34-0157NB-B2L

Caltrans EXPLORATION BORING FIELD LOG

Date 3/18/08 | Boring No.

Location Doyle Drive, Crissy field (hi viaduct) | Lab No. | EA No. 1637 01 | Page 1 of 4

Dist. 04 Co. SF Rt. 101 P.M. | Br. No. | Purpose of Bork: Br. Found.

Rt. Ft.. Lt. | Line. Sta. | Northings. | Eastings. | Elev.

Ground Water Data: Date / Time | Water Level | Bot. of Boring

Logged By: R Nashed | Drill Crew: Cori, Matt, Cerel

Drill rig: All terrain Rig | Hammer Type and Weight: Automatic

Drilling Method: Rotary wash / coring | Casing: N/A

Hole Completion: 3/20/08

Depth	Sample Interval / Tool	Blows / RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description			Remarks
1							Under the existing Doyle Dr Br			
2										Wet drilling
3										
4							Sand (SP), medium dense,			
5							dark brown, coarse grained			
	1	6					non-plastic, no cementation			
6		7								
		9								
7										
8										
9							Silty Sand (SP), medium dense			
10							dark brown, silt 30%,			
	2	6					medium grained, non-plastic,			
11		5					no cementation			
		6								
12										
13										
14							Silty sand (SP), loose, brown			
15							medium grained, non-plastic			
	3	4					no cementation			
16		4								
		4								
17										
18										
19							Sand (SP), Coloma Form.,			
20							v. dense, brown, medium			
	4	21					grained, non-plastic, no			
21		26					cementation			
		28								
22										
23										
24										
25							The Same as above			
	5	30								
26		39								
		43								
27										
28										
29										
30										

34-0157NB-BZL

EXPLORATION BORING FIELD LOG

Caltrans

Date 3/18/08 | Boring No.

Location Doyle Drive, Crissy field (h. viaduct) | Lab No. | EA No. 16370 | Page 2 of 4

Dist. 04 Co. SF Rt. 101 P.M. | Br. No. | Purpose of Work Br. Found.

Ft.. Rt. Lt. | Line. Sta. | Northings. | Eastings. | Elev.

Ground Water Data: Date/Time | Water Level | Bot. of Boring

Logged By: R Nashed | Drill Crew: Cori, Matt, Cerel

Drill rig: All terrain Rig | Hammer Type and Weight: Automatic

Drilling Method: Rotary Wash/Coring | Casing: N/A

Hole Completion: 3/20/08

Depth	Sample Interval Tool	Blows RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Remarks
		24					The same as above	
31	6	35						
		34						
32								
33								
34							The same as above	
35								
		17						
36	7	39						
		48						
37								
38								
39							The same as above	
40								
		28						
41	8	49						
		refusal						
42								
43								
44							Sand (SP), V. dense, brown with reddish stains, coarse grained, non plastic, no cementation	
45								
		25						
46	9	31						
		42						
47								
48								
49							The same as above, but less dense	
50								
		12						
51	10	13						
		20						
52							Serpentine, Franciscan, moderately bedded, green, V. soft, intensely weathered	Bed rock @ depth 55.0 ft
53								
54								
55								cont. on 3/19/08
		7					Sand stone, massive, coarse grained, brownish yellow, intensely weathered, soft, jointed	
56	11	18						
		Refusal						
57		48/48	48/48					20 min
58	11							

04-0157NB-B2L

EXPLORATION BORING FIELD LOG

Caltrans

Date 3/18/08 | Boring No.

Location Doyle Drive, Crissy field (h. Viaduct) | Lab No. | EA No. 163701 | Page 3 of 4

Dist. 04 Co. SF Rt. 101 P.M. | Br. No. | Purpose of Work Br. Found

Ft.. Rt. Lt. | Line. Sta. | Northings. | Eastings. | Elev.

Ground Water Data: Date/Time | Water Level | Bot. of Boring

Logged By: R Nashed | Drill Crew: Cori, Matt, Carel

Drill rig: All terrain Rig | Hammer Type and Weight: Automatic

Drilling Method: Rotary wash/Coring | Casing: N/A

Hole Completion: 3/20/08

Depth	Sample Interval Tool	Blows	RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Remarks
59								The Same as above	
60		23/60			47/60				
61								Sandstone, massive, coarse grained yellowish gray, intensely weathered, Soft, jointed	28 min
62	2								
63									
64									
65		5/60			60/60			Sandstone, massive, coarse grained yellowish gray to olive, moderately weathered, Soft to moderately hard, slightly fractured, and slightly jointed	25 min
66									
67	3								
68									
69									
70		21/60			56/60			Sandstone, massive, Coarse grained, gray, moderately weathered, moderately hard, intensely fractured, intensely jointed	20 min
71									
72	4								
73									
74									
75		0/60			54/60				
76									
77	5							Sandstone, massive, coarse grained, gray, intensely weathered hard, intensely fractured and jointed	20 min
78									
79									
80		10/60			55/60			~~The Same as above~~	~~34 min~~
81								The Same as above	
82	6							Shale, thinly bedded, fine grained black, intensely weathered, v. soft, intensely fractured	
83									
84									
85		9/60			40/60			Sandstone, massive, coarse grained, gray, intensely weathered hard	26 min
86									
87									
88	7							Shaley Sandston, thinly bedded, medium to fine grained, black, intensely weathered, medium hard, intensely fractured	cont. on 3/20/08
89									
90		0/60			50/60				35 min
91									
92	8							Sandstone, thickly bedded coarse grained, intensely weathered hard, intensely fractured and jointed	
93									
94									
								Shale, thinly bedded, fine grained, intensely weath, v. soft, inten fractured and jointed (Sheared)	

34-0157NB-B2L

Caltrans EXPLORATION BORING FIELD LOG

Date 3/18/08 | Boring No.

Location Doyle Drive, Crissy field (h. viaduct) | Loc No. | EA No. 163701 | Page 4 of 4

Dist. 04 Co. SF Rt. 101 P.M. | Br. No. | Purpose of Work Br. Found

Ft. Rt. Lt. | Line. Sta. | Northings. | Eastings. | Elev.

Ground Water Data: Date/Time | Water Level | Bot. of Boring

Logged By: R Nashed | Drill Crew: Cori, Matt, Ceret

Drill rig: All terrain Rig | Hammer Type and Weight: Automatic

Drilling Method: Rotary Wash/Coring | Casing: N/A

Hole Completion: 3/20/08

Depth	Sample Interval	Tool Blows	RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Remarks
95		28/60			57/60			Shale, massive, fine grained, black	
96								moderately weathered, hard,	26 min
97	9							moderately fractured and intens.	
98								fractured and intens jointed	
99									
100		14/60			52/60			The same as above	31 min
101									
102	10								
103									
104									
105		21/60			48/60			Shale, massive, fine grained,	42 min
106								black, moderately weathered,	
107	11							hard to v. soft, slightly fractured	
108								slightly jointed	
109									
110		34/60			53/60				21 min
111								Shale, massive, fine grained,	
112	12							black, intensely weathered,	
113								hard to moderately weathered,	
114								moderately fractured, slightly	
								jointed, calcic veinlets	

34-0157SB-B2R

Caltrans EXPLORATION BORING FIELD LOG

Date 3/11/08 | Boring No.

Location Doyle Drive - Crissyfield (high Viaduct) | Co No. | EA No. 163701 | Page 1 of 4

Dist. 04 Co. SF Rt. 101 P.M. | Br. No. | Purpose of Work Br. Found.

Ft. Rt. Lt. | Line. Sta. | Northings. | Eastings. | Elev.

Ground Water Data: Date/Time | Water Level | Bot. of Boring

Logged By: R Nashed | Drill Crew: Brad, Jarod, Randy

Drill rig: CME-750 | Hammer Type and Weight: Automatic

Drilling Method: Rotary wash/Coring | Casing: N/A

Hole Completion: 3/12/08

Depth	Sample Interval	Blows	RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Remarks
1								on Asphalt immediately next	
2								to the curb dike	wet drilling
3									
4								Sand (SP), medium dense,	
5								yellowish brown, slightly	
	1	6						moist, medium grained, non-	
6		8						plastic, no cementation	
		9							
7								Sand (SP), medium dense,	
8								brown, medium grained,	
9								non-plastic, no cementation	
10									
	2	6							
11		9							
		9							
12									
13								Silty Sand (SP-SM),	
14								medium dense, brown, 30%	
15								sand and 70% Sand, medium	
	3	4						grained, non plastic, w/	
16		4						weak cementation	
		8							
17									
18								Sand with gravel (SP),	
19								Coloma Formation, v. dense,	
20								brown w/ reddish and black	
	4	20						gravel, gravel < 15% Course	
21		32						grained Sand, non-plastic,	
		31						sub-angular gravel to size 1/4"	
22									
23									
24								Sand (SP), Coloma Formation,	
25								v. dense, brown, coarse	
	5	19						grained, non plastic,	
26		32						no cementation	
		38							
27									
28									
29									

34-0157-SB-B2R

Gibbs — EXPLORATION BORING FIELD LOG

Date 3/11/08 | Boring No.

Location Doyle Drive, Crissyfield (h. viaduct) | Loc No. | EA No. 163701 | Page 2 of 4

Dist. 04 Co. SF Rt. 101 P.M. | Br. No. | Purpose of Bork Br. Found.

Ft. Rt. Lt. | Line. Sta. | Northings. | Eastings. | Elev.

Ground Water Data: Date/Time | Water Level | Bot. of Boring

Logged By: RNashed | Drill Crew: Brad, Jarod, Randy

Drill rig: CME-750 | Hammer Type and Weight: Automatic

Drilling Method: Rotary Wash/ Coring | Casing: N/A

Hole Completion: 3/12/08

Depth	Sample Interval Total	Blows RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Remarks
		26					The same as above	
31	6	43						
		46						
32								
33								
34							The same as above	
35								
		32						
36	7	Refusal						
37								
38								
39							The same as above	
40								
		26						
41	8	27						
		36						
42								
43								
44							Sand (SP), Colma Formation, V. dense, yellowish brown w/ reddish stains, coarse grained (decomposed sand stone)	
45								
		10						
46	9	20						
		32						
47								
48								
49							Serpentenized Shale, Franciscan, thinly bedded, fine grained, greenish gray, intensely weathered, soft	
50								
		5				SS		23 min
51	10	18					Shale/sandstone contact, Franciscan, thinly bedded, coarse grained, yellowish green to olive, intensely weathered soft, intensely jointed	
		20						
52		24/6	40/6					
53	11							
54								
55								
56							Sand stone, massive, coarse grained, yellowish brown to dark gray, intensely weathered, moderately soft to moderately hard, intensely fractured and jointed	20 min
57								
58	12							
59								

34-0157SB-B2R

Caltrans EXPLORATION BORING FIELD LOG

Date 3/11/08 | Boring No.

Location Doyle Drive, Crissyfield (h. Viaduct) | Log No. | EA No. 16370 | Page 3 of 4

Dist. | Co. | Rt. | P.M. | Br. No. | Purpose of Work

Ft., Rt. Lt. | Line. Sta. | Northings. | Eastings. | Elev.

Ground Water Data: Date/Time | Water Level | Bot. of Boring

Logged By: R Nashed | Drill Crew: Brad, Jarod, Randy

Drill rig: CME-750 | Hammer Type and Weight: Automatic

Drilling Method: Rotary Wash/Coring | Casing: N/A

Hole Completion: 3/12/08

Depth	Sample Interval	Total Blows RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Remarks
61		10/60		60/60			Sandstone, massive, coarse grained, gray, moderately weathered, hard, intensely fractured, intensely jointed	
62								18 min
63	3							
64								
65								
66		2/60		60/60			The same as above	
67								21 min
68								To cont. on 3/12/08
69	4							
70							Sandstone, massive, coarse grained, yellowish gray, moderately weathered, hard, moderately fractured, and slightly jointed	
71		4/60		60/60				21 min
72								
73	5							
74								
75								
76		10/60		55/60			Sandstone, massive, coarse grained, dark gray, moderately weathered, hard, intensely fractured intensely jointed	16 min
77								
78	6							
79								
80							Shear zone	
81		15/60		57/60			Sandstone, massive, coarse grained, gray, intensely weathered, hard, intensely fractured, and intensely jointed	23 min
82								
83	7							
84								
85								
86		2/60		58/60			The same as above	17 min
87							Shear zone	
88	8						Sandstone, massive, coarse grained, gray, moderately weathered, hard, moderately fractured and moderately jointed, Claric veinlets	
89								
90								
91		33/60		60/60				?
92								
93	9						~~The same as above~~	
94								
95								
96		13/60		59/60			The same as above	14 min
97								
98	10							
99								
100								

34-0157SB-B2R

Caltrans EXPLORATION BORING FIELD LOG

Date 3/12/08 Boring No.

Location Doyle Drive, Crissy field (H-Viaduct) Loc No. EA No. 163701 Page 4 of 4

Dist. 04 Co. SF Rt. 101 P.M. Br. No. Purpose of Work Br. Found

Ft., Rt. Lt. Line, Sta. Northings. Eastings. Elev.

Ground Water Data	Date/Time	Water Level	Hor. of Boring

Logged By: R Nashed Drill Crew: Brad, Jarod, Randy

Drill rig: CME-750 Hammer Type and Weight: Automatic

Drilling Method: Rotary Wash/Coring Casing: N/A

Hole Completion: 3/12/08

Depth	Sample Interval	Tool	Blows	RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Remarks
101			15/60			57/60			Sandstone, massive, coarse grained, gray, intensely to moderately weathered, hard, intensely fractured, and intensely jointed	
102										17 min
103	11									
104										
105										
106			0/60			30/60			Sandstone, massive, coarse to medium grained, gray, hard sheared (sandstone fragments)	19 min
107										
108	12									
109									Shale, thinly bedded, fine grained black, intensely weathered, v. soft sheared, intensely fractured	
110										
111			69/60			54/60				
112										36 min
113	13								Sandy Shale, thinly bedded medium to fine grained, black, intensely weathered moderately to v. soft, sheared, intensely fractured	
114										
115										
116			0/60			50/60			Shale, thinly bedded, fine grained black, intensely weathered, soft to moderately hard, intensely fractured and intensely jointed	
117										
118	14									28 min
119										
120										
121			0/60			49/60				
122									Sandstone, massive, coarse grained, intensely weathered, hard, intensely fractured (sandstone fragments)	
123	15									39 min
124										
125								66		
									Sandy Shale (melange) Franciscan, fragmental, coarse to fine grained, black, intensely weathered soft, intensely sheared (fragmental)	
									Graywacke, Franciscan, massive, coarse grained, black, intensely weathered, soft, friable	