## hydrologue, Inc.

### Consulting Engineers & Geologists

Remediation Engineering Hazardous Substances

Geology and Hydrogeology

Geotechnical Engineering

http://www.hydrologue.com

Project No. 3034-02

November 20, 2007

Mr. Steven Plunkett Hazardous Materials Specialist Alameda County Environmental Health Services-Environmental Protection 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

RECEIVED

2:09 pm, Nov 21, 2007

Alameda County Environmental Health

RE: Destruction of Groundwater Monitoring Wells MW-1 through MW-3 and Observation Well OW-1, AT&T (formerly SBC Communication CTVYCA60 (P5200)) Facility Site, 2610 Norbridge Avenue, Castro Valley, CA 94546

Dear Mr. Plunkett:

Hydrologue, Inc. (HI), on behalf of AT&T Services, Inc. formerly (SBC Communications), hereby submits this report documenting the well destruction activities at the above Site for your files. The well destruction activities took place to comply with the closure requirements contained in the Alameda County Environmental Health (ACEH) letter to the AT&T Services dated September 18, 2007 and well destruction permit issued by Alameda County Public Works Agency on October 23, 2007 (see attachments).

#### WELL DESTRUCTION PROCEDURES

Well destruction permits for three groundwater monitoring wells (MW-1 through MW-3) and observation well (OW-1) associated with the Site were obtained from Alameda County Public Works Agency-Water Resources (see attachments).

#### WELL DESTRUCTION PROCEDURES

Well destruction was initiated on October 30, 2007 under the direct supervision of a Hydrologue California Registered Geologist. Woodward Drilling Co. of Rio Vista C-57 licensed (C-57 # 710079) well driller, completed the well destruction work under contract to HI. All field work was completed the same day.

The three groundwater monitoring wells MW-1, MW-2 and MW-3 and one observation well OW-1 located in the courtyard of AT&T Services-Castro Valley were abandoned by:

- Cleaning out any materials within the wells;
- Measuring the wells depth;
- Removing well box;
- Pressure grouting to the bottom of the well under 25 psi pressure for 5 minutes using Portland cement-94# sack to three feet below surface grade;
- Filling the top 5 feet with hydrated bentonite chips;

- After the seal set, backfilling the hole with neat cement and dry cement to make well tops firm;
- Patching the surface with concrete after the seal had set.

The installation date of observation well OW-1 is unknown, OW-1 was measured to a depth of 9 feet bgs during well destruction activities.

The concrete was used to patch the ground surface pending further restoration of the Site surface. Approximately 3.0 Cubic feet of Portland cement-94# sack (5 bags) were used to pressure grout all four wells. Approximately 6 bags (60 lbs per bag) of concrete-Quickrete were used to seal and patch the surface of the wells. Each well was pressure grouted and sealed under the supervision of a HI geologist. Vicky Hamlin from Public Work Agency of Alameda County oversaw the finished well destruction activities.

All wastes (well casing, cement slurry, etc.) generated during well destruction activities were stored and sealed in 55-gallon steel drums meeting DOT standards for hazardous material transport and were subsequently stored at the Site. Each drum was labeled with waste type, date of waste generation, site, project name and number, and name and phone number of the Client Project Manager. Hydrologue, Inc. will arrange for the appropriate disposal of the wastes.

#### CONCLUSION

On October 30, 2007, all on-Site groundwater monitoring wells MW-1, MW-2, MW-3 and observation well OW-1 located at AT&T Facility were abandoned by pressure grouting, removing the top of the well casings and sealing them to three feet below ground surface, and patching at the surface using concrete. At this time, no monitoring or observation wells remain at the Site.

#### LIMITATION

HI has prepared this report for the exclusive use of AT&T only. All work has been conducted in accordance with generally accepted practices in the fields of environmental engineering, geology, and hydrogeology that exist in this or similar localities at this time. No other warranty, either expressed or implied, is made.

Sincerely,

HYDROLOGUE, INC.

Seyed Morteza Mortazavi, Ph.D. Principal Hydrogeologist/Engineer

C.HG. No. 516 R.G. No. 5326

Attachments: Figures I and 2

Alameda County Environmental Health Service letter dated September 18, 2007

CERTIFIED

Well Destruction Permit

**Boring Logs** 

Well Developing Log for MW-1

Construction Detail of Groundwater Monitoring Wells MW-1 through MW-3

**DWR 188** 

cc: SMITH, MARK (ATTSI)

No. 5326

## REPORTING REQUIREMENTS

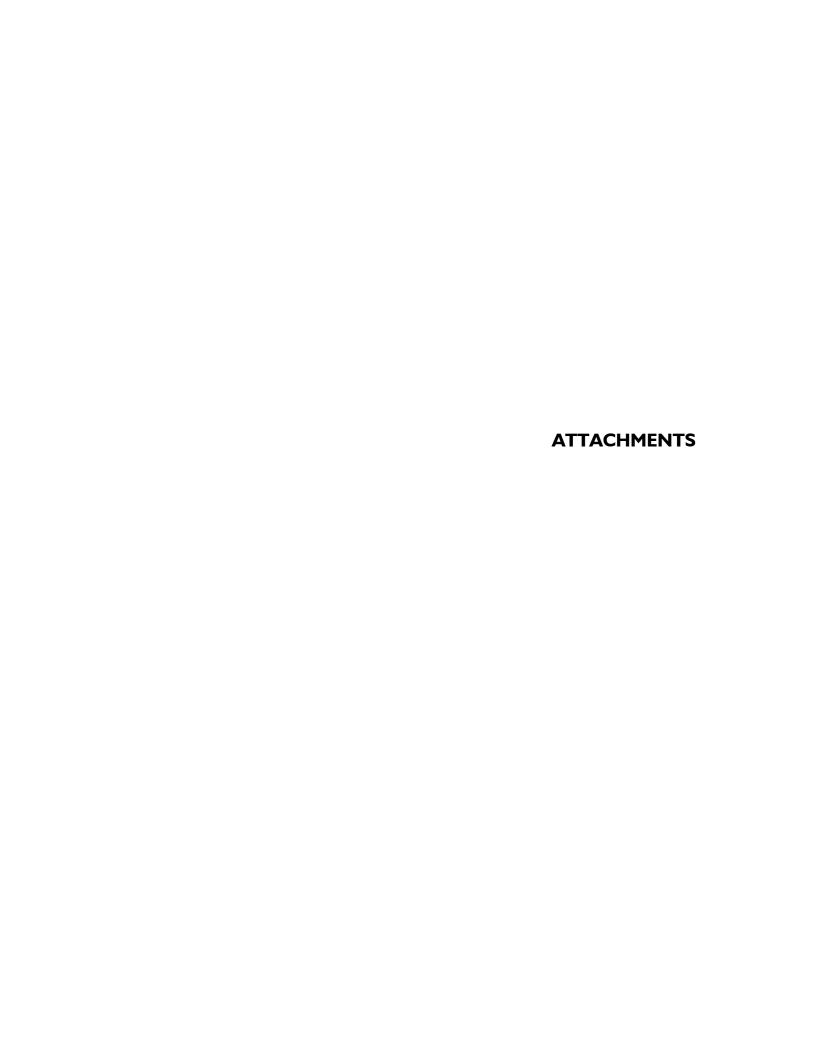
This report entitled Destruction of Groundwater Monitoring Wells (MW-1 to MW-3) and observation well OW-1, AT&T (formerly SBC Communication CTVYCA60 (P5200)) Facility Site, 2610 Norbridge Avenue, Castro Valley, CA 94546, dated November 20, 2007 will be submitted by HI on behalf of the AT&T to the following agencies.

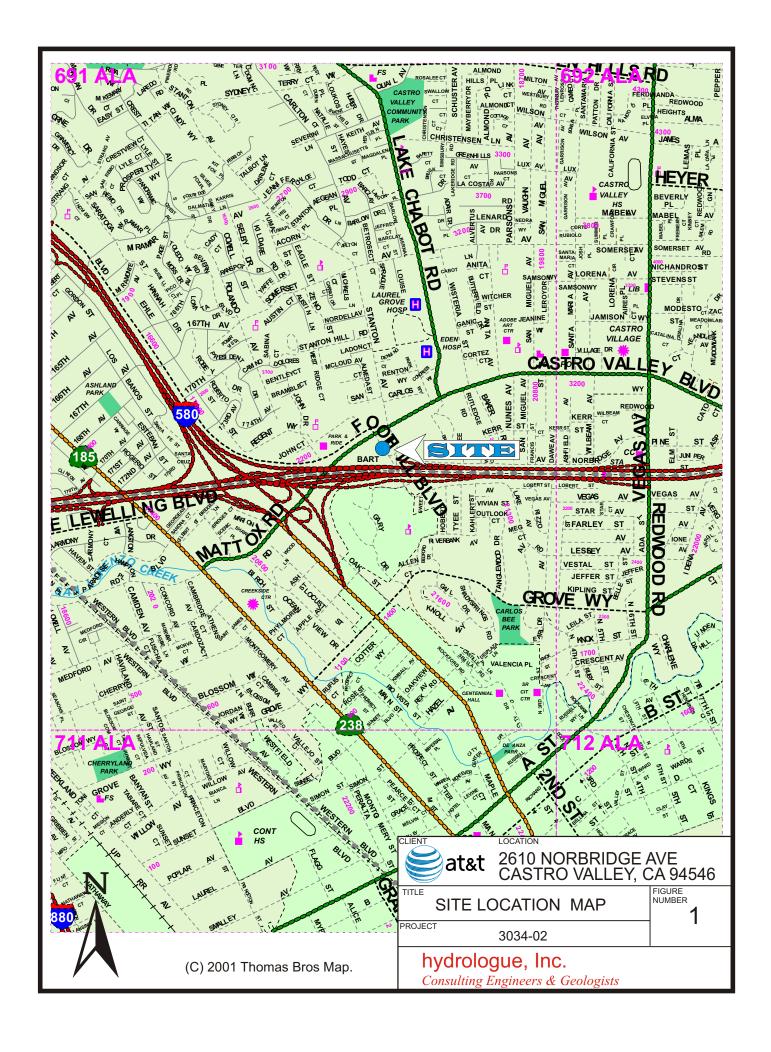
Mr. Steven Plunkett	Mr. James Yoo
Hazardous Materials Specialist	Alameda County Public Works Agency-
Alameda County Environmental Health	Water Resource
Services-Environmental Protection	399 Elmhurst Street
1131 Harbor Bay Parkway, Suite 250	Hayward, CA 94544-1395
Alameda, CA 94502-6577	

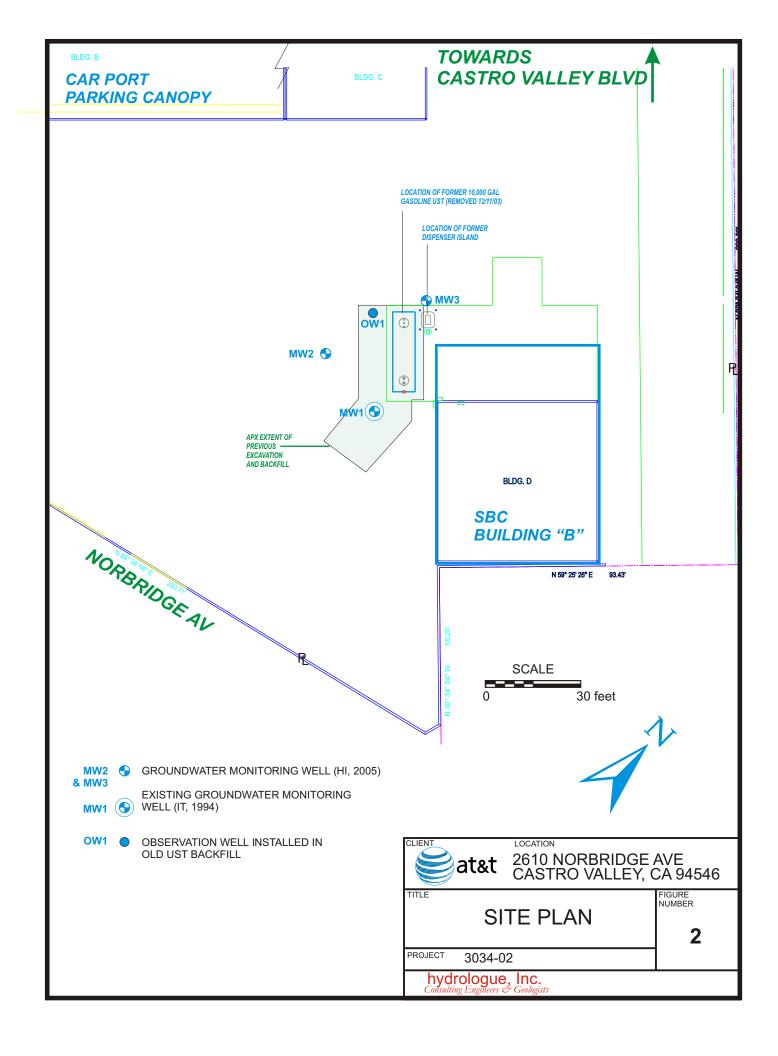
Any questions regarding this report should be directed to the following:

CLIENT CONTACT	CONSULTANT CONTACT
Mr. Mark Smith, P.G.	Seyed Mortazavi, CHG.
Environmental Manager	Principal Hydrogeologist
AT&T Services, Inc.	hydrologue Inc.
308 South Akard, Room 1700	2793 E. Foothill Blvd.
Three AT&T Plaza	Pasadena, CA 91107
Dallas, Texas 75202-5399	Tel: 626-585-9696
Tel: (214) 464-5226	Fax: 626-585-0046

 $Z\-\cite{REPORTS}\-\cite{SBC}\-\cite{Castrova}\-\well\ destruction\-\well\ Destruction\ doc$ 







# ALAMEDA COUNTY HEALTH CARE SERVICES







ENVIRONMENTAL HEALTH SERVICES ENVIRONMENTAL PROTECTION 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577 (510) 567-6700 FAX (510) 337-9335

September 18, 2007

Ms. Cheryl Allen SBC 308 Akard St, 3SBC Plaza Env Mgt Room 900 Dallas, TX 75202

Subject: Fuel Leak Case No. RO0002610 and Geotracker Global ID T06019723762, SBC (P5200) CTVYCA60, 2610 Norbridge Ave, Castro Valley, CA 94546 - Request for Well Decommissioning

Dear Ms. Allen:

Alameda County Environmental Health (ACEH) and California Regional Water Quality Control Board staff have reviewed the fuel leak case file and case closure summary for the above-referenced site and concur that no further action related to the underground storage tank fuel release is required at this time. Prior to issuance of a remedial action completion certificate, the monitoring wells installed at the site are to be properly destroyed, should the monitoring wells have no further use. Please decommission the monitoring wells and provide documentation of the well decommissioning to this office. A remedial action completion certificate will be issued following receipt of the documentation.

Well destruction permits may be obtained from the Alameda County Public Works Agency (<a href="http://www.acgov.org/pwa/wells/index.shtml">http://www.acgov.org/pwa/wells/index.shtml</a>). If you have any questions, please call me at (510) 383-1767.

Sincerely,

Sjeven Plunkett

Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Ms. Eliza Shakian, Hydrologue Inc., 2793 East Foothill Blvd, Pasadena, CA 91107

Donna Drogos, ACEH Steven Plunkett, ACEH

File

## Alameda County Public Works Agency - Water Resources Well Permit



**Project Start Date:** 

Applicant:

399 Elmhurst Street Hayward, CA 94544-1395 Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 10/23/2007 By jamesy

Permit Numbers: W2007-1086 to W2007-1089

Permits Valid from 10/30/2007 to 10/30/2007

City of Project Site: Castro Valley 1193156108369 Application Id: 2610 Norbridge Ave, Castro Valley, CA 94546 Site Location:

Completion Date: 10/30/2007 10/30/2007

Phone: 626-585-9696 Hydrologue Inc. - Seyed Montajav 2793 E Foothill Bl., Pasadena, CA 91107

**Property Owner:** AT&T c/o Cheryl Allen Phone: 214-464-1805 308 S Akard St., Dallas, UT 75202

Client: \*\* same as Property Owner \*

> Total Due: \$1200.00 Receipt Number: WR2007-0463 Total Amount Paid: \$1200.00

Payer Name: Hydrologue Inc. Paid By: CHECK **PAID IN FULL** 

#### **Works Requesting Permits:**

Well Destruction-Monitoring - 4 Wells

Driller: Woodward - Lic #: 710079 - Method: auger Work Total: \$1200.00

#### Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth	State Well #	Orig. Permit#	DWR#
W2007- 1086	10/23/2007	01/28/2008	MW1	8.00 in.	4.00 in.	1.00 ft	16.00 ft			
W2007- 1087	10/23/2007	01/28/2008	MW2	8.00 in.	4.00 in.	1.00 ft	15.00 ft			
W2007- 1088	10/23/2007	01/28/2008	MW3	8.00 in.	2.00 in.	1.00 ft	20.00 ft			
W2007- 1089	10/23/2007	01/28/2008	OW1	8.00 in.	0.00 in.	1.00 ft	0.00 ft			

#### **Specific Work Permit Conditions**

- Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.
- 2. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.
- 3. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit number and site map.

## Alameda County Public Works Agency - Water Resources Well Permit

- 4. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost and liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.
- 5. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
- 6. Permitte, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
- 7. Remove the Christy box or similar structure.

Destroy well by grouting neat cement with a tremie pipe or pressure grouting (25 psi for 5min.) to the bottom of the well and by filling with neat cement to three (3-5) feet below surface grade. Allow the sealing material to spill over the top of the casing to fill any annular space between casing and soil.

After the seal has set, backfill the remaining hole with concrete or compacted material to match existing conditions.

8. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.

A CARE I SHOWNED	SAMPLE MUMBER & MIENAL	BLOW COLLECT	RECOVERY (X)	(984) Q 1 d	BORING SUMMARY	SSSN	PROFILE	BORING NO. MW-1  FIELD GEOLOGIST: M. MILLER CHECKED 87: M. MILLER CROUND SURFACE EL: N/A  TOP OF CASING EL: N/A  DATE BEGAN: 02/02/94  DATE FINISHED: 02/02/94  TOTAL DEPTH: 18 FT.  DEPTH TO WATER: 5.2 FT.
1-0-					Protective	FL		Asphalt and concrete.
15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					Pies, Seh. 40 Catalog  March Committe  Description  Catalog  Catal	GP		Pea gravel — tank fill.  Collecting first sample from first native material.  encountered water at 6.5 feet (BGS)
F 7								TOTAL DEPTH 16 FT.
- 20-								COMMENTS:  Location is within excavated area of tankpit.  Lats of water and gravel inside auger.  No eample collected because native material was nat encountered.

PAGE 1 OF 1

DRILLING CO.: Kvilhaug Drilling DRILL METHOD: Hollow Stem Auger SAMPLING METHOD: Modified California Split Spoon Sampler

PROJECT NO.: 151933 CLIENT: Pacific Bell LOCATION: 2610 Norbridge Avenue, Castro Valley, California.



hydrologue, Inc.
Consulting Engineers and Geologists

NOTC: DATA PRESENTED IN THIS LOG IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED AND APPLIES ONLY AT THE SPECIFIC LOCATION AND TIME INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS OR TIMES.

				/- U -				Droin at #1 2024 0	10
			astro \	Valle	<u>y</u>			Project #: 3034-0 Boring I.D.: MW-2	
		y: R	(bgs):					PID:	•
			e (bgs).	):				Elevation:	
		CME						Weather:	
				ŝ					S
h (ft.	3	Co		mdd)	logy	S	Lithologic Description		Remarks
Depth (ft.) Sample Interval		Blow Count	Time	PID (ppm)	Lithology	uscs	(Soll classification, Calor, Grain Size, Moisture, Consistency, Other)		æ
0							0-4" Asphalt		
						SP	Fill- sand, light brown, fine to medium, moist, dense, some sill	t and gravel	
-							Time Sand, light Brown, fine to mediani, most, dense, seme em	and graver	
					77777	CL	Natural ground- sand clay, dark brown-gray, moist, very stif to	hard, some	
5	407	4004	10.55	0			angular gravel		
	10/	16/21	10:55	U					
							@ 7' becomes very hard, gravelly clay		
	64	.	44.40	^					
10	53	(3")	11:10	0			Bedrock: Joaquin Miller Formation Shale; excavates as dry, b clay with sand; oxidized, weathered	rown, silty	
<u></u>							ciay with saild, sxidized, weathered		
									l
	61								₹
15			11:25	0			More brittle, weathered, wet seams at 14'-14.5'		l
						$\setminus$			
						\			
l "						<b>\</b>			
20						١ ١	<u>-</u>		l
							4 bags sand x 100# to 4'		
							Set 10' screen 5'-15'		
							1 bag bentonite, 1 bag portland cement, then well box in concrete		
25							Tatal Double Dailled - 15 foot has		
							Total Depth Drilled = 15 feet bgs. Total Depth Sampled = 15		
							Groundwater encountered @14'		
							No caving. Soil boring was converted into gwm MW-2.		
30									
35									
40									

hydrologue, Inc.
Consulting Engineers and Geologists

NOTE: DATA PRESENTED IN THIS LOD IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED AND APPLIES ONLY AT THE SPECIFIC LOCATION AND TIME INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS OR TIMES.

( )	onsu	iting Eng	ineers u	na G	eotogi	313	CONDITIONS AT OF	HERLOCATIONS ORTIMES.	
Pro	ojec	: SBC-C	astro '	Valle	У		Location: 2610 Norbridge Avenue, Castro Valley, CA	Project #: 3034-0	0
Lo	gge	d By: R	10				Start/Finish Date: 8-22-05	Boring I.D.: MW-3	3
		ter Table					Sampling Method (bgs): CA Modified Split Spoon	PID:	
La	st W	ater Tab	le (bgs)	):			Wt. of Hammer (lb): #140 Hole Diameter: 8"	Elevation:	
		pe: CME			anove		Drilling Contractor: WDC	Weather:	
				<u> </u>			19h ala sila Dagasia Hais		S)
h H	e Inte	Cot		ndd)	go	တ	Lithologic Description		Remarks
Depth (ft.)	Sample Interval	Blow Count	Time	PID (ppm)	Lithology	uscs	( Soil classification, Color, Grain Size, Molsture, Consistency, Other )		Rel
0		ш				<del>-</del>	0-6" Asphalt		
						SP	Fill- sand, brown, moist, dense, some clay and gravel		
					77777	31	Fill- Salid, Drown, moist, dense, some clay and graver		
_						CL	One du alore consultivo anciet firm to bond como graval		
			1				Sandy clay, grey-blue, moist, firm to hard, some gravel		
5			40.45	_			O" stay fine cond come at E'		
3 		12/21/31	12:45	0			2" grey fine sand seam at 5'		
							@ 8' Sandy clay, brown, slightly moist, very hard, brittle, mod	derately weathered	
		04/50	13:00	0			Bedrock - Joaquin Miller Formation Shale; highly weathered		
10		21/50	13.00				, ,		
			40.45	0					
15		21/36/43	13:15	U			Becomes grey with brown and yellow mottling, more weather	red	1
[				•					
20		61/100	13:30	0			Less weathered		
						NΙ			
						$ \mathbf{N} $			
						$  \setminus  $			
						\			
25 						'	No groundwater observed while drilling		
							Set 15' screen at 5'-20'		
"							5 bags sand x 100# to 4'		
[ ]							1 bag bentonite, 1 bag portland cement,		
30							then well box in concrete		
"							Total Depth Drilled = 20 feet bgs.		
"							Total Depth Sampled = 20		
							No groundwater encountered during drilling		
"							No caving. Soil boring was converted into gwm MW-3.		
35							Join Borning was convented into gwith MVV-3.		
"									
40				_					

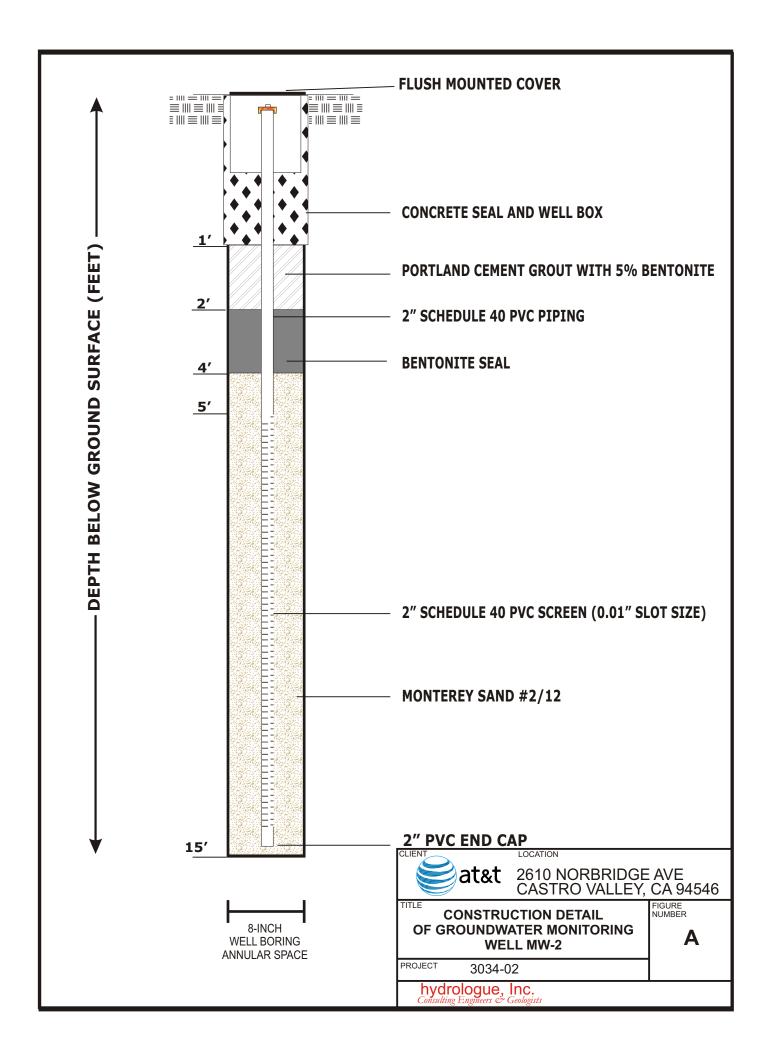


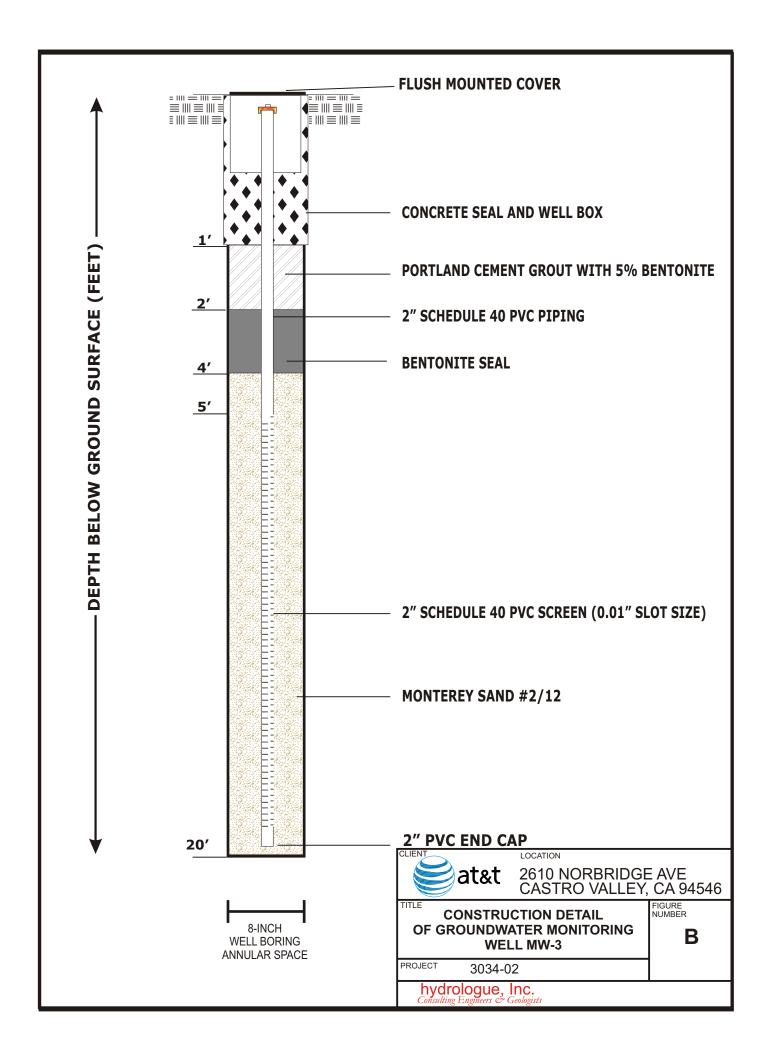
## WELL DEVELOPING LOG

10	O 2 2			on or: MW-L	
Project No.:				map if necessary):	<del></del>
Chain-of-Custody Contro					
Sample No.:	N/A		Checked by (C	flice/Date:	
EQUIPMENT					
Purging Method/Equipm	ent: FLEC	T. PJHP AUD	DISP. TUE	ING	
6" Diameter - 1.5 gal/ft		4" Diameter	0.67 gal/ft	2" Diamete	er = 0.17 gal
DEVELOPING	3 INFOR	MATION			
		-	rian Maluma (h)	-67	, ,2
Casing ID(a) (in.) Death to Well Battom (c)	15.45	Unit Cas	(a) Denth to Wei	- 10 5 20	(.6 <i>T</i>
Length of Static Water Ca	olumn in Casino	(e) = (c) - (d) =	15.45 -	5-2 10.	25 110 24
Casing Water Volume (7)	- (b) × (e)	.67	10.2	.67 er (d) 5. 20 5-2 10. 25 6.86 54.94	16.86
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			. 10	59.94	(
Volume Purged	<del> </del>	Conductance	Time	Water Description	(
Volume Purged (6AL-)	Temp.			<del>-</del>	
•	Temp.	Conductance		Water Description (Color, Turbidity, Odor, Oth) BROWN, SLTF, CDOR-255	рН
(6AL.)	Temp. ( F. )	Conductance (×/000)	Time	Water Description (Color, Turbidity, Odor, Oth BROWN, SLTY, CDOR-255	рН
(6AL·) ,25	Temp. (F.) 58.9	Conductance (×/000)	Time 10:58	Water Description (Color, Turbidity, Odor, Oth) BROWN, SLTP, CDOR-CS	р <b>н</b> В.13
(6AL·) , 25 10.0	Temp. (F.) 58.9 59.8	Conductance (×/000) /-57 /-73	7ime 10:58 11:05	Water Description (Color, Turbidity, Odor, Oth) BROWN, SITY, CDORNESS NO SHEEN TAN, "  SLIGHTLY TAN, "	8.13 8.48 8.66
(6AL·) ,25 10.0 20.0	Temp. (F.) 58.9 59.8 62.1 62.7 63.1	Conductance (×/000) /-57 /-73 /-89 /-97- /-96	10:58 11:05 11:09 11:14 11:19	Water Description (Color, Turbidity, Odor, Oth) BROWN, SLTY, CDORWESS NO SHEEN TAN, " SLIGHTLY TAN, " CLEAR, SLIGHTLY YELLOWSH	8.13 8.48 8.66
(6AL.) ,25 10.0 20.0 30,0	Temp. (F.) 58.9 59.8 62.1 62.7	Conductance (×/000) /-57 /-73 /-84 /-97	10:58 11:05 11:09	Water Description (Color, Turbidity, Odor, Oth) BROWN, SITY, CDORNESS NO SHEEN TAN, "  SLIGHTLY TAN, "	9H 8.13 8.48 8.66 8.60
(6AL.) , 25 10.0 20.0 30.0 40.0	Temp. (F.) 58.9 59.8 62.1 62.7 63.1	Conductance (×/000) /-57 /-73 /-89 /-97- /-96	10:58 11:05 11:09 11:14 11:19	Water Description (Color, Turbidity, Odor, Oth) BROWN, SLTY, CDORWESS NO SHEEN TAN, " SLIGHTLY TAN, " CLEAR, SLIGHTLY YELLOWSH	8.13 8.48 8.66 8.60 8.40
(6AL.) , 25 10.0 10.0 30.0 40.0	Temp. (F.) 58.9 59.8 62.1 62.7 63.1	Conductance (×/000) /-57 /-73 /-89 /-97- /-96	10:58 11:05 11:09 11:14 11:19	Water Description (Color, Turbidity, Odor, Oth) BROWN, SLTY, CDORWESS NO SHEEN TAN, " SLIGHTLY TAN, " CLEAR, SLIGHTLY YELLOWSH	8.13 8.48 8.66 8.60 8.40

## **NOTES:**

Total Volume Purged:





# CONFIDENTIAL

STATE OF CALIFORNIA DWR WELL COMPLETION REPORT (WELL LOGS)

**REMOVED** 



## WELL DEVELOPING LOG

191991 1101110, 1 1/C-11	IC BELL		Sample Location	or: <u>MW-L</u>	
roject No.: LS1	933		Well ID (attach m	nap if necessary):	
lequest-for-Analysis Co			Date and Time	2-9-9	14
hain-of-Custody Contro	ol No.:				
ample No.:	P/A		Checked by (Offi	ce)/Date:	
QUIPMENT					
		T 2 10 10 10 10 10 10 10 10 10 10 10 10 10	) cD T.D.	16-	
urging Method/Equipme	ent:	T. PUMP AND !	0.5F. 1061	NG-	
•	<del> </del>		~		
Diameter - 1.5 gal/ft		4" Diameter 🗸 0	.67 gal/fl	2" Diame	eter = 0.17 g
	NIFOR	BAATION			
<b>EVELOPIN</b>					
	21"			$rac{1}{2}$	
sing ID(a) (in )	24	Unit Casi	na Volume (b) _	•67	( .6
asing ID (a) (in.)	<u> </u>	Unit Casi	ng Volume (b) _ Depth to Water	(d) <u>5, 20</u>	( •6 ( 5.
asing ID (a) (in.) ppth to Well Bottom (c) a pnoth of Static Water Co	어 15.45 Slumn in Casing	Unit Casi (15 45) (e) = (c) - (d) =/	ng Volume (b) _ Depth to Water 15,45 _	(d) <u>5.20</u> 5-2 <u>10</u>	( •6 ( 5. _ <u>25</u> (/0.
asing ID(a)(in.)  ppth to Well Bottom (c)  pngth of Static Water Co  asing Water Volume (f)	15.45 Slumn in Casing - (b) × (e) = _	Unit Casi (15 45) (e) = (c) - (d) =/ • 6 7 ×	ng Volume (b) _ Depth to Water 15, 45 	(d) 5, 20 5-2 10 6.86	( •6 ( 5. (/0. (6·8
asing ID (a) (in.) ppth to Well Bottom (c) angth of Static Water Consing Water Volume (f) asing Volumes =	15.45 Slumn in Casing (b) × (e) = _	Unit Casi (15 45) (e) = (c) - (d) =x 8x	ng Volume (b) _ Depth to Water / 5. 45	5.20 5-2 6.86 54.94	( •6 ( 5 · ( 6 · 8 (
asing ID (a) (in.)  epth to Well Bottom (c) angth of Static Water Coasing Water Volume (f) asing Volumes =	<u> </u>	Unit Casi (15 45) (e) = (c) - (d) =	ng Volume (b) _ Depth to Water /5.45 /0.25 (f) =	(d) 5, 20 5-2 - 10 6.86 54.94 Water Description	
Volume Purged	Temp.				ρН
Volume Purged (6AL·)	Temp. ( F. )	Conductance (×/000)	Time	Water Description (Color, Turbidity, Odor, Ol BROWN, SLTF, CDOR-	pΗ
Volume Purged (6AL·) , 25	Temp. (F.)	Conductance (×/000)	70:58	Water Description (Color, Turbidity, Odor, Ol BROWN, SLTY, CDORNA NO SHEEN	ρH
Volume Purged (6AL·) , 25	Temp. (F.) 58.9 59.8	Conductance (×/000)	10:58 11:05	Water Description (Color, Turbidity, Odor, Of BROWN, SLTY, CDORNO NO SHEEN	pH 9 8.13 8.48 8.66
Volume Purged (GAL·) , 25 10.0	Temp. (F.) 58.9 59.8 62.1	Conductance (×/000) /.57 /.73	10:58 11:05 11:09	Water Description (Color, Turbidity, Odor, Oto BROWN, SLTF, CDOR- NO SHEEH TAN, " SLIGHTLY TAN, V	pH .55 8.13 8.48 8.66
Volume Purged (6AL·) , 25	Temp. (F.) 58.9 59.8	Conductance (×/000) /.57 /.73 /89	10:58 11:05 11:09 11:14 11:19	Water Description (Color, Turbidity, Odor, Oli BROWN, SLTY, CDORNO NO SHEEN TAN, " SLIGHTLY TAN, V CLEAR, SLIGHTLY YOURS	pH 9 8.48 8.66 8.60 8.40
Volume Purged (6AL.) , 25 10.0 10.0 30.0 Hc.c	Temp. (F.) 58.9 59.8 62.1 62.7	Conductance (X/000) /.57 /.73 /.89 /.97	10:58 11:05 11:09 11:14 11:19	Water Description (Color, Turbidity, Odor, Oto BROWN, SLTF, CDOR- NO SHEEH TAN, " SLIGHTLY TAN, V	PH 9 8.13 8.48 8.66 8.60 8.40
Volume Purged (6AL·) , 25  0.0 10.0 30.0	Temp. (F.) 58.9 59.8 62.1 62.7 63.1	Conductance (×/000) /.57 /.73 /.89 /.97 /.96	10:58 11:05 11:09 11:14 11:19	Water Description (Color, Turbidity, Odor, Oli BROWN, SLTY, CDORNO NO SHEEN TAN, " SLIGHTLY TAN, V CLEAR, SLIGHTLY YOURS	pH 9 8.48 8.66 8.60 8.40
Volume Purged (6AL.) , 25 10.0 10.0 30.0 Hc.c	Temp. (F.) 58.9 59.8 62.1 62.7 63.1	Conductance (×/000) /.57 /.73 /.89 /.97 /.96	10:58 11:05 11:09 11:14 11:19	Water Description (Color, Turbidity, Odor, Oli BROWN, SLTY, CDORNO NO SHEEN TAN, " SLIGHTLY TAN, V CLEAR, SLIGHTLY YOURS	pH 9 8.48 8.66 8.60 8.40

## **NOTES:**