Y RC 10-27-92

Watkins-Johnson Environmental, Inc.
LITHOLOGY LOG

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Site ID: 937 GW37

Project Name: PS TEPS Presidio	Project No.: 0330.230	Coordinates:	
Drilling Company: NEW DRILLING	Driller: Jasper Booker	Ground Elevation:	Total Drilled Depth: 16'
Drilling Equipment: CME-55	Drilling Method: HSA	Boring Diameter: 6"	Date/Time Drilling Started: 10/27/92; 0920
Date/Time Total Depth Reached: 10/27/92; 1100; 16'			
Type of Sampling Device: 5' continuous; 18" split spoon		Water Level (BGS): First / Final	
Sample Hammer: Type Automatic	Driving Wt. 140	Drop 30"	Hydrogeologist: Riley Conkin
Checked by/Date: ENY 10/30/92			
Location Description (include sketch in field logbook):			

Depth (ft)	Interval	% Recovery	Blow Counts	Description (include in order lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy (structure, density, consistency, etc. as applicable))	USCS Symbol	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types & depth, tag number, odor, organic vapor measurements, etc.)
0–1				FILL MATERIAL, fine to coarse grained silts, sands and gravel, subang. fragments of weathered ~~sepper~~ bedrock	FILL		DRY	30	30	40	0925 - cored asphalt; 0950 - Drill 0-3'
2		70	Continuous	SAND, fine grained, contains wood fragments, poorly graded, little moisture	SP		LM	-	98	2	
3–4		100	1, 1, 1	SAND, fine grained to med grained, very loose, light yllsh brown 2.5Y6/4, wet, poorly graded.	SP		WET	-	98	2	1000; collected sample for analysis 3'-4.5' 1005
5–6		100	Continuous	SAND, as above, wood fragments at top of interval							
7–8			3, 5, 8	SAND, as above, except color changed organic material present - roots, 5Y3/1 very dark grey, loose	SP		WET	-	98	2	1016, sample collected for analysis from 6.5'-8'
8–13				SAND, fine grained, very dark grey, contains roots and wood fragments, loose, wet	SP						1030; measured water level at 8' bgs, flowing sand inside augers from 12-13'.

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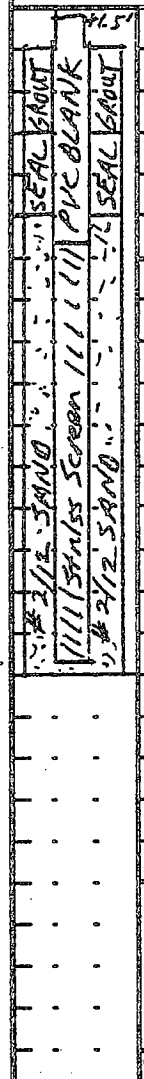
Watkins-Johnson Environmental, Inc.
WELL CONSTRUCTION SUMMARY

Well No.	937GW37
Combo/Key #	
Project Name	PSTEPS Presidio IRA
Project No.	0330-230
Coordinates	
Drilling Company	HEW DRILLING
Driller	Jasper Booker
Elevation: Ground Level / Top of Casing	
Drilling Equipment	HSA CME-55
Drilling Method	HSA
Total Drilled Depth	15'
Borehole Diameter	12"
Drilling Fluid	—
Drill Bit(s)	12" HSA
Hydrogeologist	Riley Conkin
Checked by/Date	Eay 10/30/92

Location Description (include sketch in field logbook)



ANNULAR CONSTRUCTION

Description	Type	Interval From (ft BGS)	Interval To (ft BGS)	Quantity
Filter Pack	#2/12 Lonestar Sand	14.7'	4.0'	4.5 bags
Filter Pack Blotter (if applicable)	—			
Seal	1/4" Bentonite Pellets - American Colloid Co.	4.0'	2.0'	2 buckets
Grout	RMC LONESTAR Portland Cement Type I-II High Grade Wyoming Bentonite Powder (5%)			

CONSTRUCTION TIME LOG

Activity	Start Date	Start Time	Finish Date	Finish Time
Drilling	10/27/92	0920	10/27/92	1100
Reaming	↓	1120	↓	1140
Geophysical Logging				
Casing/Screen Placement	10/27/92	1145	10/27/92	1148
Filter Pack		1148		1210
Seal		1210		1215
Grout	↓	1710	↓	1720
Preliminary Surge/ Development				
Other:				

WELL STRING DESIGN

Surface Casing [length, diameter (OD), thickness]: 3'x8" x 1/4" steel stove pipe

Casing [type, diameter (ID), thread type]: sch 40 PVC, 4", Flush Threaded

Screen [type, slot-size, diameter (ID), thread type]: Stainless Steel, 0.010", 4", Flush Threaded

Casing/Screen Sequence & Interval (starting at bottom):

BLANK CASING	From (ft BGS)	To (ft BGS)	SCREEN	From (ft BGS)	To (ft BGS)
C1	4.7	+1.5' above grade	S1	14.7	4.7
C2			S2		
C3			S3		
C4			S4		
C5			S5		
C6					
C7					
C8					
C9					
C10					
C11					

WATER ADDED DURING DRILLING/CONSTRUCTION

Total Amount (gals):

COMMENTS: Hydrated bentonite seal from 4' to 2' with 5 gallons of DI water.

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Watkins-Johnson Environmental, Inc.
WELL DEVELOPMENT DATA

SITE ID: 937 GW 37

PROJECT:

PROJECT NO.:

HYDROGEOLOGIST: Jay Hazel

DRILLER:

DATE(S) INSTALLED:

DATE(S) DEVELOPED: 11-2-92

Casing Diameter	4 in.
Borehole Diameter	12 in.
Total Well Depth	15.96 ft.
Static Water Level	7.96 ft.
Saturated Thickness	8.00 ft.
Casing volume	5.29 gal.
Annulus Volume (Assume 30% porosity)	12.72 gal.
Total Well Volume	18.01 gal.

DEVELOPMENT EQUIPMENT: 9 foot Stainless Steel bailer, Steel Cable, Truck winch

DEVELOPMENT METHODS/NOTES: Purged approx. 90 gallons. All parameters stabilized ± 10% except Turbidity, as expected. No ODORS or Sheen. Water cleared up nicely

TURBIDITY METER: HF Scientific, Serial No. 000308

pH/TEMP METER: Type: Orion SA 230, Serial Number: 4938

Calibration: pH 7.00 = 7.01 at 18.8 °C, Time 9:09; pH 10.00 = 10.00 at 18.6 °C, Time 9:10

CONDUCTIVITY METER: Type: Orion 122, Serial Number: 9811077

Conductance Standard: 1000 µS/cm at 25 °C

Measured Value: 1027 µS/cm at 21.2 °C, Time 9:12

Calibrated Conductivity = Measured Conductance + (0.02) (measured conductance) (25°C - Actual Temp): N/A /cm at 25°C, Time

Time	Number of Well Casings	Gallons Removed	°C	E.C. µS/cm	Turbidity NTU	Pump Rate GPM / pH	Approx. Pump Depth ft.	Visual Description
9:25	Initial	—	20.0	>2000	>200	6.99	N/A	Very Turbid, Dark Gray-Blk
9:28	1	18	19.1	>2,000	>200	6.75	N/A	Lt. Gray, Turbid
9:32	2	36	19.5	>2,000	>200	6.67	N/A	Clearing up Slightly Light Gray - Turbid
9:38	3	54	19.8	>2,000	129.5	6.65	N/A	Clearing - Pale Yellow/Tan
9:43	4	72	19.5	>2,000	111.3	6.61	N/A	Slightly Cloudy Pale Yellow/Tan
9:49	5	90	19.7	>2,000	74.0	6.63	N/A	Fairly Clear - Colorless to pale yellow/Tan
		Development Complete.						

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