



Project No. 09094-06-05
October 7, 2002

HAND-DELIVERED

Mr. Barry Pulver
Associate Engineering Geologist
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, California 92123

Subject: RANCHO CALIFORNIA WATER DISTRICT (RCWD) WELL NO. 118 AQUIFER TEST
FORMER DELTA DISCOUNT GAS
28111 FRONT STREET
TEMECULA, CALIFORNIA
RWQCB CASE NO. 9UT2937
WORKPLAN FOR AQUIFER TEST

Reference: *Investigation Order No. R9-2002-318*, Issued by the California Regional Water Quality Control Board, San Diego Region, dated September 24, 2002.

Dear Mr. Pulver:

In accordance with the above-referenced Investigation Order No. R9-2002-318, Geocon Consultants, Inc. (Geocon), on behalf of Narain Oil, Inc., is submitting this Work Plan to conduct groundwater monitoring at the subject site, related to testing of the underlying aquifer. The Order directs the named Responsible Parties (Atlantic Richfield Co., Chevron Products Company, ConocoPhillips, ExxonMobil, and Narain Oil, Inc.) to submit a workplan, data report, and a technical report of an aquifer pumping test to the Regional Board. The Order is issued pursuant to the California Water Code Section 13267.

Geocon's client, Narain Oil, Inc., is the former operator of the gasoline service station located at 28111 Front Street in Temecula, California. At the time of operation by Narain Oil, the station was referred to as Delta Discount Gas. This service station and the service stations associated with the other Responsible Parties are collectively referred to by the RWQCB as "sites".

The sites are located in the Murrieta hydrologic subarea. This subarea has designated beneficial uses for both surface water and groundwater, including municipal and domestic supply. The sites are located above an aquifer that is used as a public drinking water source. RCWD public supply Well No. 118 was shut down by the California Department of Health Services (DHS) in September 2000 due to methyl-tertiary butyl ether (MTBE) contamination. All of the sites are in close proximity to RCWD Well No. 118, being within a radius of approximately 1,000 to 3,500 feet of the well. Cleanup and Abatement Order (CAO) No. 2001-226 establishes that discharges of petroleum hydrocarbon wastes

occurred at the subject site. The discharges at the sites may have potentially impacted the beneficial uses of the groundwater in the underlying aquifer.

PURPOSE AND SCOPE OF SERVICES

The primary purpose of the services outlined in this workplan is obtain relevant information needed to further evaluate the "capture zone" of RCWD Well No. 118, in order to assess the pollution risks posed to the RCWD well from petroleum hydrocarbon plumes at the sites. The RCWD has agreed to pump Well No. 118 for up to 72 hours to allow the dischargers to conduct an aquifer test pumping test. Results of the test will assist in evaluating hydrogeologic conditions in the aquifer and whether or not groundwater flow beneath the sites is affected by pumping RCWD Well No. 118.

The RWQCB will conduct field aquifer testing related to RCWD Well no. 118 on October 22, 2002. Due to the unresolved issue of MTBE contamination of Well No. 118, the RWQCB is holding the current Responsible Parties (Atlantic Richfield Co., Chevron Products Company, ConocoPhillips, ExxonMobil, and Narain Oil, Inc.) responsible for assisting in the aquifer test. The primary purpose of the test will be to estimate the approximate area of influence of RCWD Well No. 118, and accordingly, further assess the potential source(s) of MTBE.

During the pumping of the Well, each responsible party will be required to monitor groundwater responses in the wells on each site. In addition, samples will be obtained from Well No. 118 during pumping, and analyzed for MTBE.

Specifically, Geocon will perform the following tasks:

- Measure and record groundwater elevations for each of the 11 wells located on the site and offsite to the west. A summary information pertaining to all wells on and offsite to the west is included as Table 1. The information presented on Table 1 will be updated.
- Install Solinst Levelogger™ Model 3001 Data loggers in three of the existing groundwater monitoring wells on the site and offsite to the west. The data loggers will be installed no later than October 18, 2002. Technical information pertaining to the Solinst Levelogger™ Model 3001 Data logger is included herein as Attachment A.
- The data loggers will be installed in the existing wells GMW-2, GMW-7, and GMW-8. Logs of the wells at the subject site and offsite to the west, installed by Geocon, are included herein as Attachment B.

Well No. GMW-2 was selected due to its relative location on the site, and the distance from RCWD Well No. 118. Wells GMW-7 and GMW-8 were selected due to the fact that these wells are screened at lower water bearing zones. Well No. GMW-7 is screened from approximately 48 to 58 feet below the ground surface. Well No. GMW-8 is screened from approximately 24.5 to 34.5 feet below the ground surface.

- Install a Solinst Barologger™ in one of the wells at the site. The barometric compensator logger will be installed in conjunction with the data loggers, no later than October 18, 2002. The function of the barometric compensator is to adjust the data for changes in barometric pressure.

- Provide field logistical support during the pumping of RCWD Well No. 118 on October 22, 2002. It is our understanding that the water samples will be obtained as the well is pumped by representatives of RCWD.
- Share the cost for the analytical laboratory testing with the other responsible parties and/or their consultants. It is estimated that the laboratory testing will cost approximately \$ 4,500, which will be split 5 ways (approximately \$ 900 per party). The Investigation Order states the following: *“Participation on the aquifer pumping test and the sharing of costs to test the water discharged from RCWD Well No. 118 during the aquifer pumping test by the dischargers shall not be an admission of responsibility for the MTBE pollution of Well 118”*.
- The data loggers will measure and record groundwater elevations and fluctuations before, during, and after the pumping of RCWD Well No 118. The data obtained from the logging instruments will be downloaded and compiled in a spreadsheet program.
- Prepare and submit a pumping test data report to the RWQCB no later than December 2, 2002. One paper copy and one electronic copy of the report will be submitted. The pumping test report data report will include tables depicting the depth to groundwater, groundwater elevations, and time since the pumping started or ended for each of the three wells monitored.
- Compile and analyze the data obtained, and estimate the approximate values of transmissivity (T) and hydraulic conductivity (K) at the site.
- Prepare and submit a technical report summarizing the aquifer test to the RWQCB no later than January 17, 2003. One paper copy and one electronic copy of the report will be submitted. The report will include the following information:
 1. A description of the methods used to collect and evaluate groundwater elevation data.
 2. Maps showing the contoured groundwater elevations relative to mean sea level (MSL) measured in the 11 groundwater monitoring wells associated with the site prior to pumping RCWD Well No. 118. A separate map will be provided for each of the three water-bearing zone monitored.
 3. Estimates for transmissivity (T), hydraulic conductivity (K) and seepage velocity (V_s) at the site. Parameters for permeability (n) based on laboratory testing of selected samples obtained during the installation of the wells will be used to estimate V_s .
 4. An interpretation of the data regarding whether or not the site overlies the capture zone of RCWD Well No. 118, based on the information obtained.
 5. Interpretations regarding the effect of pumping RCWD Well No. 118 on water levels and contaminate transport at the site, and an assessment of the pollution risk posed to RCWD Well No. 118 from the petroleum hydrocarbon plume at the site.
 6. Supporting documentation for the information presented.
- Attendance at meetings and telephone conferences as required by the RWCQB.

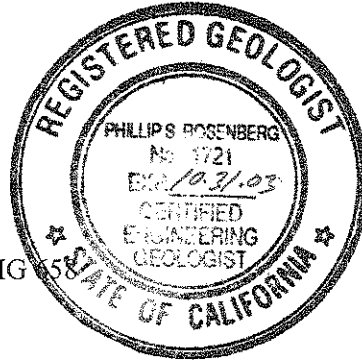
If you should have any questions regarding this workplan, please contact the undersigned at (858) 558-6100.

Sincerely,

GEOCON CONSULTANTS, INC.



Phillip S. Rosenberg, RG 5536/CEG 1721/CHG 58
Senior Geologist



PSR:sc

- (1) Addressee
- (1) Narain Oil, Inc.
- (1) Procopio, Cory, Hargreaves, and Savitch
Attention: Mr. Robert Russell

Attachments: Figure 1, Site Plan
Table 1, Groundwater Monitoring Well Information Summary
Attachment A - Solinst Levellogger Model 3001 Data Sheet
Attachment B - Boring Logs

**TABLE I
GROUNDWATER MONITORING WELL INFORMATION SUMMARY
FORMER DELTA DISCOUNT GAS
28111 FRONT STREET, TEMECULA, CALIFORNIA**

WELL	ELEV. (MSL)	X	Y	DEPTH TO TOP OF SCREEN	SCREEN LENGTH	TOTAL DEPTH OF WELL	DEPTH TO GW (Feet below TOC, Measured on 9/17/02)	GW ELEV. (MSL)
W-2*	1008.59'	-117.1549	33.5040	5'	15'	21.2'	9.70 ¹	998.89
W-3*	1006.74'	-117.1550	33.5038	5'	15'	19.7'	6.18 ²	1000.56
GMW-1**	1007.28'	-117.1551	33.5039	5'	10'	14.2'	5.52	1001.76
GMW-2**	1009.21'	-117.1548	33.5039	5'	10'	14.2'	7.31	1001.90
GMW-3**	1008.06'	-117.1549	33.5036	5'	10'	14.3'	7.28	1000.78
GMW-4***	1010.29'	-117.1547	33.50352	5'	10'	15'	9.73	1000.56
GMW-5***	1006.28'	-117.1551	33.50367	5'	10'	15'	5.50	1000.78
GMW-6***	1007.57'	-117.1553	33.50362	5'	10'	15'	7.42	1000.15
GMW-7***	1007.39'	-177.1552	33.50351	48'	10'	58'	18.75	988.64
GMW-8***	1007.68'	-177.1551	33.50349	24.5'	10'	34.5'	13.63	944.05
GMW-9***	1007.65'	-117.1551	33.50348	5'	10'	15'	7.93	999.72

* Installed by ProTech Environmental & Testing 1997.

** Installed by Geocon 2001.

*** Installed by Geocon 2002.

¹ 3.5' of free product present in well

² free product skimmer removed prior to dtw measurement

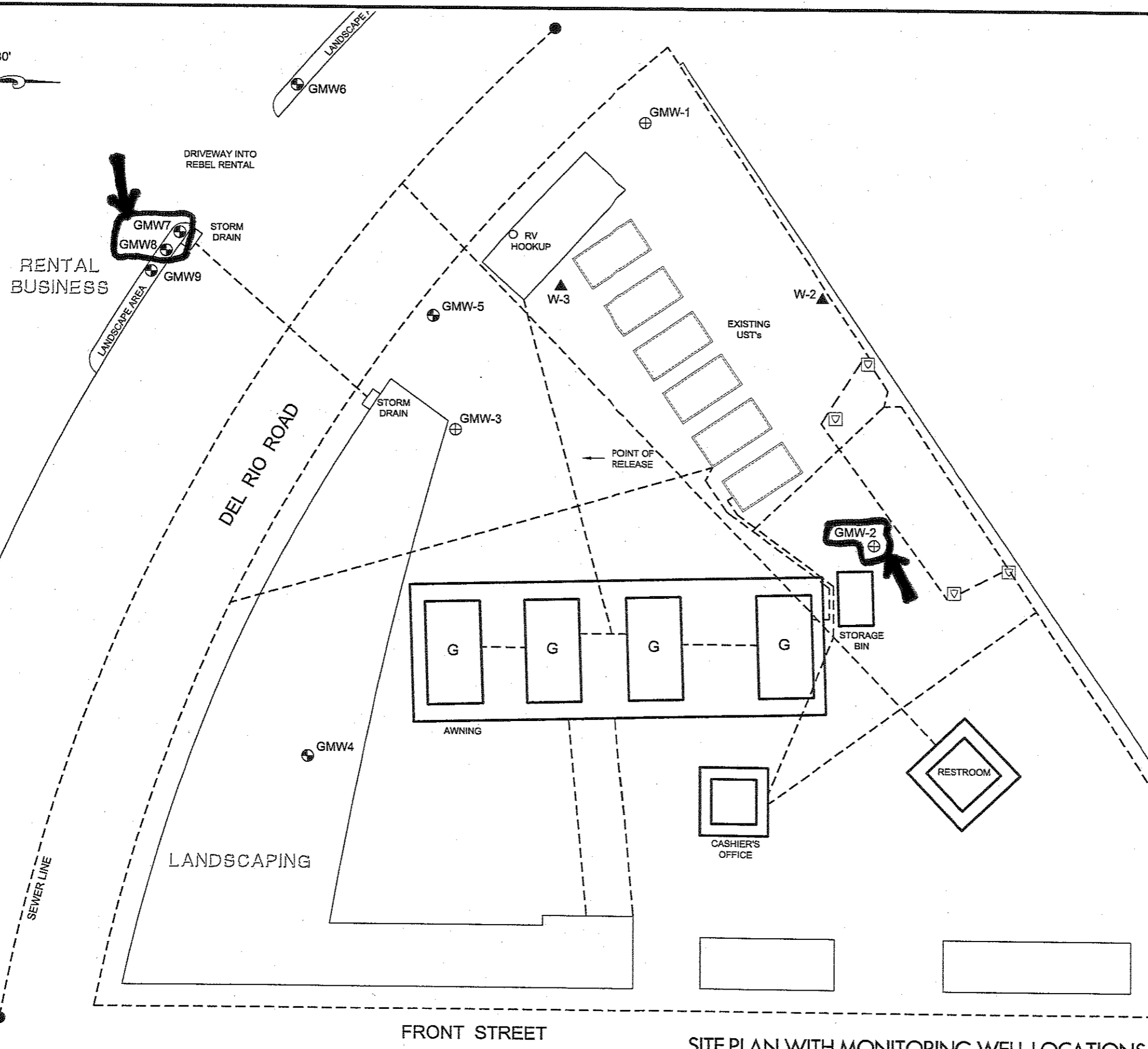
TOC = Top of Casing

X = Degrees Longitude

Y = Degrees Latitude

FORMER DELTA DISCOUNT GAS
28111 FRONT STREET
TEMECULA, CALIFORNIA

SCALE: 1" = 30'



GEOCON LEGEND

- ⊕APPROX. LOCATION OF MONITORING WELL DRILLED SEPTEMBER 2002
- GMW-1 ⊕APPROX. LOCATION OF MONITORING WELL INSTALLED 07-24-2001
- W-2 ▲APPROX. LOCATION OF MONITORING WELL INSTALLED BY OTHERS
- UTILITIES
-SEWER MANHOLE
- ▭EXISTING UST's

GEOCON
CONSULTANTS, INC.

ENVIRONMENTAL ■ GEOTECHNICAL ■ MATERIALS
6970 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 297 4
PHONE (858) 558-6100 - FAX (858) 558-8437
PROJECT NO. 09094-06-05
FIGURE 1
DATE October 7, 2002

SITE PLAN WITH MONITORING WELL LOCATIONS

Levelogger®

Model 3001

The LT Levelogger has a datalogger, 10-year battery, pressure transducer and temperature sensor, all housed in a very small, minimal maintenance, 7/8" x 4.9" stainless steel housing.

The sealed design offers protection against power surges such as nearby pumps or lightning, and greatly simplifies maintenance.

Leveloggers can be inexpensively suspended on a simple wireline, or connected to the surface with direct read cable for rapid downloading of data and/or reprogramming, without removal from the water. Using a wireline reduces costs and allows the Leveloggers to be totally hidden from view and locked away from possible damage.

The 10-year battery life, high accuracy and long-term stability make Leveloggers the ideal device for recording water levels in monitoring and production wells, boreholes, lakes, rivers, tanks, harbours, etc.

An inexpensive Barologger is available to provide the most accurate and easy method of barometric compensation. The Leveloggers themselves are available in a variety of ranges, as well as in a version that also measures dissolved oxygen and another that also measures conductivity.

The fully automatic, easily programmed Levelogger allows measurements at selected time intervals as small as 0.5 sec. with no wraparound, so that it does not overwrite data. Logarithmic and event-based sampling regimes are also easily programmed in the easy-to-use software.

Applications

- ▶ Pumping and slug tests
- ▶ Watershed, drainage basin and recharge areas
- ▶ Stream gauging, lake levels and reservoirs
- ▶ Harbour and tidal fluctuation monitoring
- ▶ Wetlands and stormwater run-off monitoring
- ▶ Long term water level monitoring
- ▶ All intensive monitoring of groundwater levels

Leveloader

The Leveloader is an inexpensive, hand-held, data transporter that downloads field data from Leveloggers, without a laptop. It holds up to 190,000 sets of readings from up to 50 Leveloggers.

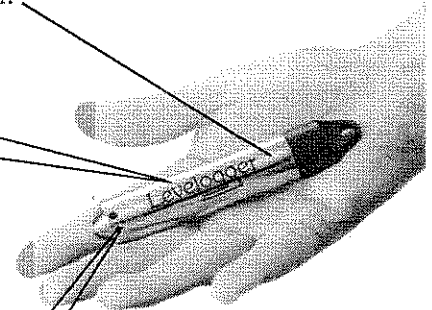
Simply hook up the Leveloader to the direct read cable and download; move on to the next well and then back to the office for transfer to the computer. No need for an expensive computer, hand-held PC or PDA. (See Leveloader Data Sheet.)



Low-maintenance
factory sealed design

Datalogger
10-year battery

Pressure transducer
Temperature sensor



Accurate and Reliable

- 0.1% FS accuracy and long-term stability
- Small ranges available for increased accuracy
- Logarithmic, event-based or linear sampling
- Protected from power surges (pumps, lightning)
- Try out a rental

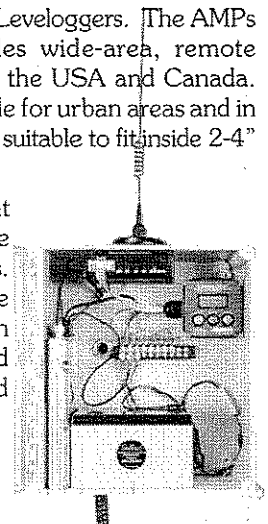
Easiest to Use

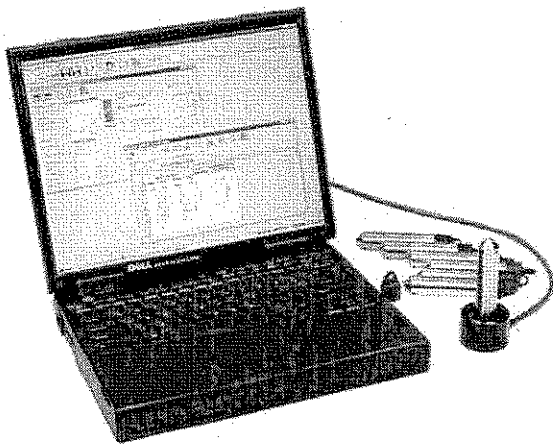
- No vented cable and no desiccants
- No need to continually replace batteries
- Maintenance-free, water-tight design
- The smallest logger of all 7/8" x 4.9" (22 x 125 mm)
- Lower price

Solinst Telemetry Systems (STS)

Telemetry systems are available for Leveloggers. The AMPs analog cellular transceiver provides wide-area, remote telemetry coverage, ideal for use in the USA and Canada. The digital GSM transceiver is suitable for urban areas and in many other places. It is smaller sized, suitable to fit inside 2-4" (50-100mm) wells.

Designed to allow self-management of the Levelogger data, the software is suitable for large or small systems. An STS can control up to 400 remote Leveloggers, Barologgers or Rain Gauges, with selectable automated reading schedules, as well as high and low level alarm options. (See Data Sheet 9100)





Levellogger Operation

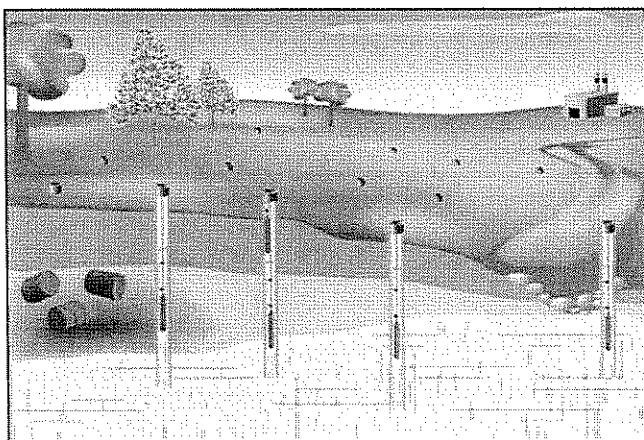
Programming of the Levelloggers requires one optical reader. Place the first Levellogger into a reader attached to a desktop or portable computer. Then fill out the various fields in the program screen with site information and choice of sampling regime.

The Levelloggers can then be started immediately, or with a future start time. They can be pre-programmed and taken to the site at a later time. If future start is chosen, no memory is used until start time. If immediate start is chosen the operator can see the loggers working before deploying them.

A manual measurement of the initial depth to water is taken in each well, and noted as a base line measurement. When a Barologger is used for barometric pressure measurements, it is set above high water level in one location on site.

If direct read cables are being used, data can be viewed and retrieved from the Levellogger at anytime. Use the handy Leveloader or a portable computer.

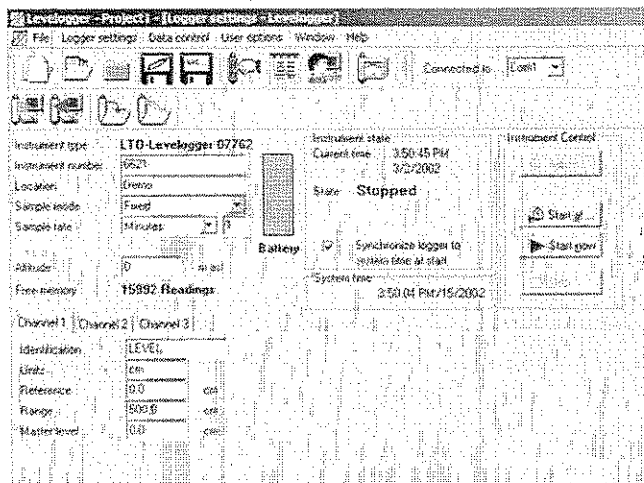
To download data from a Levellogger suspended on wireline, simply remove it from the well and place it in an optical reader attached to a Leveloader in the field, or to a computer in the field or back in the office. Data that has been collected is retained in the Levellogger until the Levellogger has been restarted.



Software

Levelloggers are programmed using a desktop or portable computer and an optical reader. The Windows software is very easy to use. Setup and programming are very fast and simple, using the screen shown below.

The measurement time interval can be set between 0.5 secs. and 99 hours in linear sampling mode, set to a choice of short, medium or long logarithmic options or to event-based options. There is ample space for entering site, customer and sampling information.



Easy Programming in One Window

Levelloggers may be synchronized to the computer clock, and there are options for immediate start or a future start time. The battery has an estimated life of 10 years and the percentage life remaining is indicated on the programming screen.

The data downloaded from a Levellogger has already been automatically temperature-compensated. If the altitude of the logger has been entered into the altitude field, it will also have been adjusted for altitude. When a Barologger and the Windows software is used, barometric compensation is highly accurate and problem free. The Barometric Compensation Wizard can be used prior to export of the data to other programs.

The software allows immediate viewing of the data in graph or chart form, or simple downloading for future examination. It also allows easy export into a spreadsheet or database for further processing.

The software can be used with any type of Levellogger including previous versions of the Levellogger.

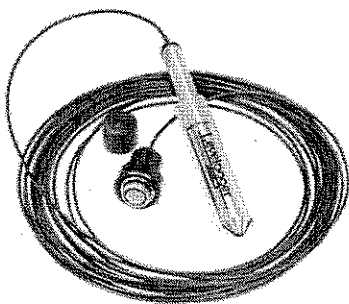
Use of Direct Read Cables

When it is desired to get real-time data and communicate with Leveloggers without removal from the water, they can be deployed using direct read cables.

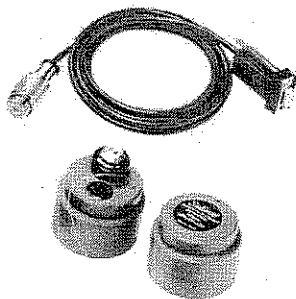
The lower end of the direct read cable has a miniaturized infra-red optical reader. The top cap of the Levelogger is removed and the direct read cable is attached in its place. In turn the upper end of the cable attaches, via a PC Interface Cable, to the portable computer.

This allows viewing of the data, downloading and/or programming in the field.

The full benefits of a sealed Levelogger with no vent tube or electrical cable connection are also maintained. The logger is still sealed from all electrical interference through a Faraday cage effect and cable handling problems are minimized.



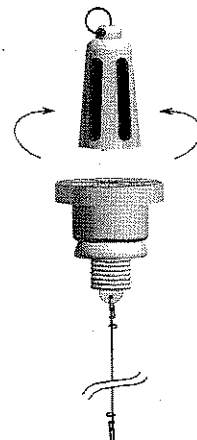
Levelogger, 30 ft. (9m) of Direct Read Cable and Integral 1" Well Cap and Cover.



PC Interface Cable 2" Wellcap and Cover.



The PC Interface Cable connected to the Direct Read Cable.



Lockable Cap with Key, Wireline and Hooks.

Use of Wireline Suspension

Leveloggers may also be suspended in the water on wireline. This is a very inexpensive method of deployment, and if in a well, allows them to be locked out of sight and inaccessible to anyone with a special key.

Solinst has adapted the Enviro Cap™ by putting a vent hole in the cap to allow for the equalization of barometric pressure. The well cap has a convenient eyelet from which to suspend the Levelogger. It slips over the casing and is locked in place with the special key, as shown.

The Enviro Caps are available sized for 2" and 4" wells, and well caps for other sizes of well can also be used.

Direct Read Cable Specifications

Direct read cables are available for attachment to any Levelogger, new or old, in standard lengths of:

50', 100', 200', 300' 500' and 15m, 30m, 60m, 80m 100m

Custom cable lengths up to 1640 ft. (500m) are also available, to fit particular monitoring situations, as required. Cable markings, each 5 ft. or one meter, may be requested, for situations where the direct read Leveloggers need to be used in a variety of locations.

The 1/10" dia. (2.54 mm) cable has an HDPE outer jacket for strength and durability. The stranded stainless steel central conductor gives non-stretch accuracy.

The upper end of the direct read cable is fitted with a connector that can act as a well cap for a 1" well. This connector fits into Solinst Levelogger well caps designed for 2" or 4" wells, and can easily be attached at surface in other situations.

Accurate Barometric Compensation

Leveloggers measure absolute pressure (water pressure + atmospheric pressure) expressed in feet or centimeters of water column.

The most accurate method of obtaining changes in water level is to compensate for atmospheric pressure using a Barologger. This avoids any time lag in the compensation figures and any errors introduced due to moisture buildup, kinking or damage to vented cable. It can also be very useful to have recorded barometric information to help determine barometric lag and/or any damping effect from the surface to the monitored aquifer.

The Barometric Compensation Wizard in the Levelogger Windows software simplifies the adjustment of the level measurements for barometric pressure changes, by using the synchronized data from all Leveloggers on site and the site Barologger.

The overall results give more reliable, highly accurate level data than that obtained when using high maintenance and expensive vented cable.

™ Kilman Electric, Inc.

Levelogger®

Model 3001

General Levelogger Specifications

Wetted Materials: 316-L stainless steel, ceramics,
Akulon and Viton

Battery Life: 10 years

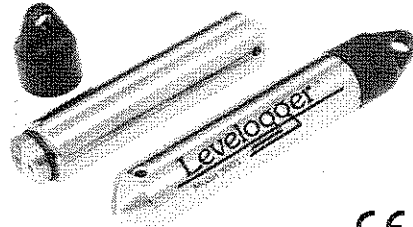
Clock Accuracy: Better than 1 second/day @ 20°C
correctable at each communication

Operating Temperature: -20°C to 80°C

Communication: RS232 (Optical Infra-Red)

LT & Barologger Dimensions: 7/8" x 4.9" (22 mm x 125 mm)

LT & Barologger Weight: 5.7 oz (160 g)



CE

Specifications	LT Levelogger	Barologger
Models	F15, F30, F60, F100, F300 M5, M10, M20, M30, M100	F5/M1.5
Memory	Non-volatile, Flash	Non-volatile, Flash
Max. # Readings	2 x 24,000 Linear, Event or Log	2 x 24,000 Linear, Event or Log
Measurement Rates	Linear at each 0.5 sec to 99 hrs, Event- Based, or 25.8 hr, 157.5 hr, 297 day Logarithmic	Linear at each 0.5 sec to 99 hrs, Event- Based, or 25.8 hr, 157.5 hr, 297 day Logarithmic
Level Sensor	Ceramic Transducer	Ceramic Transducer
Normalization	Automatic Temp Compensation (to 1%FS from -10°C to 40°C)	Automatic Temp Compensation (to 1%FS from -10°C to 40°C)
Accuracy	0.1% FS (-10°C to 40°C)	0.3% FS (-10°C to 40°C)
Water Level Fluctuation Range (at Sea Level)	F15/M5 = 13.12 ft/4m F30/M10 = 29.52 ft/9m F65/M20 = 62.32 ft/19m F100/M30 = 95.14 ft/29m F300/M100 = 324.8 ft/99m	5 ft/1.5m
Resolution	F15/M5 = 0.003 ft/0.1 cm F30/M10 = 0.007 ft/0.2 cm F65/M20 = 0.01 ft/0.4 cm F100/M30 = 0.02 ft/0.6 cm F300/M100 = 0.07 ft/2 cm	
Temperature Sensor	Spreading Resistance Silicon	Spreading Resistance Silicon
Range	-20°C to 80°C	-20°C to 80°C
Accuracy	0.1°C	0.1°C
Resolution	0.01°C	0.01°C

Dissolved Oxygen Levelogger: See Model 3001 LTDO Data Sheet for details

Conductivity Levelogger: See Model 3001 LTC Data Sheet for details

PROJECT NO. 09094-06-01

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. GMW 1		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED 7/24/01	WATER LEVEL (ATD) 7.0'		
				EQUIPMENT CME B-61 HSA		DRILLER WEST HAZMAT	
SOIL DESCRIPTION							
1			▲ ▲	PORTLAND CEMENT CONCRETE - +-6 inches, reinforced		[Diagram: 0-5' interval with concrete and sand patterns]	[Diagram: 0-5' interval with concrete and sand patterns]
2				(Hand auger 0.5 to 5 feet)			
3				ALLUVIUM		[Diagram: 5-15' interval with various soil patterns]	[Diagram: 5-15' interval with various soil patterns]
4				Medium dense, damp to moist, medium brown, Silty SAND [SM], some clay			
5							
6							
7			≡				
8				Medium dense, wet, medium brown, Silty SAND [SM], some clay			
9	26	GMW1-8 09:28					
10							
11	32	GMW1-10 09:35		Medium dense, wet, medium brown, Silty SAND [SM], coarser than above			
12							
13							
14							
15							
16				TOTAL DEPTH = 15 FEET BORING TERMINATED AT 15 FEET Groundwater at 7 feet			
17							
18							
19							
20							
21							
22							
23							
24							

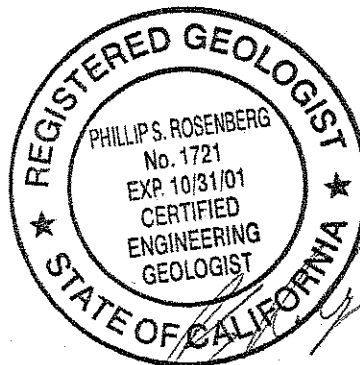


Figure A-1, log of Boring GMW 1

FDDG

CASING ELEVATION:	QUANTITY OF FILTER MATERIAL: 300lbs.
DIAMETER & TYPE OF CASING: 2" PVC	WELL SEAL & INTERVAL: 0-1.5'
CASING INTERVAL: 0-5'	WELL SEAL QUANTITY: 50lbs.
WELL SCREEN: 0.02 inch	ANNULUS SEAL/INTERVAL: 1.5'-4'
SCREEN INTERVAL: 5-10'	ADDITIVES: none
WELL COVER: Flush mount	WELL DEPTH: 15'
FILTERPACK/INTERVAL: 4-15'	ENGINEER/GEOLOGIST: PSR

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 09094-06-01

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. GMW 2		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED	WATER LEVEL (ATD)		
				7/24/01	7.5'		
				EQUIPMENT	CME B-61 HSA	DRILLER	WEST HAZMAT
SOIL DESCRIPTION							
1			▲▲	PORTLAND CEMENT CONCRETE - +-10 inches, reinforced (Hand auger from 0.8 to 5 feet)			
2				ALLUVIUM			
3				Firm to stiff, damp, dark brown, Sandy CLAY [CL]			
4							
5							
6							
7							
8			▼	Stiff, wet, dark brown, Sandy CLAY [CL]			
9							
10							
11	34	GMW2-10 11:52		Medium dense to dense, wet, medium brown, Silty SAND [SM], some clay, poorly graded			
12							
13	32	GMW2-12 11:57		Same as above			
14							
15				TOTAL DEPTH = 15 FEET BORING TERMINATED AT 15 FEET Groundwater at 7.5 feet			
16							
17							
18							
19							
20							
21							
22							
23							
24							

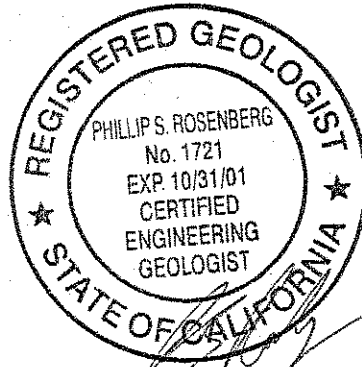


Figure A-2, log of Boring GMW 2

FDDG

CASING ELEVATION:	QUANTITY OF FILTER MATERIAL: 300lbs.
DIAMETER & TYPE OF CASING: 2" PVC	WELL SEAL & INTERVAL: 0-1.5'
CASING INTERVAL: 0-5'	WELL SEAL QUANTITY: 50lbs.
WELL SCREEN: 0.02 inch	ANNULUS SEAL/INTERVAL: 1.5'-4'
SCREEN INTERVAL: 5-10'	ADDITIVES: none
WELL COVER: Flush mount	WELL DEPTH: 15'
FILTERPACK/INTERVAL: 4-15'	ENGINEER/GEOLOGIST: PSR

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

DEPTH IN FEET	PENETRAT. RESIST. BLMS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. GMW 3		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED	WATER LEVEL (ATD)		
				7/24/01	6.0'		
				EQUIPMENT	CME B-61 HSA	DRILLER	WEST HAZMAT
SOIL DESCRIPTION							
1			▲▲▲	PORTLAND CEMENT CONCRETE - +-6 inches, reinforced (Hand auger from 0.5 to 5 feet)			
2				ALLUVIUM			
3				Medium dense, damp to moist, medium to dark brown, Silty SAND [SM], some clay			
4							
5							
6			≡				
7							
8				Medium dense, wet, medium brown, Silty SAND [SM], some clay, hydrocarbon odor			
9	20	GMW3-8 12:40		Same as above			
10							
11	30	GMW3-10 12:46					
12							
13	32	GMW3-12 12:53		Medium dense, saturated, medium to dark brown, Clayey SAND [SC] No odor			
14							
15							
16				TOTAL DEPTH = 15 FEET BORING TERMINATED AT 15 FEET Groundwater at 6 feet			
17							
18							
19							
20							
21							
22							
23							
24							

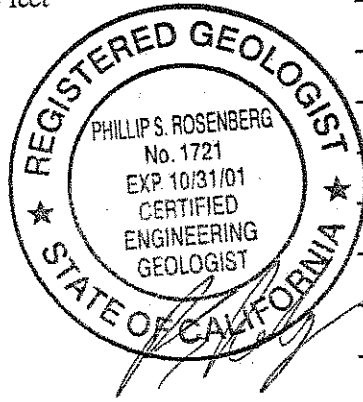


Figure A-3, log of Boring GMW 3

FDDG

CASING ELEVATION:	QUANTITY OF FILTER MATERIAL: 300lbs.
DIAMETER & TYPE OF CASING: 2" PVC	WELL SEAL & INTERVAL: 0-1.5'
CASING INTERVAL: 0-5'	WELL SEAL QUANTITY: 50lbs.
WELL SCREEN: 0.02 inch	ANNULUS SEAL/INTERVAL: 1.5'-4'
SCREEN INTERVAL: 5-10'	ADDITIVES: none
WELL COVER: Flush mount	WELL DEPTH: 15'
FILTERPACK/INTERVAL: 4-15'	ENGINEER/GEOLOGIST: PSR

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. GMW 4		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED 8/23/02	WATER LEVEL (ATD) 10.0'		
				EQUIPMENT CME 4.25 HSA		DRILLER BAJA EXPLORATION	
SOIL DESCRIPTION							
1				FILL Loose, moist, dark brown, Silty fine SAND with some clay [SM]			
2							
3							
4							
5							
6							
7	18	GMW4-1 09:15		Moderately dense, moist, brown, Silty, Clayey SAND [SC]			
8							
9							
10	20	GMW4-2 09:26		Moderately dense, wet, brown, Silty SAND [SM]			
11							
12				Firm, moist to wet, gray, very Sandy CLAY with some silt - petroleum odor [CL]			
13							
14	12	GMW4-3		Moderately dense, wet, gray, fine SAND with some silt and a trace of clay [SP]			
15							
16			BORING TERMINATED AT 15 FEET Groundwater encountered at 10 feet Monitoring well constructed				
17							
18							
19							
20							
21							
22							
23							
24							

Figure A-1, log of Boring GMW 4

DD

CASING ELEVATION:	
DIAMETER & TYPE OF CASING:	2" Sch. 40 PVC
CASING INTERVAL:	0-15 feet
WELL SCREEN:	0.020
SCREEN INTERVAL:	5-15 feet
WELL COVER:	Flush Mount
FILTERPACK/INTERVAL:	#3 Sand 3.5-15 feet

QUANTITY OF FILTER MATERIAL:	3.5 bags
WELL SEAL & INTERVAL:	Enviroplug 1.5-3.5 feet
WELL SEAL QUANTITY:	1 bag
ANNULUS SEAL/INTERVAL:	Concrete 0-1.5 feet
ADDITIVES:	None
WELL DEPTH:	15 feet
ENGINEER/GEOLOGIST:	RCO

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. GMW 5		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED 8/23/02	WATER LEVEL (ATD) 8.0'		
				EQUIPMENT CME 4.25 HSA DRILLERAJA EXPLORATION			
SOIL DESCRIPTION							
1			CONCRETE ~9 inches				
2			FILL Loose, moist, olive, Silty fine SAND [SM]				
3			-Becomes more brown				
4			-Petroleum odor				
5	11	GMW5-1 12:50	Moderately dense, moist, brown, Silty fine SAND [SM]				
6		GMW5-2 13:00					
7			Plastic, moist, brown, fine Sandy CLAY with some silt				
8	14		[CL]				
9			-Wet (no recovery)				
10	8	GMW5-2 13:19	Loose, wet, brown, fine SAND with some silt [SP]				
11							
12			Soft, moist, dark gray, Silty CLAY with a trace of sand [CL]				
13							
14	12						
15			Loose, wet, gray, fine to medium SAND with a trace of silt [SP]				
16			BORING TERMINATED AT 15 FEET Groundwater encountered at 8 feet Monitoring well constructed				
17							
18							
19							
20							
21							
22							
23							
24							

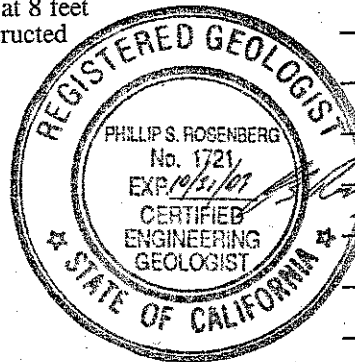


Figure A-2, log of Boring GMW 5

DD

CASING ELEVATION:	QUANTITY OF FILTER MATERIAL: 4.5 bags
DIAMETER & TYPE OF CASING: 2" Sch. 40 PVC	WELL SEAL & INTERVAL: Enviroplug 1.5-3.5 feet
CASING INTERVAL: 0-15 feet	WELL SEAL QUANTITY: 1 bag
WELL SCREEN: 0.020	ANNULUS SEAL/INTERVAL: Concrete 0-1.5 feet
SCREEN INTERVAL: 5-15 feet	ADDITIVES: None
WELL COVER: Flush Mount	WELL DEPTH: 15 feet
FILTERPACK/INTERVAL: #3 Sand 3.5-15 feet	ENGINEER/GEOLOGIST: RCO

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 09094-06-04

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. GMW 6		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED	WATER LEVEL (ATD)		
				8/23/02	10.0'		
				EQUIPMENT	CME 4.25 HSA	DRILLER/RAJA EXPLORATION	
SOIL DESCRIPTION							
1			FILL	Loose, moist, dark brown, Silty fine SAND [SM]		0.0	0.0
2							
3							
4			Moderately dense, moist, brown, Silty fine SAND [SM]			0.0	0.0
5							
6				-Trace of clay			
7	3						
8				Very loose, more Clayey SAND, trace of roots [SC]			
9	9	GMW6-1					
10		15:10	Loose, very moist to wet, brown, fine SAND with some silt [SM]			0.0	0.0
11							
12				Plastic, moist, dark gray, Sandy CLAY with some silt [CL]			
13							
14	8						
15							
16				BORING TERMINATED AT 15 FEET Groundwater encountered at 10 feet Monitoring well constructed			
17							
18							
19							
20							
21							
22							
23							
24							

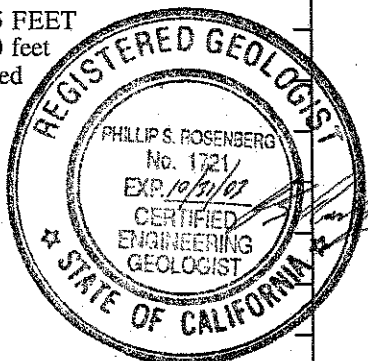


Figure A-3, log of Boring GMW 6

DD

CASING ELEVATION:	QUANTITY OF FILTER MATERIAL: 4 bags #3
DIAMETER & TYPE OF CASING: 2" Sch. 40 PVC	WELL SEAL & INTERVAL: Bentonite Enviroplug 1.5-3.5 feet
CASING INTERVAL: 0-15 feet	WELL SEAL QUANTITY: 1 bag
WELL SCREEN: 0.020	ANNULUS SEAL/INTERVAL: Concrete 0-1.5 feet
SCREEN INTERVAL: 5-15 feet	ADDITIVES: None
WELL COVER: Flush Mount	WELL DEPTH: 15 feet
FILTERPACK/INTERVAL: #3 Sand 3.5-15 feet	ENGINEER/GEOLOGIST: RCO

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. GMW 7		WELL CONSTRUCTION	HEADSPACE (PPH)
				DATE DRILLED 8/26/02	WATER LEVEL (ATD) 7.5'		
				EQUIPMENT CME 4.25 HSA		DRILLER/RAJA EXPLORATION	
SOIL DESCRIPTION							
1				FILL Loose, moist, brown, Silty fine SAND with some clay [SM]			
2							
3							
4				Soft, moist, brown, Sandy CLAY with some silt [CL]			
5							
6							
7	15	GMW7-1 08:54		▼ Loose, wet, brown, fine SAND with some silt with trace of clay [SP]			
8							
9	30	GMW7-2 09:05		-More silty			
10							
11							
12							
13							
14	8			Loose, wet, gray, SILT with some clay, with trace of fine sand [ML]			
15							
16				-More clayey			
17				Loose, wet, clayey, fine to medium SAND with some silt [SC]			
18							
19							
20	36			Moderately dense, wet, medium to coarse SAND with trace of silt [SP]			
21							
22				Dense, moist to wet, Silty fine SAND [SM]			
23							
24							

Figure A-4, log of Boring GMW 7

Continued Next Page

DD

CASING ELEVATION:	QUANTITY OF FILTER MATERIAL: 3.5 bags
DIAMETER & TYPE OF CASING: 2" Sch. 40 PVC	WELL SEAL & INTERVAL: Bentonite
CASING INTERVAL: 0-58 feet	WELL SEAL QUANTITY: 5 Pails TR30 Pellets
WELL SCREEN: 0.020	ANNULUS SEAL/INTERVAL:
SCREEN INTERVAL: 48-58 feet	ADDITIVES: None
WELL COVER: Flush Mount	WELL DEPTH: 58 feet
FILTERPACK/INTERVAL: #3 Sand 43-58 feet	ENGINEER/GEOLOGIST: RCO

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. <u>GMW 7</u>		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED <u>8/26/02</u>	WATER LEVEL (ATD) <u>7.5'</u>		
				EQUIPMENT <u>CME 4.25 HSA</u> <u>DRILLERAJA EXPLORATION</u>			
SOIL DESCRIPTION							
26	28			Same as above			
27							
28				Thin clayey seam			
29							
30	39			Medium dense, wet, gray, fine to coarse SAND with some silt [SW]			
31				-Thin, fine sandy silt seam at ~31 feet			
32							
33							
34				Dense, wet, fine to medium SAND with some clay and silt, and a trace of gravel [SP]			
35							
36	40						
37				Dense, moist, gray, fine Sandy SILT with some clay [ML]			
38							
39							
40	26			Moderately dense, moist, gray, Clayey, Sandy SILT [ML]			
41							
42							
43							
44							
45	50/6"			Same as above, with thin layers of fine to medium sand			
46							
47							
48							
49							
50	50/5"			Dense, wet, gray, fine to coarse SAND with some silt [SW]			
51							
52				Dense, very moist, gray, fine Sandy SILT with a trace of clay [ML]			
53							
54							

Figure A-5, log of Boring GMW 7

Continued Next Page

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 09094-06-04

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. <u>GMW 7</u>		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED <u>8/26/02</u>	WATER LEVEL (ATD) <u>7.5'</u>		
				EQUIPMENT <u>CME 4.25 HSA</u>		DRILLER <u>RAJA EXPLORATION</u>	
SOIL DESCRIPTION							
56	50/4"		[Lithology symbols]	Same as above, with thin layers of fine sand		[Well construction symbols]	
57							
58	50/3"		[Lithology symbols]	Dense, very moist to wet, gray, Silty, fine to medium SAND [SM]		[Well construction symbols]	
59							
60	BORING TERMINATED AT 60 FEET Groundwater encountered at 7.5 feet Monitoring well constructed						
61							
62							
63							
64							
65							
66							
67							
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							

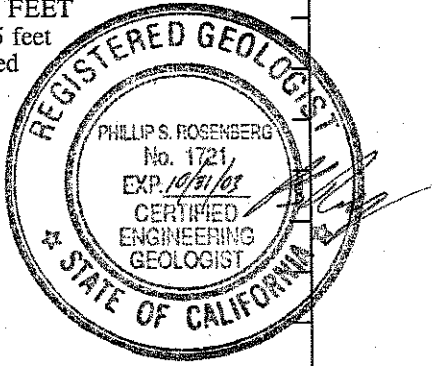


Figure A-6, log of Boring GMW 7

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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. <u>GMW 8</u>		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED <u>8/26/02</u>	WATER LEVEL (ATD) <u>7.5'</u>		
				EQUIPMENT <u>CME 4.25 HSA</u>		DRILLER/RAJA EXPLORATION	
SOIL DESCRIPTION							
1				FILL			
2				Loose, moist, dark brown, Silty fine SAND [SM]			
3							
4				-Becomes more clayey			
5							
6							
7							
8	26	GMW8-1		Moderately dense, wet, brown, fine SAND with some silt [SP]			
9							
10							
11							
12							
13							
14	16	GMW8-2		Moderately dense, wet, brown and gray, fine Sandy SILT [ML]			
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

Figure A-7, log of Boring GMW 8

Continued Next Page

DD

CASING ELEVATION:	
DIAMETER & TYPE OF CASING:	2" Sch. 40 PVC
CASING INTERVAL:	0-34.5 feet
WELL SCREEN:	0.020
SCREEN INTERVAL:	24.5-34.5 feet
WELL COVER:	Flush Mount
FILTERPACK/INTERVAL:	#3 Sand 20-35 feet

QUANTITY OF FILTER MATERIAL:	4 bags
WELL SEAL & INTERVAL:	Bentonite Pellets 17-20 feet
WELL SEAL QUANTITY:	1 Bucket Pellets & Grout
ANNULUS SEAL/INTERVAL:	
ADDITIVES:	None
WELL DEPTH:	34.5 feet
ENGINEER/GEOLOGIST:	RCO

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 09094-06-04

DEPTH IN FEET	PENETRAT. RESIST. BLMS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. GMW 8		WELL CONSTRUCTION	HEADSPACE (PPM)
				DATE DRILLED 8/26/02	WATER LEVEL (ATD) 7.5'		
				EQUIPMENT CME 4.25 HSA DRILLER/BAJA EXPLORATION			
SOIL DESCRIPTION							
26							
27							
28							
29							
30	52	GMW8-3		Moderately dense, wet, gray, Silty fine SAND [SP]			
31							
32							
33							
34							
35							
36				BORING TERMINATED AT 35 FEET Groundwater encountered at 7.5 feet			
37				Monitoring well constructed			
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							

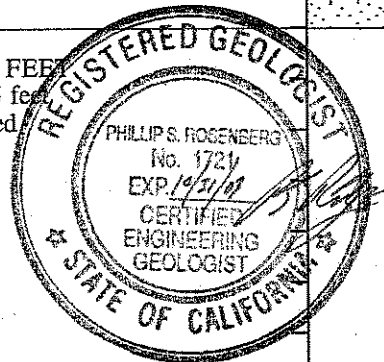


Figure A-8, log of Boring GMW 8

DD

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 09094-06-04

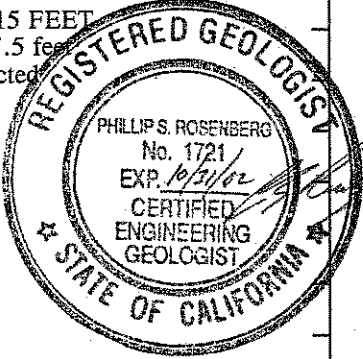
DEPTH IN FEET	PENETRAT. RESIST. BLWS/FT.	SAMPLE NO.	LITHOLOGY	BORING/WELL NO. <u>GMW 9</u>		WELL CONSTRUCTION	HEADSPACE (PPM)	
				DATE DRILLED <u>8/27/02</u>	WATER LEVEL (ATD) <u>7.5'</u>			
				EQUIPMENT <u>CME 4.25 HSA</u> DRILLER/EXPLORATION <u>RAJA</u>				
SOIL DESCRIPTION								
1			[Dotted pattern]	FILL Loose, moist, dark brown, Silty fine SAND [SM]				
2								
3								
4					-Becomes clayey			
5								
6					Moist, brown, fine SAND with some silt [SP]			
7					▼ -Becomes wet			
8								
9								
10								
11								
12								
13								
14					-Becomes more silty			
15								
16				BORING TERMINATED AT 15 FEET Groundwater encountered at 7.5 feet				
17				Monitoring well constructed				
18								
19								
20								
21								
22								
23								
24								

Figure A-9, log of Boring GMW 9

DD

CASING ELEVATION:	QUANTITY OF FILTER MATERIAL: 4 bags
DIAMETER & TYPE OF CASING: 2" Sch. 40 PVC	WELL SEAL & INTERVAL: Enviroplug 1-3 feet
CASING INTERVAL: 0-15 feet	WELL SEAL QUANTITY: 2 bags
WELL SCREEN: 0.020	ANNULUS SEAL/INTERVAL: Concrete
SCREEN INTERVAL: 5-15 feet	ADDITIVES: None
WELL COVER: Flush Mount	WELL DEPTH: 15 feet
FILTERPACK/INTERVAL: #3 Sand 3-15 feet	ENGINEER/GEOLOGIST: CB

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.