34-0168.R2

Caltrans

EXPLORATION BORING FIELD LOG

Date 9/22 | Boring No.

Location South of Arc Lab. Gorgas & Marshall | Lab No. | EA No. 163701 | Page 1 of 4

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

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

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

Logged By: M. Gaffney | Drill Crew:

Drill rig: Acker | Hammer Type and Weight: Automatic

Drilling Method: Rotary Wash | Casing:

Hole Completion:

Depth	Sample Interval Tool	Blows RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Qu		Remarks
1	Drillout						Asphalt Gravel			
2										
3										
4										
5										
6	2 3 3		1	10%			Fill. Silty Sand (SM) W/ Asphalt			Sample 1
7	Punch Core						20% Silt 40% Fine Sand 40% Asphalt			
8							Gravel			
9							Sand w/ Silt (SW SM) Olive.			
10							10% Silt 5% Clay 85% Fine Sand			
1	Push		2	100			No Plasicity, No cement			Sample 2
2							Clay (OH) vs Olive. 60% Clay 40%	0.25		
3							Organic matter.			
4							↓ Sand increasing			
5										
6	4 9 12		3	100			Sand (SP) - medium dense yellow orange 10% Silt			Sample 3
7							90% med. Sand No plastic No			
8							cement ↓ silt decreases to 0%			
9							at 5.5' 100% Sand			
20										
1	4 16 19		4	100			Sand (SP) Dense Red Brown			
2							100% med. Sand No Cementation			
3							(Colma Sand)			
4										
25										
6	8 15 19		5	100			Yellow orange			Sample 5
7										
8										
9										
30										
1	14 18 24		6	100						Sample 6 9/21
2							@ 31.5 redmottle			9/22
3										
4										
35										
6	11 20 28		7				Same			Sample 7
7										
8										
9										
0										

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Caltrans

EXPLORATION BORING FIELD LOG

Date | Boring No.

Location | Job No. | EA No. | Page 2 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: | Drill Crew:

Drill rig: | Hammer Type and Weight:

Drilling Method: | Casing:

Hole Completion:

Depth	Sample Interval	Tool Blows	RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Qu		Remarks
41	X	18 23 35		8	100			Same ↓ Grades to Light Brown			Sample 8
2								Very Dense			
3											
4								Red mottling			
45											
6	X	12 30 36		9	100			Same Light Brown			Sample 9
7											
8								@47' Trace Sandstone Gravel Angular			
9								Highly Weathered			
50											
1	X	22 26 19		10	100			Dense Light Gray Yellow orange			Sample 10
2								mottle			
3								↓ increasing Silt			
4											
5											Out of Column form.
6	X	6 13 14		11	100			Sand w/ Silt Dense Light Gray			
7								10% Silt 90% med. sand No Plasticity			Sample 11
8								No cementation			
9											
60											
1	X	8 13 21		12	100			58.5' Gray			
2								Sand Dense Gray 100% sand			Sample 12
3								Trace silt No Plasticity No			
4								cementation			
65											
6	X	Pitch		13	100			Clay (CL) Stiff. Gray Black mottle	1.04.25		Sample 13
7								100% Clay High Plasticity			Confining Layer
8								↓ sand increasing			H_2O Approximately
9											5-7 gal/hr
70											
1	X	10 20 23		14	100			Sand Dense. Gray 100% fine			Sample 14
2								Sand No Plasticity No Cement			
3								@ 71.5 5% fine Gravel 95% med			
4								sand			
75											
6	X	10 19 20		15	100			Same			Sample 15 9/23
8											Overnight mud Tub 9/24
9											fill up & Overtopped
80											& flow onto drive
											Not into drain

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BH#34-0168-R2

Caltrans

EXPLORATION BORING FIELD LOG

Date | Boring No.

Location | Lab No. | EA No. 163701 | 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 :

Drill Crew :

Drill rig :

Hammer Type and Weight :

Drilling Method :

Casing :

Hole Completion :

Drill Cut

Depth	Sample Interval Tool	Blows RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Qu		Remarks
81	X	5 9 9	16	100			Sandy Silt (ML) Stiff Olive	1-1.5		Sample 16
2							Gray 5% Clay 72% Silt 25%			
3							Fine - Med Sand No Plasticity			
4							Shells			
85										
6	X	11 20 26	17	100			Sand (SP) Olive Gray 100% med			Sample 17
7							Sand ↓ Gravelly Sand (SW) ¼" Angular Argillite			
8	Brass Tubes						↓ Sand Silt as above No			
9				No Recovery			Shells			
90										
1	X	8 11 10	18	100			@ 91' wood Very Stiff	3.5		Sample 18
2							@ 91.5' Low Plasticity			
3										
4							↓ Clay			
95										
6	X	9 14 18	19	100			Sandy Silt As above Hard			Sample 19
7								4-4.5		
8										
9										Artesian Conditions
100										expected but due to
1	X	7 11 12	20	100			Same ↓ into Light Brown			bentonite in Drilling
2							↓ Clay @ 101.5 Clay (CL) Hard Light	4-4.5		Mud water not flowing
3							Brown 100% Clay Med Plasticity			Sample 20
4										
105							Sand (SP) Red brown 100% sand			
6	X	5 9 17	21	100			No cement			Sample 21
7							Sandy Clay (CL) Light Gray			
8							50% Clay 20% Silt 30% med Sand			
9							No cement			
110							↓ Silty Sand (SW-ML) Light Gray			
1	X	5 6 9	22				15% Silt 85% Sand No Plasticity	2-2.5		Sample 22
2							No cement			
3							↓ Clay increase to Sandy Clay (CL)			
4							Very stiff 80% clay 20% Fine Sand			
15							Low Plasticity no cement			
	X	13 31 38					Silty Sand (SP-SM) Very Dense Yellow			
							Orange 20% Silt 80% med Sand			
18							No Cementation			
9										
10										

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BH 34-0108-R2

Caltrans EXPLORATION BORING FIELD LOG

Date | Boring No.

Location | Lab No. | EA No. | Page 4 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: | Drill Crew:

Drill rig: | Hammer Type and Weight:

Drilling Method: | Casing:

Hole Completion:

Depth	Sample Interval / Tool / Blows	RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Qu	Remarks
121									
2							Sand (SP) Light Brown & black		
3							Laminated · 100% fine sand		
4							Weak cementation		
125									at 125' Hole Producing
6									water, through
7									Bentonite mud
8									
9									
130							Sand (SP) Dense yellow orange		
1	8 / 15 / 36		23	100%			100% med sand no Plast		Sample 23
132							No cement		
							Bottom of boring 130'		
							SPT to 131.5'		
							23 · Zip lock bag Samples		
							No Brass Tubes		
							No Core boxes		
							Hole Completion		
							Grout 131.5-5'		
							Bentonite 5'-3.5'		
							Concrete 0.5'-0'		

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BH# 34-0164NB-RS

Caltrans EXPLORATION BORING FIELD LOG

Date 9/15/08 | Boring No.

Location Doyle Dr. | Lab No. | EA No. 16370 | Page 1 of 4

Dist. 04 Co. SF Rt. 101 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: M. Gaffney | Drill Crew: Bob John

Drill rig: Acker | Hammer Type and Weight: Automatic

Drilling Method: Rotary | Casing: NA

Hole Completion: 128' Grouted 128'-5' Bentonite 5'-0.5' Cement 0.5'-0

Depth	Sample Interval / Tool	Blows / RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Qu	Remarks
1							Asphalt		Use bentonite powder for mud (Not Polymer)
2							Fill: Silty sand (SM). Very loose Gray 30% silt 70% fine sand.		
3									
4	Punch								
5									
6	X		1	30					Sample 1
7									
8									
9									
10									
1	X		2	100			Sand. (SP) Gray. 5% Clay 95% med. sand No Plasticity		Sample 2
2									
3									
4									
5									
6	X	2 4 2	3	100			Very Loose 100% Sand		Sample 3
7									
8									
9									
20									
1	X Push		4	100			Silty sand (SM) Very loose. Gray 30% silt 70% sand! No Plasticity No Cement shells		Sample 4
2									
3									
4									
25							Sand (SP) 100% sand Gray		
6	X	3 9 16	5	100			Sand (SP) Medium dense Yellow Orange 95% med sand 5% silt No cementation (Colma)		Sample 5
7									
8									
9									
30									
1	X	15 20 23	6	100			Same as above		Sample 6 9/15 9/16
2									
3									
4									
35									
	X	6 18 22	7	100			Same Dense		Sample 7

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BH # 34-0104 NB-RS

Caltrans

EXPLORATION BORING FIELD LOG

Date 9/16/08 | Boring No.

Location | Lab No. | EA No. 163701 | Page 2 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 :

Drill Crew :

Drill rig :

Hammer Type and Weight :

Drilling Method :

Casing :

Hole Completion :

Depth	Sample Interval (Tool)	Blows / RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	QA		Remarks
41	X	14 25 24	8	100			Same			Sample 8
2							at 41' Redmottle 40% 60%			
3							Yellow Orange			
4										
45										
6	X	15 26 37	9	90			Very Dense No mottling			Sample 9
7										
8										
9										
50										
1	X	11 20 23	10	100			Sand (SP) Dense Yellow Orange			Sample 10
2							Slight Red mottling 5% silt 95%			
3							med Sand No Cement			
4										
55										
6	X	19 36 40	11	100			Same sand fines downward very dense			Sample 11
7										
8										
9										
60										
1	X	10 23 18	12	100			Dense Same Fine Sand Gray			Sample 12
2										
3										
4							color change Olive/Gray			
65										
6	X	14 43 50/5	13	100			Very Dense			Sample 13
7										
8										
9										End berring Pile
70										
1	X	5 10 12	14	100			Olive Gray Silty Sand (SM) medium dense			Sample 14
2							30% silt 70% fine Sand No Plasticity			
3							No cement			
4										
75										
6	X	6 9 11	15	100			Clay (Cl) Hard Olive 100% Clay	<4.5		Sample 15
8							Med + High Plastic No Cementation @			76.5-77 } Samples
9							76.5 Sea Shells			77.77.5 } Brass Tube
80		78.5-79	100				@ 77 Clayey Sand (SC) Olive 40% Clay			78.5-79 } 90 9/16/08
							60% Sand			9/17/08

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BH# 34-0164NB - RS

Caltrans

EXPLORATION BORING FIELD LOG

Date | Boring No.

Location | Lab No. | EA No. 163701 | 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

Drill method

Logged By :

Drill Crew :

Drill rig :

Hammer Type and Weight :

Drilling Method :

Casing :

Hole Completion :

Depth	Sample Interval Tool	Blows RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	QA		Remarks
81										
2										
3										
4										
85										
6	X	1 2 5	16	100			Sandy Clay (Cl) medium Stiff-Stiff	1.0		Sample 16
7							70% Clay 30% fine sand High Plasticity			
8							No Cement-shells @ 85' & 86.5'			
9										
90										
1	X	2 5 6	17	100			Same soft → Very Stiff shells	2.25		Sample 17
2							Throughout samples	0.25		
3										
4										
5										
6	X	8 14 36	18	100			Sand w/ silt (SP) Very dense Yellow			Sample 18
7							Orange Grades to Redish brown 10% silt			
8							90% med Sand Trace Angular			
9							Gravel @ 95' No Gravel @ 96.5'			
100							Slight Cementation			
1	X	11 10 15	19	100			Same medium dense Redish			Sample 19
2							brown w/ black mottle			*Artesian zone
3										not evident due
4										to the use of
105							Clayey Sand (SW) Yellow Orang Red &			Quick Gel bentonite
6							black mottle. 30% Clay 65%			Powder*
7							med to Coarse sand 5% 1½" Angular			
8							Argillite Gravel No Plasticity			
9							No Cement			
110										
1	X	10 22 17	20	100			Sand (SP) Dense Redish brown			
2							100 fine → medium Sand No			
3							cementation			
4										
115										
6										
7										
8										
9										
20										

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BM# 34-0164NB-RS

EXPLORATION BORING FIELD LOG

Caltrans

Date | Boring No.

Location | Lab No. | EA No. 163701 | Page 4 of 4

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

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

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

Logged By: | Drill Crew:

Drill rig: | Hammer Type and Weight:

Drilling Method: | Casing:

Hole Completion:

Depth	Sample Interval	Tool Blows	RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Qu	Remarks
121	X	6 17 27		21	100			Sand (SP) Dense Yellow Gray		Sample 21
2								100% med. sand No Cement		
3										
4										
125								Decomposed SSt @ 124.75 Gray moderate cementation.		
6	X	50/5			10%			Sandstone · Fine sand · Yellow orange		Drill rig Pressure
7								Slightly weathered Hard		1500 PSI ·
8		NO RECOVERY						Moderately Fractured		hard Drilling
9								128' bottom of boring		in bedrock
130										
1								⊙ 21 bag samples		
2								⊙ 3 brass Tube samples		
3								⊙ No core boxes.		
4								Bedrock @ 125'		
5								Hole grouted 128'-5'		
6								Bentonite 5'-0.5'		
7								Cement 0.5'-0'		
8										
9								2½ bags of Grout Per Drum		used mud from Borehole
140								which has bentonite		
1								number of Drums 2 & Topped off		the hole
2										
3										
4										
145										
6										
7										
8										
9										
150										

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BH#54-0164NR-R6

Caltrans

EXPLORATION BORING FIELD LOG

Date 9/29 | Boring No.

Location Gorgas & Marshal SF Presidio | Lab No. | EA No. 163701 | Page 1 of 4

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

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

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

Logged By: M. Gaffney | Drill Crew: Bob Jack

Drill rig: Acker | Hammer Type and Weight: Automatic

Drilling Method: Rotary Wash | Casing: NA

Hole Completion: 130.4 Total Depth

Grout 130.4'-5' Bentonite Chips 5'-0.5' Concrete 0.5'-0

Depth	Sample Interval / Tool	Blows / RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Remarks
1	Punch Core						Asphalt	
2								Bentonite Quick
3								Gel used for
4								mud
5								
6	Push 12" 2 blows	NA	0				Silty Gravelly Sand (SW-SM) Very loose Gray	No Sample
7							30% silt 40% fine sand 30% Fine Angular	
8							Gravel (chert & Asphalt)	
9								
10								
1	Push	1	100				Silty Sand SM Gray 40% silt	
2							60% Fine sand No Plast. No	sample 1
3							cement	
4							↓ Grades to Sand (SP) Very loose	
5							100% Med. sand No cement	
6	5 10 11	2	80				Sand (SP) med. dense Gray 100%	sample 2
7							Coarse sand No cement	
8								
9								
20								
1	Push 4	3	100				Same very loose	Sample 3 9/29
2								9/30
3								
4								
25								
6	5 12 19	4	100				Sand (SP) Dense Gray 100% med	Sample 4
7							sand No Plasticity No cement	Colma
8							@ 25.5' Light Brown - Fine-med.	
9							sand (Colma)	
30								
1	14 21 26	5	100				Same Trace Angular Fine Argillite	Sample 5
2							Gravel	
3								
4								
35								
	12 21 26	6	100				Same light Brown/yellow Orange	Sample 6
8							Redmottling	
9								
10								

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227-9720.23

34#0164NB.R6

Caltrans EXPLORATION BORING FIELD LOG

Date | Boring No.

Location | Lab No. | EA No. | Page 2 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: | Drill Crew:

Drill rig: | Hammer Type and Weight:

Drilling Method: | Casing:

Hole Completion:

Drill Method

Depth	Sample Interval	Tool Blows	RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	Qu		Remarks
41	X	14 27 28		7	100			Same Very Dense			Sample 7
2											
3											
4											
45											
6	X	15 29 30		8	100			Same			Sample 8
7											
8											
9											
50											
1	X	12 19 20		9	100			Same Dense			Sample 9
2											
3											
4											
55											
6	X	17 30 13		10	100			Same Very Dense @ 55.5 Gray			Sample 10
7											
8											
9											
60											
1	X	13 19 28		11	100			Same			Sample 11 9/30 10/01
2											
3											
4								↓ Sand Fine grain			
65											
6	X	16 42 50/4.5		12	100						
7								@ 66' Sand w/Silt (SW-SM) Very Dense Gray 10% silt 90% med → Fine Sand No Cementation Some Roots			Sample 12
8											
9											
70											
1	X	16 12 12		13	100			Same			Sample 13 Out of Colma
2											
3								↓ increasing silt			
4											
75											
	X	6 8 11		14	100			Clay (CL) Very stiff Gray 100% Clay Low plasticity No Cement	3.25 3.75		Sample 14
8											
9											
80											Due To Time Constraints SPT Sample every Ten feet here forward

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BH# 34-0164NB R6

Caltrans

EXPLORATION BORING FIELD LOG

Date 10-01 | Boring No.

Location | Lab No. | EA No. | 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 | Drill Method

Logged By : | Drill Crew :

Drill rig : | Hammer Type and Weight :

Drilling Method : | Casing :

Hole Completion :

Depth	Sample Interval Tool	Blows RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description	RQD		Remarks
81										@ 80' Artesean
2										Conditions encountered
3										Add more Bentonite
4										Gel to mud
85										
6	X	5	15	100			Sandy Clay (CL) Stiff Gray 60%	1-1.5		Sample 15
7							Clay 10% Silt 30% fine Sand			
8							Low Plasticity No Cement			
9							Shells Present throughout			
90	✓						↓ Shells get thinner downwards			
1										
2										
3										
4										
95										
6	X	9	16	100			Silty Sand (SW-SM) med. dense			Sample 16
7							Gray 30% Silt 70% Fine Sand			
8							No Cement No Plasticity Shells			
9							@ 96.25' Sand (SP) Light Brown-Yellow			
100	✓						Orange 100% med-Coarse Sand			
1							No Cementation			
2										
3										
4										
105										
6	X	9 19 50/3	17	100			Same As Above. Very dense			Sample 17
7										Due To Time
8										Constraint Drill
9										To bedrock
110	✓									
1										
2										
3										
4										
115	✓						Color Change Gray			
8										
9										
20	✓									

Drill Ahead bit

Drill Ahead to bedrock

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BH 34.0164NB.R6

EXPLORATION BORING FIELD LOG

Caltrans

Date 1001 | Boring No.

Location | Lab No. | EA No. | Page 4 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	Drill Method

Logged By :

Drill Crew :

Drill rig :

Hammer Type and Weight :

Drilling Method :

Casing :

Hole Completion :

Depth	Sample Interval	Tool Blows	RQD	Sample I.D.	% Rec.	Strength	Graphic Log	Description			Remarks
121											
2											
3											
4	Drill Ahead B.I.										
125		✓						As about			
6											
7											
8											
9											
130		✓		NA				Harder Drilling			
								Bottom of Boring			130.4 Bottom of boring
								Bedrock 129'			

Total Depth 130.4'
Grout 130.4 - 5'
Bentonite Chips 5' - 0.5'
Concrete 0.5' - 0

Samples 17 ziplock bags
No Brass Tubes
No Core Boxes

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