	(E),1	30,793	N/A	(E),1	LOG MEAN T = 166,264 GPD/FT
												143,749	N/A	(L)	192,306	N/A	(L)	
HOLGATE	900	E	422,925	7.70E-05	(E),2	NO FIT	N/A		106,427	6.00E-04	(E),3	86,793	1.80E-02	(L)	100,591		(L)	LOG MEAN T = 98,991 GPD/FT
			122,738	6.70E-03	(M)				106,427	1.22E-02	(L)							LOG MEAN S = 1.29E-02
			83,350	1.90E-02	(L)													
EAGLE HILLS G.C.	2,500	S	661,132	5.20E-03	(E),4	654,935	5.50E-03	(E),4	266,067	4.30E-03	(E),3	u>.01, invalid solution			NO FIT	N/A		LOG MEAN T = 278,542 GPD/FT
			219,720	1.70E-02	(L)	266,067	1.57E-02	(L)	266,067	1.58E-02	(L)	u>.01, invalid solution						LOG MEAN S = 1.24E-02
						387,006	5.60E-03	(ALL)										
HORMACHEA	3,700	W	315,339	1.70E-02	(E)	532,135	3.50E-03	(E),4	NO FIT	N/A		u>.01, invalid solution			u>.01, invalid solution			LOG MEAN T = 318,905 GPD/FT
			287,490	6.20E-03	(L)	354,755	5.80E-03	(L)				u>.01, invalid solution			u>.01, invalid solution			LOG MEAN S = 3.94E-03
						654,933	2.70E-03	(ADJ),4										
CARSON	1,300	SE	553,418	2.07E-02	(E),4	NO FIT	N/A		85,141	4.85E-02	(E),3	u>.01, invalid solution			u>.01, invalid solution			LOG MEAN T = 110,596 GPD/FT
			85,141	4.49E-02	(L)				85,141	7.50E-03	(L)	u>.01, invalid solution			u>.01, invalid solution			LOG MEAN S = 2.55E-02
			186,610	4.92E-02	(ADJ)													
															MEAN ALL WELLS			LOG MEAN T = 174,477 GPD/FT
																		LOG MEAN S = 1.37E-02
															MEAN VICINITY PRODUCTION WELL			T = 122,100 GPD/FT
																		S = 1.90E-02

NOTES:

1. EARLY TIME DATA AFFECTED BY CASING STORAGE AND GRAVITY DRAINAGE.
2. EARLY TIME DATA ASSUMED AFFECTED BY GRAVITY DRAINAGE, HIGH T AND LOW S NOT USED IN LOG MEANS.
3. EARLY TIME T AND S NOT USED IN LOG MEANS. S USEFUL FOR EARLY OR SHORT-TERM WELL RESPONSE ANALYSIS.
4. HIGH EARLY TIME T FROM GRAVITY DRAINAGE EFFECTS, T AND S NOT USED IN LOG MEANS ALTHOUGH S IS REASONABLE.

(E) - EARLY TIME
(M) - MIDDLE TIME
(L) - LATE TIME
(ALL) - ALL DATA
(ADJ) - ADJUSTED DRAWDOWN

PRODUCTION WELL

Semi-log Drawdown (Figure 15 and Appendix E-1)

This plot indicates two definite straight line segments. The first segment from time (t) = 0.3 minutes to t = 30 minutes gives a transmissivity (T) of 12,000 gallons per day per foot (gpd/ft). Additional calculations reveal, however, that because of the size of the well and gravel pack envelope, early time data is strongly influenced by casing storage and is not a valid T. The second straight line segment indicates a T of 145,000 gpd/ft. The second T is more indicative of the aquifer.

Log-Log Drawdown (Figure 16)

The log-log plot for the production well did not produce a meaningful curve and was not used in the analysis.

Semi-Log Recovery (Figure 17 and Appendix E-1)

This plot reveals two straight line segments. Early recovery data, t/t' = 4,000 to 175 indicates a T of 31,000 gpd/ft. Late time recovery data, t/t' = 175 to 3.5 indicates a T of 192,000 gpd/ft. Because of casing storage effects and water in the pump column reentering the well, early time recovery is not viewed as reliable as late time recovery.

Production Well Summary

The log mean T for the late time drawdown and late time recovery at the production well is 166,000 gpd/ft. It is not possible to get a meaningful estimate of the storage coefficient (S) from the production well.

HOLGATE WELL

Semi-log Drawdown (Figure 18 and Appendix E-2)

This curve reveals three straight line segments representing early, middle, and late times (A', A" and A"' respectively, Appendix E). The early time segment (A')

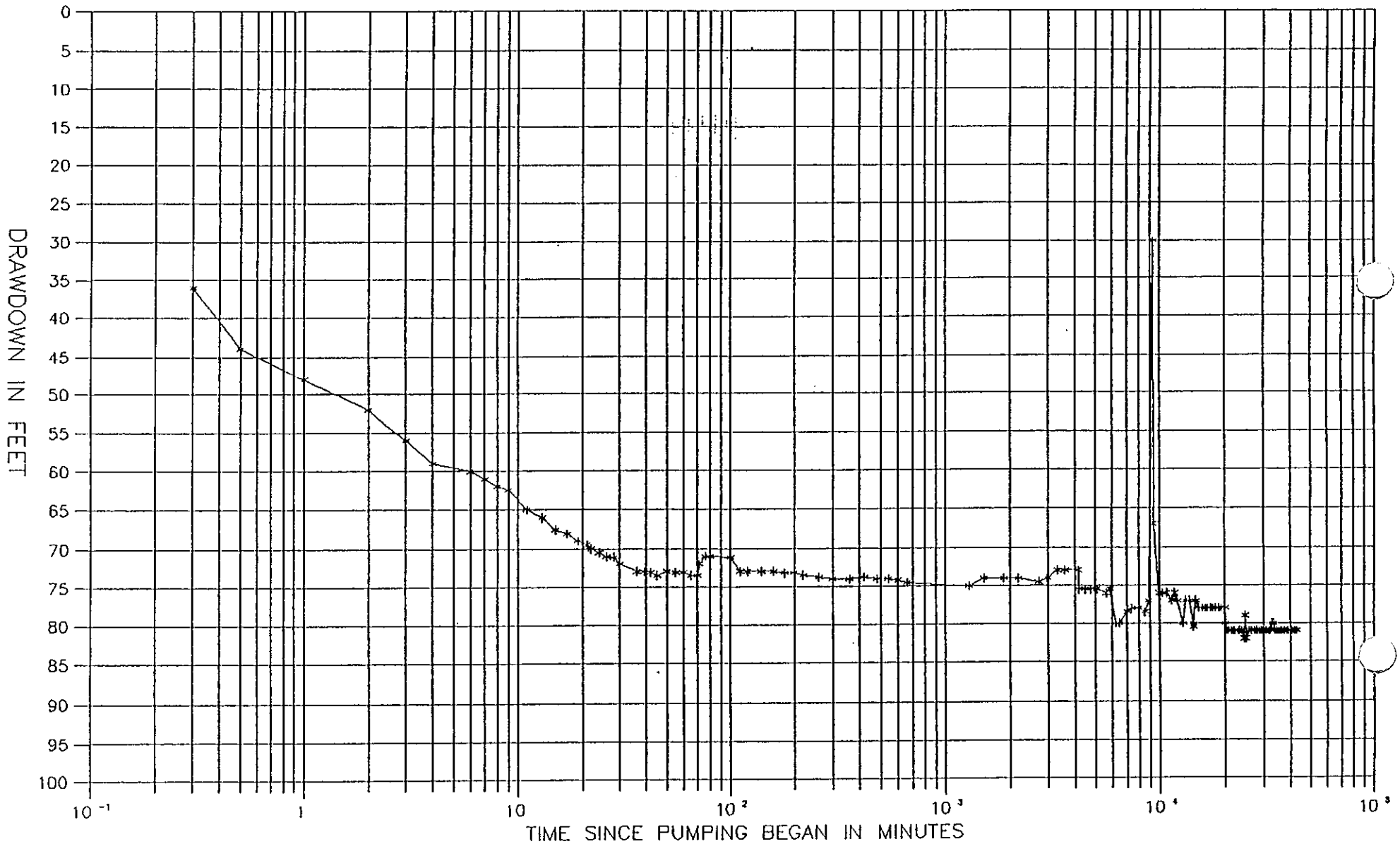

FIGURE 15
PRODUCTION WELL
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

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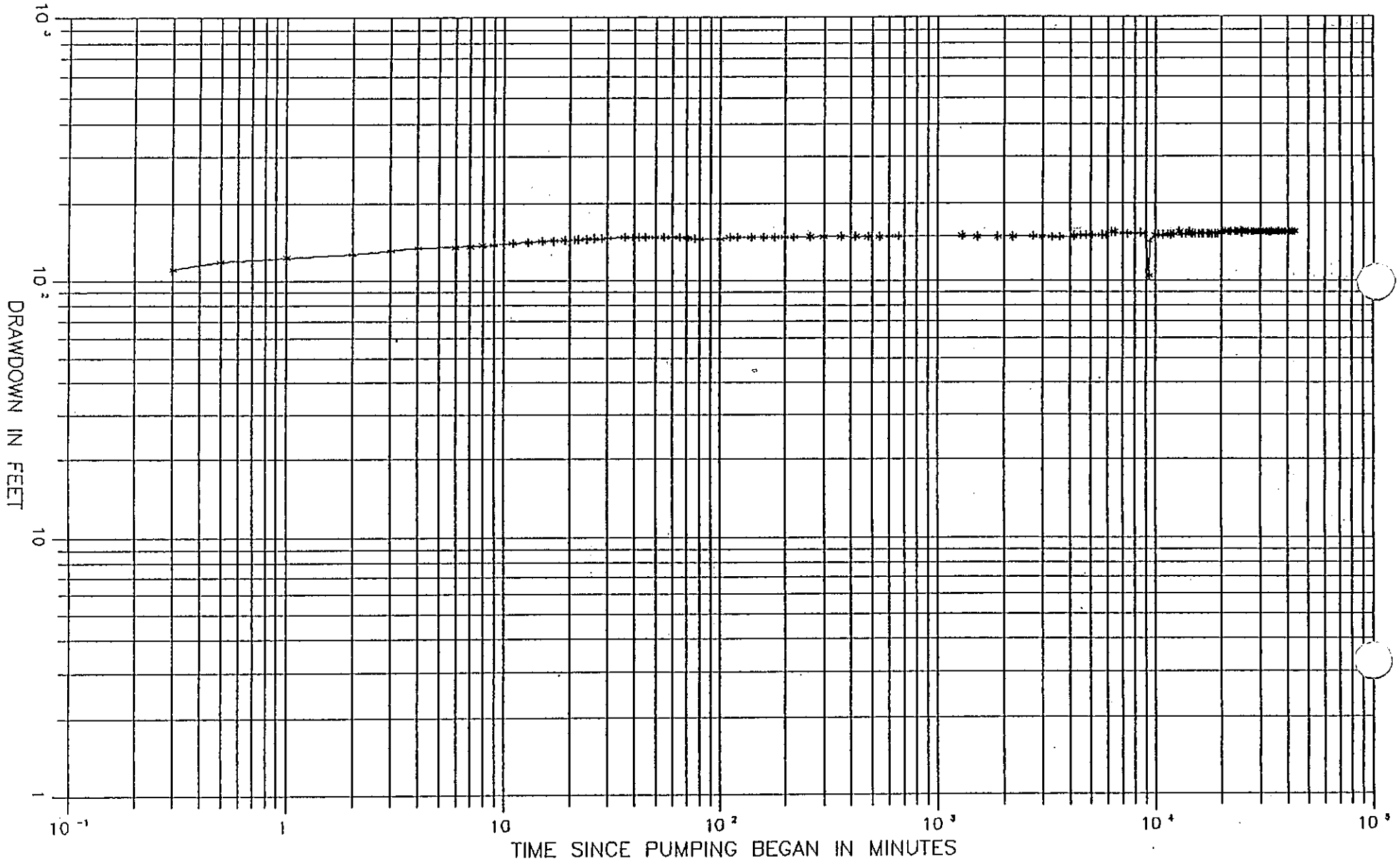

FIGURE 16
PRODUCTION WELL
LOG-LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

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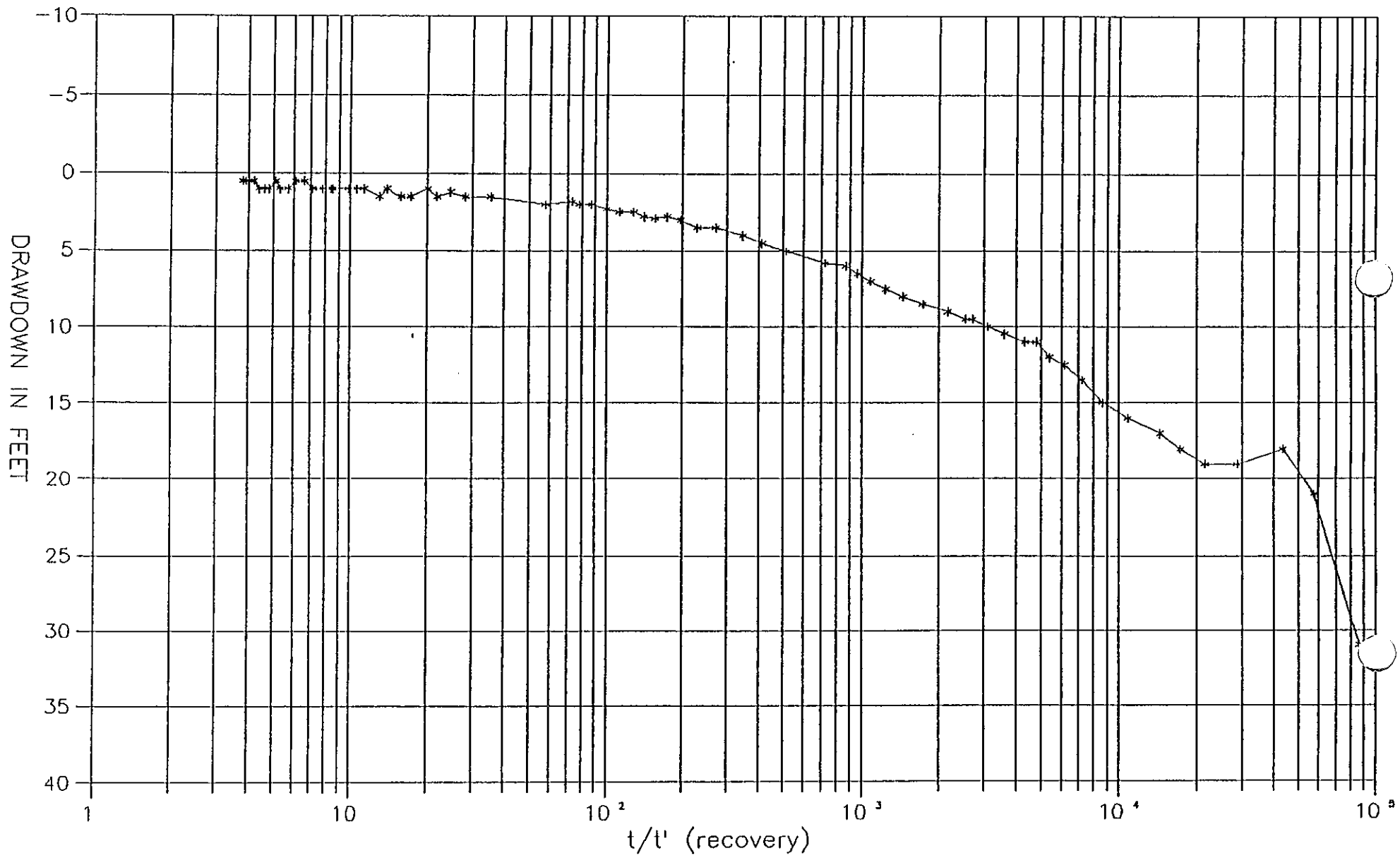

FIGURE 17
PRODUCTION WELL
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

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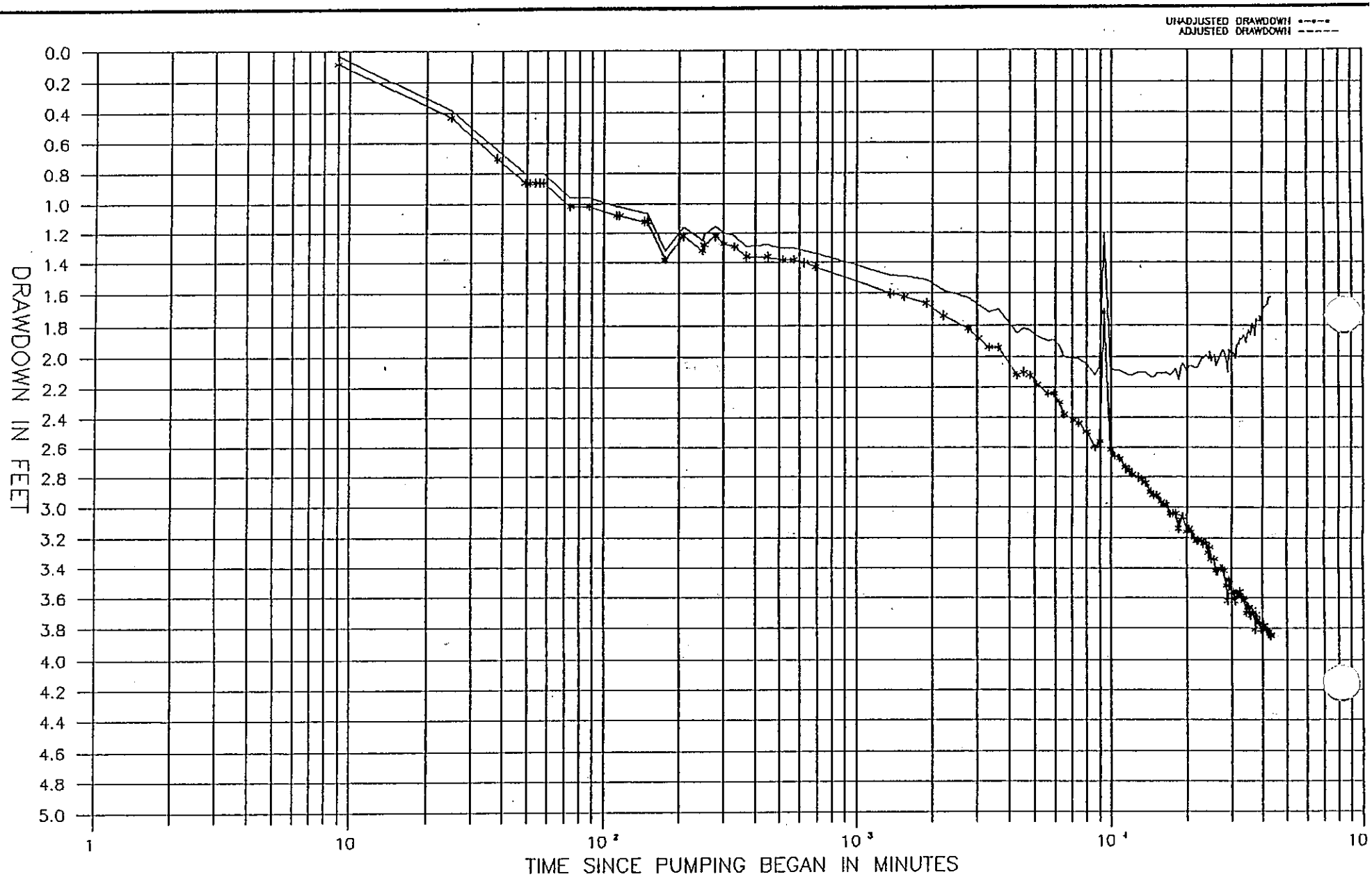

FIGURE 18
HOLGATE WELL
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

BOI31684 A1

produces T of over 400,000 gpd/ft. The middle and late time Ts are similar at 123,000 and 84,000 gpd/ft. The early time T is affected by gravity drainage and was not used.

The break in slope between middle and late time straight line segments at about t = 20,000 minutes may indicate a partial barrier or minor aquifer inhomogeneity was encountered by the propagating cone of depression.

Log-Log Drawdown (Figure 19, Appendix E-2)

This curve is a classic delayed yield curve. The single T from this analytical method is 106,000 gpd/ft. Further analysis indicates that the effect of gravity drainage becomes negligible after almost 10,000 minutes, further supporting the inappropriateness of the high early time T produced from the straight line method described above.

Semi-Log Recovery (Figure 20 and Appendix E-2)

This plot produced an S-shaped curve. Early and middle time recovery values were not used because of the unknown effects the possible barrier may have had on early data and the impact refilling dewatered strata possibly had on middle time data. The late time T of 100,000 gpd/ft is consistent with T derived from the delayed yield analysis and is considered representative.

Holgate Summary

The log mean T using those values considered appropriate is 100,000 gpd/ft. The log mean S for valid solutions is 0.0129, indicative of a poorly confined or stratified water table aquifer.

CARSON WELL

Semi-Log Drawdown (Figure 21 and Appendix E-3)

This plot produced two straight line segments from the drawdown data, early and late time, (A' and A''' respectively, Appendix E-3).

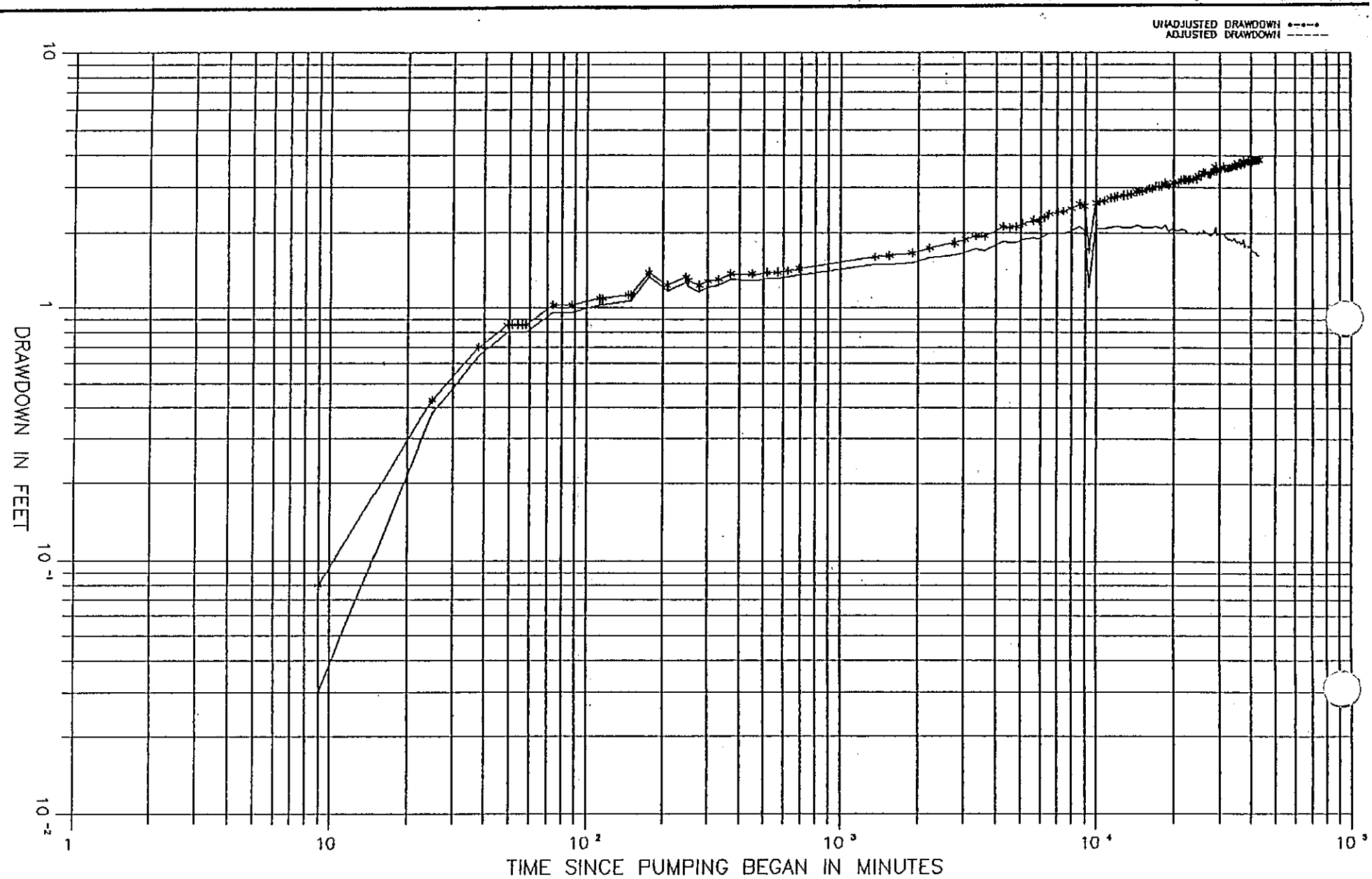

FIGURE 19
HOLGATE WELL
LOG-LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

BOI31684 A1

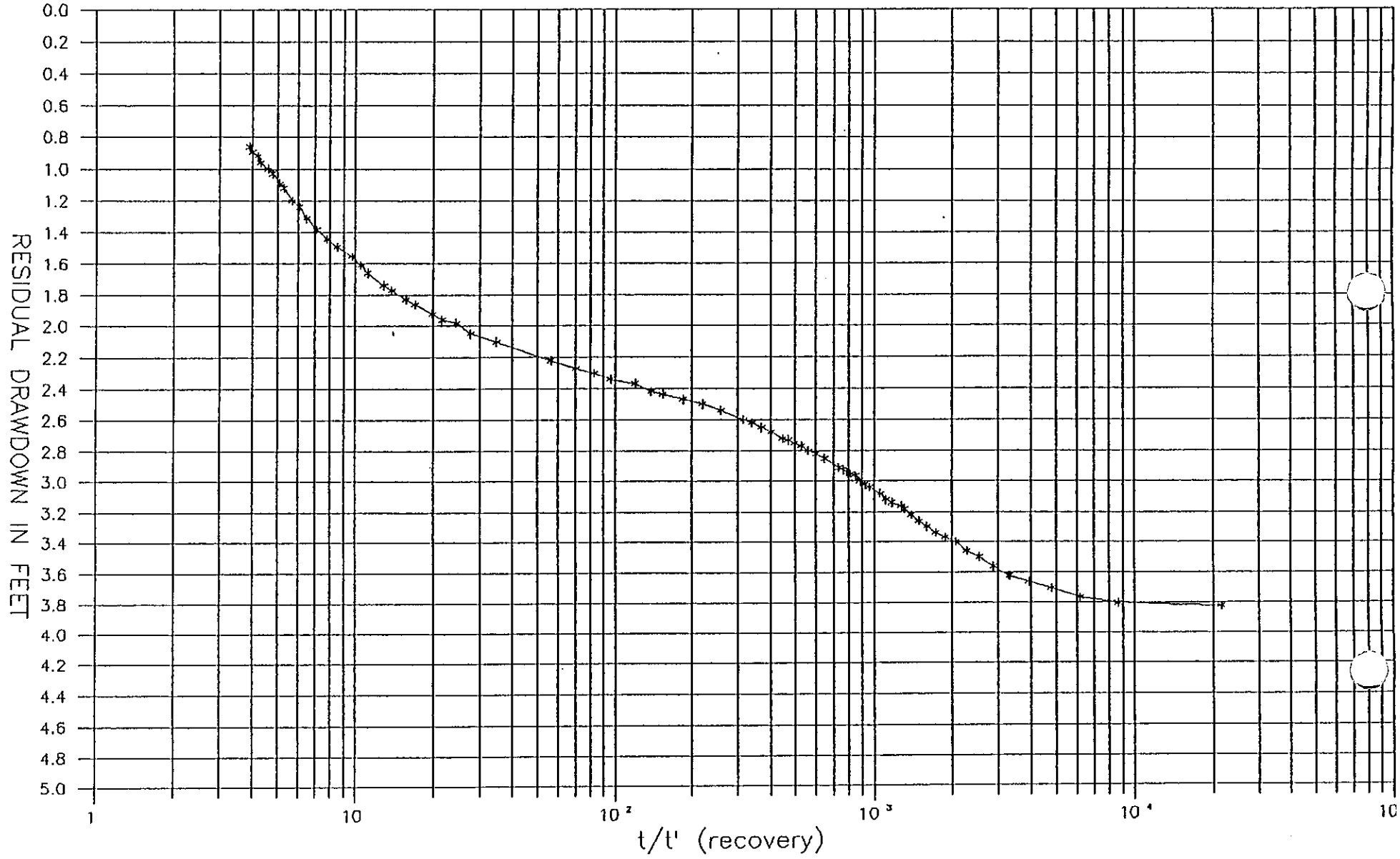

FIGURE 20
HOLGATE WELL
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

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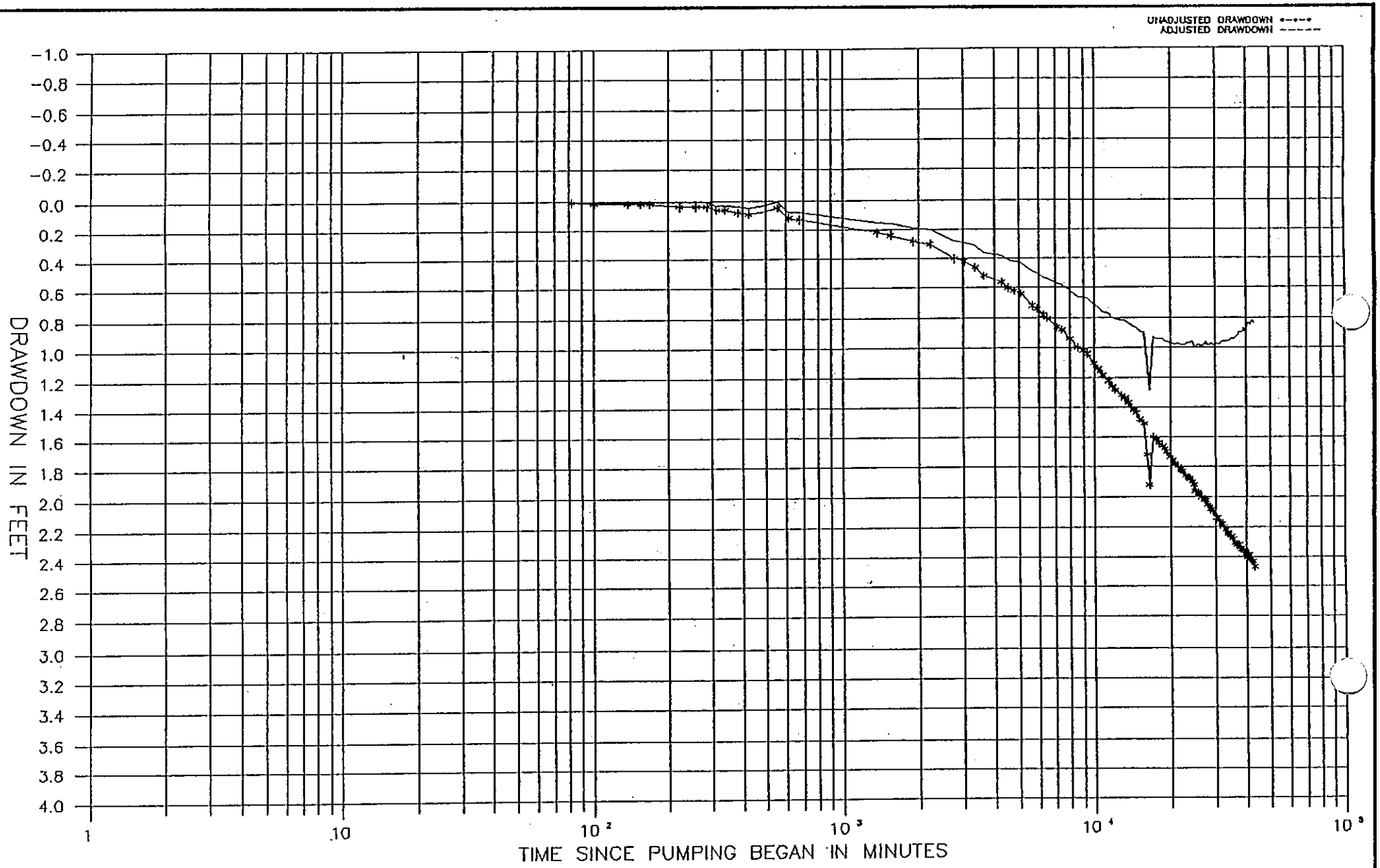

FIGURE 21
CARSON WELL
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

BOI31684 A1

The early time T of over 500,000 gpd/ft is not representative because of gravity drainage effects. The late time T of 85,000 gpd/ft is more indicative of the aquifer T from this analysis.

The adjusted water level was also used to calculate a T because it departed significantly from the unadjusted curve. The T determined from this curve, 187,000 gpd/ft (A" Appendix E-3), is considerably higher. The actual T probably lies between the two values.

Log-Log Drawdown (Figure 22, Appendix E-3)

This plot was analyzed using the delayed yield approach. The single T determined from this approach was 85,000 gpd/ft. Gravity drainage effects become negligible at about 14,000 minutes. This further supports the inappropriateness of the high early time T from the semi-log method discussed above.

Semi-Log Recovery (Figure 23 and Appendix E-3)

Analysis of the recovery data using semi-log methods for the Carson well was not included because the time and distance factors involved exceed the mathematical limitations for the validity of the method.

Carson Summary

The delayed yield method and semi-log drawdown methods agree very well. Adjusted drawdown may also be a factor. The log mean T for all values used is 110,000 gpd/ft and the log mean S is 0.0255.

EAGLE HILLS GOLF COURSE WELL

Semi-Log Drawdown (Figure 24 and Appendix E-4)

This plot contains two very distinct straight line segments representing early and late time (A' and A" respectively, Appendix E-4). Early time data, t = 0 to about 5,000 minutes produces a T of 680,000 gpd/ft. Late time data indicates a T of

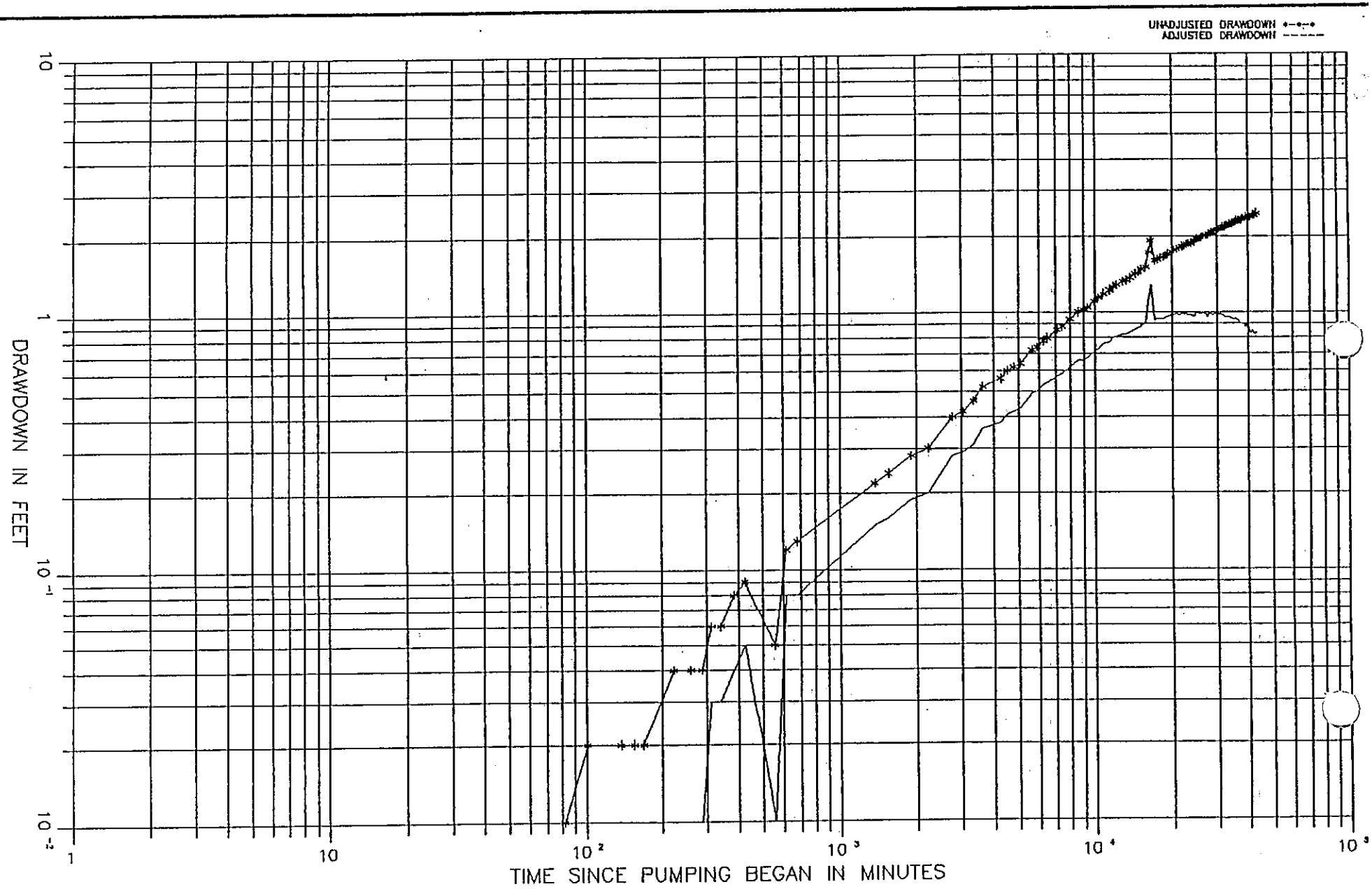

FIGURE 22
CARSON WELL
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

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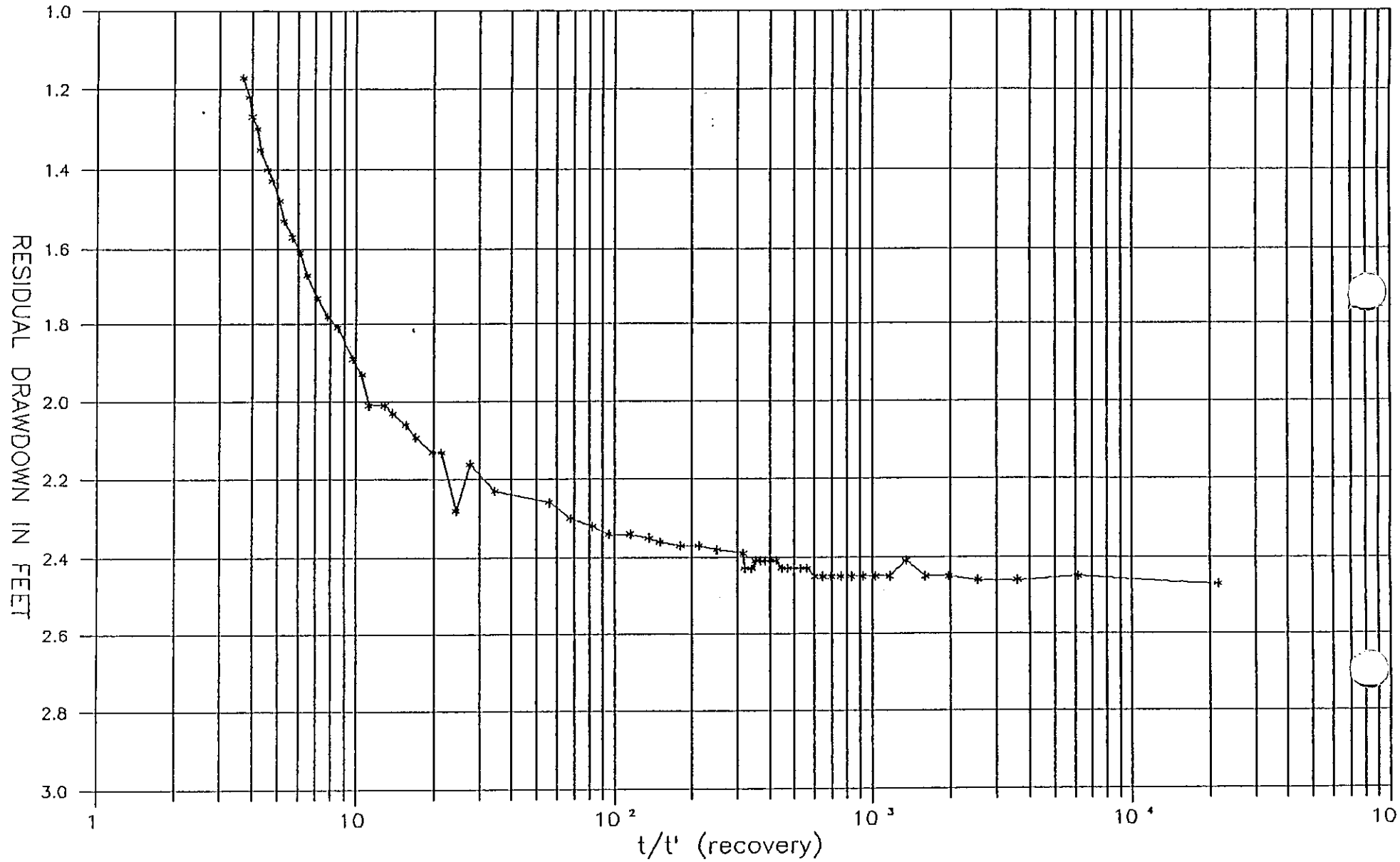

FIGURE 23
CARSON WELL
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HI

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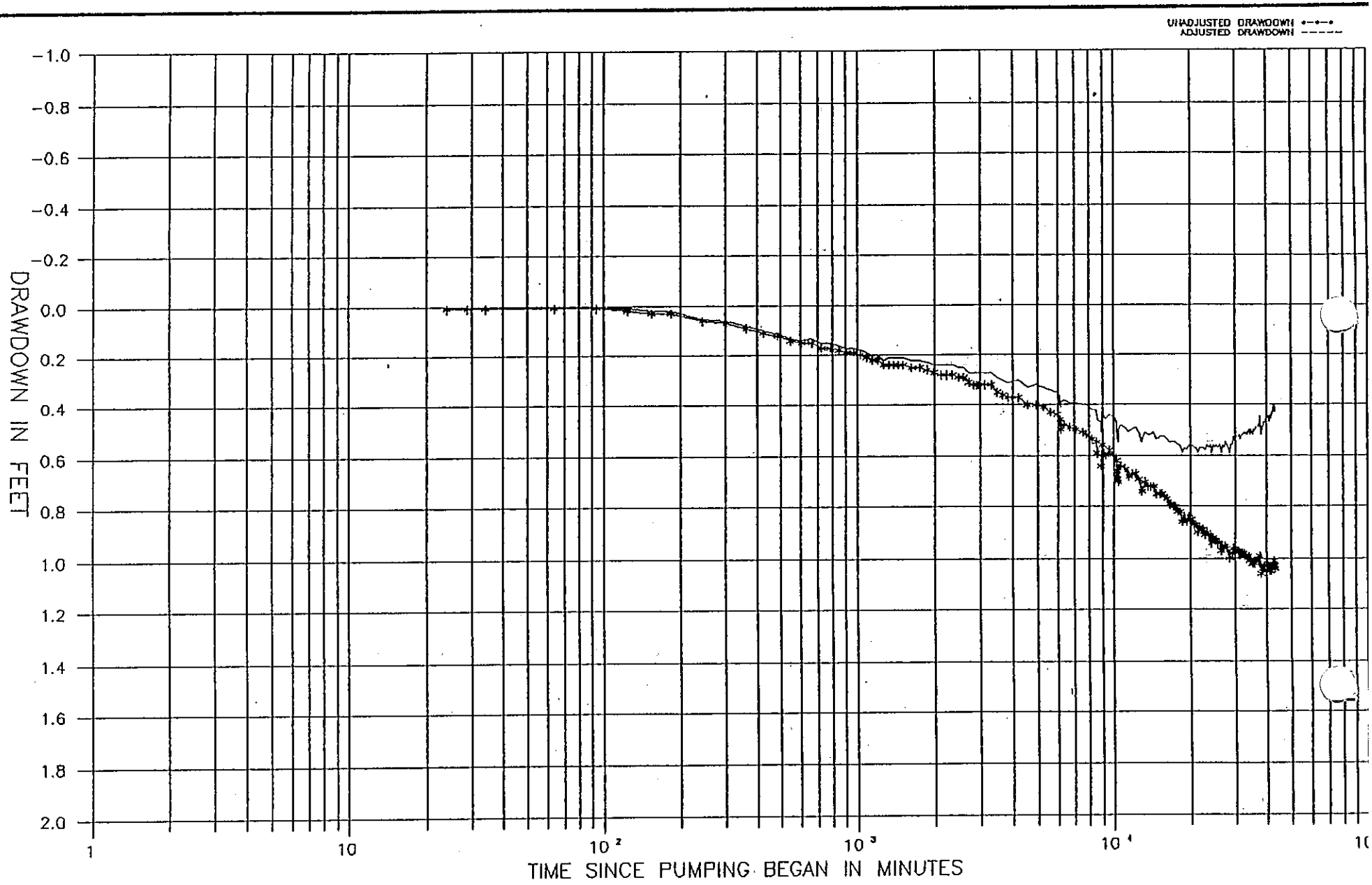

FIGURE 24
EAGLE HILLS GOLF COURSE
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

BOI31684 A1

220,000 gpd/ft. The break between early and late time data may be related either to gravity drainage or the presence of an aquifer inhomogeneity. The late time T is considered representative of the aquifer especially when long pumping times are to be considered.

Log-Log Drawdown (Figure 25, Appendix E-4)

This curve was analyzed using both gravity drainage and nonequilibrium confined aquifer (Theis) methods. Good to fair type curve matches were possible with each method. The data plot has an obvious deflection off the classic nonequilibrium type curve, indicating gravity drainage ended or an inhomogeneity was encountered. Consequently, the Theis approach was applied to early and late time as well as the entire curve. The T derived from the early time Theis curve was in the 650,000 gpd/ft range and is discounted as nonrepresentative. All the other Ts (late time Theis and gravity drainage) were in the 266,00 to 380,000 gpd/ft. Gravity drainage effects become negligible after about 12.5 days (18,000 minutes), supporting the rejection of early time T values.

Semi-Log Recovery (Figure 26 and Appendix E-4)

Analysis of the recovery data using semi-log methods for the EHGC well was not included because the time and distance factors involved exceed the mathematical limitations for the validity of the method.

Eagle Hills Golf Course Summary

The transmissivity of the aquifer apparently increases to about 280,000 gpd/ft in the vicinity of the EHGC well, as indicated by the consistent values obtained by several analytical methods. The log mean S for all appropriate solutions is 0.0124.

HORMACHEA WELL

Semi-Log Drawdown (Figure 27 and Appendix E-5)

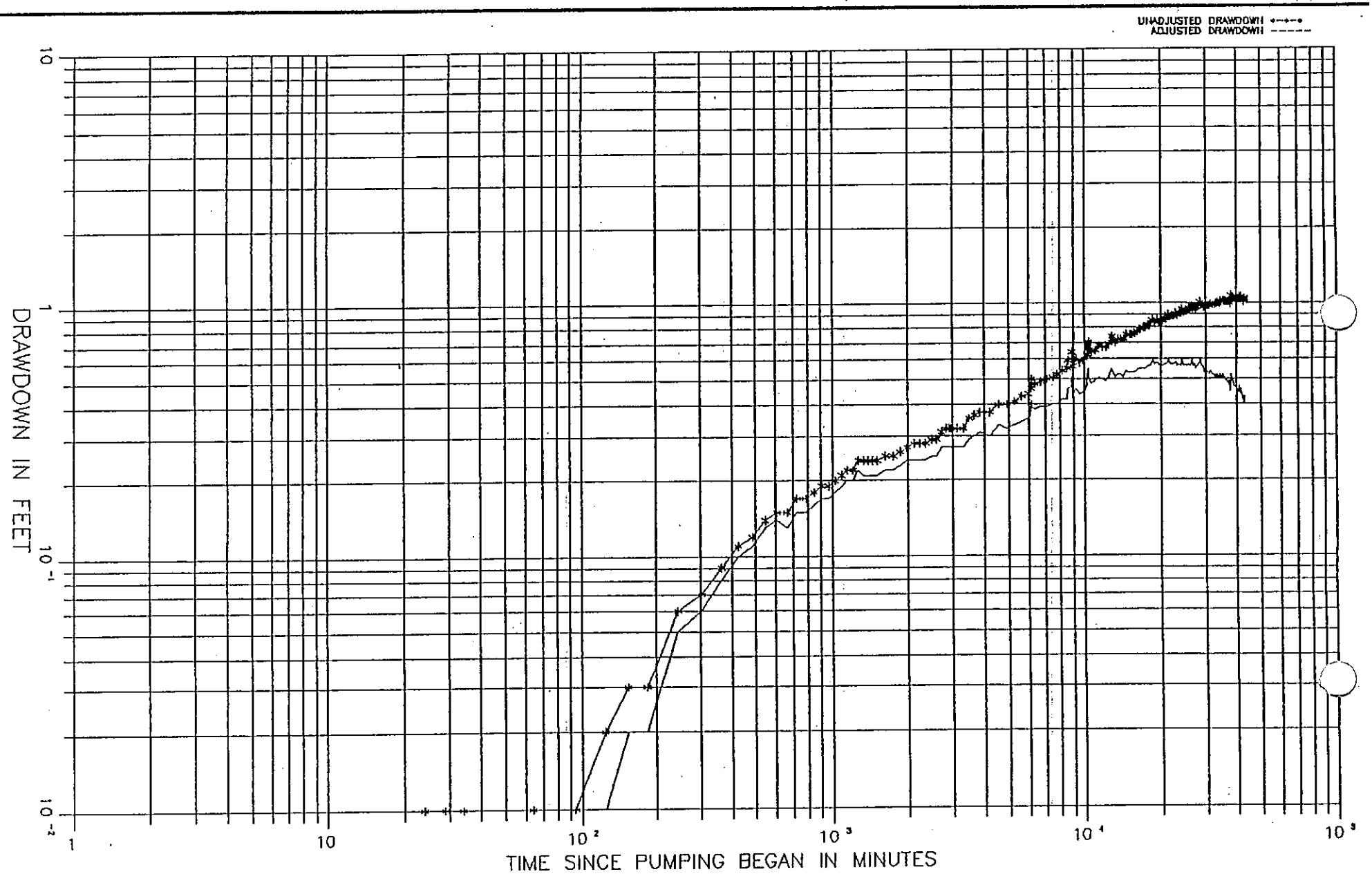

FIGURE 25
EAGLE HILLS GOLF COURSE
LOG-LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

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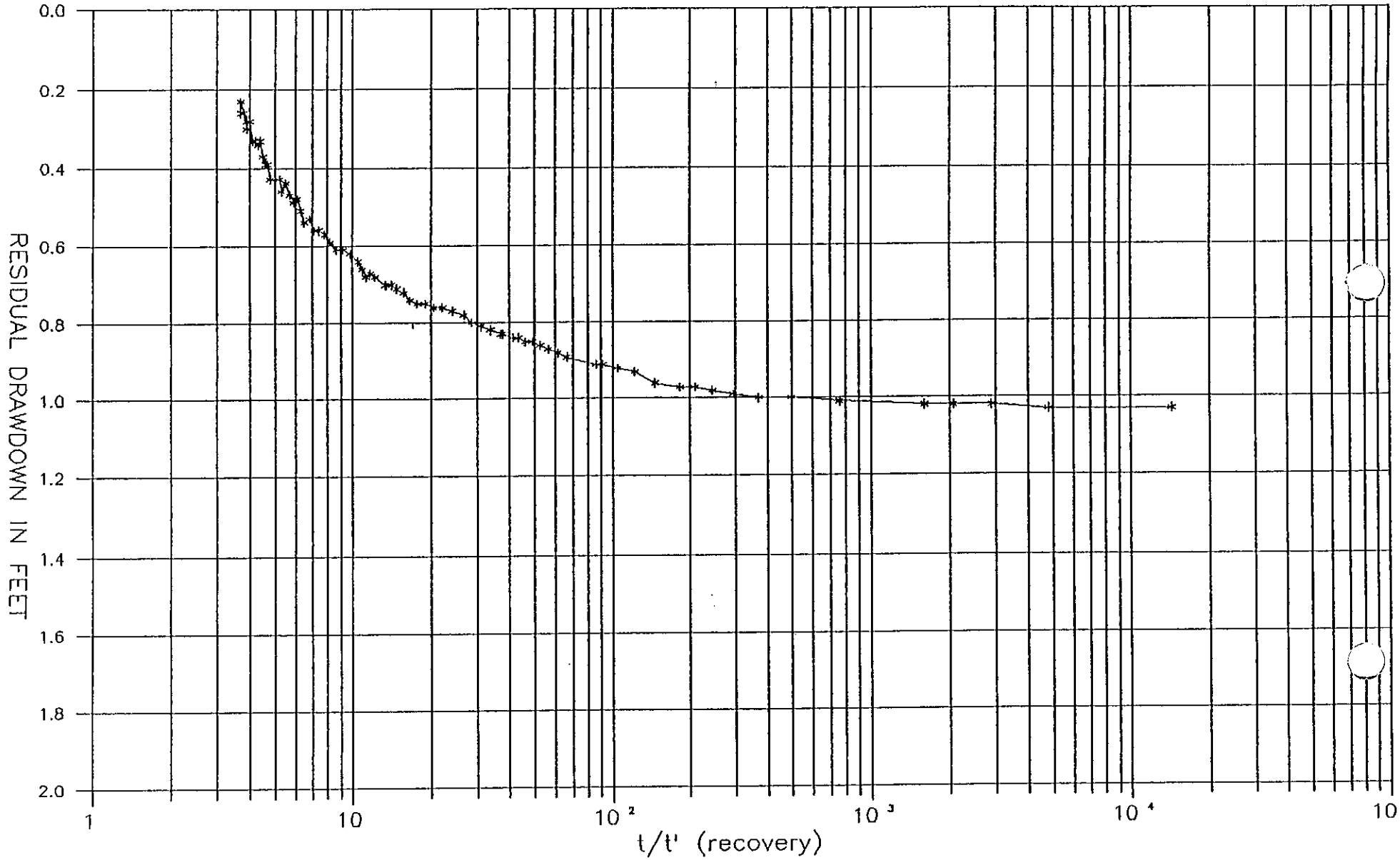

FIGURE 26
EAGLE HILLS GOLF COURSE
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

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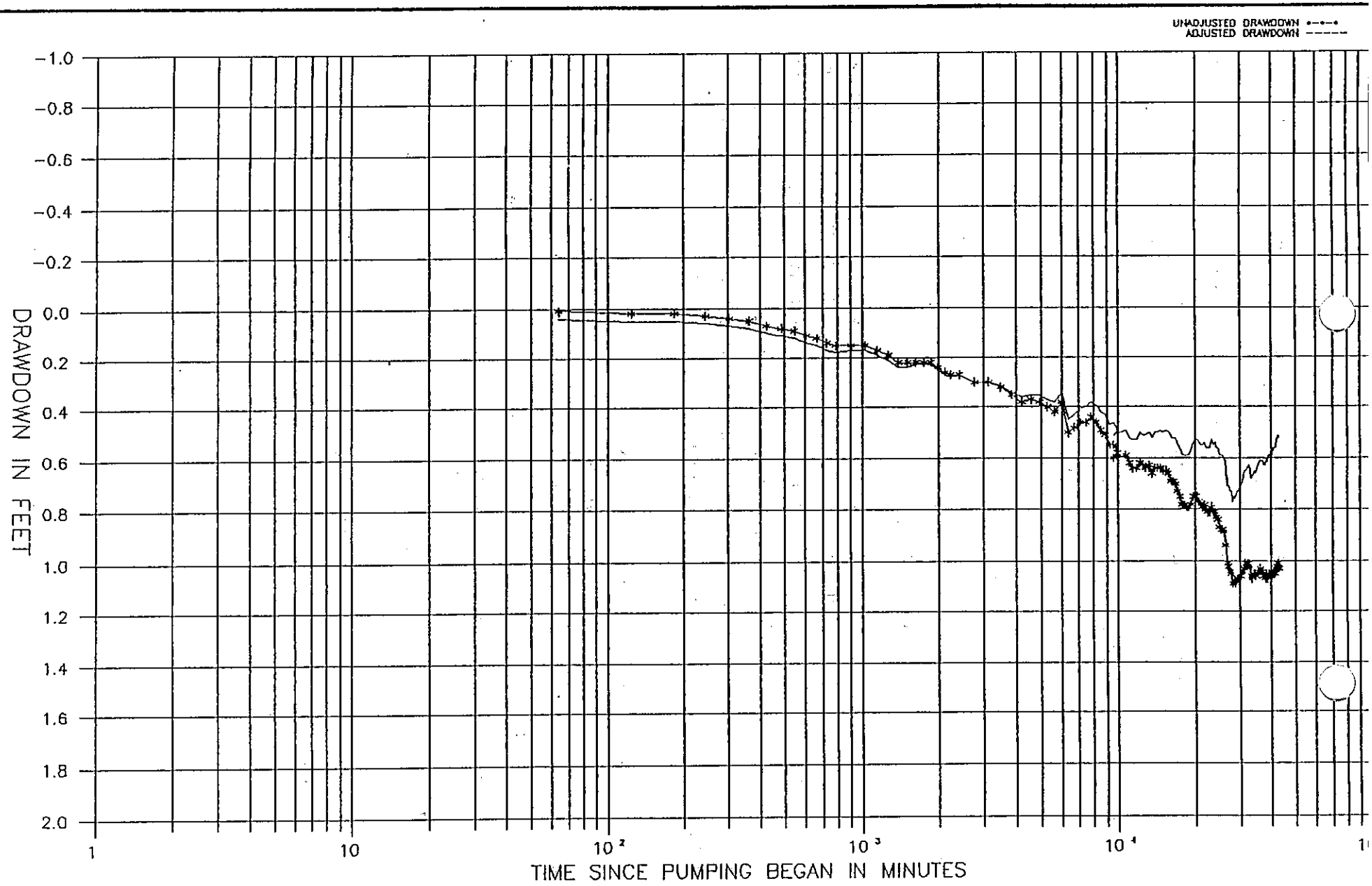

FIGURE 27
HORMACHEA WELL
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

BOI31684 A1

This plot contains two very distinct straight line segments representing early and late time (A' and A" respectively, Appendix E). Early time data, t = 0 to about 5,000 minutes produces a T of 315,000 gpd/ft. Late time data indicates a T of 287,000 gpd/ft. The break between early and late time data may be related either to the cessation of gravity drainage or the presence of a barrier or aquifer inhomogeneity. Although the two Ts are similar, the late time T is considered more representative of the aquifer, especially when long pumping times are to be considered.

Log-Log Drawdown (Figure 28, Appendix E-5)

This curve was analyzed using the non equilibrium confined aquifer (Theis) methods. No satisfactory match could be made with the delayed yield method. The data plot deflects off the classic nonequilibrium type curve, indicating some effect from gravity drainage or a barrier was encountered. Good to fair type curve matches were possible with the Theis method on both the early and late portions of the curve with considerable overlap. The T derived from the early time Theis curve was in the 530,000 gpd/ft range and it was discounted as nonrepresentative. The late time T of 355,000 gpd/ft was considered more representative and was used.

From t = 28,000 to 40,000 minutes, the drawdown suddenly increased and, consequently, did not fall on any type curve and could not be used. It is believed that interference from a second well impacted water levels during this period. From 40,000 minutes to the end of the test at 43,207 minutes the drawdown plot approached the late time Theis curve again and was used.

Semi-Log Recovery (Figure 29 and Appendix E-5)

Analysis of the recovery data using semi-log methods for the Hormachea well was not included because the time and distance factors involved exceed the mathematical limitations for the validity of the method.

Hormachea Summary

The transmissivity of the aquifer apparently increases to about 318,000 gpd/ft to the west, as indicated by the consistent values obtained by several analytical methods. The

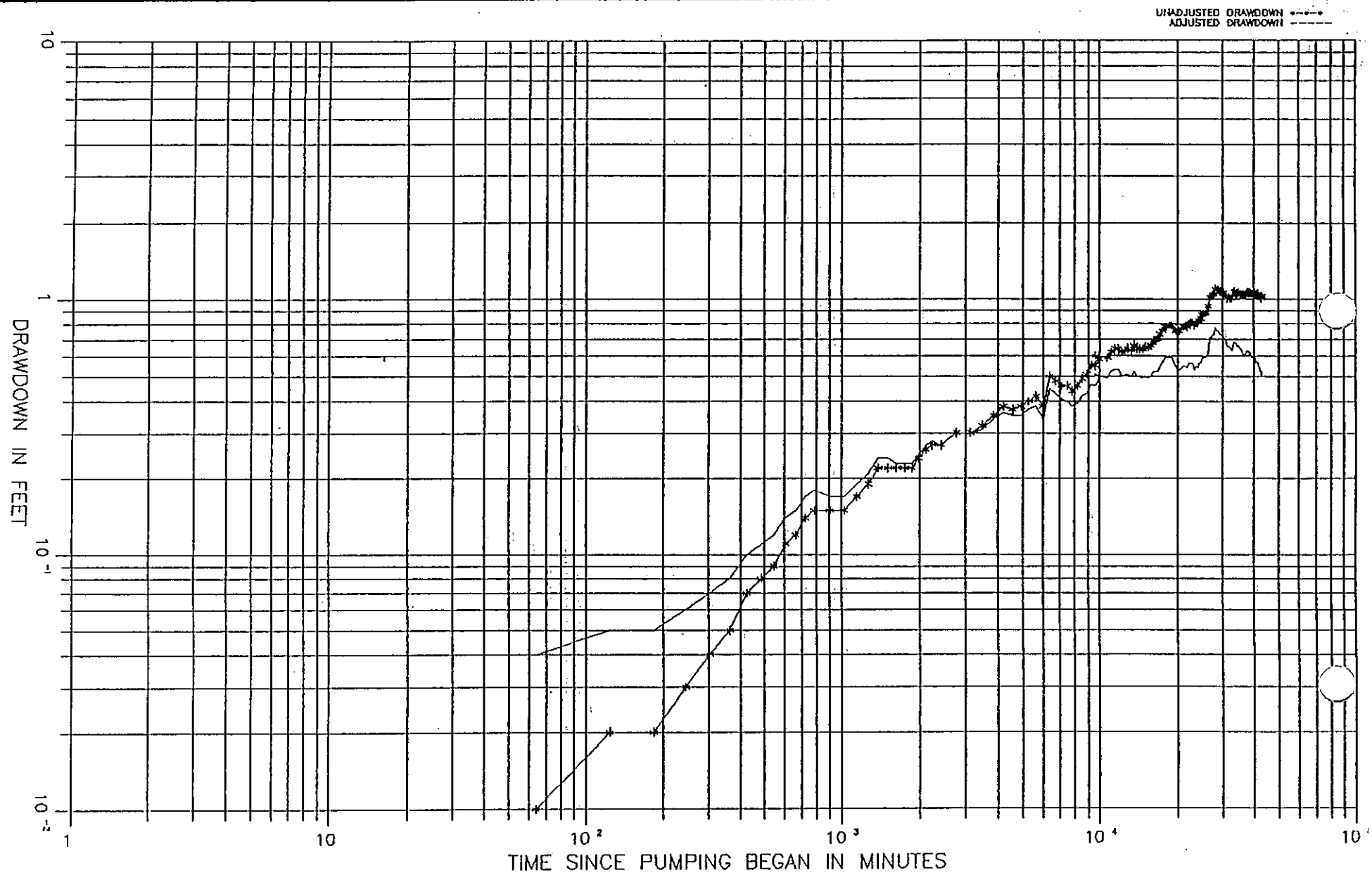

FIGURE 28
HORMACHEA WELL
LOG-LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

BOI31684 A1

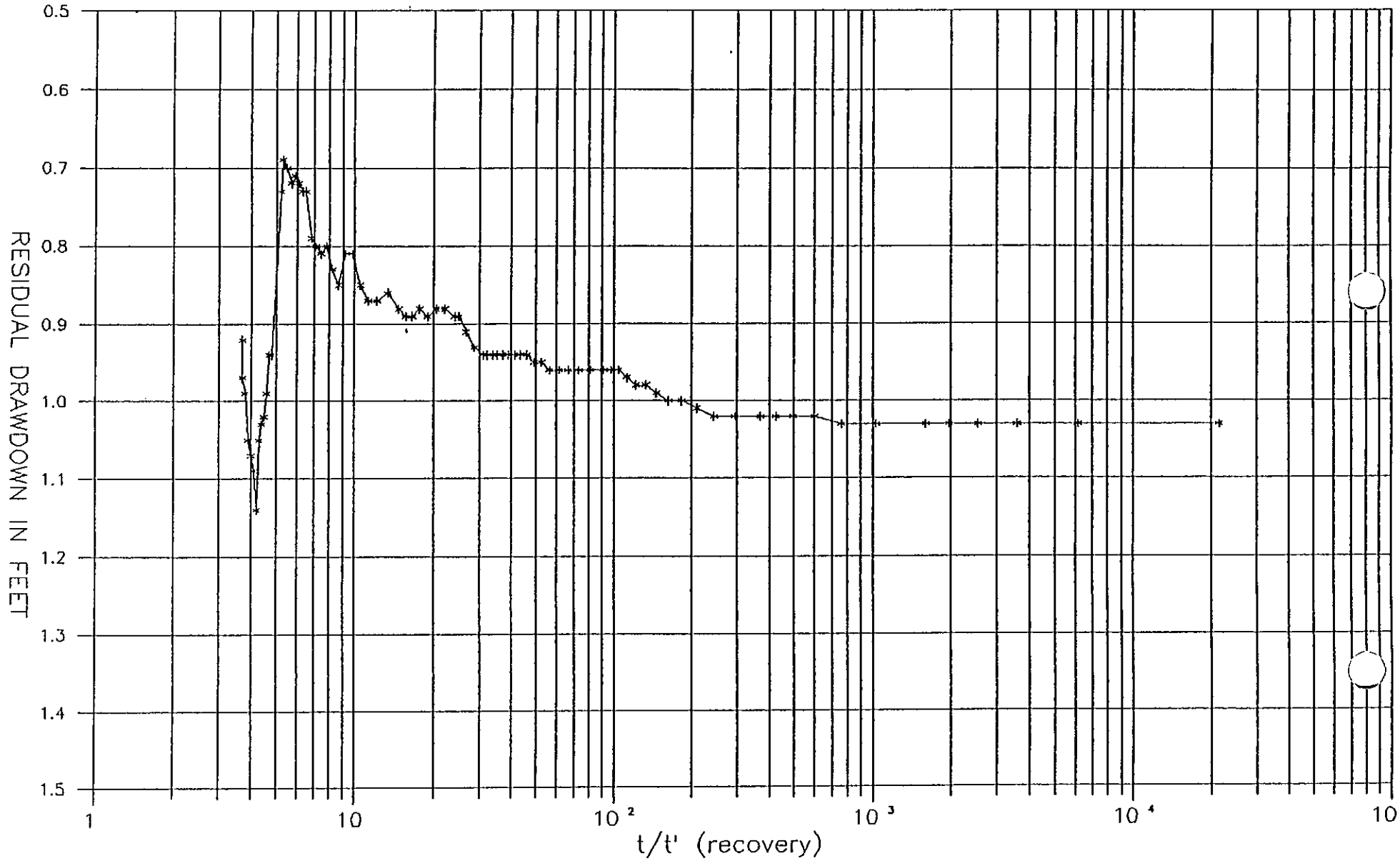

FIGURE 29
HORMACHEA WELL
SEMI LOG TIME DRAWDOWN
FLOATING FEATHER HILLS, INC.

CH2M HILL

BOI31684 A1

log mean S for all appropriate solutions is 0.0057. Latest time data for the Hormachea well appear to have been impacted by other wells. The increase in T values to the west is consistent with a general increase in well yields in this direction, as seen in available well logs and production tests.

EICHHORN, DAY, FLOATING FEATHER IRRIGATION DISTRICT, AND USGS WELLS

No aquifer properties could be determined from the graphical plots of these wells. The USGS and Day wells were apparently unaffected by the pumping. The FFID well could not be measured with enough resolution to determine if the general decline in water levels shown in Figure 12 were related to pumping the production well. Water levels in the Eichhorn well were impacted by recharge of discharge water seeping out of the adjacent Farmers Union canal.

AQUIFER RECHARGE

POTENTIAL SOURCES

The potential sources of recharge to the aquifer in this area are:

- Leakage from the Farmers Union Canal
- Infiltration of irrigation water from laterals and flood irrigation practices
- Infiltration from irrigation reservoirs and ponds
- Direct precipitation
- Seasonal losses from Dry Creek
- Lateral inflow from the northern and eastern aquifer margins
- Seepage from individual waste disposal systems

Insufficient data exist to quantify or even prioritize by magnitude the relative contributions each potential source contributes. Lateral inflow and irrigation seepage are probably the most significant sources.

RECHARGE DURING PUMPING TEST

The Eichhorn well hydrograph, Figure 7, clearly shows the effect of the leakage of pump discharge water in the Farmers Union Canal. Water level in the Eichhorn well began to fall within a few hours of pumping but began to rise after about 2,000 minutes (1.4 days) and continued to rise for an additional 20,000 minutes (14 days). During this period water levels rose about 2.5 feet. From 22,000 minutes to the end of pumping at 43,207 minutes, water levels fell to about prerecharge levels (slightly below pretest static water levels). After the pump was shut off, water levels recovered to above pre pumping water levels within 1 day and continued to rise, indicating continued recharge was reaching the aquifer.

It is important to note that since static groundwater levels are 60 to 70 feet below ground surface, drawdown from the pumping well did not induce leakage; nor did it increase the amount of leakage from the Farmers Union Canal or the various irrigation ponds in the area.

LONG-TERM RECHARGE

Although only sporadic historical water level measurements are available from IDWR, there is no evidence of long-term decline indicating overdraft of the aquifer in this area. Annual recharge is apparently sufficient to replenish the aquifer on a year-to-year basis.

AQUIFER SUMMARY

The aquifer is characterized as a complexly stratified water table aquifer consisting of highly permeable sand layers and lenses separated by discontinuous and leaky sandy clays. Aquifer response to pumping is expected to behave as a single thick water table aquifer with significant delayed yield due to gravity drainage early in the pumping period and close to the well. In distant observation wells the response during the relatively short 30-day pumping period was more indicative of a confined aquifer owing to the stratified nature. This was evident from the EHGC and Hormachea wells, which, although 2,500 and 3,700 feet from the production well, respectively, responded within 100 to 150 minutes of pumping.

The transmissivity of the aquifer appears to increase from about 100,000 gpd/ft in the vicinity of the production well to over 200,000 gpd/ft to the south and west. Storage values from all valid analytical solutions were relatively consistent at about 0.01 to 0.001. The transmissivity and storage coefficients are consistent with the conceptual model of a thick, stratified, water table aquifer.

The log mean T for all reasonable analyses is 174,500 gpd/ft and the log mean value for S is 0.0137. The log mean T for three wells in the vicinity of the production well is 122,100 and S = 0.092. The most reliable curve and calculated aquifer parameters were obtained from the Holgate well. The log mean values for T and S from the Holgate well were 100,000 gpd/ft and 0.0129, respectively.

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SIMULATIONS OF AQUIFER RESPONSE TO PUMPING

GENERAL

Mathematical simulations of aquifer response to a variety of pumping scenarios are easily performed but the results must be used with caution. Most hydrogeologic systems are much more complex than can be realistically modeled.

Each of the variables involved in these simulations is actually a range of values. For example, aquifer transmissivity values determined from the pump test range from 11,000 to 600,000 gpd/ft. Based on experience, the conceptual model of the aquifer, and analytical checks, the range of possible transmissivities were reduced to two discrete values for purposes of the simulations. Other parameters were similarly selected to be as representative as possible. Horizontal and vertical properties change in the aquifer with distance and when simulations are extended well out in time, temporal water level changes can also impact the results.

With these precautionary points in mind, the simulations produced for this investigation were selected to illustrate a range of possible effects from the proposed groundwater diversions. The predicted drawdowns should be viewed as indications of aquifer response and not absolute values.

The important variables used in these simulations are discussed separately below to provide a basis for their use in the simulations. Many combinations are possible; a few were selected to be representative and to illustrate the range.

VARIABLES

PUMPING RATE

The FFH, Inc. application is for a total of 5 cubic feet per second (cfs) or about 2,300 gpm. Part of the total applied diversion was for fire protection, which will be

used only in short-term emergency situations. The long-term sustained pumping rate for evaluation of potential impacts from this project is estimated to be 1,000 gpm. This estimate is based on the following logic:

In-house potable use:

1,000 homes x 400 gallons per day/home = 400,000 gal/day x 365 days/year = 146,000,000 gallons per year

Irrigation:

500 homes will rely on potable water for lawn irrigation every other day for 6 months = 500 x 183 days divided by 2 (alternate day watering) = 45,750 irrigation water days.

Irrigation will consist of 10 gpm for 8 hours = 4,800 gal per irrigation day per home.

45,750 home irrigation days per year x 4,800 gal/day = 219,600,000 gal per year

Average Annual Use:

Potable	146,000,000 gal
Irrigation	219,600,000 gal
Total Annual	365,600,000 gal
Average Daily (1,440 min/day, 365 days/year)	695 gpm

Average Potable Use:	400,000 gal per day
Average Rate (1,440 min/day)	278 gpm

Average Irrigation Season Use:

Potable (6 months)	73,000,000 gal
Irrigation	219,000,000 gal
Total Seasonal	292,000,000 gal
Average daily	1,108 gpm
(1,440 min/day, 183 days)	

The average pumping rate must be consistent with the pumping period also used in the simulations. Pumping rates versus simulation times are discussed in the "Simulation Time" section. The average rate used for analysis of long-term pumping effects is 1,000 gpm. This conservatively accounts for errors in the assumptions for the long-term average rate and is consistent with the seasonal high demand.

The time delay for the demand to reach maximum values is not considered. It may be that demand will gradually increase over the next 5 to 10 years. For the purposes of this exercise, these pumping rates are assumed to be constant.

WELL FIELD CONFIGURATION

At least two production wells would be needed to supply the total project. The existing production well cannot supply 1,000 gpm, and water service regulations require a second well if the total service connections exceed 29 homes.

According to FFH, Inc.'s application and personal communication with Roylance Engineers, the engineer for FFH, Inc., the second production well will be installed 1,800 feet north of the existing well.

Thus, the configuration used to simulate long-term aquifer response includes two wells, 1,800 feet apart, each pumping at 500 gpm.

AQUIFER RECHARGE

Historically, the aquifer is recharged annually. During the test, recharge from the pumping discharge was detected in the Eichhorn well next to the Farmers Union Canal. Although not investigated during this study, canal leakage is probably a significant source of water in the aquifer.

Canal leakage can be estimated by a variety of methods. Using a methodology presented in the Drainage Manual (pages 167-168), the seepage can be estimated as follows:

$$q' = \frac{K(B+(2d))}{3.5}$$

where:

q' = seepage in cubic feet per day per linear foot
K = hydraulic conductivity in ft^2/day
d = depth of water in canal in feet
B = width of water channel in feet
3.5 = factor to adjust hydraulic conductivity values to seepage losses from ponding tests

Assuming the canal is 1.5 miles long adjacent to the property, and assuming the following values for the variables of:

K = 1.3 ft^2/day (silty sand)
d = 3 feet
B = 10 feet

The total seepage for a 180-day irrigation season is 63 million gallons, or a constant rate of about 243 gpm. This number is not presented as a statement of fact but rather as an example of some of the variables that are involved in aquifer simulations. This leakage valve does not include the recharge from laterals or direct application.

SIMULATION TIME

Simulation time is a critical element of this evaluation and should be carefully considered. Given the fact that recharge is known to occur, yet without a full understanding of the sources and magnitude of recharge, it is impossible to include defendable recharge assumptions in the simulations. Without accounting for recharge, however, simulated drawdowns increase vertically and spread horizontally continuously with increased simulation time.

IDWR indicated they wanted to see a 30-year simulation. It is unreasonable to assume that no recharge reaches the aquifer for 30 years. Although the amount of recharge is unknown, annual recharge does reach the aquifer; otherwise, groundwater mining would be occurring. Therefore, a 30-year simulation without recharge represents an unrealistic worst case scenario.

It is perhaps more realistic to look at the aquifer response when recharge is not as likely, such as for the period from late fall to spring. Thus, a 6-month simulation would give an idea of the aquifer response under a reasonably realistic scenario of limited or no surficial recharge. Lateral recharge from the northeast will still be occurring however, and for some period after the irrigation season water will continue to enter the aquifer. So even this scenario produces more drawdown than may be expected. If a 6-month "nonirrigation" period is selected, then the average pumping rate for that period should also be used. In this case, it is 278 gpm (1,000 homes @ 400 gallons per day per home).

SIMULATION OF FUTURE PUMPING

METHOD

A relatively simple analytical model developed by CH2M HILL called WELSIM was used to simulate aquifer response to various pumping scenarios. WELSIM is based on the Theis equation.

ASSUMPTIONS

Wells

Two wells, each pumping at the same rate, were used. The wells consist of the existing well and a new well approximately 1,800 feet north.

Aquifer Properties

Two values for transmissivities were used: 100,000 gpd/ft to simulate near well Ts for short-term simulation, and 174,000 gpd/ft for long-term simulation when areas of increased aquifer transmissivity may be encountered by the cone of depression. The lower T was also used for long-term pumping to compare the effect that a more conservative estimate of the aquifer properties had on predicted drawdowns. A constant value for S of 0.02 was used.

Pumping Rates and Durations

Two pumping rates were simulated: 278 gpm and 1,000 gpm. The lower pumping rate was used for a 6-month simulation to illustrate the "nonirrigation" scenario discussed above. The higher rate was simulated for durations of 6 months, 1 year, 5 years, 15 years, and 30 years.

Recharge

As an exercise, a third simulation was performed that included five recharge wells at 50 gpm each evenly spread along the Farmers Union Canal alignment. The recharge simulations were conducted for a 6-month duration only.

RESULTS

Table 2 summarizes the various drawdown simulations conducted. Figures 30 through 34 provide plan views of the drawdown cone from the long-term simulations using the higher T. Figures 35 through 37 provide plan views of the drawdown if a lower T is used.

Table 2 Summary of Aquifer Simulations Floating Feather Hills, Inc.				
Simulation Number	**Transmissivity (gpd/ft)**	**Time (Days)**	**Pumping Rate (gpm)**	**Recharge**
FFH61a	100,000	183	278	No
FFH62	100,000	183 - 10950	1,000	No
FFH70	174,000	183 - 10950	1,000	No
FFH71a	174,000	183	1,000	Yes
FFH72a	100,000	183	1,000	Yes

As can be seen from the drawdown maps, the aquifer is relatively insensitive to the range of transmissivities, pumping rates, or pumping times. The worst case scenario of 1,000 gpm for 30 years with no recharge and the lower aquifer transmissivity, (Figure 37) results in 7 feet of drawdown at 1 mile and about 11 feet of drawdown in the vicinity of the two wells. With the higher transmissivity (Figure 34), the drawdown is about 4 feet at 1 mile. There is little appreciable difference between the predicted drawdowns from these two sets of simulations. Review of Figures 30 through 37 also indicates that there is little appreciable growth of the cone of depression with time.

The least amount of drawdown predicted was the 6-month "nonirrigation" simulation shown in Figure 38. Drawdowns predicted for this period were about 0.6 feet at 1 mile.

Figures 39 and 40 include a simulated recharge for 6 months. Comparison of Figures 39 with Figure 30 and Figure 40 with Figure 35 indicates that recharge reduced the drawdown 1.0 to 0.5 feet over the short pumping durations in these simulations.

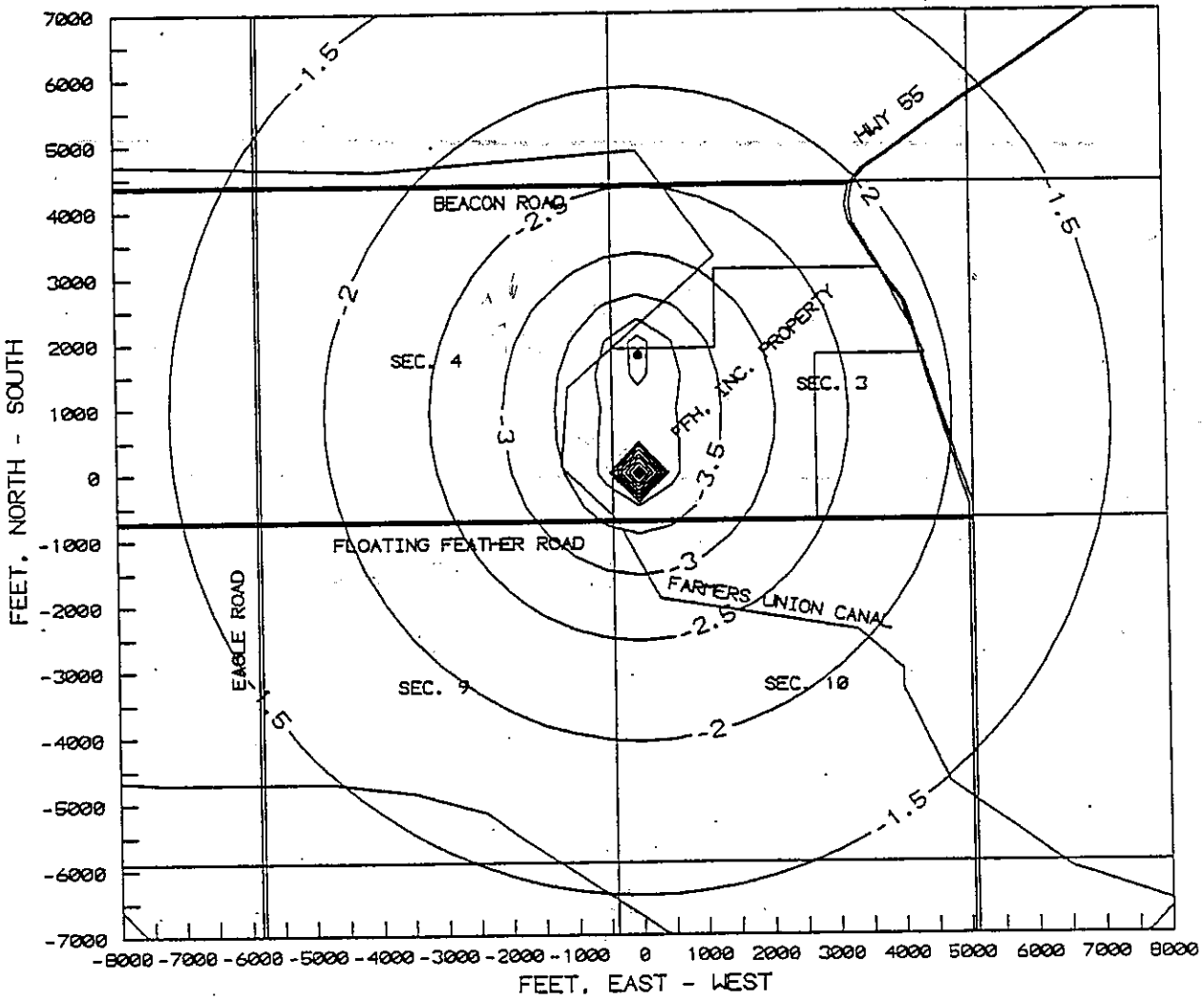

FIGURE 30
DRAWDOWN SIMULATION
T=174K, Q=1000gpm, t=6 MONTHS
FLOATING FEATHER HILLS, INC.

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CH2MHILL

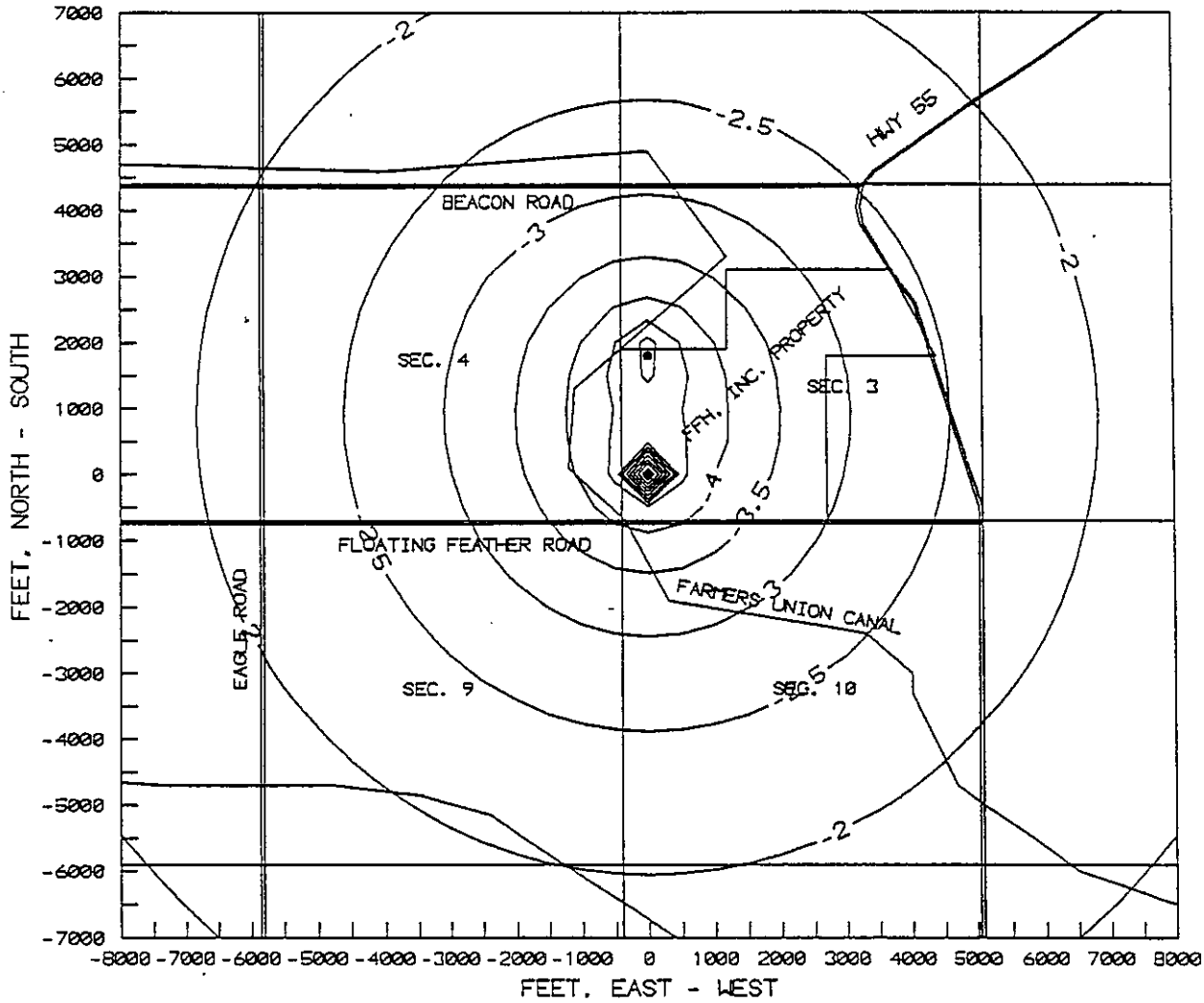

FIGURE 31
DRAWDOWN SIMULATION
T=174 K, Q=1000 gpm, t=1YEAR
FLOATING FEATHER HILLS, INC.

BOI31684 A1

CH2M HILL

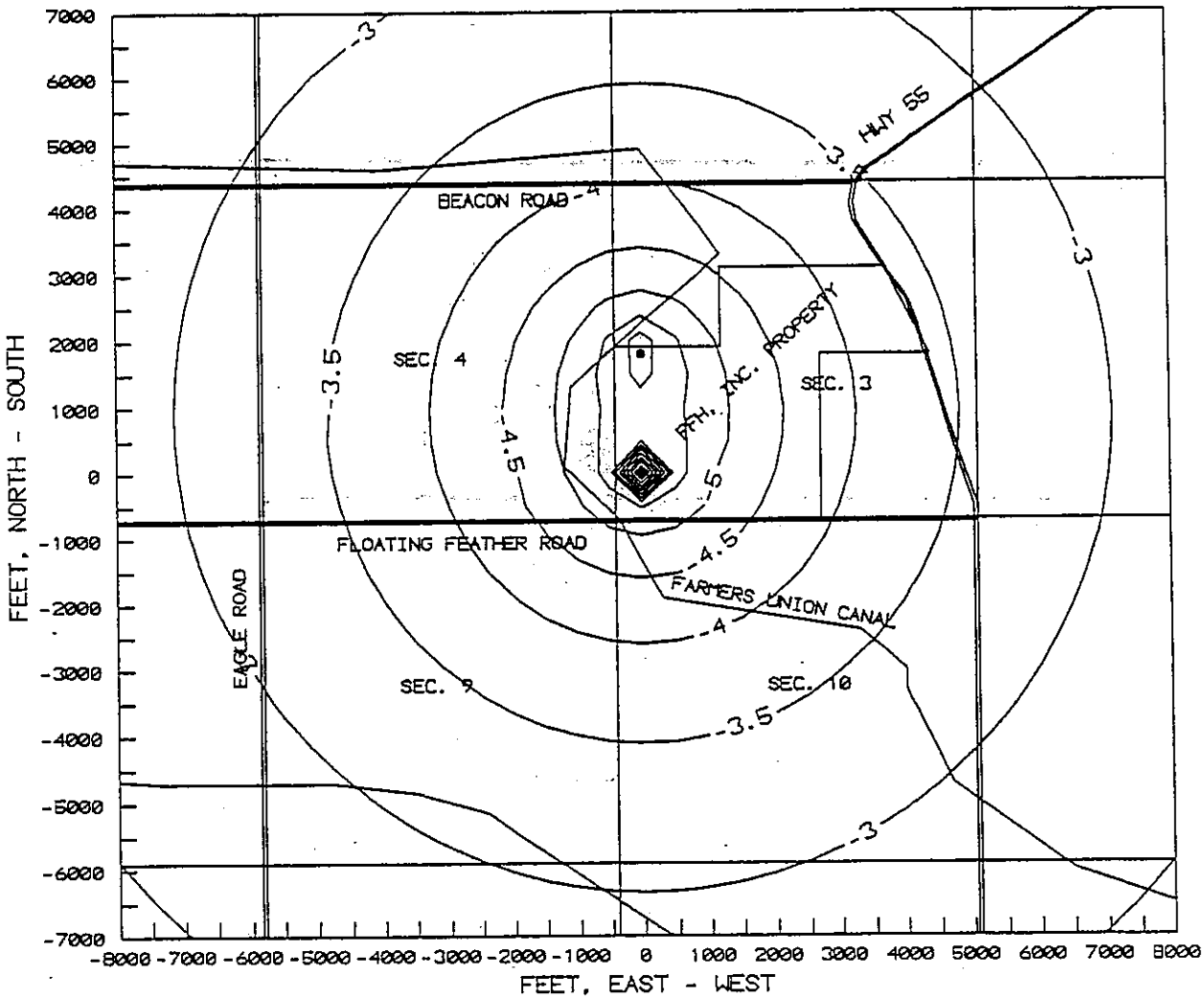

FIGURE 32
DRAWDOWN SIMULATION
T=174K, Q=1000 gpm, t=5YEARS
FLOATING FEATHER HILLS, INC.

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CH2M HILL

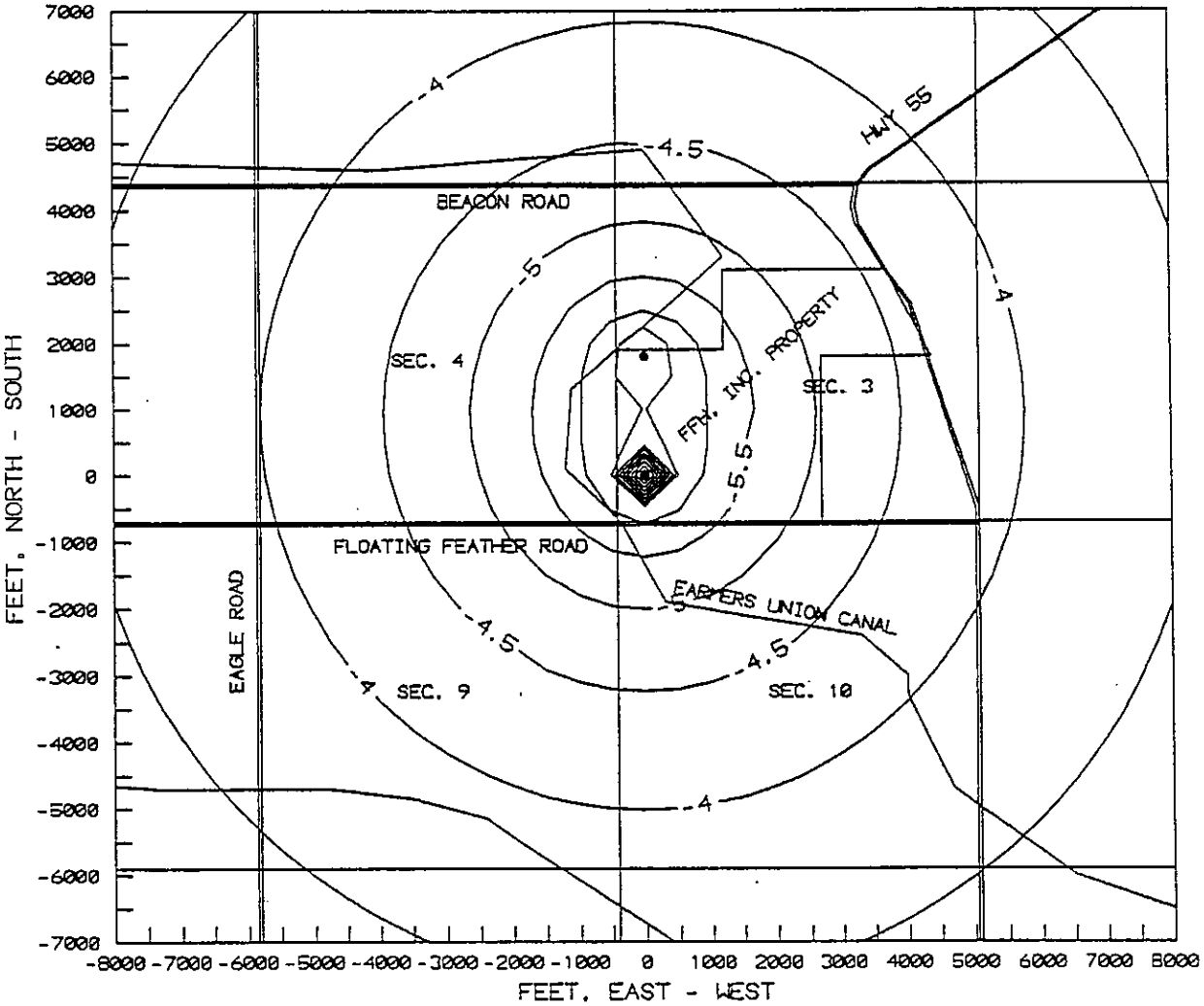

FIGURE 33
DRAWDOWN SIMULATION
T=174K, Q=1000 gpm, t=15YEARS
FLOATING FEATHER HILLS, INC.

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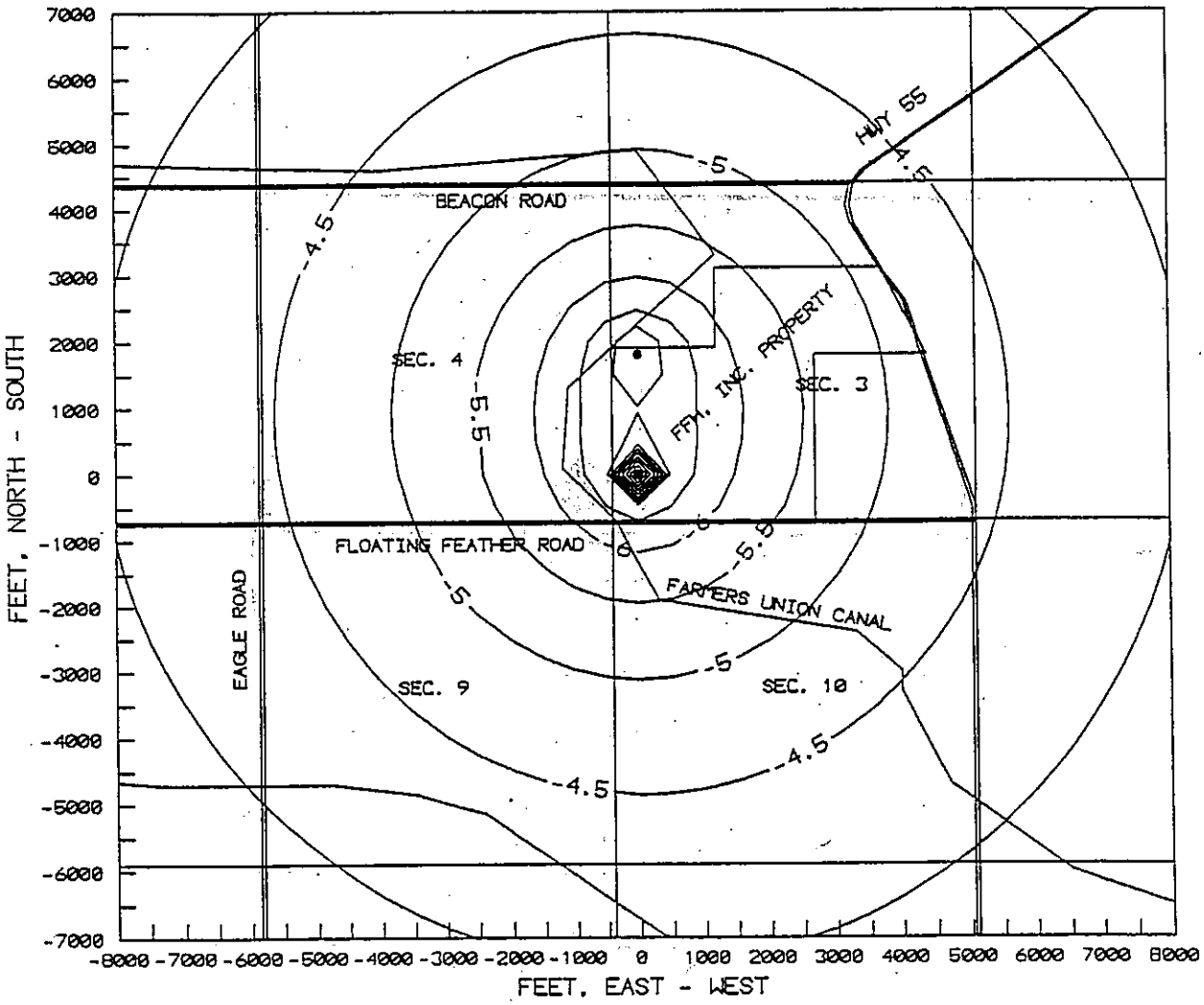

FIGURE 34
DRAWDOWN SIMULATION
T=174K,Q=1000 gpm, t=30YEARS
FLOATING FEATHER HILLS, INC.

CH2MHILL

BOI31684 A1

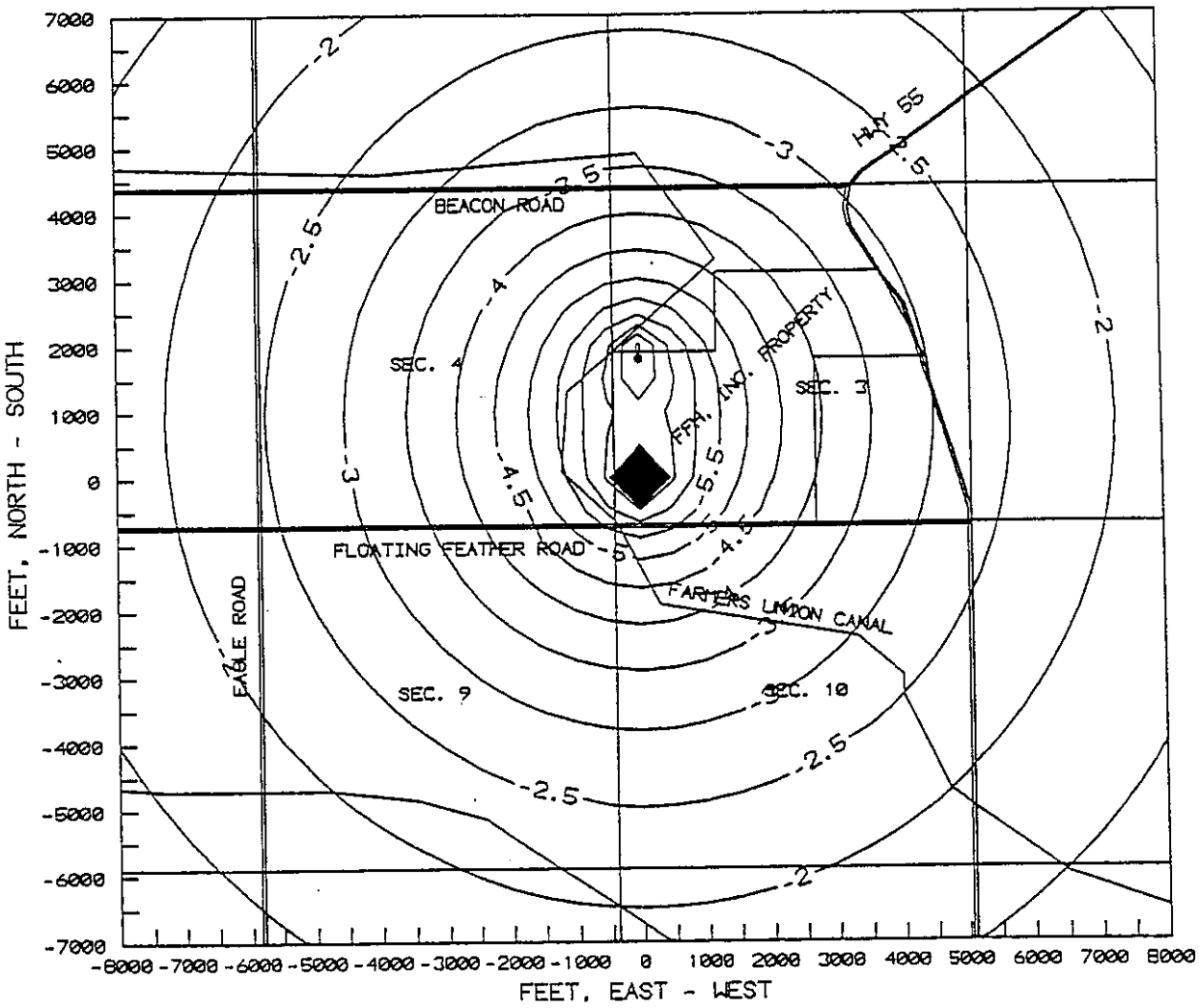

FIGURE 35
DRAWDOWN SIMULATION
T=100K, Q=1000 gpm, t=6MONTHS
FLOATING FEATHER HILLS, INC.

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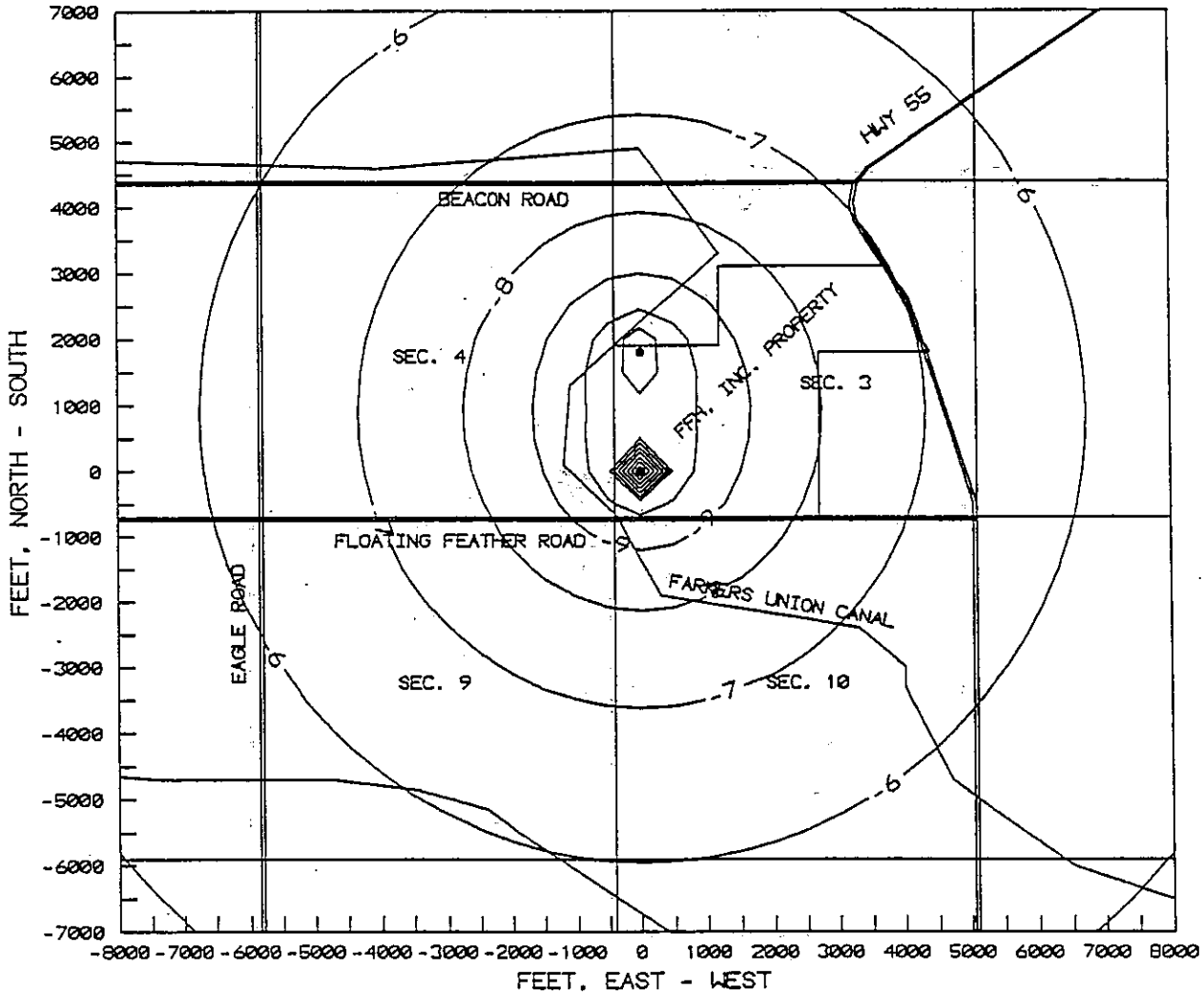

FIGURE 36
DRAWDOWN SIMULATION
T=100K, Q=1000 gpm, t=15YEARS
FLOATING FEATHER HILLS, INC.

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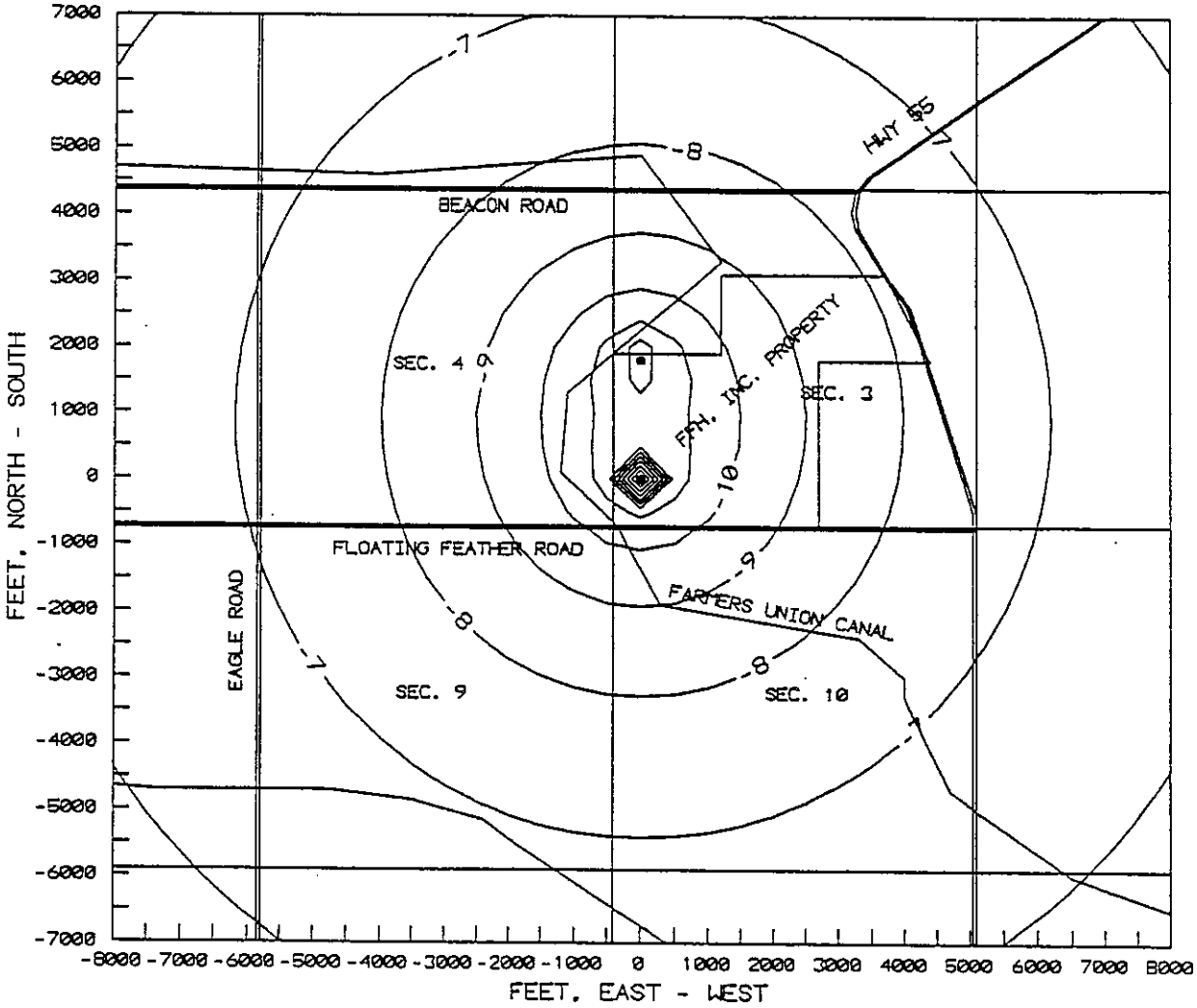

FIGURE 37
DRAWDOWN SIMULATION
T=100K, Q=1000 gpm, t=30YEARS
FLOATING FEATHER HILLS, INC.

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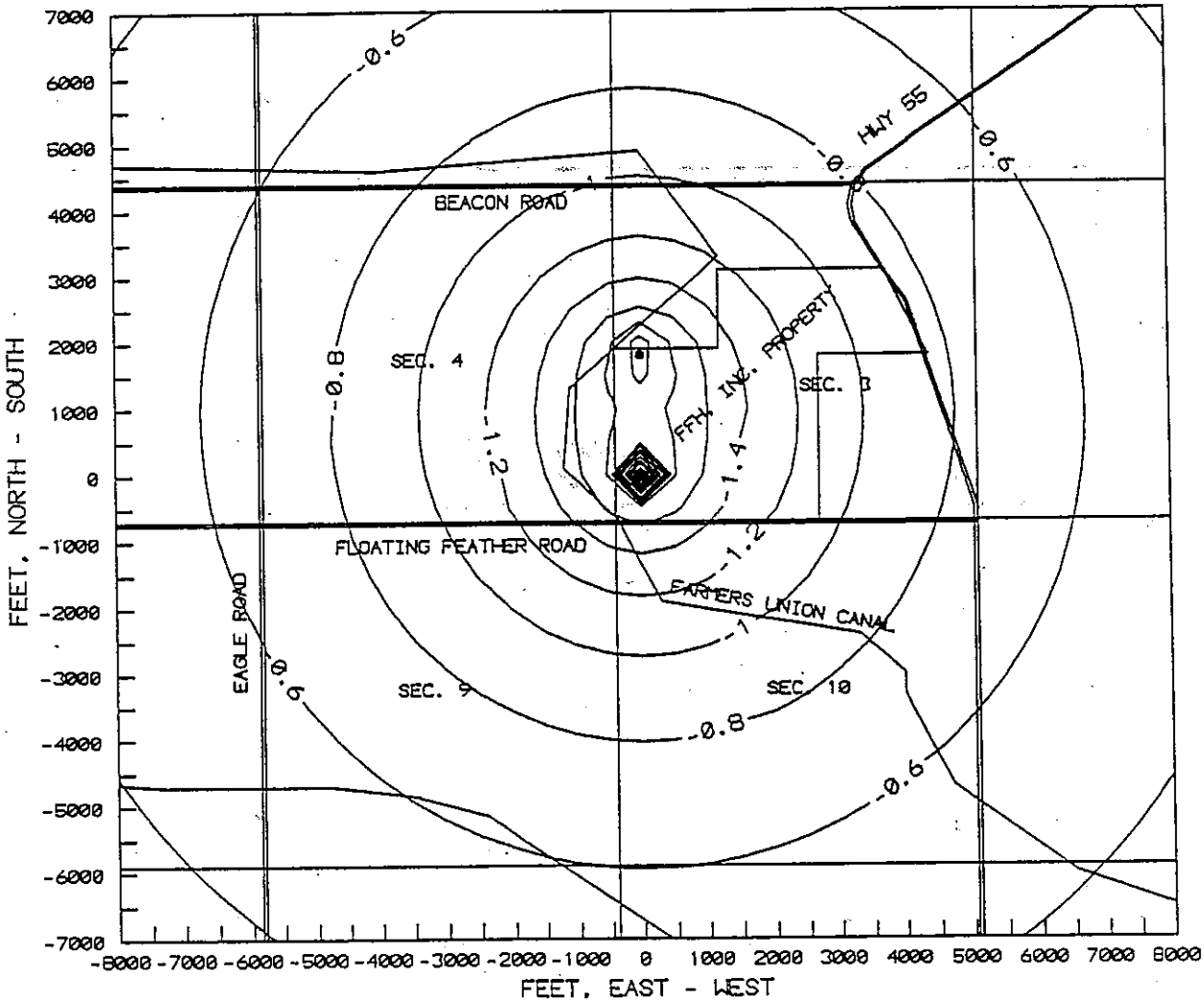

FIGURE 38
DRAWDOWN SIMULATION
T=100K, Q=278 gpm, t=6MONTHS
FLOATING FEATHER HILLS, INC.

CH2MHILL

BO131684 A1

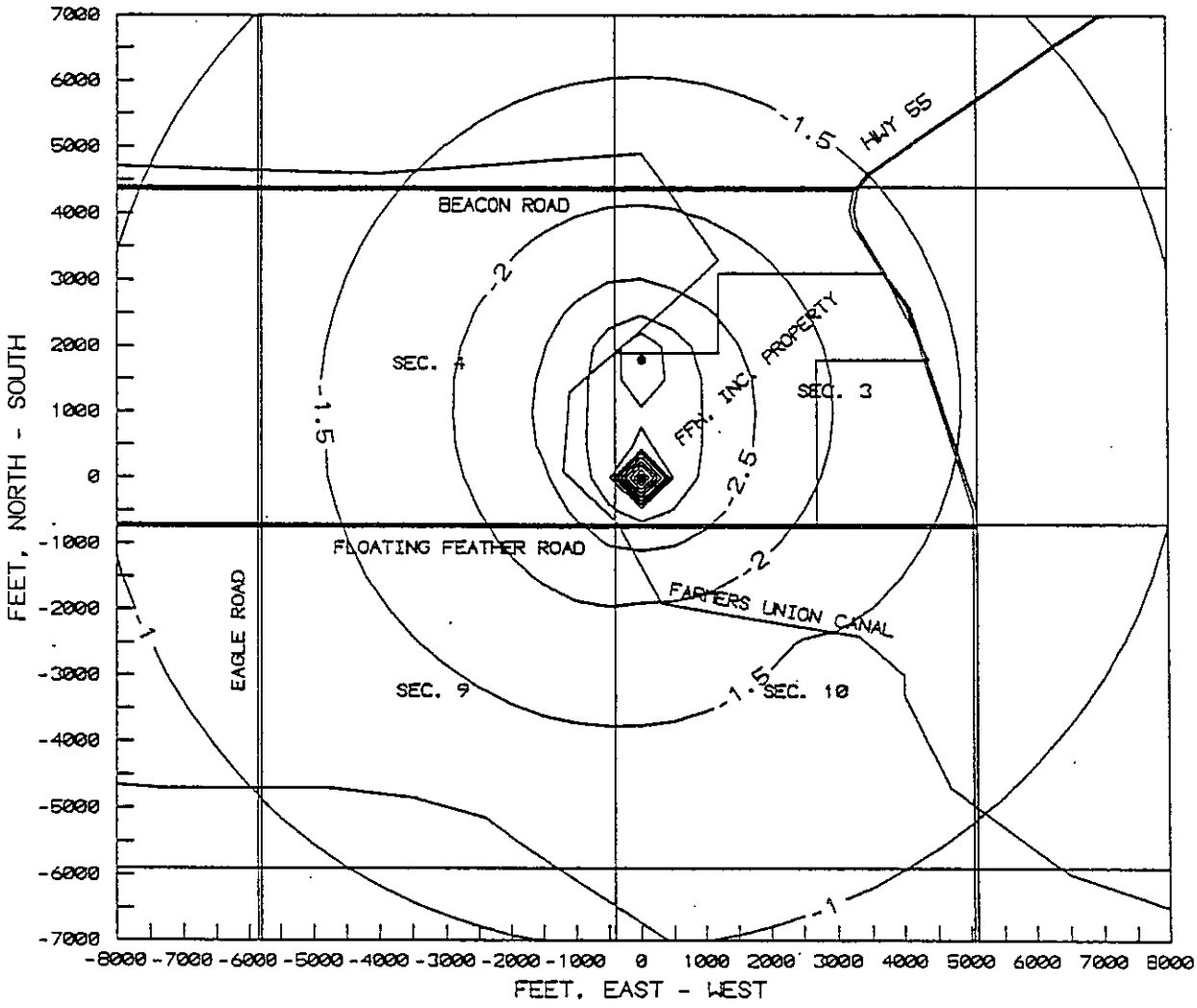

FIGURE 39
DRAWDOWN SIMULATION WITH RECHARGE T=174K, Q=1000 gpm, t=6MONTHS R=250 gpm
FLOATING FEATHER HILLS, INC.

CH2M HILL

80131684 A1

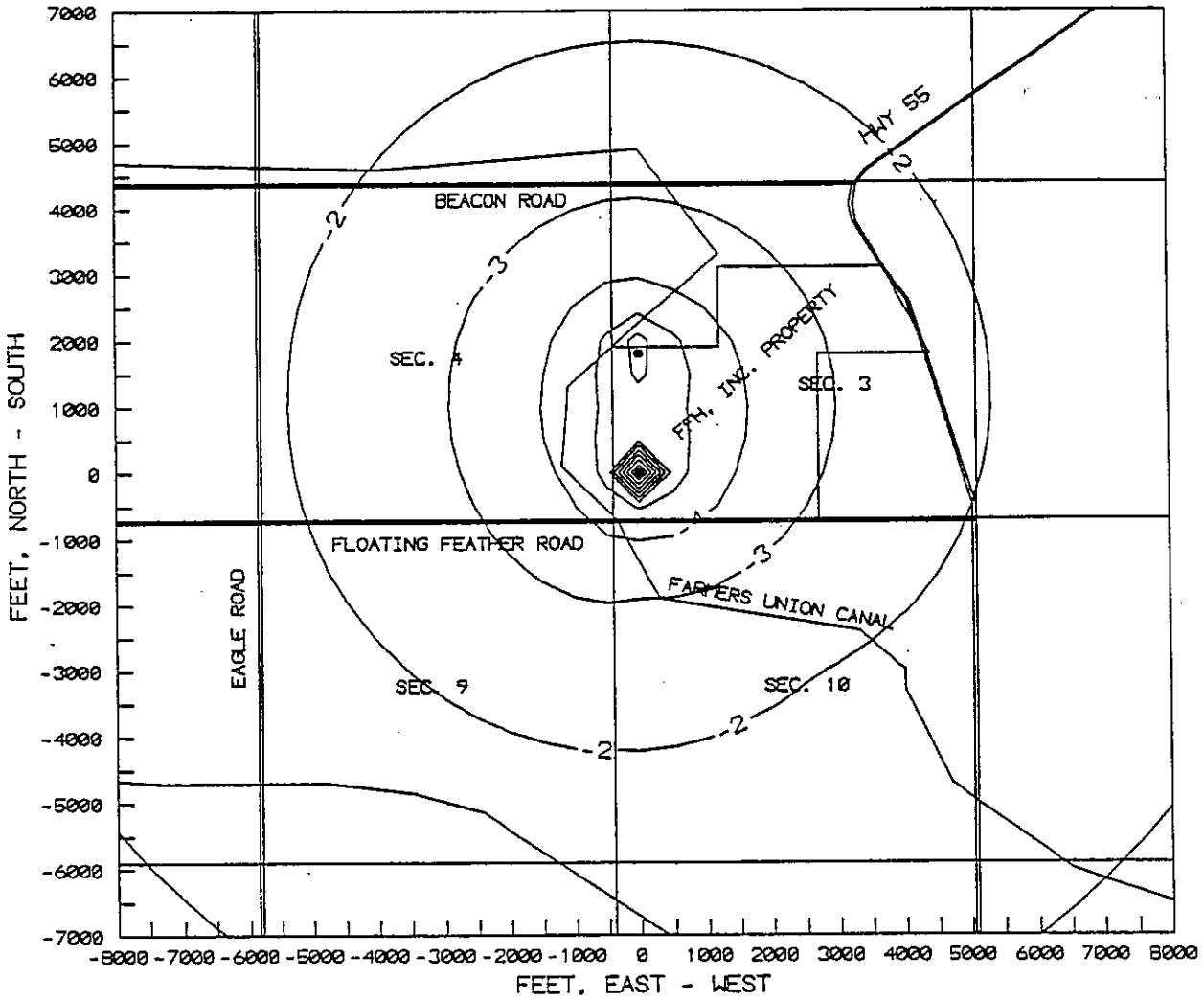

FIGURE 40
DRAWDOWN SIMULATION WITH RECHARGE T=100K, Q=1000 gpm, t=6MONTHS, R=250 gpm
FLOATING FEATHER HILLS, INC.

CH2M HILL

BO131684 A1

Appendix F provides the WELSIM printouts for the simulations conducted. The printouts give the impact variables and expected with levels at the pumped wells.

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RECOMMENDATIONS

The proposed groundwater diversions should be permitted on the basis of the demonstration of an adequate resource and limited impact to existing water rights.

The Eagle area is experiencing considerable growth and change from irrigated pasture- and farmland to residential development. The groundwater resources are consequently becoming increasingly important for potable water supplies and, as such, steps should be taken to begin or expand basic data collection to allow evaluation and monitoring of the impact of future groundwater diversions.

A monitoring system should be developed to allow tracking the temporal changes in water levels in the aquifer. Of particular concern is whether the aquifer is being mined over the long duration. Deep and shallow wells should be included. The monitoring wells may be obtained by review of unused wells or new wells installed. The Hormachea well used is this test is a good candidate for a deep monitoring well. There are a number of wells completed in the 175- to 200-foot depth range in the area. An observation well(s) completed in this depth range should be included. The Holgate well may be a candidate for this depth interval, depending on the ultimate resolution of the Holgate property. Presently, it is included in the FFH, Inc. development and, consequently, the well may be taken out of service.

Other wells in the area are available, such as the Floating Feather Irrigation District well. The Day well or another suitable new or abandoned well in the Sage Area Subdivision should be included in an observation network.

Permanent water level recorders and record management should be included in the necessary IDWR budgets to conduct a dedicated, long-term, water level monitoring program for this area.

Additional aquifer tests are needed to determine the lateral and vertical variability of the aquifer. Collection and analysis of aquifer characteristics by pumping tests should

be conditions of permits for proposed groundwater diversions. Multiple well tests are better than single well tests but all wells should be pump tested.

A water balance should be conducted to identify and characterize recharge and discharge to the aquifer. This aquifer represents a sole source water supply for this area. Recharge areas should be identified and be protected.

IDWR and/or the USGS should continue to collate information and complete their analysis of the aquifer(s) in the Eagle area. The information should be made readily available to the public and periodically published.

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Appendix A

FLOATING FEATHER, INC.
APPLICATION FOR PERMIT

8. Description of proposed uses:
DOMESTIC USE FOR 900 HOMES, FIRE PROTECTION, IRRIGATION.

9. Place of Use: IRRIGATION

TWN	RGE	SEC			ACRES		ACRES		ACRES	TOTAL
04N	01E	3	LOT	2 (NWNE)	3	SWNE	29	SENE	6	
			LOT	3 (NENW)	3	SENW	19	NESW	19	
				NWSW	19	SWSW	19	SESW	19	
				NESE	5	NWSE	17	SWSE	22	
				SESE	20					200

Total number of acres irrigated: 200

Place of Use: DOMESTIC, same as IRRIGATION use

Place of Use: FIRE PROTECTION, same as IRRIGATION use

10. Describe any other water rights used for the same purposes.

11. a. Who owns the property at the point of diversion?
APPLICANT
b. Who owns the land to be irrigated or place of use?
APPLICANT
c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing.

12. Remarks:
Amended by adding Treasure Valley Village requirements on 3/14/91
PROTESTANTS: MORE THAN 80.
PUMP TEST BEING CONDUCTED BY APPLICANTS.

13. Map of proposed point of diversion and place of use attached? [ ]

BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

_____
Applicant

Received by _____ Date _____ Time_____ Preliminary check by _____

Fee $ _____ Receipted by _____ # _____ Date _____

Publication prepared by _____ Date _____ Published in _____

Publication approved _____ Date _____

Ident. No. 63-11413

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

1. Name: FLOATING FEATHER HILLS INC. 208-343-6500
   Address: 2417 BANKS DRIVE
   SUITE 101
   BOISE, ID 83705
   AND
   Name: TREASURE VALLEY VILLAGE 208-336-3393
   Address: LIMITED PARTNERSHIP
   4720 EMERALD
   BOISE, ID 83706

2. Source: GROUNDWATER Trib. to:

3. Location of Point of Diversion:
   NWSW Sec. 3, Township 04N, Range 01E
   NESE Sec. 4, Township 04N, Range 01E
   SWSWSW Sec. 3, Township 04N, Range 01E
   SWSW Sec. 4, Township 04N, Range 01E
   ADA County

4. Water will be used for the following purposes:

Purpose	From	To	CFS	(or)	AF
IRRIGATION	03/15	11/15	2.000		
DOMESTIC	01/01	12/31	1.250		
FIRE PROTECTION	01/01	12/31	2.000		

5. Total quantity to be appropriated is:
   5.000 CFS (and/or) AF

6. Proposed diverting works:
   a. Description of ditches, flumes, pumps, headgates, etc.
   WELL, PUMP AND PIPELINE
   b. Height of storage dam feet; active reservoir capacity acre-feet; total reservoir capacity acre-feet; period of year when water will be diverted to storage: to inclusive.
   c. Proposed well diameter is 24 inches; proposed depth of well is 415 feet.
   d. Is groundwater with a temperature greater than 90F being sought? NO

7. Time required for the completion of the works and application of the water to the proposed beneficial use is 5 years.

Appendix B
DRILLERS LOG AND WELL COMPLETION REPORT FOR THE PRODUCTION WELL

Form 238-7
8/89

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

USE TYPEWRITER OR BALLPOINT PEN

1. WELL OWNER

Name: Floating Feather Hills, Inc.
Address: 2417 Bank Drive-Suite 101, Boise, ID 83705

Owner's Permit No. 63-11413

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
Well diameter increase
Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☒ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other ... (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☒ Reverse rotary
☐ Cable ☐ Dug ☐ Other ...

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other

Thickness	Diameter	From	To
.250 inches	16 inches	+ 18" feet	215 feet
.250 inches	16 inches	265 feet	375 feet
.250 inches	16 inches	385 feet	405 feet
inches	inches	feet	feet

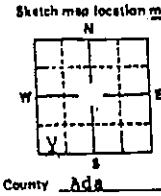
Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation ____ inches by ____ inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name: Roscoe Moss
Type: Hvy. Stainless Steel Model No.: Wirewra
Diameter 16" Slot size .040 Set from 215 feet to 265 feet
Diameter 16" Slot size .040 Set from 375 feet to 385 feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 3/8-
Placed from 315 feet to 190 feet
Surface seal depth 90' Seal also at 190-180 Seal: ☒ Cement grout ☐ Bentonite ☐ Puddling clay ☐ ...
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port: 2"

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name
Lot No. Block No.
County: Ada
SW¼ SW¼ Sec. 3, T. 4N N S, R. 1E E W

7. WATER LEVEL

Static water level 68 feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow
Artesian closed-in pressure p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature °F. Quality
Describe artesian or temperature zones below

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Air ☐ Other

Discharge G.P.M.	Pumping Level	Hours Pumped
		65

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
18"	0	3	Top Soil		
	3	15	Sandy Loam		
	15	25	Coarse Sand & Pea Gravel		
	25	40	Med. to Crse. Sand		
	40	75	River Rock		
	75	85	Fine Sand		
	85	87	Lite Brn. Clay		
	87	106	Fine Sand		
	106	108	Lite Brn. Clay		
	108	124	Fine Sand		
	124	130	Lt. Brn. Clay		
	130	165	Fine Sand		
	165	175	Gldn.Fn./Med.Sand with some clay in spots.		
	175	182	Fine Sand		
	182	185	Lt.Brn.Clay & Fine Sand		
	185	189	Fine Sand		
	189	193	Fine to Crse. Sand		
	193	195	Med./Crse. Sand & Clay Mxd		
	195	198	Lt. Brn. Clay		
	198	205	Fine to Med. Sand		
	205	209	Fine/Crse.Sand & Lt.Brn. Clay Mxd.		
	209	211	Fine Sand		
	211	215	Fine/Med.Sand & Lt.Brn.Clay		
	215	225	Fine Sand		
	225	235	Sandwitched Sand & Clay (4)		
	235	265	Gray Sand		
	265	275	Sand-Clay (50-50)		
	275	282	Gray Clay		
	282	290	Fine Gray Sand		
	290	300	Gray Clay		
	300	305	Fine Gray Sand		
	305	311	Gray Clay w/sm.at.fine sand		
	311	315	Brn. & Gray Clay		

10.
Work started 2/26/91 finished 3/7/91

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name: PETE COPE DRILLING CO., INC. Firm No.: 213
Address: 6505 W. Chinden Blvd. Meridian, ID Date
Signed by (Firm Official)
and
(Operator)

Form 238-7
8/89

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

BALLPOINT PEN

WELL DRILLER'S REPORT

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Name Floating Feather Hills, Inc.

Address _____

Owner's Permit No. _____

2. NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
____ inches	____ inches +	____ feet	____ feet
____ inches	____ inches	____ feet	____ feet
____ inches	____ inches	____ feet	____ feet
____ inches	____ inches	____ feet	____ feet

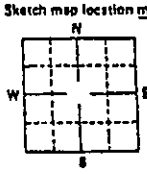
Was casing drive shoe used? ☐ Yes ☐ No
Was a packer or seal used? ☐ Yes ☐ No
Perforated? ☐ Yes ☐ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation ____ inches by ____ inches

Number	From	To
____ perforations	____ feet	____ feet
____ perforations	____ feet	____ feet
____ perforations	____ feet	____ feet

Well screen installed? ☐ Yes ☐ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from ____ feet to ____ feet
Surface seal depth ____ [illegible] used [illegible] ☐ Cement grout
☐ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing
☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. ____ Block No. ____

County _____

____ % ____ % Sec. ____ T. ____ N ☐ S ☐ R. ____ E ☐ W ☐

7. WATER LEVEL

Static water level _____ feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature ____ °F. Quality _____
Describe artesian or temperature zones below

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
28"	315	325	Brn. & Gray Clay Mix w/ streaks of fine sand.		
	325	335	Blue Brown clay w/ stks. of sand.		
	335	351	Fine Blue Sand		
	351	365	Blue Clay		
	365	385	Fine Blue Sand		
	385	388	Blue Clay		
	388	393	Blue Sand		
	393	405	Blue Clay		

10.

Work started _____ finished _____

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name PETE COPE DRILLING CO., INC. Firm No. 213

Address _____ Date _____

Signed by (Firm Official) _____

and

(Operator) _____

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE [illegible]

PRODUCTION WELL

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: FFH, INC. PRODUCTION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE)
PUMPING RATES: 750.0 Gallons per minute
HOW Q MEASURED: FLOWMETER
HOW WL's MEASURED: AIR LINE
DIST. FROM PUMPED WELL: 1 FOOT

PUMPING / OBSERVATION WELL
M.P. FOR WL'S: TOP OF CASING ELEV. :
PUMP ON: DATE 26-Mar-91 TIME 10:56:00
PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
STATIC WATER LEVEL (FT BMP): 74.00
COMMENTS: FLOW METER AT START 786,800

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	WATER LEVEL DATA DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	FLOW METER (GALLONS X 100)	TOTAL GALLONS (X 100)	Q AVG CURRENT (GPM)	Q AVG TO DATE (GPM)	REMARKS
26-Mar	10:50:00	-6.0		74.0	0.0	74.00	0.00	786,800	0			
26-Mar	10:54:00	-2.0		74.0	0.0	74.00	0.00	786,800	0			Regression from Holgate well used.
26-Mar	10:55:00	-1.0		74.0	0.0	74.00	0.00	786,800	0			
26-Mar	10:56:15	0.3		110.0	36.0	74.00	36.00					Regression Output:
26-Mar	10:56:30	0.5		118.0	44.0	74.00	44.00					Constant 74.00
26-Mar	10:57:00	1.0		122.0	48.0	74.00	48.00					Std Err of Y Est 0.06
26-Mar	10:58:00	2.0		126.0	52.0	74.00	52.00					R Squared 0.95
26-Mar	10:59:00	3.0		130.0	56.0	74.00	56.00					No. of Observations 5.00
26-Mar	11:00:00	4.0		133.0	59.0	74.00	59.00					Degrees of Freedom 3.00
26-Mar	11:02:00	6.0		134.0	60.0	74.00	60.00					
26-Mar	11:03:00	7.0		135.0	61.0	74.00	61.00					X Coefficient(s) 0.000050
26-Mar	11:04:00	8.0		136.0	62.0	74.00	62.00					Std Err of Coef. 0.000007
26-Mar	11:05:00	9.0		136.5	62.5	74.00	62.50					
26-Mar	11:07:00	11.0		139.0	65.0	74.00	65.00					X Y
26-Mar	11:09:00	13.0		140.0	66.0	74.00	66.00					-9896.00 68.14
26-Mar	11:11:00	15.0		141.5	67.5	74.00	67.50	786,900	100	667	667	-5461.00 68.38
26-Mar	11:13:00	17.0		142.0	68.0	74.00	68.00					-4016.00 68.39
26-Mar	11:15:00	19.0		143.0	69.0	74.00	69.00					-15.00 68.70
26-Mar	11:17:00	21.0		143.5	69.5	74.00	69.50					-3.00 68.58
26-Mar	11:18:00	22.0		144.0	70.0	74.00	70.00					
26-Mar	11:20:00	24.0		144.5	70.5	74.00	70.50					
26-Mar	11:22:00	26.0		145.0	71.0	74.00	71.00					
26-Mar	11:24:00	28.0		145.1	71.1	74.00	71.10					
26-Mar	11:26:00	30.0		146.0	72.0	74.00	72.00					
26-Mar	11:32:00	36.0		147.0	73.0	74.00	73.00					
26-Mar	11:35:00	39.0		147.0	73.0	74.00	73.00					
26-Mar	11:38:00	42.0		147.1	73.1	74.00	73.10					
26-Mar	11:41:00	45.0		147.5	73.5	74.00	73.50					
26-Mar	11:46:00	50.0		147.0	73.0	74.00	73.00	787,190	390	829	780	
26-Mar	11:51:00	55.0		147.1	73.1	74.00	73.10					
26-Mar	11:56:00	60.0		147.1	73.1	74.00	73.10					
26-Mar	12:01:00	65.0		147.5	73.5	74.00	73.50	787,310	510	800	785	
26-Mar	12:06:00	70.0		147.5	73.5	74.00	73.50					
26-Mar	12:07:00	71.0		146.0	72.0	74.00	72.00					
26-Mar	12:12:00	76.0		145.0	71.0	74.00	71.00					
26-Mar	12:16:00	80.0		145.0	71.0	74.00	71.00					
26-Mar	12:36:00	100.0		145.1	71.1	74.01	71.09					
26-Mar	12:47:00	111.0		147.0	73.0	74.01	72.99	787,612	812	657	732	
26-Mar	12:56:00	120.0		147.0	73.0	74.01	72.99					
26-Mar	13:16:00	140.0		147.0	73.0	74.01	72.99					
26-Mar	13:36:00	160.0		147.0	73.0	74.01	72.99	788,024	1,224	841	765	
26-Mar	13:56:00	180.0		147.2	73.2	74.01	73.19	788,190	1,390	830	772	
26-Mar	14:16:00	200.0		147.2	73.2	74.01	73.19	788,340	1,540	750	770	
26-Mar	14:36:00	220.0		147.5	73.5	74.01	73.49	788,490	1,690	750	768	
26-Mar	15:16:00	260.0		147.8	73.8	74.01	73.79	788,827	2,027	842	780	
26-Mar	15:56:00	300.0		148.0	74.0	74.02	73.98	789,112	2,312	712	771	
26-Mar	16:56:00	360.0		148.0	74.0	74.02	73.98	789,524	2,724	687	757	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: FFH, INC. PRODUCTION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE)
PUMPING RATES: 750.0 Gallons per minute
HOW Q MEASURED: FLOWMETER
HOW WL's MEASURED: AIR LINE
DIST. FROM PUMPED WELL: 1 FOOT

PUMPING / OBSERVATION WELL
M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMP ON: DATE 26-Mar-91 TIME 10:56:00
PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
STATIC WATER LEVEL (FT BMP): 74.00
COMMENTS: FLOW METER AT START 786,800

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	WATER LEVEL DATA: DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	FLOW METER (GALLONS X 100)	TOTAL GALLONS (X 100)	Q AVG CURRENT (GPM)	Q AVG TO DATE (GPM)	REMARKS
26-Mar	17:56:00	420.0		147.8	73.8	74.02	73.78	789,984	3,184	767	758	
26-Mar	18:56:00	480.0		148.0	74.0	74.02	73.98	790,409	3,609	708	752	
26-Mar	19:56:00	540.0		148.0	74.0	74.03	73.97	790,853	4,053	740	751	
26-Mar	20:56:00	600.0		148.2	74.2	74.03	74.17	791,298	4,498	742	750	
26-Mar	21:56:00	660.0		148.5	74.5	74.03	74.47	791,742	4,942	740	749	
27-Mar	08:26:00	1290.0		149.0	75.0	74.06	74.94	796,378	9,578	736	742	
27-Mar	12:07:00	1511.0		148.0	74.0	74.08	73.92	798,039	11,239	752	744	
27-Mar	18:08:00	1872.0		148.0	74.0	74.09	73.91	800,663	13,863	727	741	
27-Mar	23:26:00	2190.0		148.0	74.0	74.11	73.89	802,964	16,164	724	738	
28-Mar	08:23:00	2727.0		148.5	74.5	74.14	74.36	806,880	20,080	729	736	
28-Mar	12:40:00	2984.0		148.0	74.0	74.15	73.85	808,735	21,935	722	735	
28-Mar	18:18:00	3322.0		147.0	73.0	74.17	72.83	811,164	24,364	719	733	
28-Mar	23:00:00	3604.0		147.0	73.0	74.18	72.82	813,176	26,376	713	732	
29-Mar	08:24:00	4168.0		147.0	73.0	74.21	72.79	817,205	30,405	714	729	
29-Mar	08:30:00	4174.0		149.5	75.5	74.21	75.29					
29-Mar	13:48:00	4492.0		149.5	75.5	74.23	75.27	819,600	32,800	739	730	
29-Mar	18:16:00	4760.0		149.5	75.5	74.24	75.26	821,574	34,774	737	731	
29-Mar	23:34:00	5078.0		149.5	75.5	74.26	75.24	823,914	37,114	736	731	
30-Mar	08:46:00	5630.0		150.0	76.0	74.28	75.72	827,972	41,172	735	731	
30-Mar	13:07:00	5891.0		149.5	75.5	74.30	75.20	829,898	43,098	738	732	
30-Mar	18:40:00	6224.0		154.0	80.0	74.31	79.69	832,360	45,560	739	732	
30-Mar	22:50:00	6474.0		154.0	80.0	74.33	79.67	834,253	47,453	757	733	
31-Mar	08:28:00	7052.0		152.5	78.5	74.35	78.15	838,637	51,837	758	735	
31-Mar	14:02:00	7386.0		152.0	78.0	74.37	77.63	841,163	54,363	756	736	
31-Mar	23:31:00	7955.0		152.0	78.0	74.40	77.60	845,467	58,667	756	737	
01-Apr	08:40:00	8504.0		152.5	78.5	74.43	78.07	849,624	62,824	757	739	
01-Apr	15:30:00	8914.0		151.0	77.0	74.45	76.55	852,721	65,921	755	740	
01-Apr	22:11:00	9315.0		104.0	30.0	74.47	29.53	855,438	68,638	678	737	Pump off at about 21:40.
01-Apr	22:50:00	9354.0				74.47	-74.47					Pump back on.
01-Apr	22:54:00	9358.0		141.0	67.0	74.47	66.53	855,487	68,687	114	734	
02-Apr	07:35:00	9879.0		150.0	76.0	74.50	75.50	859,404	72,604	752	735	
02-Apr	14:40:00	10304.0		150.0	76.0	74.52	75.48	862,591	75,791	750	736	
02-Apr	22:15:00	10759.0		150.0	76.0	74.54	75.46	865,990	79,190	747	736	
03-Apr	08:15:00	11359.0		151.0	77.0	74.57	76.43	870,479	83,679	748	737	
03-Apr	14:12:00	11716.0		150.0	76.0	74.59	75.41	873,141	86,341	746	737	
03-Apr	20:23:00	12087.0		151.0	77.0	74.61	76.39	875,911	89,111	747	737	
04-Apr	08:20:00	12804.0		154.0	80.0	74.64	79.36	881,260	94,460	746	738	
04-Apr	14:39:00	13183.0		151.0	77.0	74.66	76.34	884,081	97,281	744	738	
04-Apr	22:40:00	13664.0		151.0	77.0	74.69	76.31	887,669	100,869	746	738	
05-Apr	08:57:00	14281.0		154.0	80.0	74.72	79.28	892,260	105,460	744	738	
05-Apr	09:17:00	14301.0		154.5	80.5	74.72	79.78	892,411	105,611	755	738	
05-Apr	12:21:00	14485.0		151.0	77.0	74.73	76.27	893,774	106,974	741	739	
05-Apr	16:04:00	14708.0		151.0	77.0	74.74	76.26	895,426	108,626	741	739	
05-Apr	22:34:00	15098.0		152.0	78.0	74.76	77.24	898,323	111,523	743	739	
06-Apr	09:22:00	15746.0		152.0	78.0	74.79	77.21	903,131	116,331	742	739	
06-Apr	16:26:00	16170.0		152.0	78.0	74.81	77.19	906,277	119,477	742	739	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: FFH, INC. PRODUCTION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE)
PUMPING RATES: 750.0 Gallons per minute
HOW Q MEASURED: FLOWMETER
HOW WL's MEASURED: AIR LINE
DIST. FROM PUMPED WELL: 1 FOOT

PUMPING / OBSERVATION WELL
M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMP ON: DATE 26-Mar-91 TIME 10:56:00
PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
STATIC WATER LEVEL (FT BMP): 74.00
COMMENTS: FLOW METER AT START 786,800

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	WATER LEVEL DATA DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	FLOW METER (GALLONS X 100)	TOTAL GALLONS (X 100)	Q AVG CURRENT (GPM)	Q AVG TO DATE (GPM)	REMARKS
06-Apr	22:13:00	16517.0		152.0	78.0	74.83	77.17	908,846	122,046	740	739	Daylight savings begins at 2 am.
07-Apr	09:42:00	17206.0		152.0	78.0	74.86	77.14	913,500	126,700	675	736	Elapsed time adjusted -60 min.
07-Apr	16:49:00	17633.0		152.0	78.0	74.89	77.11	916,658	129,858	740	736	
07-Apr	23:50:00	18054.0		152.0	78.0	74.91	77.09	919,777	132,977	741	737	
08-Apr	09:22:00	18626.0		152.0	78.0	74.94	77.06	924,003	137,203	739	737	
08-Apr	15:09:00	18973.0		152.0	78.0	74.95	77.05	926,569	139,769	739	737	
08-Apr	20:19:00	19283.0		152.0	78.0	74.97	77.03	928,856	142,056	738	737	
09-Apr	09:28:00	20072.0		152.0	78.0	75.01	76.99	934,680	147,880	738	737	
09-Apr	10:49:00	20153.0		154.0	80.0	75.01	78.99	935,283	148,483	744	737	
09-Apr	16:19:00	20483.0		155.0	81.0	75.03	79.97	937,779	150,979	756	737	
09-Apr	22:47:00	20871.0		155.0	81.0	75.05	79.95	940,710	153,910	755	737	
10-Apr	09:06:00	21490.0		155.0	81.0	75.08	79.92	945,385	158,585	755	738	
10-Apr	16:30:00	21934.0		155.0	81.0	75.10	79.90	948,735	161,935	755	738	
10-Apr	22:00:00	22264.0		155.0	81.0	75.12	79.88	951,225	164,425	755	739	
11-Apr	09:29:00	22953.0		155.0	81.0	75.15	79.85	956,417	169,617	754	739	
11-Apr	16:33:00	23377.0		155.0	81.0	75.18	79.82	959,611	172,811	753	739	
11-Apr	23:46:00	23810.0		155.0	81.0	75.20	79.80	962,870	176,070	753	739	
12-Apr	09:39:00	24403.0		156.0	82.0	75.23	80.77	967,334	180,534	753	740	
12-Apr	11:35:00	24519.0		156.0	82.0	75.23	80.77	968,219	181,419	763	740	
12-Apr	13:10:00	24614.0		153.0	79.0	75.24	77.76	968,949	182,149	768	740	
12-Apr	13:39:00	24643.0		153.0	79.0	75.24	77.76	969,156	182,356	712	740	
12-Apr	14:06:00	24670.0		153.0	79.0	75.24	77.76	969,355	182,555	739	740	
12-Apr	14:17:00	24681.0		153.0	79.0	75.24	77.76	969,435	182,635	723	740	
12-Apr	20:50:00	25074.0		156.0	82.0	75.26	80.74	972,410	185,610	757	740	
13-Apr	08:54:00	25798.0		155.0	81.0	75.30	79.70	977,875	191,075	755	741	
13-Apr	14:12:00	26116.0		155.0	81.0	75.31	79.69	980,274	193,474	754	741	
13-Apr	21:04:00	26528.0		155.0	81.0	75.33	79.67	983,382	196,582	754	741	
14-Apr	08:28:00	27212.0		155.0	81.0	75.37	79.63	988,534	201,734	753	741	
14-Apr	17:04:00	27728.0		155.0	81.0	75.39	79.61	992,418	205,618	753	742	
14-Apr	22:07:00	28031.0		155.0	81.0	75.41	79.59	994,695	207,895	751	742	
15-Apr	09:56:00	28740.0		155.0	81.0	75.44	79.56	1,000,020	213,220	751	742	
15-Apr	16:29:00	29133.0		155.0	81.0	75.46	79.54	1,002,969	216,169	750	742	
15-Apr	21:16:00	29420.0		155.0	81.0	75.48	79.52	1,005,120	218,320	749	742	
16-Apr	09:53:00	30177.0		155.0	81.0	75.52	79.48	1,010,790	223,990	749	742	
16-Apr	18:00:00	30664.0		155.0	81.0	75.54	79.46	1,014,433	227,633	748	742	
17-Apr	01:00:00	31084.0		155.0	81.0	75.56	79.44	1,017,573	230,773	748	742	
17-Apr	11:47:00	31731.0		155.0	81.0	75.59	79.41	1,022,401	235,601	746	742	
17-Apr	17:49:00	32093.0		155.0	81.0	75.61	79.39	1,025,101	238,301	746	743	
17-Apr	23:42:00	32446.0		155.0	81.0	75.63	79.37	1,027,732	240,932	745	743	
18-Apr	10:11:00	33075.0		154.0	80.0	75.66	78.34	1,032,416	245,616	745	743	
18-Apr	18:42:00	33586.0		154.0	80.0	75.69	78.31	1,036,217	249,417	744	743	
18-Apr	23:25:00	33869.0		155.0	81.0	75.70	79.30	1,038,339	251,539	750	743	
19-Apr	10:14:00	34518.0		155.0	81.0	75.74	79.26	1,043,204	256,404	750	743	
19-Apr	15:13:00	34817.0		155.0	81.0	75.75	79.25	1,045,441	258,641	748	743	
19-Apr	23:16:00	35300.0		155.0	81.0	75.77	79.23	1,049,048	262,248	747	743	
20-Apr	09:50:00	35934.0		155.0	81.0	75.81	79.19	1,053,779	266,979	746	743	
20-Apr	19:54:00	36538.0		155.0	81.0	75.84	79.16	1,058,287	271,487	746	743	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: FFH, INC. PRODUCTION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE)
PUMPING RATES: 750.0 Gallons per minute
HOW Q MEASURED: FLOWMETER
HOW WL's MEASURED: AIR LINE
DIST. FROM PUMPED WELL: 1 FOOT

PUMPING / OBSERVATION WELL
M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMP ON: DATE 26-Mar-91 TIME 10:56:00
PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
STATIC WATER LEVEL (FT BMP): 74.00
COMMENTS: FLOW METER AT START 786,800

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	FLOW METER (GALLONS X 100)	TOTAL GALLONS (X 100)	Q AVG CURRENT (GPM)	Q AVG TO DATE (GPM)	REMARKS
20-Apr	23:39:00	36763.0		155.0	81.0	75.85	79.15	1,059,967	273,167	747	743	
21-Apr	10:29:00	37413.0		155.0	81.0	75.88	79.12	1,064,818	278,018	746	743	
21-Apr	16:28:00	37772.0		155.0	81.0	75.90	79.10	1,067,494	280,694	745	743	
21-Apr	21:30:00	38074.0		155.0	81.0	75.91	79.09	1,069,744	282,944	745	743	
22-Apr	09:39:00	38803.0		155.0	81.0	75.95	79.05	1,075,180	288,380	746	743	
22-Apr	15:03:00	39127.0		155.0	81.0	75.97	79.03	1,077,594	290,794	745	743	
22-Apr	20:35:00	39459.0		155.0	81.0	75.98	79.02	1,080,065	293,265	744	743	
23-Apr	09:05:00	40209.0		155.0	81.0	76.02	78.98	1,085,650	298,850	745	743	
23-Apr	17:15:00	40699.0		155.0	81.0	76.05	78.95	1,089,292	302,492	743	743	
23-Apr	22:17:00	41001.0		155.0	81.0	76.06	78.94	1,091,538	304,738	744	743	
24-Apr	09:08:00	41652.0		155.0	81.0	76.09	78.91	1,096,379	309,579	744	743	
24-Apr	16:11:00	42075.0		155.0	81.0	76.11	78.89	1,099,522	312,722	743	743	
24-Apr	22:22:00	42446.0		155.0	81.0	76.13	78.87	1,102,278	315,478	743	743	
25-Apr	08:54:00	43078.0		155.0	81.0	76.17	78.83	1,106,973	320,173	743	743	
25-Apr	11:02:59	43207.0		155.0	81.0	76.17	78.83	1,107,918	321,118	733	743	
25-Apr	11:03:30	43207.5	86415.0	105.0	31.0	76.17	28.83					
25-Apr	11:03:45	43207.8	57610.3	95.0	21.0	76.17	18.83					
25-Apr	11:04:00	43208.0	43208.0	92.0	18.0	76.17	15.83					
25-Apr	11:04:30	43208.5	28805.7	93.0	19.0	76.17	16.83					
25-Apr	11:05:00	43209.0	21604.5	93.0	19.0	76.17	16.83					
25-Apr	11:05:30	43209.5	17283.8	92.0	18.0	76.17	15.83					
25-Apr	11:06:00	43210.0	14403.3	91.0	17.0	76.17	14.83					
25-Apr	11:07:00	43211.0	10802.7	90.0	16.0	76.17	13.83					
25-Apr	11:08:00	43212.0	8642.4	89.0	15.0	76.17	12.83					
25-Apr	11:09:00	43213.0	7202.2	87.5	13.5	76.17	11.33					
25-Apr	11:10:00	43214.0	6173.4	86.5	12.5	76.17	10.33					
25-Apr	11:11:00	43215.0	5401.9	86.0	12.0	76.17	9.83					
25-Apr	11:12:00	43216.0	4801.8	85.0	11.0	76.17	8.83					
25-Apr	11:13:00	43217.0	4321.7	85.0	11.0	76.17	8.83					
25-Apr	11:15:00	43219.0	3601.6	84.5	10.5	76.17	8.33					
25-Apr	11:17:00	43221.0	3087.2	84.0	10.0	76.17	7.83					
25-Apr	11:19:00	43223.0	2701.4	83.5	9.5	76.17	7.33					
25-Apr	11:20:00	43224.0	2542.6	83.5	9.5	76.17	7.33					
25-Apr	11:23:00	43227.0	2161.3	83.0	9.0	76.17	6.83					
25-Apr	11:28:00	43232.0	1729.3	82.5	8.5	76.17	6.33					
25-Apr	11:33:00	43237.0	1441.2	82.0	8.0	76.17	5.83					
25-Apr	11:38:00	43242.0	1235.5	81.5	7.5	76.17	5.33					
25-Apr	11:43:00	43247.0	1081.2	81.0	7.0	76.17	4.83					
25-Apr	11:48:00	43252.0	961.2	80.5	6.5	76.17	4.33					
25-Apr	11:53:00	43257.0	865.1	80.0	6.0	76.17	3.83					
25-Apr	12:03:00	43267.0	721.1	79.8	5.8	76.17	3.63					
25-Apr	12:28:00	43292.0	509.3	79.0	5.0	76.18	2.82					
25-Apr	12:48:00	43312.0	412.5	78.5	4.5	76.18	2.32					
25-Apr	13:08:00	43332.0	346.7	78.0	4.0	76.18	1.82					
25-Apr	13:43:00	43367.0	271.0	77.5	3.5	76.18	1.32					
25-Apr	14:13:00	43397.0	228.4	77.5	3.5	76.18	1.32					
25-Apr	14:43:00	43427.0	197.4	77.0	3.0	76.18	0.82					

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: FFH, INC. PRODUCTION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28" HOLE)
PUMPING RATES: 750.0 Gallons per minute
HOW Q MEASURED: FLOWMETER
HOW WL's MEASURED: AIR LINE
DIST. FROM PUMPED WELL: 1 FOOT

PUMPING / OBSERVATION WELL
M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMP ON: DATE 26-Mar-91 TIME 10:56:00
PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
STATIC WATER LEVEL (FT BMP): 74.00
COMMENTS: FLOW METER AT START 786,800

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	FLOW METER (GALLONS X 100)	TOTAL GALLONS (X 100)	Q AVG CURRENT (GPM)	Q AVG TO DATE (GPM)	REMARKS
25-Apr	15:13:00	43457.0	173.8	76.8	2.8	76.18	0.62					
25-Apr	15:43:00	43487.0	155.3	76.9	2.9	76.19	0.68					
25-Apr	16:13:00	43517.0	140.4	76.8	2.8	76.19	0.61					
25-Apr	16:43:00	43547.0	128.1	76.5	2.5	76.19	0.31					
25-Apr	17:30:00	43594.0	112.6	76.5	2.5	76.19	0.31					
25-Apr	18:20:00	43644.0	99.9	76.3	2.3	76.19	0.11					
25-Apr	19:23:00	43707.0	87.4	76.0	2.0	76.20	-0.20					
25-Apr	20:23:00	43767.0	78.2	76.0	2.0	76.20	-0.20					
25-Apr	21:03:00	43807.0	73.0	75.8	1.8	76.20	-0.40					
25-Apr	23:49:00	43973.0	57.4	76.0	2.0	76.21	-0.21					
26-Apr	07:58:00	44462.0	35.4	75.5	1.5	76.23	-0.73					
26-Apr	13:29:00	44793.0	28.2	75.5	1.5	76.25	-0.75					
26-Apr	17:28:00	45032.0	24.7	75.2	1.2	76.26	-1.06					
26-Apr	21:39:00	45283.0	21.8	75.5	1.5	76.28	-0.78					
27-Apr	00:45:00	45469.0	20.1	75.0	1.0	76.29	-1.29					
27-Apr	07:36:00	45880.0	17.2	75.5	1.5	76.31	-0.81					
27-Apr	11:34:00	46118.0	15.8	75.5	1.5	76.32	-0.82					
27-Apr	18:50:00	46554.0	13.9	75.0	1.0	76.34	-1.34					
27-Apr	23:15:00	46819.0	13.0	75.5	1.5	76.35	-0.85					
28-Apr	09:11:00	47415.0	11.3	75.0	1.0	76.38	-1.38					
28-Apr	14:24:00	47728.0	10.6	75.0	1.0	76.40	-1.40					
28-Apr	21:13:00	48137.0	9.8	75.0	1.0	76.42	-1.42					
29-Apr	10:30:00	48934.0	8.5	75.0	1.0	76.46	-1.46					
29-Apr	11:59:00	49023.0	8.4	75.0	1.0	76.46	-1.46					
29-Apr	20:31:00	49535.0	7.8	75.0	1.0	76.49	-1.49					
30-Apr	08:22:00	50246.0	7.1	75.0	1.0	76.53	-1.53					
30-Apr	20:36:00	50980.0	6.6	74.5	0.5	76.56	-2.06					
01-May	08:35:00	51699.0	6.1	74.5	0.5	76.60	-2.10					
01-May	20:58:00	52442.0	5.7	75.0	1.0	76.64	-1.64					
02-May	08:55:00	53159.0	5.3	75.0	1.0	76.67	-1.67					
02-May	17:39:00	53683.0	5.1	74.5	0.5	76.70	-2.20					
03-May	10:33:00	54697.0	4.8	75.0	1.0	76.75	-1.75					
03-May	20:23:00	55287.0	4.6	75.0	1.0	76.78	-1.78					
04-May	09:18:00	56062.0	4.4	75.0	1.0	76.82	-1.82					
04-May	20:56:00	56760.0	4.2	74.5	0.5	76.85	-2.35					
05-May	08:56:00	57480.0	4.0	74.5	0.5	76.89	-2.39					
05-May	19:58:00	58142.0	3.9	74.5	0.5	76.92	-2.42					
06-May	08:39:00	58903.0	3.8	74.5	0.5	76.96	-2.46					

EICHHORN WELL

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: EICHHORN — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW — RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL's MEASURED: BK PROBE — STATIC WATER LEVEL (FT BMP): 61.40

DIST. FROM PUMPED WELL: 600 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READING REFERENCE	READING MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
20-Mar	10:00	-8696				60.18	60.18	60.10	0.08	
22-Mar	15:30	-5486				60.22	60.22	60.62	-0.40	
23-Mar	16:10	-4006				61.22	61.22	60.86	0.36	
25-Mar	17:20	-1056				61.39	61.39	61.33	0.06	
26-Mar	10:29	-27				61.40	61.40	61.50	-0.10	
26-Mar	11:02	6				61.33	61.33	61.50	-0.17	
26-Mar	11:04	8				61.38	61.38	61.50	-0.13	
26-Mar	11:06	10				61.38	61.38	61.50	-0.13	
26-Mar	11:08	12				61.38	61.38	61.50	-0.13	
26-Mar	11:10	14				61.38	61.38	61.51	-0.13	
26-Mar	11:12	16				61.42	61.42	61.51	-0.09	
26-Mar	11:14	18				61.42	61.42	61.51	-0.09	
26-Mar	11:16	20				61.42	61.42	61.51	-0.09	
26-Mar	11:18	22				61.42	61.42	61.51	-0.09	
26-Mar	11:20	24				61.42	61.42	61.51	-0.09	
26-Mar	11:22	26				61.42	61.42	61.51	-0.09	
26-Mar	11:24	28				61.42	61.42	61.51	-0.09	
26-Mar	11:26	30				61.42	61.42	61.51	-0.09	
26-Mar	11:28	32				61.42	61.42	61.51	-0.09	
26-Mar	11:30	34				61.42	61.42	61.51	-0.09	
26-Mar	11:32	36				61.42	61.42	61.51	-0.09	
26-Mar	11:35	39				61.42	61.42	61.51	-0.09	
26-Mar	11:40	44				61.42	61.42	61.51	-0.09	
26-Mar	11:45	49				61.42	61.42	61.51	-0.09	
26-Mar	11:50	54				61.42	61.42	61.51	-0.10	
26-Mar	11:55	59				61.42	61.42	61.51	-0.10	
26-Mar	12:00	64				61.42	61.42	61.51	-0.10	
26-Mar	12:05	69				61.42	61.42	61.51	-0.10	
26-Mar	12:10	74				61.42	61.42	61.51	-0.10	
26-Mar	12:15	79				61.42	61.42	61.52	-0.10	
26-Mar	12:20	84				61.42	61.42	61.52	-0.10	
26-Mar	12:25	89				61.42	61.42	61.52	-0.10	
26-Mar	12:30	94				61.42	61.42	61.52	-0.10	
26-Mar	12:35	99				61.42	61.42	61.52	-0.10	
26-Mar	12:40	104				61.42	61.42	61.52	-0.10	
26-Mar	12:45	109				61.42	61.42	61.52	-0.10	
26-Mar	13:00	124				61.42	61.42	61.52	-0.11	
26-Mar	13:17	141				61.42	61.42	61.53	-0.11	Last reading by Rob Whitney, IDWR
26-Mar	14:05	189				61.44	61.44	61.53	-0.09	
26-Mar	15:09	253				61.44	61.44	61.54	-0.10	
26-Mar	16:20	324				61.46	61.46	61.56	-0.10	
26-Mar	17:00	364				61.46	61.46	61.56	-0.10	
26-Mar	18:05	429				61.48	61.48	61.57	-0.09	
26-Mar	19:15	499				61.49	61.49	61.58	-0.09	
26-Mar	20:05	549				61.51	61.51	61.59	-0.08	
26-Mar	21:05	609				61.52	61.52	61.60	-0.08	
26-Mar	22:10	674				61.54	61.54	61.61	-0.07	

Regression Output:

Constant	61.50
Std Err of Y Est	0.32
R Squared	0.80
No. of Observations	5.00
Degrees of Freedom	3.00
X Coefficient(s)	0.000161
Std Err of Coef.	0.000046

X	Y
-8696	60.18
-5486	60.22
-4006	61.22
-1056	61.39
-27	61.40

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *EICHHORN* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *BK PROBE* STATIC WATER LEVEL (FT BMP): *61.40*
DIST. FROM PUMPED WELL: *600 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
27-Mar	08:40	1304				61.66	61.66	61.71	-0.05	
27-Mar	09:22	1346				61.66	61.66	61.72	-0.06	
27-Mar	12:22	1526				61.69	61.69	61.75	-0.06	
27-Mar	18:15	1879				61.72	61.72	61.81	-0.09	
27-Mar	23:35	2199				61.70	61.70	61.86	-0.16	
28-Mar	08:40	2744				61.46	61.46	61.95	-0.49	
28-Mar	01:02	2286				61.22	61.22	61.87	-0.65	
28-Mar	18:24	3328				60.96	60.96	62.04	-1.08	
28-Mar	23:08	3612				60.82	60.82	62.09	-1.27	
29-Mar	09:16	4220				60.56	60.56	62.18	-1.62	
29-Mar	13:59	4503				60.46	60.46	62.23	-1.77	
29-Mar	18:28	4772				60.40	60.40	62.27	-1.87	
29-Mar	23:43	5087				60.34	60.34	62.32	-1.98	
30-Mar	08:06	5590				60.24	60.24	62.40	-2.16	
30-Mar	13:32	5916				60.18	60.18	62.46	-2.28	
30-Mar	18:51	6235				60.14	60.14	62.51	-2.37	
30-Mar	23:00	6484				60.14	60.14	62.55	-2.41	
31-Mar	08:39	7063				60.04	60.04	62.64	-2.60	
31-Mar	14:24	7408				60.00	60.00	62.70	-2.70	
31-Mar	23:40	7964				59.92	59.92	62.79	-2.87	
01-Apr	09:02	8526				59.88	59.88	62.88	-3.00	
01-Apr	15:54	8938				59.81	59.81	62.94	-3.13	
01-Apr	22:31	9335				59.76	59.76	63.01	-3.25	
02-Apr	07:53	9897				59.72	59.72	63.10	-3.38	
02-Apr	14:53	10317				59.68	59.68	63.17	-3.49	
02-Apr	22:28	10772				59.68	59.68	63.24	-3.56	
03-Apr	08:33	11377				59.60	59.60	63.34	-3.74	
03-Apr	14:26	11730				59.54	59.54	63.39	-3.85	
03-Apr	20:35	12099				59.50	59.50	63.45	-3.95	
04-Apr	08:31	12815				59.42	59.42	63.57	-4.15	
04-Apr	14:49	13193				59.36	59.36	63.63	-4.27	
04-Apr	22:52	13676				59.34	59.34	63.71	-4.37	
05-Apr	09:32	14316				59.30	59.30	63.81	-4.51	
05-Apr	16:14	14718				59.26	59.26	63.87	-4.61	
05-Apr	22:48	15112				59.24	59.24	63.94	-4.70	
06-Apr	09:34	15758				59.22	59.22	64.04	-4.82	
06-Apr	16:40	16184				59.20	59.20	64.11	-4.91	
06-Apr	22:23	16527				59.20	59.20	64.17	-4.97	Daylight savings time starts at 2 am.
07-Apr	09:55	17219				59.18	59.18	64.28	-5.10	Elapsed minutes adjusted -60 min.
07-Apr	17:03	17647				59.16	59.16	64.35	-5.19	
08-Apr	00:01	18065				59.16	59.16	64.41	-5.25	
08-Apr	09:32	18636				59.10	59.10	64.51	-5.41	
08-Apr	15:16	18980				59.12	59.12	64.56	-5.44	
08-Apr	20:32	19296				59.10	59.10	64.61	-5.51	
09-Apr	09:39	20083				59.08	59.08	64.74	-5.66	
09-Apr	16:30	20494				59.06	59.06	64.81	-5.75	
09-Apr	22:56	20880				59.06	59.06	64.87	-5.81	

HOLGATE WELL

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HOLGATE — PUMPING / OBSERVATION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00
HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
HOW WL's MEASURED: BK PROBE — STATIC WATER LEVEL (FT BMP): 68.58
DIST. FROM PUMPED WELL: 900 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
19-Mar	14:00	-9896		68.14	-0.44	68.14	0.00	
22-Mar	15:35	-5481		68.38	-0.20	68.38	0.02	
23-Mar	16:00	-4016		68.39	-0.19	68.43	-0.04	
25-Mar	17:15	-1061		70.02	1.44	68.58	1.44	PUMP ON
26-Mar	10:41	-15		68.70	0.12	68.63	0.07	
26-Mar	10:53	-3		68.58	0.00	68.63	-0.05	
26-Mar	11:05	9		68.66	0.08	68.63	0.03	
26-Mar	11:21	25		69.01	0.43	68.63	0.38	
26-Mar	11:34	38		69.28	0.70	68.64	0.64	
26-Mar	11:45	49		69.44	0.86	68.64	0.80	
26-Mar	11:47	51		69.44	0.86	68.64	0.80	
26-Mar	11:50	54		69.44	0.86	68.64	0.80	
26-Mar	11:52	56		69.44	0.86	68.64	0.80	
26-Mar	11:54	58		69.44	0.86	68.64	0.80	
26-Mar	12:10	74		69.60	1.02	68.64	0.96	
26-Mar	12:24	88		69.60	1.02	68.64	0.96	
26-Mar	12:49	113		69.66	1.08	68.64	1.02	
26-Mar	12:52	116		69.66	1.08	68.64	1.02	
26-Mar	13:22	146		69.70	1.12	68.64	1.06	
26-Mar	13:26	150		69.70	1.12	68.64	1.06	
26-Mar	13:52	176		69.96	1.38	68.64	1.32	
26-Mar	14:24	208		69.80	1.22	68.64	1.16	
26-Mar	15:03	247		69.90	1.32	68.65	1.25	
26-Mar	15:08	252		69.86	1.28	68.65	1.21	
26-Mar	15:35	279		69.80	1.22	68.65	1.15	
26-Mar	15:58	302		69.85	1.27	68.65	1.20	
26-Mar	16:28	332		69.87	1.29	68.65	1.22	
26-Mar	17:07	371		69.94	1.36	68.65	1.29	
26-Mar	18:25	449		69.94	1.36	68.66	1.28	
26-Mar	19:30	514		69.96	1.38	68.66	1.30	
26-Mar	20:25	569		69.96	1.38	68.66	1.30	
26-Mar	21:20	624		69.98	1.40	68.66	1.32	
26-Mar	22:25	689		70.01	1.43	68.67	1.34	
27-Mar	09:41	1365		70.18	1.60	68.70	1.48	
27-Mar	12:40	1544		70.20	1.62	68.71	1.49	
27-Mar	18:26	1890		70.24	1.66	68.73	1.51	
27-Mar	23:43	2207		70.32	1.74	68.74	1.58	
28-Mar	08:52	2756		70.40	1.82	68.77	1.63	
28-Mar	13:23	3027		70.46	1.88	68.79	1.67	
28-Mar	18:32	3336		70.52	1.94	68.80	1.72	
28-Mar	23:15	3619		70.52	1.94	68.82	1.70	
29-Mar	10:03	4267		70.70	2.12	68.85	1.85	
29-Mar	14:30	4534		70.68	2.10	68.86	1.82	
29-Mar	18:45	4789		70.70	2.12	68.87	1.83	

PRETEST WATER LEVEL TREND

Regression Output:

Constant	68.63	
Std Err of Y Est	0.06	
R Squared	0.95	
No. of Observations	5.00	
Degrees of Freedom	3.00	
X Coefficient(s)		0.000050
Std Err of Coef.		0.000007

X	Y
-9896.00	68.14
-5481.00	68.38
-4016.00	68.39
-15.00	68.70
-3.00	68.58

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HOLGATE — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL's MEASURED: BK PROBE — STATIC WATER LEVEL (FT BMP): 68.58

DIST. FROM PUMPED WELL: 900 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	WATER LEVEL DATA: DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
29-Mar	23:53	5097		70.76	2.18	68.89	1.87	
30-Mar	09:07	5651		70.82	2.24	68.92	1.90	
30-Mar	13:38	5922		70.82	2.24	68.93	1.89	
30-Mar	18:58	6242		70.88	2.30	68.95	1.93	
30-Mar	23:07	6491		70.96	2.38	68.96	2.00	
31-Mar	08:45	7069		71.00	2.42	68.99	2.01	
31-Mar	14:35	7419		71.02	2.44	69.01	2.01	
31-Mar	23:46	7970		71.08	2.50	69.03	2.05	
01-Apr	09:30	8554		71.18	2.60	69.06	2.12	
01-Apr	16:14	8958		71.14	2.56	69.08	2.06	
01-Apr	22:38	9342		70.30	1.72	69.10	1.20	
02-Apr	08:01	9905		71.20	2.62	69.13	2.07	
02-Apr	14:59	10323		71.24	2.66	69.15	2.09	
02-Apr	22:34	10778		71.26	2.68	69.17	2.09	
03-Apr	08:50	11394		71.32	2.74	69.21	2.11	
03-Apr	15:11	11775		71.34	2.76	69.22	2.12	
03-Apr	20:40	12104		71.36	2.78	69.24	2.12	
04-Apr	08:36	12820		71.38	2.80	69.28	2.10	
04-Apr	15:04	13208		71.40	2.82	69.30	2.10	
04-Apr	22:59	13683		71.42	2.84	69.32	2.10	
05-Apr	09:47	14331		71.48	2.90	69.35	2.13	
05-Apr	16:26	14730		71.50	2.92	69.37	2.13	
05-Apr	23:02	15126		71.50	2.92	69.39	2.11	
06-Apr	09:55	15779		71.54	2.96	69.43	2.11	
06-Apr	16:55	16199		71.56	2.98	69.45	2.11	
06-Apr	22:33	16537		71.56	2.98	69.46	2.10	Daylight savings time begins at 2 am.
07-Apr	10:14	17178		71.62	3.04	69.50	2.12	Elapsed times adjusted -60 min.
07-Apr	17:17	17601		71.62	3.04	69.52	2.10	
08-Apr	00:10	18014		71.62	3.04	69.54	2.08	
08-Apr	09:53	18597		71.72	3.14	69.57	2.15	
08-Apr	15:47	18951		71.66	3.08	69.59	2.07	
08-Apr	20:40	19244		71.64	3.06	69.60	2.04	
09-Apr	09:45	20029		71.74	3.16	69.64	2.10	
09-Apr	16:53	20457		71.72	3.14	69.66	2.06	
09-Apr	23:11	20835		71.74	3.16	69.68	2.06	
10-Apr	09:45	21469		71.78	3.20	69.71	2.07	
10-Apr	16:43	21887		71.80	3.22	69.73	2.07	
10-Apr	22:20	22224		71.80	3.22	69.75	2.05	
11-Apr	09:58	22922		71.80	3.22	69.79	2.01	
11-Apr	16:59	23343		71.82	3.24	69.81	2.01	
12-Apr	00:05	23769		71.82	3.24	69.83	1.99	
12-Apr	10:10	24374		71.88	3.30	69.86	2.02	
12-Apr	15:13	24677		71.84	3.26	69.87	1.97	
12-Apr	21:11	25035		71.92	3.34	69.89	2.03	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HOLGATE
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE)
PUMPING RATES: 750.0 Gallons per minute
HOW Q MEASURED: FLOWMETER
HOW WL's MEASURED: BK PROBE
DIST. FROM PUMPED WELL: 900 FEET

PUMPING / OBSERVATION WELL:
M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMP ON: DATE 26-Mar-91 TIME 10:56:00
PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
STATIC WATER LEVEL (FT BMP): 68.58
COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
13-Apr	09:15	25759		71.92	3.34	69.93	1.99	
13-Apr	14:30	26074		72.00	3.42	69.94	2.06	
13-Apr	21:35	26499		72.00	3.42	69.97	2.03	
14-Apr	08:47	27171		71.98	3.40	70.00	1.98	
14-Apr	17:23	27687		71.98	3.40	70.02	1.96	
14-Apr	22:26	27990		72.00	3.42	70.04	1.96	
15-Apr	10:15	28699		72.10	3.52	70.08	2.02	
15-Apr	16:46	29090		72.20	3.62	70.10	2.10	
15-Apr	21:28	29372		72.06	3.48	70.11	1.95	
16-Apr	10:11	30135		72.14	3.56	70.15	1.99	
16-Apr	18:28	30632		72.14	3.56	70.17	1.97	
17-Apr	01:30	31054		72.20	3.62	70.19	2.01	
17-Apr	12:22	31706		72.15	3.57	70.23	1.92	
17-Apr	18:20	32064		72.16	3.58	70.24	1.92	
18-Apr	00:11	32415		72.14	3.56	70.26	1.88	
18-Apr	10:43	33047		72.18	3.60	70.29	1.89	
18-Apr	19:32	33576		72.18	3.60	70.32	1.86	
18-Apr	23:47	33831		72.20	3.62	70.33	1.87	
19-Apr	10:45	34489		72.28	3.70	70.37	1.91	
19-Apr	15:40	34784		72.24	3.66	70.38	1.86	
19-Apr	23:38	35262		72.24	3.66	70.41	1.83	
20-Apr	10:20	35904		72.30	3.72	70.44	1.86	
20-Apr	20:18	36502		72.26	3.68	70.47	1.79	
20-Apr	23:59	36723		72.29	3.71	70.48	1.81	
21-Apr	10:58	37382		72.39	3.81	70.51	1.87	
21-Apr	16:49	37733		72.29	3.71	70.53	1.76	
21-Apr	21:54	38038		72.32	3.74	70.55	1.77	
22-Apr	10:17	38781		72.36	3.78	70.58	1.78	
22-Apr	15:26	39090		72.34	3.76	70.60	1.74	
22-Apr	20:59	39423		72.39	3.81	70.61	1.78	
23-Apr	09:28	40172		72.36	3.78	70.65	1.71	
23-Apr	17:42	40666		72.36	3.78	70.68	1.68	
23-Apr	22:39	40963		72.38	3.80	70.69	1.69	
24-Apr	09:40	41624		72.40	3.82	70.73	1.67	
24-Apr	16:40	42044		72.42	3.84	70.75	1.67	
24-Apr	22:50	42414		72.40	3.82	70.77	1.63	
25-Apr	09:32	43056		72.43	3.85	70.80	1.63	
25-Apr	11:02	43146		72.42	3.84	70.80	1.62	
25-Apr	11:05	43149	21574.5	72.40	3.82	70.80	1.60	
25-Apr	11:08	43152	8630.4	72.38	3.80	70.80	1.58	
25-Apr	11:10	43154	6164.9	72.34	3.76	70.80	1.54	
25-Apr	11:12	43156	4795.1	72.28	3.70	70.80	1.48	
25-Apr	11:14	43158	3923.5	72.24	3.66	70.80	1.44	
25-Apr	11:16	43160	3320.0	72.20	3.62	70.80	1.40	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *HOLGATE* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *BK PROBE* STATIC WATER LEVEL (FT BMP): *68.58*
DIST. FROM PUMPED WELL: *900 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
25-Apr	11:18	43162	2877.5	72.14	3.56	70.80	1.34	
25-Apr	11:20	43164	2539.1	72.08	3.50	70.80	1.28	
25-Apr	11:22	43166	2271.9	72.04	3.46	70.80	1.24	
25-Apr	11:24	43168	2055.6	71.98	3.40	70.80	1.18	
25-Apr	11:26	43170	1877.0	71.95	3.37	70.80	1.15	
25-Apr	11:28	43172	1726.9	71.92	3.34	70.80	1.12	
25-Apr	11:30	43174	1599.0	71.88	3.30	70.80	1.08	
25-Apr	11:32	43176	1488.8	71.84	3.26	70.80	1.04	
25-Apr	11:34	43178	1392.8	71.80	3.22	70.80	1.00	
25-Apr	11:36	43180	1308.5	71.76	3.18	70.80	0.96	
25-Apr	11:37	43181	1270.0	71.74	3.16	70.80	0.94	
25-Apr	11:40	43184	1167.1	71.72	3.14	70.80	0.92	
25-Apr	11:42	43186	1107.3	71.70	3.12	70.80	0.90	
25-Apr	11:44	43188	1053.4	71.66	3.08	70.80	0.86	
25-Apr	11:48	43192	959.8	71.62	3.04	70.80	0.82	
25-Apr	11:50	43194	919.0	71.60	3.02	70.80	0.80	
25-Apr	11:52	43196	881.6	71.58	3.00	70.80	0.78	
25-Apr	11:54	43198	847.0	71.54	2.96	70.80	0.74	
25-Apr	11:56	43200	815.1	71.53	2.95	70.80	0.73	
25-Apr	11:58	43202	785.5	71.52	2.94	70.80	0.72	
25-Apr	12:00	43204	758.0	71.50	2.92	70.80	0.70	
25-Apr	12:02	43206	732.3	71.49	2.91	70.80	0.69	
25-Apr	12:10	43214	645.0	71.43	2.85	70.81	0.62	
25-Apr	12:15	43219	600.3	71.40	2.82	70.81	0.59	
25-Apr	12:20	43224	561.4	71.38	2.80	70.81	0.57	
25-Apr	12:25	43229	527.2	71.35	2.77	70.81	0.54	
25-Apr	12:30	43234	496.9	71.33	2.75	70.81	0.52	
25-Apr	12:35	43239	470.0	71.31	2.73	70.81	0.50	
25-Apr	12:40	43244	445.8	71.30	2.72	70.81	0.49	
25-Apr	12:50	43254	404.2	71.26	2.68	70.81	0.45	
25-Apr	13:00	43264	369.8	71.23	2.65	70.81	0.42	
25-Apr	13:10	43274	340.7	71.20	2.62	70.81	0.39	
25-Apr	13:20	43284	315.9	71.18	2.60	70.81	0.37	
25-Apr	13:50	43314	259.4	71.12	2.54	70.81	0.31	
25-Apr	14:20	43344	220.0	71.08	2.50	70.81	0.27	
25-Apr	14:58	43382	184.6	71.05	2.47	70.81	0.24	
25-Apr	15:45	43429	154.0	71.02	2.44	70.82	0.20	
25-Apr	16:15	43459	139.3	71.00	2.42	70.82	0.18	
25-Apr	17:05	43509	120.2	70.95	2.37	70.82	0.13	
25-Apr	18:37	43601	96.0	70.92	2.34	70.82	0.10	
25-Apr	19:50	43674	82.9	70.88	2.30	70.83	0.05	
25-Apr	21:25	43769	70.4	70.85	2.27	70.83	0.02	
26-Apr	00:01	43925	56.5	70.80	2.22	70.84	-0.04	
26-Apr	08:25	44429	34.7	70.68	2.10	70.87	-0.19	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HOLGATE — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL's MEASURED: BK PROBE — STATIC WATER LEVEL (FT BMP): 68.58

DIST. FROM PUMPED WELL: 900 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	WATER LEVEL DATA: DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
26-Apr	13:50	44754	27.8	70.63	2.05	70.88	-0.25	
26-Apr	17:39	44983	24.5	70.56	1.98	70.89	-0.33	
26-Apr	21:58	45242	21.6	70.54	1.96	70.91	-0.37	
27-Apr	01:04	45428	19.9	70.50	1.92	70.92	-0.42	
27-Apr	07:51	45835	17.1	70.44	1.86	70.94	-0.50	
27-Apr	12:00	46084	15.7	70.41	1.83	70.95	-0.54	
27-Apr	19:12	46516	13.8	70.35	1.77	70.97	-0.62	
27-Apr	23:28	46772	12.9	70.32	1.74	70.98	-0.66	
28-Apr	09:28	47372	11.2	70.24	1.66	71.01	-0.77	
28-Apr	14:45	47689	10.5	70.19	1.61	71.03	-0.84	
28-Apr	21:29	48093	9.7	70.13	1.55	71.05	-0.92	
29-Apr	10:49	48893	8.5	70.07	1.49	71.09	-1.02	
29-Apr	20:47	49491	7.8	70.02	1.44	71.12	-1.10	
30-Apr	08:42	50206	7.1	69.96	1.38	71.16	-1.20	
30-Apr	20:52	50936	6.5	69.89	1.31	71.19	-1.30	
01-May	09:02	51666	6.1	69.82	1.24	71.23	-1.41	
01-May	21:22	52406	5.7	69.78	1.20	71.27	-1.49	
02-May	09:14	53118	5.3	69.70	1.12	71.30	-1.60	
02-May	17:59	53643	5.1	69.67	1.09	71.33	-1.66	
03-May	10:25	54629	4.8	69.61	1.03	71.38	-1.77	
03-May	20:45	55249	4.6	69.58	1.00	71.41	-1.83	
04-May	09:48	56032	4.3	69.54	0.96	71.45	-1.91	
04-May	21:21	56725	4.2	69.50	0.92	71.48	-1.98	
05-May	09:17	57441	4.0	69.47	0.89	71.52	-2.05	
05-May	20:14	58098	3.9	69.44	0.86	71.55	-2.11	

CARSON WELL

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HARLEY CARSON — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW — RADIUS: 14"(28" HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL's MEASURED: BK PROBE — STATIC WATER LEVEL (FT BMP): 62.48

DIST. FROM PUMPED WELL: 1,300 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READING REFERENCE	READING MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
12-Mar	15:02	-19914				61.67	-0.81	61.76	-0.09	
14-Mar	14:00	-17096				61.87	-0.61	61.86	0.01	
14-Mar	17:30	-16886				61.92	-0.56	61.87	0.05	
15-Mar	12:15	-15761				61.94	-0.54	61.91	0.03	
18-Mar	12:54	-11402				62.10	-0.38	62.07	0.03	
22-Mar	15:08	-5508				62.30	-0.18	62.30	0.00	
23-Mar	15:45	-4031				62.34	-0.14	62.35	-0.01	
25-Mar	17:00	-1076				62.46	-0.02	62.46	-0.00	
26-Mar	10:35	-21				62.48	0.00	62.50	-0.02	
26-Mar	11:58	62				62.46	-0.02	62.50	-0.04	
26-Mar	12:18	82				62.48	0.00	62.50	-0.02	
26-Mar	12:37	101				62.50	0.02	62.50	-0.00	
26-Mar	13:13	137				62.50	0.02	62.51	-0.01	
26-Mar	13:31	155				62.50	0.02	62.51	-0.01	
26-Mar	13:44	168				62.50	0.02	62.51	-0.01	
26-Mar	14:38	222				62.52	0.04	62.51	0.01	
26-Mar	15:15	259				62.52	0.04	62.51	0.01	
26-Mar	15:43	287				62.52	0.04	62.51	0.01	
26-Mar	16:10	314				62.54	0.06	62.51	0.03	
26-Mar	16:37	341				62.54	0.06	62.51	0.03	
26-Mar	17:20	384				62.56	0.08	62.52	0.04	
26-Mar	18:00	424				62.57	0.09	62.52	0.05	
26-Mar	20:10	554				62.53	0.05	62.52	0.01	
26-Mar	21:10	614				62.60	0.12	62.52	0.08	
26-Mar	22:15	679				62.61	0.13	62.53	0.08	
27-Mar	09:46	1370				62.70	0.22	62.55	0.15	
27-Mar	12:44	1548				62.72	0.24	62.56	0.16	
27-Mar	18:36	1900				62.76	0.28	62.57	0.19	
27-Mar	23:49	2213				62.78	0.30	62.58	0.20	
28-Mar	09:02	2766				62.88	0.40	62.60	0.28	
28-Mar	13:31	3035				62.90	0.42	62.61	0.29	
28-Mar	18:42	3346				62.94	0.46	62.63	0.31	
28-Mar	23:25	3629				63.00	0.52	62.64	0.36	
29-Mar	10:10	4274				63.04	0.56	62.66	0.38	
29-Mar	14:15	4519				63.08	0.60	62.67	0.41	
29-Mar	18:52	4796				63.10	0.62	62.68	0.42	
30-Mar	00:00	5104				63.12	0.64	62.69	0.43	
30-Mar	09:13	5657				63.20	0.72	62.71	0.49	
30-Mar	13:43	5927				63.22	0.74	62.72	0.50	
30-Mar	19:03	6247				63.26	0.78	62.73	0.53	
30-Mar	23:12	6496				63.28	0.80	62.74	0.54	
31-Mar	08:51	7075				63.34	0.86	62.77	0.57	
31-Mar	14:39	7423				63.36	0.88	62.78	0.58	
31-Mar	23:52	7976				63.42	0.94	62.80	0.62	
01-Apr	09:59	8583				63.48	1.00	62.82	0.66	
01-Apr	16:25	8969				63.50	1.02	62.84	0.66	
01-Apr	22:43	9347				63.52	1.04	62.85	0.67	

Regression Output:

Constant		62.50
Std Err of Y Est		0.04
R Squared		0.98
No. of Observations		9.00
Degrees of Freedom		7.00
X Coefficient(s)	0.000037	
Std Err of Coef.	0.000002	

-19914	19914	61.67
-17096	17096	61.87
-16886	16886	61.92
-15761	15761	61.94
-11402	11402	62.10
-5508	5508	62.30
-4031	4031	62.34
-1076	1076	62.46
-21	21	62.48

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HARLEY CARSON — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW — RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL's MEASURED: BK PROBE — STATIC WATER LEVEL (FT BMP): 62.48

DIST. FROM PUMPED WELL: 1,300 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READING REFERENCE	READING MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
02-Apr	08:09	9913				63.58	1.10	62.87	0.71	
02-Apr	15:04	10328				63.62	1.14	62.89	0.73	
02-Apr	22:40	10784				63.66	1.18	62.90	0.76	
03-Apr	08:54	11398				63.70	1.22	62.93	0.77	
03-Apr	15:18	11782				63.74	1.26	62.94	0.80	
03-Apr	20:44	12108				63.76	1.28	62.95	0.81	
04-Apr	08:41	12825				63.80	1.32	62.98	0.82	
04-Apr	15:25	13229				63.82	1.34	63.00	0.82	
04-Apr	23:06	13690				63.85	1.37	63.01	0.84	
05-Apr	09:54	14338				63.90	1.42	63.04	0.86	
05-Apr	16:30	14734				63.92	1.44	63.05	0.87	
05-Apr	23:09	15133				63.96	1.48	63.07	0.89	
06-Apr	10:01	15785				63.99	1.51	63.09	0.90	
06-Apr	17:02	16206				64.20	1.72	63.11	1.09	
06-Apr	22:40	16544				64.40	1.92	63.12	1.28	Daylight savings time starts at 2 am.
07-Apr	10:23	17187				64.08	1.60	63.14	0.94	Elapsed minutes adjusted -60 min.
07-Apr	17:23	17607				64.10	1.62	63.16	0.94	
08-Apr	00:13	18017				64.12	1.64	63.17	0.95	
08-Apr	09:58	18602				64.14	1.66	63.20	0.94	
08-Apr	15:54	18958				64.16	1.68	63.21	0.95	
08-Apr	20:46	19250				64.18	1.70	63.22	0.96	
09-Apr	09:49	20033				64.22	1.74	63.25	0.97	
09-Apr	16:59	20463				64.24	1.76	63.27	0.97	
09-Apr	23:18	20842				64.26	1.78	63.28	0.98	
10-Apr	09:53	21477				64.28	1.80	63.30	0.98	
10-Apr	16:49	21893				64.30	1.82	63.32	0.98	
10-Apr	22:25	22229				64.31	1.83	63.33	0.98	
11-Apr	10:04	22928				64.34	1.86	63.36	0.98	
11-Apr	17:05	23349				64.35	1.87	63.37	0.98	
12-Apr	00:09	23773				64.36	1.88	63.39	0.97	
12-Apr	10:16	24380				64.38	1.90	63.41	0.97	
12-Apr	15:18	24682				64.40	1.92	63.42	0.98	
12-Apr	21:15	25039				64.44	1.96	63.44	1.00	
13-Apr	09:20	25764				64.45	1.97	63.46	0.99	
13-Apr	14:35	26079				64.46	1.98	63.48	0.98	
13-Apr	21:41	26505				64.48	2.00	63.49	0.99	
14-Apr	08:53	27177				64.50	2.02	63.52	0.98	
14-Apr	17:26	27690				64.50	2.02	63.54	0.96	
14-Apr	22:33	27997				64.53	2.05	63.55	0.98	
15-Apr	10:19	28703				64.56	2.08	63.57	0.99	
15-Apr	16:50	29094				64.56	2.08	63.59	0.97	
15-Apr	21:33	29377				64.58	2.10	63.60	0.98	
16-Apr	10:16	30140				64.62	2.14	63.63	0.99	
16-Apr	18:32	30636				64.62	2.14	63.65	0.97	
17-Apr	01:35	31059				64.64	2.16	63.66	0.98	
17-Apr	12:29	31713				64.66	2.18	63.69	0.97	
17-Apr	19:08	32112				64.66	2.18	63.70	0.96	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HARLEY CARSON — PUMPING / OBSERVATION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00
HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
HOW WL's MEASURED: BK PROBE — STATIC WATER LEVEL (FT BMP): 62.48
DIST. FROM PUMPED WELL: 1,300 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	READING MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
18-Apr	00:17	32421				64.68	2.20	63.71	0.97	
18-Apr	10:48	33052				64.70	2.22	63.74	0.96	
18-Apr	19:38	33582				64.72	2.24	63.76	0.96	
18-Apr	23:54	33838				64.73	2.25	63.77	0.96	
19-Apr	10:52	34496				64.74	2.26	63.79	0.95	
19-Apr	15:46	34790				64.74	2.26	63.80	0.94	
19-Apr	23:45	35269				64.76	2.28	63.82	0.94	
20-Apr	10:35	35919				64.79	2.31	63.84	0.95	
20-Apr	20:36	36520				64.80	2.32	63.87	0.93	
21-Apr	00:02	36726				64.80	2.32	63.87	0.93	
21-Apr	11:13	37397				64.80	2.32	63.90	0.90	
21-Apr	17:07	37751				64.82	2.34	63.91	0.91	
21-Apr	21:59	38043				64.83	2.35	63.92	0.91	
22-Apr	10:34	38798				64.84	2.36	63.95	0.89	
22-Apr	15:30	39094				64.84	2.36	63.96	0.88	
22-Apr	21:05	39429				64.87	2.39	63.98	0.89	
23-Apr	09:33	40177				64.88	2.40	64.00	0.88	
23-Apr	17:50	40674				64.86	2.38	64.02	0.84	
23-Apr	22:44	40968				64.87	2.39	64.03	0.84	
24-Apr	09:50	41634				64.91	2.43	64.06	0.85	
24-Apr	16:47	42051				64.91	2.43	64.07	0.84	
24-Apr	22:54	42418				64.91	2.43	64.09	0.82	
25-Apr	09:45	43069				64.95	2.47	64.11	0.84	
25-Apr	10:49	43133				64.95	2.47	64.11	0.84	
25-Apr	10:54	43138		64.85	0.10	64.95	2.47	64.11	0.84	
25-Apr	11:02	43146		64.85	0.10	64.95	2.47	64.11	0.84	
25-Apr	11:05	43149	21574.5	64.85	0.10	64.95	2.47	64.11	0.84	
25-Apr	11:10	43154	6164.9	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	11:15	43159	3596.6	64.84	0.10	64.94	2.46	64.12	0.83	
25-Apr	11:20	43164	2539.1	64.84	0.10	64.94	2.46	64.12	0.83	
25-Apr	11:25	43169	1962.2	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	11:30	43174	1599.0	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	11:35	43179	1349.3	64.79	0.10	64.89	2.41	64.12	0.78	
25-Apr	11:40	43184	1167.1	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	11:45	43189	1028.3	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	11:50	43194	919.0	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	11:55	43199	830.7	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	12:00	43204	758.0	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	12:05	43209	696.9	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	12:10	43214	645.0	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	12:15	43219	600.3	64.83	0.10	64.93	2.45	64.12	0.82	
25-Apr	12:20	43224	561.4	64.81	0.10	64.91	2.43	64.12	0.79	
25-Apr	12:25	43229	527.2	64.81	0.10	64.91	2.43	64.12	0.79	
25-Apr	12:30	43234	496.9	64.81	0.10	64.91	2.43	64.12	0.79	
25-Apr	12:35	43239	470.0	64.81	0.10	64.91	2.43	64.12	0.79	
25-Apr	12:40	43244	445.8	64.81	0.10	64.91	2.43	64.12	0.79	
25-Apr	12:45	43249	424.0	64.79	0.10	64.89	2.41	64.12	0.77	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HARLEY CARSON — PUMPING / OBSERVATION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW — RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:
PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00
HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
HOW WL's MEASURED: BK PROBE — STATIC WATER LEVEL (FT BMP): 62.48
DIST. FROM PUMPED WELL: 1,300 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READING REFERENCE	READING MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
25-Apr	12:50	43254	404.2	64.79	0.10	64.89	2.41	64.12	0.77	
25-Apr	12:55	43259	386.2	64.79	0.10	64.89	2.41	64.12	0.77	
25-Apr	13:00	43264	369.8	64.79	0.10	64.89	2.41	64.12	0.77	
25-Apr	13:05	43269	354.7	64.79	0.10	64.89	2.41	64.12	0.77	
25-Apr	13:10	43274	340.7	64.81	0.10	64.91	2.43	64.12	0.79	
25-Apr	13:18	43282	320.6	64.81	0.10	64.91	2.43	64.12	0.79	
25-Apr	13:20	43284	315.9	64.77	0.10	64.87	2.39	64.12	0.75	
25-Apr	13:56	43320	250.4			64.86	2.38	64.12	0.74	
25-Apr	14:26	43350	213.5			64.85	2.37	64.12	0.73	
25-Apr	15:03	43387	180.8			64.85	2.37	64.12	0.73	
25-Apr	15:52	43436	150.3			64.84	2.36	64.13	0.71	
25-Apr	16:22	43466	136.3			64.83	2.35	64.13	0.70	
25-Apr	17:20	43524	115.4			64.82	2.34	64.13	0.69	
25-Apr	18:40	43604	95.4			64.82	2.34	64.13	0.69	
25-Apr	19:53	43677	82.4			64.80	2.32	64.13	0.67	
25-Apr	21:50	43794	67.7			64.78	2.30	64.14	0.64	
26-Apr	00:07	43931	56.0			64.74	2.26	64.14	0.60	
26-Apr	08:31	44435	34.5			64.71	2.23	64.16	0.55	
26-Apr	13:56	44760	27.7			64.64	2.16	64.18	0.46	
26-Apr	17:46	44990	24.4	64.89	-0.13	64.76	2.28	64.18	0.58	MP increased by 0.13 ft
26-Apr	22:06	45250	21.5	64.74	-0.13	64.61	2.13	64.19	0.42	
27-Apr	01:16	45440	19.8	64.74	-0.13	64.61	2.13	64.20	0.41	
27-Apr	07:57	45841	17.0	64.70	-0.13	64.57	2.09	64.22	0.35	
27-Apr	12:11	46095	15.6	64.67	-0.13	64.54	2.06	64.23	0.31	
27-Apr	19:21	46525	13.8	64.64	-0.13	64.51	2.03	64.24	0.27	
27-Apr	23:36	46780	12.9	64.62	-0.13	64.49	2.01	64.25	0.24	
28-Apr	09:49	47393	11.2	64.62	-0.13	64.49	2.01	64.27	0.22	
28-Apr	14:55	47699	10.5	64.54	-0.13	64.41	1.93	64.29	0.12	
28-Apr	21:38	48102	9.7	64.50	-0.13	64.37	1.89	64.30	0.07	
29-Apr	10:55	48899	8.5	64.42	-0.13	64.29	1.81	64.33	-0.04	
29-Apr	20:58	49502	7.8	64.39	-0.13	64.26	1.78	64.35	-0.09	
30-Apr	08:51	50215	7.1	64.34	-0.13	64.21	1.73	64.38	-0.17	
30-Apr	20:58	50942	6.5	64.28	-0.13	64.15	1.67	64.41	-0.26	
01-May	09:09	51673	6.1	64.22	-0.13	64.09	1.61	64.43	-0.34	
01-May	21:28	52412	5.7	64.18	-0.13	64.05	1.57	64.46	-0.41	
02-May	09:23	53127	5.3	64.14	-0.13	64.01	1.53	64.49	-0.48	
02-May	18:06	53650	5.1	64.09	-0.13	63.96	1.48	64.51	-0.55	
03-May	10:11	54615	4.8	64.04	-0.13	63.91	1.43	64.54	-0.63	
03-May	20:56	55260	4.6	64.01	-0.13	63.88	1.40	64.57	-0.69	
04-May	09:54	56038	4.3	63.96	-0.13	63.83	1.35	64.60	-0.77	
04-May	21:29	56733	4.2	63.91	-0.13	63.78	1.30	64.62	-0.84	
05-May	09:23	57447	4.0	63.88	-0.13	63.75	1.27	64.65	-0.90	
05-May	20:21	58105	3.9	63.83	-0.13	63.70	1.22	64.67	-0.97	
06-May	09:16	58880	3.7	63.78	-0.13	63.65	1.17	64.70	-1.05	

EAGLE HILLS GOLF COURSE WELL

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *EAGLE HILLS GOLF COURSE* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL'S MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *55.59*
DIST. FROM PUMPED WELL: *2,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READINGS: REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
12-Mar	15:50	-19866.0				55.17	-0.42	55.32	-0.15	PRETEST WATER LEVEL TREND
14-Mar	14:15	-17081.0				57.95	2.36	55.36	2.59	other well pumping
18-Mar	13:30	-11366.0				58.39	2.80	55.44	2.95	other well pumping
20-Mar	16:00	-8336.0				58.98	3.39	55.48	3.50	other well pumping
20-Mar	16:45	-8291.0				55.85	0.26	55.48	0.37	
20-Mar	17:00	-8276.0				55.73	0.14	55.48	0.25	
20-Mar	17:30	-8246.0				55.63	0.04	55.48	0.15	
20-Mar	18:00	-8216.0				55.59	0.00	55.48	0.11	
20-Mar	18:30	-8186.0				55.57	-0.02	55.48	0.09	
20-Mar	19:00	-8156.0				55.56	-0.03	55.48	0.08	
20-Mar	20:00	-8096.0				55.55	-0.04	55.48	0.07	
20-Mar	21:00	-8036.0				55.53	-0.06	55.48	0.05	
20-Mar	22:00	-7976.0				55.53	-0.06	55.48	0.05	
21-Mar	00:00	-7856.0				55.51	-0.08	55.49	0.02	
21-Mar	03:00	-7676.0				55.50	-0.09	55.49	0.01	
21-Mar	09:00	-7316.0				55.50	-0.09	55.49	0.01	
21-Mar	15:00	-6956.0				55.49	-0.10	55.50	-0.01	
21-Mar	21:00	-6596.0				55.50	-0.09	55.50	-0.00	
22-Mar	03:00	-6236.0				55.50	-0.09	55.51	-0.01	
22-Mar	09:00	-5876.0				55.51	-0.08	55.51	-0.00	
22-Mar	15:00	-5516.0				55.51	-0.08	55.52	-0.01	
22-Mar	21:00	-5156.0				55.51	-0.08	55.52	-0.01	
23-Mar	03:00	-4796.0				55.51	-0.08	55.53	-0.02	
23-Mar	09:00	-4436.0				55.52	-0.07	55.53	-0.01	
23-Mar	15:00	-4076.0				55.52	-0.07	55.54	-0.02	
23-Mar	21:00	-3716.0				55.52	-0.07	55.54	-0.02	
24-Mar	03:00	-3356.0				55.52	-0.07	55.55	-0.03	
24-Mar	09:00	-2996.0				55.54	-0.05	55.55	-0.01	
24-Mar	15:00	-2636.0				55.54	-0.05	55.56	-0.02	
24-Mar	21:00	-2276.0				55.54	-0.05	55.56	-0.02	
25-Mar	03:00	-1916.0				55.53	-0.06	55.57	-0.04	
25-Mar	09:00	-1556.0				55.54	-0.05	55.57	-0.03	
25-Mar	15:00	-1196.0				55.55	-0.04	55.58	-0.03	
25-Mar	21:00	-836.0				55.58	-0.01	55.58	-0.00	
26-Mar	03:00	-476.0				55.58	-0.01	55.59	-0.01	
26-Mar	09:00	-116.0				55.59	0.00	55.59	-0.00	
26-Mar	10:55	-1.0				55.59	0.00	55.60	-0.01	
26-Mar	10:57	1.0				55.59	0.00	55.60	-0.01	
26-Mar	10:59	3.0				55.59	0.00	55.60	-0.01	
26-Mar	11:00	4.0				55.59	0.00	55.60	-0.01	
26-Mar	11:05	9.0				55.59	0.00	55.60	-0.01	
26-Mar	11:10	14.0				55.59	0.00	55.60	-0.01	
26-Mar	11:15	19.0				55.60	0.00	55.60	-0.00	
26-Mar	11:20	24.0				55.60	0.01	55.60	0.00	

Regression Output:

Constant	55.60
Std Err of Y Est	0.05
R Squared	0.58
No. of Observations	31.00
Degrees of Freedom	29.00
X Coefficient(s)	0.000014
Std Err of Coef.	0.000002

X	Y
-19866.0	55.17
-8216.0	55.59
-8186.0	55.57
-8156.0	55.56
-8096.0	55.55
-8036.0	55.53
-7976.0	55.53
-7856.0	55.51
-7676.0	55.50
-7316.0	55.50
-6956.0	55.49
-6596.0	55.50
-6236.0	55.50
-5876.0	55.51
-5516.0	55.51
-5156.0	55.51
-4796.0	55.51
-4436.0	55.52
-4076.0	55.52
-3716.0	55.52
-3356.0	55.52
-2996.0	55.54
-2636.0	55.54
-2276.0	55.54
-1916.0	55.53
-1556.0	55.54
-1196.0	55.55
-836.0	55.58
-476.0	55.58
-116.0	55.59
-1.0	55.59

CH2M HILL *PUMPING TEST REPORT*

PROJECT NO: BOI 31684.A1

WELL NO: *EAGLE HILLS GOLF COURSE* PUMPING / OBSERVATION WELL

TYPE OF DATA: *DRAWDOWN*

PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:

PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*

HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*

HOW WL'S MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *55.59*

DIST. FROM PUMPED WELL: *2,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READINGS REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
26-Mar	11:25	29.0				55.60	0.01	55.60	0.00	
26-Mar	11:30	34.0				55.60	0.01	55.60	0.00	
26-Mar	12:00	64.0				55.60	0.01	55.60	0.00	
26-Mar	12:30	94.0				55.60	0.01	55.60	0.00	
26-Mar	13:00	124.0				55.61	0.02	55.60	0.01	
26-Mar	13:30	154.0				55.62	0.03	55.60	0.02	
26-Mar	14:00	184.0				55.62	0.03	55.60	0.02	
26-Mar	15:00	244.0				55.65	0.06	55.60	0.05	
26-Mar	16:00	304.0				55.66	0.07	55.60	0.06	
26-Mar	17:00	364.0				55.68	0.09	55.60	0.08	
26-Mar	18:00	424.0				55.70	0.11	55.60	0.10	
26-Mar	19:00	484.0				55.71	0.12	55.60	0.11	
26-Mar	20:00	544.0				55.73	0.14	55.60	0.13	
26-Mar	21:00	604.0				55.74	0.15	55.60	0.14	
26-Mar	22:00	664.0				55.74	0.15	55.61	0.13	
26-Mar	23:00	724.0				55.76	0.17	55.61	0.15	
27-Mar	00:00	784.0				55.76	0.17	55.61	0.15	
27-Mar	01:00	844.0				55.77	0.18	55.61	0.16	
27-Mar	02:00	904.0				55.78	0.19	55.61	0.17	
27-Mar	03:00	964.0				55.78	0.19	55.61	0.17	
27-Mar	04:00	1024.0				55.79	0.20	55.61	0.18	
27-Mar	05:00	1084.0				55.80	0.21	55.61	0.19	
27-Mar	06:00	1144.0				55.81	0.22	55.61	0.20	
27-Mar	07:00	1204.0				55.81	0.22	55.61	0.20	
27-Mar	08:00	1264.0				55.83	0.24	55.61	0.22	
27-Mar	09:00	1324.0				55.83	0.24	55.62	0.21	
27-Mar	10:00	1384.0				55.83	0.24	55.62	0.21	
27-Mar	11:00	1444.0				55.83	0.24	55.62	0.21	
27-Mar	12:00	1504.0				55.83	0.24	55.62	0.21	
27-Mar	14:00	1624.0				55.84	0.25	55.62	0.22	
27-Mar	16:00	1744.0				55.84	0.25	55.62	0.22	
27-Mar	18:00	1864.0				55.85	0.26	55.62	0.23	
27-Mar	20:00	1984.0				55.86	0.27	55.62	0.24	
27-Mar	22:00	2104.0				55.87	0.28	55.63	0.24	
28-Mar	00:00	2224.0				55.87	0.28	55.63	0.24	
28-Mar	02:00	2344.0				55.87	0.28	55.63	0.24	
28-Mar	04:00	2464.0				55.88	0.29	55.63	0.25	
28-Mar	06:00	2584.0				55.88	0.29	55.63	0.25	
28-Mar	08:00	2704.0				55.90	0.31	55.63	0.27	
28-Mar	10:00	2824.0				55.91	0.32	55.64	0.27	
28-Mar	11:00	2884.0				55.91	0.32	55.64	0.27	
28-Mar	12:00	2944.0				55.91	0.32	55.64	0.27	
28-Mar	15:00	3124.0				55.91	0.32	55.64	0.27	
28-Mar	18:00	3304.0				55.91	0.32	55.64	0.27	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *EAGLE HILLS GOLF COURSE* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28" HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL'S MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *55.59*
DIST. FROM PUMPED WELL: *2,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READINGS: REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
28-Mar	21:00	3484.0				55.94	0.35	55.65	0.29	
29-Mar	00:00	3664.0				55.95	0.36	55.65	0.30	
29-Mar	03:00	3844.0				55.96	0.37	55.65	0.31	
29-Mar	09:00	4204.0				55.96	0.37	55.66	0.30	
29-Mar	15:00	4564.0				55.99	0.40	55.66	0.33	
29-Mar	21:00	4924.0				55.99	0.40	55.67	0.32	
30-Mar	03:00	5284.0				56.00	0.41	55.67	0.33	
30-Mar	09:00	5644.0				56.02	0.43	55.68	0.34	
30-Mar	15:00	6004.0				56.03	0.44	55.68	0.35	
30-Mar	17:00	6124.0				56.05	0.46	55.68	0.37	
30-Mar	17:23	6147.0				56.09	0.50	55.68	0.41	
30-Mar	18:00	6184.0				56.07	0.48	55.68	0.39	
30-Mar	21:00	6364.0				56.07	0.48	55.69	0.38	
31-Mar	03:00	6724.0				56.08	0.49	55.69	0.39	
31-Mar	09:00	7084.0				56.09	0.50	55.70	0.39	
31-Mar	16:00	7504.0				56.10	0.51	55.70	0.40	
31-Mar	21:00	7804.0				56.11	0.52	55.71	0.40	
01-Apr	03:00	8164.0				56.13	0.54	55.71	0.42	
01-Apr	09:00	8524.0				56.14	0.55	55.72	0.42	
01-Apr	10:00	8584.0				56.18	0.59	55.72	0.46	
01-Apr	14:30	8854.0				56.19	0.60	55.72	0.47	
01-Apr	14:45	8869.0				56.23	0.64	55.72	0.51	
01-Apr	15:45	8929.0				56.23	0.64	55.72	0.51	
01-Apr	16:15	8959.0				56.15	0.56	55.72	0.43	
01-Apr	21:00	9244.0				56.19	0.60	55.73	0.46	
02-Apr	03:00	9604.0				56.17	0.58	55.73	0.44	
02-Apr	09:00	9964.0				56.19	0.60	55.74	0.45	
02-Apr	13:20	10224.0				56.21	0.62	55.74	0.47	
02-Apr	13:45	10249.0				56.26	0.67	55.74	0.52	
02-Apr	14:30	10294.0				56.25	0.66	55.74	0.51	
02-Apr	15:00	10324.0				56.28	0.69	55.74	0.54	
02-Apr	15:45	10369.0				56.29	0.70	55.74	0.55	
02-Apr	16:30	10414.0				56.24	0.65	55.74	0.50	
02-Apr	21:00	10684.0				56.23	0.64	55.75	0.48	
03-Apr	03:00	11044.0				56.24	0.65	55.75	0.49	
03-Apr	09:00	11404.0				56.27	0.68	55.76	0.51	
03-Apr	15:00	11764.0				56.26	0.67	55.76	0.50	
03-Apr	21:00	12124.0				56.26	0.67	55.77	0.49	
04-Apr	03:00	12484.0				56.28	0.69	55.77	0.51	
04-Apr	09:00	12844.0				56.33	0.74	55.78	0.55	
04-Apr	15:00	13204.0				56.29	0.70	55.78	0.51	
04-Apr	21:00	13564.0				56.31	0.72	55.79	0.52	
05-Apr	03:00	13924.0				56.31	0.72	55.79	0.52	
05-Apr	09:00	14284.0				56.31	0.72	55.80	0.51	

PROJECT NO: BOI 31684.A1

COURSE — PUMPING / OBSERVATION WELL

14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:

lons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

IS RECORDER — STATIC WATER LEVEL (FT BMP): 55.59

ET — COMMENTS:

LEVEL DATA

S A- RE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
	56.34	0.75	55.80	0.54	
	56.34	0.75	55.81	0.53	
	56.34	0.75	55.81	0.53	
	56.35	0.76	55.82	0.53	
	56.36	0.77	55.82	0.54	
	56.38	0.79	55.83	0.55	Daylight savings time started at 2 am.
	56.38	0.79	55.83	0.55	Elapsed time adjusted -60 min.
	56.39	0.80	55.84	0.55	
	56.39	0.80	55.84	0.55	
	56.41	0.82	55.85	0.56	
	56.41	0.82	55.85	0.56	
	56.45	0.86	55.86	0.59	
	56.43	0.84	55.86	0.57	
	56.45	0.86	55.87	0.58	
	56.43	0.84	55.87	0.56	
	56.45	0.86	55.88	0.57	
	56.44	0.85	55.88	0.56	
	56.46	0.87	55.89	0.57	
	56.46	0.87	55.89	0.57	
	56.49	0.90	55.90	0.59	
	56.47	0.88	55.90	0.57	
	56.48	0.89	55.91	0.57	
	56.48	0.89	55.91	0.57	
	56.50	0.91	55.92	0.58	
	56.49	0.90	55.92	0.57	
	56.50	0.91	55.93	0.57	
	56.50	0.91	55.93	0.57	
	56.53	0.94	55.94	0.59	
	56.51	0.92	55.94	0.57	
	56.52	0.93	55.95	0.57	
	56.52	0.93	55.95	0.57	
	56.53	0.94	55.96	0.57	
	56.53	0.94	55.96	0.57	
	56.56	0.97	55.97	0.59	
	56.54	0.95	55.98	0.56	
	56.55	0.96	55.98	0.57	
	56.54	0.95	55.99	0.55	
	56.55	0.96	55.99	0.56	
	56.59	1.00	56.00	0.59	
	56.57	0.98	56.01	0.56	
	56.57	0.98	56.01	0.56	
	56.55	0.96	56.02	0.53	
	56.56	0.97	56.02	0.54	
	56.56	0.97	56.03	0.53	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *EAGLE HILLS GOLF COURSE* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL'S MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *55.59*
DIST. FROM PUMPED WELL: *2,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READINGS REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
16-Apr	21:00	30784.0				56.56	0.97	56.03	0.53	
17-Apr	03:00	31144.0				56.56	0.97	56.04	0.52	
17-Apr	09:00	31504.0				56.58	0.99	56.04	0.54	
17-Apr	15:00	31864.0				56.57	0.98	56.05	0.52	
17-Apr	21:00	32224.0				56.57	0.98	56.05	0.52	
18-Apr	03:00	32584.0				56.57	0.98	56.06	0.51	
18-Apr	09:00	32944.0				56.58	0.99	56.06	0.52	
18-Apr	16:00	33364.0				56.58	0.99	56.07	0.51	
18-Apr	21:00	33664.0				56.59	1.00	56.07	0.52	
19-Apr	03:00	34024.0				56.58	0.99	56.08	0.50	
19-Apr	09:00	34384.0				56.60	1.01	56.08	0.52	
19-Apr	15:00	34744.0				56.59	1.00	56.09	0.50	
19-Apr	21:00	35104.0				56.61	1.02	56.09	0.52	
20-Apr	03:00	35464.0				56.60	1.01	56.10	0.50	
20-Apr	09:00	35824.0				56.61	1.02	56.10	0.51	
20-Apr	15:00	36184.0				56.60	1.01	56.11	0.49	
20-Apr	21:00	36544.0				56.60	1.01	56.11	0.49	
21-Apr	03:00	36904.0				56.60	1.01	56.12	0.48	
21-Apr	09:00	37264.0				56.61	1.02	56.12	0.49	
21-Apr	15:00	37624.0				56.58	0.99	56.13	0.45	
21-Apr	21:00	37984.0				56.65	1.06	56.13	0.52	
22-Apr	03:00	38344.0				56.63	1.04	56.14	0.49	
22-Apr	09:00	38704.0				56.64	1.05	56.14	0.50	
22-Apr	15:00	39064.0				56.62	1.03	56.15	0.47	
22-Apr	21:00	39424.0				56.62	1.03	56.15	0.47	
23-Apr	03:00	39784.0				56.62	1.03	56.16	0.46	
23-Apr	09:00	40144.0				56.60	1.01	56.16	0.44	
23-Apr	15:00	40504.0				56.62	1.03	56.17	0.45	
23-Apr	21:00	40864.0				56.64	1.05	56.17	0.47	
24-Apr	03:00	41224.0				56.62	1.03	56.18	0.44	
24-Apr	09:00	41584.0				56.64	1.05	56.18	0.46	
24-Apr	15:00	41944.0				56.62	1.03	56.19	0.43	
24-Apr	21:00	42304.0				56.62	1.03	56.19	0.43	
25-Apr	03:00	42664.0				56.60	1.01	56.20	0.40	
25-Apr	09:00	43024.0				56.63	1.04	56.20	0.43	
25-Apr	09:45	43069.0				56.63	1.04	56.20	0.43	
25-Apr	11:02	43147.0				56.62	1.03	56.21	0.41	
25-Apr	11:06	43150.0	14383.3			56.62	1.03	56.21	0.41	
25-Apr	11:12	43156.0	4795.1			56.62	1.03	56.21	0.41	
25-Apr	11:18	43162.0	2877.5			56.61	1.02	56.21	0.41	
25-Apr	11:24	43168.0	2055.6			56.61	1.02	56.21	0.41	
25-Apr	11:30	43174.0	1599.0			56.61	1.02	56.21	0.40	
25-Apr	12:00	43204.0	758.0			56.60	1.01	56.21	0.39	
25-Apr	12:30	43234.0	496.9			56.60	1.00	56.21	0.39	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: EAGLE HILLS GOLF COURSE — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW — RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL'S MEASURED: SI PROBE & STEVENS RECORDER — STATIC WATER LEVEL (FT BMP): 55.59

DIST. FROM PUMPED WELL: 2,500 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	WATER LEVEL DATA: READINGS: REFERENCE	READINGS: MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
25-Apr	13:00	43264.0	369.8			56.59	1.00	56.21	0.38	
25-Apr	13:30	43294.0	294.5			56.58	0.99	56.21	0.37	
25-Apr	14:00	43324.0	244.8			56.57	0.98	56.21	0.36	
25-Apr	14:30	43354.0	209.4			56.57	0.97	56.21	0.36	
25-Apr	15:00	43384.0	183.1			56.56	0.97	56.21	0.35	
25-Apr	16:00	43444.0	146.3			56.56	0.96	56.21	0.35	
25-Apr	17:00	43504.0	121.9			56.53	0.93	56.21	0.31	
25-Apr	18:00	43564.0	104.5			56.51	0.92	56.21	0.30	
25-Apr	19:00	43624.0	91.5			56.51	0.91	56.21	0.29	
25-Apr	19:30	43654.0	86.1			56.50	0.91	56.21	0.29	
25-Apr	22:00	43804.0	66.7			56.48	0.89	56.21	0.27	
25-Apr	23:00	43864.0	61.2			56.47	0.88	56.22	0.25	
26-Apr	00:00	43924.0	56.5			56.46	0.87	56.22	0.24	
26-Apr	01:00	43984.0	52.5			56.45	0.86	56.22	0.23	
26-Apr	02:00	44044.0	49.1			56.45	0.85	56.22	0.23	
26-Apr	03:00	44104.0	46.1			56.44	0.85	56.22	0.22	
26-Apr	04:00	44164.0	43.4			56.44	0.84	56.22	0.22	
26-Apr	05:00	44224.0	41.1			56.43	0.84	56.22	0.21	
26-Apr	06:42	44326.0	37.6			56.42	0.83	56.22	0.20	
26-Apr	07:00	44344.0	37.0			56.42	0.83	56.22	0.20	
26-Apr	09:00	44464.0	33.8			56.41	0.82	56.22	0.19	
26-Apr	11:00	44584.0	31.0			56.40	0.81	56.23	0.18	
26-Apr	13:00	44704.0	28.7			56.39	0.80	56.23	0.16	
26-Apr	15:00	44824.0	26.7			56.37	0.78	56.23	0.14	
26-Apr	18:00	45004.0	24.2			56.36	0.77	56.23	0.13	
26-Apr	21:00	45184.0	22.2			56.36	0.76	56.23	0.12	
27-Apr	00:00	45364.0	20.5			56.35	0.76	56.24	0.11	
27-Apr	03:00	45544.0	19.0			56.34	0.75	56.24	0.10	
27-Apr	06:00	45724.0	17.7			56.34	0.75	56.24	0.10	
27-Apr	09:00	45904.0	16.6			56.33	0.74	56.24	0.09	
27-Apr	12:00	46084.0	15.7			56.32	0.72	56.25	0.07	
27-Apr	15:00	46264.0	14.8			56.31	0.71	56.25	0.06	
27-Apr	18:00	46444.0	14.1			56.29	0.70	56.25	0.04	
27-Apr	21:00	46624.0	13.4			56.29	0.70	56.25	0.04	
27-Apr	21:45	46669.0	13.3			56.29	0.70	56.26	0.03	
28-Apr	03:00	46984.0	12.2			56.27	0.68	56.26	0.01	
28-Apr	06:00	47164.0	11.7			56.26	0.67	56.26	-0.00	
28-Apr	09:00	47344.0	11.3			56.27	0.68	56.26	0.01	
28-Apr	12:00	47524.0	10.9			56.25	0.66	56.27	-0.02	
28-Apr	15:00	47704.0	10.5			56.23	0.64	56.27	-0.04	
28-Apr	21:00	48064.0	9.8			56.21	0.62	56.27	-0.06	
29-Apr	03:00	48424.0	9.2			56.20	0.61	56.28	-0.08	
29-Apr	09:00	48784.0	8.7			56.20	0.61	56.29	-0.09	
29-Apr	15:00	49144.0	8.2			56.18	0.59	56.29	-0.11	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: EAGLE HILLS GOLF COURSE — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW — RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL'S MEASURED: SI PROBE & STEVENS RECORDER — STATIC WATER LEVEL (FT BMP): 55.59

DIST. FROM PUMPED WELL: 2,500 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	WATER LEVEL DATA: READINGS: REFERENCE	READINGS: MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
29-Apr	21:00	49504.0	7.8			56.17	0.57	56.30	-0.13	
30-Apr	03:00	49864.0	7.4			56.15	0.56	56.30	-0.15	
30-Apr	09:00	50224.0	7.1			56.15	0.56	56.31	-0.16	
30-Apr	15:00	50584.0	6.8			56.12	0.53	56.31	-0.19	
30-Apr	21:00	50944.0	6.5			56.13	0.54	56.32	-0.19	
01-May	03:00	51304.0	6.3			56.10	0.51	56.32	-0.22	
01-May	09:00	51664.0	6.1			56.07	0.48	56.33	-0.26	
01-May	15:00	52024.0	5.9			56.08	0.49	56.33	-0.25	
01-May	21:00	52384.0	5.7			56.06	0.47	56.34	-0.28	
02-May	03:00	52744.0	5.5			56.03	0.44	56.34	-0.31	
02-May	09:00	53104.0	5.3			56.05	0.46	56.35	-0.30	
02-May	14:00	53404.0	5.2			56.02	0.43	56.35	-0.33	
03-May	10:10	54614.0	4.8			56.02	0.43	56.37	-0.35	
03-May	15:00	54904.0	4.7			55.98	0.39	56.37	-0.39	
03-May	21:00	55264.0	4.6			55.98	0.39	56.38	-0.40	
04-May	03:00	55624.0	4.5			55.96	0.37	56.38	-0.42	
04-May	09:00	55984.0	4.4			55.92	0.33	56.39	-0.47	
04-May	15:00	56344.0	4.3			55.93	0.34	56.39	-0.46	
04-May	21:00	56704.0	4.2			55.92	0.33	56.40	-0.48	
05-May	03:00	57064.0	4.1			55.92	0.33	56.40	-0.48	
05-May	09:00	57424.0	4.0			55.87	0.28	56.41	-0.54	
05-May	15:00	57784.0	3.9			55.87	0.28	56.41	-0.54	
05-May	21:00	58144.0	3.9			55.89	0.30	56.42	-0.53	
06-May	03:00	58504.0	3.8			55.85	0.26	56.42	-0.57	
06-May	09:00	58864.0	3.7			55.82	0.23	56.43	-0.61	
06-May	11:24	59008.0	3.7			55.85	0.26	56.43	-0.58	

HORMACHEA WELL

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HORMACHEA — PUMPING / OBSERVATION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW — RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:
PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00
HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
HOW WL's MEASURED: SI PROBE — STATIC WATER LEVEL (FT BMP): 60.44
DIST. FROM PUMPED WELL: 3,700 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READINGS REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
20-Mar	16:00	-8336				60.29	-0.15	60.30	-0.01	
20-Mar	21:00	-8036				60.27	-0.17	60.30	-0.03	PRETEST WATER LEVEL TRENDS
21-Mar	03:00	-7676				60.27	-0.17	60.31	-0.04	Regression Output:
21-Mar	09:00	-7316				60.29	-0.15	60.31	-0.02	Constant 60.40
21-Mar	15:00	-6956				60.31	-0.13	60.32	-0.01	Std Err of Y Est 0.03
21-Mar	21:00	-6596				60.33	-0.11	60.32	0.01	R Squared 0.60
22-Mar	03:00	-6236				60.34	-0.10	60.33	0.01	No. of Observations 25.00
22-Mar	09:00	-5876				60.37	-0.07	60.33	0.04	Degrees of Freedom 23.00
22-Mar	15:00	-5516				60.38	-0.06	60.34	0.04	
22-Mar	21:00	-5156				60.38	-0.06	60.34	0.04	X Coefficient(s) 0.000013
22-Mar	03:00	-6236				60.35	-0.09	60.33	0.02	Std Err of Coef. 0.000002
23-Mar	09:00	-4436				60.35	-0.09	60.35	0.00	
22-Mar	15:00	-5516				60.35	-0.09	60.34	0.01	X Y
23-Mar	21:00	-3716				60.36	-0.08	60.36	0.00	-8336 60.29
24-Mar	03:00	-3356				60.33	-0.11	60.36	-0.03	-8036 60.27
24-Mar	09:00	-2996				60.38	-0.06	60.37	0.01	-7676 60.27
24-Mar	15:00	-2636				60.39	-0.05	60.37	0.02	-7316 60.29
24-Mar	21:00	-2276				60.39	-0.05	60.38	0.01	-6956 60.31
25-Mar	03:00	-1916				60.34	-0.10	60.38	-0.04	-6596 60.33
25-Mar	09:00	-1556				60.34	-0.10	60.39	-0.05	-6236 60.34
25-Mar	15:00	-1196				60.35	-0.09	60.39	-0.04	-5876 60.37
25-Mar	21:00	-836				60.38	-0.06	60.39	-0.01	-5516 60.38
26-Mar	03:00	-476				60.40	-0.04	60.40	0.00	-5156 60.38
26-Mar	09:00	-116				60.43	-0.01	60.40	0.03	-6236 60.35
26-Mar	10:00	-56				60.43	-0.01	60.40	0.03	-4436 60.35
26-Mar	11:00	4				60.44	0.00	60.40	0.04	-5516 60.35
26-Mar	12:00	64				60.45	0.01	60.41	0.04	-3716 60.36
26-Mar	13:00	124				60.46	0.02	60.41	0.05	-3356 60.33
26-Mar	14:00	184				60.46	0.02	60.41	0.05	-2996 60.38
26-Mar	15:00	244				60.47	0.03	60.41	0.06	-2636 60.39
26-Mar	16:00	304				60.48	0.04	60.41	0.07	-2276 60.39
26-Mar	17:00	364				60.49	0.05	60.41	0.08	-1916 60.34
26-Mar	18:00	424				60.51	0.07	60.41	0.10	-1556 60.34
26-Mar	19:00	484				60.52	0.08	60.41	0.11	-1196 60.35
26-Mar	20:00	544				60.53	0.09	60.41	0.12	-836 60.38
26-Mar	21:00	604				60.55	0.11	60.41	0.14	-476 60.40
26-Mar	22:00	664				60.56	0.12	60.41	0.15	-116 60.43
26-Mar	23:00	724				60.58	0.14	60.41	0.17	-56 60.43
27-Mar	00:00	784				60.59	0.15	60.41	0.18	
27-Mar	02:00	904				60.59	0.15	60.42	0.17	
27-Mar	04:00	1024				60.59	0.15	60.42	0.17	
27-Mar	06:00	1144				60.61	0.17	60.42	0.19	
27-Mar	08:00	1264				60.63	0.19	60.42	0.21	
27-Mar	10:00	1384				60.66	0.22	60.42	0.24	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *HORMACHEA* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *SI PROBE* STATIC WATER LEVEL (FT BMP): *60.44*
DIST. FROM PUMPED WELL: *3,700 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READINGS REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
27-Mar	12:00	1504				60.66	0.22	60.42	0.24	
27-Mar	14:00	1624				60.66	0.22	60.43	0.23	
27-Mar	16:00	1744				60.66	0.22	60.43	0.23	
27-Mar	18:00	1864				60.66	0.22	60.43	0.23	
27-Mar	20:00	1984				60.68	0.24	60.43	0.25	
27-Mar	22:00	2104				60.70	0.26	60.43	0.27	
28-Mar	00:00	2224				60.71	0.27	60.43	0.28	
28-Mar	03:00	2404				60.71	0.27	60.44	0.27	
28-Mar	09:00	2764				60.74	0.30	60.44	0.30	
28-Mar	15:00	3124				60.74	0.30	60.44	0.30	
28-Mar	21:00	3484				60.76	0.32	60.45	0.31	
29-Mar	03:00	3844				60.79	0.35	60.45	0.34	
29-Mar	09:00	4204				60.82	0.38	60.46	0.36	
29-Mar	15:00	4564				60.81	0.37	60.46	0.35	
29-Mar	21:00	4924				60.82	0.38	60.47	0.35	
30-Mar	03:00	5284				60.84	0.40	60.47	0.37	
30-Mar	09:00	5644				60.86	0.42	60.48	0.38	
30-Mar	15:00	6004				60.82	0.38	60.48	0.34	
30-Mar	21:00	6364				60.94	0.50	60.49	0.45	
31-Mar	03:00	6724				60.92	0.48	60.49	0.43	
31-Mar	09:00	7084				60.90	0.46	60.49	0.41	
31-Mar	15:00	7444				60.90	0.46	60.50	0.40	
31-Mar	21:00	7804				60.88	0.44	60.50	0.38	
01-Apr	03:00	8164				60.90	0.46	60.51	0.39	
01-Apr	09:00	8524				60.93	0.49	60.51	0.42	
01-Apr	15:00	8884				60.95	0.51	60.52	0.43	
01-Apr	21:00	9244				60.99	0.55	60.52	0.47	
02-Apr	03:00	9604				60.99	0.55	60.53	0.46	
02-Apr	09:00	9964				61.02	0.58	60.53	0.49	
02-Apr	03:00	9604				61.04	0.60	60.53	0.51	
02-Apr	21:00	10684				61.03	0.59	60.54	0.49	
03-Apr	03:00	11044				61.06	0.62	60.54	0.52	
03-Apr	09:00	11404				61.08	0.64	60.55	0.53	
03-Apr	15:00	11764				61.08	0.64	60.55	0.53	
03-Apr	21:00	12124				61.06	0.62	60.56	0.50	
04-Apr	03:00	12484				61.07	0.63	60.56	0.51	
04-Apr	09:00	12844				61.08	0.64	60.57	0.51	
04-Apr	15:00	13204				61.07	0.63	60.57	0.50	
04-Apr	21:00	13564				61.10	0.66	60.58	0.52	
05-Apr	03:00	13924				61.08	0.64	60.58	0.50	
05-Apr	09:00	14284				61.08	0.64	60.58	0.50	
05-Apr	15:00	14644				61.08	0.64	60.59	0.49	
05-Apr	21:00	15004				61.09	0.65	60.59	0.50	
06-Apr	03:00	15364				61.09	0.65	60.60	0.49	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HORMACHEA — PUMPING / OBSERVATION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00
HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
HOW WL's MEASURED: SI PROBE — STATIC WATER LEVEL (FT BMP): 60.44
DIST. FROM PUMPED WELL: 3,700 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READINGS REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
06-Apr	09:00	15724				61.10	0.66	60.60	0.50	
06-Apr	15:00	16084				61.13	0.69	60.61	0.52	
06-Apr	21:00	16444				61.13	0.69	60.61	0.52	Daylight savings time begins at 2 am.
07-Apr	03:00	16744				61.14	0.70	60.62	0.52	Elapsed time adjusted -60 min.
07-Apr	09:00	17104				61.17	0.73	60.62	0.55	
07-Apr	15:00	17464				61.19	0.75	60.62	0.57	
07-Apr	21:00	17824				61.22	0.78	60.63	0.59	
08-Apr	03:00	18184				61.22	0.78	60.63	0.59	
08-Apr	09:00	18544				61.23	0.79	60.64	0.59	
08-Apr	15:00	18904				61.23	0.79	60.64	0.59	
08-Apr	21:00	19264				61.22	0.78	60.65	0.57	
09-Apr	03:00	19624				61.19	0.75	60.65	0.54	
09-Apr	09:00	19984				61.19	0.75	60.66	0.53	
09-Apr	15:00	20344				61.19	0.75	60.66	0.53	
09-Apr	21:00	20704				61.21	0.77	60.67	0.54	
10-Apr	03:00	21064				61.22	0.78	60.67	0.55	
10-Apr	09:00	21424				61.23	0.79	60.67	0.56	
10-Apr	15:00	21784				61.22	0.78	60.68	0.54	
10-Apr	21:00	22144				61.24	0.80	60.68	0.56	
11-Apr	03:00	22504				61.25	0.81	60.69	0.56	
11-Apr	09:00	22864				61.25	0.81	60.69	0.56	
11-Apr	15:00	23224				61.23	0.79	60.70	0.53	
11-Apr	21:00	23584				61.25	0.81	60.70	0.55	
12-Apr	03:00	23944				61.25	0.81	60.71	0.54	
12-Apr	09:00	24304				61.27	0.83	60.71	0.56	
12-Apr	15:00	24664				61.28	0.84	60.72	0.56	
12-Apr	21:00	25024				61.31	0.87	60.72	0.59	
13-Apr	03:00	25384				61.32	0.88	60.72	0.60	
13-Apr	09:00	25744				61.32	0.88	60.73	0.59	
13-Apr	15:00	26104				61.33	0.89	60.73	0.60	
13-Apr	21:00	26464				61.38	0.94	60.74	0.64	
14-Apr	03:00	26824				61.45	1.01	60.74	0.71	
14-Apr	09:00	27184				61.46	1.02	60.75	0.71	
14-Apr	15:00	27544				61.48	1.04	60.75	0.73	
14-Apr	21:00	27904				61.49	1.05	60.76	0.73	
15-Apr	03:00	28264				61.53	1.09	60.76	0.77	
15-Apr	09:00	28624				61.52	1.08	60.77	0.75	
15-Apr	15:00	28984				61.53	1.09	60.77	0.76	
15-Apr	21:00	29344				61.51	1.07	60.77	0.74	
16-Apr	03:00	29704				61.51	1.07	60.78	0.73	
16-Apr	09:00	30064				61.50	1.06	60.78	0.72	
16-Apr	15:00	30424				61.50	1.06	60.79	0.71	
16-Apr	21:00	30784				61.48	1.04	60.79	0.69	
17-Apr	03:00	31144				61.47	1.03	60.80	0.67	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HORMACHEA — PUMPING / OBSERVATION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00
HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
HOW WL's MEASURED: SI PROBE — STATIC WATER LEVEL (FT BMP): 60.44
DIST. FROM PUMPED WELL: 3,700 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READINGS REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
17-Apr	09:00	31504				61.45	1.01	60.80	0.65	
17-Apr	15:00	31864				61.46	1.02	60.81	0.65	
17-Apr	21:00	32224				61.45	1.01	60.81	0.64	
18-Apr	03:00	32584				61.45	1.01	60.82	0.63	
18-Apr	09:00	32944				61.47	1.03	60.82	0.65	
18-Apr	15:00	33304				61.50	1.06	60.82	0.68	
18-Apr	21:00	33664				61.51	1.07	60.83	0.68	
19-Apr	03:00	34024				61.49	1.05	60.83	0.66	
19-Apr	09:00	34384				61.49	1.05	60.84	0.65	
19-Apr	15:00	34744				61.50	1.06	60.84	0.66	
19-Apr	21:00	35104				61.49	1.05	60.85	0.64	
20-Apr	03:00	35464				61.48	1.04	60.85	0.63	
20-Apr	09:00	35824				61.48	1.04	60.86	0.62	
20-Apr	15:00	36184				61.47	1.03	60.86	0.61	
20-Apr	21:00	36544				61.48	1.04	60.86	0.62	
21-Apr	03:00	36904				61.48	1.04	60.87	0.61	
21-Apr	09:00	37264				61.50	1.06	60.87	0.63	
21-Apr	15:00	37624				61.50	1.06	60.88	0.62	
21-Apr	21:00	37984				61.51	1.07	60.88	0.63	
22-Apr	03:00	38344				61.49	1.05	60.89	0.60	
22-Apr	09:00	38704				61.51	1.07	60.89	0.62	
22-Apr	15:00	39064				61.49	1.05	60.90	0.59	
22-Apr	21:00	39424				61.49	1.05	60.90	0.59	
23-Apr	03:00	39784				61.50	1.06	60.91	0.59	
23-Apr	09:00	40144				61.50	1.06	60.91	0.59	
23-Apr	15:00	40504				61.48	1.04	60.91	0.57	
23-Apr	21:00	40864				61.49	1.05	60.92	0.57	
24-Apr	03:00	41224				61.48	1.04	60.92	0.56	
24-Apr	09:00	41584				61.49	1.05	60.93	0.56	
24-Apr	15:00	41944				61.46	1.02	60.93	0.53	
24-Apr	21:00	42304				61.47	1.03	60.94	0.53	
25-Apr	03:00	42664				61.45	1.01	60.94	0.51	
25-Apr	09:00	43024				61.47	1.03	60.95	0.52	
25-Apr	10:00	43084				61.47	1.03	60.95	0.52	
25-Apr	11:00	43144				61.47	1.03	60.95	0.52	
25-Apr	11:05	43149	21574.5			61.47	1.03	60.95	0.52	
25-Apr	11:10	43154	6164.9			61.47	1.03	60.95	0.52	
25-Apr	11:15	43159	3596.6			61.47	1.03	60.95	0.52	
25-Apr	11:20	43164	2539.1			61.47	1.03	60.95	0.52	
25-Apr	11:25	43169	1962.2			61.47	1.03	60.95	0.52	
25-Apr	11:30	43174	1599.0			61.47	1.03	60.95	0.52	
25-Apr	11:45	43189	1028.3			61.47	1.03	60.95	0.52	
25-Apr	12:00	43204	758.0			61.47	1.03	60.95	0.52	
25-Apr	12:15	43219	600.3			61.46	1.02	60.95	0.51	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: HORMACHEA — PUMPING / OBSERVATION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00
HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
HOW WL's MEASURED: SI PROBE — STATIC WATER LEVEL (FT BMP): 60.44
DIST. FROM PUMPED WELL: 3,700 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READINGS: REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
25-Apr	12:30	43234	496.9			61.46	1.02	60.95	0.51	
25-Apr	12:45	43249	424.0			61.46	1.02	60.95	0.51	
25-Apr	13:00	43264	369.8			61.46	1.02	60.95	0.51	
25-Apr	13:30	43294	294.5			61.46	1.02	60.95	0.51	
25-Apr	14:00	43324	244.8			61.46	1.02	60.95	0.50	
25-Apr	14:30	43354	209.4			61.45	1.01	60.95	0.49	
25-Apr	15:00	43384	183.1			61.44	1.00	60.95	0.49	
25-Apr	15:30	43414	162.6			61.44	1.00	60.95	0.48	
25-Apr	16:00	43444	146.3			61.43	0.99	60.95	0.48	
25-Apr	16:30	43474	132.9			61.43	0.98	60.95	0.47	
25-Apr	17:00	43504	121.9			61.42	0.98	60.95	0.46	
25-Apr	17:30	43534	112.5			61.41	0.97	60.95	0.45	
25-Apr	18:00	43564	104.5			61.40	0.96	60.95	0.45	
25-Apr	18:30	43594	97.5			61.40	0.96	60.95	0.44	
25-Apr	19:00	43624	91.5			61.40	0.96	60.95	0.45	
25-Apr	20:00	43684	81.3			61.40	0.96	60.95	0.45	
25-Apr	21:00	43744	73.3			61.40	0.96	60.96	0.44	
25-Apr	22:00	43804	66.7			61.40	0.96	60.96	0.44	
25-Apr	23:00	43864	61.2			61.40	0.96	60.96	0.44	
26-Apr	00:00	43924	56.5			61.40	0.96	60.96	0.44	
26-Apr	01:00	43984	52.5			61.39	0.95	60.96	0.43	
26-Apr	02:00	44044	49.1			61.39	0.95	60.96	0.43	
26-Apr	03:00	44104	46.1			61.38	0.94	60.96	0.42	
26-Apr	04:00	44164	43.4			61.38	0.94	60.96	0.41	
26-Apr	05:00	44224	41.1			61.38	0.94	60.96	0.41	
26-Apr	06:00	44284	38.9			61.38	0.94	60.96	0.41	
26-Apr	07:00	44344	37.0			61.38	0.94	60.96	0.41	
26-Apr	08:00	44404	35.3			61.38	0.94	60.96	0.41	
26-Apr	09:00	44464	33.8			61.38	0.94	60.96	0.41	
26-Apr	10:00	44524	32.3			61.38	0.94	60.97	0.41	
26-Apr	11:00	44584	31.0			61.38	0.94	60.97	0.41	
26-Apr	13:00	44704	28.7			61.37	0.93	60.97	0.40	
26-Apr	15:00	44824	26.7			61.35	0.91	60.97	0.38	
26-Apr	17:00	44944	25.0			61.33	0.89	60.97	0.36	
26-Apr	18:00	45004	24.2			61.33	0.89	60.97	0.36	
26-Apr	21:00	45184	22.2			61.32	0.88	60.97	0.35	
27-Apr	00:00	45364	20.5			61.32	0.88	60.98	0.34	
27-Apr	03:00	45544	19.0			61.33	0.89	60.98	0.35	
27-Apr	06:00	45724	17.7			61.32	0.88	60.98	0.33	
27-Apr	09:00	45904	16.6			61.33	0.89	60.98	0.35	
27-Apr	12:00	46084	15.7			61.33	0.89	60.99	0.34	
27-Apr	15:00	46264	14.8			61.32	0.88	60.99	0.33	
27-Apr	21:00	46624	13.4			61.30	0.86	60.99	0.31	
28-Apr	03:00	46984	12.2			61.31	0.87	61.00	0.31	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *HORMACHEA* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28" HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *SI PROBE* STATIC WATER LEVEL (FT BMP): *60.44*
DIST. FROM PUMPED WELL: *3,700 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READINGS REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
28-Apr	09:00	47344	11.3			61.31	0.87	61.00	0.30	
28-Apr	15:00	47704	10.5			61.29	0.85	61.01	0.28	
28-Apr	21:00	48064	9.8			61.25	0.81	61.01	0.24	
29-Apr	03:00	48424	9.2			61.25	0.81	61.01	0.24	
29-Apr	09:00	48784	8.7			61.29	0.85	61.02	0.27	
29-Apr	15:00	49144	8.2			61.27	0.83	61.02	0.25	
29-Apr	21:00	49504	7.8			61.24	0.80	61.03	0.21	
30-Apr	03:00	49864	7.4			61.25	0.81	61.03	0.22	
30-Apr	09:00	50224	7.1			61.24	0.80	61.04	0.20	
30-Apr	15:00	50584	6.8			61.23	0.79	61.04	0.19	
30-Apr	21:00	50944	6.5			61.17	0.73	61.05	0.12	
01-May	03:00	51304	6.3			61.17	0.73	61.05	0.12	
01-May	09:00	51664	6.1			61.16	0.72	61.06	0.10	
01-May	15:00	52024	5.9			61.15	0.71	61.06	0.09	
01-May	21:00	52384	5.7			61.16	0.72	61.06	0.10	
02-May	03:00	52744	5.5			61.14	0.70	61.07	0.07	
02-May	09:00	53104	5.3			61.13	0.69	61.07	0.06	
02-May	15:00	53464	5.2			61.17	0.73	61.08	0.09	
03-May	10:00	54604	4.8			61.38	0.94	61.09	0.29	
03-May	15:00	54904	4.7			61.38	0.94	61.10	0.28	
03-May	21:00	55264	4.6			61.43	0.99	61.10	0.33	
04-May	03:00	55624	4.5			61.46	1.02	61.11	0.35	
04-May	09:00	55984	4.4			61.47	1.03	61.11	0.36	
04-May	15:00	56344	4.3			61.49	1.05	61.11	0.38	
04-May	21:00	56704	4.2			61.58	1.14	61.12	0.46	
05-May	03:00	57064	4.1			61.53	1.09	61.12	0.41	
05-May	09:00	57424	4.0			61.51	1.07	61.13	0.38	
05-May	15:00	57784	3.9			61.49	1.05	61.13	0.36	
06-May	03:00	58504	3.8			61.43	0.99	61.14	0.29	
06-May	09:00	58864	3.7			61.41	0.97	61.15	0.26	
06-May	12:03	59047	3.7			61.36	0.92	61.15	0.21	

FLOATING FEATHER IRRIGATION DISTRICT WELL

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: FLOATING FEATHER IRRIGATION — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW — RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL's MEASURED: AIRLINE @ 119.10 FT BELOW PUMP BASE — STATIC WATER LEVEL (FT BMP): 86.8

DIST. FROM PUMPED WELL: 5,000 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	AIRLINE PRESSURE (PSI)	WATER LEVEL DATA: DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
19-Mar	14:20	-9876			89.2	2.44			
23-Mar	13:25	-4171		13.5	87.9	1.16			
23-Mar	15:40	-4036		14.0	86.8	0.00			
25-Mar	17:00	-1076		14.0	86.8	0.00			
26-Mar	09:00	-116		14.0	86.8	0.00			
26-Mar	12:58	122		14.0	86.8	0.00			
26-Mar	13:39	163		14.0	86.8	0.00			
26-Mar	14:15	199		14.0	86.8	0.00			
26-Mar	14:55	239		14.0	86.8	0.00			
26-Mar	15:20	264		14.0	86.8	0.00			
26-Mar	15:45	289		14.0	86.8	0.00			
26-Mar	16:15	319		14.0	86.8	0.00			
26-Mar	16:58	362		14.0	86.8	0.00			
26-Mar	18:15	439		14.0	86.8	0.00			
26-Mar	19:24	508		14.0	86.8	0.00			
26-Mar	20:18	562		14.0	86.8	0.00			
26-Mar	21:15	619		14.0	86.8	0.00			
27-Mar	09:50	1374		13.9	87.0	0.23			
27-Mar	12:58	1562		14.0	86.8	0.00			
27-Mar	18:58	1922		13.7	87.5	0.69			
27-Mar	23:56	2220		13.7	87.5	0.69			
28-Mar	09:10	2774		14.0	86.8	0.00			
28-Mar	13:41	3045		14.0	86.8	0.00			
28-Mar	18:50	3354		13.7	87.5	0.69			
28-Mar	23:30	3634		13.7	87.5	0.69			
29-Mar	10:26	4290		13.7	87.5	0.69			
29-Mar	18:58	4802		13.7	87.5	0.69			
30-Mar	00:07	5111		13.7	87.5	0.69			
30-Mar	09:22	5666		13.7	87.5	0.69			
30-Mar	13:49	5933		13.7	87.5	0.69			
30-Mar	19:10	6254		13.7	87.5	0.69			
30-Mar	23:16	6500		13.7	87.5	0.69			
31-Mar	08:57	7081		13.5	87.9	1.16			
31-Mar	14:48	7432		14.0	86.8	0.00			
31-Mar	23:59	7983		13.7	87.5	0.69			
01-Apr	10:05	8589		14.0	86.8	0.00			
01-Apr	16:29	8973		14.0	86.8	0.00			
01-Apr	23:10	9374		13.7	87.5	0.69			
02-Apr	08:16	9920		14.0	86.8	0.00			
02-Apr	15:10	10334		14.0	86.8	0.00			
02-Apr	22:45	10789		13.5	87.9	1.16			
02-Apr	22:45	10789		13.5	87.9	1.16			
03-Apr	09:00	11404		14.0	86.8	0.00			
03-Apr	15:20	11784		14.0	86.8	0.00			

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *FLOATING FEATHER IRRIGATION* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *AIRLINE @ 119.10 FT BELOW PUMP BASE* STATIC WATER LEVEL (FT BMP): *86.8*
DIST. FROM PUMPED WELL: *5,000 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	AIRLINE PRESSURE (PSI)	WATER LEVEL DATA: DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
03-Apr	20:50	12114		13.5	87.9	1.16			
04-Apr	08:47	12831		14.0	86.8	0.00			
04-Apr	15:32	13236		14.0	86.8	0.00			
04-Apr	23:11	13695		14.0	86.8	0.00			
05-Apr	09:58	14342		14.0	86.8	0.00			
05-Apr	16:34	14738		14.0	86.8	0.00			
05-Apr	23:06	15130		14.0	86.8	0.00			
06-Apr	10:07	15791		14.0	86.8	0.00			
06-Apr	17:07	16211		14.0	86.8	0.00			
06-Apr	22:47	16551		14.0	86.8	0.00			Daylight savings begins at 2 am.
07-Apr	10:29	17193		14.0	86.8	0.00			All elapsed time adjusted -60 min.
07-Apr	17:29	17613		14.0	86.8	0.00			
08-Apr	00:20	18024		13.7	87.5	0.69			
08-Apr	09:25	18569		13.7	87.5	0.69			
08-Apr	10:03	18607		13.7	87.5	0.69			
08-Apr	16:18	18982		13.7	87.5	0.69			
08-Apr	20:52	19256		13.5	87.9	1.16			
09-Apr	09:55	20039		13.5	87.9	1.16			
09-Apr	17:05	20469		13.5	87.9	1.16			
09-Apr	23:24	20848		13.2	88.6	1.85			
10-Apr	09:57	21481		13.5	87.9	1.16			
10-Apr	16:54	21898		13.5	87.9	1.16			
10-Apr	22:33	22237		13.5	87.9	1.16			
11-Apr	10:12	22936		13.5	87.9	1.16			
11-Apr	17:10	23354		13.5	87.9	1.16			
12-Apr	00:17	23781		13.2	88.6	1.85			
12-Apr	10:22	24386		13.7	87.5	0.69			
12-Apr	15:25	24689		13.5	87.9	1.16			
12-Apr	21:22	25046		13.5	87.9	1.16			
13-Apr	09:25	25769		13.5	87.9	1.16			
13-Apr	14:41	26085		13.5	87.9	1.16			
13-Apr	21:47	26511		13.2	88.6	1.85			
14-Apr	08:58	27182		13.5	87.9	1.16			
14-Apr	17:32	27696		13.5	87.9	1.16			
14-Apr	22:38	28002		13.5	87.9	1.16			
15-Apr	10:25	28709		13.5	87.9	1.16			
15-Apr	17:20	29124		13.5	87.9	1.16			
15-Apr	21:38	29382		13.5	87.9	1.16			
16-Apr	10:20	30144		13.2	88.6	1.85			
16-Apr	18:36	30640		13.5	87.9	1.16			
17-Apr	01:41	31065		13.2	88.6	1.85			
17-Apr	12:36	31720		13.5	87.9	1.16			
17-Apr	19:14	32118		13.5	87.9	1.16			
18-Apr	00:24	32428		13.5	87.9	1.16			

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: FLOATING FEATHER IRRIGATION — PUMPING / OBSERVATION WELL
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW — RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:
PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00
HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
HOW WL's MEASURED: AIRLINE @ 119.10 FT BELOW PUMP BASE — STATIC WATER LEVEL (FT BMP): 86.8
DIST. FROM PUMPED WELL: 5,000 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t '	AIRLINE PRESSURE (PSI)	WATER LEVEL DATA: DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED DEPTH TO WATER (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
18-Apr	10:54	33058		13.5	87.9	1.16			
18-Apr	19:43	33587		13.2	88.6	1.85			
18-Apr	23:59	33843		13.1	88.8	2.08			
19-Apr	10:53	34497		13.5	87.9	1.16			
19-Apr	15:50	34794		13.5	87.9	1.16			
19-Apr	23:52	35276		13.4	88.1	1.39			
20-Apr	10:42	35926		13.5	87.9	1.16			
20-Apr	20:40	36524		13.2	88.6	1.85			
21-Apr	00:09	36733		13.5	87.9	1.16			
21-Apr	11:24	37408		13.5	87.9	1.16			
21-Apr	17:12	37756		13.5	87.9	1.16			
21-Apr	22:04	38048		13.5	87.9	1.16			
22-Apr	10:59	38823		13.5	87.9	1.16			
22-Apr	15:35	39099		13.5	87.9	1.16			
22-Apr	21:10	39434		13.2	88.6	1.85			
23-Apr	09:39	40183		13.5	87.9	1.16			
23-Apr	17:56	40680		13.5	87.9	1.16			
23-Apr	22:49	40973		13.5	87.9	1.16			
24-Apr	09:58	41642		13.2	88.6	1.85			
24-Apr	16:52	42056		13.2	88.6	1.85			
24-Apr	23:00	42424		13.2	88.6	1.85			
25-Apr	09:50	43074		13.2	88.6	1.85			
25-Apr	16:04	43448	144.3	13.2	88.6	1.85			
25-Apr	17:24	43528	114.2	13.2	88.6	1.85			
25-Apr	18:40	43604	95.4	13.2	88.6	1.85			
25-Apr	19:50	43674	82.9	13.2	88.6	1.85			
26-Apr	00:15	43939	55.5	13.1	88.8	2.08			
26-Apr	08:35	44439	34.4	13.1	88.8	2.08			
26-Apr	14:02	44766	27.7	13.2	88.6	1.85			
26-Apr	17:52	44996	24.3	13.2	88.6	1.85			
26-Apr	22:14	45258	21.4	13.2	88.6	1.85			
27-Apr	01:22	45446	19.8	13.2	88.6	1.85			
27-Apr	08:03	45847	17.0	13.2	88.6	1.85			
27-Apr	19:26	46530	13.8	13.1	88.8	2.08			
27-Apr	23:42	46786	12.9	13.3	88.4	1.66			
28-Apr	09:54	47398	11.1	13.5	87.9	1.16			
28-Apr	15:02	47706	10.5	13.2	88.6	1.85			
28-Apr	21:46	48110	9.7	13.2	88.6	1.85			
29-Apr	11:03	48907	8.5	13.2	88.6	1.85			

DAY WELL

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: DAY
TYPE OF DATA: DRAWDOWN
PUMPED WELL NO: PW RADIUS: 14"(28"HOLE)
PUMPING RATES: 750.0 Gallons per minute
HOW Q MEASURED: FLOWMETER
HOW WL's MEASURED: SI PROBE & STEVENS RECORDER
DIST. FROM PUMPED WELL: 7,500 FEET

PUMPING / OBSERVATION WELL
M.P. FOR WL'S: TOP OF CASING ELEV.:
PUMP ON: DATE 26-Mar-91 TIME 10:56:00
PUMP OFF: DATE 25-Apr-91 TIME 11:03:00
STATIC WATER LEVEL (FT BMP): 201.24
COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
23-Mar	15:00	-4076.0				201.50	0.26	
23-Mar	18:30	-3866.0				201.39	0.15	
23-Mar	23:00	-3596.0				201.39	0.15	
24-Mar	02:30	-3386.0				201.28	0.04	
24-Mar	06:30	-3146.0				201.28	0.04	
24-Mar	09:00	-2996.0				201.34	0.10	
24-Mar	10:00	-2936.0				201.44	0.20	
24-Mar	14:15	-2681.0				201.50	0.26	
24-Mar	17:30	-2486.0				201.50	0.26	
24-Mar	22:00	-2216.0				201.37	0.13	
25-Mar	03:00	-1916.0				201.15	-0.09	
25-Mar	04:30	-1826.0				201.15	-0.09	
25-Mar	06:30	-1706.0				201.04	-0.20	
25-Mar	07:30	-1646.0				201.04	-0.20	
25-Mar	09:30	-1526.0				201.10	-0.14	
25-Mar	13:00	-1316.0				201.10	-0.14	
25-Mar	15:40	-1156.0				201.06	-0.18	
25-Mar	21:30	-806.0				201.05	-0.19	
26-Mar	05:00	-356.0				201.11	-0.13	
26-Mar	07:00	-236.0				201.11	-0.13	
26-Mar	10:00	-56.0				201.24	0.00	
26-Mar	18:00	424.0				201.24	0.00	
26-Mar	22:00	664.0				201.34	0.10	
27-Mar	02:00	904.0				201.34	0.10	
27-Mar	04:00	1024.0				201.41	0.17	
27-Mar	06:30	1174.0				201.41	0.17	
27-Mar	07:15	1219.0				201.47	0.23	
27-Mar	09:00	1324.0				201.50	0.26	
27-Mar	09:10	1334.0				201.57	0.33	
27-Mar	10:00	1384.0				201.58	0.34	
27-Mar	13:00	1564.0				201.58	0.34	
27-Mar	16:30	1774.0				201.56	0.32	
27-Mar	19:00	1924.0				201.56	0.32	
27-Mar	19:30	1954.0				201.59	0.35	
27-Mar	21:20	2064.0				201.59	0.35	
27-Mar	21:30	2074.0				201.63	0.39	
28-Mar	02:00	2344.0				201.61	0.37	
28-Mar	06:30	2614.0				201.61	0.37	
28-Mar	07:45	2689.0				201.62	0.38	
28-Mar	08:00	2704.0				201.64	0.40	
28-Mar	11:15	2899.0				201.64	0.40	
28-Mar	11:20	2904.0				201.66	0.42	
28-Mar	11:40	2924.0				201.66	0.42	
28-Mar	13:30	3034.0				201.61	0.37	
28-Mar	16:30	3214.0				201.59	0.35	
28-Mar	19:30	3394.0				201.59	0.35	
28-Mar	22:00	3544.0				201.71	0.47	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *DAY* PUMPING / OBSERVATION WELL

TYPE OF DATA: *DRAWDOWN*

PUMPED WELL NO: *PW* RADIUS: *14"(28" HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:

PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*

HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*

HOW WL's MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *201.24*

DIST. FROM PUMPED WELL: *7,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READING: REFERENCE	READING: MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
29-Mar	07:00	4084.0				201.70	0.46	
29-Mar	07:30	4114.0				201.78	0.54	
29-Mar	08:00	4144.0				201.85	0.61	
29-Mar	09:30	4234.0				201.95	0.71	
29-Mar	10:00	4264.0				201.95	0.71	
29-Mar	10:20	4284.0				202.01	0.77	
29-Mar	11:40	4364.0				202.04	0.80	
29-Mar	11:45	4369.0				202.06	0.82	
29-Mar	12:25	4409.0				202.06	0.82	
29-Mar	13:15	4459.0				201.95	0.71	
29-Mar	14:15	4519.0				201.91	0.67	
29-Mar	17:00	4684.0				201.81	0.57	
29-Mar	18:30	4774.0				201.81	0.57	
29-Mar	18:45	4789.0				201.77	0.53	
29-Mar	19:20	4824.0				201.77	0.53	
29-Mar	22:20	5004.0				201.76	0.52	
30-Mar	02:15	5239.0				201.67	0.43	
30-Mar	05:45	5449.0				201.64	0.40	
30-Mar	08:00	5584.0				201.64	0.40	
30-Mar	09:00	5644.0				201.66	0.42	
30-Mar	09:15	5659.0				201.68	0.44	
30-Mar	13:45	5929.0				201.66	0.42	
30-Mar	14:00	5944.0				201.62	0.38	
30-Mar	15:00	6004.0				201.62	0.38	
30-Mar	15:50	6054.0				201.74	0.50	
30-Mar	17:55	6179.0				201.75	0.51	
30-Mar	18:00	6184.0				201.75	0.51	
30-Mar	20:00	6304.0				201.75	0.51	
31-Mar	00:00	6544.0				201.61	0.37	
31-Mar	02:30	6694.0				201.62	0.38	
31-Mar	04:05	6789.0				201.71	0.47	
31-Mar	04:35	6819.0				201.71	0.47	
31-Mar	06:45	6949.0				201.67	0.43	
31-Mar	07:45	7009.0				201.67	0.43	
31-Mar	08:30	7054.0				201.71	0.47	
31-Mar	11:00	7204.0				201.71	0.47	
31-Mar	12:15	7279.0				201.84	0.60	
31-Mar	14:10	7394.0				201.86	0.62	
31-Mar	14:45	7429.0				201.93	0.69	
31-Mar	15:45	7489.0				201.94	0.70	
31-Mar	16:00	7504.0				202.03	0.79	
31-Mar	17:00	7564.0				202.03	0.79	
31-Mar	18:00	7624.0				202.01	0.77	
31-Mar	19:30	7714.0				201.91	0.67	
31-Mar	20:30	7774.0				201.91	0.67	
31-Mar	22:30	7894.0				201.71	0.47	
31-Mar	23:00	7924.0				201.71	0.47	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *DAY* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV. :
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *201.24*
DIST. FROM PUMPED WELL: *7,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
01-Apr	00:00	7984.0				201.62	0.38	
01-Apr	01:00	8044.0				201.58	0.34	
01-Apr	02:00	8104.0				201.56	0.32	
01-Apr	02:30	8134.0				201.55	0.31	
01-Apr	04:00	8224.0				201.55	0.31	
01-Apr	05:00	8284.0				201.54	0.30	
01-Apr	05:45	8329.0				201.50	0.26	
01-Apr	07:00	8404.0				201.50	0.26	
01-Apr	09:15	8539.0				201.62	0.38	
01-Apr	09:10	8534.0				201.65	0.41	
01-Apr	10:55	8639.0				201.65	0.41	
01-Apr	11:05	8649.0				201.70	0.46	
01-Apr	11:25	8669.0				201.70	0.46	
01-Apr	12:00	8704.0				201.63	0.39	
01-Apr	12:45	8749.0				201.60	0.36	
01-Apr	14:00	8824.0				201.60	0.36	
01-Apr	14:45	8869.0				201.61	0.37	
01-Apr	15:30	8914.0				201.56	0.32	
01-Apr	17:30	9034.0				201.55	0.31	
01-Apr	18:30	9094.0				201.64	0.40	
01-Apr	19:50	9174.0				201.93	0.69	
01-Apr	20:10	9194.0				201.93	0.69	
02-Apr	00:00	9424.0				201.66	0.42	
02-Apr	01:30	9514.0				201.64	0.40	
02-Apr	03:00	9604.0				201.64	0.40	
02-Apr	04:10	9674.0				201.69	0.45	
02-Apr	07:15	9859.0				201.69	0.45	
02-Apr	08:00	9904.0				201.79	0.55	
02-Apr	10:45	10069.0				201.81	0.57	
02-Apr	11:30	10114.0				201.84	0.60	
02-Apr	11:40	10124.0				201.86	0.62	
02-Apr	12:10	10154.0				201.86	0.62	
02-Apr	14:45	10309.0				201.79	0.55	
02-Apr	15:00	10324.0				201.74	0.50	
02-Apr	20:00	10624.0				201.73	0.49	
02-Apr	20:30	10654.0				201.76	0.52	
03-Apr	06:45	11269.0				201.72	0.48	
03-Apr	07:35	11319.0				201.79	0.55	
03-Apr	08:55	11399.0				201.81	0.57	
03-Apr	09:45	11449.0				201.82	0.58	
03-Apr	11:00	11524.0				201.94	0.70	
03-Apr	11:15	11539.0				202.01	0.77	
03-Apr	11:50	11574.0				202.01	0.77	
03-Apr	15:00	11764.0				202.13	0.89	
03-Apr	17:00	11884.0				202.23	0.99	
03-Apr	17:30	11914.0				202.27	1.03	
03-Apr	18:00	11944.0				202.27	1.03	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *DAY* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28" HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *201.24*
DIST. FROM PUMPED WELL: *7,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	READING MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
03-Apr	21:00	12124.0				202.05	0.81	
03-Apr	21:30	12154.0				202.04	0.80	
04-Apr	00:00	12304.0				201.91	0.67	
04-Apr	02:30	12454.0				201.86	0.62	
04-Apr	04:00	12544.0				201.86	0.62	
04-Apr	04:30	12574.0				201.89	0.65	
04-Apr	05:00	12604.0				201.89	0.65	
04-Apr	05:30	12634.0				201.85	0.61	
04-Apr	06:15	12679.0				201.84	0.60	
04-Apr	10:20	12924.0				201.85	0.61	
04-Apr	16:00	13264.0				201.62	0.38	
04-Apr	17:15	13339.0				201.62	0.38	
04-Apr	17:30	13354.0				201.66	0.42	
04-Apr	18:00	13384.0				201.66	0.42	
04-Apr	19:30	13474.0				201.60	0.36	
04-Apr	23:05	13689.0				201.57	0.33	
05-Apr	06:00	14104.0				201.40	0.16	
05-Apr	07:05	14169.0				201.40	0.16	
05-Apr	07:30	14194.0				201.43	0.19	
05-Apr	09:45	14329.0				201.45	0.21	
05-Apr	10:10	14354.0				201.45	0.21	
05-Apr	10:15	14359.0				201.49	0.25	
05-Apr	14:45	14629.0				201.43	0.19	
05-Apr	15:45	14689.0				201.39	0.15	
05-Apr	16:45	14749.0				201.39	0.15	
05-Apr	17:45	14809.0				201.40	0.16	
05-Apr	18:30	14854.0				201.42	0.18	
05-Apr	19:10	14894.0				201.53	0.29	
05-Apr	22:45	15109.0				201.53	0.29	
06-Apr	03:00	15364.0				201.40	0.16	
06-Apr	04:00	15424.0				201.40	0.16	
06-Apr	04:15	15439.0				201.42	0.18	
06-Apr	05:15	15499.0				201.42	0.18	
06-Apr	06:15	15559.0				201.36	0.12	
06-Apr	08:40	15704.0				201.36	0.12	
06-Apr	09:40	15764.0				201.43	0.19	
06-Apr	11:30	15874.0				201.46	0.22	
06-Apr	14:00	16024.0				201.46	0.22	
06-Apr	14:45	16069.0				201.43	0.19	
06-Apr	15:30	16114.0				201.43	0.19	
06-Apr	16:00	16144.0				201.41	0.17	
06-Apr	19:45	16369.0				201.43	0.19	
06-Apr	21:15	16459.0				201.43	0.19	
07-Apr	00:00	16624.0				201.39	0.15	DAYLIGHT SAVING TIME BEGAN @ 2 AM
07-Apr	06:10	16934.0				201.40	0.16	ELAPSED TIME ADJUSTED -60 MIN.
07-Apr	06:15	16939.0				201.42	0.18	
07-Apr	07:30	17014.0				201.42	0.18	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *DAY* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *201.24*
DIST. FROM PUMPED WELL: *7,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	READING MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
07-Apr	10:30	17194.0				201.57	0.33	
07-Apr	11:45	17269.0				201.69	0.45	
07-Apr	13:00	17344.0				201.68	0.44	
07-Apr	13:30	17374.0				201.68	0.44	
07-Apr	14:00	17404.0				201.69	0.45	
07-Apr	15:10	17474.0				201.68	0.44	
07-Apr	15:30	17494.0				201.62	0.38	
07-Apr	17:00	17584.0				201.60	0.36	
07-Apr	17:00	17584.0				201.60	0.36	
07-Apr	17:45	17629.0				201.60	0.36	
07-Apr	18:00	17644.0				201.63	0.39	
07-Apr	20:30	17794.0				201.64	0.40	
07-Apr	21:15	17839.0				201.71	0.47	
07-Apr	22:30	17914.0				201.70	0.46	
07-Apr	23:00	17944.0				201.68	0.44	
08-Apr	00:30	18034.0				201.68	0.44	
08-Apr	02:00	18124.0				201.61	0.37	
08-Apr	03:00	18184.0				201.59	0.35	
08-Apr	05:30	18334.0				201.59	0.35	
08-Apr	05:00	18304.0				201.63	0.39	
08-Apr	07:00	18424.0				201.63	0.39	
08-Apr	07:30	18454.0				201.68	0.44	
08-Apr	08:30	18514.0				201.69	0.45	
08-Apr	09:15	18559.0				201.75	0.51	
08-Apr	12:00	18724.0				201.75	0.51	
08-Apr	13:00	18784.0				201.77	0.53	
08-Apr	13:45	18829.0				201.77	0.53	
08-Apr	15:15	18919.0				201.72	0.48	
08-Apr	17:00	19024.0				201.72	0.48	
08-Apr	18:00	19084.0				201.62	0.38	
08-Apr	19:00	19144.0				201.64	0.40	
08-Apr	19:30	19174.0				201.64	0.40	
08-Apr	20:00	19204.0				201.62	0.38	
08-Apr	20:30	19234.0				201.62	0.38	
08-Apr	21:45	19309.0				201.68	0.44	
08-Apr	22:30	19354.0				201.68	0.44	
09-Apr	00:00	19444.0				201.61	0.37	
09-Apr	02:00	19564.0				201.55	0.31	
09-Apr	03:30	19654.0				201.55	0.31	
09-Apr	04:15	19699.0				201.51	0.27	
09-Apr	06:15	19819.0				201.51	0.27	
09-Apr	07:00	19864.0				201.49	0.25	
09-Apr	07:45	19909.0				201.49	0.25	
09-Apr	09:45	20029.0				201.54	0.30	
09-Apr	11:00	20104.0				201.57	0.33	
09-Apr	12:45	20209.0				201.57	0.33	
09-Apr	13:00	20224.0				201.59	0.35	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *DAY* PUMPING / OBSERVATION WELL

TYPE OF DATA: *DRAWDOWN*

PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV. :

PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*

HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*

HOW WL's MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *201.24*

DIST. FROM PUMPED WELL: *7,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
09-Apr	13:30	20254.0				201.59	0.35	
09-Apr	15:30	20374.0				201.48	0.24	
09-Apr	16:30	20434.0				201.48	0.24	
09-Apr	17:30	20494.0				201.46	0.22	
09-Apr	18:45	20569.0				201.45	0.21	
09-Apr	19:00	20584.0				201.47	0.23	
09-Apr	21:30	20734.0				201.47	0.23	
09-Apr	23:00	20824.0				201.52	0.28	
09-Apr	23:30	20854.0				201.52	0.28	
10-Apr	00:30	20914.0				201.49	0.25	
10-Apr	04:30	21154.0				201.44	0.20	
10-Apr	05:30	21214.0				201.44	0.20	
10-Apr	08:15	21379.0				201.45	0.21	
10-Apr	08:50	21414.0				201.51	0.27	
10-Apr	09:30	21454.0				201.52	0.28	
10-Apr	14:00	21724.0				201.53	0.29	
10-Apr	14:30	21754.0				201.49	0.25	
10-Apr	15:45	21829.0				201.44	0.20	
10-Apr	16:50	21894.0				201.44	0.20	
10-Apr	20:15	22099.0				201.51	0.27	
11-Apr	06:00	22684.0				201.39	0.15	
11-Apr	06:30	22714.0				201.39	0.15	
11-Apr	08:30	22834.0				201.48	0.24	
11-Apr	12:00	23044.0				201.48	0.24	
11-Apr	14:30	23194.0				201.39	0.15	
11-Apr	18:17	23421.0				201.35	0.11	
11-Apr	20:00	23524.0				201.35	0.11	
11-Apr	22:00	23644.0				201.40	0.16	
11-Apr	23:15	23719.0				201.40	0.16	
12-Apr	00:15	23779.0				201.37	0.13	
12-Apr	01:15	23839.0				201.36	0.12	
12-Apr	03:15	23959.0				201.32	0.08	
12-Apr	04:15	24019.0				201.32	0.08	
12-Apr	05:15	24079.0				201.37	0.13	
12-Apr	05:45	24109.0				201.37	0.13	
12-Apr	06:00	24124.0				201.35	0.11	
12-Apr	06:30	24154.0				201.35	0.11	
12-Apr	07:30	24214.0				201.38	0.14	
12-Apr	08:00	24244.0				201.42	0.18	
12-Apr	09:15	24319.0				201.44	0.20	
12-Apr	10:30	24394.0				201.52	0.28	
12-Apr	12:00	24484.0				201.52	0.28	
12-Apr	12:05	24489.0				201.57	0.33	
12-Apr	12:45	24529.0				201.57	0.33	
12-Apr	13:00	24544.0				201.53	0.29	
12-Apr	15:00	24664.0				201.51	0.27	
12-Apr	16:50	24774.0				201.51	0.27	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *DAY* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *201.24*
DIST. FROM PUMPED WELL: *7,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
12-Apr	17:20	24804.0				201.55	0.31	
12-Apr	18:30	24874.0				201.55	0.31	
12-Apr	20:45	25009.0				201.57	0.33	
12-Apr	22:00	25084.0				201.62	0.38	
12-Apr	23:30	25174.0				201.62	0.38	
13-Apr	00:00	25204.0				201.61	0.37	
13-Apr	03:30	25414.0				201.60	0.36	
13-Apr	07:00	25624.0				201.58	0.34	
13-Apr	07:30	25654.0				201.57	0.33	
13-Apr	08:30	25714.0				201.57	0.33	
13-Apr	10:00	25804.0				201.64	0.40	
13-Apr	11:00	25864.0				201.70	0.46	
13-Apr	11:15	25879.0				201.78	0.54	
13-Apr	12:20	25944.0				201.79	0.55	
13-Apr	12:35	25959.0				201.80	0.56	
13-Apr	14:20	26064.0				201.80	0.56	
13-Apr	14:45	26089.0				201.88	0.64	
13-Apr	16:05	26169.0				201.88	0.64	
13-Apr	16:45	26209.0				201.93	0.69	
13-Apr	19:00	26344.0				202.19	0.95	
13-Apr	20:30	26434.0				202.04	0.80	
13-Apr	21:30	26494.0				202.09	0.85	
14-Apr	00:00	26644.0				201.82	0.58	
14-Apr	05:00	26944.0				201.58	0.34	
14-Apr	08:00	27124.0				201.53	0.29	
14-Apr	18:00	27724.0				201.53	0.29	
14-Apr	19:00	27784.0				201.76	0.52	
14-Apr	20:00	27844.0				201.76	0.52	
14-Apr	23:00	28024.0				201.70	0.46	
15-Apr	00:00	28084.0				201.58	0.34	
15-Apr	02:00	28204.0				201.54	0.30	
15-Apr	04:00	28324.0				201.52	0.28	
15-Apr	11:00	28744.0				201.57	0.33	
15-Apr	18:00	29164.0				201.33	0.09	
16-Apr	00:00	29524.0				201.33	0.09	
16-Apr	04:00	29764.0				201.24	0.00	
16-Apr	08:00	30004.0				201.24	0.00	
16-Apr	10:00	30124.0				201.28	0.04	
16-Apr	12:00	30244.0				201.39	0.15	
16-Apr	19:00	30664.0				201.30	0.06	
16-Apr	22:00	30844.0				201.30	0.06	
17-Apr	02:00	31084.0				201.31	0.07	
17-Apr	06:00	31324.0				201.26	0.02	
17-Apr	07:00	31384.0				201.26	0.02	
17-Apr	10:00	31564.0				201.36	0.12	
17-Apr	18:00	32044.0				201.29	0.05	
17-Apr	21:00	32224.0				201.29	0.05	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *DAY* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *201.24*
DIST. FROM PUMPED WELL: *7,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	READING MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
17-Apr	22:00	32284.0				201.35	0.11	
18-Apr	03:00	32584.0				201.30	0.06	
18-Apr	11:00	33064.0				201.45	0.21	
19-Apr	06:00	34204.0				201.44	0.20	
19-Apr	11:00	34504.0				201.63	0.39	
19-Apr	13:00	34624.0				201.63	0.39	
19-Apr	15:00	34744.0				201.58	0.34	
19-Apr	17:00	34864.0				201.59	0.35	
19-Apr	18:00	34924.0				201.59	0.35	
19-Apr	19:30	35014.0				201.55	0.31	
19-Apr	20:00	35044.0				201.55	0.31	
19-Apr	21:00	35104.0				201.60	0.36	
19-Apr	23:00	35224.0				201.60	0.36	
20-Apr	04:00	35524.0				201.41	0.17	
20-Apr	06:00	35644.0				201.41	0.17	
20-Apr	07:00	35704.0				201.31	0.07	
20-Apr	12:00	36004.0				201.49	0.25	
20-Apr	17:00	36304.0				201.27	0.03	
20-Apr	19:00	36424.0				201.32	0.08	
21-Apr	02:00	36844.0				201.24	0.00	
21-Apr	08:00	37204.0				201.24	0.00	
21-Apr	10:00	37324.0				201.28	0.04	
21-Apr	11:00	37384.0				201.54	0.30	
21-Apr	12:00	37444.0				201.64	0.40	
21-Apr	13:00	37504.0				201.53	0.29	
21-Apr	19:00	37864.0				201.53	0.29	
21-Apr	20:00	37924.0				201.57	0.33	
21-Apr	21:00	37984.0				201.59	0.35	
22-Apr	04:00	38404.0				201.38	0.14	
22-Apr	06:00	38524.0				201.38	0.14	
22-Apr	07:00	38584.0				201.34	0.10	
22-Apr	09:00	38704.0				201.52	0.28	
22-Apr	11:00	38824.0				201.52	0.28	
22-Apr	11:30	38854.0				201.49	0.25	
22-Apr	12:00	38884.0				201.55	0.31	
22-Apr	13:00	38944.0				201.49	0.25	
22-Apr	17:00	39184.0				201.51	0.27	
22-Apr	20:00	39364.0				201.95	0.71	
23-Apr	02:00	39724.0				201.63	0.39	
23-Apr	11:00	40264.0				201.59	0.35	
23-Apr	07:00	40024.0				201.57	0.33	
23-Apr	09:00	40144.0				201.71	0.47	
23-Apr	11:30	40294.0				201.71	0.47	
23-Apr	14:00	40444.0				202.04	0.80	
23-Apr	16:30	40594.0				202.04	0.80	
23-Apr	17:00	40624.0				202.17	0.93	
23-Apr	19:00	40744.0				202.18	0.94	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: DAY — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW RADIUS: 14"(28" HOLE) — M.P. FOR WL'S: TOP OF CASING ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL's MEASURED: SI PROBE & STEVENS RECORDER — STATIC WATER LEVEL (FT BMP): 201.24

DIST. FROM PUMPED WELL: 7,500 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA READING REFERENCE	READING MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
23-Apr	19:30	40774.0				202.28	1.04	
23-Apr	21:00	40864.0				202.28	1.04	
24-Apr	00:00	41044.0				201.94	0.70	
24-Apr	04:00	41284.0				201.68	0.44	
24-Apr	05:30	41374.0				201.68	0.44	
24-Apr	06:00	41404.0				201.59	0.35	
24-Apr	07:30	41494.0				201.59	0.35	
24-Apr	08:00	41524.0				201.65	0.41	
24-Apr	15:00	41944.0				201.51	0.27	
24-Apr	18:00	42124.0				201.51	0.27	
25-Apr	06:00	42844.0				201.19	-0.05	
25-Apr	07:00	42904.0				201.19	-0.05	
25-Apr	12:00	43204.0	758.0			201.38	0.14	
25-Apr	15:00	43384.0	183.1			201.29	0.05	
25-Apr	17:00	43504.0	121.9			201.29	0.05	
25-Apr	18:00	43564.0	104.5			201.26	0.02	
25-Apr	22:00	43804.0	66.7			201.26	0.02	
26-Apr	07:00	44344.0	37.0			201.29	0.05	
26-Apr	10:00	44524.0	32.3			201.40	0.16	
26-Apr	11:00	44584.0	31.0			201.40	0.16	
26-Apr	12:00	44644.0	29.8			201.43	0.19	
26-Apr	17:00	44944.0	25.0			201.28	0.04	
26-Apr	21:00	45184.0	22.2			201.23	-0.01	
27-Apr	00:00	45364.0	20.5			201.22	-0.02	
27-Apr	04:00	45604.0	18.6			201.22	-0.02	
27-Apr	10:00	45964.0	16.3			201.23	-0.01	
27-Apr	13:00	46144.0	15.4			201.42	0.18	
27-Apr	17:00	46384.0	14.3			201.42	0.18	
27-Apr	19:00	46504.0	13.9			201.41	0.17	
27-Apr	22:00	46684.0	13.2			201.41	0.17	
27-Apr	23:00	46744.0	13.0			201.45	0.21	
28-Apr	03:00	46984.0	12.2			201.45	0.21	
28-Apr	05:00	47104.0	11.9			201.41	0.17	
28-Apr	07:00	47224.0	11.6			201.41	0.17	
28-Apr	11:00	47464.0	11.0			201.43	0.19	
28-Apr	12:00	47524.0	10.9			201.52	0.28	
28-Apr	13:00	47584.0	10.7			201.57	0.33	
28-Apr	15:00	47704.0	10.5			201.57	0.33	
28-Apr	17:00	47824.0	10.2			201.54	0.30	
28-Apr	19:00	47944.0	10.0			201.47	0.23	
28-Apr	21:00	48064.0	9.8			201.46	0.22	
28-Apr	23:00	48184.0	9.6			201.54	0.30	
29-Apr	00:00	48244.0	9.5			201.54	0.30	
29-Apr	05:00	48544.0	9.0			201.33	0.09	
29-Apr	08:00	48724.0	8.7			201.30	0.06	
29-Apr	11:00	48904.0	8.5			201.54	0.30	
29-Apr	14:00	49084.0	8.3			201.54	0.30	
29-Apr	17:00	49264.0	8.1			201.58	0.34	

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *DAY* PUMPING / OBSERVATION WELL
TYPE OF DATA: *DRAWDOWN*
PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:
PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*
HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*
HOW WL's MEASURED: *SI PROBE & STEVENS RECORDER* STATIC WATER LEVEL (FT BMP): *201.24*
DIST. FROM PUMPED WELL: *7,500 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READING: REFERENCE	READING: MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	REMARKS
29-Apr	19:00	49384.0	7.9			201.57	0.33	
29-Apr	21:00	49504.0	7.8			201.49	0.25	
29-Apr	22:00	49564.0	7.7			201.50	0.26	
30-Apr	05:00	49984.0	7.3			201.38	0.14	
30-Apr	07:00	50104.0	7.2			201.42	0.18	
30-Apr	09:00	50224.0	7.1			201.39	0.15	
30-Apr	11:00	50344.0	7.0			201.54	0.30	
30-Apr	13:00	50464.0	6.9			201.59	0.35	
30-Apr	18:00	50764.0	6.7			201.38	0.14	
30-Apr	19:00	50824.0	6.6			201.43	0.19	
30-Apr	22:00	51004.0	6.5			201.41	0.17	
30-Apr	23:00	51064.0	6.4			201.53	0.29	
01-May	03:00	51304.0	6.3			201.37	0.13	
01-May	09:00	51664.0	6.1			201.37	0.13	
01-May	10:00	51724.0	6.0			201.53	0.29	
01-May	12:00	51844.0	6.0			201.53	0.29	
01-May	19:00	52264.0	5.7			201.35	0.11	
01-May	20:00	52324.0	5.7			201.35	0.11	
01-May	22:00	52444.0	5.6			201.57	0.33	
02-May	06:00	52924.0	5.4			201.11	-0.13	
02-May	08:00	53044.0	5.4			201.11	-0.13	
02-May	09:00	53104.0	5.3			201.07	-0.17	
02-May	10:00	53164.0	5.3			201.07	-0.17	
02-May	12:00	53284.0	5.3			201.21	-0.03	
02-May	13:00	53344.0	5.2			201.18	-0.06	
02-May	14:00	53404.0	5.2			201.27	0.03	
02-May	16:00	53524.0	5.2			201.25	0.01	
02-May	18:00	53644.0	5.1			201.18	-0.06	
02-May	22:00	53884.0	5.0			201.21	-0.03	
02-May	23:00	53944.0	5.0			201.26	0.02	
03-May	02:00	54124.0	4.9			201.22	-0.02	
03-May	04:00	54244.0	4.9			201.22	-0.02	
03-May	06:00	54364.0	4.8			201.24	0.00	
03-May	06:00	54364.0	4.8			201.24	0.00	
03-May	07:00	54424.0	4.8			201.30	0.06	
03-May	08:00	54484.0	4.8			201.31	0.07	
03-May	12:00	54724.0	4.7			201.58	0.34	
03-May	14:00	54844.0	4.7			201.58	0.34	
03-May	19:00	55144.0	4.6			201.44	0.20	
03-May	20:00	55204.0	4.6			201.49	0.25	
03-May	22:00	55324.0	4.5			201.49	0.25	
04-May	01:00	55504.0	4.5			201.93	0.69	
04-May	03:00	55624.0	4.5			201.70	0.46	
04-May	04:00	55684.0	4.4			201.61	0.37	
04-May	06:00	55804.0	4.4			201.55	0.31	
04-May	08:00	55924.0	4.4			201.55	0.31	
04-May	09:00	55984.0	4.4			201.52	0.28	
04-May	13:00	56224.0	4.3			201.96	0.72	
04-May	17:00	56464.0	4.2			201.95	0.71	
04-May	19:00	56584.0	4.2			201.95	0.71	
04-May	20:00	56644.0	4.2			202.05	0.81	
05-May	12:34	57638.0	4.0			202.44	1.20	

USGS WELL

Site Ident. No. 434245116185001

Water Year 1991

TAbulation Sheet for Highest and Lowest Water Level

Well No. 04N 01E 03DAD1 County ADA

Highest W/L	Date	Ckd by	Lowest W/L	Date	Ckd by
58.05	10/31/90		58.90	10/1/90	
57.58	3/17/91		58.30	11/2-4/90	
57.25	3/1/91		57.94	4/4/91	

Water Year 1991			Water Year 1991		
Highest W/L	Date	Ckd by	Lowest W/L	Date	Ckd by

Period of Record			Period of Record		
Highest W/L	Date	Ckd by	Lowest W/L	Date	Ckd by
57.22	2/1/90		59.45	8/5/90	

ultratcs-inc

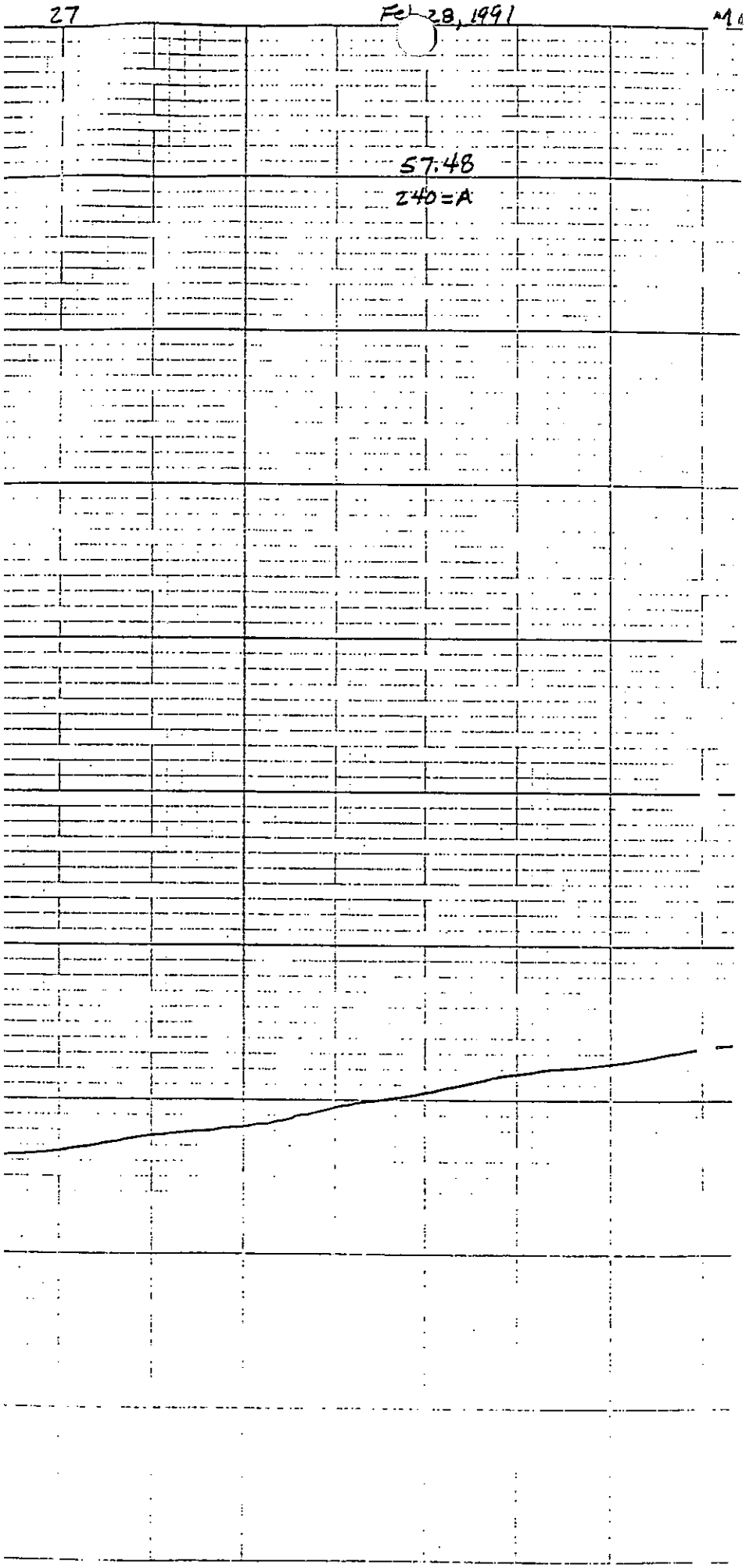
5778
240=A

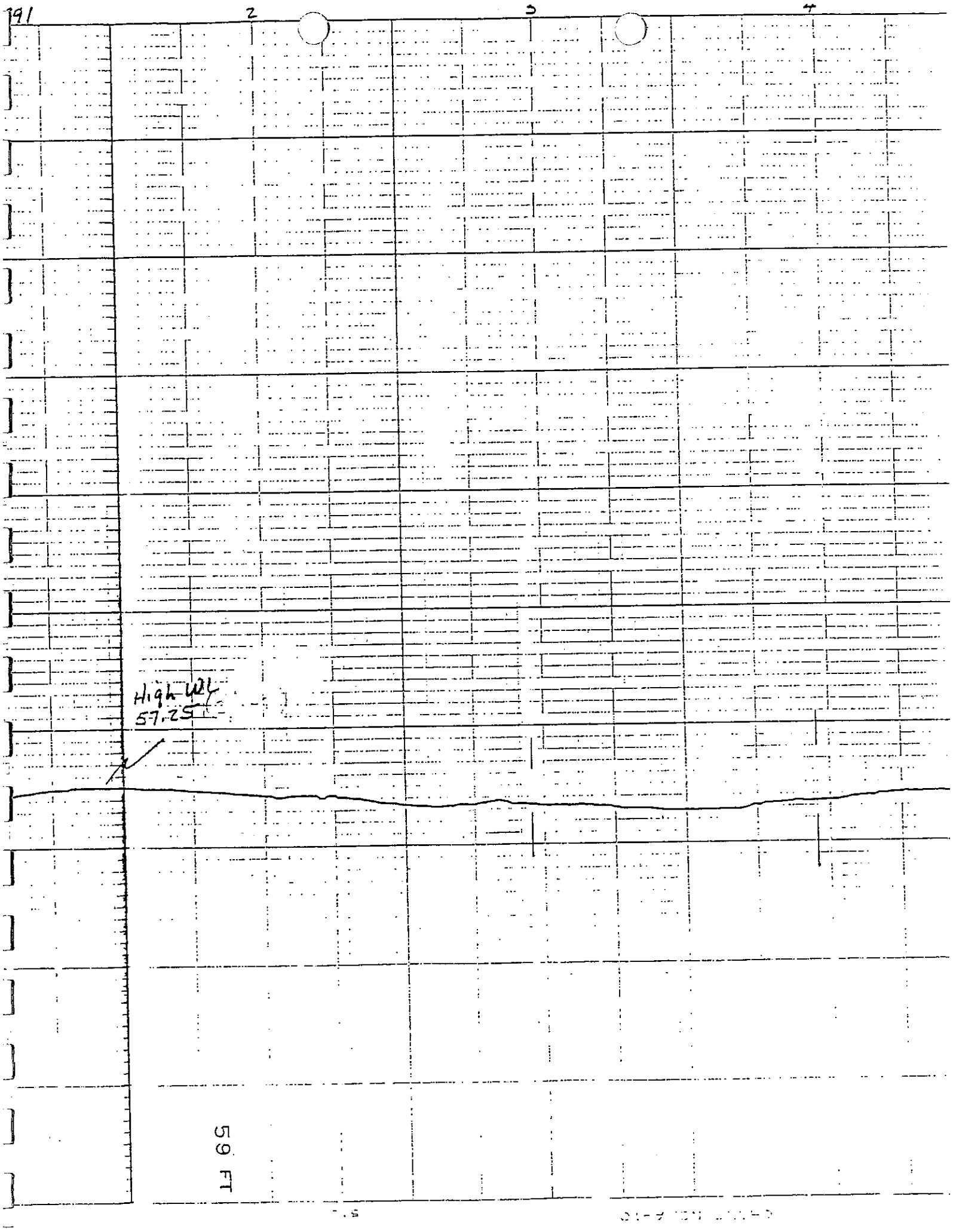
60 FT

Feb 28, 1991

57:48

240=A




91
2
3
4
High WL
57.25
59 FT

MAY 5, 1971

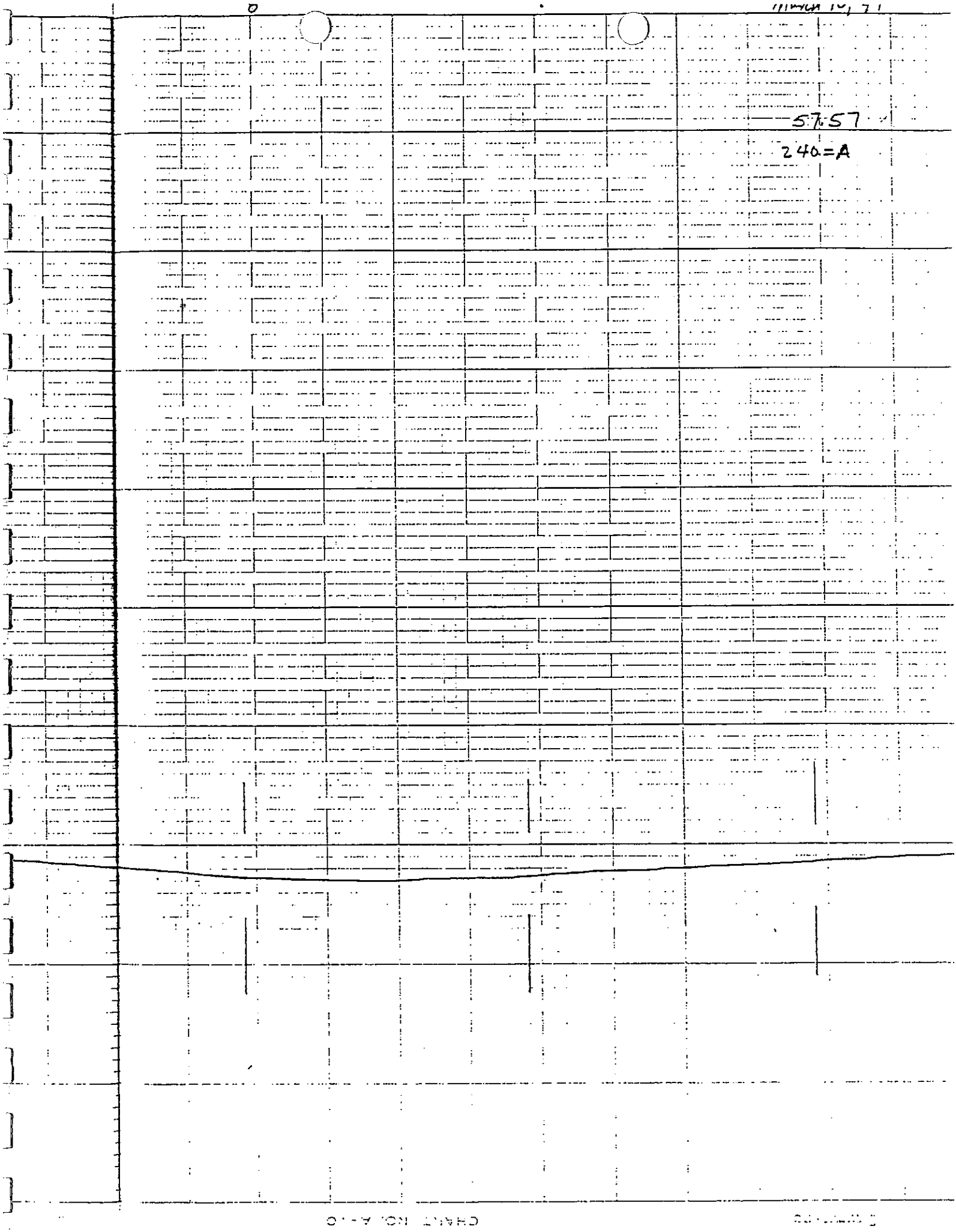
6

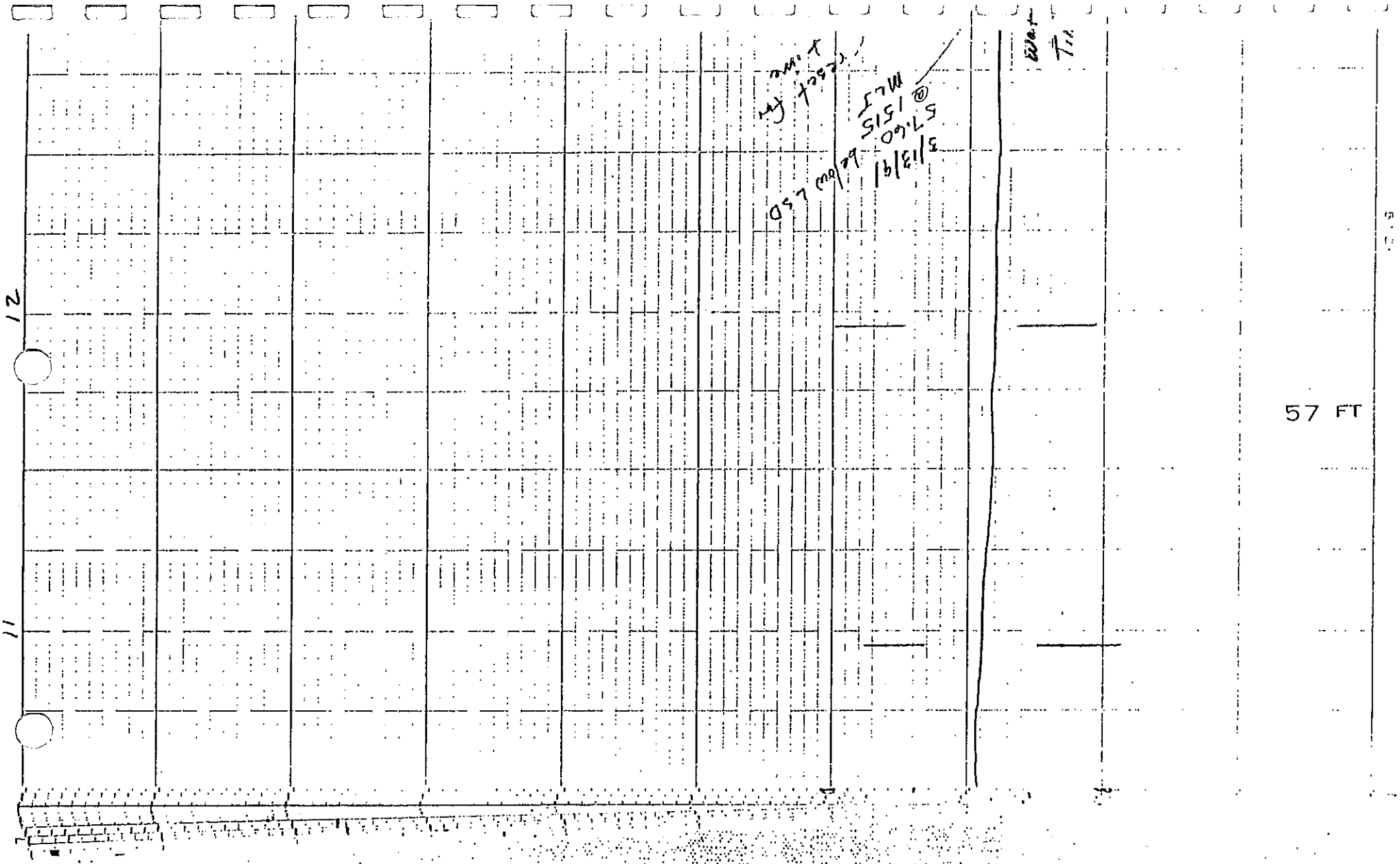
5734

240=A

8

58 FT


57.57
240=A


12
11
57 FT

57.57

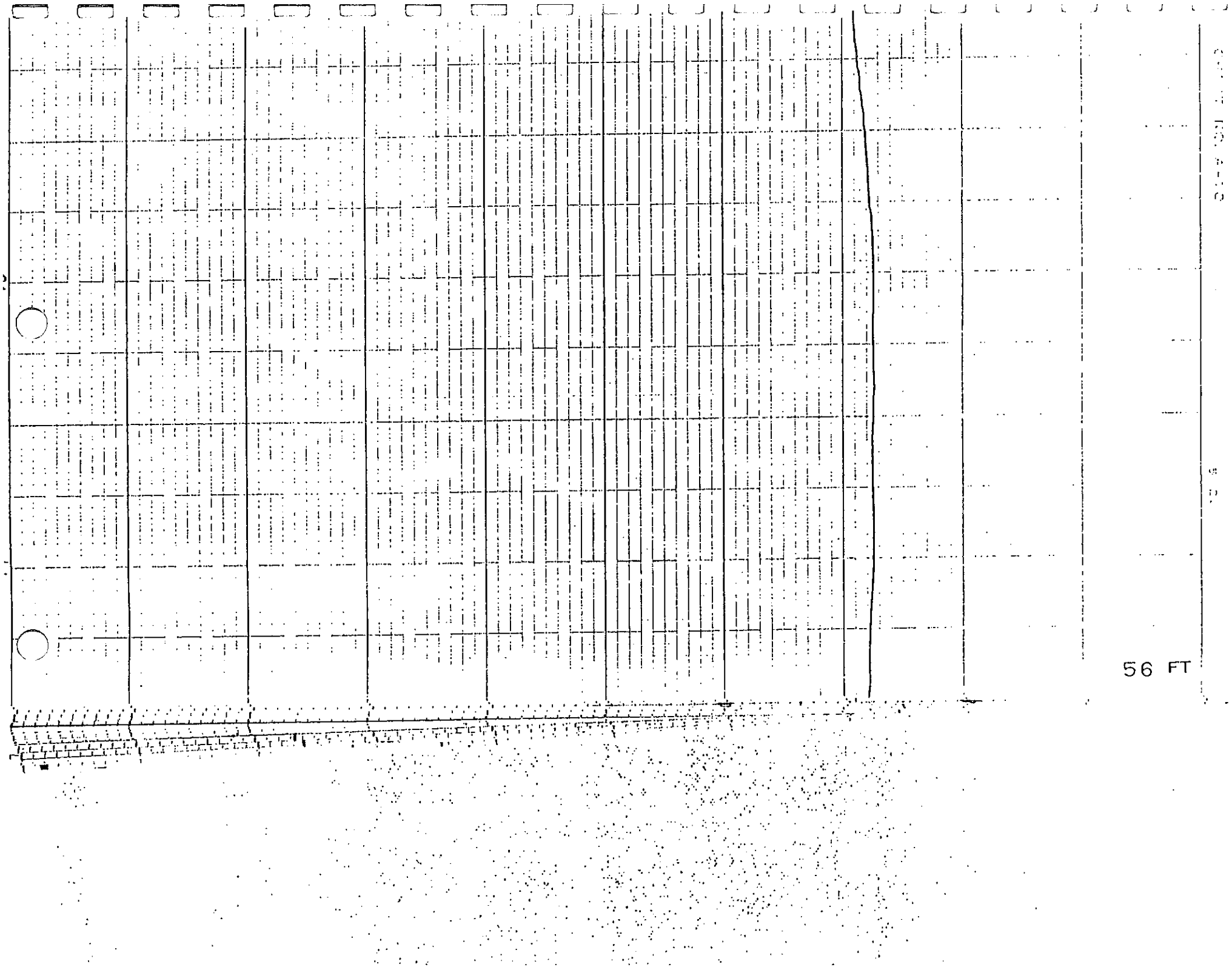
240 = A

47

vel - ok

pour slow

48


56 FT

57:50 - 0.0

240=A

+.01

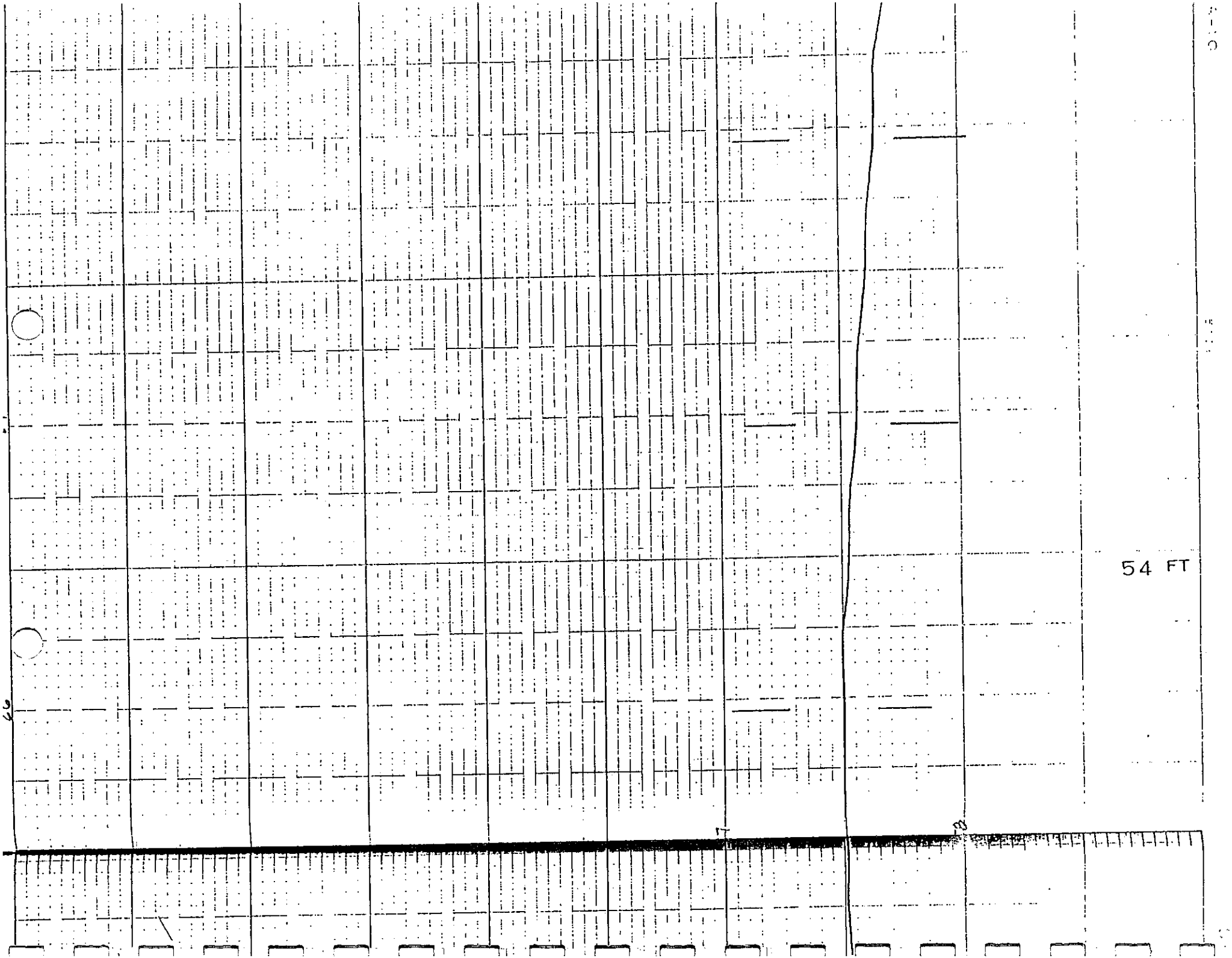
55 FT

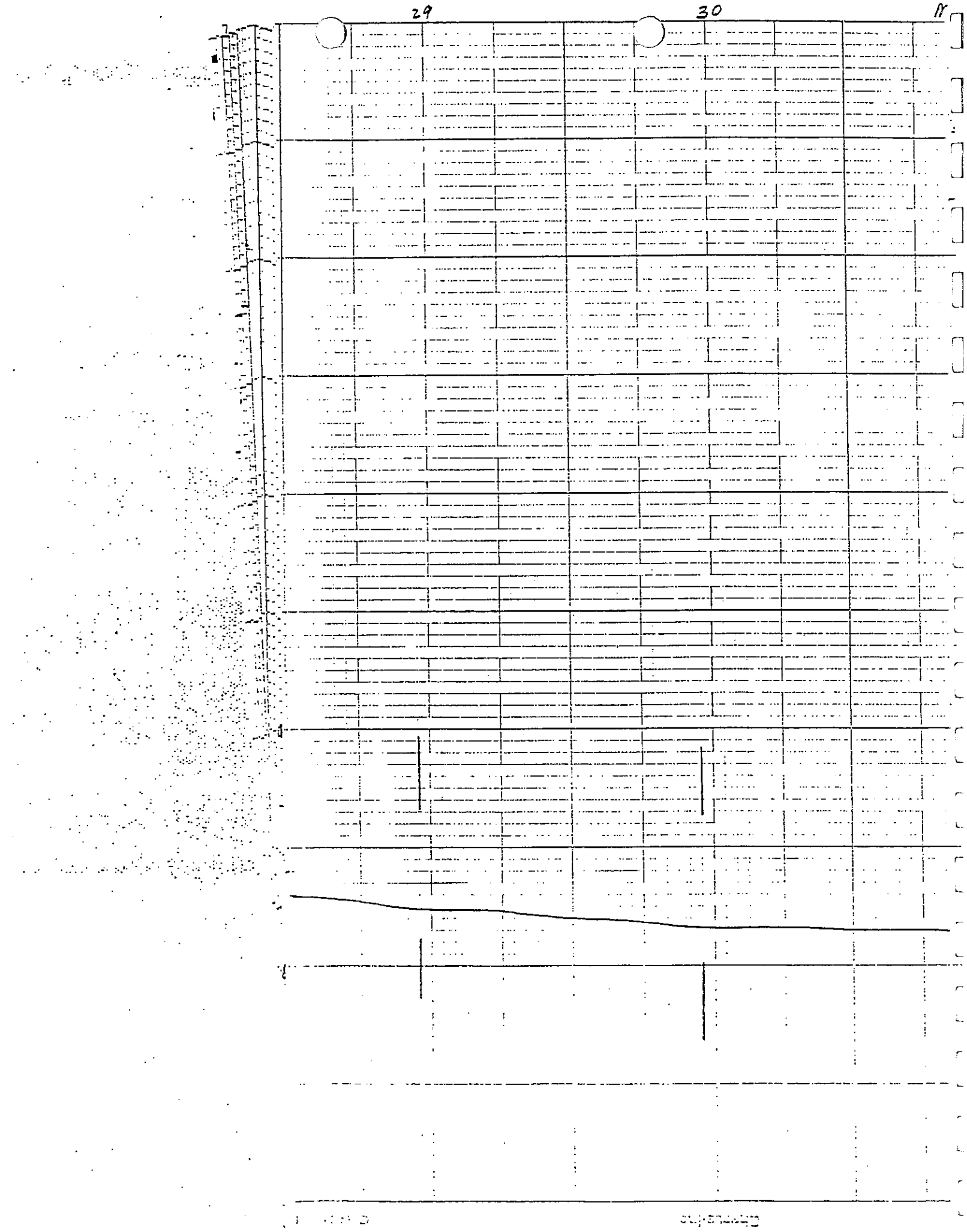
23 24 25, 91

57.55
+.01
57.56
240=A

57

58


54 FT


29
30
N

+.01
+.02
53 FT

57.88
+.02
57.90
240=A

57

Low WL
57.92 +.02 = 57.94

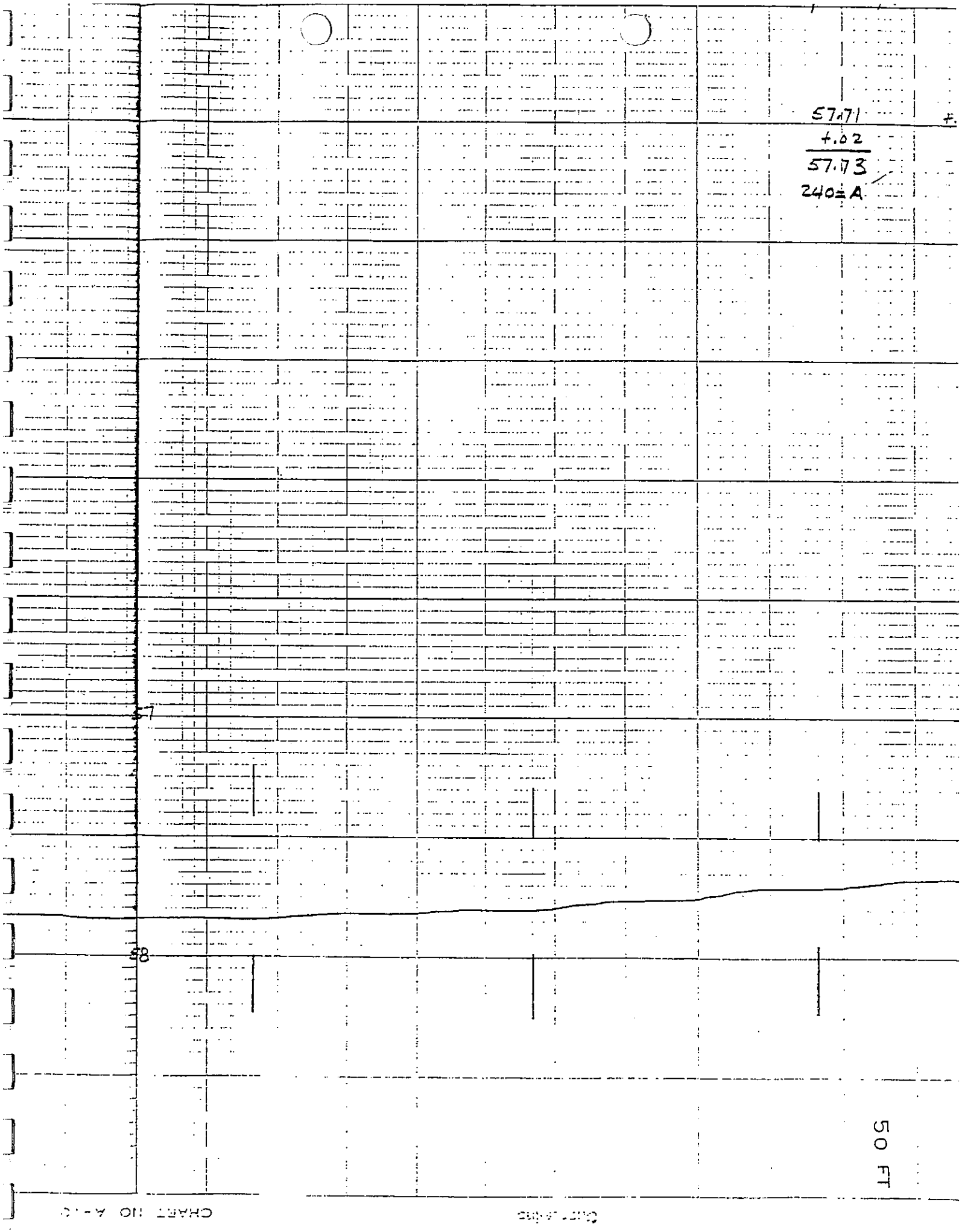
58

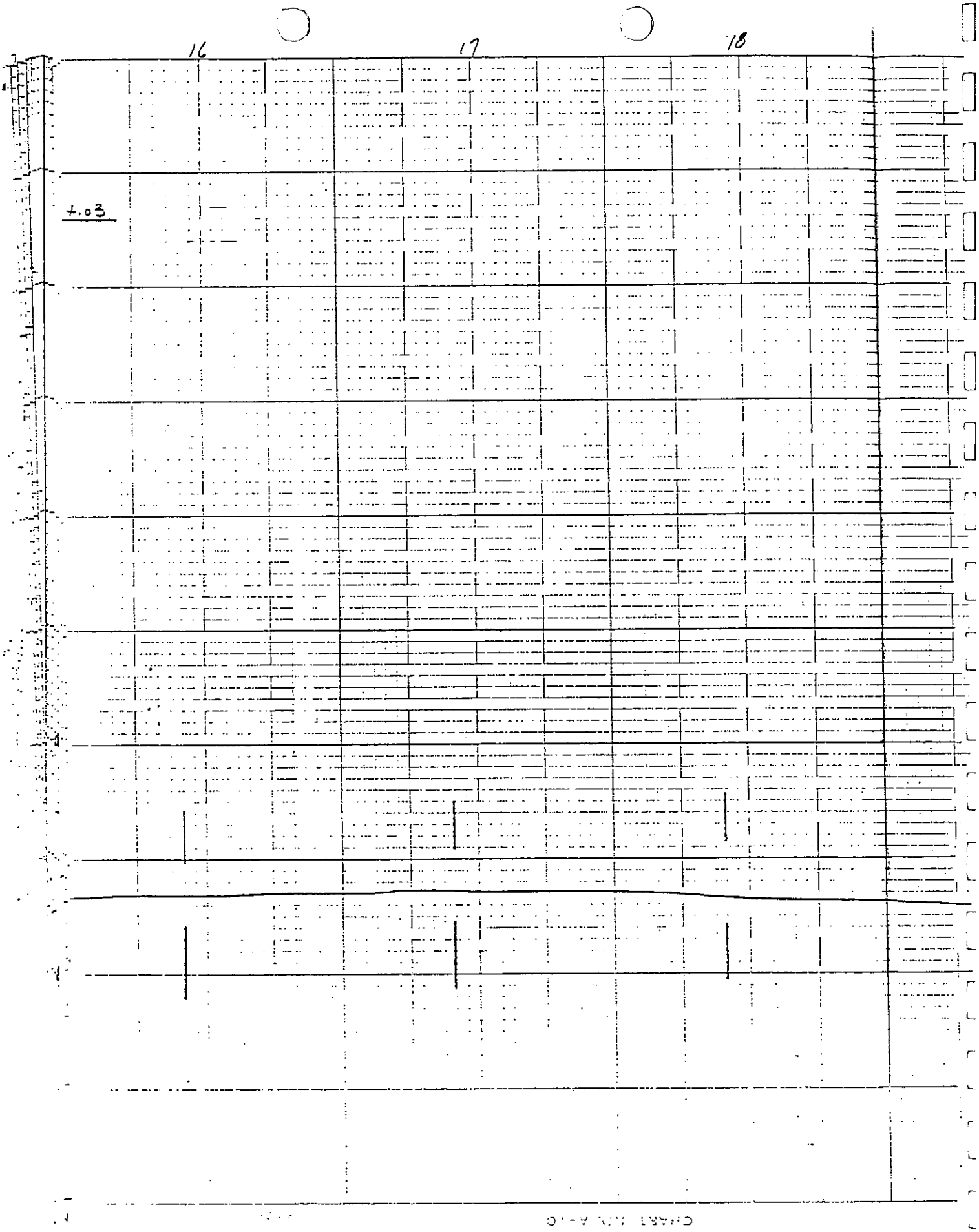
52 FT

Begin Daylight
Savings time

57.87
+.02
57.89
240 = A

51 FT


57.71
+.02
57.73
240±A
57
58
50 FT
CHART NO A-1C


16
17
18
+.03

19 4/20/91 54 21 22

57.70
+.03
57.73
240=A

55 ft

56

57

58

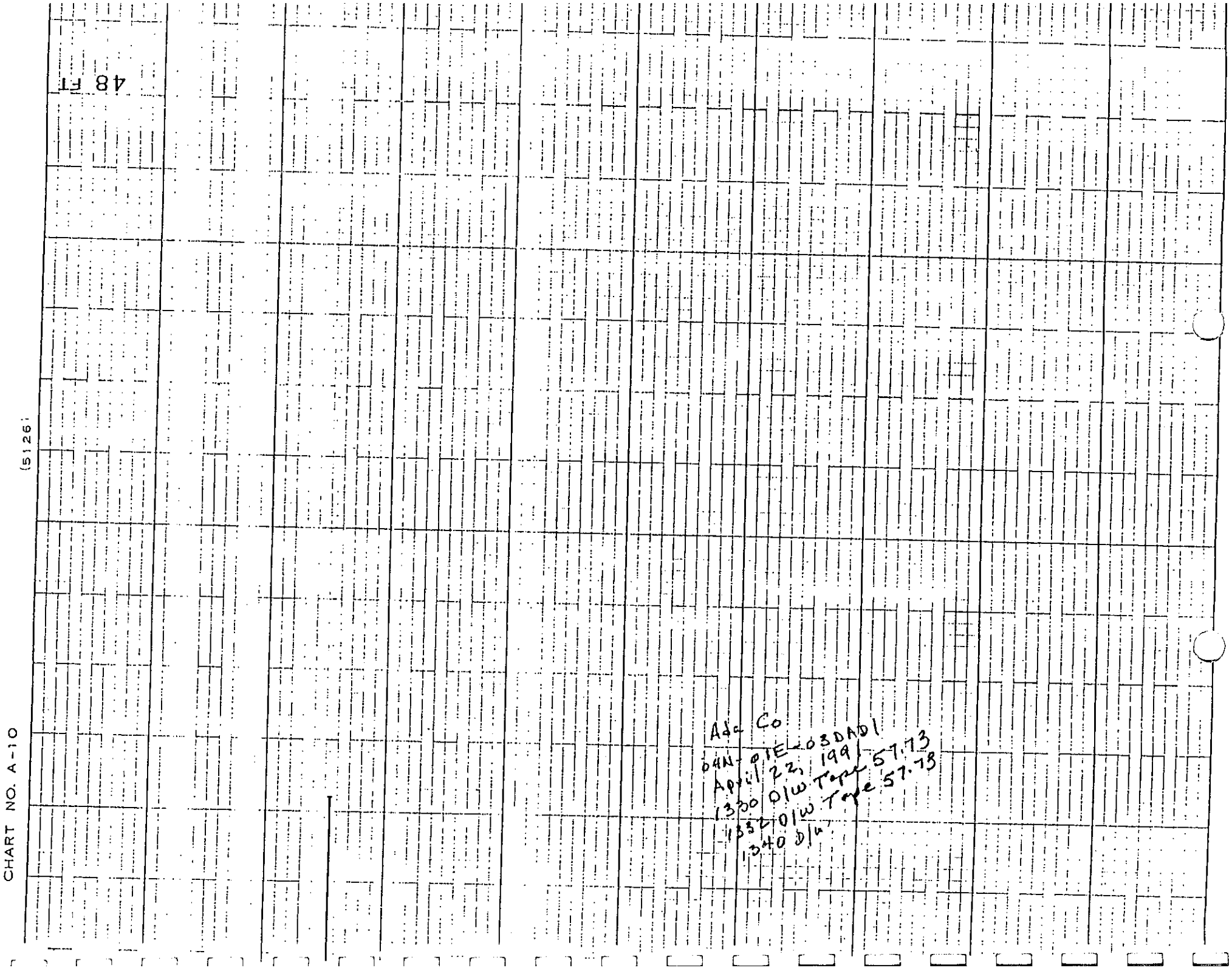
59

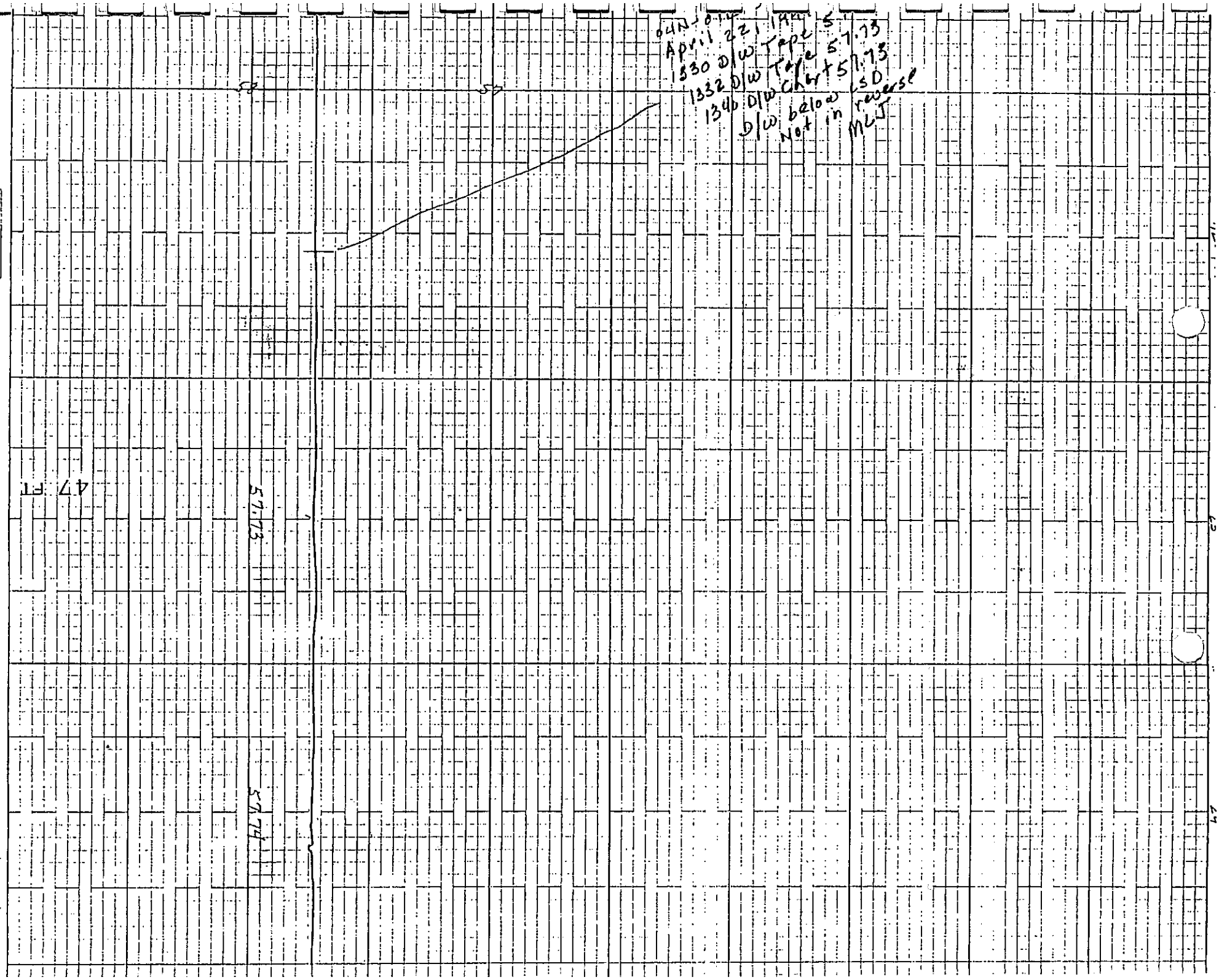
Entered by _____ Date _____
Verified by _____ Date _____

Water level +.03
Time 3 hrs-35 min slow
less 1 hour daylight Saving time

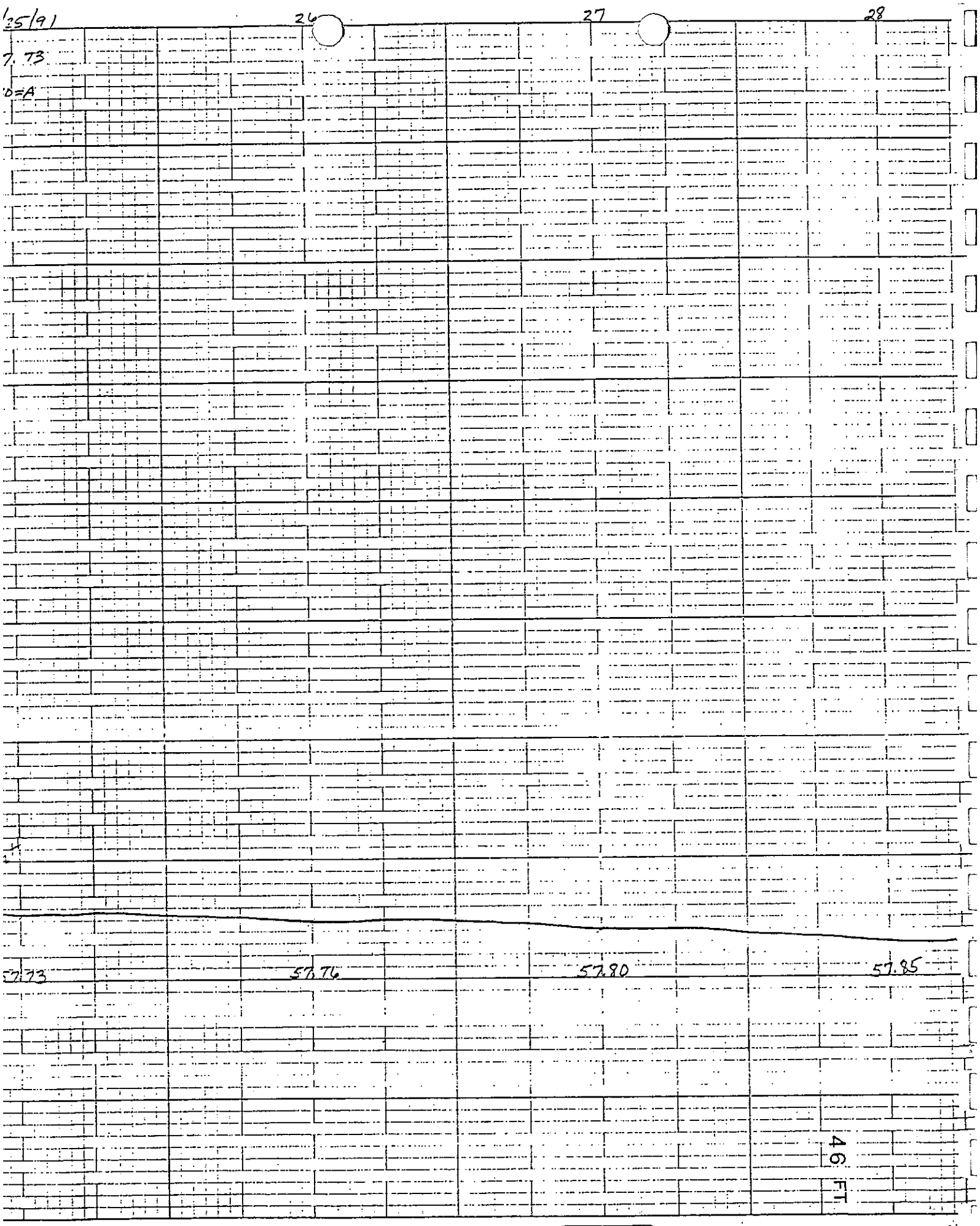
Computed By	M.L. Jones	Date	4/24/91
Checked By	A.T. [illegible]	Date	4/[illegible]
Highest W/L	57.25	Date	3/1/91
Lowest W/L	57.94	Date	4/4/91

49 FT


48 FT
(5126)
CHART NO. A-10
Ada Co
04N-01E-03DAD1
April 22, 1991
1330 D/W Tape 57.73
1332 D/W Tape 57.73
1340 D/W



April 22, 1944
1330 D/W Tape 57.73
1332 D/W Tape 57.73
1340 D/W Chart 57.73
D/W below LSD
Not in reverse
MLJ
47 FT
57.73
57.74
Charts·Inc.
(5126)



Charts-Inc

CHART NO. A-10

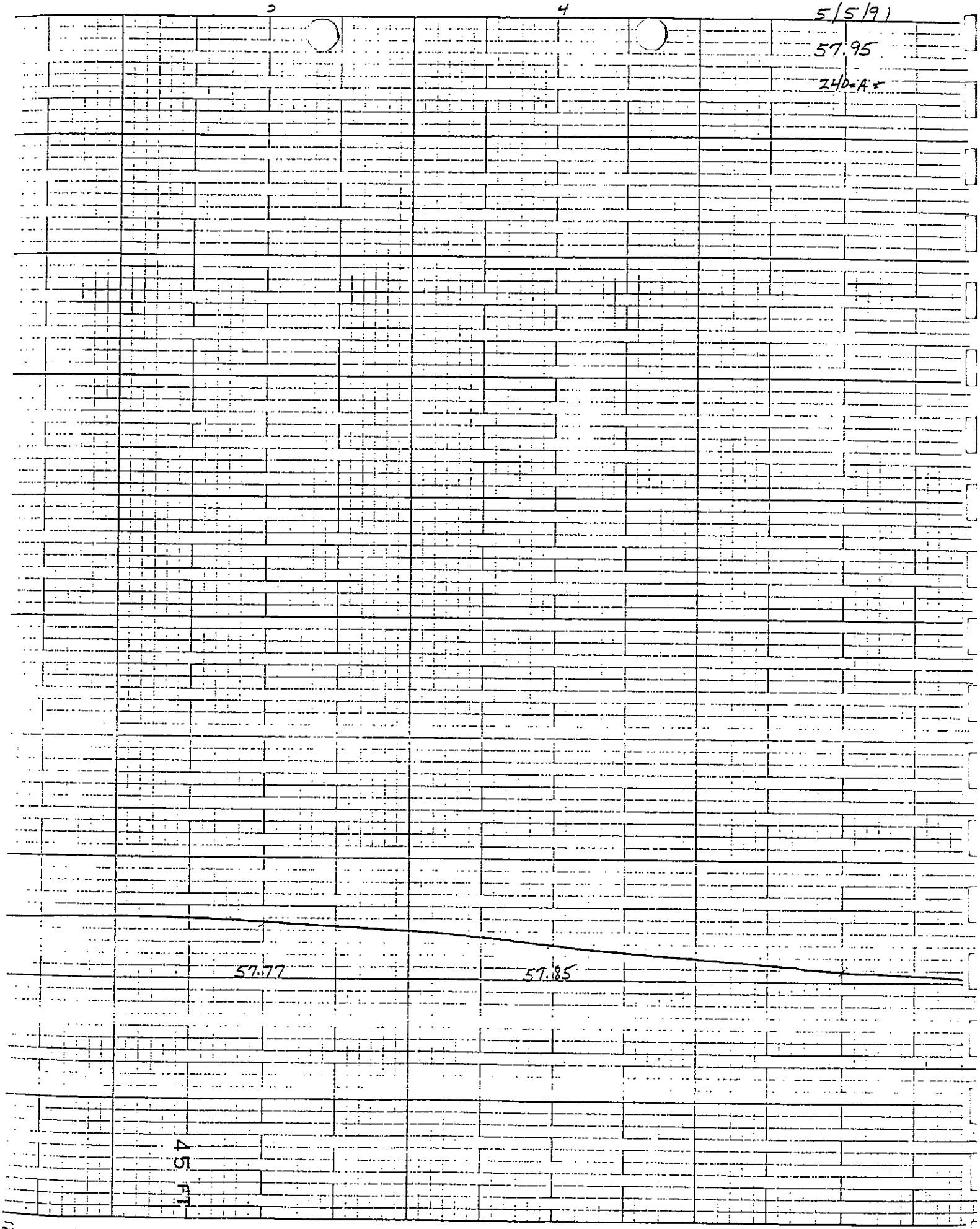
57.88

240=A*

57.87 57.88 57.84

CHART NO. A-10

(5126)



(5126)

Charts.inc

5/10/91

11

12

58.19

240=A*

58.19

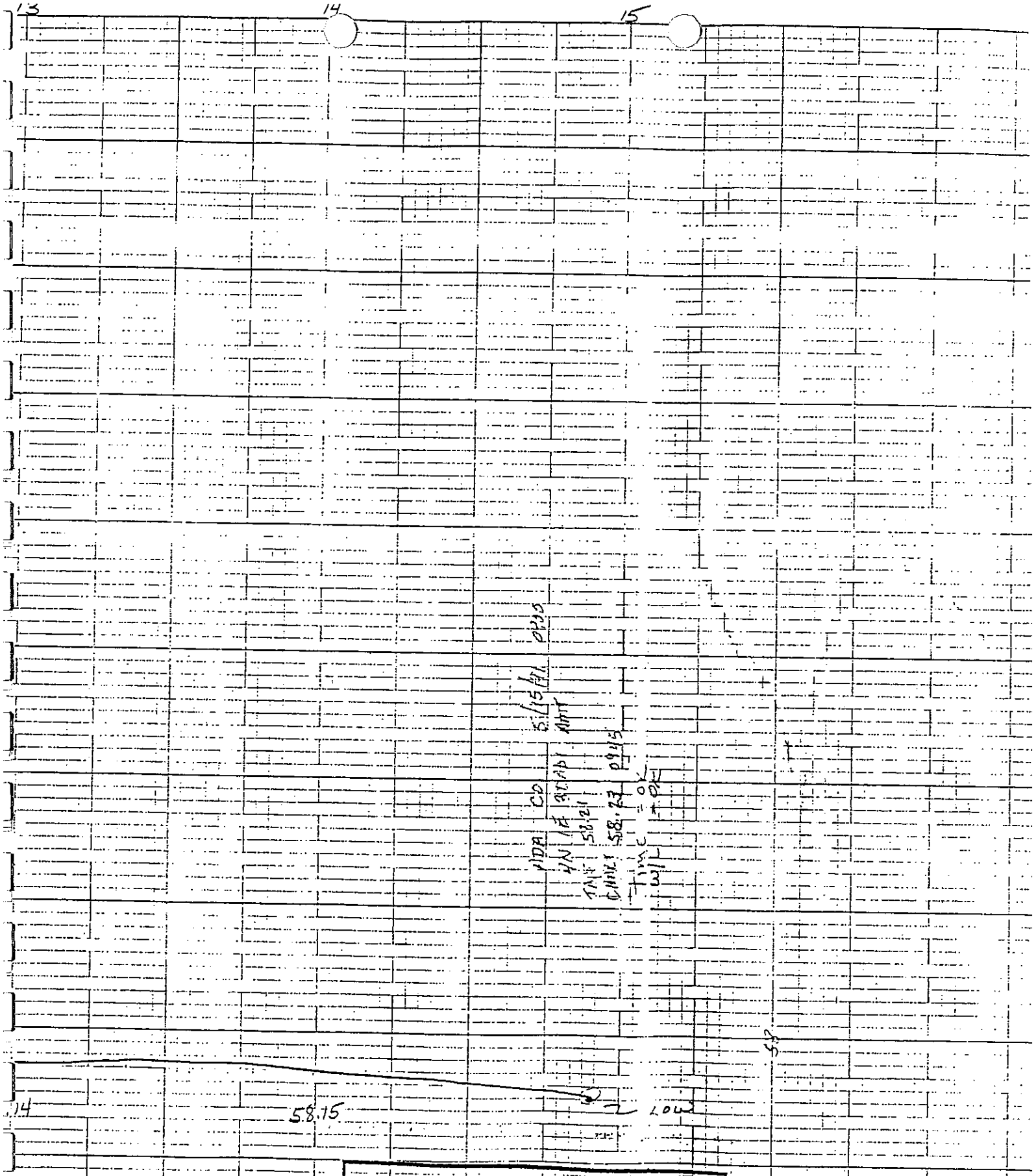
58.18

58.17

43 FT

CHART NO. A-10

Charts-Inc



Computed By	A. Tunuate	Date	5/15/91
Checked By		Date	
Highest W/L	57.7-1	Date	4/25/91
Lowest W/L	58.23 0930	Date	5/15/91

(5126)

CHART NO. A-10

Appendix D
SUPPLEMENTAL HYDROGEOLOGIC DATA FROM THE IDWR

CH2M HILL *PUMPING TEST REPORT* PROJECT NO: BOI 31684.A1

WELL NO: *EICHHORN* PUMPING / OBSERVATION WELL

TYPE OF DATA: *DRAWDOWN*

PUMPED WELL NO: *PW* RADIUS: *14"(28"HOLE)* M.P. FOR WL'S: *TOP OF CASING* ELEV.:

PUMPING RATES: *750.0 Gallons per minute* PUMP ON: DATE *26-Mar-91* TIME *10:56:00*

HOW Q MEASURED: *FLOWMETER* PUMP OFF: DATE *25-Apr-91* TIME *11:03:00*

HOW WL's MEASURED: *BK PROBE* STATIC WATER LEVEL (FT BMP): *61.40*

DIST. FROM PUMPED WELL: *600 FEET* COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READING: REFERENCE	MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
10-Apr	09:15	21499				59.06	59.06	64.97	-5.91	
10-Apr	16:39	21943				59.06	59.06	65.04	-5.98	
10-Apr	22:13	22277				59.08	59.08	65.09	-6.01	
11-Apr	09:41	22965				59.06	59.06	65.20	-6.14	
11-Apr	16:51	23395				59.28	59.28	65.27	-5.99	
11-Apr	23:57	23821				59.54	59.54	65.34	-5.80	
12-Apr	09:56	24420				59.88	59.88	65.44	-5.56	
12-Apr	15:04	24728				60.02	60.02	65.49	-5.46	
12-Apr	21:04	25088				60.18	60.18	65.55	-5.37	
13-Apr	09:08	25812				60.40	60.40	65.66	-5.26	
13-Apr	14:22	26126				60.44	60.44	65.71	-5.27	
13-Apr	21:20	26544				60.56	60.56	65.78	-5.22	
14-Apr	08:39	27223				60.74	60.74	65.89	-5.15	
14-Apr	17:16	27740				60.82	60.82	65.97	-5.15	
14-Apr	22:20	28044				60.88	60.88	66.02	-5.14	
15-Apr	10:08	28752				61.04	61.04	66.14	-5.10	
15-Apr	16:40	29144				61.10	61.10	66.20	-5.10	
15-Apr	21:10	29414				61.12	61.12	66.24	-5.12	
16-Apr	10:04	30188				61.20	61.20	66.37	-5.17	
16-Apr	18:10	30674				61.20	61.20	66.45	-5.25	
17-Apr	01:15	31099				61.26	61.26	66.51	-5.25	
17-Apr	12:02	31746				61.30	61.30	66.62	-5.32	
17-Apr	18:03	32107				61.34	61.34	66.68	-5.34	
17-Apr	23:54	32458				61.36	61.36	66.73	-5.37	
18-Apr	10:31	33095				61.44	61.44	66.84	-5.40	
18-Apr	18:53	33597				61.49	61.49	66.92	-5.43	
18-Apr	23:36	33880				61.53	61.53	66.96	-5.43	
19-Apr	10:36	34540				61.52	61.52	67.07	-5.55	
19-Apr	15:24	34828				61.60	61.60	67.11	-5.51	
19-Apr	23:28	35312				61.60	61.60	67.19	-5.59	
20-Apr	10:05	35949				61.60	61.60	67.30	-5.70	
20-Apr	20:05	36549				61.59	61.59	67.39	-5.80	
20-Apr	23:49	36773				61.59	61.59	67.43	-5.84	
21-Apr	10:43	37427				61.60	61.60	67.53	-5.93	
21-Apr	16:40	37784				61.62	61.62	67.59	-5.97	
21-Apr	21:39	38083				61.58	61.58	67.64	-6.06	
22-Apr	09:50	38814				61.60	61.60	67.76	-6.16	
22-Apr	15:11	39135				61.58	61.58	67.81	-6.23	
22-Apr	20:45	39469				61.60	61.60	67.86	-6.26	
23-Apr	09:14	40218				61.64	61.64	67.98	-6.34	
23-Apr	17:27	40711				61.64	61.64	68.06	-6.42	
23-Apr	22:29	41013				61.66	61.66	68.11	-6.45	
24-Apr	09:18	41662				61.68	61.68	68.22	-6.54	
24-Apr	16:24	42088				61.70	61.70	68.28	-6.58	
24-Apr	22:40	42464				61.71	61.71	68.35	-6.64	
25-Apr	09:07	43091				61.76	61.76	68.45	-6.69	
25-Apr	12:07	43271	676.1			61.79	61.79	68.48	-6.69	

CH2M HILL PUMPING TEST REPORT

PROJECT NO: BOI 31684.A1

WELL NO: EICHHORN — PUMPING / OBSERVATION WELL

TYPE OF DATA: DRAWDOWN

PUMPED WELL NO: PW — RADIUS: 14"(28"HOLE) — M.P. FOR WL'S: TOP OF CASING — ELEV.:

PUMPING RATES: 750.0 Gallons per minute — PUMP ON: DATE 26-Mar-91 TIME 10:56:00

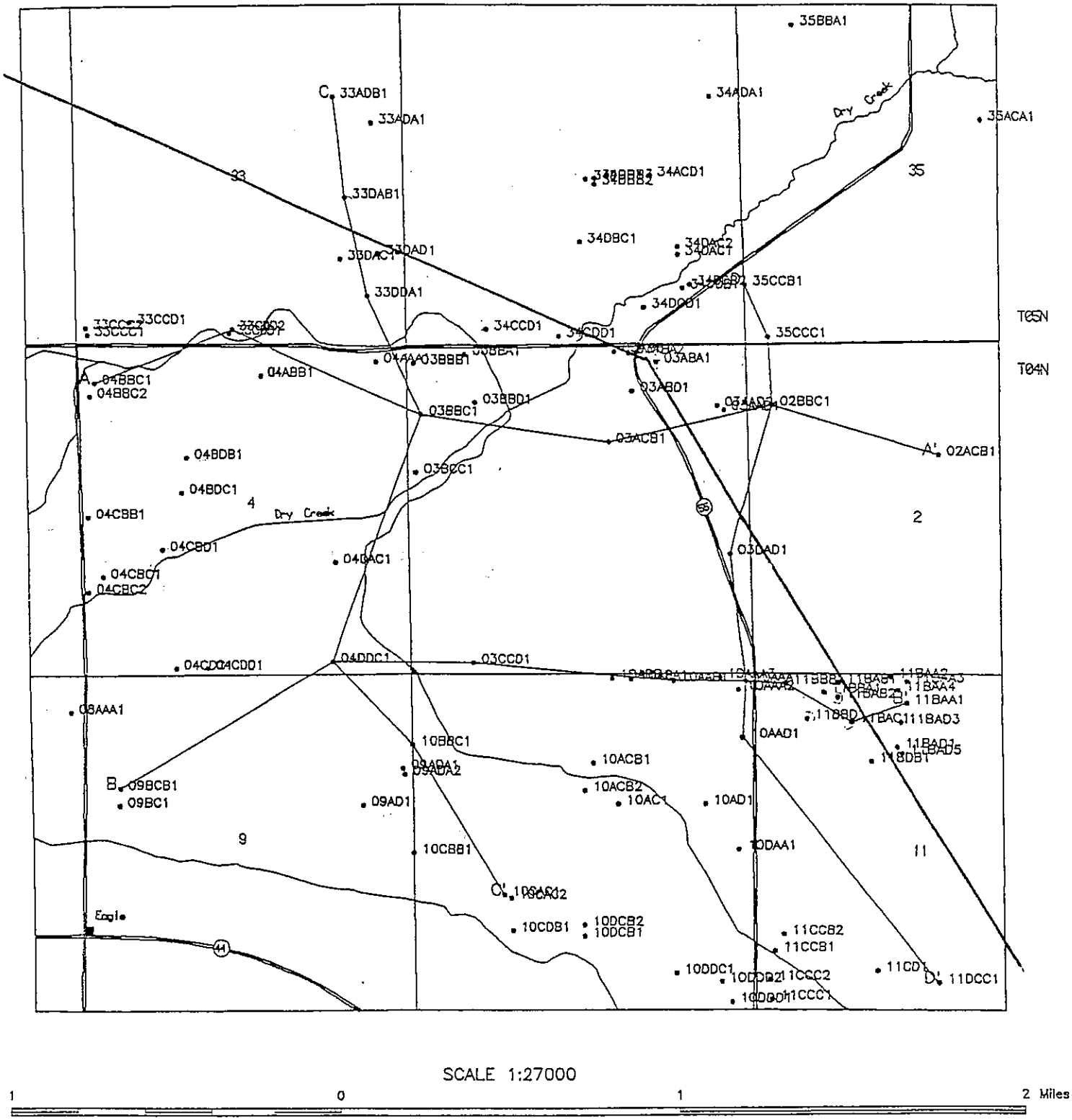
HOW Q MEASURED: FLOWMETER — PUMP OFF: DATE 25-Apr-91 TIME 11:03:00

HOW WL's MEASURED: BK PROBE — STATIC WATER LEVEL (FT BMP): 61.40

DIST. FROM PUMPED WELL: 600 FEET — COMMENTS:

DATE	CLOCK TIME	TIME SINCE PUMPING STARTED / STOPPED (minutes)	t/t'	WATER LEVEL DATA: READING: REFERENCE	READING: MEASURE	DEPTH TO WATER (FT)	DRAW DOWN (FT)	ADJUSTED WATER LEVEL (FT)	ADJUSTED DRAW DOWN (FT)	REMARKS
25-Apr	13:13	43337	333.4			61.77	61.77	68.49	-6.72	
25-Apr	13:40	43364	276.2			61.76	61.76	68.49	-6.73	
25-Apr	14:20	43404	220.3			61.74	61.74	68.50	-6.76	
25-Apr	14:45	43429	195.6			61.72	61.72	68.50	-6.78	
25-Apr	15:50	43494	151.5			61.72	61.72	68.51	-6.79	
25-Apr	16:48	43552	126.2			61.70	61.70	68.52	-6.82	
25-Apr	18:40	43664	95.5			61.66	61.66	68.54	-6.88	
25-Apr	20:00	43744	81.5			61.64	61.64	68.55	-6.91	
25-Apr	21:15	43819	71.6			61.63	61.63	68.56	-6.93	
25-Apr	23:36	43960	58.4			61.60	61.60	68.59	-6.99	
26-Apr	07:52	44456	35.6			61.52	61.52	68.67	-7.15	
26-Apr	13:38	44802	28.1			61.49	61.49	68.72	-7.23	
26-Apr	17:18	45022	24.8			61.46	61.46	68.76	-7.30	
26-Apr	21:32	45276	21.9			61.44	61.44	68.80	-7.36	
27-Apr	00:39	45463	20.2			61.42	61.42	68.83	-7.41	
27-Apr	07:29	45873	17.2			61.38	61.38	68.89	-7.51	
27-Apr	11:26	46110	15.9			61.36	61.36	68.93	-7.57	
27-Apr	18:39	46543	14.0			61.31	61.31	69.00	-7.69	
27-Apr	23:08	46812	13.0			61.29	61.29	69.05	-7.76	
28-Apr	09:05	47409	11.3			61.24	61.24	69.14	-7.90	
28-Apr	14:18	47722	10.6			61.19	61.19	69.19	-8.00	
28-Apr	21:06	48130	9.8			61.12	61.12	69.26	-8.14	
29-Apr	10:25	48929	8.6			61.10	61.10	69.39	-8.29	
29-Apr	20:16	49520	7.8			61.04	61.04	69.48	-8.44	
30-Apr	08:14	50238	7.1			61.00	61.00	69.60	-8.60	
30-Apr	20:30	50974	6.6			60.94	60.94	69.72	-8.78	
01-May	08:27	51691	6.1			60.90	60.90	69.83	-8.93	
01-May	20:52	52436	5.7			60.84	60.84	69.95	-9.11	
02-May	08:47	53151	5.3			60.78	60.78	70.07	-9.29	
02-May	17:32	53676	5.1			60.72	60.72	70.15	-9.43	
03-May	10:40	54704	4.8			60.60	60.60	70.32	-9.72	
03-May	20:16	55280	4.6			60.66	60.66	70.41	-9.75	
04-May	09:07	56051	4.4			60.62	60.62	70.53	-9.91	
04-May	20:49	56753	4.2			60.60	60.60	70.65	-10.05	
05-May	08:49	57473	4.0			60.54	60.54	70.76	-10.22	
05-May	19:53	58137	3.9			60.46	60.46	70.87	-10.41	
06-May	08:30	58894	3.8			60.36	60.36	70.99	-10.63	

NORTH EAGLE AREA



SCALE 1:27000

1 0 1 2 Miles

Figure 1. MAP SHOWING LOCATIONS OF INVENTORIED WELLS

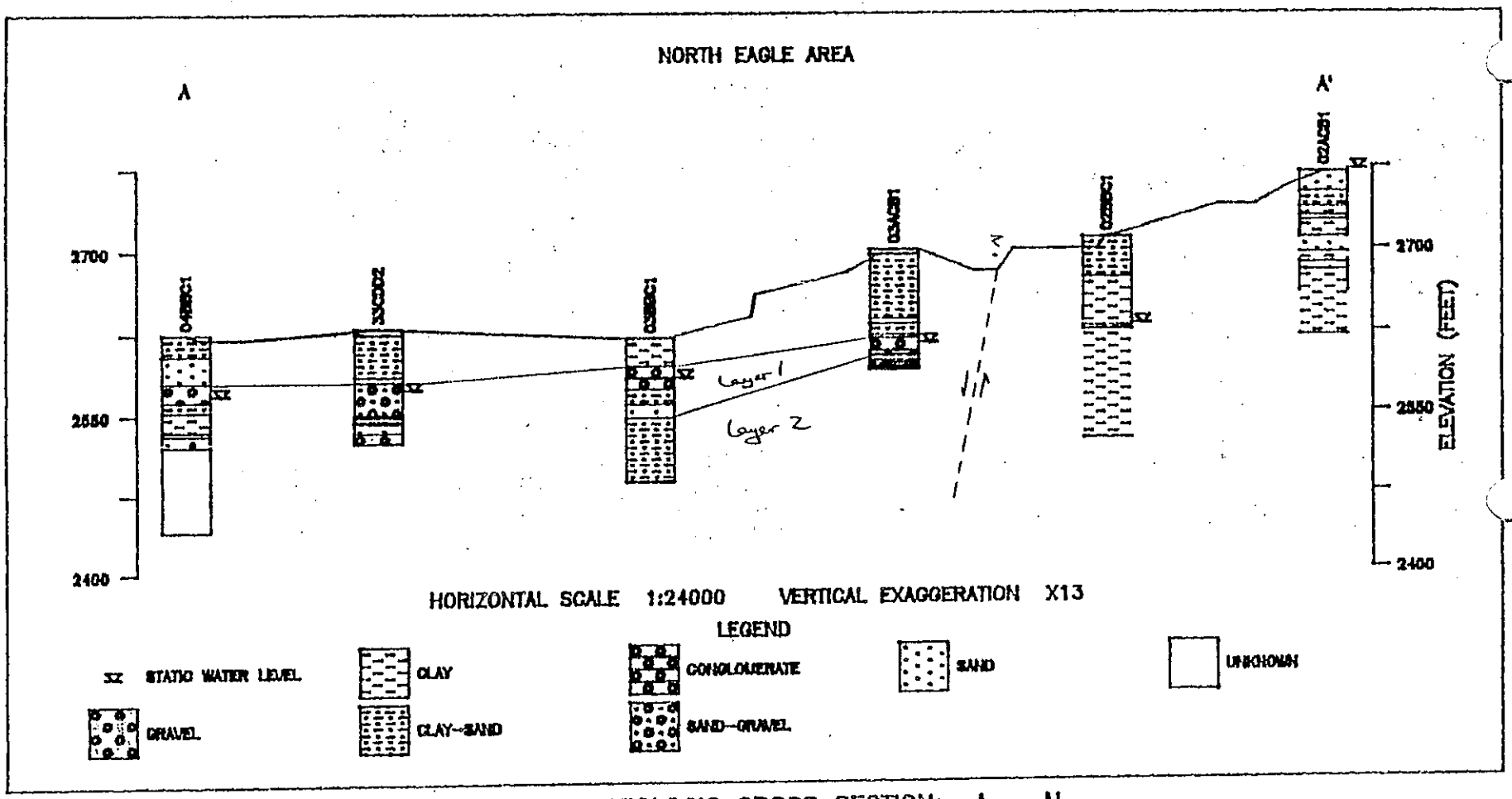


Figure 1. GEOLOGIC CROSS SECTION: A — A'

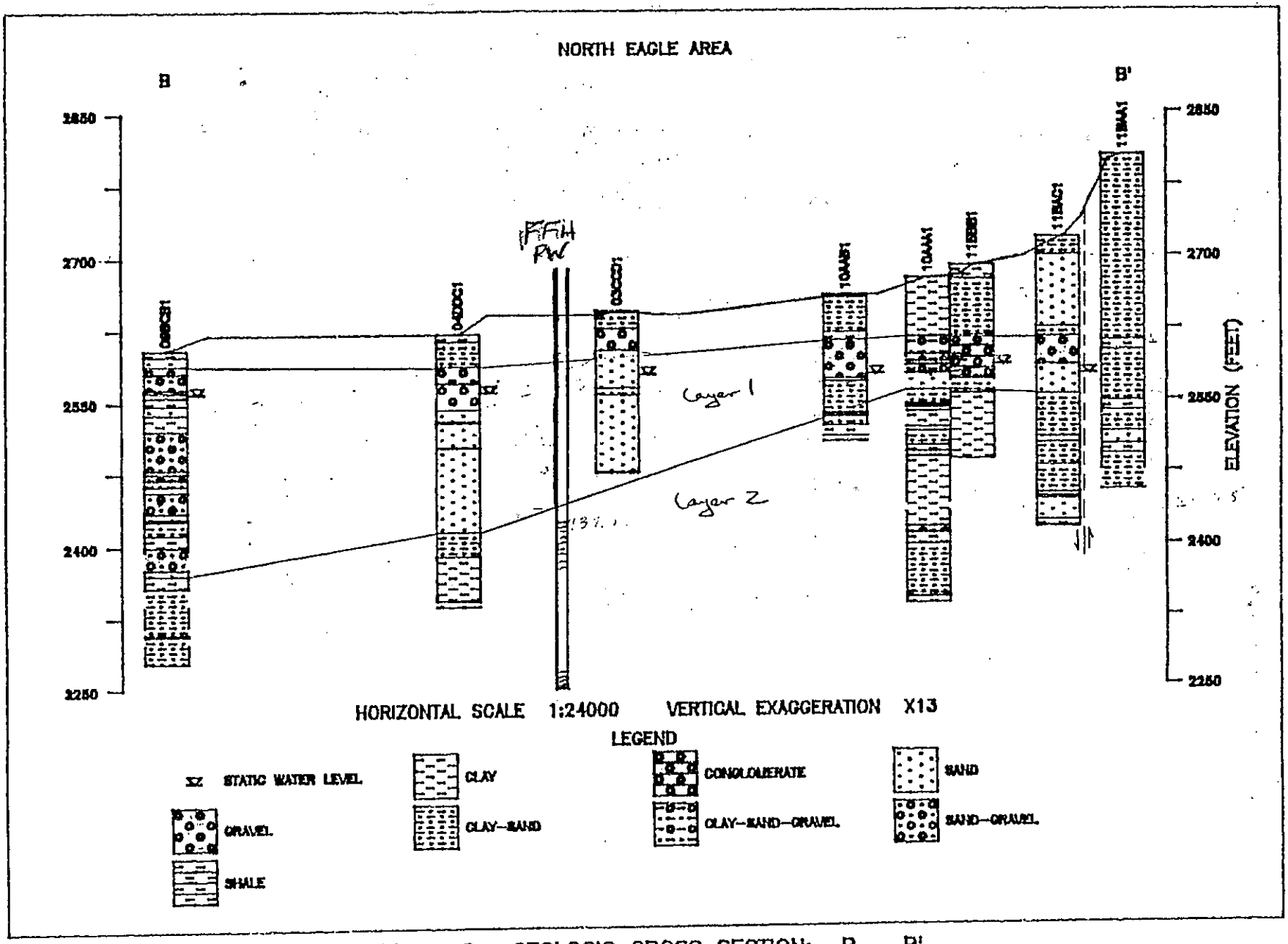


Figure 2. GEOLOGIC CROSS SECTION: B – B'

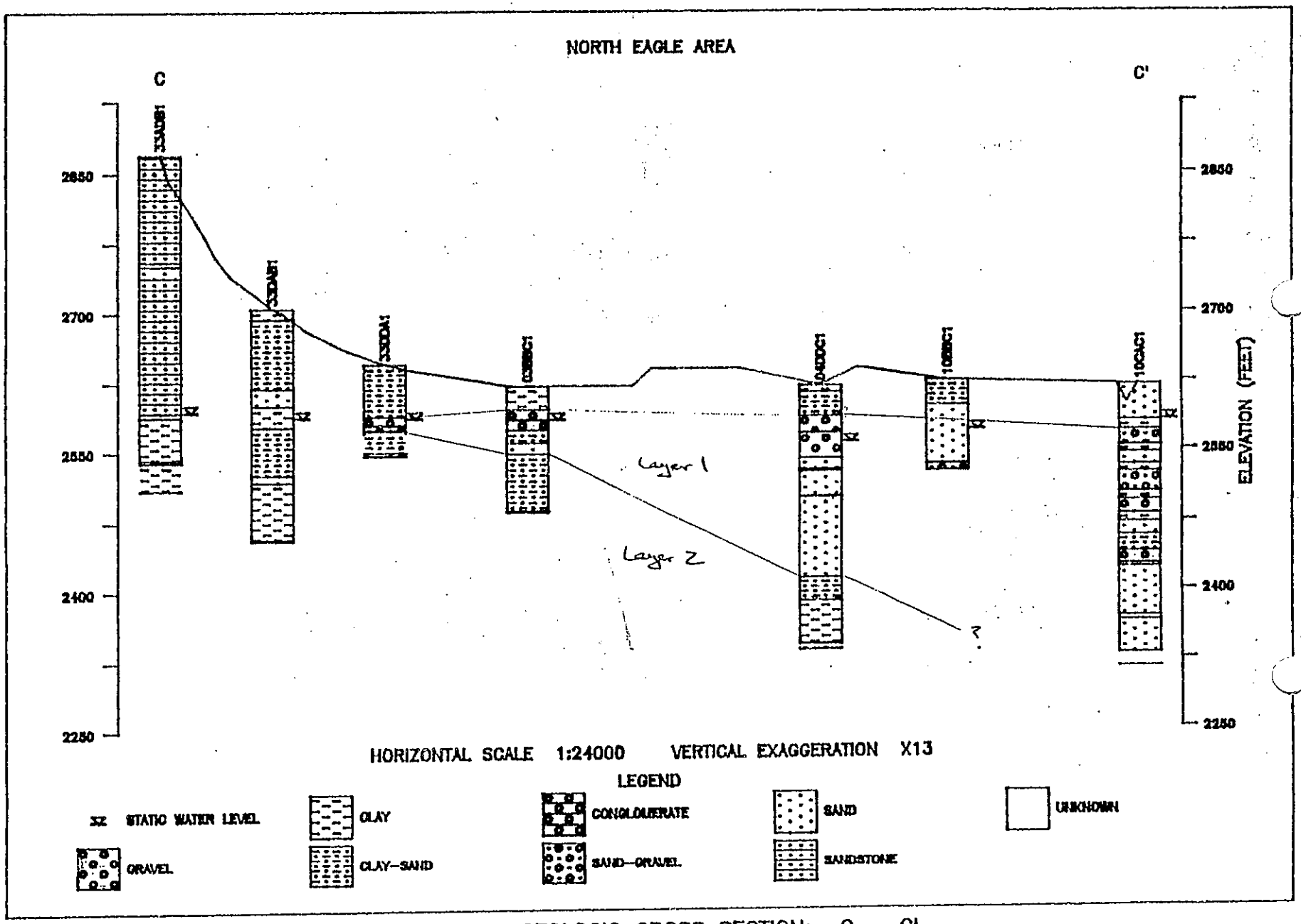


Figure 3. GEOLOGIC CROSS SECTION: C – C'

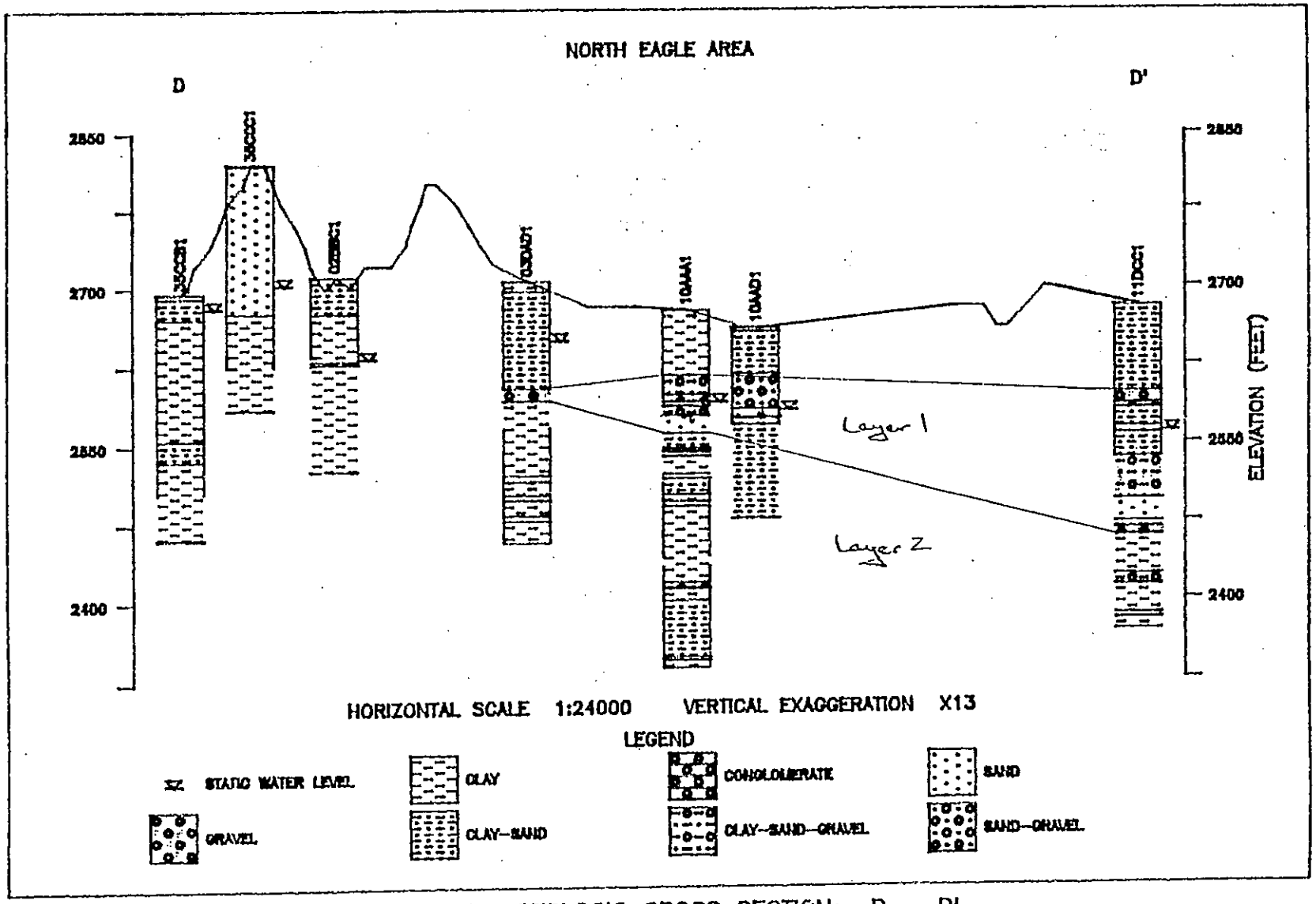


Figure 4. GEOLOGIC CROSS SECTION: D – D'

Appendix E
PUMPING TEST CALCULATION SHEETS

Appendix E-1
PRODUCTION WELL

SUBJECT FFH, INC PUMP TEST BY C. FERGT DATE 5/13/91
SHEET 1 OF 1
PROJECT NO. B01 31684.A1

PRODUCTION WELL

SR TIME DRAWDOWN

T_1 0 - 38 mins

$$T = \frac{264\,Q}{\Delta S} = \frac{264 \times 743}{64.54 - 48.18} = 11,986 \text{ gpd/ft}$$

T_2 38 - 10,000+ mins

$$T = \frac{264\,Q}{\Delta S} = \frac{264 \times 743}{75.91 - 74.55} = 143,749 \text{ gpd/ft}$$

Early time data affected by casing storage (UOP Johnson, 1978)

t_c = time at which casing storage effects neglible

$$t_c = \frac{.6\,(d_c^2 - d_p^2)}{Q/s}$$

d_c = diameter casing (inches) = 28
d_p = diameter pump column (in.) = 10
Q/s = specific capacity at time t_c

Assume t_c = 40 min

$$Q/s @ t_c = \frac{750 \text{ gpm}}{73'} = 10.3 \text{ gpm/ft}$$

$$\therefore t_c = \frac{.6\,(26^2 - 8^2)}{10.3} = 41 \text{ min}$$

$\therefore$ Casing storage affects T_1 and T_2 is correct T

Also $T_2 = \frac{4T_1}{E}$ where E is well efficiency and E > 30 percent

$$E = \frac{4T_1}{} \quad \frac{4 \times 11986}{} = 33\%$$

MAY 24, 1991

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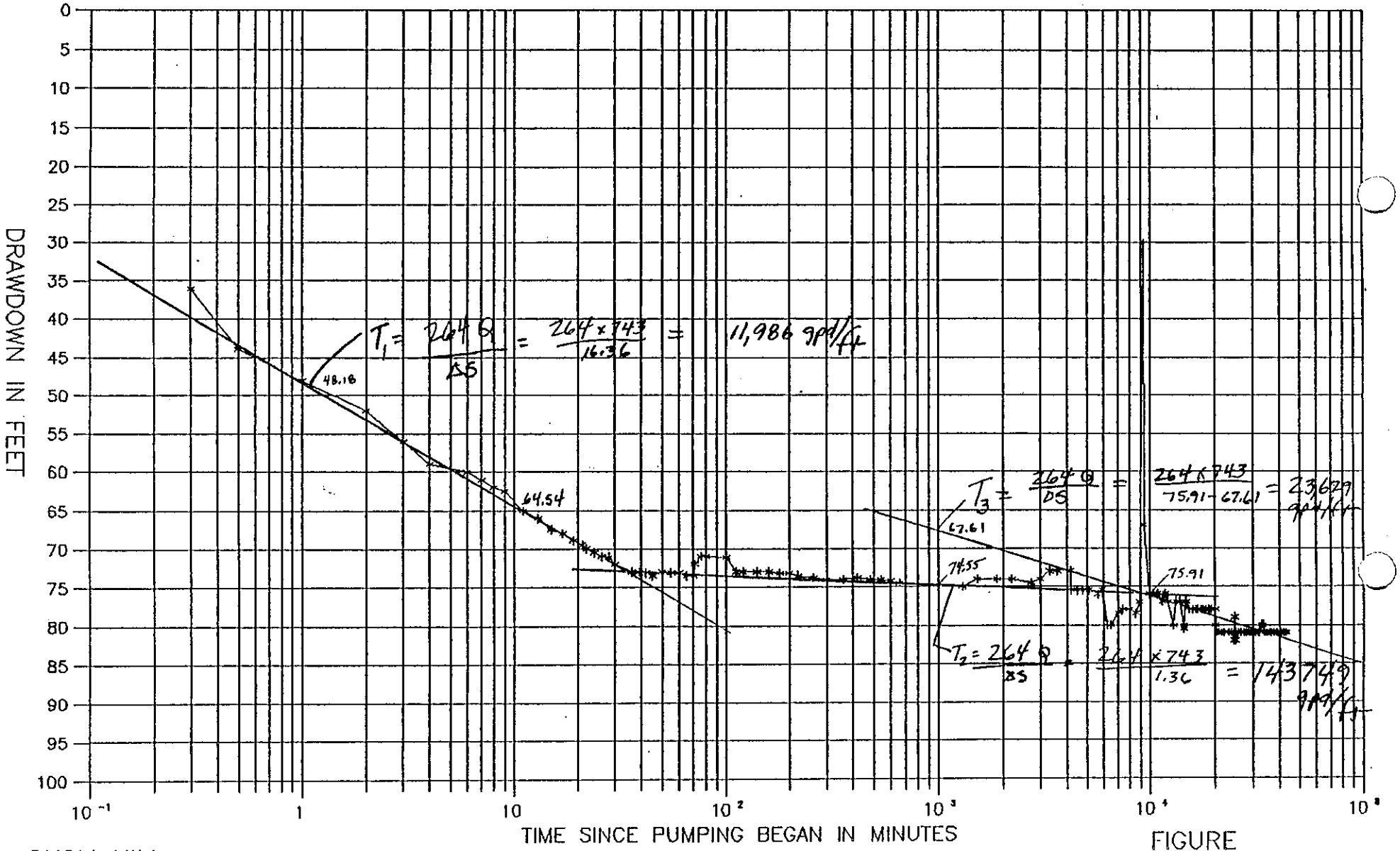

CH2M HILL
B0131684.A1

FIGURE
PRODUCTION WELL
TIME DRAWDOWN

SUBJECT FFH, LNG PUMP TEST BY L. PETS DATE 5/13/91

SHEET 1 OF 1

PROJECT NO. B01 31684.A1

PRODUCTION WELL TIME RECOVERY

THIS CURVE has 2 distinct straight line Segments

early time $t/t'' = 4000 - 175 \pm$

LATE TIME $t/t' = 175$ to EOT @

$$T_1 (\text{EARLY}) = \frac{264\,Q}{\Delta S} = \frac{264 \times 743}{13.41 - 7.04} \doteq 30{,}793 \text{ gpd/ft}$$

$$T_2 (\text{LATE}) = \frac{264\,Q}{\Delta S} = \frac{264 \times 743}{2.04 - 1.02} = 192{,}306 \text{ gpd/ft}$$

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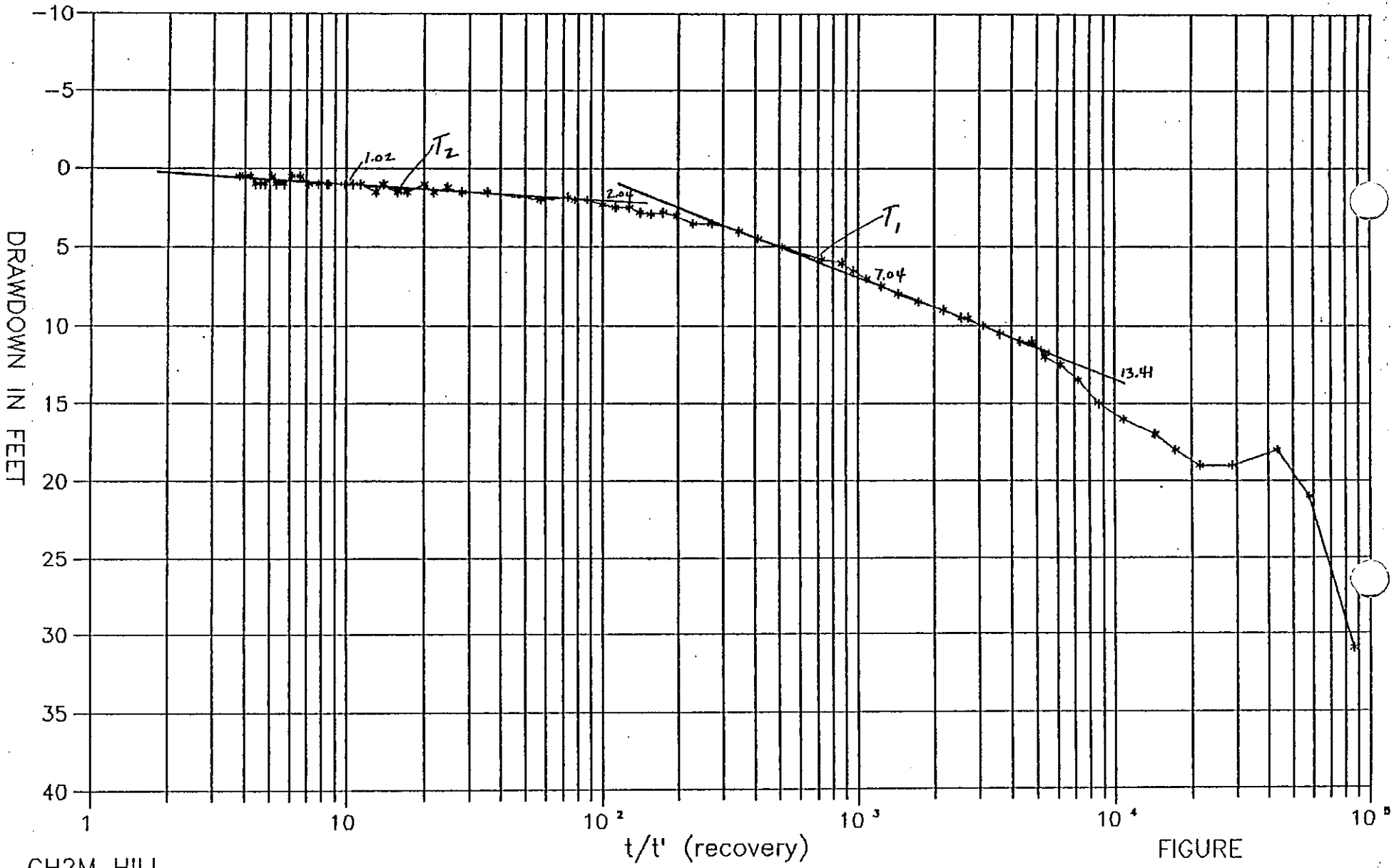

CH2M HILL
B0131684.A1

FIGURE
PRODUCTION WELL
TIME RECOVERY

Appendix E-2
HOLGATE WELL

SUBJECT FFH, INC PUMP TEST BY C. FREST DATE 5/14/91

SHEET 1 OF 2

PROJECT NO. B07 31684.A1

HOLGATE TIME DD

METHOD: PRICKETT DELAYED YIELD

MATCH PT A

$1/\mu_a = 1 \quad \mu_a = 1$

$W(\mu_a, r/d) = 1$

$r/d = .6$

$t = 13 \text{ min} = \frac{13}{1440} = .009 \text{ days}$

$s = .8 \text{ ft}$

$r = 900 \text{ ft}$

$Q = 143037 \text{ ft}^3/\text{day}$

$$KD = \frac{Q}{4\pi s} \times W(\mu_a, r/d) = \frac{143037}{4\pi \times .8} \times 1 = 14{,}288 \text{ ft}^2/\text{day}$$

$$= 106{,}427 \text{ gpd/ft}$$

$$S_a = \frac{\mu_a 4 KD t}{r^2} = \frac{1 \times 4 \times 14{,}288 \times .009}{900^2} = .0006$$

Match PT. B =

$\frac{1}{\mu_y} = 1$

$W(\mu_y, r/d) = 1$

$r/d = .6$

$t = 250 \text{ min} = .1736 \text{ days}$

$s = .8 \text{ ft}$

$$KD = \frac{Q}{4\pi s} \times W(\mu_y, r/d) = \frac{143037}{4\pi .8} \times 1 = 14{,}228 \text{ ft}^2/\text{day}$$

$$= 106{,}427 \text{ gpd/ft}$$

$$S_y = \frac{\mu_y \, 4 \, KD \, t}{r^2} = \frac{1 \times 4 \times 14{,}228 \times .1736 \text{ days}}{900^2}$$

$$= 1.0122$$

$$\gamma = 1 + \frac{S_y}{S_a} = 1 + \frac{.0122}{.0006} = 21.33$$

$r = 900$

$r/B = .6$ $\quad \therefore B = r/.6 = 900/.6 = 1{,}500$

$$B = \sqrt{\frac{KD}{\alpha S_y}} \qquad \alpha = \frac{KD}{S_y B^2} = \frac{14{,}228}{(.0122)(1500)^2} = .52$$

From K&R figure 33

$r/B = .6$, $\alpha t_{wt} = 3.6$

$\therefore t_{wt} = 3.6/\alpha = 3.6/.52 = 6.9$ days (9,936 min

$\therefore$ after 6.9 days gravity drainage becomes negligible

$KD = T = 14{,}228 \text{ ft}^2/\text{day} = 106{,}427 \text{ gpd/ft}$

SUBJECT [illegible] BY C. FEAST DATE 5/14
SHEET 1 OF 1
PROJECT NO. B01 31684.A1

HOLGATE TIME RECOVERY

This curve has 3 distinct straight line portions

T_1 (early Time)

T_2 (middle time)

T_3 (Late Time)

$$T = \frac{264\,Q}{\Delta s}$$

$Q = 743$ gpm

$$T_1 = \frac{264 \times 743}{4.16 - 3.05} = 176{,}714 \text{ gpd/ft}$$

$$T_2 = \frac{264 \times 743}{2.84 - 2.36} = 408{,}650 \text{ gpd/ft}$$

$$T_3 = \frac{264 \times 743}{2.27 - .32} = 100{,}591 \text{ gpd/ft}$$

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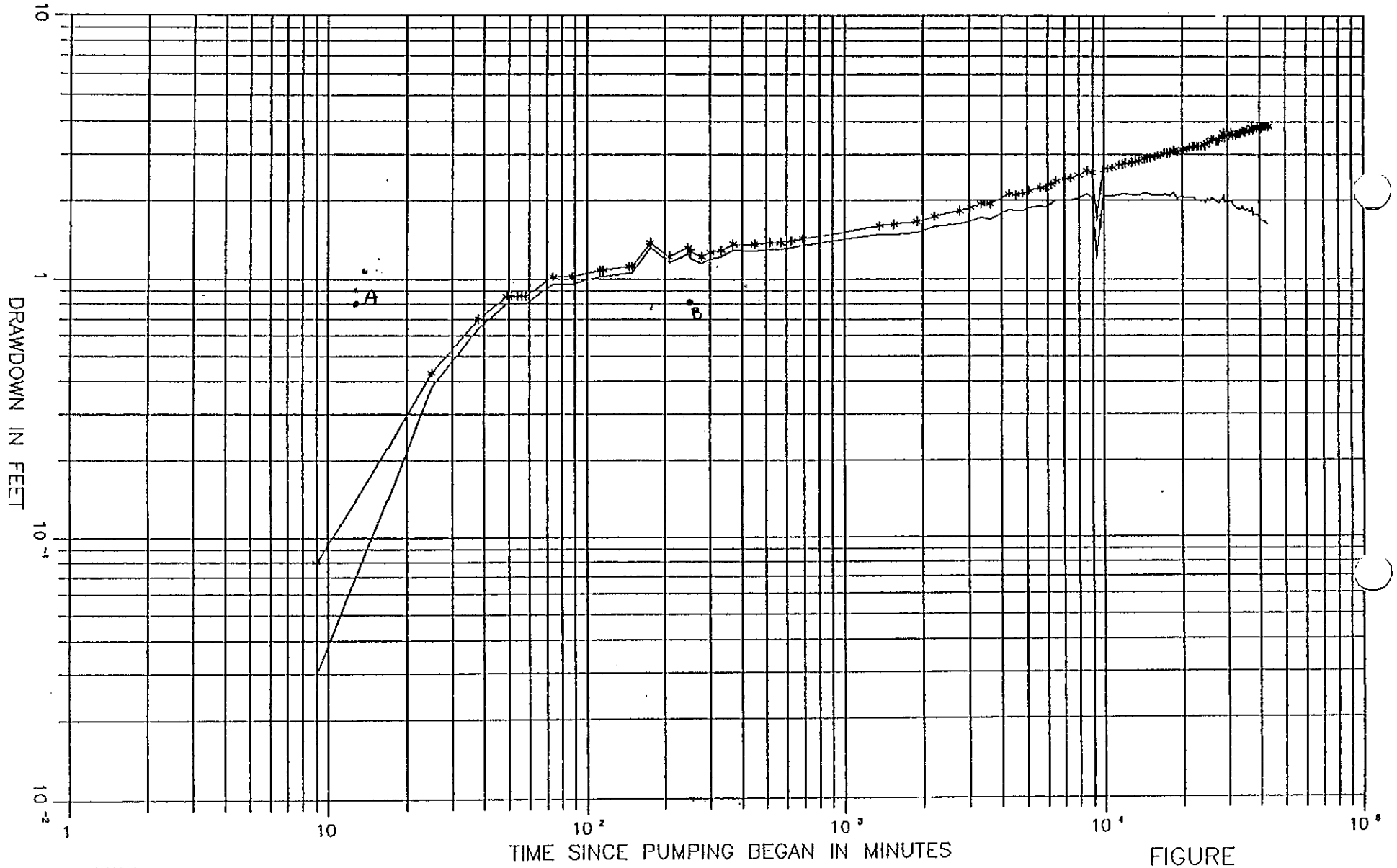

CH2M HILL
B0131684.A1

FIGURE

HOLGATE WELL
TIME DRAWDOWN

HOLGATE TIME DD

1) Semi log "Chow" method Kruseman & Ridder p. 57

A') $\Delta SA' = 1.51 - 1.05 = .46$

A' = $\Delta A' = 1.51$ ft

$t_{A'} = 1000$ min $= \frac{1000 \text{ min}}{1440 \text{ min/day}} = .69$ day

$$s_A = \frac{Q}{4\pi KD} W(u)$$

$$F(u) = \frac{SA'}{\Delta SA'} = \frac{1.51}{.46} = 3.28$$

$$F(u) = \frac{W(u)e^u}{2.30}$$

from fig 14 $u = .0004$
$W(u) = 7.6$

$Q = 743$ gpm $\div 7.48$ gals/ft^3

$= 99.33$ ft^3/min $\times 1440$ min/day

$= 143{,}037$ ft^3/day

$r = 900$ ft

$$s_A = \frac{Q}{4\pi KD} W(u)$$

$$KD = \frac{Q}{4\pi s_A} W(u)$$

$$KD = \frac{143{,}037}{4\pi \times 1.51}(7.6) = 57{,}290 \text{ ft}^2/\text{day}$$

$= 428{,}526$ gpd/ft

$$S = \frac{4uKD}{r^2} t_A = \frac{4(.0004)(57{,}290)}{900 \times 900}(.69) = 7.8 \times 10^{-5}$$

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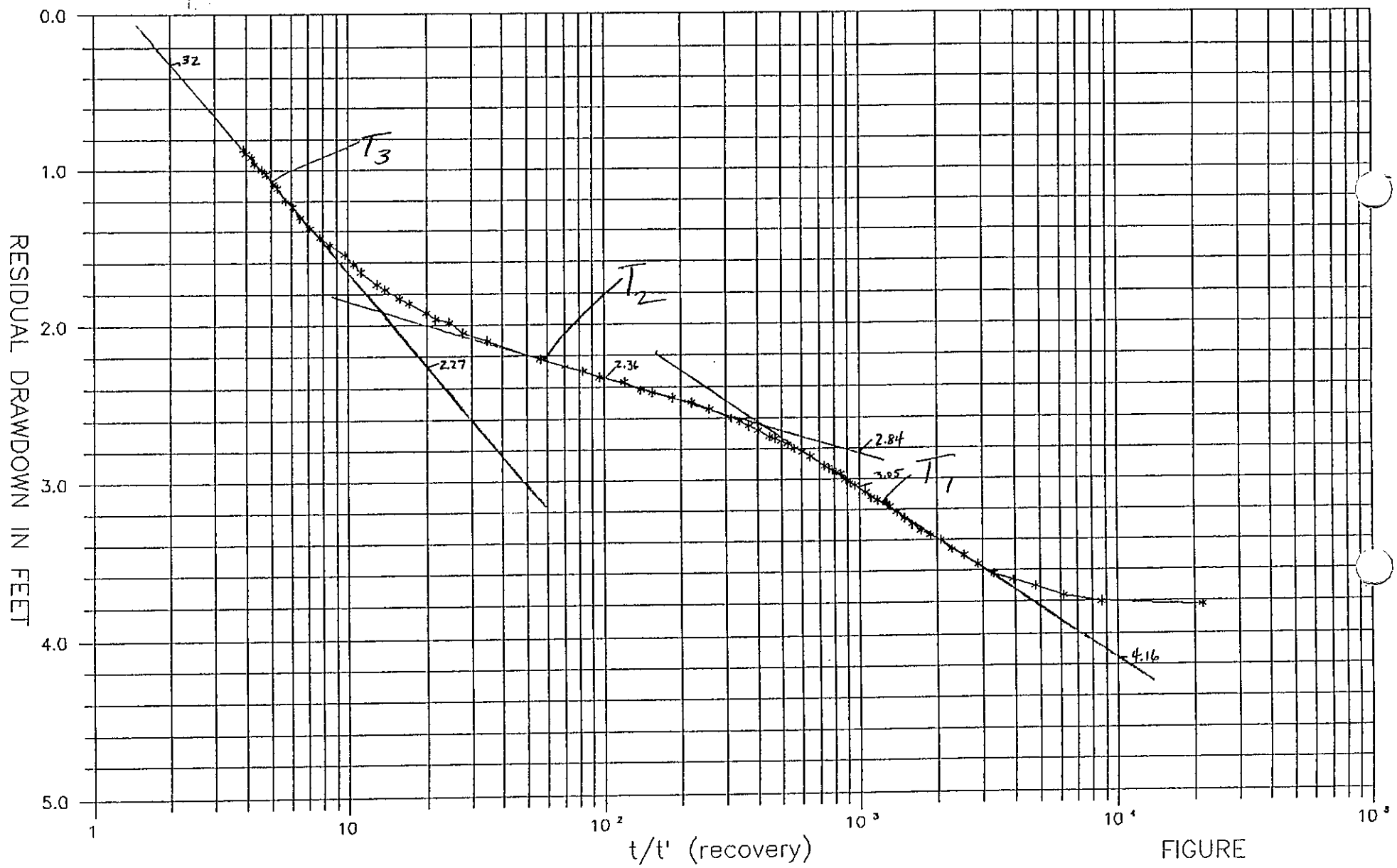

CH2M HILL
B0131684.A1

FIGURE
HOLGATE WELL
TIME RECOVERY

SUBJECT FFH PUMP TEST BY CF DATE 5/14
SHEET 2 OF 34
PROJECT NO. B07 31684.A1

HOLGATE TIME DD

A'') $\Delta SA'' = 2.64$ [illegible]

$\Delta SA'' = 2.67 - 1.073 = 1.54$

$t_{A''} = 10{,}000 \text{ min} \times \frac{1 \text{ day}}{1440 \text{ min}} = 6.94 \text{ days}$

$F(u) = \frac{SA''}{\Delta SA''} = \frac{2.64}{1.56} = 1.69$

$w(u_{a''}) = 3.8$

$u_{a''} = .012$

$Q = 743 \text{ gpm} \times \frac{1 \text{ ft}^3}{7.48 \text{ gal}} \times \frac{1440 \text{ min}}{1 \text{ day}} = 143{,}037 \text{ ft}^3/\text{day}$

$r = 900 \text{ ft}$

$S_A = \frac{Q}{4\pi KD \, w(u)}$

$KD = \frac{Q}{4\pi SA'' \, w(u)}$

$KD = \frac{143{,}037 \text{ ft}^3}{4\pi \times 2.61} \times 3.8 = 16{,}572 \text{ ft}^2/\text{day} \times \frac{7.48 \text{ gal}}{\text{ft}^3} = 123{,}960 \text{ gpd/ft}$

$S = \frac{4 u_{a''} KD}{r^2} t_{a''}$

$S = \frac{4(.012)\,16{,}572}{900 \times 900} \times 6.94 = .0068$

HOLGATE TIME DD

A''')

$\Delta SA''' = 4.0 - 1.74' = 2.26$

$SA''' = 3.475$

$t_{A'''} = 30{,}000 \text{ min} \times \frac{1 \text{ day}}{1440 \text{ min}} = 20.83 \text{ days}$

$F(u) = \frac{SA'''}{\Delta SA'''} = \frac{3.475}{2.26} = 1.54$

$w(u) = 3.4$

$u = .017$

$Q = 143{,}037 \text{ ft}^3/\text{day}$

$r = 900 \text{ ft}$

$KD = \frac{Q}{4\pi SA'''} w(u) = \frac{143{,}037}{4\pi \cdot 3.475} \times 3.4$

$= 11{,}153 \text{ ft}^2/\text{day} \times \frac{7.48 \text{ gal}}{\text{ft}^3} = 83{,}424 \text{ gpd/ft}$

$S = \frac{4 u_{a'''} KD}{r^2} t_{a'''}$

$S = \frac{4(.017)(11{,}153)}{900 \times 900} \times 20.83 = .0195$

CHECK Validity of straight line method for $u \leq .02$
Walton p 212

$t_{SL} = \frac{1.35 \times 10^5 r^2 S}{T}$ (gal-ft-day units)

$t_{SL A'} = \frac{1.35 \times 10^5 \times 900^2 \times .8 \times 10^{-5}}{428{,}526} = 20.4 \text{ min}$

∴ T.A' is valid

$t_{SL A''} = \frac{1.35 \times 10^5 \times 900^2 \times .0068}{123{,}960} = 5{,}999 \text{ min}$

∴ T.A'' is VALID

$$t_{sc} A''' = \frac{1.35 \times 10^5 \times 900^2 \times .0195}{83,424} = 25,560 \text{ min}$$

$\therefore T_{A'''}$ is valid

Conclusion:

Very LATEST time should provide best Aquifer Characteristics because of effect of gravity drainage on early time.

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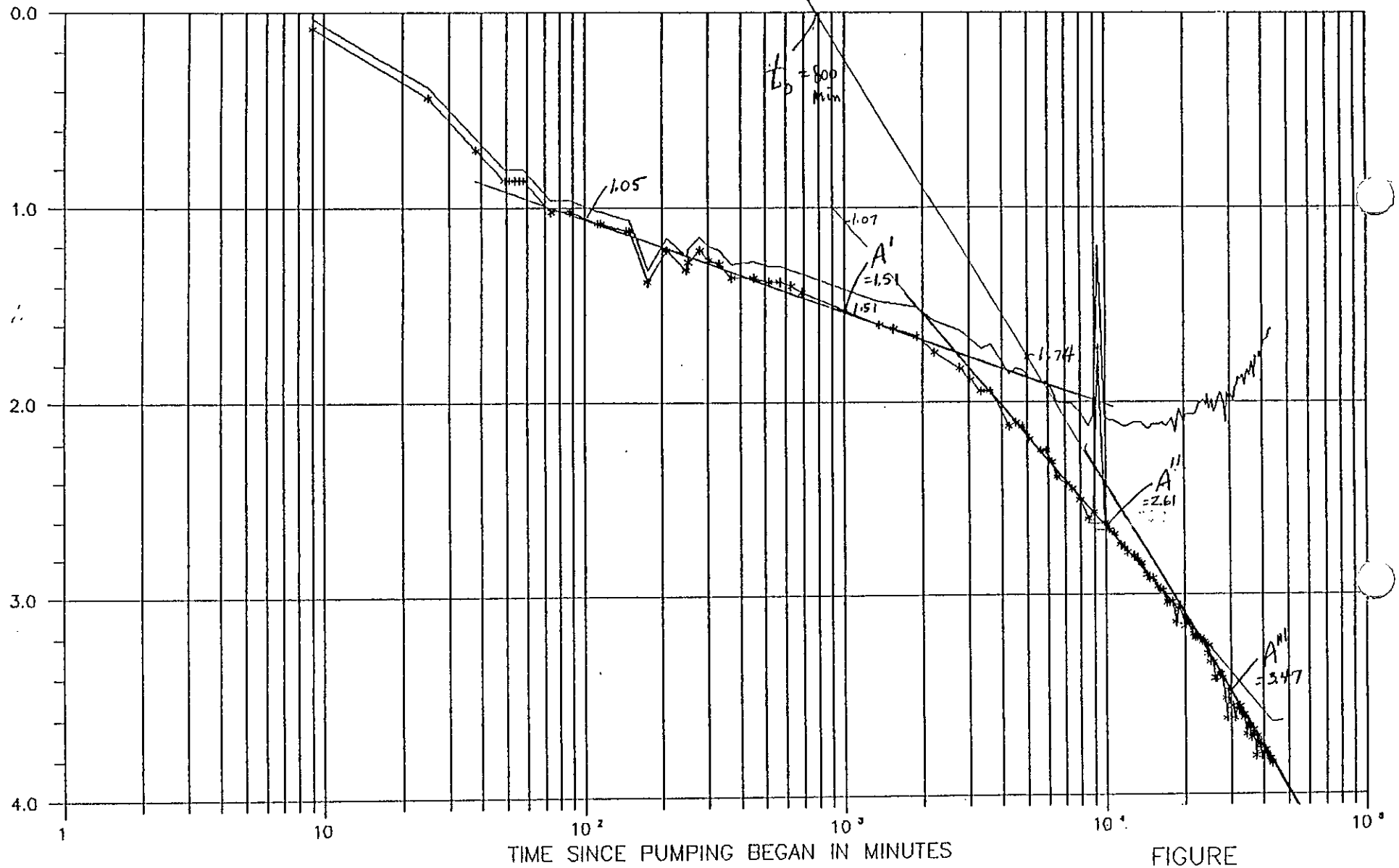

CH2M HILL
B0131684.A1

FIGURE

HOLGATE WELL
TIME DRAWDOWN

Appendix E-3
CARSON WELL

CARSON SL TIME DD

METHOD CHOW

EARLY TIME 200 - 2000 min

LATE TIME 9000 - EOT @ ~45000 min

USE LATE TIME TO NEGATE EFFECTS OF GRAVITY DRAINAGE

LATE TIME

$SA''' = 2.40$

$\Delta SA''' = 3.25 - 1.09 = 2.16$

$t_{A'''} = 40{,}000$ min $= 27.8$ days

$Q = 143037$ ft³/day

$r = 1300$ ft

$$F(u) = \frac{SA'''}{\Delta SA'''} = \frac{2.40}{2.16} = 1.11$$

$W(u) = 2.4$

$(u) = .06$

$$T = \frac{Q}{4\pi\, SA'''} \times W(u) = \frac{143037}{4\pi \times 2.40} \times 2.4 = 11{,}383 \text{ ft}^2/\text{day}$$

$= 85{,}141$ gpd/ft

$$S = \frac{4\, T\, t_{A'''}}{r^2} \times u = \frac{4 \times 11{,}383 \times 27.8}{1300^2} \times .06 = .0449$$

Early time A''' to check

$SA''' = .20$

$\Delta SA''' = .28 - 0 = .28$

$t_{A'''} = 1000$ min $= .6944$

$F(u) = \frac{SA'''}{\Delta SA'''} = .71$ $\quad W(u) = 1.3 \quad u = .17$

$$T = \frac{Q}{4\pi\, SA''} \times W(u) = \frac{143037}{4\pi \cdot .2} \times 1.3 = 73{,}986 \text{ ft}^2/\text{day} = 553{,}418 \text{ gpd/ft}$$

$$S = \frac{4\, T\, t_{A'''}}{r^2} \times u = \frac{4 \times 73986 \times .6944}{1300^2} \times .17 = .0207$$

Carson SL Time DD Cont'd

Adjusted Drawdown Curve 4000 – 15,000 min

$SA'' = .73$
$\Delta SA'' = 1.65 - .73 = .92$
$t_{A''} = 10{,}000 \text{ min} = 6.94 \text{ days}$

$Q = 143037 \text{ ft}^3/\text{day}$
$r = 1300 \text{ ft}$

$$F(u) = \frac{SA''}{\Delta SA''} = \frac{.73}{.92} = .79$$

$$W(u) = 1.6$$
$$u = .12$$

$$T = \frac{Q}{4\pi SA'} \times W(u) = \frac{143037}{4\pi \cdot .73} \times 1.6 = 24{,}948 \text{ ft}^2/\text{day}$$
$$= 186{,}610 \text{ gpd/ft}$$

$$S = \frac{4 T t_{A''}}{r^2} \times u = \frac{4 \times 24{,}948 \times 6.94}{1300^2} \times .12 = .0492$$

Check Validity of Jacob Straight Line Method Walton p212

$$t_{SL} = \frac{1.35 \times 10^5 \, r^2 S}{T} \quad \text{(gal-ft-day units)}$$

$$t_{SLA'} = 1.35 \times 10^5 \times 1300^2 \times \quad = \frac{1.35 \times 10^5 \times 1300^2 \times .039}{88{,}869} = 100{,}000 \text{ min}$$

∴ $T_{A''}$ (Late time data) is NOT VALID Therefore early time data is also not valid.

CARSON Delayed Drainage cont'd

$$B = \frac{r}{r/B} = \frac{1300}{2.5} = 520 \text{ ft}$$

$$\alpha = \frac{KD}{S_Y B^2} = \frac{11382}{.0485(520)^2} = .868 \text{ days}^{-1}$$

$$\gamma = 1 + \left(S_Y / S_a\right) = 1 + \frac{.0485}{.00075} = 17.5$$

$r/B = 2.5$ $\alpha t_{wt} = 8.3$

$\alpha t_{wt} = 8.3/.868 =$ 9.56 days before gravity drainage becomes neglible

MAY 24, 1991

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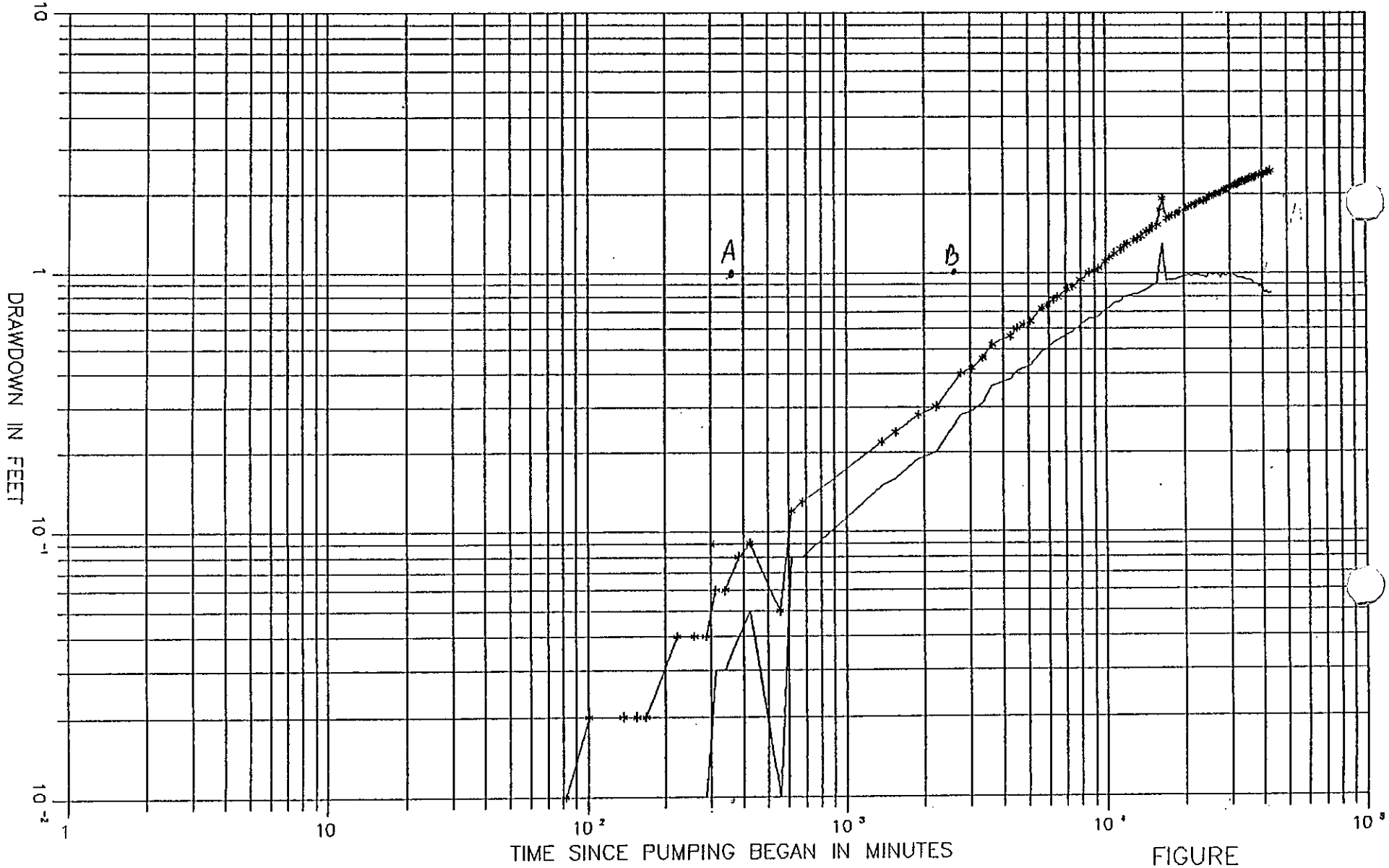

CH2M HILL
B0131684.A1

FIGURE
CARSON WELL
TIME DRAWDOWN

SUBJECT FFH, INC. PUMP TEST BY C. Peary DATE 5/17/91

SHEET 1 OF 1

PROJECT NO. B0731684.A1

CARSON TIME DD DELAYED YIELD

MATCH PT B Late time

$r/b = 2.5$ POOR early time match

$1/\mu_y = 1$

$w(U_{ay}, r/d) = 1$

$r/d = 2.5$

$t = 2600$ min $= 1.8$ days

$s = 1$ ft

$r = 1300$ ft

$Q = 143037$ ft³/day

$$KD = \frac{Q}{4\pi s}(w(u_{ay}, r/d) = \frac{143037}{4\pi\ 1}(1) = 11,383 \text{ ft}^2/\text{day}$$

$$= 85,141 \text{ gpd}$$

$$S_y = \frac{\mu_y 4 KD t}{r^2} = \frac{1 \times 4 \times 11,383 \times 1.8}{1300^2} = .0485$$

MATCH PT A (poor fit) Early time

$1/\mu_a = 1110$ $\mu_a = .11$

$w(\mu_{ay}, r/b) = 1$

$r/d = 2.5$

$t = 440$ min $= .28$

$s = 1.0$ ft

$r = 1300$

$$KD = \frac{Q}{4\pi s}(w(u_{ay}, r/d)) = \frac{143037}{4\pi\ 1} \times 1 = 11,383 \text{ ft}^2/\text{day}$$

$$= 85,141 \text{ gpd}$$

$$S = \frac{\mu_a 4 KD t}{r^2} = \frac{1 \times 4 \times 11,383 \times .28}{1300^2} = .0075$$

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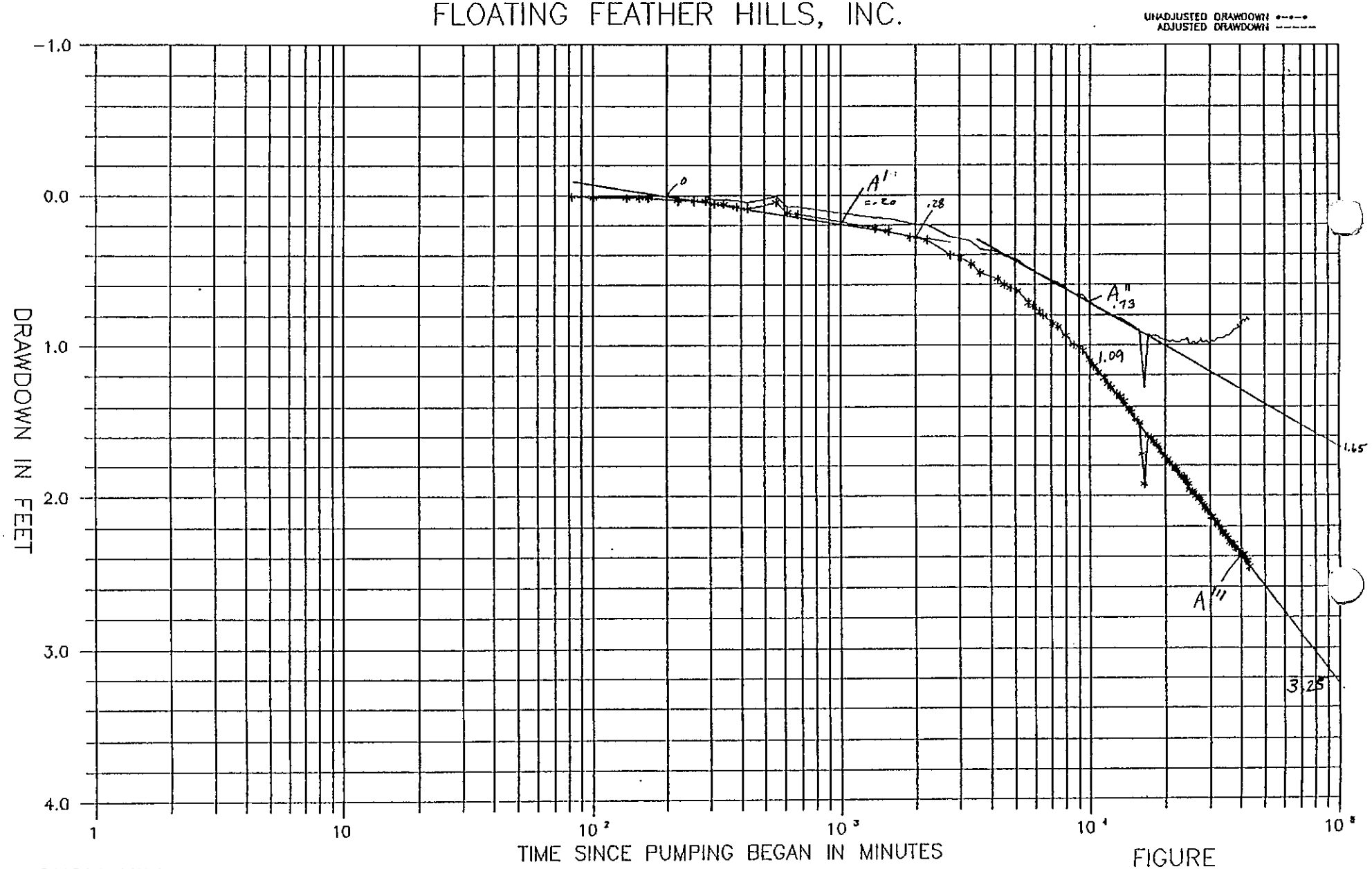

CH2M HILL
B0131684.A1

FIGURE
CARSON WELL
TIME DRAWDOWN

Appendix E-4
EAGLE HILLS GOLF COURSE WELL

EHGC Non Equib Theis Cont'd

Match Pt. C assumes 1 continuous type curve match
Early and late time match well, middle time below curve

$W(u) = 1$
$1/u = 1 \quad u = 1$

$A = .22$ ft
$t = 240$ min $= .17$ day

$$T = \frac{Q}{4\pi A} \times W(u) = \frac{143{,}037}{4\pi \times .22} \times 1 = 51{,}739 \text{ ft}^3/\text{day}$$
$$= 387{,}006$$

$$S = \frac{4Tt}{r^2} \times u = \frac{4 \times 51{,}739 \times .17}{2500^2} = .0056$$

DELAYED YIELD

EARLY TIME MATCH PT. D $\quad r/d = 1.0 \quad W(u_a, r/d) = 1 \quad u = 1$
LATE TIME MATCH PT. B $\quad r/d = 1.0 \quad W(u_y, r/d) = 1 \quad u = 1$

EARLY TIME

$r/d = 1.0 \quad A = .32$
$u = 1.0 \quad t = 270$ min $= .1875$ days
$W(u_a) = 1$

$$T = \frac{Q}{4\pi A} \times W(u_a) = \frac{143037}{4\pi \times .32} \times 1 = 35{,}570 \text{ ft}^2/\text{day} = 266{,}066 \text{ gpd/ft}$$

$$S = \frac{4Tt}{r^2} \times u_a = \frac{4 \times 35{,}570 \times .1875}{2500^2} \times 1 = .0043$$

LATE TIME MATCH PT. B

$r/d = 1.0 \quad A = .32$
$u_y =$ $\quad t = 1000$ min $= .6944$ days
$W(u_y, r/d)$

EH6C NON EQUILIBRIUM THEIS

THIS curve shows two equilibrium shapes

early time 0 - 3000 min — MATCH PT A

Late time 3000 - 40,000 min — MATCH PT B

EARLY TIME MATCH PT A

$t = 145$ min $= .101$ days

$A = .13$ ft

$w(u) = 1$

$1/u = 1$

$Q = 143{,}037$ ft³/day

$r = 2500$ ft

$$T = \frac{Q}{4\pi A} \times w(u) = \frac{143{,}037}{4\pi .13} \times 1 = 87{,}558 \text{ ft}^2/\text{day}$$

$$= 654{,}935 \text{ gpd/ft}$$

$$S = \frac{4Tt}{r^2} u = \frac{4 \times 87{,}558 \times .101}{2500^2} \times 1 = .005T$$

LATE TIME - MATCH PT B

$t = 1000$ min $= .6944$ days

$A = .32$

$w(u) = 1$

$1/u = 1$

$$T = \frac{Q}{4\pi A} \times w(u) = \frac{143{,}037}{4\pi \times .32} \times 1 = 35{,}570 \text{ ft}^2/\text{day}$$

$$= 266{,}066 \text{ gpd/ft}$$

$$S = \frac{4Tt}{r^2} \times u = \frac{4 \times 35{,}570 \times .69}{2500} = .0157$$

EH6C DELAYED YIELD CON'T

$$T_{(LATE)} = \frac{Q}{4\pi s} \times W(u_y) = \frac{143037}{4\pi \cdot 32} \times 1 = 35570 \text{ ft}^2/\text{day} = 266{,}066 \text{ gpd/ft}$$

$$S_Y = \frac{4Tt}{r^2} \times u_y = \frac{4 \times 35570 \times .6944}{2500^2} \times 1 = .0158$$

$$Y = 1 + \frac{S_Y}{S_c} = 1 + \frac{.0158}{.0043} = 4.67$$

$r = 2500$ ft, $r/D_1 = 1$ $\therefore$ $D_1 = 2500$

$$D_1 = \sqrt{\frac{T}{\alpha S_Y}} \qquad \alpha = \frac{T}{S_Y D_1^2} = \frac{35{,}570}{.0158 \times D_1^2} = .36$$

From fig. 33 K&R

$r/d = 1.0$ $\alpha t_{wt} = 4.5$

$\therefore$ $t_{wt} = 4.5/\alpha = 4.5/.36 = 12.5$ days before gravity drainage becomes negl.ble.

MAY 24, 1991

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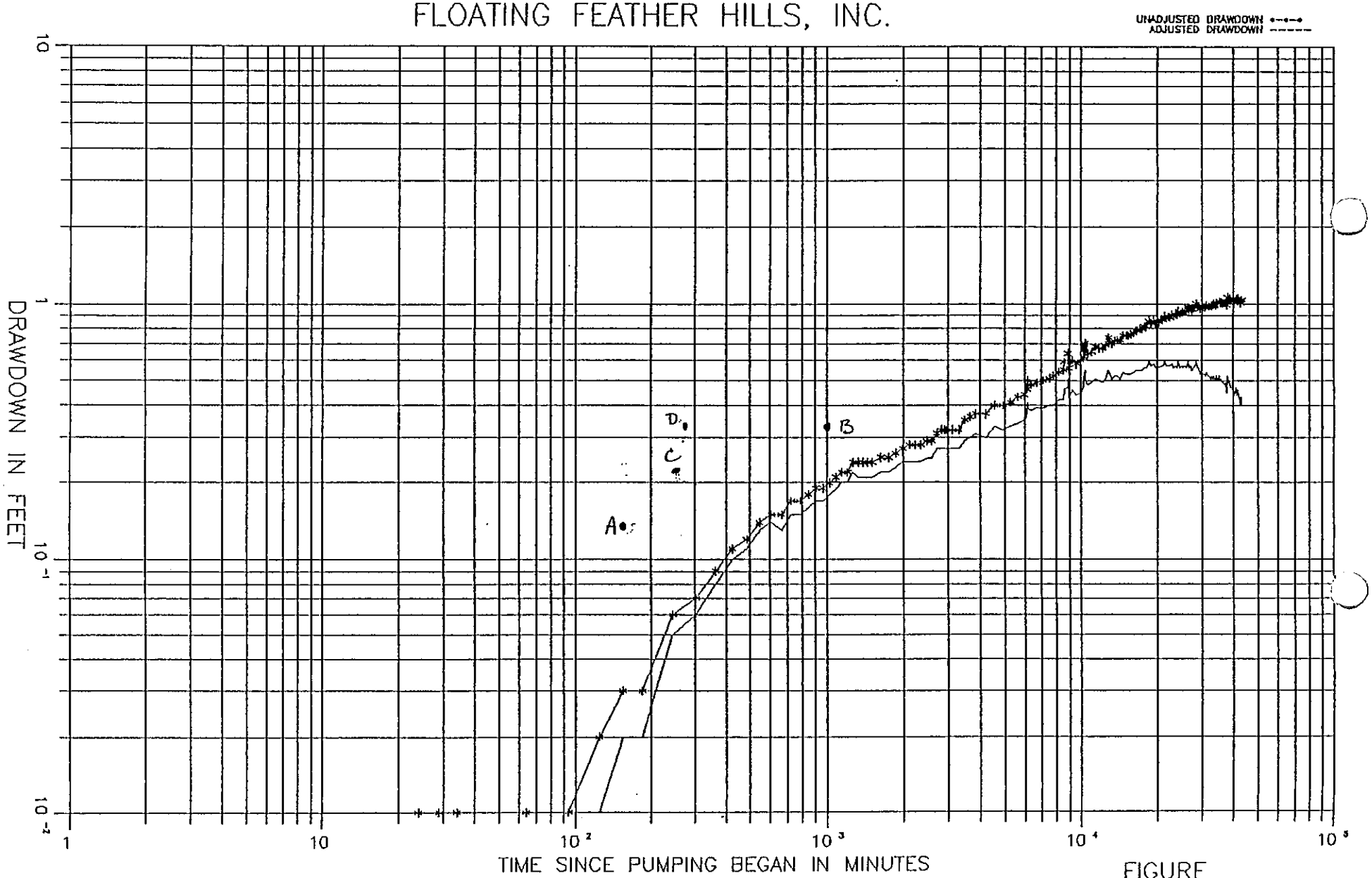

CH2M HILL
B0131684.A1

FIGURE
EAGLE HILLS G.C.
TIME DRAWDOWN

EHGC SL TIME DD

METHOD: CHOW

$SA' = .20$
$\Delta SA' = .45 - .20 = .25$
$t_{A'} = 1000 \text{ min} = \frac{1000}{1440} = .69 \text{ days}$ (early time)

$$F(u) = \frac{SA'}{\Delta SA'} = \frac{.20}{.25} = .80$$

$W(u) = 1.6$
$u = .13$

$Q = 743 \text{ gpm} = 143037 \text{ ft}^3/\text{day}$

$r = 2500 \text{ ft}$

$$KD = \frac{Q}{4\pi SA'} W(u) = \frac{143,037}{4 \times \pi \times .20} \times 1.6 = 91,060 \text{ ft}^2/\text{day}$$
$$= 681,132 \text{ gpd/ft}$$

$$S = \frac{4 (u) KD}{r^2} \times t_{A'} = \frac{4 \times .13 \times 91,060}{2500^2} \times .69 = .0052$$

$SA'' = .62$
$\Delta SA'' = 1.40 - .62 = .78$
$t_{A''} = 10000 \text{ min} = 6.94 \text{ days}$ (Late time)

$$F(u) = \frac{SA''}{\Delta SA''} = \frac{.62}{.78} = .79$$

$W(u) = 1.6$
$u = .13$

EHGC SL TIME DD CONT'D

$$KD = \frac{Q}{4\pi SA''} W(u) = \frac{143{,}037}{4\pi \cdot .62} \times 1.6 = 29{,}374 \text{ ft}^2/\text{d}$$
$$= 219{,}720 \text{ gpd/ft}$$

$$S = \frac{4(u)KD}{r^2} \times t_{A''} = \frac{4 \times .13 \times 29{,}374}{2500^2} \times 6.94 = .017$$

CHECK TIME FOR $U \leq .02$ for validity of JACOBS straight line method. Walton p 212

$$t_{SL} = \frac{1.35 \times 10^5 r^2 S}{T} \quad \text{(gal-ft-day units)}$$

for A' $t_{SL} = \frac{1.35 \times 10^5 r^2 S}{T} = \frac{1.35 \times 10^5 \times 2500^2 \times .0052}{681{,}132} = 6{,}441$ min
$= 4.47$ days

$\therefore$ $T_{A'}$ is not valid

for A'' $t_{SL} = \frac{1.35 \times 10^5 \times 2500^2 \times .017}{219{,}720} = 65{,}282$ minutes
$= 45.3$ days

$\therefore$ $T_{A''}$ is not valid

MAY 24, 1991

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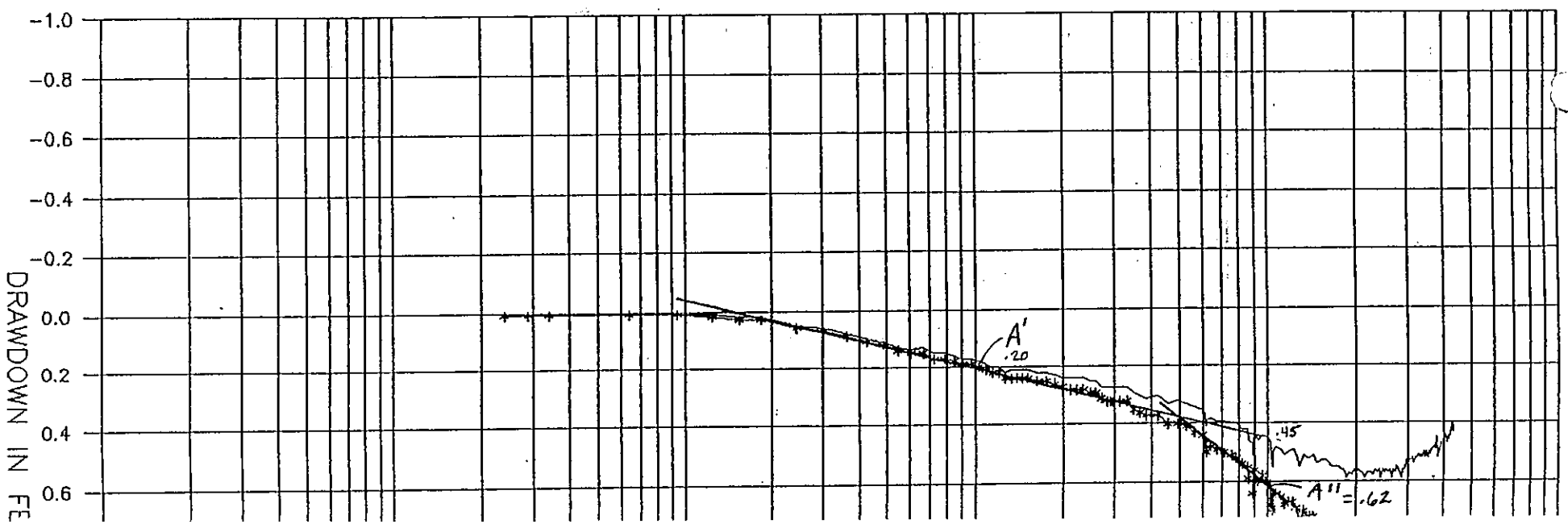

No fit

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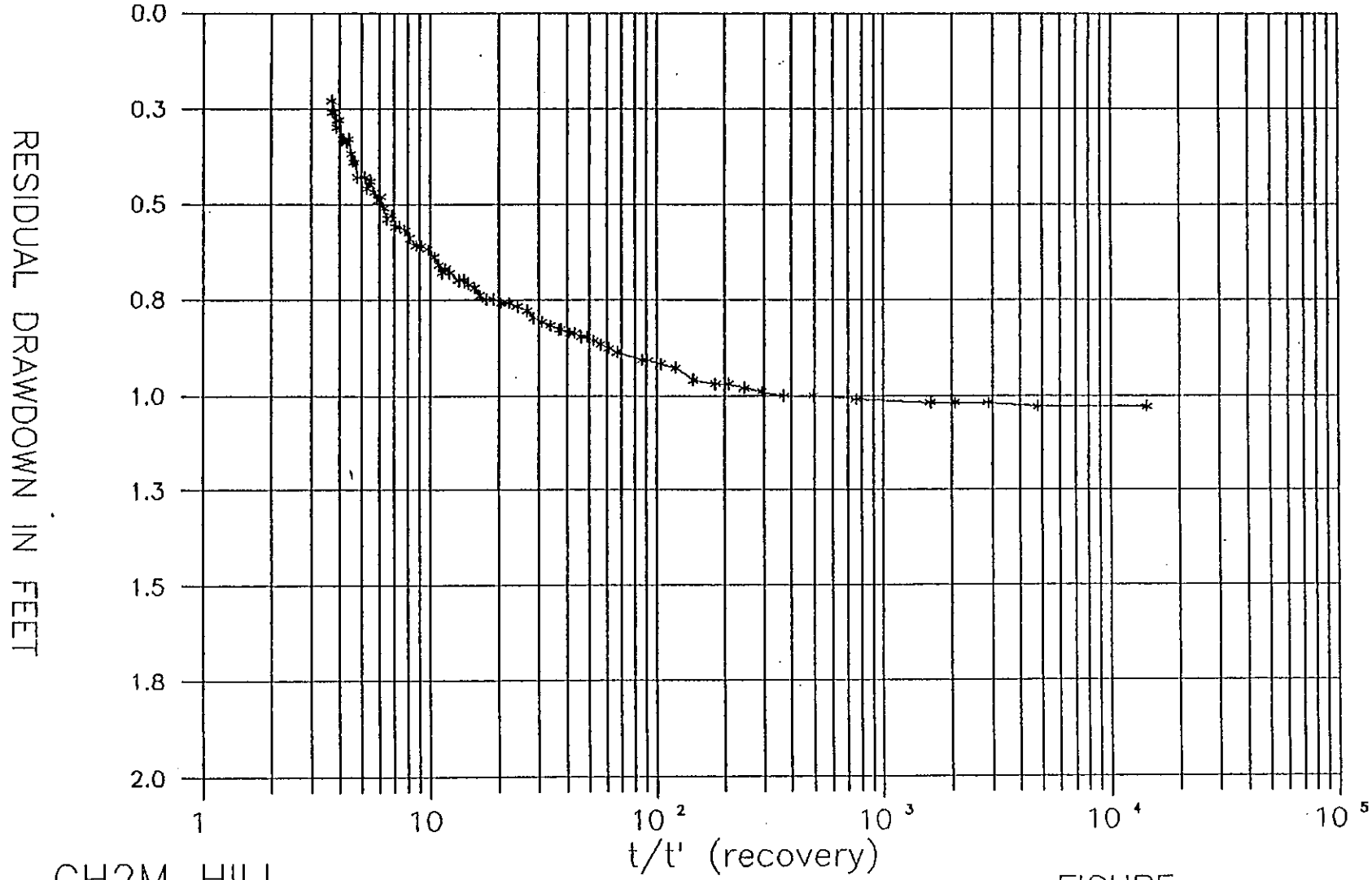

CH2M HILL

B0131684.A1

FIGURE

EAGLE HILLS GOLF COURSE
RECOVERY

Appendix E-5
HORMACHEA WELL

SUBJECT FF4, INC PUMP TEST C. HEAST DATE 5/15/91
SHEET 1 OF 2
PROJECT NO. DOT 31684.A1

HORMACHEA SL DRAWDOWN

METHOD CHOW

Two slightly different straight line segments
other interferences produce small irregularities in plot

A'

$SA' = .25$
$\Delta SA' = .42 - .15 = .27$
$t_{A'} = 2000 \text{ min} = 1.39 \text{ days}$

$Q = 143{,}037 \text{ ft}^3/\text{day}$
$r = 3700 \text{ ft}$

$$F(u) = \frac{SA'}{\Delta SA'} = \frac{.25}{.27} = .93$$

$W(u) = 1.9$
$u = .09$

$$T = \frac{Q}{4\pi SA} \times W(u) = \frac{143{,}037}{4\pi .27} = 42{,}158 \text{ ft}^2/\text{day}$$
$$= 315{,}339 \text{ gpd/ft}$$

$$S = \frac{4 T t_{A'}}{r^2}(u) = \frac{4 \times 42{,}158 \times 1.39}{3700^2} = .017$$

A''

$SA'' = .77$
$\Delta SA'' = 1.23 - .58 = .65$
$t_{A''} = 20{,}000 \text{ min} = 13.9 \text{ days}$

$$F(u) = \frac{SA''}{\Delta SA''} = \frac{.77}{.65} = 1.18$$

$W(u) = 2.6$
$(u) = .04$

$$T = \frac{Q}{4\pi SA''}(W(u)) = \frac{143037}{4\pi .77} \times 2.6 = 38{,}434 \text{ ft}^2/\text{day}$$
$$= 287{,}490 \text{ gpd/ft}$$

$$S = \frac{4 T t_{A''}}{r^2} \times u = \frac{4 \times 38{,}434 \times 13.9}{3700^2} \times .04 = .0062$$

HORMACHEA SL DD CONT'D

Check validity of straight line solutions by Walton pg 12

$$t_{SL} = \frac{1.35 \times 10^5 \, r^2 \times S}{T}$$

$$t_{SL} A'' = \frac{1.35 \times 10^5 \times 3700^2 \times .06}{110,573} = > 1 \text{ million minutes}$$

∴ JACOB straight line method invalid

SUBJECT FFH, INC PUMP TEST C. FEAST DATE 5/15/91

SHEET 1 OF 2

PROJECT NO. B01 31684.A1

HORMACHEA WELL LL DRAWDOWN

This curve has two NON EQUILIBRIUM segments

Early time 0 – 8000 ± min — MATCH PT. A

Late time 8000 ± — EOT @ ~45,000 min

EARLY TIME is a better match suggesting interferences from other wells during late time

EARLY TIME

A) $u = 1$ $Q = 143{,}037\ ft^3/day$

$w(u) = 1$

$s = .16\ ft$ $r = 3700\ ft$

$t = 240\ min = .17\ days$

$$T = \frac{Q}{4\pi s} w(u) = \frac{143{,}037}{4\pi .16} \times 1 = 71{,}141\ ft^2/day$$

$$= 532{,}135\ gpd/ft$$

$$S = \frac{4Tt}{r^2} \times u = \frac{4 \times 71{,}141 \times .17}{3700^2} = .0035$$

LATE TIME

B) $u = 1$ $Q = 143{,}037\ ft^3/day$

$w(u) = 1$

$s = .24$ $r = 3700\ ft$

$t = 600\ min = 1.42\ days$

$$T = \frac{Q}{4\pi s} w(u) = \frac{143{,}037}{4\pi .24} \times 1 = 47{,}427\ ft^2/day$$

$$= 354{,}755\ gpd/ft$$

$$S = \frac{4Tt}{r^2} u = \frac{4 \times 47{,}427 \times .42}{3700^2} \times 1 = .0058$$

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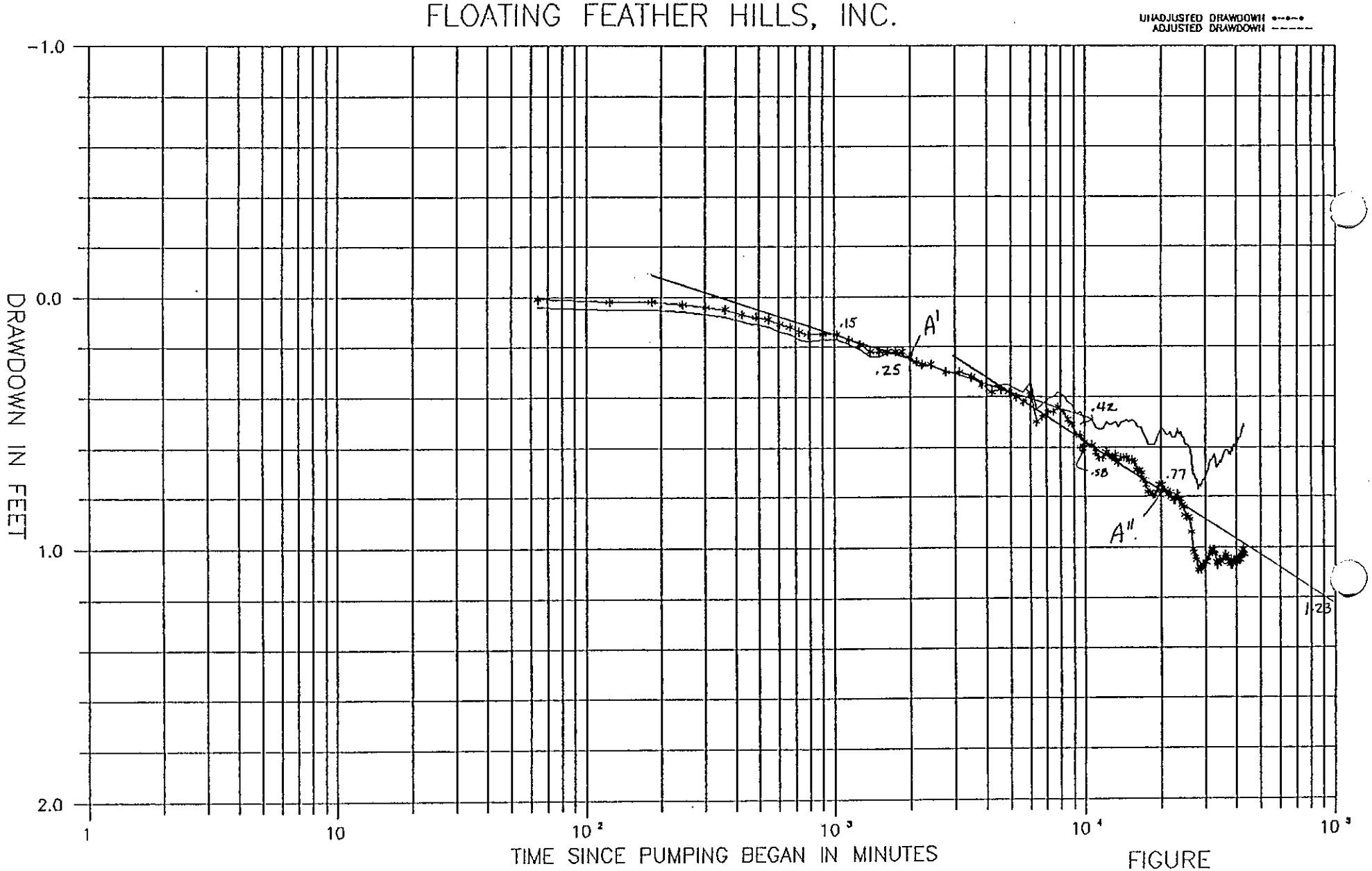


CH2M HILL
B0131684.A1

FIGURE
HORMACHEA WELL
TIME DRAWDOWN

SUBJECT FFH, INC. PUMP TEST BY [illegible] DATE 5/15/91
SHEET 2 OF 2
PROJECT NO. B0131684.A1

HORMACHEA CONT'D

MATCH PT C

ADJUSTED WATER LEVEL

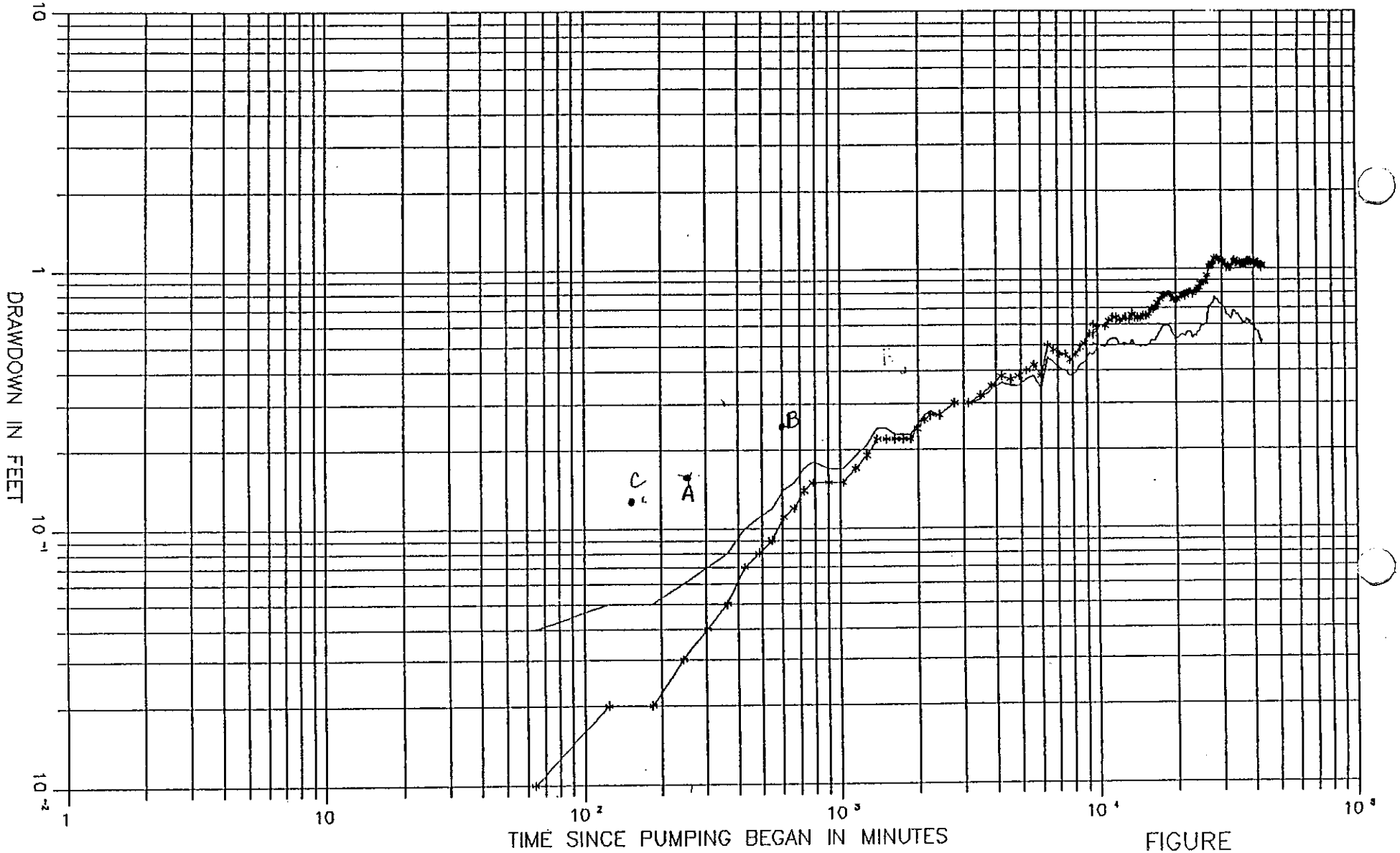
$w(u) = 1$
$(u) = 1$
$s = .13$
$t = 150$ min $= .104$ days

$$T = \frac{Q}{4\pi s} \times w(u) = \frac{143037}{4\pi .13} \times 1 = 87{,}558 \text{ ft}^2/\text{day}$$
$$= 654{,}933 \text{ gpd/ft}$$

$$S = \frac{4Tt}{r^2} \times (u) = \frac{4 \times 87{,}558 \times .104}{3700^2} = .0027$$

MAY 24, 1991

FLOATING FEATHER HILLS, INC.

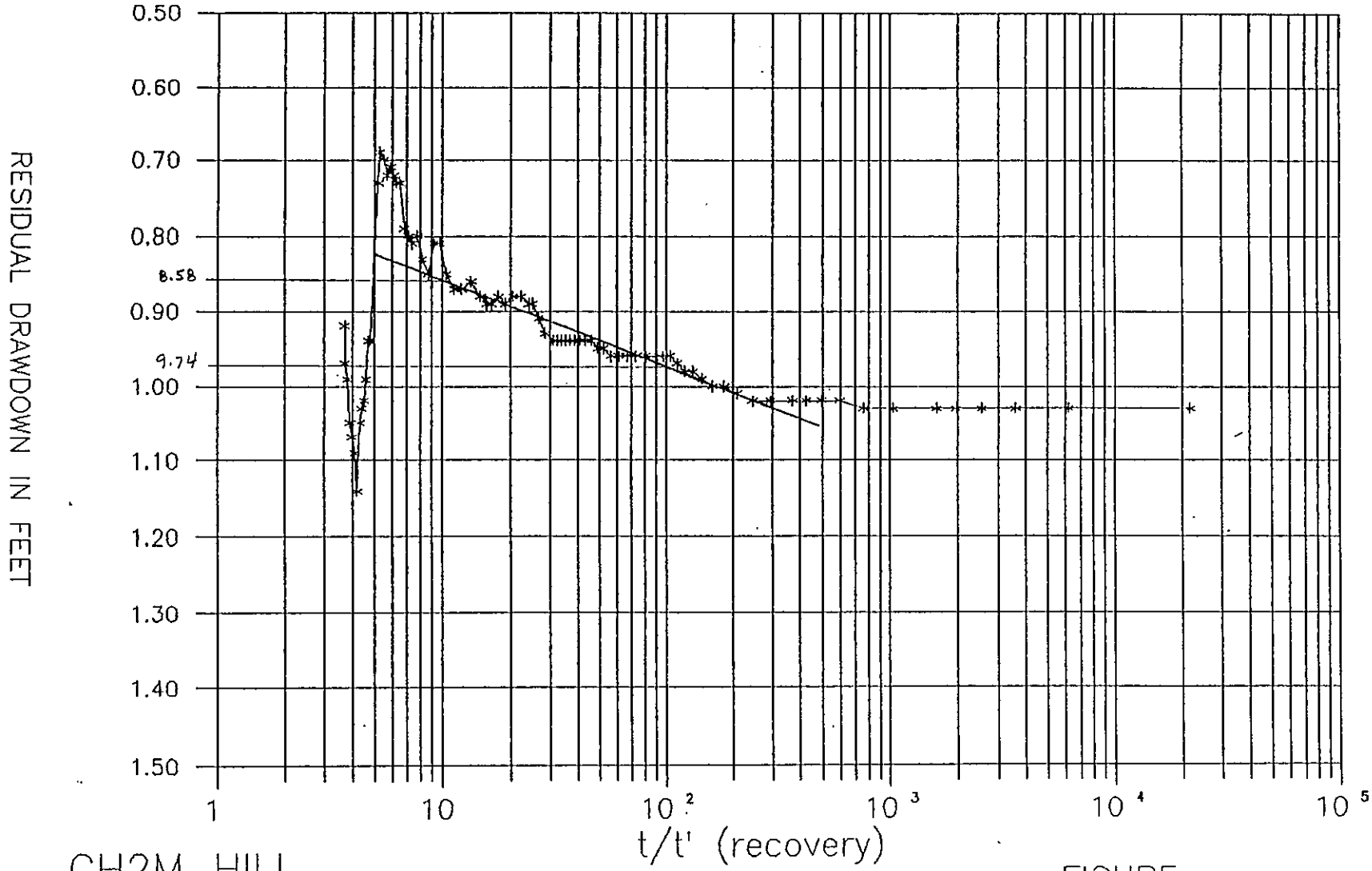


CH2M HILL
B0131684.A1

FIGURE
HORMACHEA WELL
TIME DRAWDOWN

MAY 15, 1991

FLOATING FEATHER HILLS, INC.



CH2M HILL

B0I316B4.A1

FIGURE

HORMACHEA WELL RECOVERY

$$T = \frac{264\,Q}{\Delta S} = \frac{264\,(743)}{9.74 - 8.58} = \frac{196{,}152}{1.16} = 169{,}096 \text{ gpd/ft}$$

Appendix F
DRAWDOWN SIMULATION OUTPUT FILES

FFH61a, T=100k, S=.02, Q=278 gpm, t=6 months

** PROGRAM AND AQUIFER PARAMETERS **
Water Table Solution

NO. OF WELLS = 2
NO. OF TIMES = 1
TRANSMISSIVITY = 100000. GPD/FT
STORAGE COEFFICIENT = .20E-01
AQUIFER THICKNESS = 330. FEET
NO. OF NODES IN THE X- OR EAST DIRECTION = 33
NO. OF NODES IN THE Y- OR SOUTH DIRECTION = 29
NODE SPACING = 500. FEET
X-GRID ORIGIN = -8000. FEET
Y-GRID ORIGIN = -7000. FEET

*** WELL PARAMETERS ***

WELL NAME	X-COORD (FT)	Y-COORD (FT)	Q (GPM)	RADIUS (FT)	EFF (FRACT.)	TIME ON (DAYS)
W1	0.	0.	139.	1.0	.33	.00
W2	0.	1800.	139.	1.0	.33	.00

TIMES AT WHICH DRAWDOWNS ARE TO BE CALCULATED AND PRINTED IN DAYS

183.0

SIMULATED DRAWDOWNS AT 183.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	3.11	9.42	10.14
W2	3.11	9.42	10.14

FFH62, T=100k, S=.02, Q=1000 gpm, t=6 MONTHS TO 30 YEARS

** PROGRAM AND AQUIFER PARAMETERS **
Water Table Solution

NO. OF WELLS = 2
NO. OF TIMES = 5
TRANSMISSIVITY = 100000. GPD/FT
STORAGE COEFFICIENT = 0.20E-01
AQUIFER THICKNESS = 330. FEET

*** WELL PARAMETERS ***

WELL NAME	X-COORD (FT)	Y-COORD (FT)	Q (GPM)	RADIUS (FT)	EFF (FRACT.)	TIME ON (DAYS)
W1	0.	0.	500.	1.0	.33	.00
W2	0.	1800.	500.	1.0	.33	.00

TIMES AT WHICH DRAWDOWNS ARE TO BE CALCULATED AND PRINTED IN DAYS

183.0
365.0
1825.0
5475.0
10950.0

SIMULATED DRAWDOWNS AT 183.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	11.329	34.329	36.979
W2	11.329	34.329	36.979

SIMULATED DRAWDOWNS AT 365.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	11.739	35.571	38.636
W2	11.739	35.571	38.636

SIMULATED DRAWDOWNS AT 1825.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	12.696	38.473	42.516
W2	12.696	38.473	42.516

SIMULATED DRAWDOWNS AT 5475.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	13.352	40.459	45.175
W2	13.352	40.459	45.175

SIMULATED DRAWDOWNS AT 10950.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	13.766	41.714	46.858
W2	13.766	41.714	46.858

FFH70, T=174k, S=.02, Q=1000 gpm, t=6 MONTHS TO 30 YEARS

** PROGRAM AND AQUIFER PARAMETERS **
Water Table Solution

NO. OF WELLS = 2
NO. OF TIMES = 5
TRANSMISSIVITY = 174000. GPD/FT
STORAGE COEFFICIENT = .20E-01
AQUIFER THICKNESS = 330. FEET

*** WELL PARAMETERS ***

WELL NAME	X-COORD (FT)	Y-COORD (FT)	Q (GPM)	RADIUS (FT)	EFF (FRACT.)	TIME ON (DAYS)
W1	0.	0.	500.	1.0	.33	.00
W2	0.	1800.	500.	1.0	.33	.00

TIMES AT WHICH DRAWDOWNS ARE TO BE CALCULATED AND PRINTED IN DAYS

183.0
365.0
1825.0
5475.0
10950.0

SIMULATED DRAWDOWNS AT 183.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	6.648	20.146	21.830
W2	6.648	20.146	21.830

SIMULATED DRAWDOWNS AT 365.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	6.880	20.850	22.768
W2	6.880	20.850	22.768

SIMULATED DRAWDOWNS AT 1825.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	7.422	22.491	24.958
W2	7.422	22.491	24.958

SIMULATED DRAWDOWNS AT 5475.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	7.792	23.614	26.457
W2	7.792	23.614	26.457

SIMULATED DRAWDOWNS AT 10950.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	8.026	24.322	27.404
W2	8.026	24.322	27.404

FFH71a, T=174k, S=.02, Q=1000 gpm, t=6 months

** PROGRAM AND AQUIFER PARAMETERS **
Water Table Solution

NO. OF WELLS = 7
NO. OF TIMES = 1
TRANSMISSIVITY = 174000. GPD/FT
STORAGE COEFFICIENT = .20E-01
AQUIFER THICKNESS = 330. FEET
NO. OF NODES IN THE X- OR EAST DIRECTION = 33
NO. OF NODES IN THE Y- OR SOUTH DIRECTION = 29
NODE SPACING = 500. FEET
X-GRID ORIGIN = -8000. FEET
Y-GRID ORIGIN = -7000. FEET

*** WELL PARAMETERS ***

WELL NAME	X-COORD (FT)	Y-COORD (FT)	Q (GPM)	RADIUS (FT)	EFF (FRACT.)	TIME ON (DAYS)
W1	0.	0.	500.	1.0	.33	.00
W2	0.	1800.	500.	1.0	.33	.00
R1	2200.	-2300.	-50.	1.0	1.00	.00
R2	150.	-1600.	-50.	1.0	1.00	.00
R3	-1100.	-200.	-50.	1.0	1.00	.00
R4	-800.	1600.	-50.	1.0	1.00	.00
R5	600.	2750.	-50.	1.0	1.00	.00

TIMES AT WHICH DRAWDOWNS ARE TO BE CALCULATED AND PRINTED IN DAYS

183.0

SIMULATED DRAWDOWNS AT 183.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	6.648	20.146	21.015
W2	6.648	20.146	21.025
R1	-.657	-.657	1.185
R2	-.657	-.657	1.751
R3	-.657	-.657	2.236
R4	-.657	-.657	2.610
R5	-.657	-.657	2.169

FFH72a, T=100k, S=.02, Q=1000 gpm, t=6 months

** PROGRAM AND AQUIFER PARAMETERS **
Water Table Solution

NO. OF WELLS = 7
NO. OF TIMES = 1
TRANSMISSIVITY = 100000. GPD/FT
STORAGE COEFFICIENT = .20E-01
AQUIFER THICKNESS = 330. FEET
NO. OF NODES IN THE X- OR EAST DIRECTION = 33
NO. OF NODES IN THE Y- OR SOUTH DIRECTION = 29
NODE SPACING = 500. FEET
X-GRID ORIGIN = -8000. FEET
Y-GRID ORIGIN = -7000. FEET

*** WELL PARAMETERS ***

WELL NAME	X-COORD (FT)	Y-COORD (FT)	Q (GPD)	RADIUS (FT)	EFF (FRACT.)	TIME ON (DAYS)
W1	0.	0.	500.	1.0	.33	.00
W2	0.	1800.	500.	1.0	.33	.00
R1	2200.	-2300.	-50.	1.0	1.00	.00
R2	150.	-1600.	-50.	1.0	1.00	.00
R3	-1100.	-200.	-50.	1.0	1.00	.00
R4	-800.	1600.	-50.	1.0	1.00	.00
R5	600.	2750.	-50.	1.0	1.00	.00

TIMES AT WHICH DRAWDOWNS ARE TO BE CALCULATED AND PRINTED IN DAYS

183.0

SIMULATED DRAWDOWNS AT 183.0 DAYS

WELL NAME	WELL DRAWDOWN	WELL DRAWDOWN @ EFF	TOTAL DRAWDOWN @ EFF + INTERFERENCE
W1	11.329	34.329	35.700
W2	11.329	34.329	35.716
R1	-1.112	-1.112	1.597
R2	-1.112	-1.112	2.578
R3	-1.112	-1.112	3.421
R4	-1.112	-1.112	4.072
R5	-1.112	-1.112	3.304