ensco
environmental
services, inc.

SHALLOW GROUNDWATER AQUIFER PUMP TEST

AT

FORMER SHELL OIL COMPANY
SERVICE STATION
7194 AMADOR VALLEY BOULEVARD
DUBLIN, CALIFORNIA

Project No. 1826G
Shell P.O. No. MOH 237138
November 1989

Corporate Offices 41674 Christy Street, Fremont, CA 94538-3114 (415) 659-0404 Fax (415) 651-4677 Contr Lic No. 550205

89 DEC 22 AM 10

ensco environmental services, inc.

a subsidiary of environmental system company

December 15, 1989

Shell Oil Company
1390 Willow Pass Road, Suite 900
Concord, CA 94520

Attention: Ms. Diane Lundquist

Subject: Shallow Groundwater Aquifer Pump Test
Former Shell Service Station
7194 Amador Valley Boulevard, Dublin, California
Shell P.O. No. MOH 237138
EES Project No. 1826G

Dear Ms. Lundquist:

Ensco Environmental Services, Inc., (EES) is pleased to submit this report which details the procedures and results of a Shallow Groundwater Aquifer Pump Test conducted at the facility noted above. If you have any questions concerning the report, please call.

Sincerely,
Ensco Environmental Services, Inc.

Cynthia R. Virostko
Staff Geologist

Douglas T. Young
Senior Project Hydrogeologist

Lawrence D. Pavlak, C.E.G. 1187
Senior Program Geologist

CRV/DTY/LDP/sw
Enclosure

CONTENTS

List of Tables

CONTENTS
(Continued)

List of Figures

Appendices

SHALLOW GROUNDWATER AQUIFER PUMP TEST

AT

FORMER SHELL OIL COMPANY SERVICE STATION 7194 AMADOR VALLEY BOULEVARD DUBLIN, CALIFORNIA

EXECUTIVE SUMMARY

Ensco Environmental Services, Inc. (EES) has issued this report to summarize the results of the shallow groundwater aquifer pump test conducted from August 1 through 4, 1989, at the subject site located in the City of Dublin, Alameda County, California. EES's field investigation and findings of the test may be summarized as follows:

1. A 30-foot deep, 6-inch-diameter test recovery well (RW-1) was installed on July 27, 1989, at the location shown on Figure 2.

2. A study of background fluctuations in groundwater levels were performed using existing wells at the site.

3. An electric submersible pump was installed in RW-1. Pressure-sensitive electronic water depth transducers were then installed in RW-1 and five existing on-site groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5). A 21,000 gallon portable Baker tank was placed at the site to store purged groundwater.

4. A preliminary step-drawdown test was conducted on July 31, 1989 to determine the optimum pump discharge rate. This rate was determined to be 3.0 gallons per minute (gpm).

5. A constant-discharge pump test was performed for 72 hours. Water levels in wells that contained transducers were recorded electronically by a data logger. Wells without transducers were measured manually with an electronic sounding tape at regular intervals.

6. Following the pump test, groundwater levels were measured at regular intervals in all wells at the site during the recovery period.

7. Data obtained from the test was analyzed and values calculated for hydraulic conductivity, transmissivity, and storativity for each well within the observed radius of influence. A radius of influence (cone of depression) for the recovery well was calculated to be approximately 200 feet. With this radius of influence, it is probable that a zone of capture covering the entire site can be created with one recovery well.

3 gpm = a radius of influence of 200 ft.

SHALLOW GROUNDWATER AQUIFER PUMP TEST

AT

FORMER SHELL OIL COMPANY SERVICE STATION 7194 AMADOR VALLEY BOULEVARD DUBLIN, CALIFORNIA

At the request of Shell Oil Company (Shell), Ensco Environmental Services, Inc. (EES) has conducted a shallow groundwater aquifer pump test at the former Shell Service Station located at 7194 Amador Valley Boulevard in the City of Dublin, Alameda County, California (Figure 1). This was done for the following purposes:

1. To determine aquifer characteristics and the feasibility of achieving hydraulic control of the site.

2. To determine the feasibility of using recovery wells to remove separate-phase floating product and soluble hydrocarbon contamination from the groundwater, and to determine the zone of capture.

RECOVERY WELL CONSTRUCTION

EES drilled an exploratory boring and installed recovery well RW-1 on July 27, 1989, at the location shown on Figure 2. The log of the boring is presented in Appendix A along with the well construction details. The boring was drilled with EES's truck-mounted B-61 drill rig using a 10-inch-diameter, hollow-stem auger to a depth of 31.5 feet. The auger and other tools used to advance the boring were steam cleaned before use to minimize the possibility of cross-contamination.

After drilling to the desired depth, EES installed one recovery well in the exploratory boring. The recovery well was constructed of 6-inch-diameter, schedule 40, flush-threaded polyvinyl chloride (PVC) casing: no glues or solvents were used. The PVC casing, measuring a total of 30 feet, contained a 20-foot screened interval with three rows of 0.020-inch slots. A sandpack was slowly poured into the borehole annulus to

approximately 1 foot above the screened interval, followed by a 1-foot seal of hydrated bentonite pellets. The remaining portion of the annular space was sealed with neat cement. The top of the well was set in a wooden frame with a PVC locking cap to provide security. The boring log and recovery well construction details can be found in Appendix A.

After construction, the well was thoroughly surged and developed using an air-lift purge pump to align the grains of the aquifer material around the screened interval for more efficient groundwater flow; and to remove fine sediments from the well casing and sand pack. Approximately 10 well volumes of groundwater were removed from the extraction well during the operation and stored in drums at the site. The drums of water were subsequently removed and properly disposed of.

EQUIPMENT SETUP

A Grundfos SP-1-9 submersible electric purge pump was installed in well RW-1. Electric power was supplied by a 230-volt AC, diesel-driven generator. The discharged groundwater was carried from the pump by a plastic hose. This was run in series through a totalizer, control valve, and a 0-5-gpm flowmeter. The purged groundwater was then stored at the site in a portable 21,000-gallon capacity poly tank.

A total of six pressure-sensitive electronic transducers were installed in wells RW-1, MW-1, MW-2, MW-3, MW-4, and MW-5. These were interfaced with a Terrascience Systems, Ltd. Terra 8 Datalogger that recorded groundwater depths at regular time intervals. The transducers measured the pressure of the overlying water, which was converted by the Datalogger into feet of pressure head. Data stored in the Datalogger was downloaded into a portable IBM-PC-compatible computer on-site. The computer was also used to start, stop, and modify the Datalogger program.

BACKGROUND DATA

To verify the validity of groundwater level changes recorded during the pump test, it was necessary to correlate them with the natural cycle of groundwater level fluctuations as measured over a period of time. Groundwater elevation contours

calculated from measurements taken on June 28, 1989 are shown in Figure 3. The groundwater elevation data for Figure 3 is listed in Table 1. The apparent direction of groundwater flow was to the southeast at an average gradient of 0.0025 feet/foot.

Data for background fluctuations of groundwater levels were obtained during the two weeks from July 20 through 26, 1989 and stored in the datalogger. This information was obtained from transducers in wells RW-1 MW-1, MW-2, MW-3, MW-4, and MW-5. Graphs of the background fluctuation data are shown on Figures 4 through 8. Graphical analyses for well MW-5 were not conducted since it is screened at a lower depth then wells MW-1 through MW-4. Information stored in the datalogger for the background fluctuation is included in Appendix B. The fluctuations typically occur over a cycle of 24 hours, and are probably influenced by barometric pressure forces. The mean maximum fluctuation for these five wells within a 72 hour period was 0.26 feet.

STEP/DRAWDOWN TEST

To determine the optimum recovery well discharge rate at which maximum drawdown can be maintained in a relative state of equilibrium, a step/drawdown test was performed on July 31, 1989. The pump was started with an initial flow of 3.0 gpm and was increased at stepped intervals to a maximum of 5 gpm. It was found that the optimum discharge rate for the recovery well was 3.0 gpm.

CONSTANT DISCHARGE PUMP TEST/RECOVERY TEST

Commencing on August 1, 1989, the pump was run at a constant discharge rate of 3.0 gpm for 72 hours. Groundwater level data for the wells with transducers installed was stored in the Datalogger for later computer analysis. Groundwater depths for the remaining wells were manually measured at one-hour intervals with electronic sounders. RW-1 was also measured periodically with an electronic sounder in addition to a transducer.

After the pumping was halted on August 4, 1989, the recovery phase of the test was initiated. Groundwater level data were acquired throughout the recovery phase until groundwater levels reached equilibrium, a period of approximately 2.75 hours. At this point, the test was completed. Purged groundwater stored in the portable tank at the

site (a total of 16,737 gallons) was removed for disposal by a registered hazardous waste hauler (Crosby and Overton, Inc.).

DATA ANALYSIS, PUMP TEST

Data obtained during the pump test from those wells with transducers (RW-1, MW-1, MW-2, MW-3, MW-4, and MW-5) was first downloaded from the Datalogger, processed using the Terrascience Systems Ltd. Terra 8 software, and compiled into a data report (Appendix B) using software from Golden Software, Inc. on an IBM-PC-compatible computer. Data collected by manual electronic sounding from wells without transducers were tabulated by hand and compiled into data files using the Golden software. From these files, groundwater contour maps were generated by computer using the Surfer program by Golden Software, Inc.

A groundwater elevation contour map for August 4, 1989, at the time of maximum drawdown, is shown in Figure 9. A maximum drawdown contour map for the same period of time is shown in Figure 10. Groundwater elevation and maximum drawdown data used for Figures 9 and 10 are presented in Tables 2 and 3, respectively. As seen in Figure 10, the radius of the cone of depression is approximately 200 feet. This was calculated by averaging the distance between the 0.00 foot contour (no influence) and the -0.40 foot contour (first calculated influence). Because background 72 hour water level fluctuations had a mean maximum of 0.26 feet, only those wells with a maximum drawdown greater than that were considered for data analysis and in determining the radius of influence (radius of the cone of depression generated by the recovery well).

Data obtained from the pump test for those wells with a maximum drawdown of 0.26 feet or greater was analyzed using the Graphical Well Analysis Package by Groundwater Graphics on an IBM-PC-compatible computer. This software package calculates aquifer characteristics by using the Theis Nonequilibrium Well Equation. For application of this equation to the aquifer characteristics of this site the Neuman (1975) modification of the Theis equation for water-tables aquifers was used. This analysis makes the following generalized assumptions about the aquifer:

1. The aquifer is unconfined.
2. The aquifer is level and infinite in horizontal extent.
3. The aquifer is homogeneous and isotropic.

4. The pumping well fully penetrates the aquifer.
5. Discharge from the well is at a constant rate.
6. There is no storage within the well itself.
7. The aquifer response to drawdown is elastic (early response).

The Theis equation for elastic response of water-table aquifers is as follows:

$$T = Q/(4\pi sW(U_A, B))$$

Where: $UA = (r^2 S_s)/(4Tt)$

$$B = r^2/b^2$$

T = transmissivity
Q = pumping rate
s = drawdown
W = well function
r = radial distance from pumping well
S_s = storativity coefficient
t = time since pumping started
b = initial standard thickness of aquifer

Sources: Dansby and Price (1987), p. B.7, eqs. B.7, B.8; Fetter (1988), p. 192, eqs. 6-48, 6-49

Hydraulic conductivity is calculated by:

$$K = T/b$$

Where: K = hydraulic conductivity
T = transmissivity
b = initial saturated thickness of aquifer

Source: Fetter (1988), p. 105, eq. 4-16

Figures 11 through 21 show Theis curve plots and values for transmissivity, aquifer thickness, hydraulic conductivity, and storativity for RW-1, MW-1 through MW-4, MW-6, and MW-8 through MW-12. A summary of these results is given in Table 4.

Data obtained from monitoring wells MW-5 and MW-7 were found to be anomolous since; 1) the screened interval for MW-5 is different from the other monitoring wells, and; 2) water levels for MW-7 showed a consistent rise in the water table during the testing.

Transmissivity values were calculated from the observation wells and ranged from 844 gallons per day per foot (gpd/ft) for MW-1 to 5450 gpd/ft for MW-12. Hydraulic conductivity varied from 48.9 gpd/ft^2 for MW-1 to 527 gpd/ft^2 for MW-12.

For all wells, excluding MW-5 and MW-7 for reasons stated above, the saturated aquifer thickness ranged from 6.92 feet at MW-8 to 0.185 feet at MW-1. Storativity coefficients varied from 0.00172 for MW-2 to 0.185 for MW-1.

DATA ANALYSIS, RECOVERY TEST

During the recovery phase of the test, water levels were measured by the datalogger in wells that contained transducers, and by hand with an electronic depth sounder in the wells without transducers. Water levels for RW-1 were measured by both datalogger and electronic depth sounder.

The datalogger measured water levels beginning with approximately 2-second intervals, gradually lengthening to half-hour intervals. Water levels taken by electronic depth sounder were measured at half-hour intervals until the end of the recovery phase. A groundwater elevation contour map for the end of the recovery phase at 17:58 on August 4, 1989, is shown in Figure 22. Groundwater level data for RW-1 during the recovery phase are included in Table 5.

The data was plotted as residual drawdown (s') vs. the log of the ratio t/t" (where t = time since start of pumping and t" = time since pumping stopped). This is a

modification of the Jacob Straight-Line Method as discussed in "Groundwater and Wells," pp. 256-257 (Driscoll, 1986). Transmissivity is calculated by the equation:

$$T = \frac{264\,Q}{\Delta s'}$$

Where:
- T = transmissivity in gpd/ft
- Q = pumping rate in gpm
- $\Delta s'$ = change in drawdown over 1 log cycle in feet
- 264 = conversion factor for gpm to gpd

The graph, calculations, and value for transmissivity for the recovery test analysis are shown in Figure 23. The value for transmissivity is calculated as 628 gpd/ft, which compares with 433 gpd/ft as calculated from the pumping test data. The values are within one order of magnitude of each other, which is acceptable accuracy considering differences in measurement technique, data analysis, and change in aquifer storativity as air occupies voids in the aquifer material during dewatering and is trapped during recovery. Theoretically, the drawdown and recovery curves and aquifer characteristic values should be identical (Driscoll, 1986, pp. 257-260).

CAPTURE ZONE ANALYSES

Calculation of the capture zone symmetry was performed using the RESSQ semianalytical contaminant transport model presented in the American Geophysical Union, Water Resources Monograph No. 10 for groundwater transport models. The model uses a series of injection well points to (1) create point sources for flow lines and (2) generate a regional flow equivalent to the groundwater gradient observed beneath the site. The program then uses extraction well points to represent groundwater recovery wells using pumping rates determined from the pump tests. The model combines the equations for complex velocity potential, uniform flow, number of point sources, and point sinks to calculate the symmetry of the capture zone. This analysis does make some general assumptions about the aquifer which include: (1) the aquifer is infinite in horizontal extent; (2) the aquifer is homogeneous and isotopic; (3) the aquifer is of uniform thickness; and (4) a steady state flow (gradient and direction) exists beneath the site.

Initial pumping at the site in September 1988 was conducted at a rate of 5 gpm. The recovery well (RW-1) dewatered approximately 13 hours after the start of pumping. This indicated that a lower pumping rate would be needed to conduct a long-term constant drawdown test. A step drawdown test was performed in July 31, 1989 that indicated an optimum pumping rate of 3 gpm could be sustained by RW-1 during the constant discharge test. This result was confirmed when the constant drawdown test was performed from August 1 through 4, 1989. It is this rate at which the capture zone configuration model was run. Figure 24 presents the flow symmetry and capture zone resulting from the simulated use of existing extraction well RW-1 pumping at 3 gpm. As can be seen by the diagram, the capture zone extends as far as MW-6 to the northeast and as far as MW-2 to the southwest. Data used to generate the capture zone model are presented in Appendix C.

CONCLUSIONS

Data obtained from the constant-discharge aquifer pump and recovery test of August 1 through 4, 1989, for Shell indicate that aquifer characteristics at the site are generally isotropic and heterogeneous. The radius of influence of the recovery well RW-1 has been determined to be approximately 200 feet. It is estimated that one recovery well would generate a capture zone sufficient to cover the entire site. It appears that extracting groundwater using RW-1 at the rate of 3 gpm will result in a capture zone extensive enough to recover all contaminated groundwater beneath the site as well as contaminated groundwater identified in monitoring wells off-site.

REFERENCES

Dansby, D.A. and C.A. Price, 1987. Graphical Well Analysis Package, Version 2.0 - User Manual. Groundwater Graphics, Oceanside, CA., pp. B3 - B8.

Driscoll, G. 1986. Groundwater and Wells, Second Edition. Johnson Division, St. Paul, MN., pp. 256-260.

Ensco Environmental Services, Inc., September Quarterly Report Groundwater Sampling and Analysis for Former Shell Station, 7194 Amador Valley Boulevard, Dublin, California, EES Project No. 1826G, September 1989.

Javandel, I. Doughty C. and Tsang, C.E., Groundwater Transport: Handbook of Mathematical Models, American Geophysical Union Water Resources Monograph No. 10, pp 228, 1987.

Fetter, C.W., Applied Hydrogeology, Second Edition, Merrill Publishing Company, Columbus, OH., p. 105, 192, 1988.

Neuman, S.P., Analysis of pumping test data from unconfined aquifers considering delayed gravity response, Water Resources Res., 11, pp. 329-342,1975.

REPORTING REQUIRMENTS

A copy of this report should be forwarded by Shell Oil Company to the following agencies:

Alameda County Flood Control and
Water Conservation District (Zone 7)
5997 Parkside Drive
Pleasanton, California 94566
Attention: Mr. Craig Mayfield

Alameda County Health Care Services
Department of Environmental Health
80 Swan Way, Suite 200
Oakland, California 94621
Attention: Mr. Storm Goranson

California Regional Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street, Suite 700
Oakland, California 94612-3429
Attention: Mr. Donald Dalke

DISCLAIMER

This report has been prepared solely for the use of Shell and any reliance on this report by third parties shall be as such party's sole risk.

LIMITATIONS

The discussion and recommendations presented in this report are based on the following:

1. The exploratory test borings drilled at the site.
2. The observations of field personnel.
3. Data obtained from the aquifer tests performed by EES.
4. Referenced documents.
5. Our understanding of the regulations of the State of California and the Alameda County and/or the City of Dublin.

It is possible that variations in the soil or groundwater conditions could exist beyond the points explored in this investigation. Also, changes in the groundwater conditions could occur at some time in the future due to variations in rainfall, temperature, regional water usage, or other factors.

The service performed by EES has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the Alameda County area. Please note that contamination of soil and groundwater must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.

EES includes in this report chemical analytical data from a state-certified laboratory. The analytical results are performed according to procedures suggested by the U.S. EPA and State of California. EES is not responsible for laboratory errors in procedure or result reporting.

TABLE 1

GROUNDWATER ELEVATION DATA

Pre-Pump Test
June 28 through 30, 1989

Well No.	Date	Groundwater Elevation (ft. datum MSL)	Distance From RW-1 (ft.)
MW-1	6/29/89	326.23	25
MW-2	6/29/89	326.06	85
MW-3	6/29/89	326.36	160
MW-4	6/29/89	326.14	140
MW-6	6/29/89	326.12	135
MW-7	6/29/89	326.38	125
MW-8	6/29/89	326.40	275
MW-9	6/29/89	325.57	210
MW-10	6/29/89	326.32	175
MW-11	6/29/89	325.90	130
MW-12	6/29/89	325.53	275
RW-1	6/30/89	326.29	0

TABLE 2

GROUNDWATER ELEVATION DATA

Maximum Drawdown
14:03 August 4, 1989

Well Number	Groundwater Elevation (ft. datum MSL)
MW-1	324.13
MW-2	324.91
MW-3	325.88
MW-4	325.45
MW-6	325.62
MW-7	326.98
MW-8	326.14
MW-9	325.12
MW-10	325.88
MW-11	325.15
MW-12	325.38
RW-1	321.74

TABLE 3

MAXIMUM DRAWDOWN DATA

Ends of Pump Test
14:03 August 4, 1989

Well Number	Groundwater Elevation (ft. datum MSL)
MW-1	-1.84
MW-2	-0.89
MW-3	-0.22
MW-4	-0.43
MW-6	-0.24
MW-7	0.00
MW-8	0.00
MW-9	-0.19
MW-10	-0.18
MW-11	-0.49
MW-12	0.00
RW-1	-4.29

TABLE 4

AQUIFER CHARACTERISTICS

Constant Discharge Pump Test Analysis
August 1 through 4, 1989

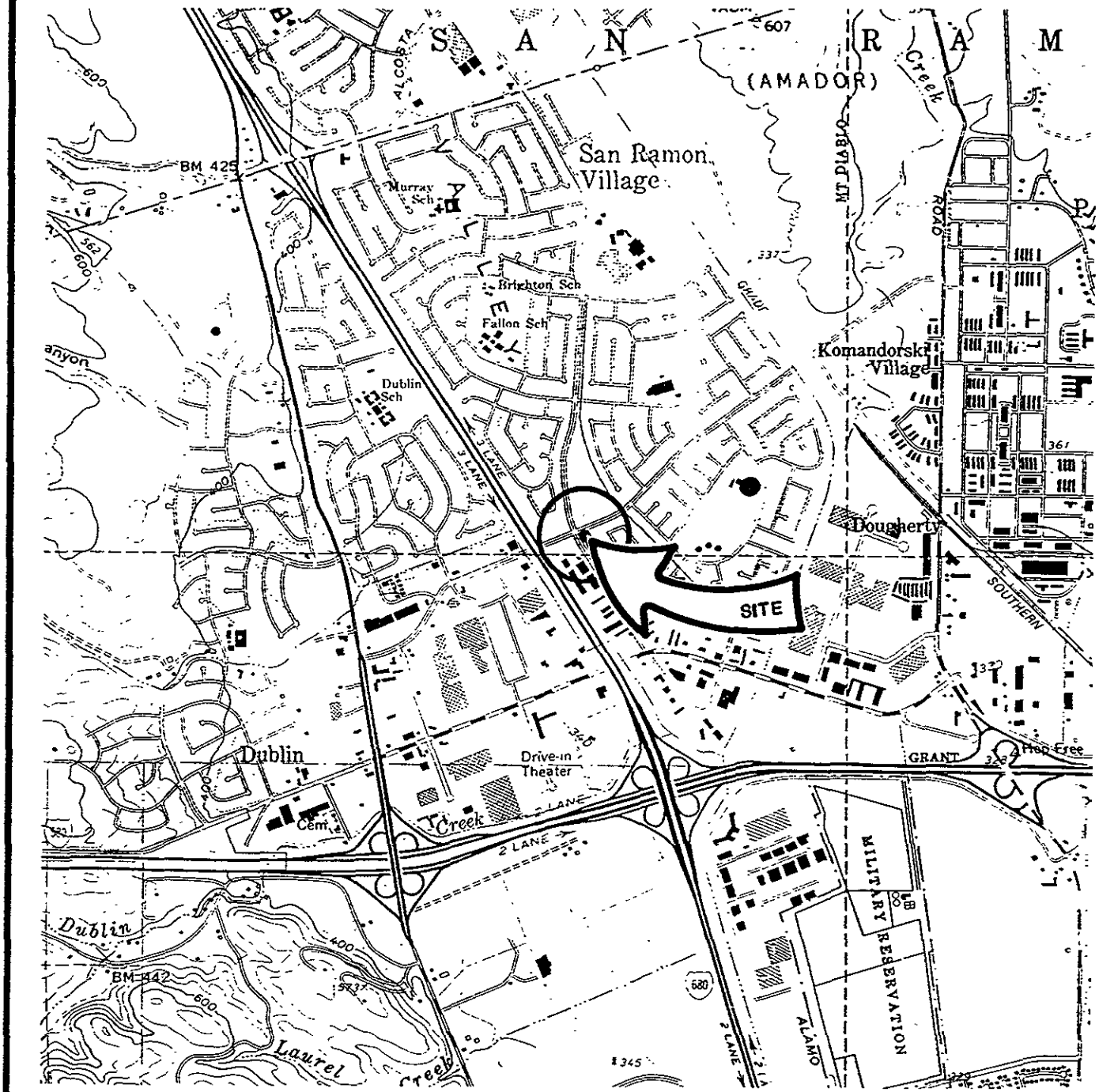
Well Number	Transmissivity (gpd/ft.)	Saturated Aquifer Thickness (ft.)	Hydraulic Conductivity (gpd/ft2)	Storativity Coeffeclent
MW-1	844	17.3	48.9	0.185
MW-2	1160	14.8	78.7	0.00172
MW-3	2020	15.1	134	0.00202
MW-4	1610	14.7	110	0.00262
MW-6	2550	13.8	185	0.00221
MW-8	2670	6.92	386	0.00426
MW-9	1890	9.36	202	0.00292
MW-10	1930	8.90	217	0.00370
MW-11	1430	8.42	170	0.00309
MW-12	5450	10.3	527	0.00804
RW-1	433	20.6	21.0	0.226

TABLE 5

GROUNDWATER ELEVATION DATA

Maximum Drawdown
14:03 August 4, 1989

Well Number	Groundwater Elevation (ft. datum MSL)
MW-1	326.21
MW-2	325.98
MW-3	326.33
MW-4	326.02
MW-6	325.69
MW-7	326.98
MW-8	326.14
MW-9	325.13
MW-10	325.47
MW-11	325.22
MW--12	325.38
RW-1	325.31



SOURCE: USGS 7.5' MAP, DUBLIN QUADRANGLE

LEGEND

SITE LOCATION

ensco environmental services, Inc.

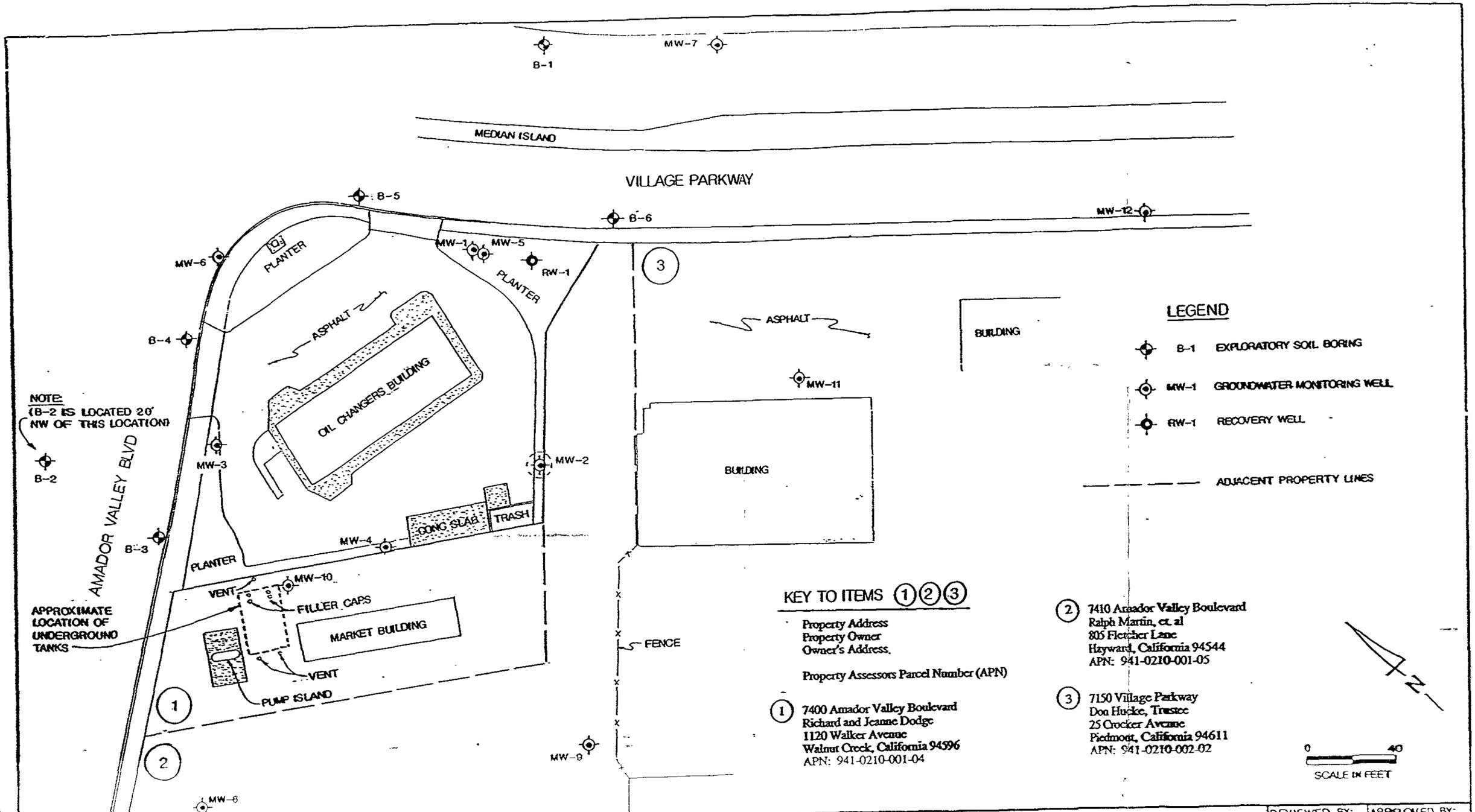
SITE LOCATION MAP

FORMER SHELL STATION

7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY	APPROVED BY
JOB # 1826G	DRAWN BY J.C.
DATE 4-5-89	DRAWING # FIG. 1



ensco environmental services, Inc.

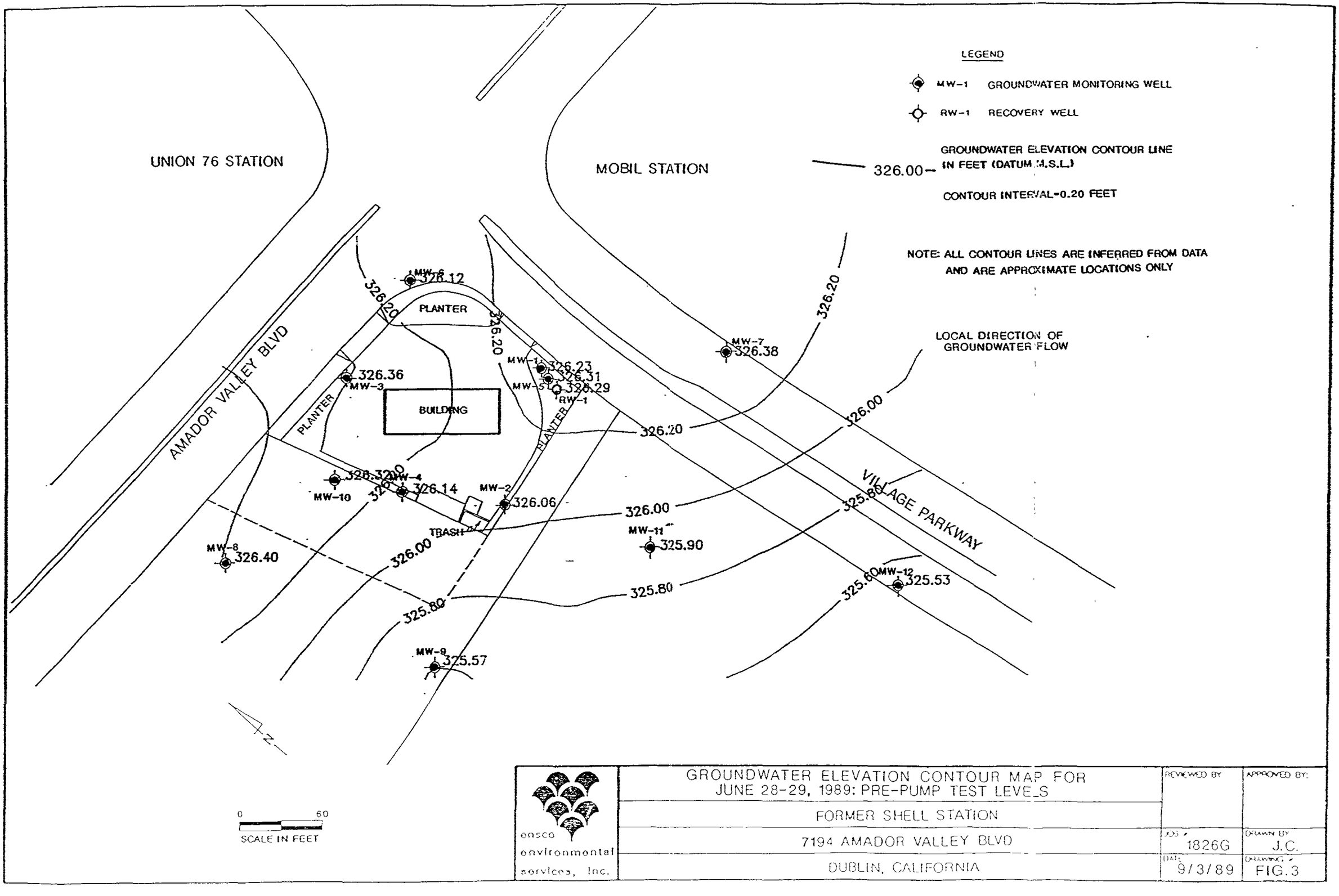
SITE PLAN

FORMER SHELL STATION

7194 AMADOR VALLEY BLVD

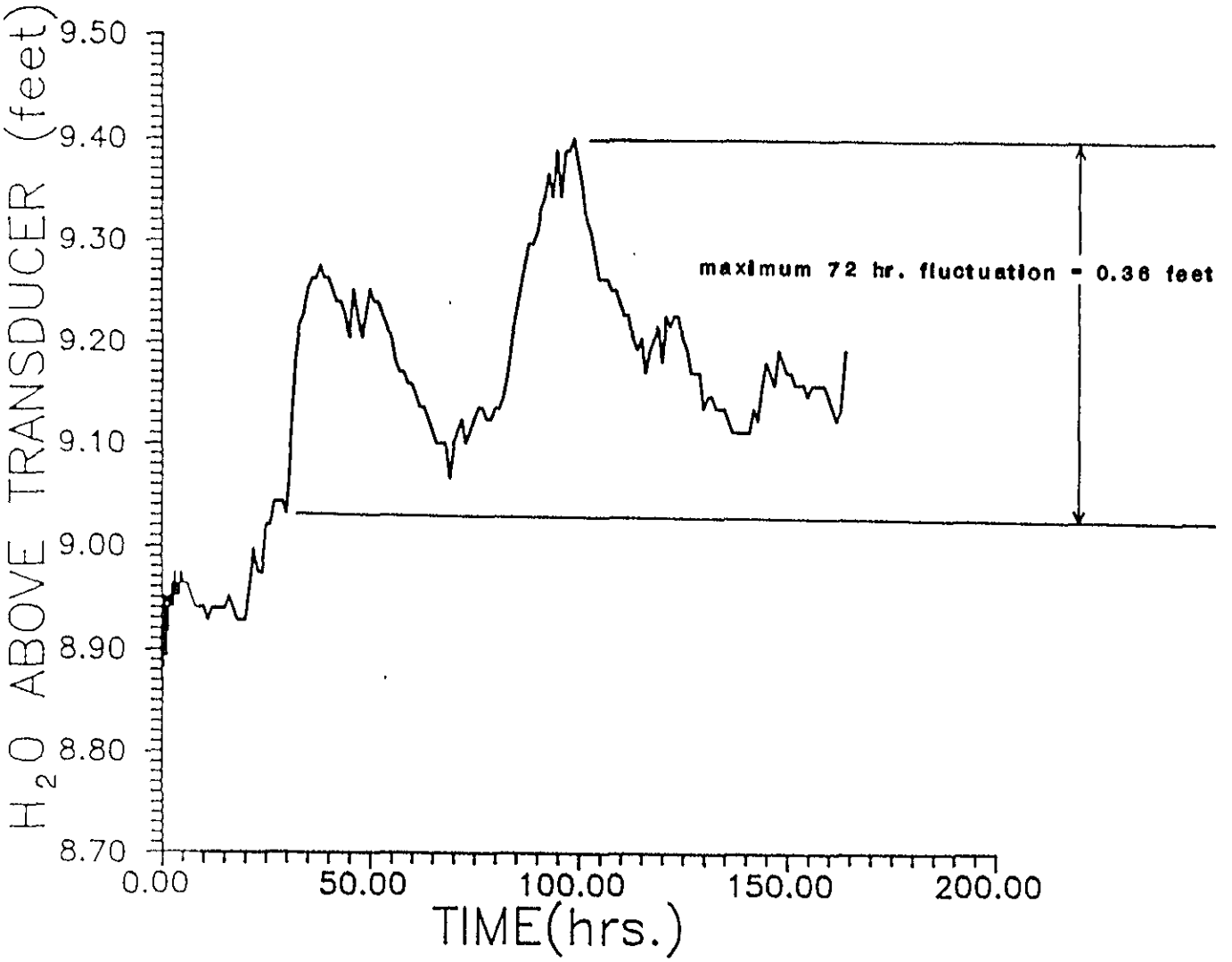
DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: SLS
DATE: 1/5/89	DRAWING #: FIG. 2



ensco environmental services, Inc.

GROUNDWATER ELEVATION CONTOUR MAP FOR JUNE 28-29, 1989: PRE-PUMP TEST LEVELS		REVIEWED BY	APPROVED BY:
FORMER SHELL STATION			
7194 AMADOR VALLEY BLVD	JOB # 1826G	DRAWN BY J.C.	
DUBLIN, CALIFORNIA	DATE 9/3/89	DRAWING # FIG. 3	



ensco environmental services, Inc.

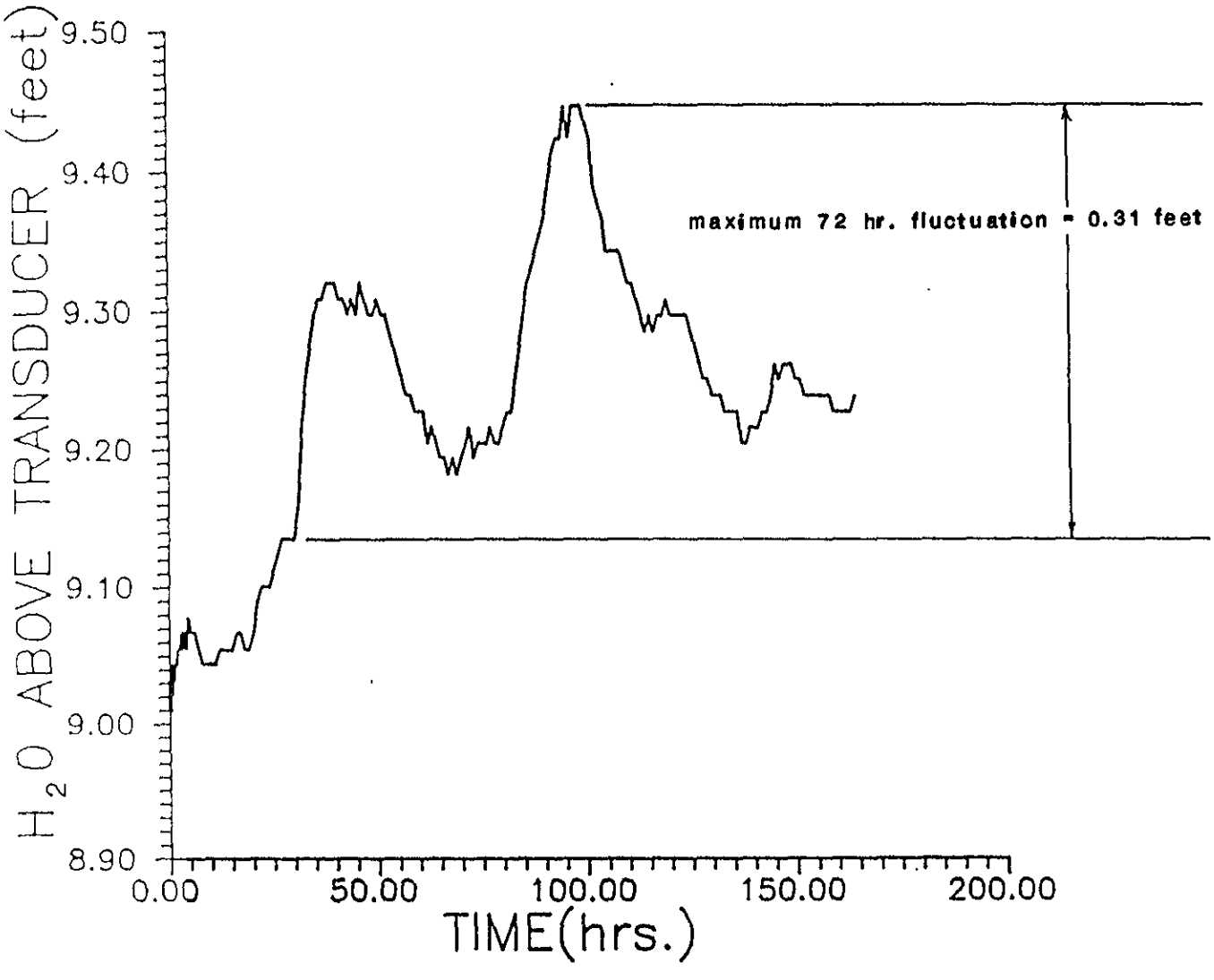
RW-1 GROUNDWATER LEVEL BACKGROUND FLUCTUATIONS (JULY 20-27, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY	APPROVED BY
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 4



ensco environmental services, Inc.

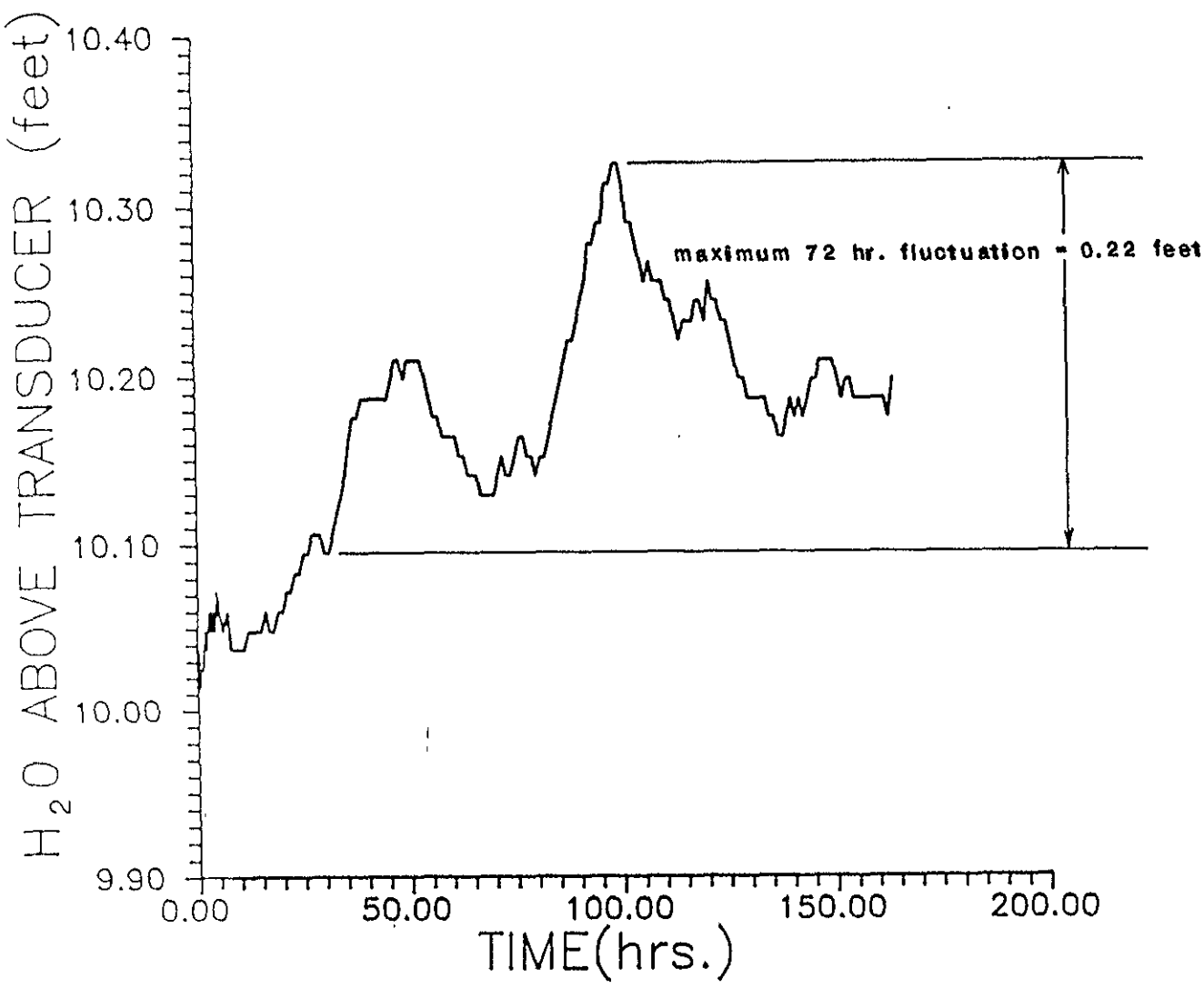
MW-1 GROUNDWATER LEVEL BACKGROUND FLUCTUATIONS (JULY 20-27, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 5



ensco environmental services, Inc.

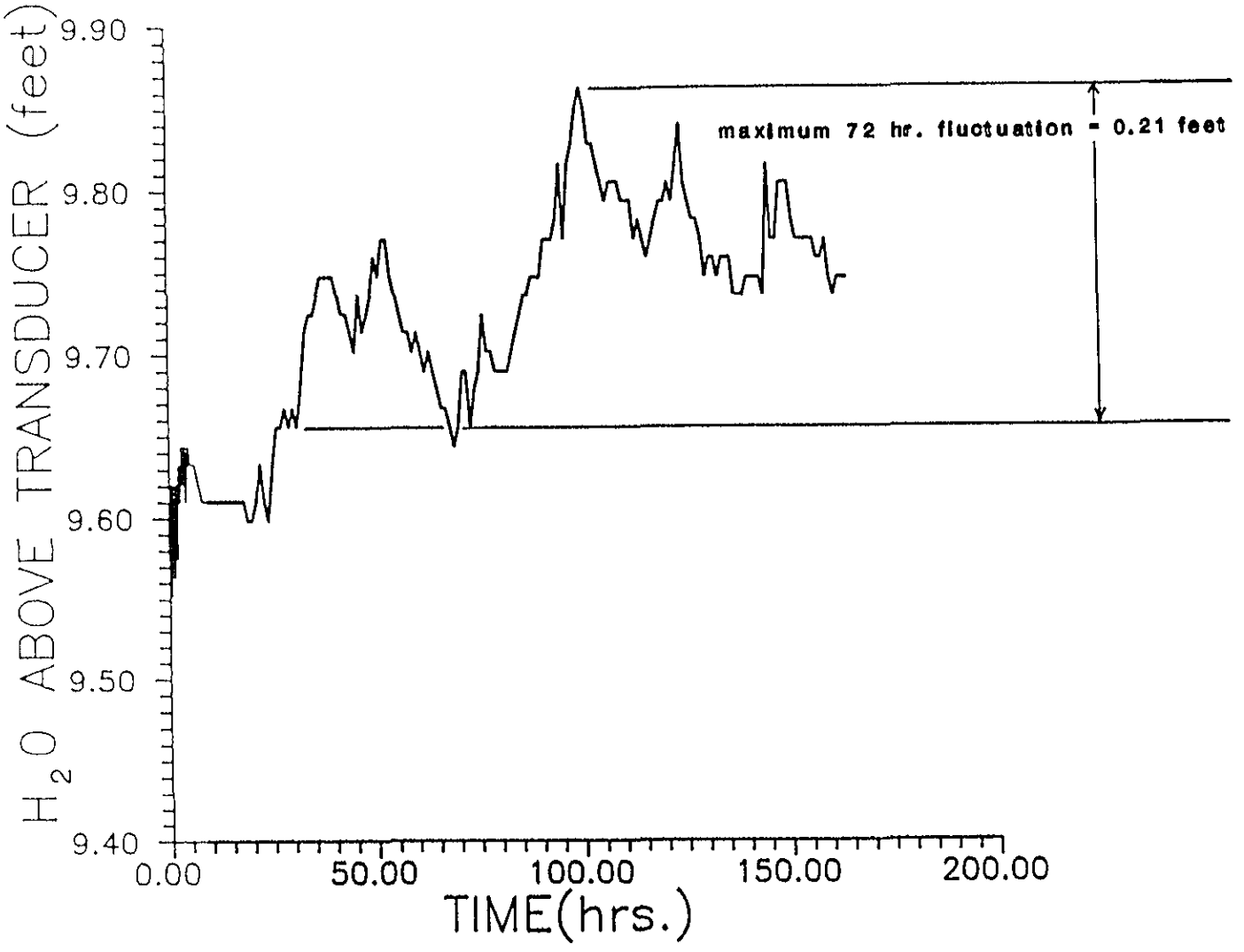
MW-2 GROUNDWATER LEVEL BACKGROUND FLUCTUATIONS (JULY 20-27, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 6



ensco environmental services, inc.

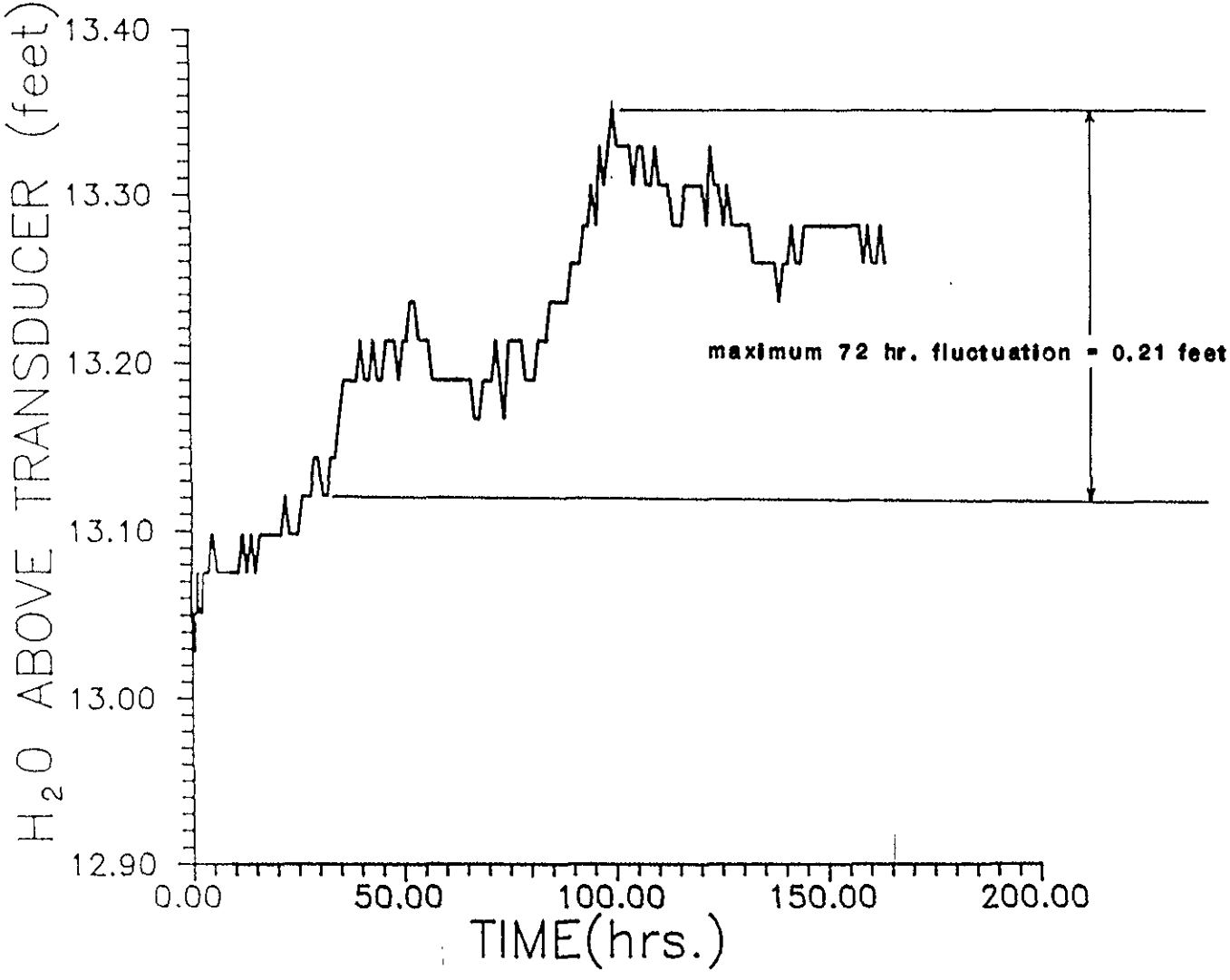
MW-3 GROUNDWATER LEVEL BACKGROUND FLUCTUATIONS (JULY 20-27, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 7



ensco environmental services, Inc.

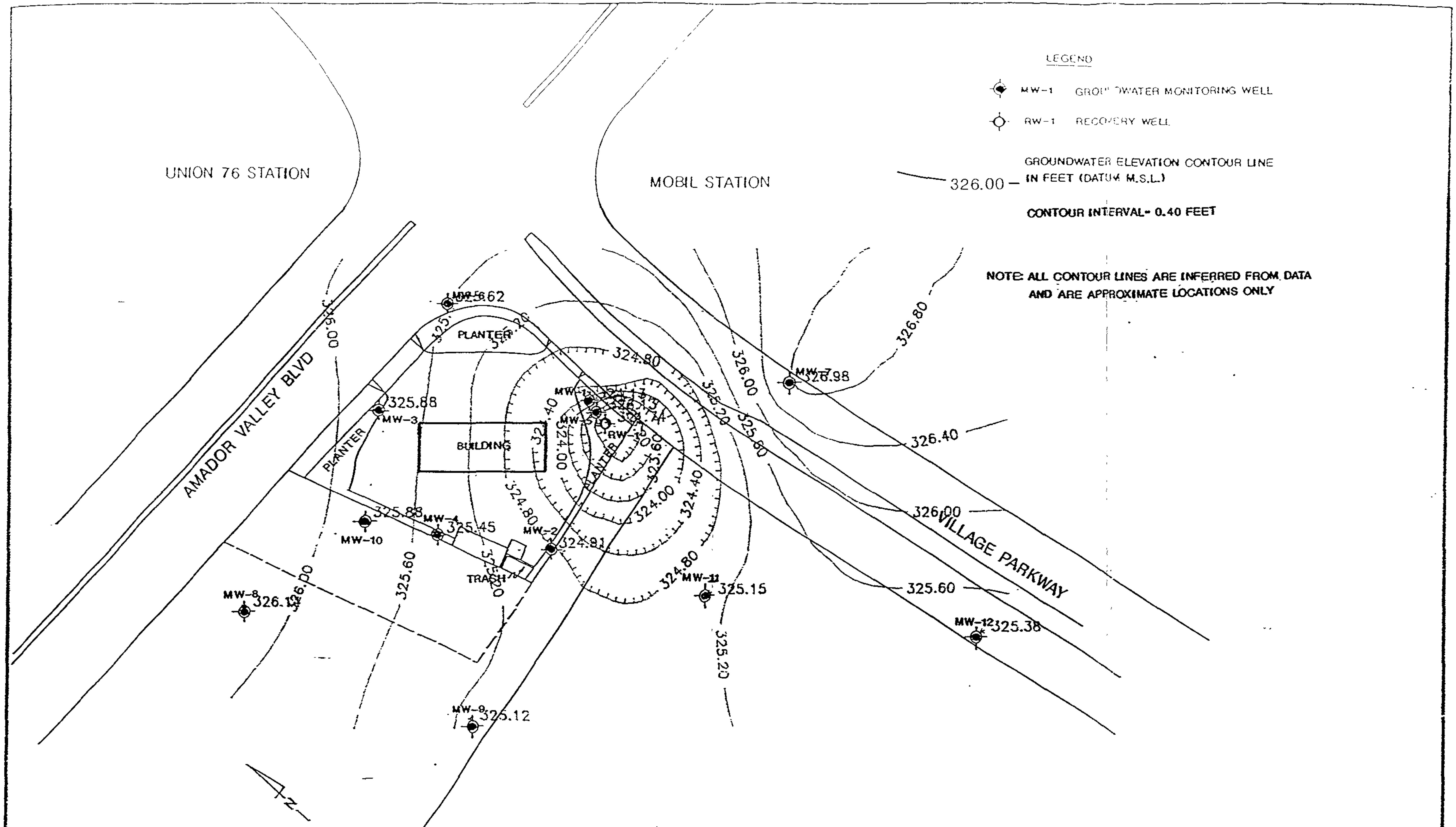
MW-4 GROUNDWATER LEVEL BACKGROUND FLUCTUATIONS (JULY 20-27, 1989)

FORMER SHELL SERVICE STATION

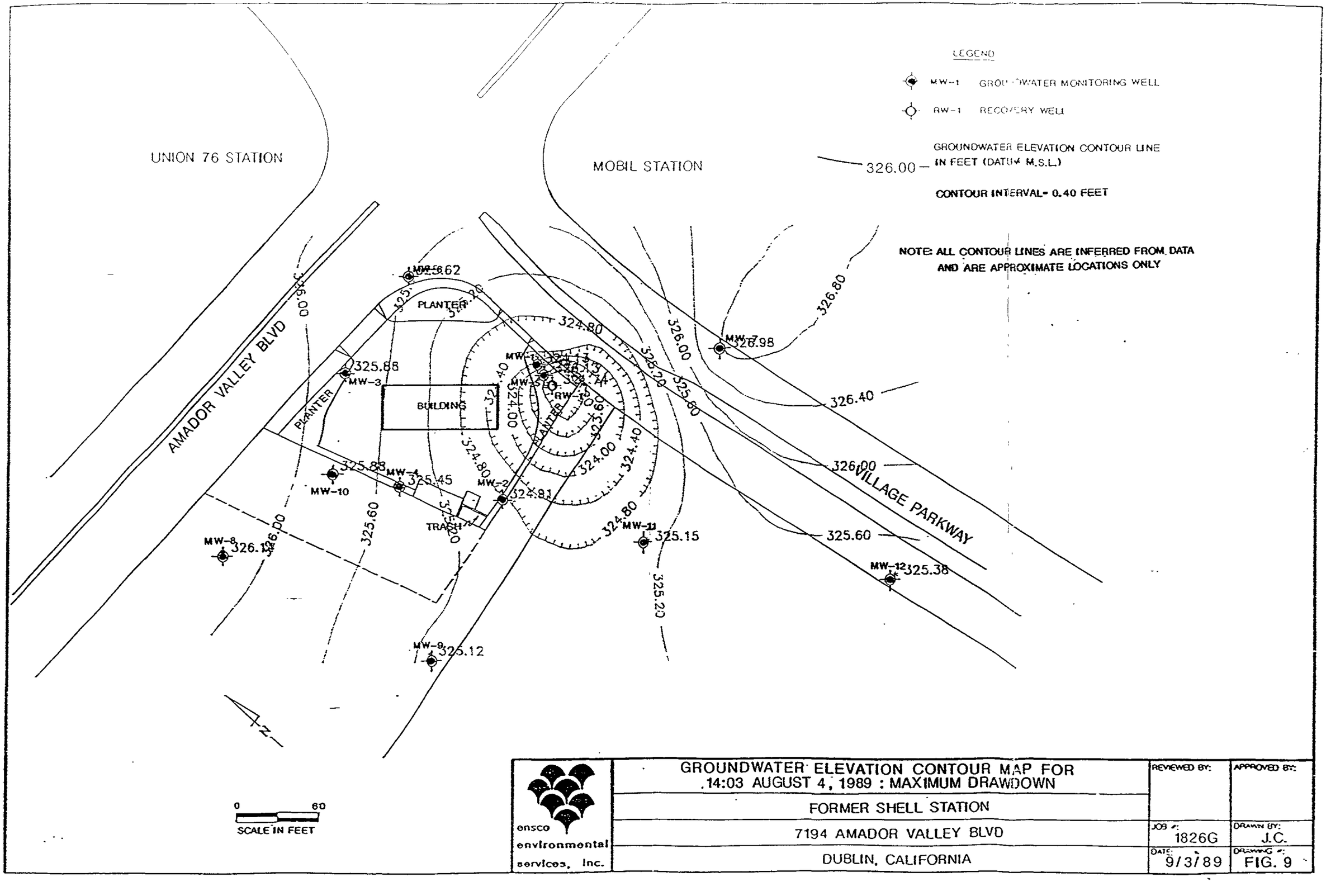
7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB # 1826G	DRAWN BY J.C.
DATE: 8-25-89	DRAWING # FIG. 8

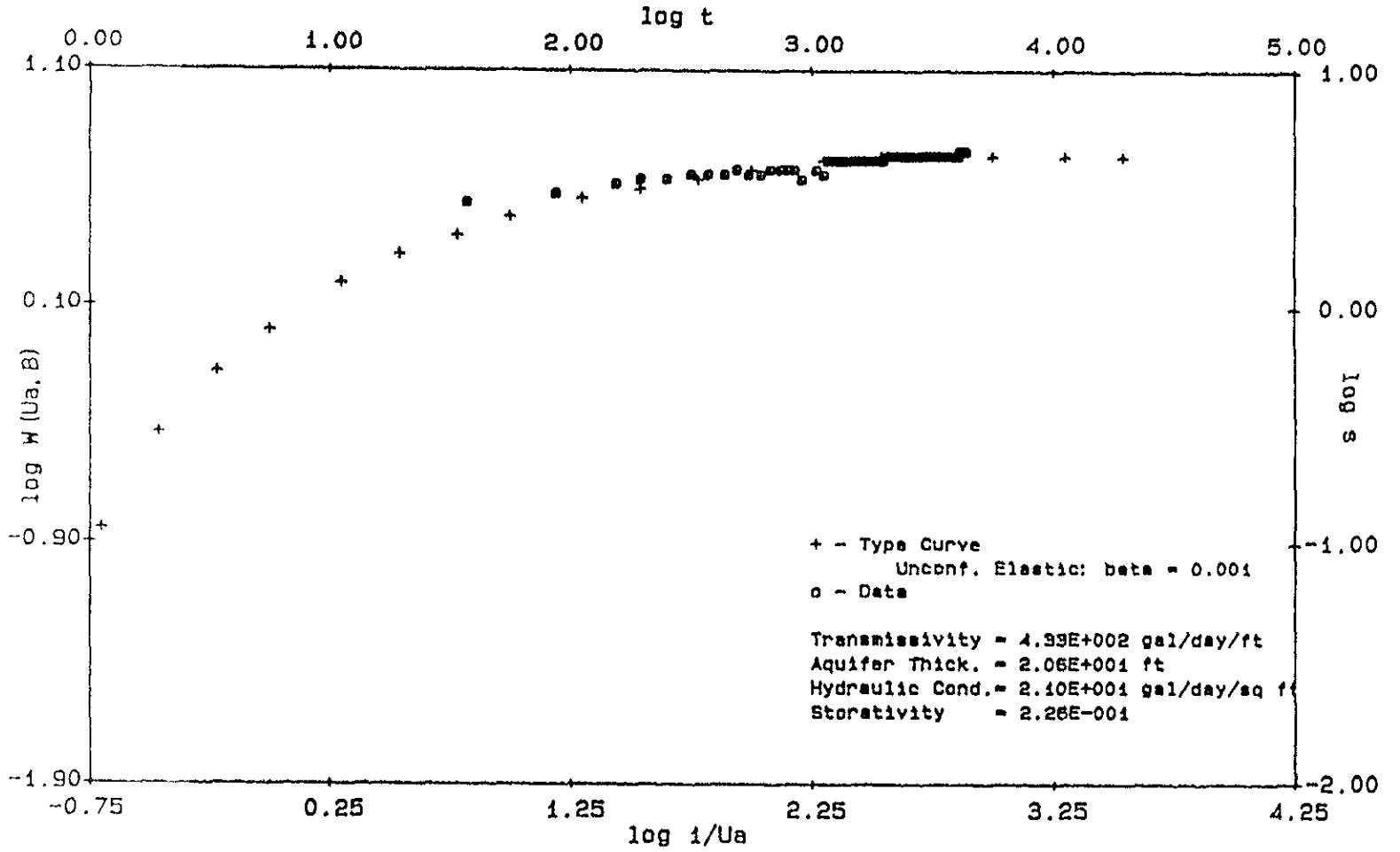

LEGEND
MW-1 GROUNDWATER MONITORING WELL
RW-1 RECOVERY WELL
326.00 — GROUNDWATER ELEVATION CONTOUR LINE IN FEET (DATUM M.S.L.)
CONTOUR INTERVAL= 0.40 FEET
NOTE: ALL CONTOUR LINES ARE INFERRED FROM DATA AND ARE APPROXIMATE LOCATIONS ONLY
UNION 76 STATION
MOBIL STATION
AMADOR VALLEY BLVD
VILLAGE PARKWAY
PLANTER
BUILDING
TRASH
MW-3 325.88
MW-4 325.45
MW-10 325.88
MW-8 326.12
MW-9 325.12
MW-2 324.81
MW-11 325.15
MW-12 325.38
MW-7 326.98
MW-5 325.62
RW-1
324.80
325.20
325.60
326.00
326.40
326.80
324.40
324.00
0 80
SCALE IN FEET
N

ensco environmental services, Inc.	GROUNDWATER ELEVATION CONTOUR MAP FOR 14:03 AUGUST 4, 1989 : MAXIMUM DRAWDOWN	REVIEWED BY:	APPROVED BY:
	FORMER SHELL STATION		
	7194 AMADOR VALLEY BLVD	JOB #: 1826G	DRAWN BY: J.C.
	DUBLIN, CALIFORNIA	DATE: 9/3/89	DRAWING #: FIG. 9



ensco environmental services, Inc.

GROUNDWATER ELEVATION CONTOUR MAP FOR .14:03 AUGUST 4, 1989 : MAXIMUM DRAWDOWN		REVIEWED BY:	APPROVED BY:
FORMER SHELL STATION			
7194 AMADOR VALLEY BLVD		JOB #: 1826G	DRAWN BY: J.C.
DUBLIN, CALIFORNIA		DATE: 9/3/89	DRAWING #: FIG. 9



ensco environmental services, inc.

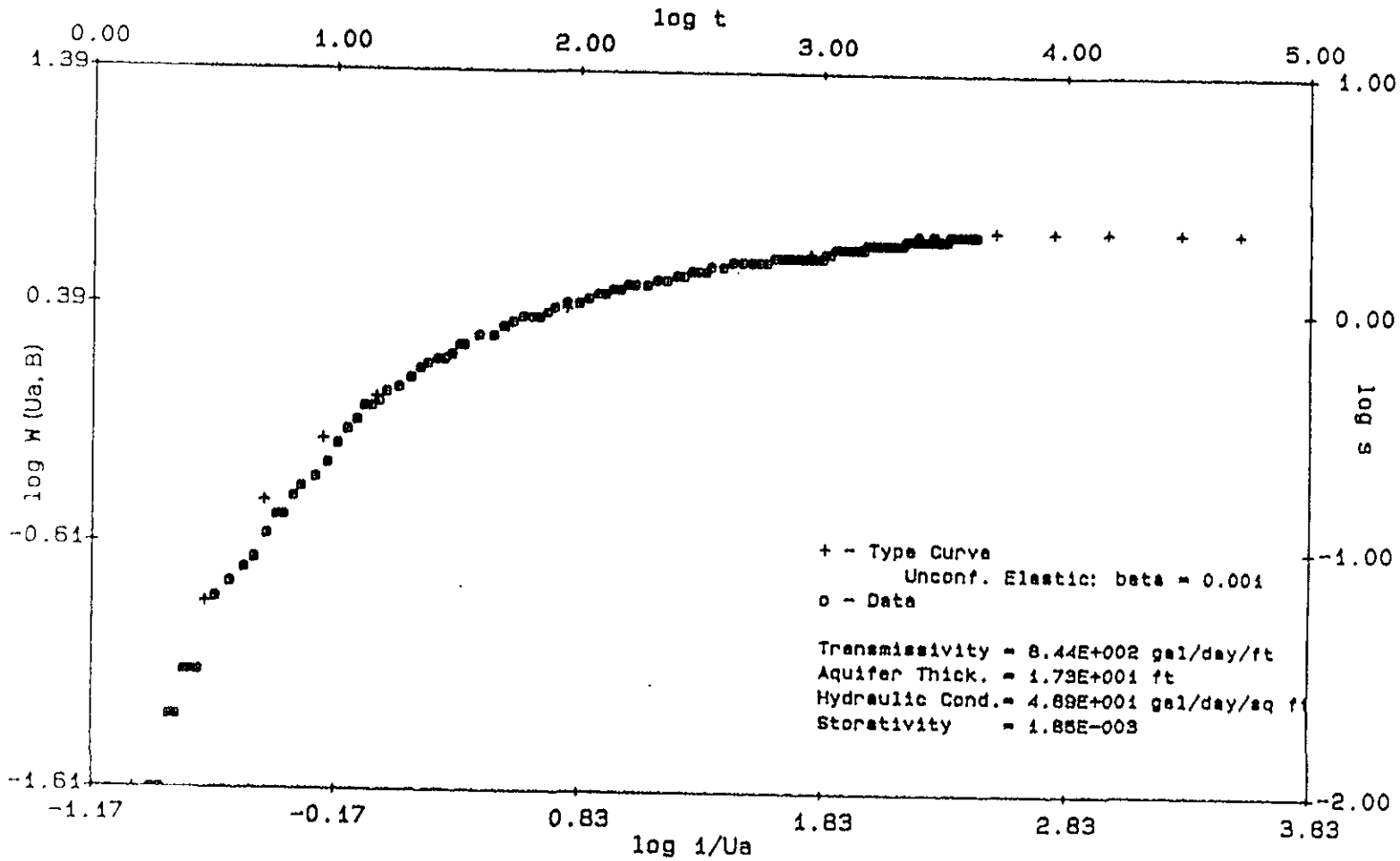
RW-1 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 11



ensco environmental services, Inc.

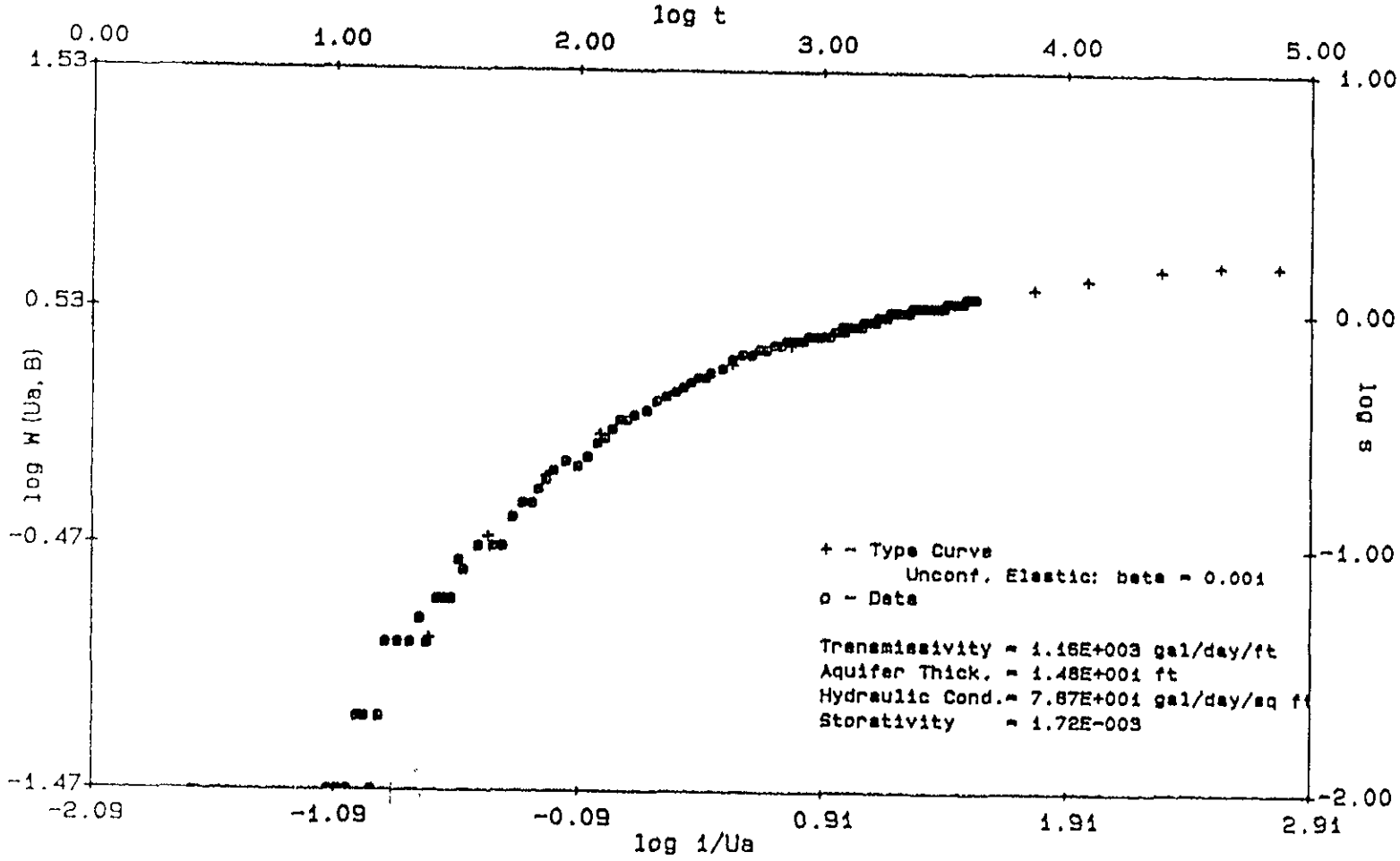
MW-1 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 12



ensco environmental services, Inc.

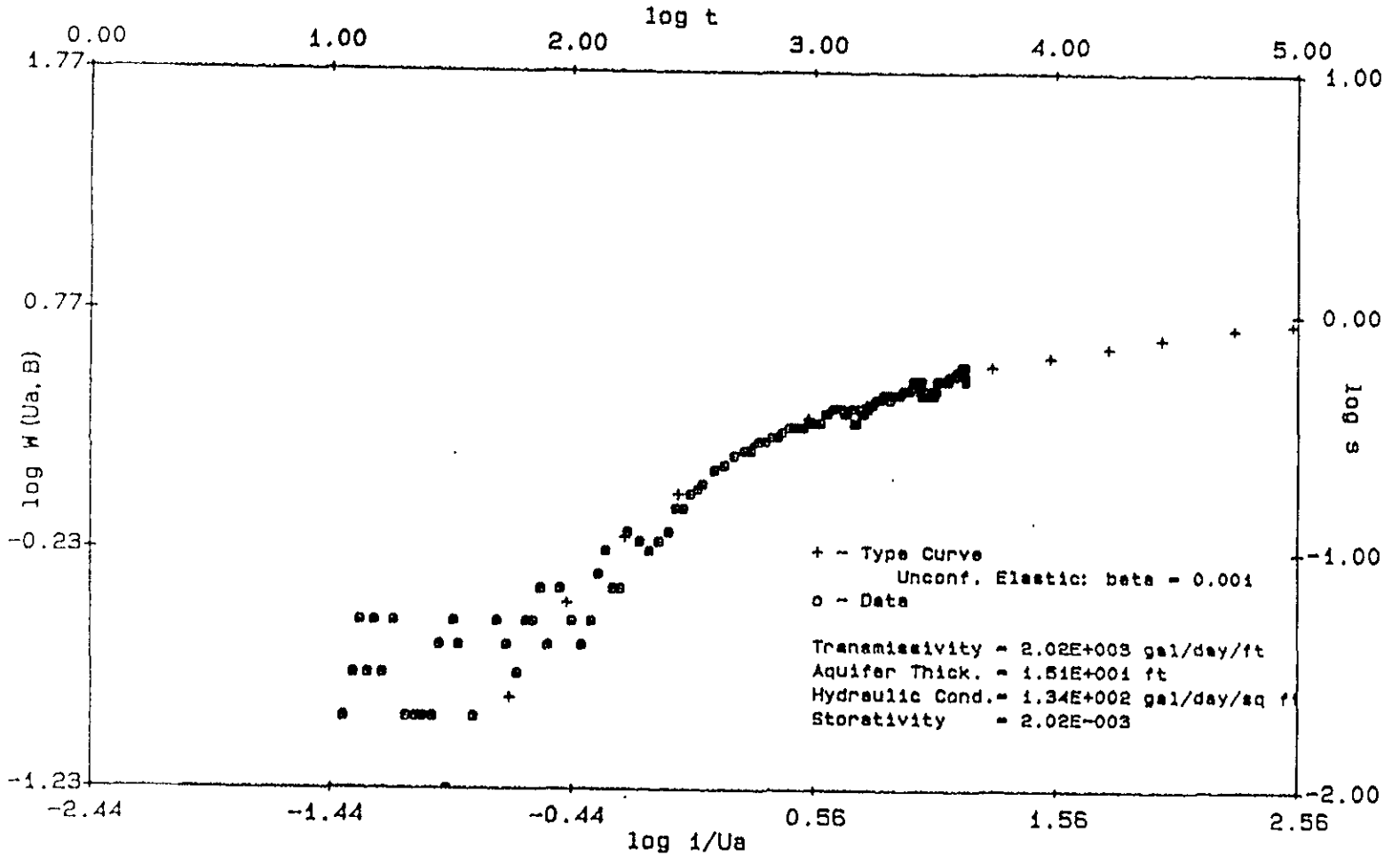
MW-2 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 13



ensco environmental services, Inc.

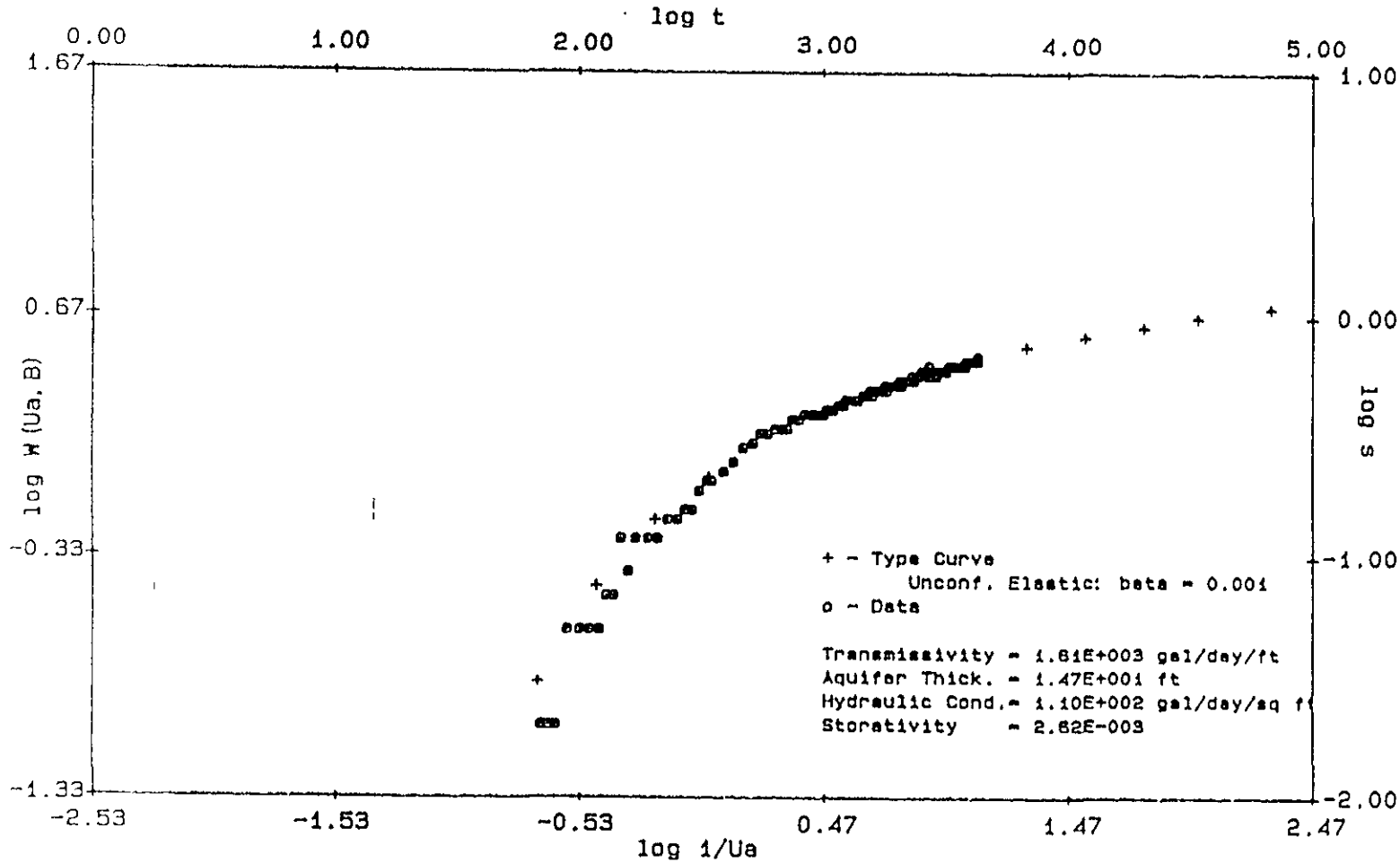
MW-3 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 14



ensco environmental services, Inc.

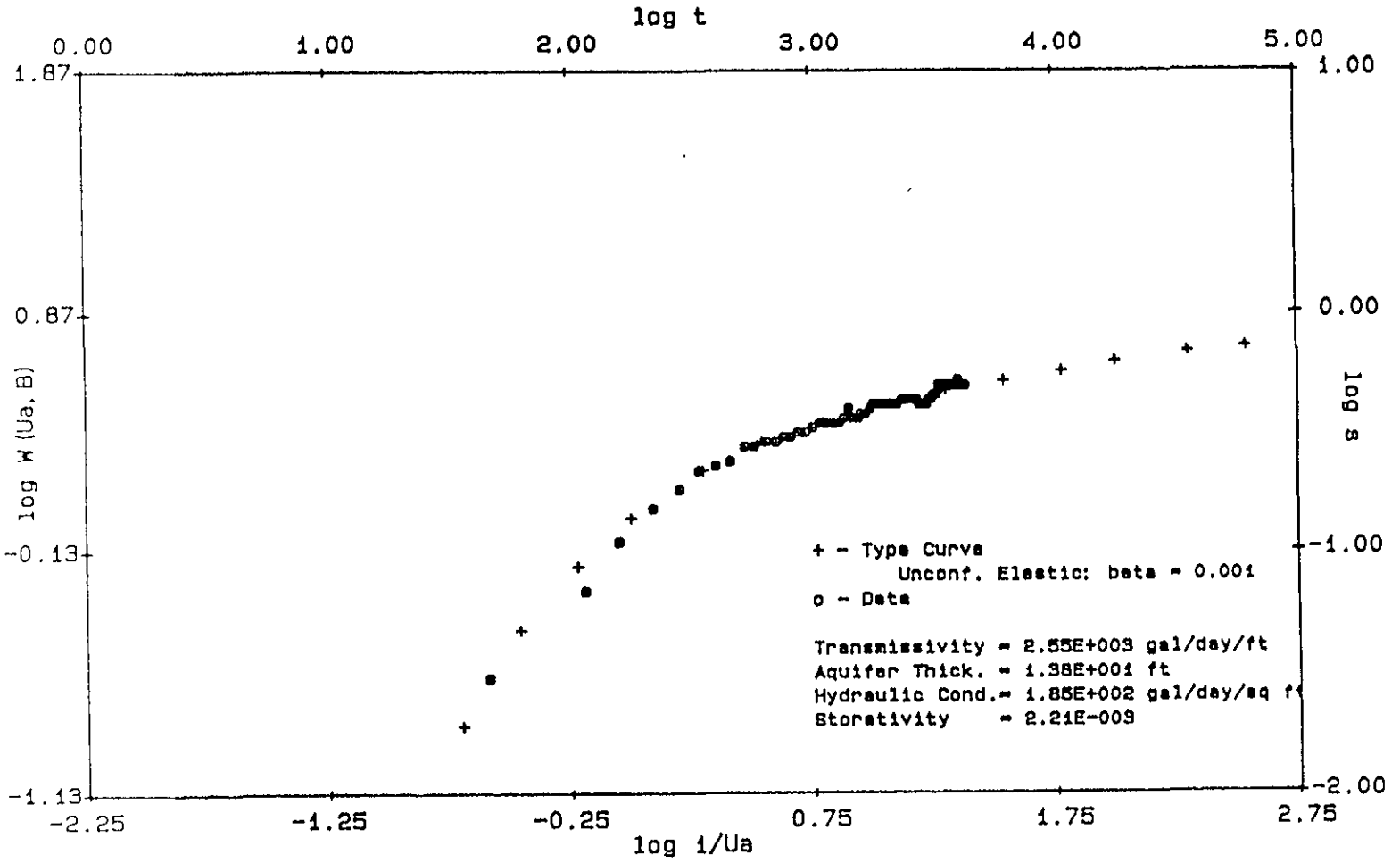
MW-4 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 15



ensco environmental services, Inc.

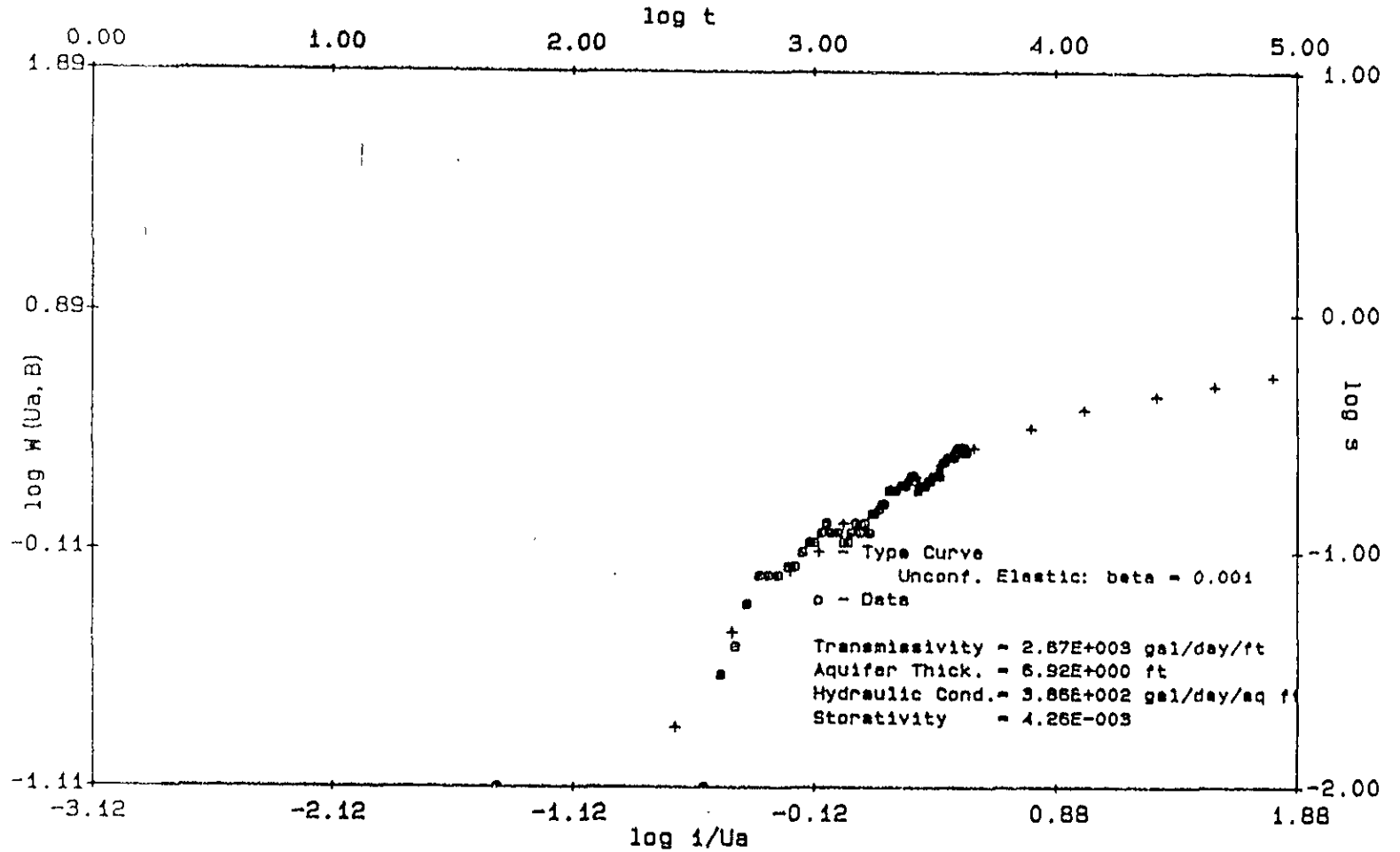
MW-6 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 16



ensco environmental services, Inc.

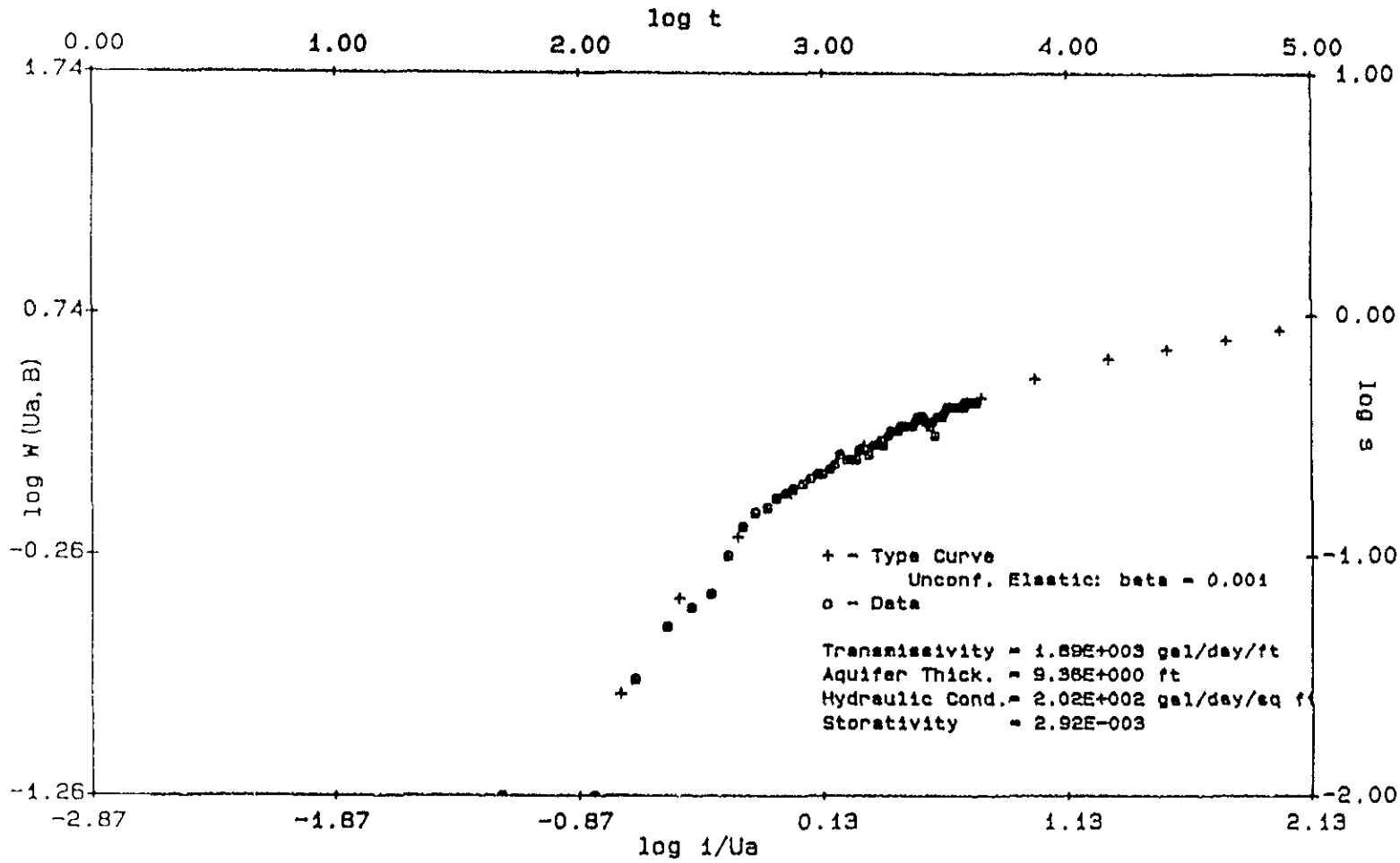
MW-8 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 17



ensco environmental services, Inc.

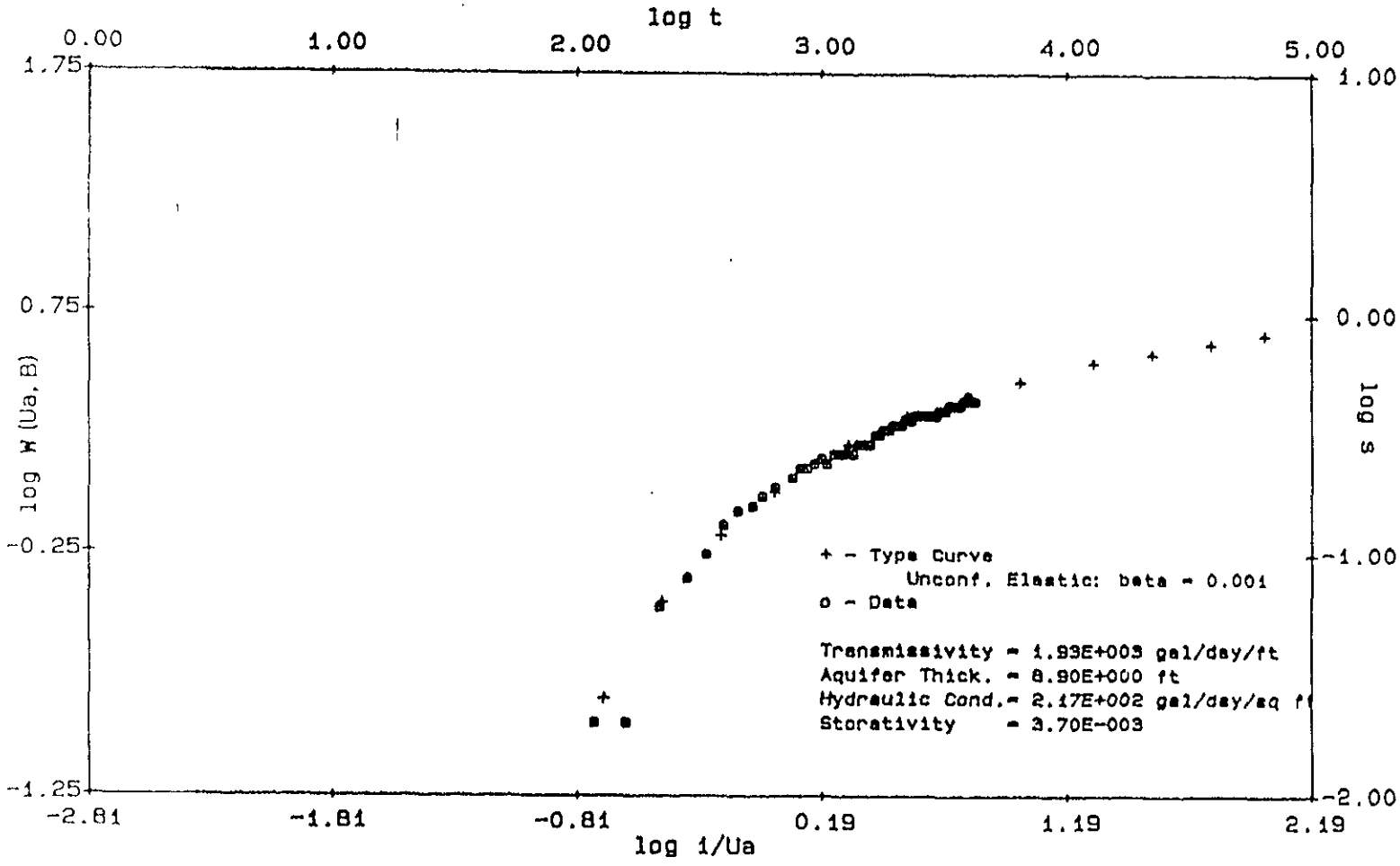
MW-9 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 18



ensco environmental services, Inc.

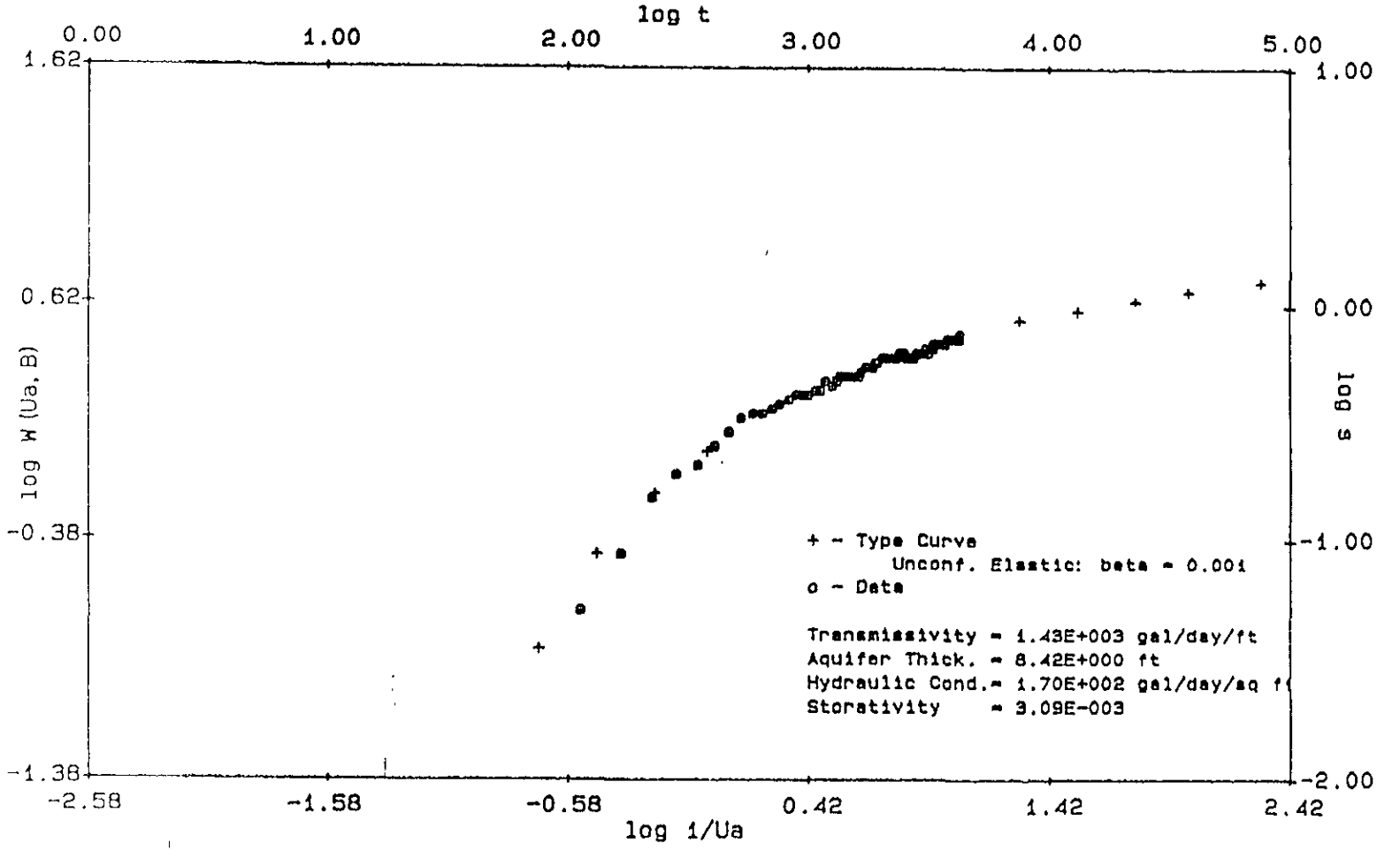
MW-10 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 19



onsco environmental services, inc.

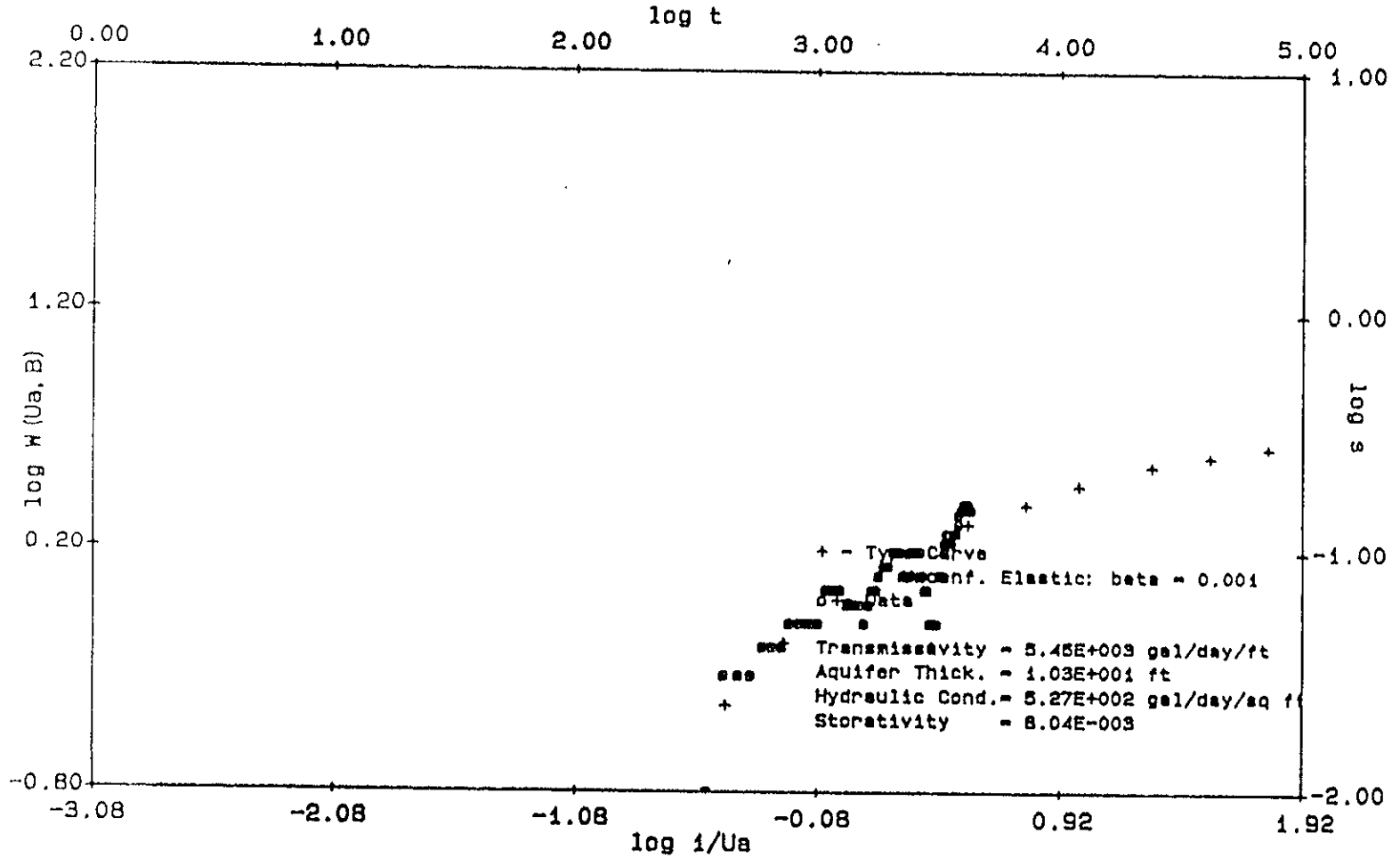
MW-11 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 20



ensco environmental services, Inc.

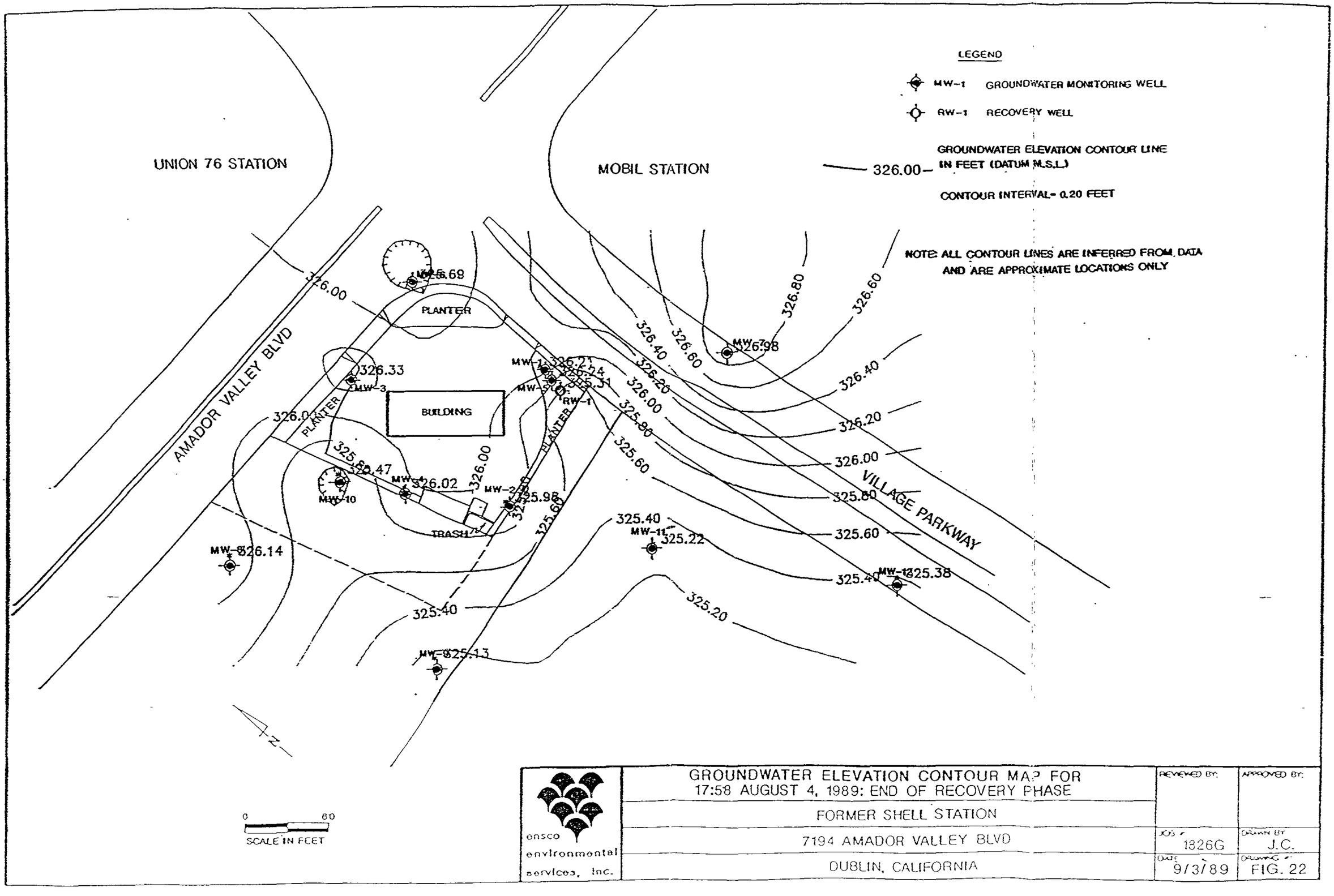
MW-12 CONSTANT DISCHARGE PUMP TEST ANALYSIS (AUGUST 1-4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD.

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 8-25-89	DRAWING #: FIG. 21



ensco environmental services, inc.

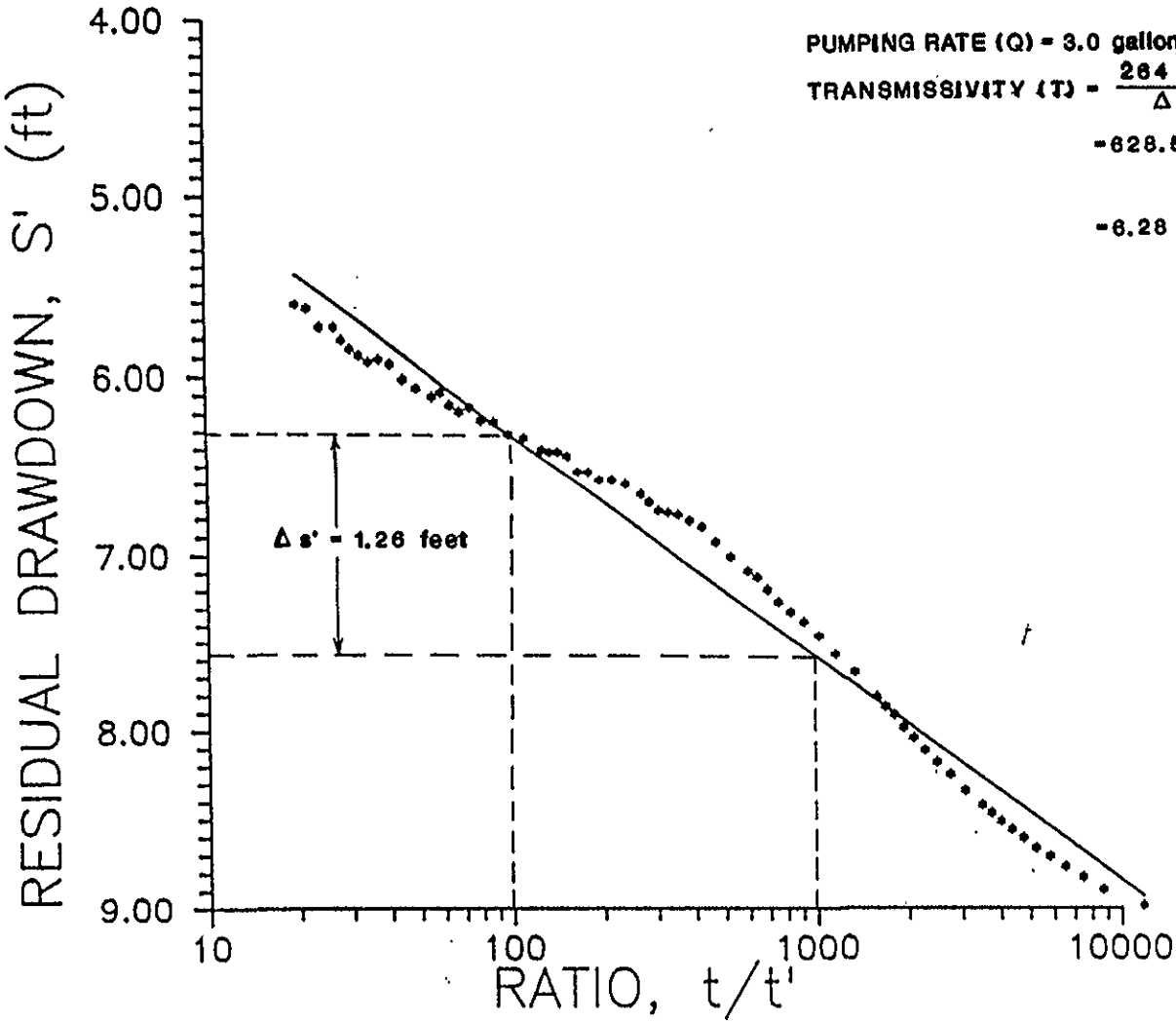
GROUNDWATER ELEVATION CONTOUR MAP FOR
17:58 AUGUST 4, 1989: END OF RECOVERY PHASE

FORMER SHELL STATION

7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.C.
DATE: 9/3/89	DRAWING #: FIG. 22



PUMPING RATE (Q) = 3.0 gallons-per-minute (gpm)

TRANSMISSIVITY (T) = $\frac{264\ (Q)}{\Delta s'} = \frac{(264)(3.0\ gpm)}{(1.26\ feet)}$

$= 628.57\ \frac{\text{gallons-per-day}}{\text{foot}}$

$= 6.28 \times 002\ \frac{gpd}{ft}$

onsco environmental services, Inc.

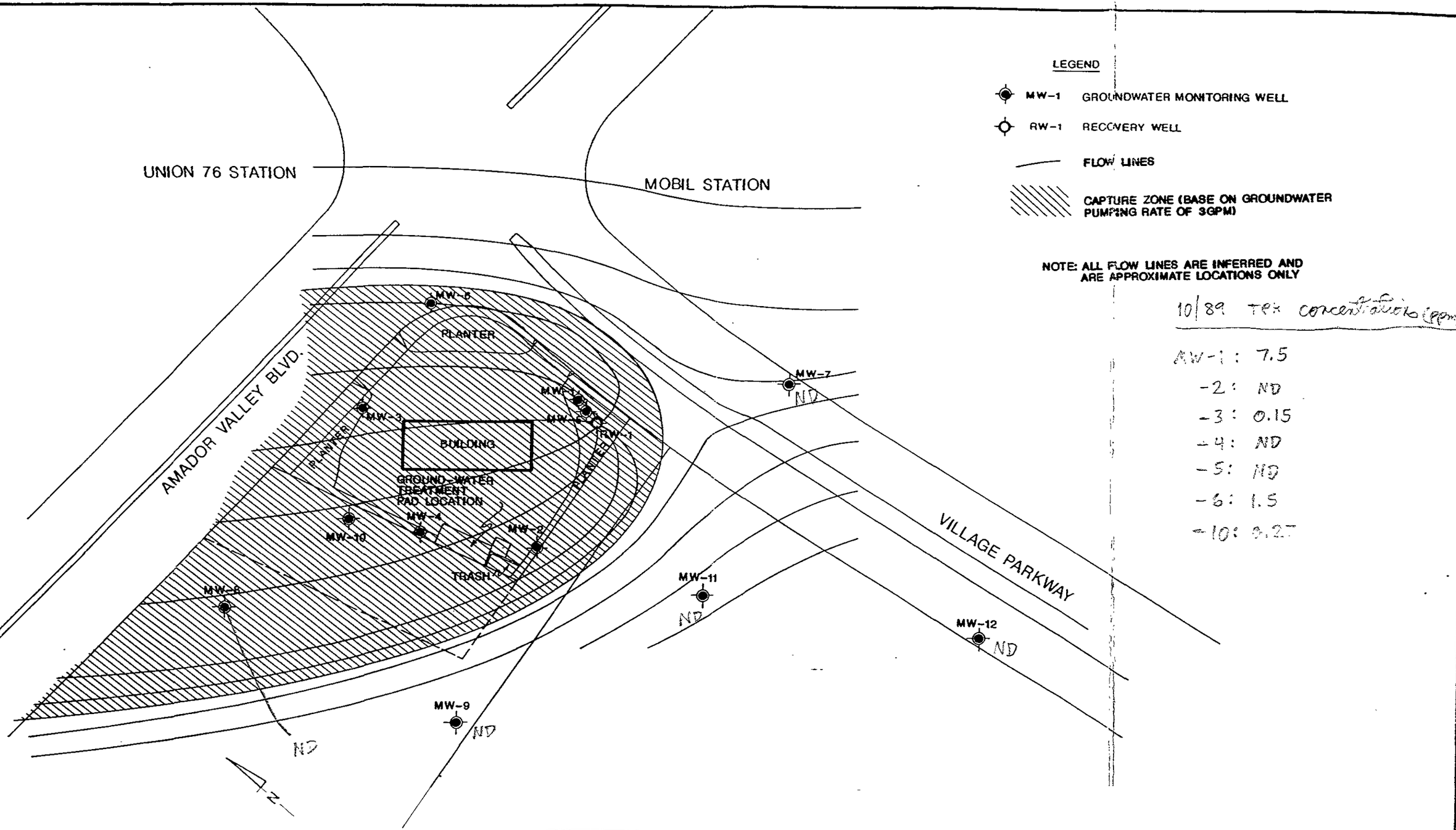
RW-1 RECOVERY TEST ANALYSIS (AUGUST 4, 1989)

FORMER SHELL SERVICE STATION

7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY	APPROVED BY
JOB # 1826G	DRAWN BY J.C.
DATE 8-25-89	DRAWING # FIG. 23



LEGEND

- MW-1 GROUNDWATER MONITORING WELL
- RW-1 RECOVERY WELL
- FLOW LINES
- CAPTURE ZONE (BASE ON GROUNDWATER PUMPING RATE OF 3GPM)

NOTE: ALL FLOW LINES ARE INFERRED AND ARE APPROXIMATE LOCATIONS ONLY

10/89 TPH concentrations (ppm)

MW-1 : 7.5
-2 : ND
-3 : 0.15
-4 : ND
-5 : ND
-6 : 1.5
-10 : 0.27

ensco environmental services, Inc.

CAPTURE ZONE FLOW MODEL DIAGRAM

FORMER SHELL STATION

7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY	APPROVED BY
JOB # 1826G	DRAWN BY J.C.
DATE 10/20/89	DRAWING # FIG. 24

APPENDIX A

BORING LOGS AND WELL CONSTRUCTION DETAILS FOR RW-1

EXPLORATORY BORING LOG

ensco environmental services, inc.

PROJECT NAME: Shell Oil, Dublin
7194 Amador Valley Blvd.

BORING NO. RW-1

DATE DRILLED: 7/27/89

PROJECT NUMBER: 1826G

LOGGED BY: S.C.

DEPTH (ft.)	SAMPLE No	BLOWS/FOOT	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL	OVM READING ppm
1–2				FILL: Sandy Gravel, 75% fine to coarse gravel, 25% medium to coarse sand, damp to dry		
3–10	R1-1	13	CH	SILTY CLAY, black (5YR 2.5/1), trace fine sand, trace fine gravel, high plasticity, stiff, damp		5
11–15	R1-2	10		CLAY, black (10YR 2/1), trace of sand, minor roots, high plasticity, stiff, moist		20 310
16–20	R1-3	8	CH	Color change to dark grayish brown (2.5Y 4/2) mottled with very dark gray (10YR 3/1), becomes silty, trace fine to coarse sand, rare fine gravel, few to common decayed roots, common rootholes (wet), medium stiff, wet, water noted in holes	▽	0.5
21	R1-3	10		Color change to black (5Y 2.5/1), no gravel, no roots, few rootholes (wet), stiff, wet		0.5

REVIEWED BY R.G /C E.G.

EXPLORATORY BORING LOG

ensco environmental services, inc.

PROJECT NAME: Shell Oil, Dublin
7194 Amador Valley Blvd.

BORING NO. RW-1

DATE DRILLED: 7/27/89

PROJECT NUMBER: 1826G

LOGGED BY: S.C.

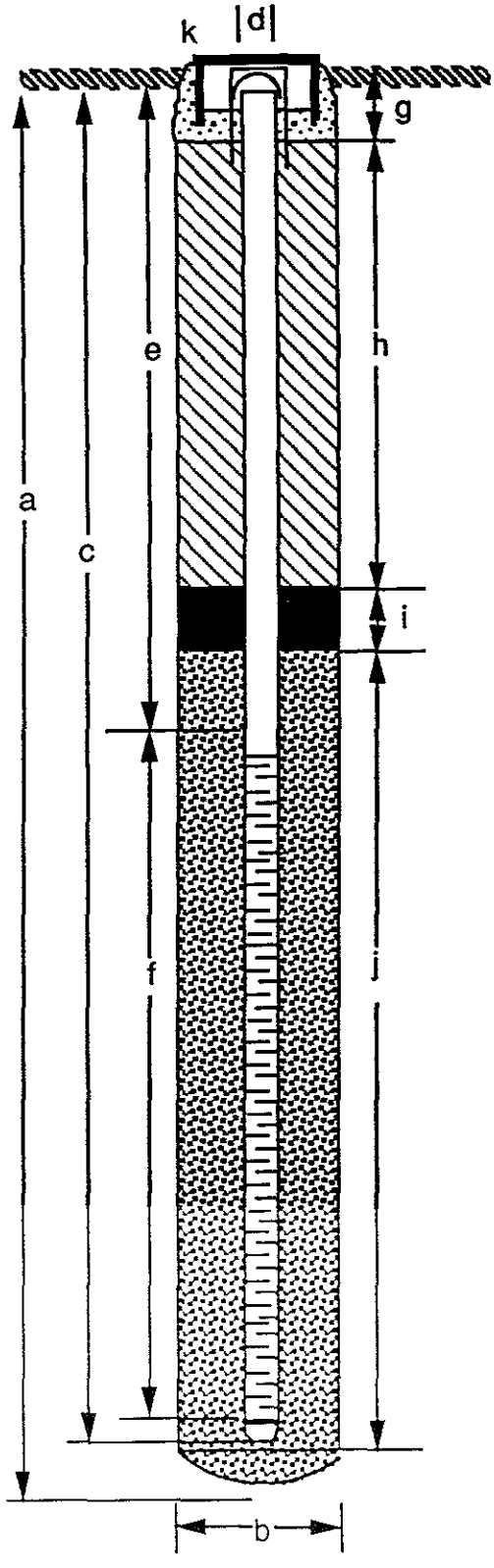
DEPTH (ft.)	SAMPLE No	BLOWS/FOOT	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL	OVM READING ppm
22			CH	SILTY CLAY, as above		
23						
24						
25			CL	SANDY CLAY, dark gray (5Y 4/1), 15% fine to coarse sand, rare root fibers, rare root holes, trace black organic staining, low to moderate plasticity, stiff, damp		
26	R1-5	16				0.5
27						
28						
29			CH	SANDY CLAY, dark gray (5Y 4/1) with very slight orange-brown staining, 15% fine sand, becomes 40% fine to coarse sand at shoe, some rootholes, very stiff, wet		
30						
31	R1-6	19				0.5
32				Bottom of Boring = 31.5 feet		
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						

REVIEWED BY R.G /C.E G

Recovery Well Detail

PROJECT NUMBER 1826G Shell Oil
PROJECT NAME 7194 Amador Valley Blvd.
COUNTY Alameda
WELL PERMIT NO.

BORING / WELL NO. RW-1
TOP OF CASING ELEV.
GROUND SURFACE ELEV.
DATUM Mean Sea Level



EXPLORATORY BORING

a. Total Depth 31.5 ft.
b. Diameter 10 in.
Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Casing length 30 ft.
Material Schedule 40 PVC
d. Diameter 6 in.
e. Depth to top perforations 10 ft.
f. Perforated length 20 ft.
Perforated interval from 30 to 10 ft.
Perforation type Machine Slot
Perforation size 0.020 in.
g. Surface seal -- ft.
Seal Material n/a
h. Backfill 8 ft.
Backfill material Grout
i. Seal 1 ft.
Seal Material Bentonite
j. Gravel pack 21 ft.
Pack material 2/12 Monterey Type Sand
k.

ensco
environmental
services, inc.

APPENDIX B

TERRA 8
DATA COLLECTION REPORTS
FOR
RW-1, MW-1, MW-2,
MW-3, MW-4, AND MW-5

- Background Data
- 72-Hour Constant Discharge Pump Test Data
- Pump Test Recovery Data

Background Data

BACKGROUND DATA

[illegible]

"Firmware Version 6.1/87"
"Number of Bytes in Data Dump 6332"
"User Supplied Comment"
"Time Header Block Loaded 04/24 03:29:39:50"
"Time Data File Dumped 04/30 23:52:28:90"
"Remaining Memory 59204"
"Number of Logs 299"
"Type of Data Memory Memory Board"
"[illegible]"
"Power [illegible] During Data Collection Period"

" Terra8 Channel Setup:"
"Number of Declared Analog Channels = 6"

"Ch# Description	Units	Delay	M	B "
" 1 5 PSI...........	PSI.....	100	2.310	0.000"
" 2 5 PSI...........	PSI.....	100	2.310	0.000"
" 3 0-5 PSI...........	PSI.....	100	2.310	0.000"
" 4 0-5 PSI...........	PSI.....	100	2.310	0.000"
" 5 0-10 PSI...........	PSI.....	100	4.620	0.000"
" 6 0-15 PSI...........	PSI.....	100	6.930	0.000"

" Terra8 Channel Setup:"

"Number of Declared Digital Channels = 0"

"Ch# Description______Units___Delay______M__________B_____"

"*Initial Scan at "4 24 3 29 37 40
"*Next Scan at "4 24 3 29 37 40

"Time	""Analog#01""	Analog#02""	Analog#03""	Analog#04""	Analog#0	
SECONDS	RW-1	MW-2	MW-3	MW-1	MW-4	MW-5
0.00	8.905	10.025	9.575	9.032	13.051	16.078
3.00	8.905	10.037	9.575	9.032	13.051	16.078
5.50	8.905	10.037	9.586	9.032	13.051	16.112
7.90	8.905	10.037	9.586	9.021	13.051	16.112
10.40	8.905	10.025	9.575	9.032	13.051	16.078
12.90	8.905	10.025	9.586	9.032	13.051	16.078
15.30	8.905	10.025	9.586	9.021	13.051	16.078
17.80	8.893	10.025	9.586	9.021	13.051	16.112
20.30	8.893	10.025	9.586	9.021	13.051	16.078
22.70	8.893	10.037	9.586	9.032	13.051	16.078
25.20	8.893	10.025	9.586	9.021	13.051	16.078
27.60	8.905	10.025	9.586	9.021	13.051	16.078
30.10	8.893	10.025	9.586	9.021	13.051	16.078
32.60	8.905	10.025	9.586	9.021	13.051	16.078
35.10	8.893	10.037	9.586	9.021	13.075	16.112
[illegible]	[illegible]	[illegible]	9.575	9.021	13.051	16.078
48.0[illegible]	8.893	10.037	9.575	9.032	13.051	16.078
[illegible]	[illegible]	[illegible]	[illegible]	9.021	[illegible]	16.0[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	9.021	[illegible]	16.0[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

73.00	8.905	10.037	9.586	9.032	13.051	16.112
78.00	8.905	10.037	9.586	9.032	13.051	16.112
83.00	8.905	10.037	9.586	9.032	13.051	16.078
88.00	8.905	10.025	9.586	9.032	13.051	16.112
93.00	8.905	10.025	9.586	9.032	13.051	16.078
98.00	8.905	[illegible]	9.586	[illegible]	[illegible]	[illegible]
103.00	8.917	[illegible]	9.575	[illegible]	[illegible]	[illegible]
108.00	8.917	10.025	9.586	9.032	[illegible]	[illegible]
113.00	8.917	10.025	9.586	9.032	13.051	16.078
118.00	8.917	10.025	9.586	9.032	13.051	16.078
123.00	8.917	10.037	9.586	9.032	13.051	16.078
128.00	8.917	10.025	9.598	9.032	[illegible]	16.112
133.00	8.917	10.037	9.598	9.021	[illegible]	16.112
138.00	8.917	10.025	9.586	9.032	[illegible]	[illegible]
143.00	8.917	10.037	9.586	9.032	13.051	16.078
153.00	8.917	10.025	9.586	9.021	13.051	16.078
163.00	8.905	10.025	9.586	9.021	13.051	16.078
173.00	8.905	10.025	9.586	9.021	13.051	16.078
183.00	8.905	10.025	9.586	9.021	13.051	16.078
193.00	8.893	10.025	9.586	9.021	13.051	16.078
203.00	8.893	10.014	9.586	9.021	13.051	16.078
213.00	8.893	10.025	9.586	9.021	13.051	16.078
223.00	8.893	10.025	9.586	9.021	13.051	16.078
233.00	8.905	10.025	9.586	9.021	13.051	16.078
243.00	8.905	10.025	9.586	9.021	13.051	16.078
253.00	8.905	10.037	9.586	9.021	13.051	16.078
263.00	8.905	10.037	9.586	9.021	13.028	16.078
273.00	8.905	10.025	9.575	9.021	13.051	16.078
283.00	8.905	10.025	9.586	9.021	13.028	16.078
293.00	8.893	10.014	9.575	9.009	13.051	16.078
303.00	8.905	10.025	9.586	9.021	13.051	16.078
313.00	8.905	10.025	9.586	9.032	13.051	16.078
323.00	8.905	10.037	9.575	9.021	13.051	16.078
333.00	8.905	10.025	9.586	9.021	13.051	16.078
343.00	8.905	10.025	9.586	9.021	13.051	16.078
353.00	8.905	10.025	9.586	9.021	13.051	16.078
363.00	8.905	10.037	9.586	9.021	13.051	16.078
373.00	8.917	10.037	9.586	9.032	13.075	16.112
383.00	8.917	10.037	9.598	9.032	13.075	16.078
393.00	8.917	10.037	9.598	9.032	13.075	16.112
403.00	8.928	10.037	9.598	9.044	13.051	16.112
413.00	8.940	10.037	9.586	9.044	13.051	16.112
423.00	8.940	10.037	9.598	9.044	13.051	16.112
433.00	8.940	10.037	9.586	9.044	13.051	16.112
463.00	8.940	10.037	9.586	9.032	13.051	16.078
493.00	8.928	10.037	9.586	9.032	13.051	16.078
523.00	8.940	10.048	9.598	9.032	13.051	16.078
553.00	8.940	10.037	9.610	9.032	13.051	16.078
583.00	8.928	10.037	9.598	9.021	13.028	16.078
613.00	8.917	10.025	9.598	9.021	13.028	16.078
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.028	16.078
[illegible]	[illegible]	[illegible]	[illegible]	9.021	13.051	16.078
[illegible]	[illegible]	[illegible]	[illegible]	9.021	13.028	16.078
733.00	[illegible]	10.014	[illegible]	[illegible]	13.028	16.078
763.00	[illegible]	10.025	[illegible]	9.021	13.051	16.078
[illegible]	[illegible]	10.037	[illegible]	9.032	13.051	16.078
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.051	16.112
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	16.112
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.051	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

1363.00	8.905	10.025	9.586	9.021	13.028	16.078
1423.00	8.893	10.025	9.586	9.032	13.051	16.078
1483.00	8.893	10.025	9.575	9.021	13.051	16.078
1543.00	8.893	10.014	9.563	9.021	13.028	16.078
1603.00	8.882	10.014	9.552	9.021	13.028	16.078
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	8.905	10.025	9.598	9.032	13.051	[illegible]
1843.00	8.928	10.025	9.598	9.032	13.051	16.112
1903.00	8.905	10.014	9.586	9.021	13.028	16.078
1963.00	8.917	10.014	9.586	9.021	13.051	16.078
2023.00	8.917	10.025	9.586	9.032	13.051	16.078
2083.00	8.917	10.025	9.586	9.021	13.051	16.078
2143.00	8.882	10.025	9.552	9.009	13.028	16.078
2203.00	8.893	10.025	9.563	9.032	13.051	16.078
2263.00	8.905	10.014	9.586	9.032	13.051	16.078
2323.00	8.917	10.025	9.586	9.032	13.051	16.078
2383.00	8.905	10.025	9.575	9.021	13.028	16.078
2443.00	8.905	10.025	9.575	9.021	13.051	16.078
2503.00	8.905	10.014	9.586	9.021	13.028	16.078
2563.00	8.893	10.025	9.563	9.021	13.028	16.078
2683.00	8.917	10.025	9.586	9.032	13.051	16.078
2803.00	8.893	10.025	9.563	9.021	13.028	16.078
2923.00	8.928	10.025	9.586	9.032	13.051	16.078
3043.00	8.917	10.025	9.586	9.032	13.051	16.078
3163.00	8.928	10.025	9.610	9.032	13.051	16.078
3283.00	8.951	10.025	9.621	9.032	13.051	16.112
3403.00	8.928	10.025	9.598	9.021	13.051	16.078
3703.00	8.928	10.025	9.598	9.032	13.051	16.112
4003.00	8.917	10.025	9.598	9.032	13.051	16.078
4303.00	8.940	10.025	9.610	9.044	13.051	16.078
4603.00	8.917	10.025	9.598	9.032	13.051	16.078
4903.00	8.893	10.025	9.575	9.032	13.051	16.078
5203.00	8.928	10.025	9.610	9.044	13.075	16.078
5503.00	8.928	10.037	9.563	9.044	13.051	16.078
5803.00	8.928	10.037	9.586	9.044	13.075	16.078
6103.00	8.917	10.037	9.598	9.044	13.051	16.078
6403.00	8.917	10.037	9.610	9.044	13.051	16.078
6703.00	8.951	10.037	9.621	9.044	13.051	16.078
7303.00	8.940	10.048	9.610	9.055	13.051	16.078
7903.00	8.940	10.048	9.575	9.044	13.051	16.078
8503.00	8.951	10.037	9.633	9.055	13.051	16.078
9103.00	8.963	10.048	9.610	9.055	13.051	16.078
9703.00	8.963	10.048	9.610	9.055	13.051	16.078
10303.00	8.940	10.060	9.610	9.067	13.075	16.078
10903.00	8.963	10.060	9.644	9.067	13.075	16.078
11503.00	8.974	10.048	9.633	9.055	13.075	16.078
12102.90	8.963	10.060	9.633	9.067	13.075	16.078
12703.00	8.951	10.048	9.621	9.067	13.075	16.078
13303.00	8.963	10.060	9.644	9.067	13.075	16.078
[illegible]	8.951	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	8.974	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	8.963	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	8.963	10.048	[illegible]	[illegible]	13.075	[illegible]
[illegible]	8.951	10.060	[illegible]	[illegible]	13.075	[illegible]
[illegible]	8.940	[illegible]	[illegible]	[illegible]	13.075	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

69103.00	8.928	10.060	9.598	9.055	13.098	16.078
72703.00	8.928	10.060	9.598	9.067	13.098	16.078
76303.00	8.963	10.072	9.610	9.090	13.098	16.078
79903.00	8.997	10.072	9.633	9.101	13.121	16.078
83503.00	8.974	10.083	9.610	9.101	13.098	16.078
[illegible]	[illegible]	[illegible]	[illegible]	9.101	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	9.021	10.095	[illegible]	9.124	[illegible]	[illegible]
97903.00	9.044	10.106	9.656	9.136	13.121	16.078
101503.00	9.044	10.106	9.667	9.136	13.121	16.078
105103.00	9.044	10.106	9.656	9.136	13.144	16.078
108703.00	9.032	10.095	9.667	9.136	13.144	16.112
112303.00	9.101	10.095	9.656	9.159	13.121	16.112
[illegible]	9.182	10.106	[illegible]	9.217	13.121	[illegible]
119503.00	9.217	10.118	9.714	9.252	13.144	16.078
123103.00	9.228	10.129	9.725	9.275	13.144	16.112
126703.00	9.252	10.141	9.725	9.298	13.167	16.078
130303.00	9.263	10.164	9.737	9.309	13.190	16.078
133903.00	9.263	10.176	9.748	9.309	13.190	16.112
137503.00	9.275	10.176	9.748	9.321	13.190	16.078
141103.00	9.263	10.187	9.748	9.321	13.190	16.112
144703.00	9.263	10.187	9.748	9.321	13.213	16.112
148303.00	9.252	10.187	9.737	9.309	13.190	16.112
151903.00	9.240	10.187	9.725	9.309	13.190	16.112
155503.00	9.240	10.187	9.725	9.298	13.213	16.112
159103.00	9.228	10.187	9.714	9.309	13.190	16.112
162703.00	9.205	10.187	9.702	9.298	13.190	16.112
166303.00	9.252	10.199	9.737	9.321	13.213	16.112
169903.00	9.228	10.210	9.714	9.309	13.213	16.112
173503.00	9.205	10.210	9.725	9.298	13.213	16.112
177103.00	9.228	10.199	9.737	9.298	13.190	16.112
180703.00	9.252	10.210	9.760	9.309	13.213	16.112
184303.00	9.240	10.210	9.748	9.298	13.213	16.112
187902.90	9.240	10.210	9.771	9.298	13.236	16.112
191502.90	9.228	10.210	9.771	9.286	13.236	16.147
195103.00	9.217	10.199	9.748	9.275	13.213	16.112
198703.00	9.205	10.187	9.737	9.263	13.213	16.147
202303.00	9.182	10.176	9.725	9.252	13.213	16.112
205903.00	9.171	10.176	9.714	9.240	13.190	16.147
209503.00	9.171	10.164	9.714	9.240	13.190	16.147
213103.00	9.159	10.164	9.702	9.228	13.190	16.147
216703.00	9.159	10.164	9.714	9.228	13.190	16.112
220303.00	9.148	10.164	9.702	9.228	13.190	16.147
223903.00	9.136	10.152	9.690	9.205	13.190	16.147
227503.00	9.136	10.152	9.702	9.217	13.190	16.147
231103.00	9.124	10.141	9.690	9.205	13.190	16.147
234703.00	9.113	10.141	9.679	9.194	13.190	16.147
238303.00	9.101	10.141	9.667	9.194	13.190	16.147
241903.00	9.101	10.129	9.667	9.182	13.167	16.147
245503.00	9.101	10.129	9.656	9.194	13.167	16.147
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.190	[illegible]
[illegible]	9.101	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	9.113	[illegible]	[illegible]	[illegible]	13.190	[illegible]
[illegible]	9.124	[illegible]	[illegible]	9.217	13.213	[illegible]
[illegible]	9.101	[illegible]	[illegible]	9.194	[illegible]	16.147
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.167	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

306703.00	9.228	10.187	9.725	9.298	13.236	16.147
310303.00	9.252	10.199	9.737	9.321	13.236	16.147
313903.00	9.275	10.210	9.737	9.332	13.236	16.147
317503.00	9.298	10.222	9.748	9.344	13.236	16.147
321103.00	9.298	10.222	9.748	9.355	13.236	16.147
[illegible]	9.309	[illegible]	9.748	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	9.344	10.255	9.771	[illegible]	[illegible]	16.147
335503.00	9.367	10.279	9.771	9.425	13.282	16.147
339103.00	9.344	10.279	9.783	9.425	13.282	16.147
342703.00	9.390	10.291	9.817	9.448	13.306	16.182
346303.00	9.344	10.291	9.771	9.425	13.282	16.147
349903.00	9.390	10.314	9.817	9.448	13.329	16.182
[illegible]	9.390	10.314	9.829	9.448	13.306	16.147
357103.00	9.402	10.326	9.852	9.448	13.329	16.182
360703.00	9.379	10.326	9.864	9.436	13.352	16.147
364303.00	9.355	10.314	9.852	9.425	13.329	16.182
367903.00	9.321	10.291	9.829	9.390	13.329	16.147
371503.00	9.309	10.291	9.829	9.379	13.329	16.182
375103.00	9.286	10.279	9.817	9.367	13.329	16.182
378703.00	9.263	10.268	9.806	9.344	13.306	16.182
382303.00	9.263	10.256	9.794	9.344	13.329	16.182
385903.00	9.263	10.268	9.806	9.344	13.329	16.182
389503.00	9.252	10.256	9.806	9.344	13.306	16.182
393103.00	9.252	10.256	9.806	9.332	13.306	16.182
396703.00	9.240	10.256	9.794	9.321	13.329	16.182
400303.00	9.228	10.245	9.794	9.321	13.306	16.182
403903.00	9.228	10.245	9.794	9.309	13.306	16.182
407503.00	9.205	10.233	9.771	9.298	13.306	16.182
411103.00	9.194	10.222	9.783	9.286	13.282	16.182
414703.00	9.205	10.233	9.771	9.298	13.282	16.182
418303.00	9.171	10.233	9.760	9.286	13.282	16.182
421903.00	9.194	10.233	9.771	9.298	13.306	16.182
425503.00	9.205	10.245	9.783	9.298	13.306	16.182
429103.00	9.217	10.245	9.794	9.309	13.306	16.182
432703.00	9.182	10.233	9.794	9.298	13.306	16.182
436303.00	9.228	10.256	9.806	9.298	13.306	16.182
439903.00	9.217	10.245	9.794	9.298	13.282	16.182
443503.00	9.228	10.245	9.817	9.298	13.329	16.216
447103.00	9.228	10.233	9.841	9.298	13.306	16.216
450703.00	9.205	10.233	9.815	9.286	13.306	16.182
454303.00	9.194	10.222	9.794	9.275	13.282	16.182
457903.00	9.171	10.210	9.783	9.263	13.306	16.182
461503.00	9.171	10.199	9.783	9.252	13.282	16.216
465103.00	9.171	10.199	9.771	9.252	13.282	16.182
468703.00	9.136	10.187	9.745	9.240	13.282	16.182
472303.00	9.148	10.187	9.760	9.240	13.282	16.182
475903.00	9.148	10.187	9.760	9.240	13.282	16.182
479503.00	9.136	10.187	9.748	9.228	13.259	16.182
483103.00	9.136	10.187	9.760	9.228	13.259	16.182
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	10.164	[illegible]	[illegible]	13.259	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	10.187	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

544303.00	9.171	10.199	9.783	9.252	13.282	16.182
547903.00	9.159	10.187	9.771	9.240	13.282	16.182
551503.00	9.159	10.199	9.771	9.240	13.282	16.182
555103.00	9.159	10.199	9.771	9.240	13.282	16.182
558703.00	9.148	10.187	9.771	9.240	13.282	16.182
[illegible]						
573103.00	9.159	10.187	9.771	9.228	13.259	16.182
576703.00	9.148	10.187	9.748	9.228	13.282	16.182
580303.00	9.136	10.187	9.737	9.228	13.259	16.182
583903.00	9.124	10.187	9.748	9.228	13.259	16.182
587503.00	9.136	10.176	9.748	9.228	13.282	16.182
[illegible]						

Last Scan at 4:30:23.41 20.40

72-Hour Constant Discharge
Pump Test Data

72-HOUR CONSTANT DISCHARGE PUMP TEST DATA

"Firmware Version 2.6.1/87"
"Number of Bytes in Data Dump 3992"
"User Supplied Comment "
"Time Header Block Loaded 01/01 00:34:36.40"
"Time Data Was Dumped 01/04 00:2[illegible]"
"Remaining Memory [illegible] 815440"
"Number of Logs 182"
"Type of Data Memory Memory Board"
"Logs/Timestamp 1"
"Power Was OK During Data Collection Period"

" Terra8 Channel Setup:"
"Number of Declared Analog Channels = 6"

"Ch#	Description	Units	Delay	M	B"
" 1	5 PSI.....	FEET....	100	2.310	0.000"
" 2	5 PSI.....	FEET....	100	2.310	0.000"
" 3	5 PSI.....	FEET....	100	2.310	0.000"
" 4	5 PSI.....	FEET....	100	2.310	0.000"
" 5	10 PSI.....	FEET....	100	4.620	0.000"
" 6	15 PSI.....	FEET....	100	6.930	0.000"

" Terra8 Channel Setup:"

"Number of Declared Digital Channels = 0"

"Ch#	Description	Units	Delay	M	B"

"*Initial Scan at "1 1 0 34 34 40
"*Next Scan at "1 1 0 34 34 40

" Time "" Analog#01"" Analog#02"" Analog#03"" Analog#04"" Analog#0

SECONDS	RW-1	MW-2	MW-3	MW-1	MW-4	MW-5
0.00	11.816	10.499	9.81[illegible]	9.413	13.329	16.14[illegible]
2.80	11.816	10.499	9.81[illegible]	9.413	13.329	16.14[illegible]
5.20	11.816	10.487	9.817	9.413	13.329	16.14[illegible]
7.60	11.816	10.487	9.817	9.425	13.329	16.14[illegible]
10.00	11.816	10.499	9.817	9.413	13.329	16.14[illegible]
12.40	11.816	10.499	9.81[illegible]	9.413	13.329	16.14
14.80	11.816	10.487	9.81[illegible]	9.413	13.329	16.14[illegible]
17.20	11.816	10.499	9.81[illegible]	9.413	13.329	16.14
19.60	11.816	10.487	9.81[illegible]	9.413	13.329	16.14
22.00	11.816	10.499	9.81[illegible]	9.413	13.329	16.14
28.90	11.816	10.487	9.81[illegible]	9.402	13.329	16.14
33.90	11.81[illegible]	10.4[illegible]	9.[illegible]	9.[illegible]	13.329	16.1[illegible]
38.90	11.81[illegible]	10.4[illegible]	9.[illegible]	9.[illegible]	13.[illegible]	16.1[illegible]
[illegible]	11.81[illegible]	10.4[illegible]	9.[illegible]	9.[illegible]	[illegible]	[illegible]
48.90	11.816	10.476	9.81[illegible]	9.402	13.306	16.14
53.90	11.816	10.476	9.81[illegible]	9.402	13.329	16.11
58.90	11.816	10.476	9.81[illegible]	9.402	13.306	16.14
63.8[illegible]	11.81[illegible]	10.47[illegible]	9.8[illegible]	9.[illegible]	13.329	16.14
68.5[illegible]	11.81[illegible]	10.48[illegible]	9.8[illegible]	9.[illegible]	13.329	16.14

93.90	11.816	10.487	9.829	9.402	13.306	16.147
103.90	11.816	10.487	9.817	9.390	13.306	16.147
113.90	11.816	10.476	9.817	9.390	13.306	16.147
123.90	11.816	10.487	9.806	9.379	13.329	16.112
133.90	11.816	10.487	9.794	9.379	13.329	16.147
[illegible]						
[illegible]						
[illegible]						
193.90	11.816	10.487	9.794	9.344	13.329	16.112
223.90	11.816	10.487	9.817	9.332	13.329	16.112
253.90	11.816	10.487	9.817	9.321	13.329	16.147
283.90	11.816	10.499	9.829	9.309	13.329	16.147
[illegible]						
[illegible]						
373.90	11.816	10.487	9.852	9.275	13.329	16.147
403.90	11.816	10.487	9.841	9.240	13.306	16.147
433.90	11.816	10.487	9.817	9.228	13.329	16.112
493.90	11.816	10.499	9.829	9.205	13.329	16.147
553.90	11.816	10.510	9.864	9.182	13.329	16.147
613.90	11.816	10.487	9.864	9.136	13.329	16.147
673.90	11.816	10.499	9.841	9.101	13.329	16.147
733.90	11.816	10.476	9.829	9.067	13.306	16.147
793.90	11.816	10.476	9.806	9.032	13.329	16.147
853.90	11.816	10.487	9.829	9.021	13.329	16.147
913.90	11.816	10.476	9.806	8.997	13.329	16.147
973.90	11.816	10.464	9.829	8.963	13.306	16.112
1093.90	11.816	10.464	9.806	8.928	13.306	16.147
1213.90	11.816	10.464	9.841	8.893	13.329	16.147
1333.90	11.816	10.453	9.841	8.847	13.329	16.147
1453.90	11.816	10.464	9.841	8.824	13.329	16.147
1573.90	11.816	10.441	9.841	8.790	13.329	16.147
1693.90	11.816	10.441	9.817	8.778	13.329	16.147
1813.90	11.816	10.441	9.852	8.755	13.352	16.147
1933.90	11.816	10.407	9.806	8.697	13.306	16.147
2053.90	11.816	10.418	9.817	8.697	13.306	16.147
2353.90	11.816	10.395	9.841	8.639	13.306	16.147
2653.90	11.816	10.395	9.864	8.616	13.329	16.182
2953.90	11.816	10.395	9.806	8.570	13.329	16.182
3253.90	11.816	10.372	9.817	8.524	13.329	16.182
3553.90	11.816	10.349	9.829	8.489	13.306	16.147
3853.90	11.816	10.349	9.806	8.478	13.329	16.182
4153.90	11.816	10.326	9.806	8.455	13.306	16.182
4453.90	11.816	10.314	9.794	8.431	13.306	16.182
4753.90	11.816	10.291	9.817	8.397	13.306	16.182
5353.90	11.816	10.268	9.794	8.351	13.282	16.182
5953.90	11.816	10.279	9.806	8.316	13.282	16.182
6553.90	11.816	10.256	9.817	8.293	13.282	16.182
7153.90	11.816	10.233	9.806	8.247	13.282	16.182
7753.90	11.816	10.210	9.783	8.224	13.259	16.182
8354.00	11.816	10.187	9.760	8.189	13.259	16.182
[illegible]						
[illegible]						
[illegible]						
11353.90	11.816	10.118	9.748	8.097	13.213	16.182
12954.00	11.816	10.095	9.760	8.071	13.213	16.216
13754.00	11.816	10.060	9.748	8.048	13.190	16.216
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]						

32954.00	11.816	9.806	9.598	7.773	13.005	16.216
35354.00	11.816	9.794	9.575	7.762	13.005	16.216
37754.00	11.816	9.771	9.575	7.750	12.982	16.216
40154.00	11.816	9.760	9.563	7.727	12.982	16.216
42554.00	11.816	9.748	9.563	7.750	12.982	16.216
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	11.816	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	11.816	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
52154.00	11.816	9.714	9.540	7.715	12.936	16.182
54554.00	11.816	9.714	9.529	7.738	12.936	16.182
56954.00	11.816	9.702	9.517	7.727	12.936	16.182
59354.00	11.816	9.702	9.517	7.727	12.936	16.182
[illegible]	11.816	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	11.816	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
66554.00	11.816	9.667	9.483	7.600	12.913	16.182
68954.00	11.816	9.656	9.483	7.588	12.890	16.182
71354.00	11.816	9.633	9.471	7.577	12.890	16.147
73754.00	11.816	9.644	9.471	7.565	12.867	16.182
76154.00	11.816	9.621	9.471	7.542	12.867	16.147
78554.00	11.816	9.621	9.459	7.542	12.890	16.182
80954.00	11.816	9.610	9.483	7.542	12.867	16.182
83354.00	11.816	9.598	9.483	7.519	12.867	16.147
85754.00	11.816	9.598	9.471	7.531	12.844	16.147
88154.00	11.816	9.586	9.517	7.519	12.844	16.147
90554.00	11.816	9.586	9.517	7.507	12.844	16.147
92954.00	11.816	9.575	9.459	7.507	12.820	16.147
95354.00	11.816	9.586	9.483	7.507	12.844	16.147
97754.00	11.816	9.563	9.494	7.507	12.820	16.147
100154.00	11.816	9.563	9.471	7.496	12.820	16.147
102554.00	11.816	9.552	9.471	7.484	12.820	16.147
104954.00	11.816	9.540	9.448	7.473	12.820	16.112
107354.00	11.816	9.529	9.448	7.473	12.797	16.147
109754.00	11.816	9.529	9.425	7.450	12.821	16.147
112154.00	11.816	9.517	9.425	7.450	12.797	16.112
114554.00	11.816	9.506	9.413	7.450	12.797	16.112
116954.00	11.816	9.506	9.402	7.450	12.797	16.112
119354.00	11.816	9.506	9.402	7.438	12.797	16.112
121754.00	11.816	9.494	9.402	7.427	12.774	16.112
124154.00	11.816	9.494	9.413	7.427	12.797	16.112
126554.00	11.816	9.483	9.402	7.427	12.774	16.078
128954.00	11.816	9.483	9.402	7.427	12.774	16.112
131354.00	11.816	9.483	9.402	7.415	12.774	16.078
133754.00	11.816	9.471	9.390	7.415	12.774	16.078
136154.00	11.816	9.471	9.390	7.415	12.774	16.078
138554.00	11.816	9.471	9.390	7.415	12.751	16.078
140954.00	11.816	9.459	9.379	7.404	12.774	16.078
143354.00	11.816	9.459	9.379	7.404	12.751	16.078
145754.00	11.816	9.459	9.379	7.392	12.751	16.078
148154.00	11.816	9.448	9.367	7.392	12.751	16.078
150554.00	11.816	9.436	9.367	7.392	12.728	16.078
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
160154.00	11.816	9.448	9.344	7.392	12.751	16.043
162554.00	11.816	9.448	9.355	7.381	12.705	16.043
164954.00	11.816	9.436	9.367	7.381	12.728	16.043
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

191354.00	11.816	9.425	9.379	7.369	[illegible]	[illegible]
193754.00	11.816	9.413	9.367	7.369	[illegible]	[illegible]
196154.00	11.816	9.402	9.344	7.346	12.705	16.043
198554.00	11.816	9.390	9.332	7.346	12.682	16.043
200954.00	11.816	9.390	9.332	7.334	12.682	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
210554.00	11.816	9.379	9.321	7.334	12.682	16.008
212954.00	11.816	9.379	9.321	7.334	12.682	16.008
215354.00	11.816	9.379	9.309	7.334	12.682	16.008
217754.00	11.816	9.379	9.321	7.323	12.682	16.008
220154.00	11.816	9.379	9.309	7.323	12.682	16.008
222554.00	11.816	9.367	9.309	7.323	12.682	16.008
224954.00	11.816	9.367	9.309	7.323	12.682	16.008
227354.00	11.816	9.367	9.309	7.323	12.682	16.008
229754.00	11.816	9.367	9.309	7.323	12.659	16.008
232154.00	11.816	9.355	9.298	7.311	12.659	16.008
234554.00	11.816	9.355	9.286	7.311	12.659	16.008
236954.00	11.816	9.344	9.286	7.311	12.659	16.008
239354.00	11.816	9.355	9.275	7.300	12.659	16.008
241754.00	11.816	9.344	9.275	7.300	12.659	15.974
244154.00	11.816	9.344	9.252	7.300	12.659	15.974
246554.00	11.816	9.355	9.263	7.311	12.659	16.008
248954.00	11.816	9.344	9.275	7.300	12.659	15.974
251354.00	11.816	9.344	9.252	7.288	12.659	15.974
253754.00	5.717	9.355	9.252	7.300	12.636	15.974
256154.00	5.590	9.344	9.298	7.300	12.659	15.974
258554.00	5.613	9.355	9.344	7.311	12.636	15.974

"*Last Scan at "1 4 0 23 48 40

Pump Test Recovery Data

PUMP TEST RECOVERY DATA

"Firmware Version" 6.1/87"
"Number of Bytes in Data Dump 7552"
"User Supplied Comment"
"Time Header Block Loaded 01/01 00:34:36.40"
"Time Data File Dumped 01/06 22:14:13.60"
"Remaining Memory 57984"
"Number of Logs 360"
"Type of Data Memory Memory Board"
"Logs/Timestamp 1"
"Power was OK During Data Collection Period"

" Terra8 Channel Setup:"
"Number of Declared Analog Channels = 6"
"

"Ch#	Description	Units	Delay	M	B"
" 1	5 PSI.....	FEET....	100	2.310	0.000"
" 2	5 PSI.....	FEET....	100	2.310	0.000"
" 3	5 PSI.....	FEET....	100	2.310	0.000"
" 4	5 PSI.....	FEET....	100	2.310	0.000"
" 5	10 PSI.....	FEET....	100	4.620	0.000"
" 6	15 PSI.....	FEET....	100	6.930	0.000"

" Terra8 Channel Setup:"

"Number of Declared Digital Channels = 0"
"

"Ch#	Description	Units	Delay	M	B"

"*Initial Scan at "1 1 0 34 34 40
"*Next Scan at "1 1 0 34 34 40

" Time "" Analog#01"" Analog#02"" Analog#03"" Analog#04"" Analog#0						
SECONDS	**RW-1**	**MW-2**	**MW-3**	**MW-1**	**MW-4**	**MW-5**
0.00	11.816	10.499	9.817	9.413	13.329	16.147
2.80	11.816	10.499	9.817	9.413	13.329	16.147
5.20	11.816	10.487	9.817	9.413	13.329	16.147
7.60	11.816	10.487	9.817	9.425	13.329	16.147
10.00	11.816	10.499	9.817	9.413	13.329	16.147
12.40	11.816	10.499	9.817	9.413	13.329	16.147
14.80	11.816	10.487	9.817	9.413	13.329	16.147
17.20	11.816	10.499	9.817	9.413	13.329	16.147
19.60	11.816	10.487	9.817	9.413	13.329	16.147
22.00	11.816	10.499	9.817	9.413	13.329	16.147
24.40	11.816	10.487	9.806	9.402	13.329	16.147
[illegible]	[illegible]	10.487	[illegible]	9.413	13.329	16.147
[illegible]	[illegible]	10.487	[illegible]	9.413	13.306	16.147
[illegible]	[illegible]	[illegible]	[illegible]	9.413	13.306	16.147
[illegible]	[illegible]	10.476	[illegible]	9.402	13.306	16.147
[illegible]	[illegible]	10.476	[illegible]	9.402	13.329	16.147
[illegible]	[illegible]	10.476	[illegible]	9.402	13.306	16.147
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.329	16.147
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.329	16.147

93.90	11.816	10.487	9.829	9.402	13.306	16.147
103.90	11.816	10.487	9.817	9.390	13.306	16.147
113.90	11.816	10.476	9.817	9.390	13.306	16.147
123.90	11.816	10.487	9.806	9.379	13.329	16.112
133.90	11.816	10.487	9.794	9.379	13.329	16.147
[illegible]						
[illegible]						
163.90	11.816	10.487	[illegible]	[illegible]	[illegible]	[illegible]
193.90	11.816	10.487	9.794	9.344	13.329	16.112
223.90	11.816	10.487	9.817	9.332	13.329	16.112
253.90	11.816	10.487	9.817	9.321	13.329	16.147
283.90	11.816	10.499	9.829	9.309	13.329	16.147
313.90	11.816	10.487	9.841	9.286	13.329	16.147
343.90	11.816	10.487	9.852	9.275	13.329	16.147
373.90	11.816	10.487	9.852	9.275	13.329	16.147
403.90	11.816	10.487	9.841	9.240	13.306	16.147
433.90	11.816	10.487	9.817	9.228	13.329	16.112
493.90	11.816	10.499	9.829	9.205	13.329	16.147
553.90	11.816	10.510	9.864	9.182	13.329	16.147
613.90	11.816	10.487	9.864	9.136	13.329	16.147
673.90	11.816	10.499	9.841	9.101	13.329	16.147
733.90	11.816	10.476	9.829	9.067	13.306	16.147
793.90	11.816	10.476	9.806	9.032	13.329	16.147
853.90	11.816	10.487	9.829	9.021	13.329	16.147
913.90	11.816	10.476	9.806	8.997	13.329	16.147
973.90	11.816	10.464	9.829	8.963	13.306	16.112
1093.90	11.816	10.464	9.806	8.928	13.306	16.147
1213.90	11.816	10.464	9.841	8.893	13.329	16.147
1333.90	11.816	10.453	9.841	8.847	13.329	16.147
1453.90	11.816	10.464	9.841	8.824	13.329	16.147
1573.90	11.816	10.441	9.841	8.790	13.329	16.147
1693.90	11.816	10.441	9.817	8.778	13.329	16.147
1813.90	11.816	10.441	9.852	8.755	13.352	16.147
1933.90	11.816	10.407	9.806	8.697	13.306	16.147
2053.90	11.816	10.418	9.817	8.697	13.306	16.147
2353.90	11.816	10.395	9.841	8.639	13.306	16.147
2653.90	11.816	10.395	9.864	8.616	13.329	16.182
2953.90	11.816	10.395	9.806	8.570	13.329	16.182
3253.90	11.816	10.372	9.817	8.524	13.329	16.182
3553.90	11.816	10.349	9.829	8.489	13.306	16.147
3853.90	11.816	10.349	9.806	8.478	13.329	16.182
4153.90	11.816	10.326	9.806	8.455	13.306	16.182
4453.90	11.816	10.314	9.794	8.431	13.306	16.182
4753.90	11.816	10.291	9.817	8.397	13.306	16.182
5353.90	11.816	10.268	9.794	8.351	13.282	16.182
5953.90	11.816	10.279	9.806	8.316	13.282	16.182
6553.90	11.816	10.256	9.817	8.293	13.282	16.182
7153.90	11.816	10.233	9.806	8.247	13.282	16.182
7753.90	11.816	10.210	9.783	8.224	13.259	16.182
8354.00	11.816	10.187	9.760	8.189	13.259	16.182
[illegible]						
[illegible]						
[illegible]						
11253.90	11.816	10.118	9.748	8.097	13.213	16.182
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]						

32954.00	11.816	9.806	9.598	7.773	13.005	16.216
35354.00	11.816	9.794	9.575	7.762	13.005	16.216
37754.00	11.816	9.771	9.575	7.750	12.982	16.216
40154.00	11.816	9.760	9.563	7.727	12.982	16.216
42554.00	11.816	9.748	9.563	7.750	12.982	16.216
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
49754.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
52154.00	11.816	9.714	9.540	7.715	12.936	16.182
54554.00	11.816	9.714	9.529	7.738	12.936	16.182
56954.00	11.816	9.702	9.517	7.727	12.936	16.182
59354.00	11.816	9.702	9.517	7.727	12.936	16.182
61754.00	[illegible]	9.679	9.506	7.669	[illegible]	16.182
64154.00	[illegible]	[illegible]	9.506	7.669	[illegible]	16.182
66554.00	11.816	9.667	9.483	7.600	12.913	16.182
68954.00	11.816	9.656	9.483	7.588	12.890	16.182
71354.00	11.816	9.633	9.471	7.577	12.890	16.147
73754.00	11.816	9.644	9.471	7.565	12.867	16.182
76154.00	11.816	9.621	9.471	7.542	12.867	16.147
78554.00	11.816	9.621	9.459	7.542	12.890	16.182
80954.00	11.816	9.610	9.483	7.542	12.867	16.182
83354.00	11.816	9.598	9.483	7.519	12.867	16.147
85754.00	11.816	9.598	9.471	7.531	12.844	16.147
88154.00	11.816	9.586	9.517	7.519	12.844	16.147
90554.00	11.816	9.586	9.517	7.507	12.844	16.147
92954.00	11.816	9.575	9.459	7.507	12.820	16.147
95354.00	11.816	9.586	9.483	7.507	12.844	16.147
97754.00	11.816	9.563	9.494	7.507	12.820	16.147
100154.00	11.816	9.563	9.471	7.496	12.820	16.147
102554.00	11.816	9.552	9.471	7.484	12.820	16.147
104954.00	11.816	9.540	9.448	7.473	12.820	16.112
107354.00	11.816	9.529	9.448	7.473	12.797	16.147
109754.00	11.816	9.529	9.425	7.450	12.820	16.147
112154.00	11.816	9.517	9.425	7.450	12.797	16.112
114554.00	11.816	9.506	9.413	7.450	12.797	16.112
116954.00	11.816	9.506	9.402	7.450	12.797	16.112
119354.00	11.816	9.506	9.402	7.438	12.797	16.112
121754.00	11.816	9.494	9.402	7.427	12.774	16.112
124154.00	11.816	9.494	9.413	7.427	12.797	16.112
126554.00	11.816	9.483	9.402	7.427	12.774	16.078
128954.00	11.816	9.483	9.402	7.427	12.774	16.112
131354.00	11.816	9.483	9.402	7.415	12.774	16.078
133754.00	11.816	9.471	9.390	7.415	12.774	16.078
136154.00	11.816	9.471	9.390	7.415	12.774	16.078
138554.00	11.816	9.471	9.390	7.415	12.751	16.078
140954.00	11.816	9.459	9.379	7.404	12.774	16.078
143354.00	11.816	9.459	9.379	7.404	12.751	16.078
145754.00	11.816	9.459	9.379	7.392	12.751	16.078
148154.00	11.816	9.448	9.367	7.392	12.751	16.078
150554.00	11.816	9.436	9.367	7.392	12.728	16.078
[illegible]	11.816	9.448	[illegible]	[illegible]	12.728	[illegible]
[illegible]	11.816	9.448	[illegible]	[illegible]	12.728	[illegible]
[illegible]	11.816	[illegible]	[illegible]	[illegible]	12.728	[illegible]
[illegible]	11.816	9.448	[illegible]	7.392	12.751	[illegible]
[illegible]	11.816	9.448	[illegible]	[illegible]	12.705	[illegible]
[illegible]	11.816	9.436	[illegible]	[illegible]	12.728	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

191354.00	11.816	9.425	9.379	7.369	12.728	16.043
193754.00	11.816	9.413	9.367	7.369	12.705	16.043
196154.00	11.816	9.402	9.344	7.346	12.705	16.043
198554.00	11.816	9.390	9.332	7.346	12.682	16.043
200954.00	11.816	9.390	9.332	7.334	12.682	16.008
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
210554.00	11.816	9.379	9.321	7.334	12.682	16.008
212954.00	11.816	9.379	9.321	7.334	12.682	16.008
215354.00	11.816	9.379	9.309	7.334	12.682	16.008
217754.00	11.816	9.379	9.321	7.323	12.682	16.008
220154.00	11.816	9.379	9.309	[illegible]	12.682	16.008
22255?.00	11.816	9.367	9.309	[illegible]	[illegible]	16.008
224954.00	11.816	9.367	9.309	7.323	12.682	16.008
227354.00	11.816	9.367	9.309	7.323	12.682	16.008
229754.00	11.816	9.367	9.309	7.323	12.659	16.008
232154.00	11.816	9.355	9.298	7.311	12.659	16.008
234554.00	11.816	9.355	9.286	7.311	12.659	16.008
236954.00	11.816	9.344	9.286	7.311	12.659	16.008
239354.00	11.816	9.355	9.275	7.300	12.659	16.008
241754.00	11.816	9.344	9.275	7.300	12.659	15.974
244154.00	11.816	9.344	9.252	7.300	12.659	15.974
246554.00	11.816	9.355	9.263	7.311	12.659	16.008
248954.00	11.816	9.344	9.275	7.300	12.659	15.974
251354.00	11.816	9.344	9.252	7.288	12.659	15.974
253754.00	5.717	9.355	9.252	7.300	12.636	15.974
256154.00	5.590	9.344	9.298	7.300	12.659	15.974
258554.00	5.613	9.355	9.344	7.311	12.636	15.974
259407.10	2.576	9.332	9.263	7.288	12.636	15.974
259409.60	2.610	9.332	9.263	7.288	12.659	15.974
259412.00	2.680	9.332	9.263	7.288	12.659	15.974
259414.50	2.714	9.344	9.263	7.288	12.636	15.974
259416.90	2.760	9.332	9.275	7.288	12.636	15.974
259419.40	2.807	9.344	9.263	7.288	12.659	15.974
259421.80	2.841	9.344	9.263	7.288	12.659	15.974
259424.30	2.899	9.344	9.263	7.300	12.659	15.974
259426.70	2.922	9.344	9.275	7.300	12.659	15.974
259429.20	2.968	9.344	9.263	7.300	12.659	15.974
259437.00	3.061	9.355	9.275	7.300	12.659	15.974
259442.00	3.130	9.355	9.263	7.300	12.659	15.974
259447.00	3.188	9.355	9.275	7.300	12.659	15.974
259452.00	3.246	9.355	9.275	7.300	12.659	15.974
259457.00	3.292	9.355	9.275	7.300	12.659	15.974
259462.00	3.349	9.344	9.275	7.300	12.659	15.974
259467.00	3.396	9.355	9.275	7.300	12.659	15.974
259472.00	3.442	9.355	9.263	7.300	12.659	15.974
259477.00	3.488	9.355	9.263	7.288	12.659	15.974
259482.00	3.534	9.355	9.275	7.300	12.659	15.974
259492.00	3.615	9.355	9.275	7.300	12.659	15.974
[illegible]	[illegible]	[illegible]	[illegible]	7.300	12.659	15.974
[illegible]	[illegible]	[illegible]	[illegible]	7.300	12.659	15.974
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.659	15.974
259532.00	3.915	[illegible]	9.275	7.311	12.659	15.974
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.659	15.974
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.659	15.974
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

259842.00	4.863	9.344	9.309	7.461	12.659	15.974
259902.00	4.943	9.355	9.298	7.507	12.659	15.974
259962.00	5.024	9.355	9.298	7.531	12.636	15.974
260022.00	5.105	9.367	9.309	7.577	12.659	16.008
260082.00	5.140	9.355	9.309	7.588	12.659	15.974
[illegible]						
260322.00	5.244	9.367	9.275	7.669	12.659	15.974
260382.00	5.290	9.379	9.309	7.704	12.659	15.974
260502.00	5.348	9.367	9.309	7.738	12.659	15.974
260622.00	5.371	9.379	9.286	7.773	12.636	15.974
260742.00	5.371	9.378	9.275	7.796	12.659	15.939
260862.00	5.417	9.390	9.286	7.831	12.659	15.974
260982.00	5.417	9.390	9.275	7.866	12.659	15.974
261102.00	5.509	9.402	9.321	7.900	12.659	15.974
261222.00	5.532	9.402	9.298	7.923	12.659	15.974
261342.00	5.532	9.413	9.286	7.946	12.659	15.974
261462.00	5.544	9.413	9.298	7.969	12.659	15.974
261762.00	5.613	9.448	9.309	8.016	12.659	15.974
262062.00	5.636	9.436	9.298	8.039	12.659	15.939
262362.00	5.706	9.459	9.321	8.108	12.659	15.974
262662.00	5.717	9.459	9.309	8.120	12.682	15.939
262962.00	5.787	9.494	9.332	8.166	12.659	15.974
263262.00	5.763	9.471	9.286	8.177	12.659	15.939
263562.00	5.798	9.471	9.298	8.200	12.659	15.939
263862.00	5.867	9.494	9.355	8.235	12.659	15.974
264162.00	5.844	9.506	9.309	8.247	12.682	15.974
264762.00	5.890	9.506	9.309	8.293	12.682	15.939
265362.00	5.937	9.529	9.321	8.328	12.682	15.939
265962.00	6.018	9.563	9.355	8.374	12.705	15.974
266562.00	6.041	9.575	9.367	8.397	12.705	15.974
267162.00	6.029	9.586	9.344	8.420	12.682	15.939
267762.00	6.064	9.598	9.344	8.443	12.705	15.939
268362.00	6.098	9.610	9.355	8.466	12.705	15.939
268962.00	6.145	9.621	9.379	8.489	12.728	15.974
269562.00	6.214	9.633	9.390	8.524	12.728	15.939
270762.00	6.214	9.644	9.355	8.535	12.728	15.939
271962.00	6.318	9.667	9.402	8.582	12.751	15.939
273162.00	6.341	9.702	9.402	8.616	12.751	15.939
274362.00	10.060	9.714	9.402	8.605	12.774	15.939
275562.00	10.141	9.714	9.402	8.651	12.774	15.939
276762.00	10.164	9.737	9.413	8.674	12.774	15.939
277962.00	10.199	9.748	9.402	8.686	12.797	15.939
279162.00	10.210	9.748	9.413	8.709	12.797	15.939
280362.00	10.245	9.771	9.413	8.732	12.797	15.939
282762.00	10.268	9.794	9.425	8.755	12.820	15.904
285162.00	10.291	9.817	9.425	8.778	12.820	15.904
287562.00	10.314	9.829	9.425	8.801	12.820	15.939
289962.00	10.337	9.841	9.425	8.824	12.844	15.904
[illegible]						
359562.00	10.418	9.910	9.448	8.893	12.867	15.939
361962.00	10.441	9.921	9.459	8.905	12.890	15.939
364362.00	10.457	9.933	9.471	8.917	12.890	15.904
[illegible]						
373962.00	10.499	9.979	9.494	8.961	12.913	15.939
376362.00	10.510	9.991	9.505	8.974	12.913	15.939
378762.00	10.510	9.991	9.494	8.985	12.913	15.974
[illegible]						

330762.00	10.545	10.037	9.494	9.021	12.936	15.939
333162.00	10.568	10.048	9.483	9.032	12.959	15.939
335562.00	10.557	10.048	9.483	9.032	12.959	15.904
337962.00	10.568	10.072	9.517	9.055	12.959	15.939
340362.00	10.603	10.072	9.517	9.067	12.982	15.939
[illegible]	[illegible]	[illegible]	9.517	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	9.517	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	9.529	[illegible]	[illegible]	[illegible]
349962.00	10.661	10.118	9.575	9.101	13.005	15.974
352362.00	10.638	10.129	9.563	9.101	13.005	15.939
354762.00	10.626	10.129	9.529	9.101	13.005	15.939
357162.00	10.661	10.141	9.586	9.113	13.005	15.974
359562.00	10.684	10.152	9.598	9.136	13.028	15.974
361962.00	10.718	10.164	9.586	9.165	13.028	15.974
364362.00	10.811	10.164	9.586	9.194	13.028	15.939
366762.00	10.903	10.176	9.586	9.252	13.028	15.939
369162.00	10.961	10.176	9.575	9.286	13.028	15.974
371562.00	10.996	10.199	9.575	9.321	13.028	15.974
373962.00	11.007	10.210	9.575	9.344	13.051	15.974
376362.00	11.030	10.210	9.563	9.355	13.051	15.974
378762.00	11.042	10.233	9.575	9.367	13.051	15.974
381162.00	11.053	10.245	9.575	9.379	13.051	15.974
383562.00	11.065	10.245	9.575	9.379	13.075	15.974
385962.00	11.065	10.256	9.586	9.402	13.075	15.974
388362.00	11.065	10.268	9.586	9.402	13.075	15.974
390762.00	11.076	10.279	9.598	9.402	13.075	15.974
393162.00	11.076	10.279	9.598	9.413	13.098	15.939
395562.00	11.088	10.291	9.610	9.413	13.098	15.974
397962.00	11.076	10.303	9.610	9.425	13.098	15.974
400362.00	11.088	10.314	9.610	9.425	13.098	15.974
402762.00	11.076	10.303	9.610	9.413	13.098	15.974
405162.00	11.065	10.314	9.610	9.413	13.098	15.974
407562.00	11.053	10.314	9.610	9.413	13.121	15.974
409962.00	11.053	10.326	9.610	9.402	13.121	16.008
412362.00	11.053	10.326	9.610	9.413	13.121	15.974
414762.00	11.042	10.326	9.610	9.402	13.121	16.008
417162.00	11.053	10.337	9.610	9.413	13.144	16.008
419562.00	11.019	10.349	9.586	9.402	13.121	16.008
421962.00	11.019	10.349	9.598	9.402	13.121	16.008
424362.00	11.019	10.349	9.610	9.402	13.144	16.008
426762.00	11.019	10.360	9.633	9.402	13.144	16.008
429162.00	11.019	10.360	9.633	9.402	13.167	16.008
431562.00	11.007	10.372	9.633	9.413	13.167	16.043
433962.00	11.019	10.383	9.633	9.413	13.167	16.008
436362.00	11.042	10.372	9.667	9.413	13.167	16.043
438762.00	11.030	10.372	9.690	9.413	13.167	16.043
441162.00	11.007	10.383	9.667	9.413	13.167	16.008
443562.00	10.996	10.383	9.656	9.402	13.167	16.043
445962.00	11.007	10.383	9.679	9.402	13.190	16.008
448362.00	10.996	10.383	9.679	9.390	13.167	16.008
[illegible]	[illegible]	[illegible]	[illegible]	9.390	13.167	16.043
[illegible]	10.984	[illegible]	[illegible]	9.379	13.167	16.043
[illegible]	10.984	[illegible]	[illegible]	9.379	13.167	16.043
457962.00	10.972	10.372	9.679	9.367	13.167	16.043
[illegible]	10.949	10.372	9.656	9.355	13.167	16.043
[illegible]	[illegible]	[illegible]	9.656	9.355	13.167	16.043
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.167	16.043
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	9.344	13.190	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.190	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

486762.00	10.938	10.372	9.667	9.355	13.190	16.078
[illegible]	10.938	10.372	9.656	9.355	[illegible]	[illegible]
[illegible]	[illegible]	10.372	9.656	9.344	[illegible]	[illegible]
493962.00	10.938	10.372	9.656	9.344	[illegible]	16.078
496362.00	10.926	10.372	9.656	9.355	13.190	16.078
498762.00	10.926	10.383	9.656	9.344	13.190	16.078
[illegible]	[illegible]	[illegible]	9.679	9.355	[illegible]	16.078
[illegible]	[illegible]	10.360	9.621	9.332	[illegible]	16.043
[illegible]	[illegible]	10.383	9.667	9.355	[illegible]	16.078
508362.00	10.961	10.395	9.714	9.367	13.213	16.078

Last Scan at 1 6 21 47 16 40

APPENDIX C

RESSQ DATA FILE FOR CAPTURE ZONE ANALYSES

```
*SHELL DUBLIN PUMP TEST
     19    1          0.        .01
            2.4      .10    191.50       10.        .05
            IW1       0.        0.        0.                              10.  1  1-1
            IW2       0.     18.29        0.                              10.  1  1-1
            IW3       0.     36.57        0.                              10.  1  1-1
            IW4       0.     54.86        0.                              10.  1  1-1
            IW5       0.     73.15        0.                              10.  1  1-1
            IW6       0.     91.44        0.                              10.  1  1-1
          IW6.5       0.    100.59        0.                              10.  1  1-1
           IW61       0.    109.73        0.                              10.  1  1-1
           IW62       0.    128.02        0.                              10.  1  1-1
         IW62.5       0.    137.30        0.                              10.  1  1-1
           IW63       0.    146.30        0.                              10.  1  1-1
            IW7    18.28        0.        0.                              10.  1  1-1
            IW8    36.58        0.        0.                              10.  1  1-1
            IW9    54.87        0.        0.                              10.  1  1-1
           IW10    73.15        0.        0.                              10.  1  1-1
           IW11    91.44        0.        0.                              10.  1  1-1
         IW12.5   118.87        0.        0.                              10.  1  1-1
           IW12   109.73        0.        0.                              10.  1  1-1
           IW13   128.02        0.        0.                              10.  1  1-1
            RW1    79.25     59.44     0.680
      1          5.
 10.0            5.              -1
```