Site 19

SITE 19 SOIL BORING AND CONE PENETROMETER LOGS

Remedial Investigation Report for OU-2A, Alameda Point, Alameda, California
(Page 1 of 1)

Boring ID	Date Drilled	Investigation
MWD13-1	7/11/1990	Phase 1 & 2A
MWD13-2	7/6/1990	Phase 1 & 2A
MWD13-3	7/6/1990	Phase 1 & 2A
MWD13-4	7/9/1990	Phase 1 & 2A
BD13-5	7/3/1990	Phase 1 & 2A
BD13-6	7/3/1990	Phase 1 & 2A
BD13-7	7/3/1990	Phase 1 & 2A
BD13-8	7/5/1990	Phase 1 & 2A
BD13-9	7/5/1990	Phase 1 & 2A
BD13-10	7/5/1990	Phase 1 & 2A
BD13-11	7/10/1990	Phase 1 & 2A
BD13-12	7/9/1990	Phase 1 & 2A
BD13-13	7/11/1990	Phase 1 & 2A
BD13-14	7/9/1990	Phase 1 & 2A
BD13-15	7/10/1990	Phase 1 & 2A
BD13-16	7/10/1990	Phase 1 & 2A
B19-17	8/22/1994	Follow On Investigation 1994
B19-18	8/22/1994	Follow On Investigation 1994
B19-19	8/22/1994	Follow On Investigation 1994
M19-05	11/19/1994	Follow On Investigation 1994
D19-01	11/2/1994	Follow On Investigation 1994
CPT-S19-01	7/7/1994	Follow On Investigation 1994
CPT-S19-02	7/7/1992	Follow On Investigation 1994
CPT-S19-03	7/7/1994	Follow On Investigation 1994
CPT-S19-04A	8/5/1994	Follow On Investigation 1994
CPT-S19-05	8/5/1994	Follow On Investigation 1994
372-MW2	1/20/1995	Undergound Storage Tank Investigation
C3S019B001	7/31/2003	PAH Study
C3S019B002	8/1/2003	PAH Study
C3S019B003	8/1/2003	PAH Study
C3S019B004	Unknown	PAH Study
C3S019B005	8/1/2003	PAH Study
C3S019B006	8/1/2003	PAH Study
C3S019B007	8/1/2003	PAH Study
C3S019B008	7/31/2003	PAH Study
C3S019B009	8/1/2003	PAH Study
C3S019B010	7/31/2003	PAH Study
C3S019B011	Unknown	PAH Study
C3S019B012	8/1/2003	PAH Study
C3S019B013	8/1/2003	PAH Study
C3S019B014	Unknown	PAH Study
C3S019B015	Unknown	PAH Study

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. MWD13-1
LOGGED BY BB

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: N side of yard D13, inside fence by N gate SURFACE ELEV. 114.57 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/11/90 FINISH 7/11/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	20	6	16	14	SM			0.3	Asphalt. (Fill)	
	2	CS	1.5	3.0	10	20	13	14	SM				Medium dense to dense, light brown, silty fine sand, dry. (Fill)	
	3	CS	3.0	4.5	1	2	3	14	SM			3.5	Very loose, dark brown, mottled, gray silty fine sand, moist, with some pockets of gray clay.	
5														
	4	CS	4.5	6.0	2	1	1	0	SM					X
	5	CS	6.0	7.5	1	1	2	12	SM				color changes to balck at 4.5 feet.	X
											Fill			X
	6	CS	7.5	9.0	2	1	3	15	SM-SC			8.0	Very loose, mottled gray, orange brown, silty clayey fine sand, saturated, with some silt. (Merritt Sand)	X
10	7	CS	9.0	10.5	5	10	15	18	SC		MS			X
	8	CS	10.5	12.0	6	13	16	16	SC				become medium dense at 9.0 feet.	X
	9	CS	12.0	13.5	11	10	6	16	SC				thin layer of sandy, clay at 9.0 feet.	X
15	10	CS	13.5	15.0	6	6	10	8	SC					X
												15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 6.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

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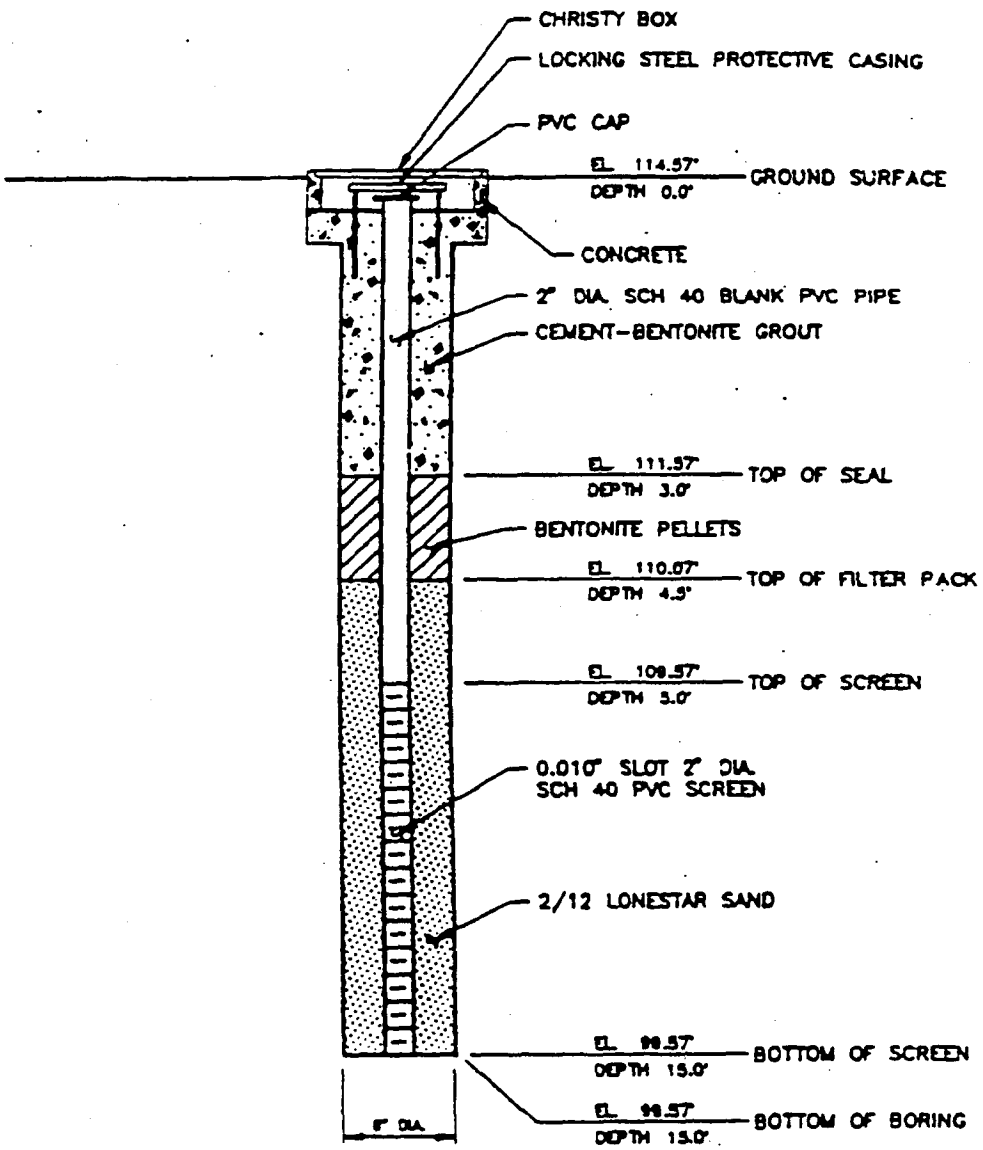
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MWD13-1

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION YARD D13 BY NORTH GATE DATE 7-11-90 BY BB



NOTES:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. MWD13-2
LOGGED BY TGB

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: North end of yard D13, west of Bldg 616 SURFACE ELEV 113.90 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/6/90 FINISH 7/6/90

DEPTH	SAMPLE No	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PID (ppm)
													Asphalt. (Fill)	
	1	CS	0.5	2.0	14	18	16	18	GM			0.3	Dense, brown, silty gravel, moist. (Fill)	
	2	CS	2.0	3.5	15	22	20	15	GM					
5	3	CS	3.5	5.0	9	19	17	18	SM			3.5	Medium dense, brown, silty fine sand, moist.	
	4	CS	5.0	6.5	5	10	11	18	SM				becomes saturated at 5.5 feet.	x
	5	CS	6.5	8.0	8	10	6	15	SM				color changes to gray from 6.5-7.5 feet.	x
	6	CS	8.0	9.5	4	2	1	18	SM				thin layer of organic matter at 9.0 feet.	x
10														x
	7	CS	9.5	11.0	1	1	6	18	SM					x
	8	CS	11.0	12.5	8	11	10	18	SC			11.0	Medium dense, orange brown mottled with gray, clayey fine sand, saturated, with some silt.	x
	9	CS	12.5	14.0	4	13	15	18	SC				increase in silt content below 13.0 feet.	x
15	10	CS	14.0	15.5	4	9	12	18	SC					x
												15.5	Bottom of Boring at 15.5 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings:
   a) 200 ppm at 1.5 feet.
   b) 20-30 ppm at 3.0 feet.

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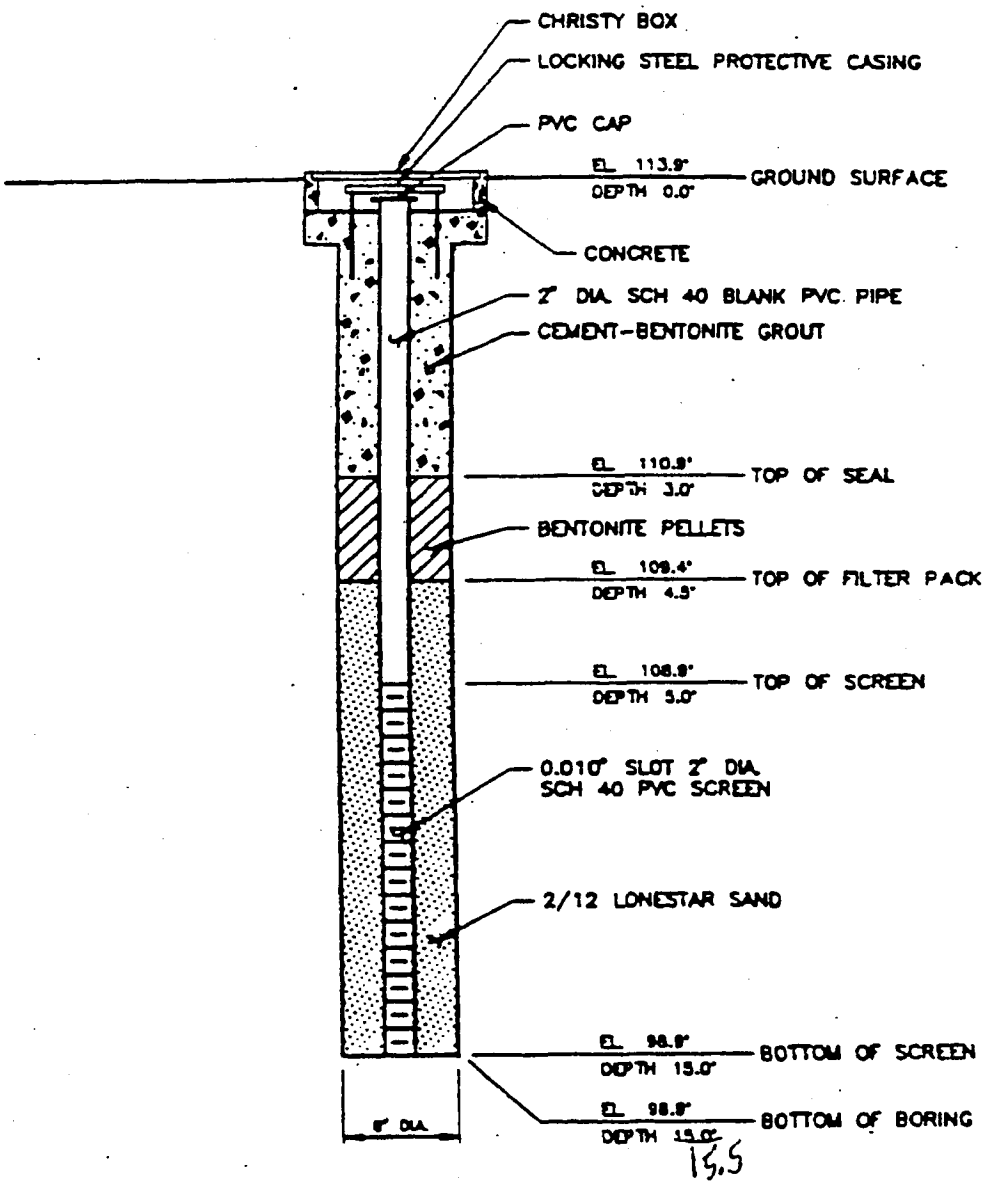
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MWD13-2

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION YARD D13, WEST OF BUILDING 616 DATE 7-6-90 BY TGB



NOTES:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION

PROJECT No. 86-018-1804
BORING No. MWD13-3
LOGGED BY TGB

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: SW corner of yard D13, by west fence SURFACE ELEV. 114.36 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/6/90 FINISH 7/6/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	TO	BLOW COUNT 0" 6" 6"	6" 12" 12"	12" 18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
													Asphalt. (Fill)	
	1	CS	0.5	2.0	8	10	15	12	SM			0.5	Medium dense, light brown, silty fine sand, dry. (Fill)	
	2	CS	2.0	3.5	5	8	6	12	SM					
5	3	CS	3.5	5.0	3	1	1	12	SM				becomes saturated at 5.0 feet.	
	4	CS	5.0	6.5	2	7	9	6	SM			5.5	Concrete rubble between 5 and 10 feet. (Fill) (driller noted resistance at 5.0 feet. boring location moved three times due to refusal.)	X
10														X
	5	CS	10.0	11.5	5	5	5	12	CL			10.0	Medium stiff, dark gray, silty clay.	X
	6	CS	11.5	13.0	7	13	18	18	SC			11.7	Medium dense, orange brown mottled with clayey, fine sand, saturated, with some silt. (Merritt Sand)	X
	7	CS	13.0	14.5	8	9	19	18	SC					X
15	8	CS	14.5	15.0	10	12	15	6	SC					X
												15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.0 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings:
   a) 2 ppm at 11.7 feet.

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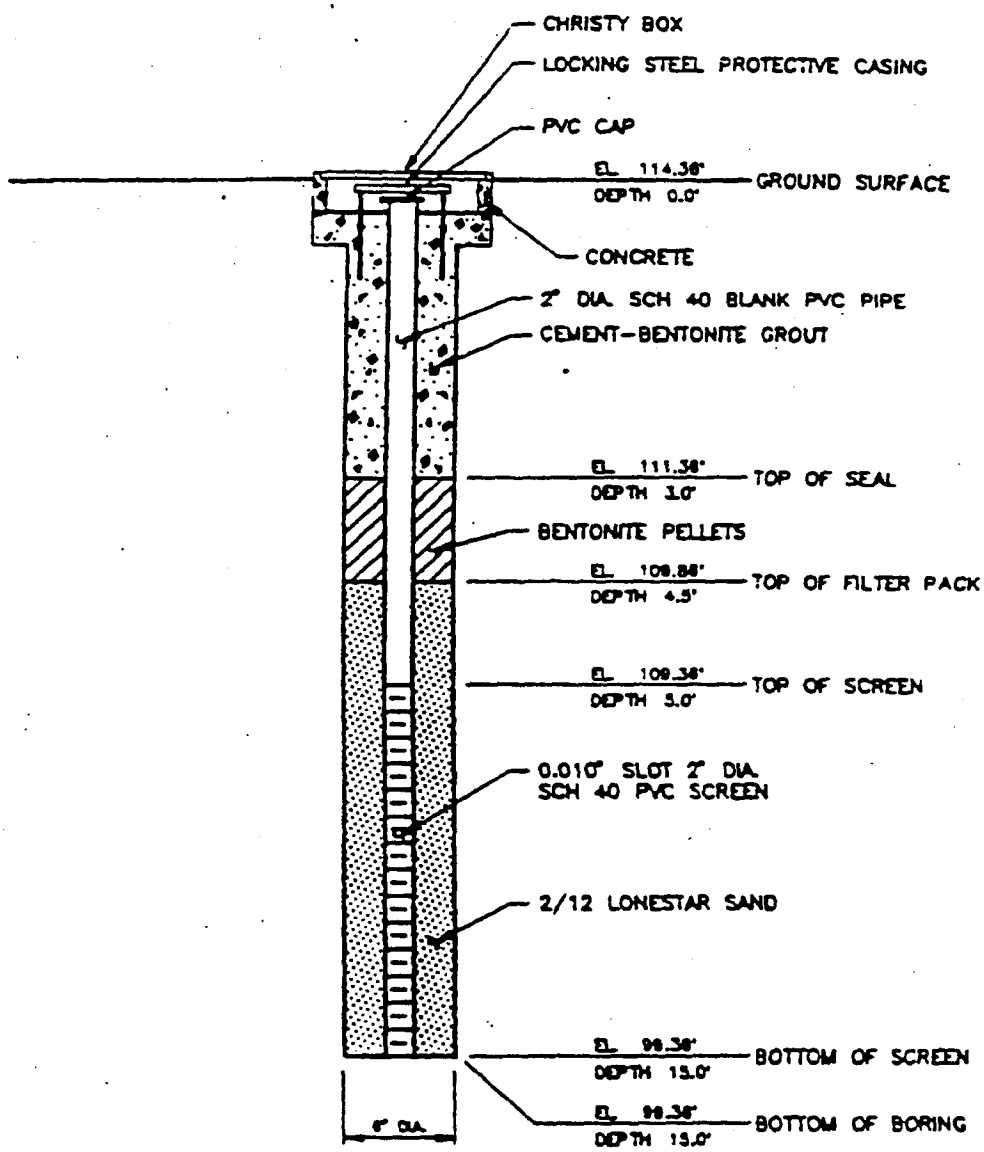
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MWD13-3

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION YARD D13, SOUTHWEST CORNER DATE 7-6-90 BY TGB



NOTES:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. MWD13-4
LOGGED BY RMD

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: Yard D13 by the south gate SURFACE ELEV. 115.69 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/9/90 FINISH 7/9/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	EZO
													Asphalt. (Fill)	
	1	CS	2.0	3.5	30	21	19	17	SP			2.8	Dense, light brown, fine sand, moist. (Fill)	
5	2	CS	3.5	5.0	15	19	19	12	SP					
								0				5.0	Concrete rubble and silty sand. (Fill) augered between 5 and 8 feet. saturated below 6.5 feet.	X
								0						X
	3	CS	8.0	9.5	40	25	35	8	GP			8.0	Dense, gray, silty sandy gravel, saturated. (Fill)	X
10														X
	4	CS	9.5	11.0	5	30	50	17	GP					X
											Fill		augered between 11.0 and 12.5 feet.	X
	5	CS	12.5	14.0	10	15	15	0	SM		MS	12.5	Medium dense, brown, silty fine sand, saturated.	X
15	6	CS	14.0	15.5	8	10	15	18	SM					X
												15.5	Bottom of Boring at 15.5 feet	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 6.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

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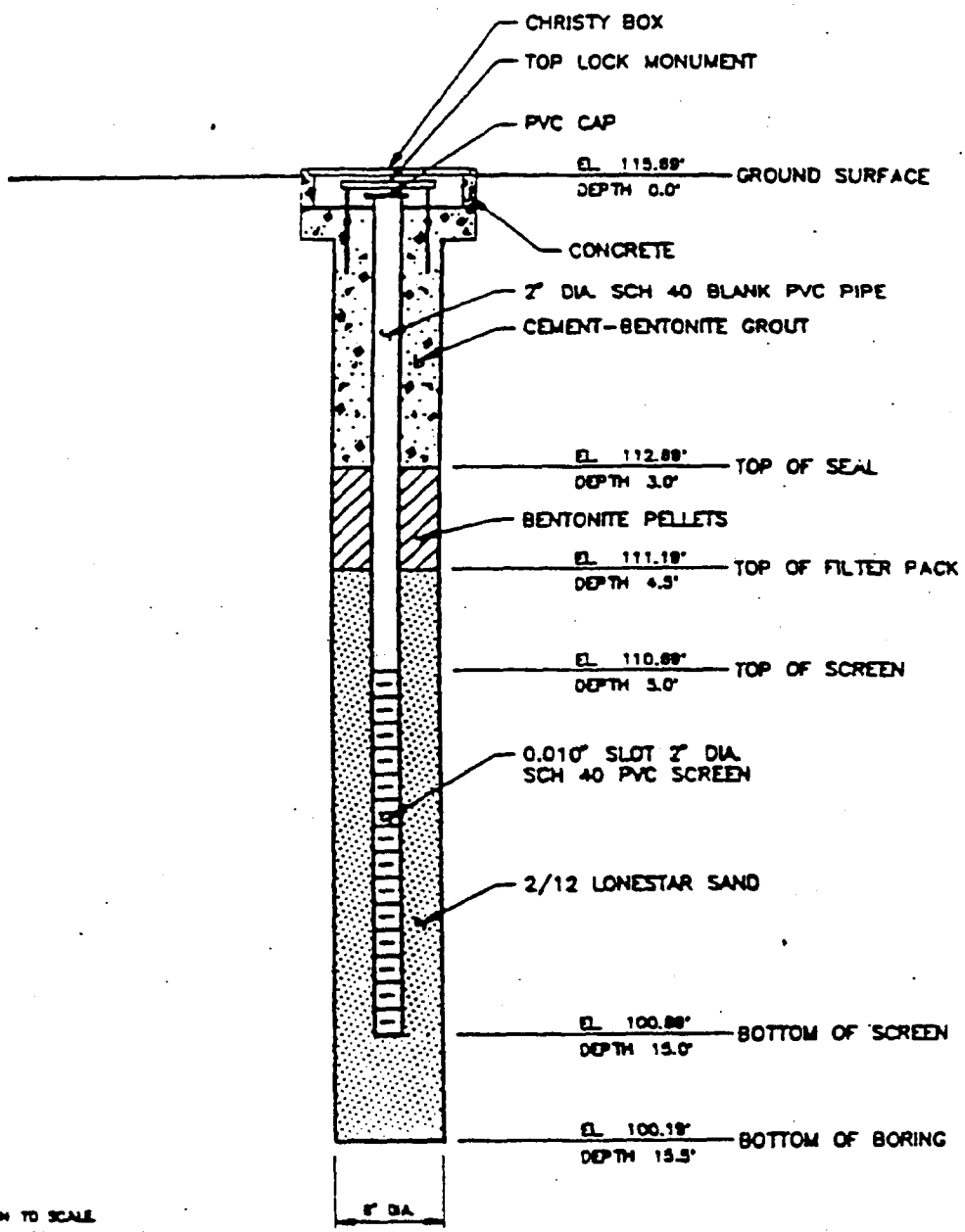
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MWD13-4

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION YARD D13 BY SOUTH GATE DATE 7-9-90 BY RMD



NOTES:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. BD13-5
LOGGED BY RMD

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: Northwest corner of Yard D13 SURFACE ELEV. 113.9 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/3/90 FINISH 7/3/90

DEPTH	SAMPLE No	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	9	13	13	15	SM				Asphalt. (Fill)	
												1.0	Loose, brown, silty fine sand, moist. (Fill)	
	2	CS	1.5	3.0	8	16	17	15	SM				becomes medium dense below 1.5 feet.	
	3	CS	3.0	4.5	6	8	6	16	SM					
5													becomes saturated below 4.5 feet.	
	4	CS	4.5	6.0	2	5	10	12	SM				color change to gray brown at 5.8 feet.	
	5	CS	6.0	7.5	5	3	6	12	SM					
												7.5	Loose, gray silty gravelly fine sand,	
	6	CS	7.5	9.0	5	3	6	0	SP		Fill		saturated, with concrete and brick	
10	7	CS	9.0	10.5	6	9	8	16	SM			9.0	fragments. (Fill)	
											MS		Medium dense orange brown, clayey,	
	8	CS	10.5	12.0	8	15	16	16	SM				silty fine sand, saturated, with trace	
	9	CS	12.0	13.5	4	10	10	16	SM				of clay. (Merritt Sand)	
													some gray mottling between 11 and	
15	10	CS	13.5	15.0	6	10	11	14	SM				12.5 feet.	
												15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 4.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

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Soil Boring Log

PROJECT No. 86-018-1804
BORING No. BD13-6
LOGGED BY BB

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: NE corner of Building 616 in Yard D13 SURFACE ELEV. 114.1 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/3/90 FINISH 7/3/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS
	1	CS	0.0	1.5	10	15	18	15	SM			0.3	Asphalt. (Fill)
													Medium dense, light brown, silty fine sand, moist. (Fill)
	2	CS	1.5	3.0	8	16	13	15	SM				
	3	CS	3.0	4.5	7	12	12	15	SM				
5													
	4	CS	4.5	6.0	5	6	4	12	SM			5.0	Loose to medium dense, dark gray, silty fine sand, saturated. (Fill)
	5	CS	6.0	7.5	2	5	6	18	SM			7.0	thin layer of silty clay at 6.5 feet.
	6	CS	7.5	9.0	3	3	5	18	SM		Fill	8.0	Medium dense dark gray, silty fine sand, saturated.
10	7	CS	9.0	10.5	3	5	15	18	SC		MS		Loose reddish brown mottled gray, clayey fine sand, saturated, with some silt. (Merritt Sand)
	8	CS	10.5	12.0	2	8	18	18	SC				
	9	CS	12.0	13.5	4	10	16	16	SC				
15	10	CS	13.5	15.0	5	5	20	18	SC				becomes medium dense below 9 feet.
												15.0	Bottom of Boring at 15.0 feet.
20													
25													
30													
35													
40													

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.0 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings:
   a) 10 ppm at 0.5 feet.
   b) 30 ppm at 6.5 feet.

Canonie Environmental

PROJECT No. 86-018-1804
BORING No. BD13-7
LOGGED BY RMD

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: Northeast corner of Yard D13 SURFACE ELEV. 114.1 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/3/90 FINISH 7/3/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	15	18	14	15	SM			0.3	Asphalt. (Fill)	
	2	CS	1.5	3.0	4	6	12	12	SM				Medium dense, light brown, silty fine sand. (Fill) some cobbles and wood fragments between 3 to 4.5 feet.	
5	3	CS	4.5	6.0	5	7	5	18	SM			4.5	Loose, medium dense dark brown, silty fine sand, saturated.	
	4	CS	6.0	7.5	3	5	7	12	SM			7.0	Medium dense brown, silty fine sand.	
	5	CS	7.5	9.0	3	3	4	15	SM		Fill			
10	6	CS	9.0	10.5	6	6	11	14	SM-SC		MS	9.5	Medium dense orange brown, mottled gray, clayey fine sand, with some gray mottled abundant iron-stained laminations at top of unit. (Merritt Sand)	
	7	CS	10.5	12.0	2	2	4	15	SC					
	8	CS	12.0	13.5	5	8	10	15	SC					
15	9	CS	13.5	15.0	8	15	15	14	SC			15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 4.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

Canonie Environmental

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. BD13-8
LOGGED BY RMD

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: South of Building 616 in Yard D13 SURFACE ELEV. 114.5 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/5/90 FINISH 7/5/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	ZONE
	1	CS	0.0	1.5	30	17	20	13	SP			0.3	Asphalt. (Fill)	
												0.8	Base rock. (Fill)	
	2	CS	1.5	3.0	7	12	13	14	SP				Medium dense, light brown, fine sand. moist. (Fill)	
	3	CS	3.0	4.5	5	4	9	12	SP				becomes saturated below 4.5 feet.	
5														
	4	CS	4.5	6.0	10	15	14	13	SM			5.0	Medium dense, grayish brown, gravelly silty sand, saturated. (Fill)	
	5	CS	6.0	7.5	7	7	3	12	SM				(driller reports very runny, some rock fragments.)	
	6	CS	7.5	9.0	3	4	12	8	SM					
10	7	CS	9.0	10.5	4	10	9	9	SM					
	8	CS	10.5	12.0	5	5	10	15	SC		Fill	10.5	Medium dense, gray, clayey fine sand, saturated.	
	9	CS	12.0	13.5	5	10	20	13	SC			11.5	black discoloration and soupy conditions at 10.5 feet, strong odor.	
15	10	CS	13.5	15.0	7	10	15	9	SC		MS		some gravel and rock fragments (Fill)	
												15.0	Medium dense to to dense, orange brown, clayey sand, saturated. (Merritt Sand)	
20													some gray mottling at 14 feet.	
													Bottom of Boring at 15.0 feet.	
25														
30														
35														
40														

Notes:
1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.0 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings:
   a) 10 -30 ppm at 6.5 feet.
   b) 20 ppm at 9.0 feet.
   c) 100-150 ppm at 10.5 feet.

Canonie Environmental

PROJECT No. 86-018-1804
BORING No. BD13-9
LOGGED BY RMD

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: South of SE corner of Building 616 SURFACE ELEV. 114.7 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/5/90 FINISH 7/5/90

DEPTH	SAMPLE No	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER	DEPTH	SOIL DESCRIPTION AND REMARKS	ZONE
	1	CS	0.0	1.5	16	20	18	13	SM					Asphalt (Fill)	
													0.8	Medium dense to dense, brown, silty fine sand, moist. (Fill)	
	2	CS	1.5	3.0	10	17	14	15	SM						
	3	CS	3.0	4.5	6	7	7	14	SM						
5											Fill			saturated below 4.5 feet.	
	4	CS	4.5	6.0	4	7	5	12	SM					thin layer of gray clay at 4.5 feet.	
	5	CS	6.0	7.5	15	9	17	16	SM-SP				6.5	interlayered gray clay below 5 feet.	
											BS			Medium dense, gray, fine to medium sand, saturated, with abundant tiny round shells.	
	6	CS	7.5	9.0	4	10	12	16	SP						
10	7	CS	9.0	10.5	4	14	20	16	SP-SC				9.7		
											MS			Dense, orange brown clayey sand, saturated. (Merritt Sand)	
	8	CS	10.5	12.0	5	12	18	16	SC					thin layer of gray silty sand at 10.5 to 11.3 feet, some shells.	
	9	CS	12.0	13.5	12	12	15	15	SC						
15	10	CS	13.5	15.0	15	21	15	18	SC						
													15.0	Bottom of Boring at 15 feet.	
20															
25															
30															
35															
40															

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 4.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

CanonieEnvironmental

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. BD13-10
LOGGED BY GM

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: Southeast of Building 616 in Yard D13 SURFACE ELEV. 114.6 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/5/90 FINISH 7/5/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	12	20	15	13	SM				Asphalt. (Fill)	
												0.8	Medium dense, light brown, silty fine sand, dry. (Fill)	
	2	CS	1.5	3.0	5	4	5	12	SM					
	3	CS	3.0	4.5	5	7	7	15	SM				color change to dark brown at 3.0 feet. saturated below 4.5 feet.	
5														
	4	CS	4.5	6.0	2	4	4	14	SM				color change to gray at 7.0 feet.	
	5	CS	6.0	7.5	2	3	2	18	SM-SC					
											Fill			
	6	CS	7.5	9.0	3	3	5	15	SC-SC			8.5	Medium dense, mottled gray-orange brown clayey sand, saturated. (Merritt Sand)	
10	7	CS	9.0	10.5	7	9	10	18	CL		NAS	9.7		
	8	CS	10.5	12.0	10	14	9	18	CL-SC			11.0	Medium dense, mottled orange brown, gray sandy clay, saturated, some layers of silty fine sand. (Merritt Sand)	
	9	CS	12.0	13.5	10	12	13		SC					
15	10	CS	13.5	15.0	9	14	16		SC			15.0	Medium dense orange brown, clayey sand, saturated, some layers of silty sand. (Merritt Sand)	
													Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 4.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

Canonie Environmental

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. BD13-11
LOGGED BY BB

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: West side of Yard D13 by fence SURFACE ELEV. 114.2 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/10/90 FINISH 7/10/90

DEPTH	SAMPLE No	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PID (ppm)
													Asphalt. (Fill)	
	1	CS	0.5	2.0	12	9	15	14	SM			0.5	Medium dense, light brown, silty fine sand, moist. (Fill)	
	2	CS	2.0	3.5	10	13	10	15	SM					
5	3	CS	3.5	5.0	3	11	13	13	SM			4.5	Medium dense, orange dark brown to brown gray, gravelly silty sand, moist. (Fill)	
	4	CS	5.0	6.5	11	13		6	SM					
	5	CS	6.5	8.0	3	5	6	6	SM				concrete and rock debris below 6.5 feet. (auger tipped sideways due to concrete; hole was relocated; interval started at 6.5 feet.)	
	6	CS	8.0	9.5	4	25		6	SM					
10											Fill			
	7	CS	9.5	11.0	4	6	6	6	SM			10.0		
	8	CS	11.0	12.5	9	10	19	12	CL		BS	11.5	color changes to gray at 8.0 feet.	
											MS		Medium stiff dark gray, silty sandy clay, saturated.	
	9	CS	12.5	14.0	10	20	30	18	SC					
15	10	CS	14.0	15.5	18	18	25	18	SC				Medium dense, orange brown clayey fine sand, saturated. (Merritt Sand) becomes dense at 14.0 feet.	
												15.5	Bottom of Boring at 15.5 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 6.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

Canonie Environmental

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. BD13-12
LOGGED BY RMD

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: Center of Yard D13 SURFACE ELEV. 115.6 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/9/90 FINISH 7/9/90

DEPTH	SAMPLE No	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	ZONE
													Asphalt. (Fill)	
	1	CS	1.0	2.5	15	29	31	15	SM			1.3	Dense, light brown, silty fine sand, moist. (Fill)	
	2	CS	2.5	4.0	15	20	21	16	SM				becomes loose at 4.5 feet.	
5	3	CS	4.0	5.5	9	7	2	13	SM		Fill			
	4	CS	5.5	7.0	5	2	1	12	SC			6.5	Soft, gray clayey sand, saturated.	
	5	CS	7.0	8.5	2	1	1	15	SC		BS			
	6	CS	8.5	10.0	6	16	21	17	SC			9.0	thin layer of clay at 8.5 feet.	
10	7	CS	10.0	11.5	3	13	21	15	SC		MS		layer of black clayey sand at 8.5 to 9.0 feet, oily discoloration.	
	8	CS	11.5	13.0	6	13	20	13	SC				Medium dense orange brown, clayey fine sand, saturated, with trace of silt. (Merritt Sand)	
	9	CS	13.0	14.5	6	13	12	15	SC					
15	10	CS	14.5	16.0	6	12	19	18	SC					
												16.0	Bottom of Boring at 16.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.3 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

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PROJECT No. 86-018-1804
BORING No. BD13-13
LOGGED BY BB

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: E side of Yard D13, N of concrete pad SURFACE ELEV. 114.9 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/11/90 FINISH 7/11/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	ELEV
													Asphalt. (Fill)	
	1	CS	2.0	3.5	10	5	5	15	SM			2.0	Loose, light brown, silty fine sand, moist. (Fill)	
5	2	CS	3.5	5.0	10	10		2	SM				concrete encountered at 4.5 and 6.0 feet.	
	3	CS	5.0	6.5	10	5		0	SM				saturated below 6.5 feet.	
	4	CS	6.5	8.0	2	1	3	12	SM		Fill	6.5	Very loose, brown, silty fine sand.	
	5	CS	8.0	9.5	6	7	25	18	SM			8.5	saturated, trace of clay.	
10											MS		Medium dense, orange brown, silty fine sand, saturated, with trace of clay, some gray mottling. (Merritt Sand)	
	6	CS	9.5	11.0	12	20	25	14	SM				no clay below 12.5 feet.	
	7	CS	11.0	12.5	10	15	12	18	SM					
	8	CS	12.5	14.0	12	10	11	14	SM					
15	9	CS	14.0	15.5	10	12	14	18	SM			15.5	Bottom of Boring at 15.5 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 6.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

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PROJECT No. 86-018-1804
BORING No. BD13-14
LOGGED BY BB

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: SW corner of Yard D13 on concrete pad SURFACE ELEV. 115.2 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/9/90 FINISH 7/9/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	ZONE
													Concrete. (Fill)	
												1.0	Dense, dark to light brown, silty fine sand, moist. (Fill)	
	1	CS	1.5	3.0	30	32	19	15	SM					
5	2	CS	3.0	4.5	15	15	18	15	SM				concrete debris between 4.5 and 6.0 feet.	
													becomes saturated at 6.0 feet.	
	3	CS	6.0	7.5	6	5	50	0	SM				concrete encountered 6.5 to 9.0 feet.	
10														
	4	CS	9.0	10.5	8	8	3	8	GP			9.0	Medium dense brown gray, silty, sandy gravel, saturated.	
	5	CS	10.5	12.0	5	20	15	0	GP				cobbles at 10.5 feet.	
											FI			
15	6	CS	13.5	15.0	22	22	15	18	SM			13.5	Dense, dark reddish brown, silty fine sand; saturated, trace of clay, some interbedded clayey sand. (Merritt Sand)	
	7	CS	15.0	16.5	16	25	25	18	SM		MS	16.5		
20													Bottom of Boring at 16.5 feet.	
25													Notes:	
30													1. Boring was advanced using 8-inch-diameter hollow stem augers.	
35													2. Groundwater was encountered at 6.0 feet during drilling.	
40													3. Sampler type: California Sampler (CS) O.D.: 2.5 inches I.D.: 2.0 inches	
													4. Boring was backfilled with cement/bentonite grout upon completion of drilling.	
													5. OVA readings: No OVA readings observed during drilling.	

Canonie Environmental

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. BD13-15
LOGGED BY BB

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: South edge of Yard D13 by gate SURFACE ELEV. 115.5 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/10/90 FINISH 7/10/90

DEPTH	SAMPLE No	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZ
													Asphalt. (Fill)	
	1	CS	1.5	3.0	38	23	14	13	SM			1.5	Medium dense light brown, silty fine sand, moist. (Fill)	
	2	CS	3.0	4.5	10	5	3	13	SM				becomes loose at 3.0 feet.	
5	3	CS	4.5	5.0	6			2	SM			4.5	Concrete debris and silty sand from 4.5 to 10.5 feet. (Fill)	
	5	CS	7.5	9.0	4	2	2	6					becomes saturated at 7.0 feet. color change to black between 10.5 and 11.0 feet.	
10	7	CS	10.5	12.0	10	12	20	17	SM			11.0	Dense, brown, silty fine to medium sand, saturated, abundant shells.	
	8	CS	12.0	13.5	20	20	25	15	SM		Fill	12.5	some black discoloration at top of unit.	
	9	CS	13.5	15.0	13	21	21	18	SM		NAS		Dense, orange brown, silty fine sand,	
15												15.0	saturated, trace of clay. (Merritt Sand)	
													Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 7.0 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

Canonie Environmental

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. BD13-16
LOGGED BY RMD

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: Southeast corner of Yard D13 SURFACE ELEV. 115.0 feet
DRILLER Spectrum Exploration - Garry Buss DATE. START 7/10/90 FINISH 7/10/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	DEPTH	SOIL DESCRIPTION AND REMARKS	PID
													Concrete	
	1	CS	1.0	2.5	13	21	30	14	SM			1.0	Medium dense to dense, dark to light brown, silty fine sand, moist. (Fill)	
	2	CS	2.5	4.0	9	14	9	15	SM					
5	3	CS	4.0	5.5	3	6	4	14	SM-SC			4.5	Medium dense mottled gray brown, clayey sand, moist, with pockets of clay.	
	4	CS	5.5	7.0	3	2	1	13	SC					
	5	CS	7.0	8.5	1	1	5	8	SC				some wood and organic debris encountered below 8 feet.	
	6	CS	8.5	10.0	9	11	4	15	SC					
10	7	CS	10.0	11.5	8	15	14	16	SC		Fill	11.0	thin pocket of dark gray, gravelly silty sand, with shells at 9.5 feet. wood encountered below 8 feet.	
	8	CS	11.5	13.0	6	13	11	15	SC		MS			
	9	CS	13.0	14.5	2	3	10	18	SC				Medium dense, orange brown, clayey sand, saturated, some silt. (Merritt Sand)	
15												14.5	Bottom of Boring at 14.5 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 6.0 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings:
   a) 50 ppm at 8.0 feet.
   b) 10-30 ppm at 9.5 feet.
   c) 10 ppm at 11.0 feet.

Canonie Environmental

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING B19-17

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	13			GW	FILL Sandy gravel (GW), gray brown, fine sand, dense, damp
	CHEMICAL	28Ø-S19-ØØ1						Same as above, but increase sand, some tar and asphalt
	CHEMICAL	28Ø-S19-ØØ2	Ø	34			SW	Gravelly sand (SW), orange brown, medium sand, dense, slightly moist
							SP	Sand (SP), light brown (7.5YR6/3), fine sand, dense, slightly moist
				17				Same as above, but wet
5	CHEMICAL	28Ø-S19-ØØ3	Ø					
10								
15								
20								

TD = 6 Feet bgs

Borehole abandoned as follows:
6.Ø to Ø.Ø feet bgs: Neat Cement

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 19
JOB NUMBER 044-Ø28Ø
LOGGED BY JEV
DATE DRILLED 8-22-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 14.16 Feet
TOC ELEVATION Not Applicable
BORING DIAMETER 8.5 inches
TOTAL DEPTH OF HOLE 6 Feet bgs
WATER LEVEL 4.5 Feet bgs
WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING B19

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	23			SW	FILL Gravelly sand (SW), red brown (2.5YR 4/3), medium sand, dense, dry
	CHEMICAL	280-S19-004						
	CHEMICAL	280-S19-005	Ø	53			SP	Sand (SP), light brown (7.5YR6/3), fine sand, dense, Slightly moist
			Ø	15				
5	CHEMICAL	280-S19-006						Same as above, but wet
	CHEMICAL	280-S19-007		25				Same as above

TD = 8 Feet bgs

Borehole abandoned as follows:

8.Ø to Ø.Ø feet bgs: Neat Cement

10

15

20

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI

LOCATION Site 19

JOB NUMBER ØØ3-Ø28Ø

LOGGED BY JEV

DATE DRILLED 8-22-94

DRILLER Woodward Drilling Co.

DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon

GROUND ELEVATION 14.16 Feet

TOC ELEVATION Not Applicable

BORING DIAMETER 8.5 inches

TOTAL DEPTH OF HOLE 8 Feet bgs

WATER LEVEL 5 Feet bgs

WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING B19-19

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S19-008	3.0	37/6 50/4			GW	FILL Sandy gravel (GW), gray brown, fine sand, dense, dry
	CHEMICAL	280-S19-009	0	30/6 50/6			SP	Sand (SP), light brown, fine sand, dense, damp
								Same as above, but moist
5	CHEMICAL	280-S19-010	0					Same as above, but wet
								TD = 6 Feet bgs
								Borehole abandoned as follows: 6.0 to 0.0 feet bgs; Neat Cement
10								
15								
20								

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 19
JOB NUMBER 044-0280
LOGGED BY JEV
DATE DRILLED 8-22-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION
TOC ELEVATION Not Applicable
BORING DIAMETER 8.5 inches
TOTAL DEPTH OF HOLE 6 Feet bgs
WATER LEVEL 5 Feet bgs
WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC. — **LOG OF BORING/MW**

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
								FILL
	CHEMICAL	280-S19-011	NA	27			SP	Asphalt over oiled sand base Sand (SP), light brownish gray (10YR 6/2), fine sand, medium dense, moist
	CHEMICAL	280-S19-012		5				Same as above, but light brownish gray (10YR 6/2) and dark grayish brown (10YR 4/2) mottled, loose, very moist
5	CHEMICAL	280-S19-013		1				Same as above, but very dark gray (10YR 3/1) and dark yellowish brown (10YR 4/4) mottled, very loose, wet, trace silt, trace organic matter
								MERRITT SAND
10				35			SM	Grades to yellowish brown (10YR 5/6) and pale brown (10YR 6/3), very fine sand, dense, very moist to wet, trace clay
15				40			SP	Grades to sand (SP), yellowish brown (10YR 5/4), very fine to fine sand, wet, trace silt
20				52				Same as above, trace to 5% silt

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 19
JOB NUMBER 044-0280
LOGGED BY WPW
DATE DRILLED 11-6-94 to 11-19-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 14.27 Feet
TOC ELEVATION 13.93 Feet
BORING DIAMETER 8 inches
TOTAL DEPTH OF HOLE 30 Feet bgs
WATER LEVEL 4.2 Feet bgs
WELL INSTALLED? (Y/N) Y

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING M19-05

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
					X		ST	
25 / 5				46	X			Same as above, but yellowish brown (10YR5/4) and light brownish gray (2.5Y6/2) mottled,
30 / 10				40	X			Same as above, but light brownish gray (2.5Y6/2) with yellowish brown (10YR5/6) mottling, 5% silt
35 / 15								
40 / 20								

TD = 30 Feet bgs

Water Level

Split Spoon

Sample Collected

PROJECT

LOCATION

JOB NUMBER 044-

LOGGED BY

DATE DRILLED

DRILLER

DRILL METHOD

SAMPLING METHOD

GROUND ELEVATION

TOC ELEVATION

BORING DIAMETER

TOTAL DEPTH OF HOLE

WATER LEVEL

WELL INSTALLED? (Y/N)

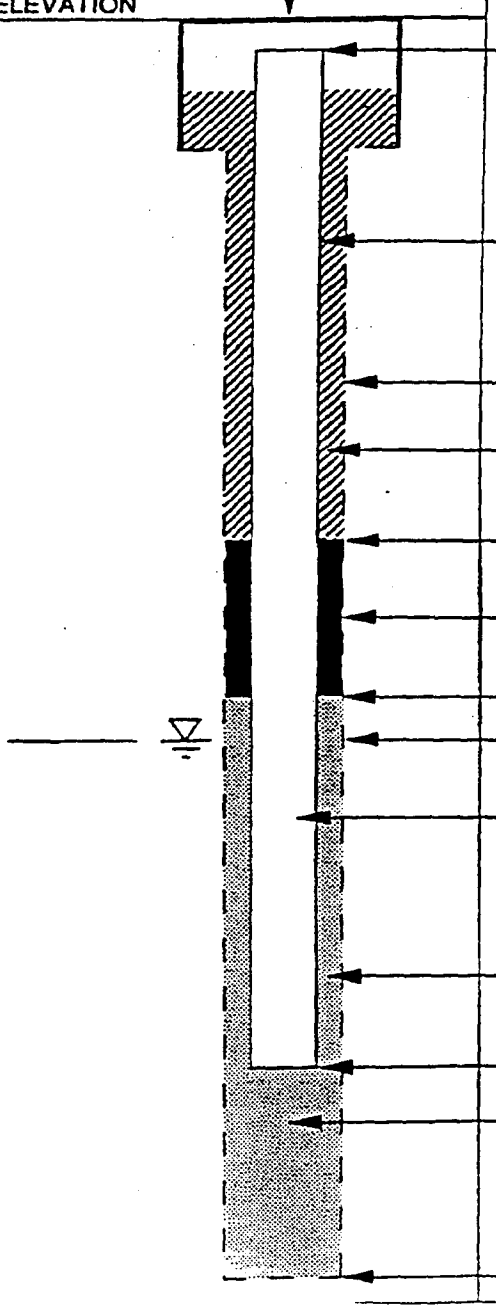
WELL ~~BORING~~ NO. M19-05

MONITORING WELL SHEET

PROJECT NAS Alameda RI
LOCATION Alameda, California
PROJECT NO. 044 0280
BORING M19-05
SITE 19
DATE 11-19-94
FIELD GEOLOGIST WPW

DRILLER Woodward Drilling Co.
DRILLING METHOD Hollow Stem Auger
DEVELOPMENT METHOD Surge/Bail/Pump

GROUND ELEVATION



(feet MLLW)

ELEVATION OF GROUND SURFACE: 14.27

ELEVATION OF TOP OF WELL CASING: 13.93

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 8 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL (feet bgs) 16.0

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK (feet bgs) 18.0

DEPTH TOP OF SCREEN 20.0

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE ~~x LENGTH~~ 0.01 inch

I.D. OF SCREEN 2 inches

TYPE OF SAND PACK: #2/12 Monterey Sand

DEPTH BOTTOM OF SCREEN (feet bgs) 30.0

DEPTH BOTTOM OF SAND PACK 30.0

TYPE OF BACKFILL BELOW OBSERVATION WELL: Not Applicable

DEPTH OF HOLE (feet bgs) 30.0

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D19-01

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			NA	65				FILL Asphalt over sand and gravel base
							SP	Sand (SP), brown (10YR5/3), fine sand, dense, dry
				80			GM	Silty gravel (GM), reddish yellow (5YR6/6), medium gravel, dense, dry
				71				
5								
								BAY SEDIMENTS
10				48			CL	Silty clay (CL), gray (10YR5/1), stiff, moist
								MERRITT SAND
15				33			SM	Silty sand (SM), yellowish brown (10YR5/8), fine sand, medium dense, moist
20								

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 19
JOB NUMBER 044-0280
LOGGED BY JEV
DATE DRILLED 11-2-94
DRILLER Tonto Drilling Services Co.
DRILL METHOD Mud Rotary

SAMPLING METHOD Split spoon
GROUND ELEVATION 13.9
TOC ELEVATION 13.9
BORING DIAMETER 8 inches
TOTAL DEPTH OF HOLE 61 Feet bgs
WATER LEVEL Not Available
WELL INSTALLED? (Y/N) Y

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D1

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
				60	X		SP	Grades to sand (SP)
25 ~~8~~				76	X			Same as above, but dark yellowish brown (10YR 4/6)
30 ~~10~~				55/6 60/6	X			Same as above
35 ~~15~~				70	X			Same as above, but dense
40 ~~20~~								

Water Level

Split Spoon

Sample Collected

PROJECT _____ SAMPLING METHOD _____

LOCATION _____ GROUND ELEVATION _____

JOB NUMBER 044- TOC ELEVATION _____

LOGGED BY _____ BORING DIAMETER _____

DATE DRILLED _____ TOTAL DEPTH OF HOLE _____

DRILLER _____ WATER LEVEL _____

DRILL METHOD _____ WELL INSTALLED? (Y/N) _____

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D19-01

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
				28	X		SM	Grades to silty sand (SM), yellowish brown (10YR5/8), medium dense, trace clay
45 ~~5~~				50/6 50/6	X			Same as above, but dense
60 ~~10~~				35/6 50/6	X		SP	Sand (SP), grayish brown (10YR5/2), fine sand, dense, moist
65 ~~15~~				27/6 50/6	X			Same as above, but dark brown (10YR3/3),
70 ~~20~~								

Water Level

Split Spoon

Sample Collected

PROJECT

LOCATION

JOB NUMBER 044-

LOGGED BY

DATE DRILLED

DRILLER

DRILL METHOD

SAMPLING METHOD

GROUND ELEVATION

TOC ELEVATION

BORING DIAMETER

TOTAL DEPTH OF HOLE

WATER LEVEL

WELL INSTALLED? (Y/N)

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D19

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
				36/6 50/6	X		SP	Same as above
								TD = 61 Feet bgs
65								
70								
75								
80								

Water Level

Split Spoon

Sample Collected

PROJECT _____ SAMPLING METHOD _____

LOCATION _____ GROUND ELEVATION _____

JOB NUMBER 044- _____ TOC ELEVATION _____

LOGGED BY _____ BORING DIAMETER _____

DATE DRILLED _____ TOTAL DEPTH OF HOLE _____

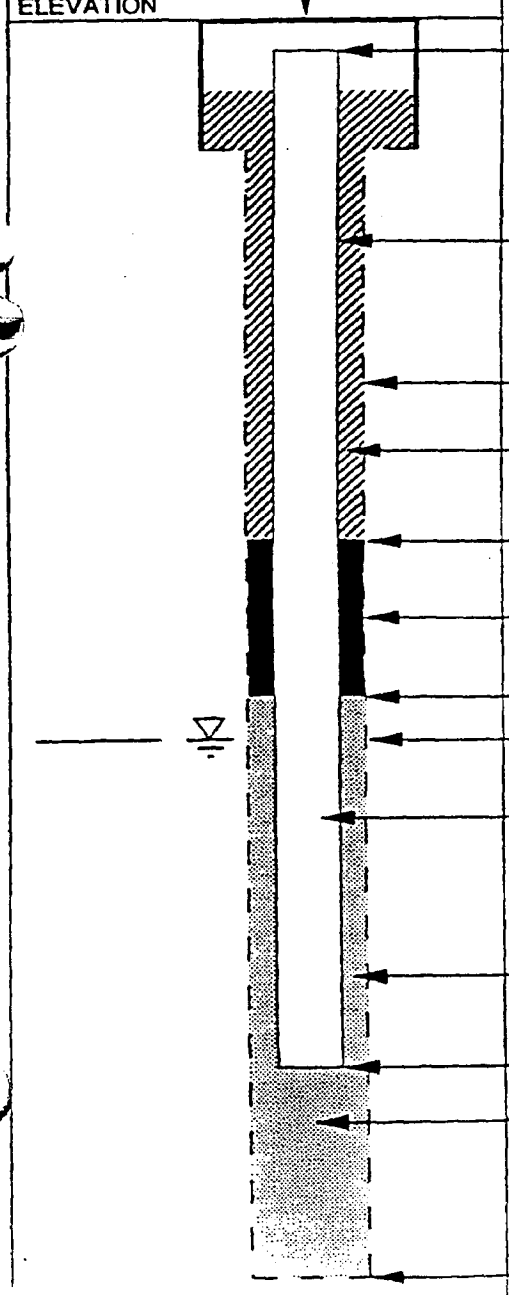
DRILLER _____ WATER LEVEL _____

DRILL METHOD _____ WELL INSTALLED? (Y/N) _____

WELL ~~BORING~~ NO. D19-01

MONITORING WELL SHEET

PROJECT NAS Alameda RI	LOCATION Alameda, California	DRILLER Tonto Drilling Services Co.
PROJECT NO. 044 0280	BORING D19-01	DRILLING METHOD Mud Rotary
SITE 19	DATE 11-2-94	DEVELOPMENT METHOD Surge/Bail/Pump
FIELD GEOLOGIST JEV		



(feet MLLW)

ELEVATION OF GROUND SURFACE: 13.90

ELEVATION OF TOP OF WELL CASING: 13.90

RISER PIPE I.D.: 3 inches

TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 8 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL (feet bgs) 43.0

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK: (feet bgs) 46.5

DEPTH TOP OF SCREEN: 50.0

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE ~~x LENGTH~~ 0.01 inch

I.D. OF SCREEN 3 inches

TYPE OF SAND PACK: #2/12 Monterey Sand

DEPTH BOTTOM OF SCREEN: (feet bgs) 60.0

DEPTH BOTTOM OF SAND PACK: 61.0

TYPE OF BACKFILL BELOW OBSERVATION WELL: #2/12 Monterey Sand

DEPTH OF HOLE: (feet bgs) 61.0

TONTO ENVIRONMENTAL DRILLING

Operator :Montgomery Watsn
On Site Loc:CPT-S19-01
Job No. :CPT-S19-01
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/07/94 08:52
Cone Used :462
Water table (meters) : 3

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	179.92	1.12	0.62	0.02	sand	>90	>48	34	UNDEFINED
0.50	1.64	265.36	2.47	0.93	0.07	sand	>90	>48	>50	UNDEFINED
0.75	2.46	266.30	3.22	1.21	0.12	sand	>90	>48	>50	UNDEFINED
1.00	3.28	202.32	1.91	0.95	0.17	sand	>90	>48	39	UNDEFINED
1.25	4.10	80.58	1.15	1.43	0.21	silty sand to sandy silt	80-90	46-48	26	UNDEFINED
1.50	4.92	28.66	0.30	1.05	0.26	silty sand to sandy silt	50-60	40-42	9	UNDEFINED
1.75	5.74	14.10	0.05	0.35	0.31	sandy silt to clayey silt	UNDFND	UNDFD	5	1.3
2.00	6.56	16.28	0.05	0.28	0.35	sandy silt to clayey silt	UNDFND	UNDFD	6	1.5
2.25	7.38	23.26	0.05	0.22	0.40	silty sand to sandy silt	<40	38-40	7	UNDEFINED
2.50	8.20	21.00	0.06	0.30	0.45	silty sand to sandy silt	<40	36-38	7	UNDEFINED
2.75	9.02	21.12	0.11	0.52	0.50	silty sand to sandy silt	<40	36-38	7	UNDEFINED
3.00	9.84	29.68	0.10	0.32	0.54	silty sand to sandy silt	40-50	38-40	9	UNDEFINED
3.25	10.66	31.66	0.55	1.74	0.58	sandy silt to clayey silt	UNDFND	UNDFD	12	3.1
3.50	11.48	20.60	0.15	0.74	0.60	sandy silt to clayey silt	UNDFND	UNDFD	8	1.9
3.75	12.30	49.96	1.45	2.91	0.62	sandy silt to clayey silt	UNDFND	UNDFD	19	4.9
4.00	13.12	87.06	1.81	2.08	0.64	silty sand to sandy silt	60-70	42-44	28	UNDEFINED
4.25	13.94	101.08	4.89	4.84	0.66	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
4.50	14.76	92.58	3.25	3.51	0.68	sandy silt to clayey silt	UNDFND	UNDFD	35	9.1
4.75	15.58	124.00	4.19	3.38	0.71	sandy silt to clayey silt	UNDFND	UNDFD	48	12.3
5.00	16.40	165.76	4.56	2.75	0.73	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
5.25	17.22	209.00	3.56	1.70	0.75	sand to silty sand	>90	44-46	>50	UNDEFINED
5.50	18.04	236.18	3.00	1.27	0.77	sand	>90	44-46	45	UNDEFINED
5.75	18.86	193.02	4.58	2.37	0.79	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
6.00	19.69	257.14	7.13	2.77	0.81	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
6.25	20.51	218.64	2.27	1.04	0.84	sand	>90	44-46	42	UNDEFINED
6.50	21.33	282.00	3.01	1.07	0.86	sand	>90	46-48	>50	UNDEFINED
6.75	22.15	256.58	2.84	1.11	0.88	sand	>90	44-46	49	UNDEFINED
7.00	22.97	270.42	2.95	1.09	0.90	sand	>90	44-46	>50	UNDEFINED
7.25	23.79	240.90	1.96	0.81	0.92	sand	>90	44-46	46	UNDEFINED
7.50	24.61	274.08	2.91	1.06	0.94	sand	>90	44-46	>50	UNDEFINED
7.75	25.43	307.12	3.90	1.27	0.96	sand	>90	44-46	>50	UNDEFINED
8.00	26.25	391.86	4.54	1.16	0.99	sand	>90	46-48	>50	UNDEFINED
8.25	27.07	294.40	3.52	1.19	1.01	sand	>90	44-46	>50	UNDEFINED
8.50	27.89	246.72	4.18	1.69	1.03	sand to silty sand	>90	44-46	>50	UNDEFINED
8.75	28.71	311.76	4.51	1.45	1.05	sand to silty sand	>90	44-46	>50	UNDEFINED
9.00	29.53	232.30	2.93	1.26	1.07	sand	80-90	44-46	45	UNDEFINED
9.25	30.35	237.22	2.07	0.87	1.09	sand	>90	44-46	45	UNDEFINED
9.50	31.17	222.70	2.08	0.93	1.12	sand	80-90	44-46	43	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONME..TAL DRILLING

Operator :Montgomery Watsn On Site Loc:CPT-S19-01 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	243.14	3.33	1.37	1.14	sand to silty sand	>90	44-46	>50	UNDEFINED
10.00	32.81	265.62	2.85	1.07	1.16	sand	>90	44-46	>50	UNDEFINED
10.25	33.63	313.02	3.36	1.07	1.18	sand	>90	44-46	>50	UNDEFINED
10.50	34.45	265.28	2.58	0.97	1.20	sand	>90	44-46	>50	UNDEFINED
10.75	35.27	270.56	3.28	1.21	1.22	sand	>90	44-46	>50	UNDEFINED
11.00	36.09	223.18	2.65	1.19	1.24	sand	80-90	42-44	43	UNDEFINED
11.25	36.91	295.14	3.34	1.13	1.27	sand	>90	44-46	>50	UNDEFINED
11.50	37.73	263.18	2.24	0.85	1.29	sand	>90	44-46	>50	UNDEFINED
11.75	38.55	294.28	2.86	0.97	1.31	sand	>90	44-46	>50	UNDEFINED
12.00	39.37	286.90	3.44	1.20	1.33	sand	>90	44-46	>50	UNDEFINED
12.25	40.19	155.46	2.83	1.82	1.35	silty sand to sandy silt	70-80	40-42	50	UNDEFINED
12.50	41.01	156.78	1.73	1.10	1.37	sand to silty sand	70-80	40-42	38	UNDEFINED
12.75	41.83	109.46	2.01	1.84	1.40	silty sand to sandy silt	60-70	38-40	35	UNDEFINED
13.00	42.65	142.60	2.81	1.97	1.42	silty sand to sandy silt	70-80	40-42	46	UNDEFINED
13.25	43.47	84.06	2.09	2.48	1.44	sandy silt to clayey silt	UNDFND	UNDFD	32	8.1
13.50	44.29	38.10	0.76	2.00	1.46	sandy silt to clayey silt	UNDFND	UNDFD	15	3.5
13.75	45.11	44.58	1.43	3.21	1.48	clayey silt to silty clay	UNDFND	UNDFD	21	4.2
14.00	45.93	107.52	6.33	5.88	1.50	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.25	46.75	174.16	8.67	4.98	1.52	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.50	47.57	211.70	6.64	3.14	1.55	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED

Dr - All sands (Janiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MontgomeryWatson
On Site Loc:CPT-S19-02
Job No. :2738.1236
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/07/92 08:52
Cone Used :462
Water table (meters) : 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	3.20	0.00	0.00	0.02	undefined	UNDFND	UNDFD	UDF	UNDEFINED
0.50	1.64	6.40	0.13	2.06	0.07	silty clay to clay	UNDFND	UNDFD	4	.6
0.75	2.46	140.80	1.96	1.39	0.12	sand to silty sand	>90	>48	34	UNDEFINED
1.00	3.28	216.00	3.52	1.63	0.17	sand to silty sand	>90	>48	>50	UNDEFINED
1.25	4.10	222.40	1.64	0.74	0.21	sand	>90	>48	43	UNDEFINED
1.50	4.92	247.20	1.54	0.62	0.26	sand	>90	>48	47	UNDEFINED
1.75	5.74	257.60	1.32	0.51	0.31	sand	>90	>48	49	UNDEFINED
2.00	6.56	201.40	1.66	0.82	0.35	sand	>90	>48	39	UNDEFINED
2.25	7.38	144.80	1.08	0.74	0.40	sand	>90	46-48	28	UNDEFINED
2.50	8.20	122.40	0.64	0.52	0.45	sand	80-90	44-46	23	UNDEFINED
2.75	9.02	34.60	0.50	1.46	0.50	sandy silt to clayey silt	UNDFND	UNDFD	13	3.4
3.00	9.84	9.00	0.33	3.67	0.54	clay	UNDFND	UNDFD	9	.8
3.25	10.66	3.40	0.21	6.29	0.58	clay	UNDFND	UNDFD	3	.2
3.50	11.48	114.00	2.42	2.12	0.60	silty sand to sandy silt	70-80	42-44	36	UNDEFINED
3.75	12.30	139.20	2.99	2.15	0.62	silty sand to sandy silt	80-90	44-46	44	UNDEFINED
4.00	13.12	164.60	3.42	2.08	0.64	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
4.25	13.94	151.60	4.01	2.65	0.66	silty sand to sandy silt	80-90	44-46	48	UNDEFINED
4.50	14.76	147.20	3.37	2.29	0.68	silty sand to sandy silt	80-90	44-46	47	UNDEFINED
4.75	15.58	181.20	2.49	1.38	0.71	sand to silty sand	80-90	44-46	43	UNDEFINED
5.00	16.40	157.60	2.43	1.54	0.73	sand to silty sand	80-90	44-46	38	UNDEFINED
5.25	17.22	162.40	4.05	2.49	0.75	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
5.50	18.04	240.60	4.88	2.03	0.77	sand to silty sand	>90	44-46	>50	UNDEFINED
5.75	18.86	293.80	4.34	1.48	0.79	sand to silty sand	>90	46-48	>50	UNDEFINED
6.00	19.69	225.60	1.87	0.83	0.81	sand	>90	44-46	43	UNDEFINED
6.25	20.51	231.80	1.74	0.75	0.84	sand	>90	44-46	44	UNDEFINED
6.50	21.33	282.20	2.18	0.77	0.86	sand	>90	46-48	>50	UNDEFINED
6.75	22.15	299.20	3.43	1.15	0.88	sand	>90	46-48	>50	UNDEFINED
7.00	22.97	278.60	2.10	0.76	0.90	sand	>90	44-46	>50	UNDEFINED
7.25	23.79	248.80	2.53	1.02	0.92	sand	>90	44-46	48	UNDEFINED
7.50	24.61	204.40	3.25	1.59	0.94	sand to silty sand	80-90	44-46	49	UNDEFINED
7.75	25.43	260.00	3.15	1.21	0.96	sand	>90	44-46	50	UNDEFINED
8.00	26.25	290.00	3.28	1.13	0.99	sand	>90	44-46	>50	UNDEFINED
8.25	27.07	279.40	2.54	0.91	1.01	sand	>90	44-46	>50	UNDEFINED
8.50	27.89	264.60	3.03	1.15	1.03	sand	>90	44-46	>50	UNDEFINED
8.75	28.71	310.80	2.65	0.85	1.05	sand	>90	44-46	>50	UNDEFINED
9.00	29.53	221.40	2.34	1.06	1.07	sand	80-90	44-46	42	UNDEFINED
9.25	30.35	224.00	2.20	0.98	1.09	sand	80-90	44-46	43	UNDEFINED
9.50	31.17	217.00	1.45	0.67	1.12	sand	80-90	42-44	42	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MontgomeryWatson On Site Loc:CPT-S19-02 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	231.00	1.58	0.68	1.14	sand	80-90	44-46	44	UNDEFINED
10.00	32.81	256.20	3.17	1.24	1.16	sand	>90	44-46	49	UNDEFINED
10.25	33.63	271.60	3.49	1.29	1.18	sand	>90	44-46	>50	UNDEFINED
10.50	34.45	301.60	3.62	1.20	1.20	sand	>90	44-46	>50	UNDEFINED
10.75	35.27	265.80	2.29	0.86	1.22	sand	>90	44-46	>50	UNDEFINED
11.00	36.09	219.20	2.13	0.97	1.24	sand	80-90	42-44	42	UNDEFINED
11.25	36.91	163.20	2.19	1.34	1.27	sand to silty sand	70-80	42-44	39	UNDEFINED
11.50	37.73	213.40	2.77	1.30	1.29	sand	80-90	42-44	41	UNDEFINED
11.75	38.55	140.00	2.02	1.44	1.31	sand to silty sand	70-80	40-42	34	UNDEFINED
12.00	39.37	126.00	3.12	2.47	1.33	silty sand to sandy silt	60-70	40-42	40	UNDEFINED
12.25	40.19	67.00	1.26	1.88	1.35	silty sand to sandy silt	50-60	36-38	21	UNDEFINED
12.50	41.01	90.20	3.91	4.33	1.37	clayey silt to silty clay	UNDFND	UNDFD	43	8.7
12.75	41.83	201.20	5.72	2.84	1.40	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E TONTO ENVIRONMENTAL DRILLING

Operator :Montgomery Watsn
On Site Loc:CPT-S19-03
Job No. :27381236
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/07/94 08:52
Cone Used :462
Water table (meters) : 3

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	151.80	1.55	1.02	0.02	sand to silty sand	>90	>48	36	UNDEFINED
0.50	1.64	165.30	1.46	0.88	0.07	sand	>90	>48	32	UNDEFINED
0.75	2.46	100.90	0.75	0.74	0.12	sand to silty sand	>90	>48	24	UNDEFINED
1.00	3.28	96.14	0.72	0.75	0.17	sand to silty sand	>90	>48	23	UNDEFINED
1.25	4.10	77.70	0.46	0.59	0.21	sand to silty sand	80-90	46-48	19	UNDEFINED
1.50	4.92	47.32	0.38	0.81	0.26	silty sand to sandy silt	60-70	42-44	15	UNDEFINED
1.75	5.74	28.86	0.31	1.07	0.31	silty sand to sandy silt	40-50	40-42	9	UNDEFINED
2.00	6.56	41.72	0.33	0.78	0.35	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
2.25	7.38	17.54	0.16	0.94	0.40	sandy silt to clayey silt	UNDFND	UNDFD	7	1.7
2.50	8.20	2.86	0.04	1.56	0.45	sensitive fine grained	UNDFND	UNDFD	1	.2
2.75	9.02	31.90	0.33	1.03	0.50	silty sand to sandy silt	40-50	38-40	10	UNDEFINED
3.00	9.84	31.30	0.39	1.25	0.54	sandy silt to clayey silt	UNDFND	UNDFD	12	3.0
3.25	10.66	2.56	0.11	4.20	0.58	clay	UNDFND	UNDFD	2	.1
3.50	11.48	92.30	1.68	1.82	0.60	silty sand to sandy silt	70-80	42-44	29	UNDEFINED
3.75	12.30	121.88	2.64	2.16	0.62	silty sand to sandy silt	70-80	42-44	39	UNDEFINED
4.00	13.12	124.82	3.61	2.89	0.64	sandy silt to clayey silt	UNDFND	UNDFD	48	12.4
4.25	13.94	147.12	2.89	1.96	0.66	silty sand to sandy silt	80-90	44-46	47	UNDEFINED
4.50	14.76	144.88	3.28	2.26	0.68	silty sand to sandy silt	80-90	44-46	46	UNDEFINED
4.75	15.58	150.74	2.88	1.91	0.71	silty sand to sandy silt	80-90	44-46	48	UNDEFINED
5.00	16.40	145.36	1.95	1.34	0.73	sand to silty sand	80-90	44-46	35	UNDEFINED
5.25	17.22	148.68	1.80	1.21	0.75	sand to silty sand	80-90	44-46	36	UNDEFINED
5.50	18.04	140.88	3.48	2.47	0.77	silty sand to sandy silt	80-90	42-44	45	UNDEFINED
5.75	18.86	200.06	3.28	1.64	0.79	sand to silty sand	80-90	44-46	48	UNDEFINED
6.00	19.69	247.78	2.34	0.94	0.81	sand	>90	44-46	47	UNDEFINED
6.25	20.51	272.66	2.53	0.93	0.84	sand	>90	46-48	>50	UNDEFINED
6.50	21.33	264.86	2.26	0.85	0.86	sand	>90	44-46	>50	UNDEFINED
6.75	22.15	270.98	3.11	1.15	0.88	sand	>90	44-46	>50	UNDEFINED
7.00	22.97	258.58	2.37	0.92	0.90	sand	>90	44-46	50	UNDEFINED
7.25	23.79	278.72	3.03	1.09	0.92	sand	>90	44-46	>50	UNDEFINED
7.50	24.61	233.92	5.51	2.36	0.94	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
7.75	25.43	219.48	2.96	1.35	0.96	sand to silty sand	80-90	44-46	>50	UNDEFINED
8.00	26.25	196.68	1.85	0.94	0.99	sand	80-90	44-46	38	UNDEFINED
8.25	27.07	215.50	2.96	1.37	1.01	sand to silty sand	80-90	44-46	>50	UNDEFINED
8.50	27.89	286.28	3.32	1.16	1.03	sand	>90	44-46	>50	UNDEFINED
8.75	28.71	310.38	3.01	0.97	1.05	sand	>90	44-46	>50	UNDEFINED
9.00	29.53	275.64	3.31	1.20	1.07	sand	>90	44-46	>50	UNDEFINED
9.25	30.35	117.74	1.44	1.22	1.09	sand to silty sand	70-80	40-42	28	UNDEFINED
9.50	31.17	107.58	1.64	1.52	1.12	sand to silty sand	60-70	40-42	26	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

TONTO ENVIRONMENTAL DRILLING

Operator :Montgomery Watsn On Site Loc:CPT-S19-03 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	68.92	1.82	2.64	1.14	sandy silt to clayey silt	UNDFND	UNDFD	26	6.7
10.00	32.81	144.02	3.36	2.33	1.16	silty sand to sandy silt	70-80	40-42	46	UNDEFINED
10.25	33.63	173.58	2.66	1.53	1.18	sand to silty sand	80-90	42-44	42	UNDEFINED
10.50	34.45	253.40	3.85	1.52	1.20	sand to silty sand	>90	44-46	>50	UNDEFINED
10.75	35.27	307.20	3.86	1.26	1.22	sand	>90	44-46	>50	UNDEFINED
11.00	36.09	357.26	4.91	1.37	1.24	sand	>90	44-46	>50	UNDEFINED
11.25	36.91	335.80	2.35	0.70	1.27	sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY
On Site Loc:CPT-S19-04A
Job No. :2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :08/05/94 08:46
Cone Used :492
Water table (meters) : 3

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	7.54	0.04	0.51	0.02	sensitive fine grained	UNDFND	UNDFD	4	.7
0.50	1.64	5.62	0.00	0.04	0.07	sensitive fine grained	UNDFND	UNDFD	3	.5
0.75	2.46	3.18	0.03	0.81	0.12	sensitive fine grained	UNDFND	UNDFD	2	.3
1.00	3.28	9.32	0.07	0.79	0.17	clayey silt to silty clay	UNDFND	UNDFD	4	.9
1.25	4.10	133.60	1.00	0.75	0.21	sand	>90	>48	26	UNDEFINED
1.50	4.92	155.52	1.13	0.73	0.26	sand	>90	>48	30	UNDEFINED
1.75	5.74	96.38	0.43	0.44	0.31	sand to silty sand	80-90	44-46	23	UNDEFINED
2.00	6.56	81.12	0.38	0.47	0.35	sand to silty sand	70-80	44-46	19	UNDEFINED
2.25	7.38	89.74	0.44	0.49	0.40	sand to silty sand	70-80	44-46	21	UNDEFINED
2.50	8.20	33.32	0.29	0.87	0.45	silty sand to sandy silt	40-50	38-40	11	UNDEFINED
2.75	9.02	13.46	0.16	1.21	0.50	sandy silt to clayey silt	UNDFND	UNDFD	5	1.2
3.00	9.84	31.86	0.51	1.59	0.54	sandy silt to clayey silt	UNDFND	UNDFD	12	3.1
3.25	10.66	100.12	1.00	1.00	0.58	sand to silty sand	70-80	42-44	24	UNDEFINED
3.50	11.48	67.68	0.50	0.73	0.60	sand to silty sand	60-70	40-42	16	UNDEFINED
3.75	12.30	104.44	2.62	2.51	0.62	silty sand to sandy silt	70-80	42-44	33	UNDEFINED
4.00	13.12	184.00	5.08	2.76	0.64	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
4.25	13.94	267.46	5.18	1.94	0.66	sand to silty sand	>90	46-48	>50	UNDEFINED
4.50	14.76	202.58	5.80	2.86	0.68	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
4.75	15.58	203.34	4.89	2.41	0.71	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
5.00	16.40	214.94	3.66	1.70	0.73	sand to silty sand	>90	44-46	>50	UNDEFINED
5.25	17.22	206.48	4.19	2.03	0.75	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
5.50	18.04	213.22	5.26	2.46	0.77	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
5.75	18.86	214.84	3.88	1.81	0.79	sand to silty sand	>90	44-46	>50	UNDEFINED
6.00	19.69	242.36	3.81	1.57	0.81	sand to silty sand	>90	44-46	>50	UNDEFINED
6.25	20.51	224.98	2.30	1.02	0.84	sand	>90	44-46	43	UNDEFINED
6.50	21.33	240.56	3.36	1.40	0.86	sand to silty sand	>90	44-46	>50	UNDEFINED
6.75	22.15	233.22	3.26	1.40	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
7.00	22.97	260.76	3.61	1.39	0.90	sand to silty sand	>90	44-46	>50	UNDEFINED
7.25	23.79	247.38	4.73	1.91	0.92	sand to silty sand	>90	44-46	>50	UNDEFINED
7.50	24.61	306.76	4.99	1.63	0.94	sand to silty sand	>90	46-48	>50	UNDEFINED
7.75	25.43	253.90	3.49	1.37	0.96	sand to silty sand	>90	44-46	>50	UNDEFINED
8.00	26.25	224.54	3.75	1.67	0.99	sand to silty sand	>90	44-46	>50	UNDEFINED
8.25	27.07	258.02	3.16	1.23	1.01	sand	>90	44-46	49	UNDEFINED
8.50	27.89	226.32	4.40	1.94	1.03	sand to silty sand	80-90	44-46	>50	UNDEFINED
8.75	28.71	204.24	3.05	1.49	1.05	sand to silty sand	80-90	42-44	49	UNDEFINED
9.00	29.53	203.10	2.73	1.35	1.07	sand to silty sand	80-90	42-44	49	UNDEFINED
9.25	30.35	178.86	2.00	1.17	1.09	sand to silty sand	80-90	42-44	41	UNDEFINED
9.50	31.17	201.60	2.52	1.25	1.12	sand	80-90	42-44	39	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY On Site Loc:CPT-S19-04A Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	268.60	4.61	1.71	1.14	sand to silty sand	>90	44-46	>50	UNDEFINED
10.00	32.81	303.78	4.97	1.64	1.16	sand to silty sand	>90	44-46	>50	UNDEFINED
10.25	33.63	275.14	4.11	1.50	1.18	sand to silty sand	>90	44-46	>50	UNDEFINED
10.50	34.45	309.02	4.43	1.44	1.20	sand to silty sand	>90	44-46	>50	UNDEFINED
10.75	35.27	332.40	5.07	1.53	1.22	sand to silty sand	>90	44-46	>50	UNDEFINED
11.00	36.09	290.64	4.04	1.39	1.24	sand	>90	44-46	>50	UNDEFINED
11.25	36.91	137.74	2.40	1.74	1.27	silty sand to sandy silt	70-80	40-42	44	UNDEFINED
11.50	37.73	133.66	3.35	2.51	1.29	silty sand to sandy silt	70-80	40-42	43	UNDEFINED
11.75	38.55	186.48	3.54	1.90	1.31	sand to silty sand	80-90	42-44	45	UNDEFINED
12.00	39.37	156.98	5.26	3.35	1.33	sandy silt to clayey silt	UNDFND	UNDFD	>50	15.4
12.25	40.19	166.44	3.44	2.07	1.35	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
12.50	41.01	89.46	2.64	2.96	1.37	sandy silt to clayey silt	UNDFND	UNDFD	34	8.7
12.75	41.83	65.98	1.57	2.39	1.40	sandy silt to clayey silt	UNDFND	UNDFD	25	6.3
13.00	42.65	178.42	8.09	4.53	1.42	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
13.25	43.47	221.26	10.45	4.72	1.44	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
13.50	44.29	200.66	7.60	3.79	1.46	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Janiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY
On Site Loc:CPT-S19-05
Job No. :2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :08/05/94 10:33
Cone Used :492
Water table (meters) : 3

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	2.22	0.01	0.38	0.02	sensitive fine grained	UNDFND	UNDFD	1	.2
0.50	1.64	2.08	0.01	0.53	0.07	sensitive fine grained	UNDFND	UNDFD	1	.2
0.75	2.46	3.06	0.00	0.03	0.12	sensitive fine grained	UNDFND	UNDFD	1	.2
1.00	3.28	3.70	0.01	0.39	0.17	sensitive fine grained	UNDFND	UNDFD	2	.3
1.25	4.10	4.12	0.04	1.04	0.21	sensitive fine grained	UNDFND	UNDFD	2	.3
1.50	4.92	15.40	0.13	0.84	0.26	sandy silt to clayey silt	UNDFND	UNDFD	6	1.5
1.75	5.74	16.42	0.27	1.66	0.31	sandy silt to clayey silt	UNDFND	UNDFD	6	1.6
2.00	6.56	58.02	0.41	0.71	0.35	sand to silty sand	60-70	42-44	14	UNDEFINED
2.25	7.38	62.48	0.48	0.77	0.40	sand to silty sand	60-70	42-44	15	UNDEFINED
2.50	8.20	41.66	0.32	0.77	0.45	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
2.75	9.02	21.68	0.41	1.90	0.50	sandy silt to clayey silt	UNDFND	UNDFD	8	2.1
3.00	9.84	63.88	0.55	0.87	0.54	sand to silty sand	60-70	40-42	15	UNDEFINED
3.25	10.66	43.92	0.76	1.72	0.58	silty sand to sandy silt	50-60	38-40	14	UNDEFINED
3.50	11.48	140.22	3.17	2.26	0.60	silty sand to sandy silt	80-90	44-46	45	UNDEFINED
3.75	12.30	142.56	5.63	3.95	0.62	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
4.00	13.12	148.40	4.45	3.00	0.64	sandy silt to clayey silt	UNDFND	UNDFD	>50	14.7
4.25	13.94	130.22	4.92	3.78	0.66	sandy silt to clayey silt	UNDFND	UNDFD	50	12.9
4.50	14.76	182.90	4.38	2.39	0.68	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
4.75	15.58	216.78	3.71	1.71	0.71	sand to silty sand	>90	44-46	>50	UNDEFINED
5.00	16.40	179.12	4.16	2.32	0.73	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
5.25	17.22	183.74	4.52	2.46	0.75	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
5.50	18.04	174.82	5.34	3.06	0.77	sandy silt to clayey silt	UNDFND	UNDFD	>50	17.3
5.75	18.86	284.72	7.35	2.58	0.79	silty sand to sandy silt	>90	46-48	>50	UNDEFINED
6.00	19.69	328.32	6.51	1.98	0.81	sand to silty sand	>90	46-48	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

LOCATION MAP

N →

372-3

372-2

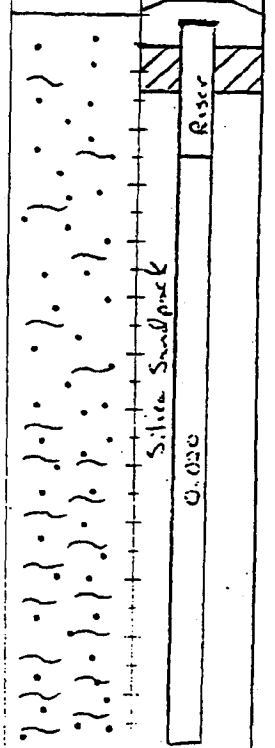
372-1

ERM-SOUTH WELL LOG

PROJECT ➤	1970.08
WELL NO.	372-MW-2
DATE ➤	1-20-95
LOCATION ➤	Bldg 372, Alameda NAS
LOGGED ➤ BY	Greg Mahr
WEATHER ➤	Light Rain
DRILLING ➤ METHOD	HSA
DRILLED ➤ BY	Wayne Environmental Drlg
SAMPLING ➤ METHOD	Brass Tube - Grab
OVA ➤	—
MEASURING POINT ELEVATION ➤	
LAND SURFACE ELEVATION ➤	
FILTER ➤ PACK	Lonestar #3, TOP DEPTH 1.55', BOTTOM DEPTH 13'
SEAL ➤	Bentonite, TOP DEPTH .55', BOTTOM DEPTH 1.55'
CASING ➤ TYPE	Sched 40 PVC, DIAMETER 4", LENGTH 2.55'
WATER LEVEL INITIAL	3' ☑ B.G.S. ☐ B.M.P.
BOREHOLE DIAMETER	8.25"
SCREEN ➤ TYPE	Sched 40 PVC, SLOT 0.020, DIAMETER 4", LENGTH 10.0'
WATER LEVEL AT COMPLETION	2.95 ☑ B.G.S. ☐ B.M.P.
BOREHOLE DEPTH	13'
DEVELOPMENT ➤ METHOD	
GALLONS PUMPED	
PUMPING RATE	
COMMENTS ➤	

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	OVA (PPM)	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY/REMARKS
D						0			Concrete
						1			
M						2			Silty Sands, Moderate Yellowish Brown, 10YR 5/4, Silt- Medium Grained, Angular (SM)
W				372 MW2 3-4'		3			
						4			
						5			
						6			
						7			
						8			Silty Sands, Dark Greenish Gray, 5G 4/1, 50% Fines (SM)
						9			
						10			
						11			
						12			
						13			

GRAPHIC LOG



WELL COMPLETION

The ERM GROUP

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B001

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in		not surveyed	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / ft	Pete Holland	E. Johansen, R.G. 6643	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								CONCRETE AND BASEROCK	
C0591045		3:35:00 PM				1		SAND (SP): Olive [5Y 5/3], dense, moist, poorly graded, fine grained sand, subrounded, contains thin (<1") layers of fat clay and fine gravel.	FID/PID Background = 2.1 ppm Hole backfilled with cement grout after completion (.5 bgs cement + 2.5 gal water)
C0591046		3:40:00 PM				2			IDW Generated = 3 gallons
						3			
C0591047		3:45:00 PM		▽		4		at 4.0 ft.: wet.	
						5			
						6			
C0591048		3:50:00 PM				7			
						8			
								TOTAL DEPTH = 8.5 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B001

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B002

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in		not surveyed	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.5 ft / ft	Pete Holland	E. Johansen, R.G. 6643	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	
C0591049		11:00:00 AM				1		at 0.5 ft.: Very dark grayish brown [10YR 3/2]. SAND (SP): Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subrounded.	FID/PID Background = 3.8 ppm Hole backfilled with cement grout after completion (.5 bgs cement + 2.5 gal water)
C0591050		11:05:00 AM				2			IDW generated = 3 gallons
C0591051		11:10:00 AM		▽		3			
						4		at 4.5 ft.: wet	
						5			
						6		at 6.0 ft.: Greenish gray [10GY 4/1].	
C0591052		11:15:00 AM				7			
						8			
								TOTAL DEPTH = 8.5 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B002

Report form: CTD-059 ALAMEDA BORING LOG Time: 4:58:13 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B003

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in		not surveyed	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼	Pete Holland	E. Johansen, R.G. 6643	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	FID/PID Background = 4.4 ppm
C0591054 C0591053		10:20:00 AM				1		**SAND (SP)**: Olive [5Y 5/3], dense, moist, poorly graded, fine grained sand, subrounded.	Hole backfilled with cement grout after completion (.5 bgs cement + 2.5 gal water)
C0591055		10:25:00 AM				2			IDW Generated = 3 gallons
						3		DRAFT	
C0591056		10:30:00 AM				4			
						5		at 4.5 ft.: Dark reddish brown [5YR 2.5/2].	
C0591057		10:35:00 AM				6			
						7		at 7.3 ft.: Brown [10YR 4/3].	
						8			
								TOTAL DEPTH = 8.5 FEET	

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B003

	PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
	CLEAN 3	23818-059	1 of 1	C3S019B004

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.		OU-2A IR Site 19	Alameda Point	Unknown	Unknown

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push			not surveyed	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼		E. Johansen, R.G. 6643	Vertical	

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
						1			
						2			
						3			
						4			
						5			
						6			
						7			
						8			
								TOTAL DEPTH = 8.0 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B004

Report form: CTD-459 ALAMEDA BORING LOG Tbart 4/30/07 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B005

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	8-1-03	8-1-03
DRILLING METHOD	**HOLE DIAMETER**	**COORDINATES**		**ELEVATION**	**TOTAL DEPTH**
Direct-Push	1.5 in			not surveyed	8.5 ft
DEPTH / ELEVATION TO WATER		**LOGGED BY**	**REVIEWED BY**	**ANGLE (from Horiz)**	**ABANDON DATE**
▼ 5.0 ft / ft		Pete Holland	E. Johansen, R.G. 6643	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								CONCRETE	
C0591062		9:00:00 AM				1		**SAND (SP)**: Olive [5Y 5/3], dense, wet, poorly graded, fine grained sand, subrounded, (FILL).	FID/PID Background = 1.8 ppm Hole backfilled with cement grout after completion (.5 bgs cement + 2.5 gal water)
C0591064 C0591063		9:05:00 AM				2			IDW Generated = 3 gallons
C0591065		9:10:00 AM				3			
				▽		4			
						5		at 5.0 ft.: wet.	
C0591066		9:15:00 AM				6		**SAND (SW)**: Black [10YR 2/1], wet, angular fragments of sandstone, might be oily. (FILL).	
						7			
						8		**SAND (SP)**: Olive [5Y 5/3], dense, wet, poorly graded, fine grained sand, subrounded.	
								TOTAL DEPTH = 8.5 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B005

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B006

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in		not surveyed	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / ft	Pete Holland	E. Johansen, R.G. 6643	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								CONCRETE	
C0591067		9:45:00 AM				1		**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subrounded, (FILL).	FID/PID Background = 4.1 ppm Hole backfilled with cement grout after completion (.5 bgs cement + 2.5 gal water)
C0591068		9:50:00 AM				2			IDW Generated = 3 gallons.
C0591069		9:55:00 AM		▽		3			
						4		at 4.0 ft.: wet.	
						5		**GRAVEL (GW)**: Black [10YR 2/1], dense, wet, well graded, includes a lot of unidentifiable debris, white grainy-plastic material, decomposed plastic??, about 80% rock, 20% debris (gravel compostition), gravel @ 6.5'-7.5' appeared to have oily sheen. (FILL).	
C0591070		10:00:00 AM				6			
						7			
						8		**SAND (SP)**: Greenish gray [5G 5/1], poorly graded.	
								TOTAL DEPTH = 8.5 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B006

Report Form: CTU-488 ALAMEDA BORING LOG Time: 4:58:32 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B007

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	8-1-03	8-1-03
DRILLING METHOD	**HOLE DIAMETER**	**COORDINATES**		**ELEVATION**	**TOTAL DEPTH**
Direct-Push	1.5 in			not surveyed	8.5 ft
DEPTH / ELEVATION TO WATER		**LOGGED BY**	**REVIEWED BY**	**ANGLE (from Horiz)**	**ABANDON DATE**
▼ 4.0 ft / ft		Pete Holland	E. Johansen, R.G. 6643	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	
C0591071		11:25:00 AM				1		at 0.5 ft.: Reddish brown [2.5YR 4/4]. SAND (SP): Olive [5Y 5/3], dense, moist, fine grained sand, subrounded, (FILL).	FID/PID Background = 4.3 ppm Hole backfilled with cement grout after completion (.5 bgs cement + 2.5 gal water)
C0591072		11:30:00 AM				2			IDW Generated = 3 gal
						3			
C0591074 C0591073		11:35:00 AM		▽		4			
								CLAY (CH): Greenish gray [5GY 5/1], high plasticity, (FILL).	
						5		SAND (SP): Olive [5Y 5/3], dense, moist, fine grained sand, subrounded, (FILL). at 5.0 ft.: Very dark gray [10YR 3/1].	
						6			
C0591075		11:40:00 AM				7			
						8		at 7.8 ft.: Greenish gray [10Y 5/1].	
								TOTAL DEPTH = 8.5 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B007

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B008

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 19	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in		not surveyed	8.7 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ 4.0 ft / ft	Lynelle Onishi	E. Johansen, R.G. 6643	Vertical	7/31/03

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	Fld background = 0 ppm Hole backfilled after completion
C0591076		3:30:00 PM				1		SAND (SP): Light olive brown [2.5Y 5/4], moist, poorly graded, fine grained sand, shell fragments, trace fine angular gravel, 90% sand, 10% fines.	
C0591077		3:30:00 PM				2			IDW Generated = 4-gallons of soil
						3			
C0591078		3:32:00 PM		▽		4		at 4.0 ft.: wet.	
						5			
						6			
C0591079		3:37:00 PM				7			
						8		at 8.0 ft.: Dark greenish gray [GLEY1 3/1].	
								TOTAL DEPTH = 8.7 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83
Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S019B008

Report from: C:\0-0\9 ALAMEDA BORING LOG Time: 4:58:31 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B009

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in		not surveyed	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / ft	Pete Holland	E. Johansen, R.G. 6643	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	FID/PID Background = 3.4 ppm Hole backfilled with cement grout after completion (.5 bgs cement + 2.5 gal water)
C0591080		11:50:00 AM				1		**SAND (SP)**: Olive [5Y 5/3], dense, moist, poorly graded, fine grained sand, subrounded.	
C0591081		11:55:00 AM				2			IDW Generated = 3 gal
						3			
C0591082		12:00:00 PM		▽		4		at 3.5 ft.: Very dark grayish brown [10YR 3/2]. at 4.0 ft.: wet.	
						5			
						6			
C0591084 C0591083		12:05:00 PM				7		at 6.5 ft.: Light olive brown [2.5Y 5/3].	
						8			
								TOTAL DEPTH = 8.5 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83
Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S019B009

BORING LOG Time: 15:39 PM
Report form: CTH.

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B010

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in		not surveyed	9.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / ft	Lynelle Onishi	E. Johansen, R.G. 6643	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	FID Background = 0 ppm Hole backfilled with cement grout after completion (.75 bgs cement + ~5 gal water)
C0591085		2:51:00 PM				1		CLAY with GRAVEL (CL): Dark brown [10YR 3/3], moist, fine gravel, angular, 35% gravel, 15% sand, 50% fines (ROAD FILL).	
								SAND with SILT (SP-SM): Light olive brown [2.5Y 5/4], moist, fine grained sand, trace fine angular gravel, shell fragments, trace gravel, 90% sand, 10% fines. (FILL).	
C0591086		2:59:00 PM				2			IDW Generated = 1 gal
						3			
C0591087		3:00:00 PM		▽		4		at 4.0 ft.: wet, ~ 4 ft.	
						5			
						6		at 6.0 ft.: Very dark greenish gray [Gley 1 3/1].	
C0591088		3:05:00 PM				7			
						8			
						9		TOTAL DEPTH = 9.0 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B010

Report Name: CTO-059 ALAMEDA BORING LOG Time: 4:58:41 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B011

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	Unknown	Unknown

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in		not surveyed	7.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / ft	Pete Holland	E. Johansen, R.G. 6643	Vertical	

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	
C0591089		2:10:00 PM				1		**SAND (SP)**: Olive [5Y 5/3], dense, moist, poorly graded, fine grained sand.	FID/PID Background = 0.9 ppm (backfill information not available)
C0591090		2:15:00 PM				2			(IDW generation information not available)
						3			
C0591091		2:20:00 PM		▽		4		at 3.5 ft.: Dark olive brown [2.5Y 3/3].	
								at 4.0 ft.: wet.	
						5			
								at 5.5 ft.: Greenish gray [5G 5/1].	
						6			
C0591092		2:25:00 PM				7			
								at 7.5 ft.: bottom 7.5 ft (probably dense gravelly layer).	
								TOTAL DEPTH = 7.5 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B011

BORING LOG Time 4:58:44 PM
Report form: CT

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B012

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in		not surveyed	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / ft	Pete Holland	E. Johansen, R.G. 6643	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	
C0591094 C0591093		1:40:00 PM				1		SAND (SP): Olive [5Y 5/3], dense, moist, poorly graded, fine grained sand.	FID/PID Background = 8.0 ppm Hole backfilled with cement grout after completion (.5 bgs cement + 2.5 gal water)
C0591095		1:45:00 PM				2			IDW Generated = 3 gal
						3			
C0591096		1:50:00 PM		▽		4		at 3.5 ft.: Dark grayish brown. at 4.0 ft.: wet.	
						5		at 5.0 ft.: Greenish gray.	
						6			
C0591097		1:55:00 PM				7		GRAVEL (GP): dense, fine and coarse gravel, subrounded, varicolored.	
						8			
								TOTAL DEPTH = 8.5 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83
Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S019B012

Report Form: CTD-059 ALAMEDA BORING LOG Time: 6:58:41 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S019B013

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 19	Alameda Point	8-1-03	8-1-03
DRILLING METHOD	**HOLE DIAMETER**	**COORDINATES**		**ELEVATION**	**TOTAL DEPTH**
Direct-Push	1.5 in			not surveyed	8.5 ft
DEPTH / ELEVATION TO WATER		**LOGGED BY**	**REVIEWED BY**	**ANGLE (from Horiz)**	**ABANDON DATE**
▼ 4.0 ft / ft		Pete Holland	E. Johansen, R.G. 6643	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	
C0591098		1:15:00 PM				1		**SAND (SP)**: Olive [5Y 5/3], dense, moist, poorly graded, fine grained sand.	FID/PID Background = 3.1 ppm Hole backfilled with cement grout after completion (.5 bgs cement + 2.5 gal water)
C0591099		1:20:00 PM				2			IDW Generated = 3 gal
						3		at 2.5 ft.: Dark olive brown [2.5Y 3/3], trace organics.	
C0591100		1:25:00 PM		▽		4		at 4.0 ft.: Greenish gray [5G 5/1], wet.	
						5			
						6			
C0591102 C0591101		1:30:00 PM				7			
						8			
								TOTAL DEPTH = 8.5 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B013

BORING LOG Time: 4:58:58 PM

Report form: CTF

	PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
	CLEAN 3	23818-059	1 of 1	C3S019B014
DRILLING COMPANY / DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	OU-2A IR Site 19	Alameda Point	Unknown	Unknown
DRILLING METHOD / HOLE DIAMETER	COORDINATES		ELEVATION	TOTAL DEPTH
Direct-Push			not surveyed	8.0 ft
DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼		E. Johansen, R.G. 6643	Vertical	

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
						1			
						2			
						3			
						4			
						5			
						6			
						7			
						8			
								TOTAL DEPTH = 8.0 FEET	

DRAFT

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B014

Report form: C:\TI-059 ALAMEDA\BORING LOG Time: 4:58:51 PM

	PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
	CLEAN 3	23818-059	1 of 1	C3S019B015

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.		OU-2A IR Site 19	Alameda Point	Unknown	Unknown

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push			not surveyed	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼		E. Johansen, R.G. 6643	Vertical	

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
						1			
						2			
						3			
						4			
						5			
						6			
						7			
						8			

DRAFT

TOTAL DEPTH = 8.0 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992), CCS83 Vertical Coordinates: North Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S019B015

Report Format: ...ALAMEDA BORING LOG Time: 4:58:51 PM

Site 22

SITE 22 SOIL BORING AND CONE PENETROMETER LOGS

Remedial Investigation Report for OU-2A, Alameda Point, Alameda, California

Boring ID	Date Drilled	Investigation
MW547-1	6/29/1990	Phase 1 & 2A
MW547-2	6/29/1990	Phase 1 & 2A
MW547-3	7/2/1990	Phase 1 & 2A
MW547-4	6/28/1990	Phase 1 & 2A
MW547-5	6/29/1990	Phase 1 & 2A
B547-6	7/2/1990	Phase 1 & 2A
B547-7	6/28/1990	Phase 1 & 2A
B547-8	7/3/1990	Phase 1 & 2A
B547-9	7/2/1990	Phase 1 & 2A
B547-10	7/2/1990	Phase 1 & 2A
B07C-11	8/17/1994	Follow On Investigation 1994
B07C-12	8/17/1994	Follow On Investigation 1994
B07C-13	8/23/1994	Follow On Investigation 1994
B07C-14	8/17/1994	Follow On Investigation 1994
B07C-15	8/17/1994	Follow On Investigation 1994
M07C-06	8/17/1994	Follow On Investigation 1994
M07C-07	8/18/1994	Follow On Investigation 1994
M07C-08	8/18/1994	Follow On Investigation 1994
M07C-09	8/17/1994	Follow On Investigation 1994
D07C-01	11/4/1994	Follow On Investigation 1994
CPT-S7C-01	7/8/1994	Follow On Investigation 1994
CPT-S7C-03	7/8/1994	Follow On Investigation 1994
CPT-S7C-04	7/8/1994	Follow On Investigation 1994
S22-DGS-SG01	7/10/2001	Data Gap Sampling 2001
S22-DGS-SG02	7/10/2001	Data Gap Sampling 2001
S22-DGS-SG04	9/7/2001	Data Gap Sampling 2001
C3S022B001	7/31/2003	PAH Study
C3S022B002	7/31/2003	PAH Study
C3S022B003	7/31/2003	PAH Study
C3S022B004	7/31/2003	PAH Study
C3S022B005	7/31/2003	PAH Study
C3S022B006	7/31/2003	PAH Study
C3S022B007	7/31/2003	PAH Study
C3S022B008	7/31/2003	PAH Study
C3S022B009	7/31/2003	PAH Study
C3S022B010	7/31/2003	PAH Study
C3S022B011	7/31/2003	PAH Study
C3S022B012	7/31/2003	PAH Study
C3S022B013	7/31/2003	PAH Study
C3S022B014	7/31/2003	PAH Study
C3S022B015	7/31/2003	PAH Study
C3S022B016	7/31/2003	PAH Study
C3S022B017	7/31/2003	PAH Study
C3S022B018	7/31/2003	PAH Study
C3S022B019	7/31/2003	PAH Study
C3S022B020	7/31/2003	PAH Study
C3S022B021	7/31/2003	PAH Study
C3S022B022	7/31/2003	PAH Study

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. MW547-1
LOGGED BY RMD

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION NW corner of fenced area of Building 547 at gate SURFACE ELEVATION 114.58 feet
DRILLER Spectrum Exploration - Garry Buss DATE: START 6/29/90 FINISH 6/29/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS
	1	CS	0.0	1.5	12	14	11	14	SP			0.3	Asphalt. (Fill)
	2	CS	1.5	3.0	6	7	7	15	SP				Medium dense, light brown, fine sand, moist, some asphalt debris. (Fill)
	3	CS	3.0	4.5	2	2	2	13	SP-SM			4.0	becomes loose at 1.5 feet.
5													Loose, dark brown, silty fine sand, saturated.
	4	CS	4.5	6.0	1	2	1	13	SM				
	5	CS	6.0	7.5	2	1	1	15	SM		Fill	6.0	Medium dense, brown, silty fine sand, saturated. (Merritt Sand)
	6	CS	7.5	9.0	3	6	12	18	SM		MS	7.3	Loose, orange and brown mottled with gray, silty, fine sand, saturated, with trace of clay. (Merritt Sand)
10	7	CS	9.0	10.5	14	15	14	17	SM				
	8	CS	10.5	12.0	10	20	16	18	SM			10.5	becomes medium dense at 8.5 feet. layer of clayey sand at top of unit.
	9	CS	12.0	13.5	7	13	12	18	SM				
15	10	CS	13.5	15.0	7	13	15	18	SM				Medium dense to dense, brown, silty fine sand, saturated. (Merritt Sand)
												15.0	Bottom of Boring at 15.0 feet.
20													
25													
30													
35													
40													

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 4.0 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

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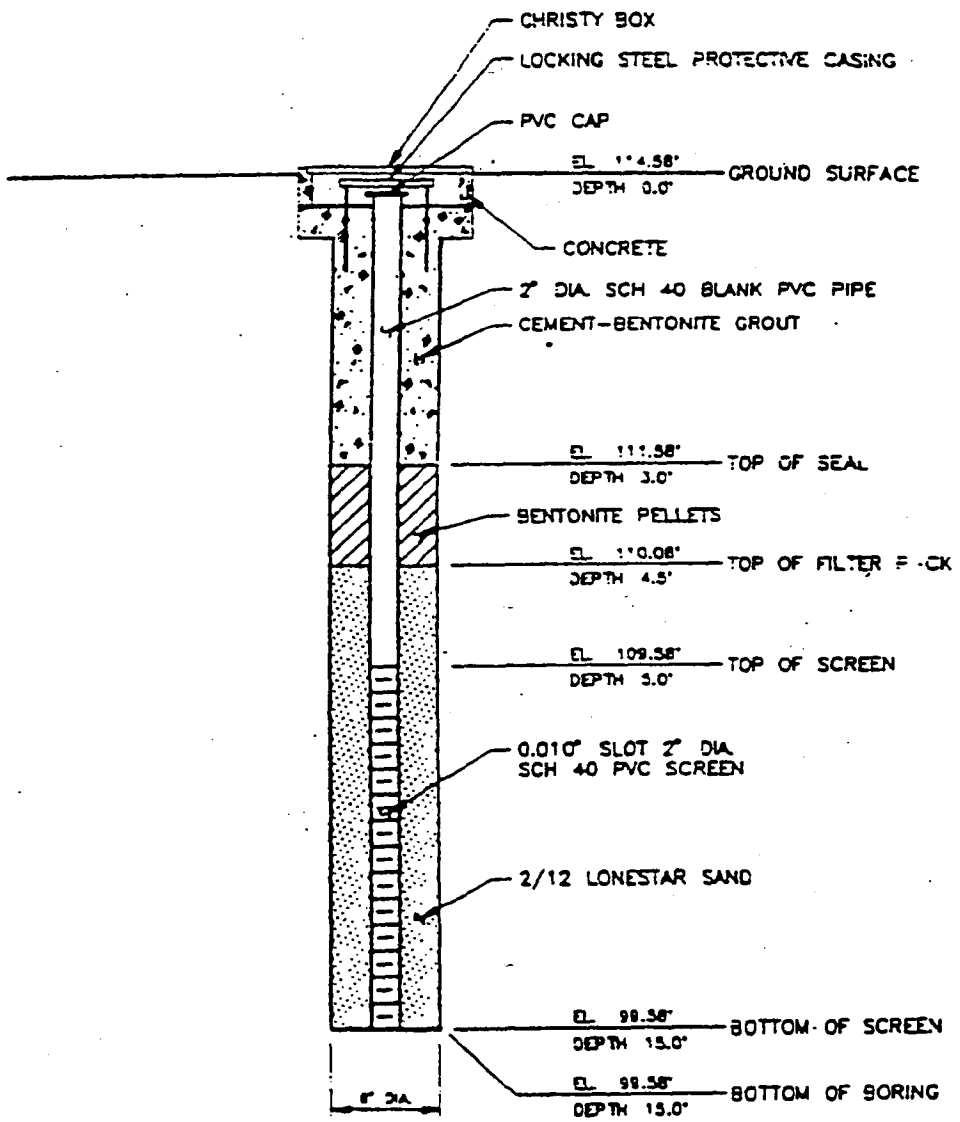
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MW547-1

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION AREA 547, NORTHWEST CORNER AT GATE DATE 5-29-90 BY RMD



NOTES:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION

PROJECT No. 86-018-1804
BORING No. MW547-2
LOGGED BY RMD

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION Northeast corner of fenced area of Building 547 SURFACE ELEVATION 113.87 feet
DRILLER Spectrum Exploration - Garry Buss DATE: START 6/29/90 FINISH 6/29/90

DEPTH	No.	TYPE	INTERVAL FROM	INTERVAL TO	COUNT 0"-6"	COUNT 6"-12"	COUNT 12"-18"	(in)	SOIL TYPE	(%)	(TSF)	LAYER	DEPTH	AND REMARKS	PIEZO
	1	CS	0.0	1.5	4	9	14	13	SM					Grass and topsoil.	
												0.5		Medium dense, dark brown, silty fine sand, dry. (Fill)	
	2	CS	1.5	3.0	6	8	12	15	SM					becomes moist with odor at 2.5 feet.	
	3	CS	3.0	4.5	10	10	7	14	SM					color change to black at 2.8 feet.	
5															
	4	CS	4.5	6.0	2	3	2	15	SM		Fill	5.0		trace of clay at 3.5 feet.	X
	5	CS	6.0	7.5	3	5	10	18	SC			7.0		becomes loose at 4.5 feet.	X
											MS			Medium dense, brown, silty sand, saturated.	X
	6	CS	7.5	9.0	5	10	11	16	SC						X
10	7	CS	9.0	10.5	9	7	10	16	SC					Medium dense, orange brown mottled with gray, clayey fine sand, saturated.	X
															X
	8	CS	10.5	12.0	9	9	13	15	SC					clay decreases to some at 9.0 feet.	X
	9	CS	12.0	13.5	9	10	11	16	SC					color change to brown at 9.0 feet.	X
														(Merritt Sand)	X
15	10	CS	13.5	15.0	6	11	13	18	SC					Heaving sands encountered at bottom of borehole.	X
												15.0		Bottom of Boring at 15.0 feet.	
20															
25															
30															
35															
40															

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.3 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings:
   a) 10 ppm at 1.0 feet.

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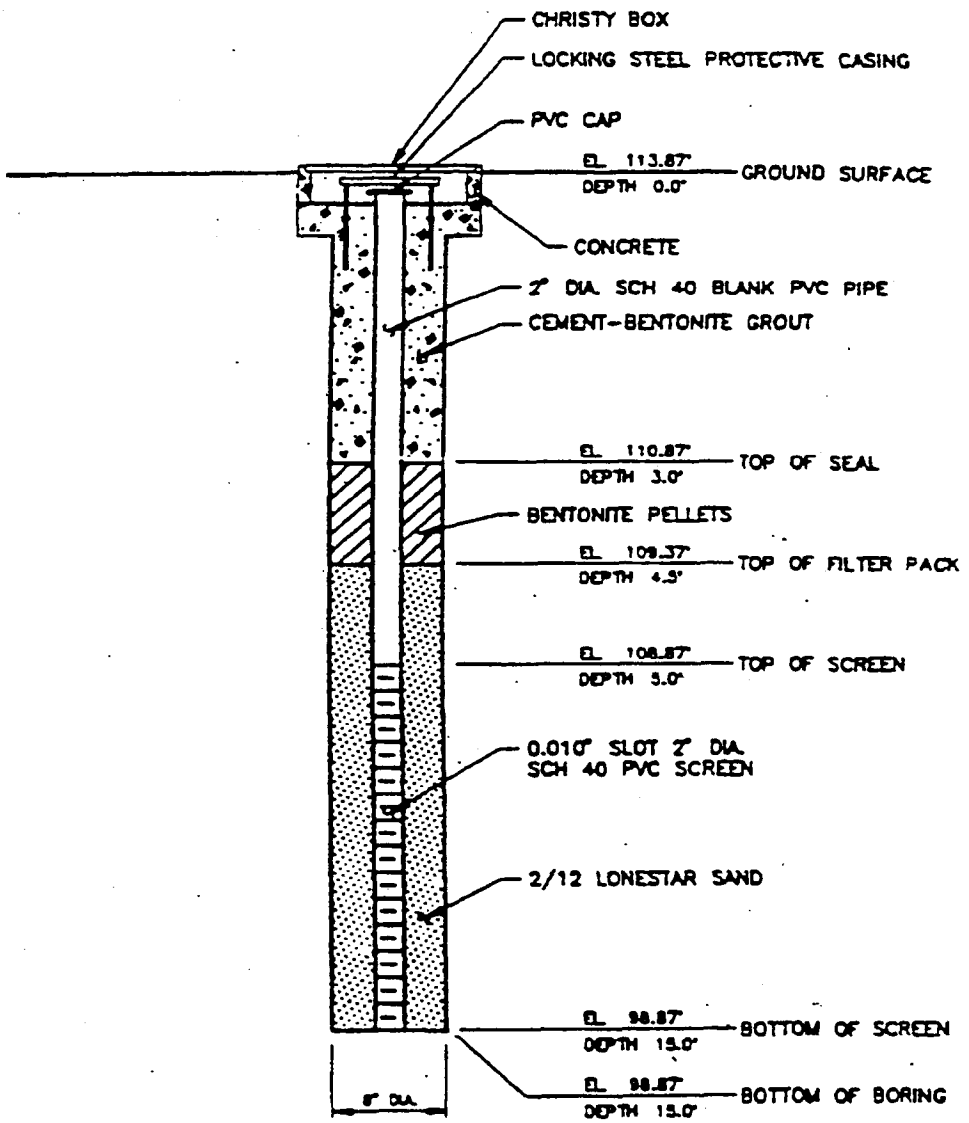
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MW547-2

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION AREA 547, NORTHEAST CORNER DATE 6-29-90 BY RMD



NOTES:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. MW547-3
LOGGED BY RMD

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION South of service island in fenced area of Bldg. 547 SURFACE ELEVATION 115.61 feet
DRILLER Spectrum Exploration - Garry Buss DATE: START 7/2/90 FINISH 7/2/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	6	13	13	9	SP				Asphalt (Fill)	
												1.0	Medium dense, gray, fine sand, dry, with fuel odor. (Fill)	
	2	CS	1.5	3.0	2	12	13	15	SP					
	3	CS	3.0	4.5	6	5	6	14	SP				sand becomes moist at 3.5 feet.	
5													thin layer of clay at 4.0 feet.	
	4	CS	4.5	6.0	1	1	1	13	CL			5.5	Soft, dark gray, sandy clay, saturated.	x
	5	CS	6.0	7.5	1	1	1	16	CL			7.3	Sand decreases to none at 6.3 feet.	x
													Very loose, black, silty fine sand, saturated.	x
	6	CS	7.5	9.0	2	2	2	17	SM					x
10	7	CS	9.0	10.5	3	2	2	15	SM			10.3	Loose, orange brown mottled with gray, silty, fine sand, saturated, with some clay. (Merritt Sand)	x
														x
	8	CS	10.5	12.0	2	5	7	18	SM					x
	9	CS	12.0	13.5	2	9	10	16	SM				becomes medium dense at 11.5 feet.	x
													clay decreases to trace at 12.8 feet.	x
15	10	CS	13.5	15.0	5	8	13	17	SM					x
												15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.0 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings:
   a) 30-40 ppm at 1.5 feet.
   b) 100-200 ppm in hole 3.0 feet.
   c) 50 ppm at 6.0 feet.

Canonie Environmental

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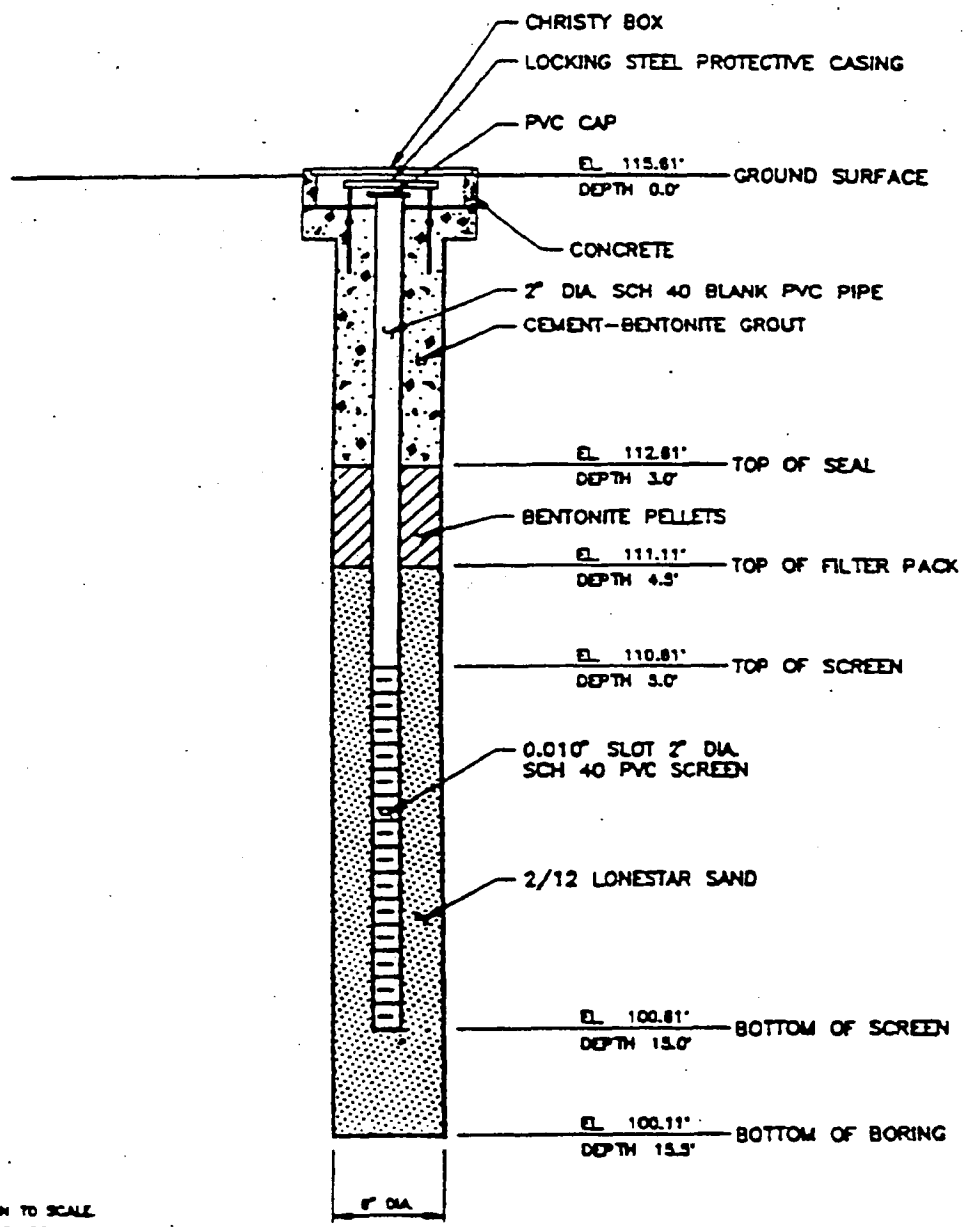
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MW547-3

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION AREA 547, SOUTH OF GASOLINE ISLAND DATE 7-2-90 BY RMD



NOTES:

1. NOT DRAWN TO SCALE.
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

PROJECT No. 86-018-1804
BORING No. MW547-4
LOGGED BY BB

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION Southwest corner of fenced area of Building 547 SURFACE ELEVATION 114.68 feet
DRILLER Spectrum Drilling - Garry Buss DATE: START 6/28/90 FINISH 6/28/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	TO	BLOW COUNT 0" 6" 6" 12"	12" 18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	10	9 10	13	SM				Asphalt. (Fill)	
											0.3	Medium dense, dark brown, silty fine sand, dry. (Fill)	
	2	CS	1.5	3.0	6	8 6	15	SM					
	3	CS	3.0	4.5	1	2 2	15	SM				becomes very loose at 3.0 feet.	
5												color change to black at 3.8 feet.	
	4	CS	4.5	6.0	1	1 1	18	SM				becomes saturated at 4.5 feet.	X
	5	CS	6.0	7.5	2	2 2	15	SM					X
													X
	6	CS	7.5	9.0	1	1 1	17	SM		Fill			X
10	7	CS	9.0	10.5	3	4 4	16	SC			9.0	Loose, reddish brown and gray, clayey fine sand, saturated, with some silt. (Merritt Sand)	X
										MS			X
	8	CS	10.5	12.0	4	7 6	17	SC					X
	9	CS	12.0	13.5	2	5 10	15	SC				clay decreases to trace at 12.5 feet.	X
													X
15	10	CS	13.5	15.0	10	12 15	13	SM			13.5	Medium dense, dark brown, silty fine sand, saturated.	X
											15.0	Bottom of Boring at 15.0 feet.	
20													
25													
30													
35													
40													

Notes:

1. Boring was advanced using 8-inch-diameterhollow stem augers.
2. Groundwater was encountered at 4.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

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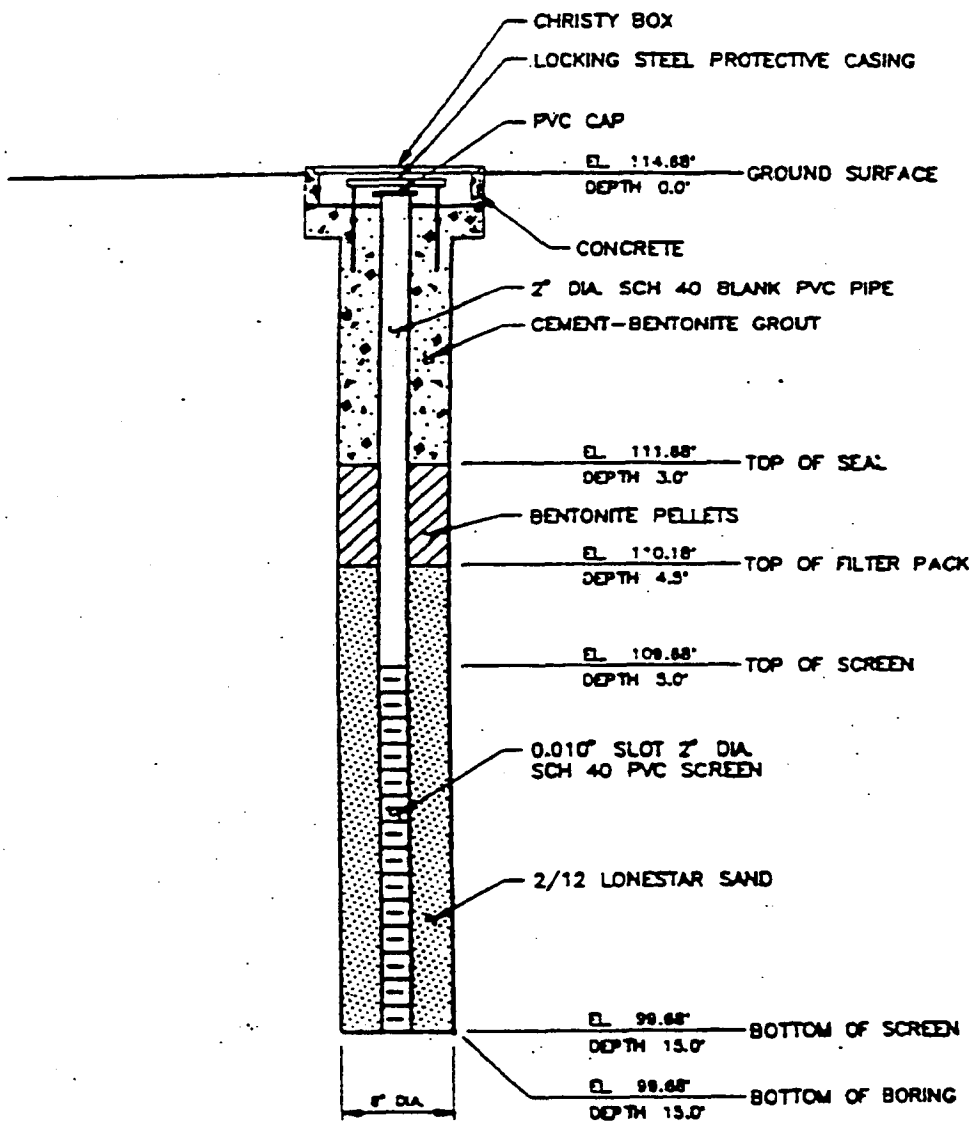
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MW547-4

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION AREA 547, SOUTHWEST CORNER DATE 8-28-90 BY SB



NOTES:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. MW547-5
LOGGED BY BB

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION Southeast corner of fenced area of Building 547 SURFACE ELEVATION 114.68 feet
DRILLER Spectrum Exploration - Garry Buss DATE: START 6/29/90 FINISH 6 29 90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	TO	BLOW COUNT 0" 6" 6" 12"	12" 18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS
	1	CS	0.0	1.5	4	14 19	10	SP				Grass and Topsoil.
											0.2	Medium dense, light brown, fine sand, dry. (Fill)
	2	CS	1.5	3.0	21	13 17	13	SP				
	3	CS	3.0	4.5	5	6 5	12	SP				trace of red brick fragments from 1.7 feet to 2.0 feet.
5												
	4	CS	4.5	6.0	2	4 6	15	SM			4.5	Loose, dark brown, silty fine sand, moist
	5	CS	6.0	7.5	2	6 4	16	SC			6.0	with pockets of gray clay.
												Loose, black, clayey fine sand, with
	6	CS	7.5	9.0	3	4 3	17	SC				some silt, saturated.
10	7	CS	9.0	10.5	3	5 3	16	SM			9.0	Loose, dark brown, silty fine sand, with
												trace of clay, saturated.
	8	CS	10.5	12.0	10	12 15	18	SM			10.5	Medium dense, orange brown mottled
	9	CS	12.0	13.5	2	10 20	17	SM				with gray silty fine sand, saturated with
												trace of clay. (Merritt Sand)
15	10	CS	13.5	15.0	8	11 16	16	SM				
											15.0	Bottom of Boring at 15.0 feet.
20												
25												
30												
35												
40												

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 6.0 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

Canonie Environmental

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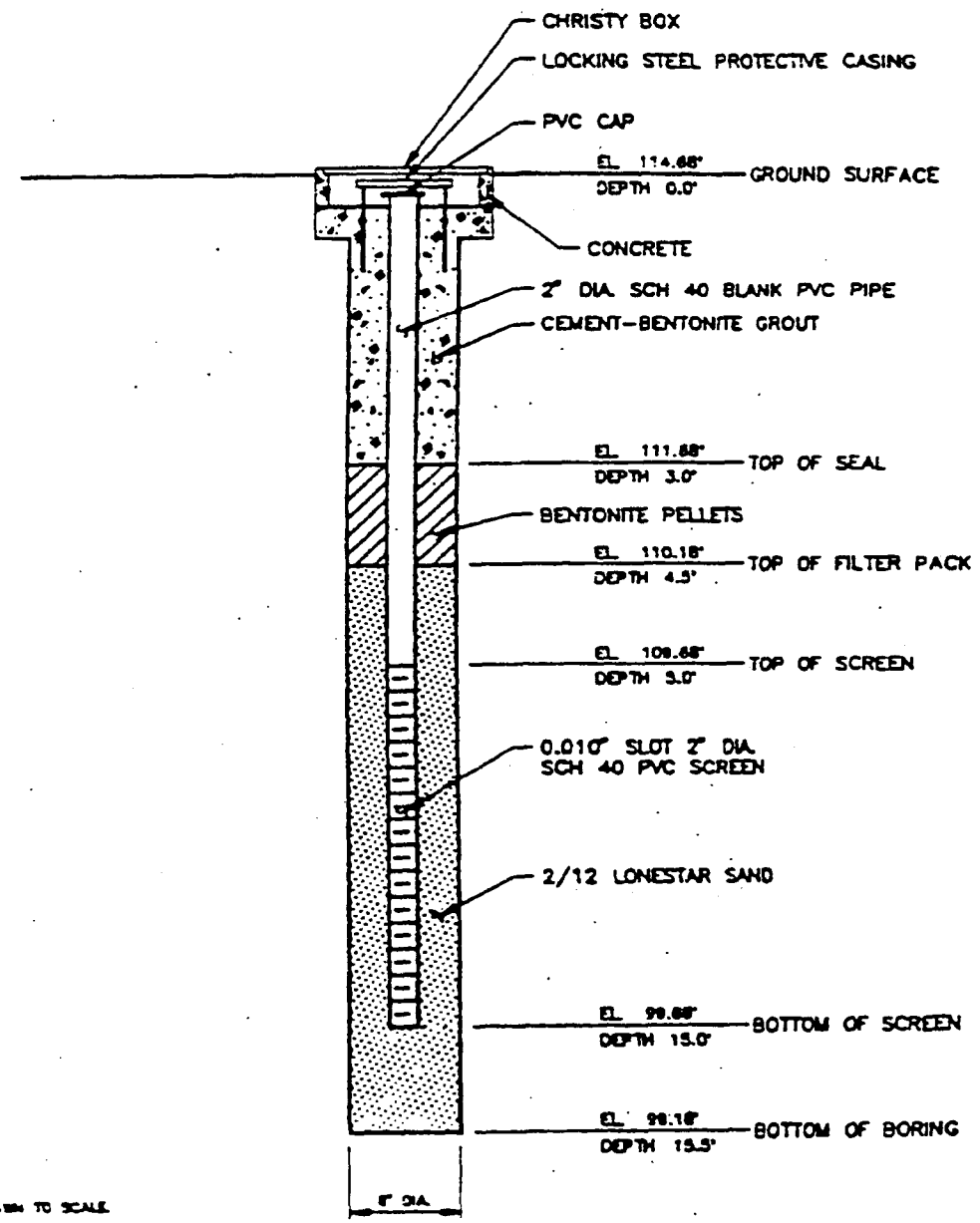
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MW547-5

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION AREA 547, SOUTHEAST CORNER DATE 6-29-90 BY RMD



NOTES:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. B547-6
LOGGED BY RMD

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION Northeast corner of fenced area of Building 547 SURFACE ELEVATION 114.8 feet
DRILLER Spectrum Exploration - Garry Buss DATE: START 7/2/90 FINISH 7/2/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER	DEPTH	SOIL DESCRIPTION AND REMARKS
	1	CS	0.0	1.5	7	16	12	0	SM				0.3	Asphalt. (Fill)
	2	CS	1.5	3.0	15	18	16	12	SM					Medium dense, brown, silty fine sand, moist. (Fill)
	3	CS	3.0	4.5	3	2	4	9	SM					
5														color change to black at 4.5 feet.
	4	CS	4.5	6.0	4	2	3	15	SM					becomes saturated at 5.5 feet.
	5	CS	6.0	7.5	2	3	2	13	SM					color change to brown at 6.0 feet.
	6	CS	7.5	9.0	2	8	20	16	SC		Fill		7.8	Medium dense, orange brown mottled with gray, clayey sand, saturated, with trace of silt. (Merritt Sand)
10	7	CS	9.0	10.5	17	25	20	18	SC		HS			
	8	CS	10.5	12.0	10	15	25	18	SC					decrease in clay to some at 11.5 feet.
	9	CS	12.0	13.5	10	17	20	15	SC					some interlayered silty sand.
15	10	CS	13.5	15.0	6	10	12	15	SC					
													15.0	Bottom of Boring at 15.0 feet.
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings:
   a) 1 ppm at 1.0 feet.

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PROJECT No. 86-018-1804
BORING No. B547-7
LOGGED BY BB

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION North of service island in fenced area of Bldg. 547. SURFACE ELEVATION 116.2 feet
DRILLER Spectrum Exploration - Garry Buss · DATE: START 6/28/90 FINISH 6/28/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	15	19	21	12	SM			0.3	Asphalt (Fill)	
													Dense, dark brown, silty fine sand, moist.	
	2	CS	1.5	3.0	16	23	24	14	SP			1.8	Dense, light brown, fine sand, moist.	
	3	CS	3.0	4.5	5	7	6	15	SP				strong fuel odor at 1.5 feet.	
5													becomes loose at 4.5 feet.	
	4	CS	4.5	6.0	3	3	3	16	SP				very strong fuel odor at 5.5 feet.	
	5	CS	6.0	7.5	2	4	4	12	SP				becomes saturated at 5.5 feet.	
											Fill			
	6	CS	7.5	9.0	2	1	2	15	SP			8.0	Very loose, dark grayish brown, fine	
10	7	CS	9.0	10.5	7	12	10	17	SP		MS		sand, saturated, with trace of silt.	
													becomes medium dense at 9.0 feet.	
	8	CS	10.5	12.0	6	10	12	15	SM			11.0	Medium dense, brown and gray, silty	
	9	CS	12.0	13.5	8	8	8	17	SM				fine sand, saturated, with some clay	
													seams. some orange-mottled gray	
15	10	CS	13.5	15.0	6	13	13	17	SM				coloring at 11.0 feet. (Merritt Sand)	
												15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings:
   a) 30 ppm down hole at 1.5 feet.
   b) 300-700 ppm at 2.0 feet.
   c) > 1,000 ppm at 5.5 feet.

Canonie Environmental

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. B547-8
LOGGED BY BB

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION NE of service island in fenced area of Building 547 SURFACE ELEVATION 116.2 feet
DRILLER Spectrum Exploration - Garry Buss DATE: START 7/3/90 FINISH 7/3/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	11	17	20	10	SM			0.3	Asphalt. (Fill)	
													Dense, dark brown, silty fine sand, moist.	
	2	CS	1.5	3.0	11	18	15	14	SP			2.0	Medium dense, light gray, fine sand,	
	3	CS	3.0	4.5	6	7	6	14	SP				moist, fuel odor.	
5													becomes very loose at 4.5 feet.	
	4	CS	4.5	6.0	2	1	1	11	SP				becomes saturated at 5.5 feet.	
	5	CS	6.0	7.5	1	2	1	14	SM			6.5	Very loose, black, silty fine sand,	
													saturated.	
	6	CS	7.5	9.0	2	1	2	14	SM				strong fuel odor at 6.5 feet	
10	7	CS	9.0	10.5	2	5	10	16	SM			9.5	color change to dark gray at 7.5 feet.	
													Medium dense, orange brown mottled	
	8	CS	10.5	12.0	6	20	17	18	SM				with gray silty fine sand, saturated,	
	9	CS	12.0	13.5	4	10	20	15	SM				with some clay. (Merritt Sand)	
													clay decreases to trace at 12.0 feet.	
15	10	CS	13.5	15.0	6	13	25	11	SM					
												15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings:
   a) > 1,000 ppm at 2.0 feet.
   b) 10-20 ppm at 7.5 feet.

Canonie Environmental

PROJECT No. 86-018-1804
BORING No. B547-9
LOGGED BY BB

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION West of fenced area of Bldg. 547 by power pole SURFACE ELEVATION 114 feet
DRILLER Spectrum Exploration - Garry Buss DATE: START 7/2/90 FINISH 7/2/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	28	9	9	12	SM			0.3	Asphalt. (Fill)	
													Medium dense, dark brown, silty fine sand, moist.	
	2	CS	1.5	3.0	4	4	5	12	SM				becomes loose at 1.5 feet.	
	3	CS	3.0	4.5	2	2	1	13	SM				color change to light brown at 2.5 feet.	
5													dark brown layer at 4.0 feet.	
	4	CS	4.5	6.0	2	1	1	14	SM		Fill		becomes saturated at 4.5 feet.	
	5	CS	6.0	7.5	2	1	4	16	SM-SC			7.0	Loose, dark brown mottled with gray and orange clayey fine sand, saturated	
											MS		Medium dense, reddish brown & gray, silty fine sand, saturated, with some clay. (Merritt Sand)	
	6	CS	7.5	9.0	6	10	14	16	SC-SM			8.0	color change to brown gray at 13.5 feet.	
10	7	CS	9.0	10.5	7	12	10	15	SM				clay decreases to none at 13.5 feet.	
	8	CS	10.5	12.0	6	10	9	18	SM					
	9	CS	12.0	13.5	4	3	4	6	SM					
15	10	CS	13.5	15.0	10	10	11	17	SM			15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 4.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings: No OVA readings observed during drilling.

CanonieEnvironmental

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. B547-10
LOGGED BY BB

PROJECT NAME NAS Alameda - Phase 2A Site Investigations
BORING LOCATION S side of fenced area of Bldg. 547, by dual gates SURFACE ELEVATION 114.9 feet
DRILLER Spectrum Exploration - Garry Buss DATE: START 7/2/90 FINISH 7/2/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	10	19	19	14	SM			0.3	Asphalt (Fill)	
													Dense, dark brown, silty fine sand, moist, some gravel from 0.3-1.5 feet.	
	2	CS	1.5	3.0	7	8	5	12	SM				becomes medium dense at 1.5 feet.	
	3	CS	3.0	4.5	3	3	3	15	SM				becomes loose at 3.0 feet.	
5													color change to black at 3.5 feet.	
	4	CS	4.5	6.0	1	2	3	15	SM				becomes saturated at 5.0 feet.	
	5	CS	6.0	7.5	2	4	3	18	SM					
	6	CS	7.5	9.0	2	2	3	16	SM		Fill			
10	7	CS	9.0	10.5	2	2	3	16	SM				color change to dark brown at 9.5 feet.	
											MS			
	8	CS	10.5	12.0	3	7	13	17	SM			10.5	Medium dense, dark brown and gray, silty fine sand, saturated, with some clay.	
	9	CS	12.0	13.5	8	8	8	15	SM				color change to reddish brown mottled gray at 12.5 feet.	
15	10	CS	13.5	15.0	5	13	15	17	SM					
												15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 5.0 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was backfilled with cement/bentonite grout upon completion of drilling.
5. OVA readings:
   a) 2 ppm at 3.5 feet.
   b) 15-30 ppm at 6.0 feet.

Canonie Environmental

ok

PRC ENVIRONMENTAL MANAGEMENT, INC. — **LOG OF BORING** B07C

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S7C-001	1.0	29			SP	FILL Sand (SP), light brown, fine sand, dense, damp
	CHEMICAL	280-S7C-002	2.5	6				Same as above, but dark brown, moist
			3.0	2				Same as above
5	CHEMICAL	280-S7C-003						Same as above, but wet ▽
								TD = 6 Feet bgs Borehole abandoned as follows: 6.0 to 0.0 feet bgs: Neat Cement
10								
15								
20								

▼ Water Level
☒ Split Spoon
■ Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 7C
JOB NUMBER 044-0280
LOGGED BY JEV
DATE DRILLED 8-17-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 14.45 Feet
TOC ELEVATION Not Applicable
BORING DIAMETER 8.25 inches
TOTAL DEPTH OF HOLE 6 Feet bgs
WATER LEVEL 5 Feet bgs
WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING 67C-12

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S7C-004	110	27			SM (FILL)	Silty sand (SM), gray, fine sand, dense, slightly moist, trace clay, slight hydrocarbon-like odor
	CHEMICAL	280-S7C-005	245	11				Same as above, but no clay, moderate hydrocarbon-like odor
			315	6				Same as above.
5	CHEMICAL	280-S7C-006						Same as above, but wet
10								
15								
20								

TD = 6 Feet bgs

Borehole abandoned as follows:
6.0 to 0.0 feet bgs: Neat Cement

Water Level
Split Spoon
Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 7c
JOB NUMBER 044-0280
LOGGED BY JEV
DATE DRILLED 8-17-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 15.42 Feet
TOC ELEVATION Not Applicable
BORING DIAMETER 8.25 inches
TOTAL DEPTH OF HOLE 6 Feet bgs
WATER LEVEL 5 Feet bgs
WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC. — **LOG OF BORING** B07C

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
				NA				FILL 6 inches concrete
	CHEMICAL	280-S7C-007	12				CL	Sandy clay (CL), black, medium sand, loose, moist
	CHEMICAL	280-S7C-008	20					
	CHEMICAL	280-S7C-009	2 5					same as above with strong hydrocarbon-like odor
							SP	Sand (SP), grayish green, 20% fine sand, 80% medium sand, loose, moist, no odor
			700					same as above, hydrocarbon-like odor
5	CHEMICAL	280-S7C-010						same as above, but wet ▽
							CL	Clay (CL), black, soft, moist, strong hydrocarbon-like odor
								TD = 6 Feet bgs
								Borehole abandoned as follows: 6.0 to 0.0 feet bgs: Neat Cement
10								
15								
20								

▼ Water Level
☒ Split Spoon
■ Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 7C
JOB NUMBER ~~044~~ 0280
LOGGED BY DEK
DATE DRILLED 8-23-94
DRILLER Montgomery Watson
DRILL METHOD Hand Auger

SAMPLING METHOD Sleeves
GROUND ELEVATION 16.38 Feet
TOC ELEVATION Not Applicable
BORING DIAMETER 4 inches
TOTAL DEPTH OF HOLE 6 Feet bgs
WATER LEVEL 4.75 Feet bgs
WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING B07C-14

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S7C-011	0	48			SW	FILL Gravelly sand (SW), light brown, fine to medium sand, dense, dry, trace silt
				24			SP	Sand (SP), light brown, fine sand, damp Same as above with some dark brown, trace pebbles
	CHEMICAL	280-S7C-012	77					
				NA				Same as above with strong hydrocarbon-like odor
5	CHEMICAL	280-S7C-013	150					Same as above; but wet

TD = 6 Feet bgs

Borehole abandoned as follows:

6.0 to 0.0 feet bgs: Neat Cement

10

15

20

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 7C
JOB NUMBER 044-0280
LOGGED BY JEN
DATE DRILLED 8-17-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD split spoon
GROUND ELEVATION 15.86 Feet
TOC ELEVATION Not Applicable
BORING DIAMETER 8.25 inches
TOTAL DEPTH OF HOLE 6 Feet bgs
WATER LEVEL 5 Feet bgs
WELL INSTALLED? (Y/N) N

PRC ENVIRONMENTAL MANAGEMENT, INC. — **LOG OF BORING B07C**

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S7C-014	NA	24			ML	FILL Sandy silt (ML), dark brown, fine sand, dense, dry, trace roots
	CHEMICAL	280-S7C-015		18				Same as above
				4			SM	Silty sand (SM), gray brown, dense, slightly moist
5	CHEMICAL	280-S7C-016						Same as above, but wet ▽

TD = 6 Feet bgs

Borehole abandoned as follows:

6.0 to 0.0 feet bgs: Neat Cement

10

15

20

▼ Water Level

☒ Split Spoon

■ Sample Collected

PROJECT NAS Alameda RI

LOCATION Site 7C

JOB NUMBER 044-0280

LOGGED BY JEV

DATE DRILLED 8-17-94

DRILLER Woodward Drilling Co.

DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split Spoon

GROUND ELEVATION 15.16 Feet

TOC ELEVATION Not Applicable

BORING DIAMETER 8.5 Feet bgs

TOTAL DEPTH OF HOLE 6 Feet bgs

WATER LEVEL 5.5 Feet bgs

WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING M7C-06

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S7C-017	2.8	35			SM	FILL Silty sand (SM), grey, fine sand, dense, slightly moist, trace gravel
	CHEMICAL	280-S7C-018	1.3	20				Same as above
				9				Same as above
5	CHEMICAL	280-S7C-019	4.4					
10			NA	7				Same as above with some clay
								TD = 14 Feet bgs
15								
20								

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 7C
JOB NUMBER 044-0280
LOGGED BY JEV
DATE DRILLED 8-17-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 14.6 Feet
TOC ELEVATION 14.21 Feet
BORING DIAMETER 8.5 inches
TOTAL DEPTH OF HOLE 14 Feet bgs
WATER LEVEL 6 Feet bgs
WELL INSTALLED? (Y/N) Y

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING M7C

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S7C-017	2.8	35			SM	FILL Silty sand (SM), gray, fine sand, dense, slightly moist, trace gravel
	CHEMICAL	280-S7C-018	1.3	20				Same as above
5	CHEMICAL	280-S7C-019	4.4	9				Same as above
10			NA	7				Same as above with some clay
15								TD = 14 Feet bgs
20								

Water Level

Split Spoon

Sample Collected

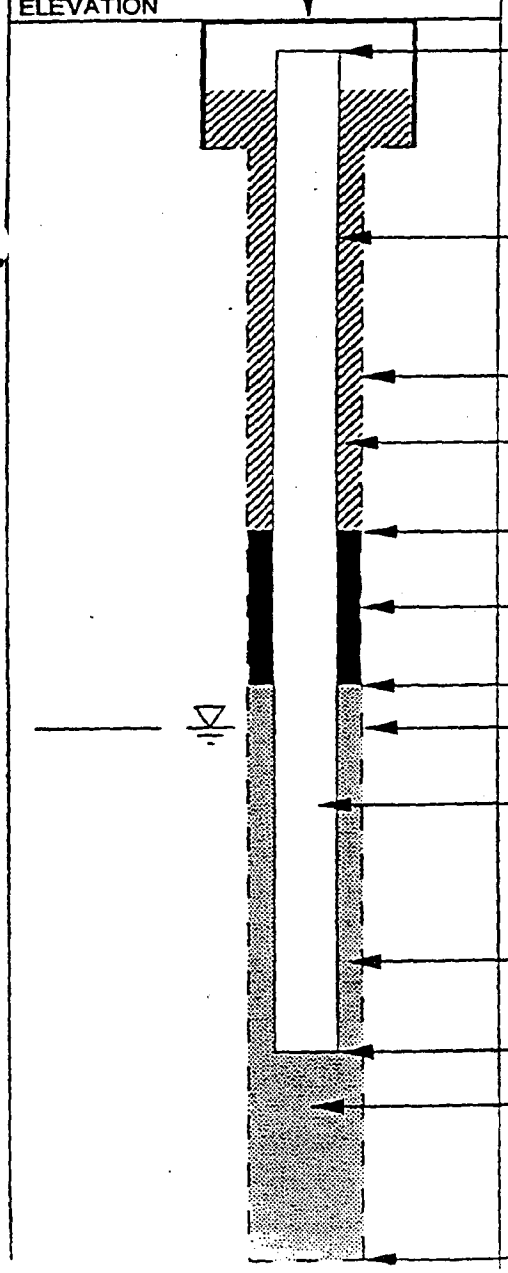
PROJECT NAS Alameda RI
LOCATION Site 7C
JOB NUMBER 044-0280
LOGGED BY JEV
DATE DRILLED 8-17-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 14.6 Feet
TOC ELEVATION 14.21 Feet
BORING DIAMETER 8.5 inches
TOTAL DEPTH OF HOLE 14 Feet bgs
WATER LEVEL 6 Feet bgs
WELL INSTALLED? (Y/N) Y

WELL
~~BORING~~ NO. MØ7C-Ø6

MONITORING WELL SHEET

PROJECT NAS Alameda RI	LOCATION Alameda, California	DRILLER Woodward Drilling Co.
PROJECT NO. Ø44 Ø28Ø	BORING MØ7C-Ø6	DRILLING METHOD Hollow Stem Auger
SITE 7C ~~ELEVATION~~	DATE 8-17-94	DEVELOPMENT METHOD Surge/Bail/Pump
FIELD GEOLOGIST JEV		



(feet MLLW)

ELEVATION OF GROUND SURFACE: 14.60

ELEVATION OF TOP OF WELL CASING: 14.21

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 8.5 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL (feet bgs) 1.5

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK (feet bgs) 2.5

DEPTH TOP OF SCREEN (feet bgs) 4.0

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE ~~x LENGTH~~ Ø.Ø1 inch

I.D. OF SCREEN 2 inches

TYPE OF SAND PACK: #2/16 Monterey Sand

DEPTH BOTTOM OF SCREEN (feet bgs) 14.0

DEPTH BOTTOM OF SAND PACK (feet bgs) 14.0

TYPE OF BACKFILL BELOW OBSERVATION WELL: Not Applicable

DEPTH OF HOLE (feet bgs) 14.0

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING MØ7C-Ø

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	32			GW	FILL Sandy gravel (GW), dark brown, road base
	CHEMICAL	28Ø-S7C-Ø21					SP	Sand (SP), light brown, fine sand, dense, slightly moist
			Ø	6			SW	Gravelly sand (SW), light to dark brown, medium sand, dense, damp
	CHEMICAL	28Ø-S7C-Ø22						
				5			SP	Sand (SP), gray brown, fine sand, dense, trace clay
5	CHEMICAL	28Ø-S7C-Ø23	Ø					Same as above; but wet ▽
10			NA	34				Same as above
								TD = 13.5 Feet bgs
15								
20								

▼ Water Level
☒ Split Spoon
■ Sample Collected

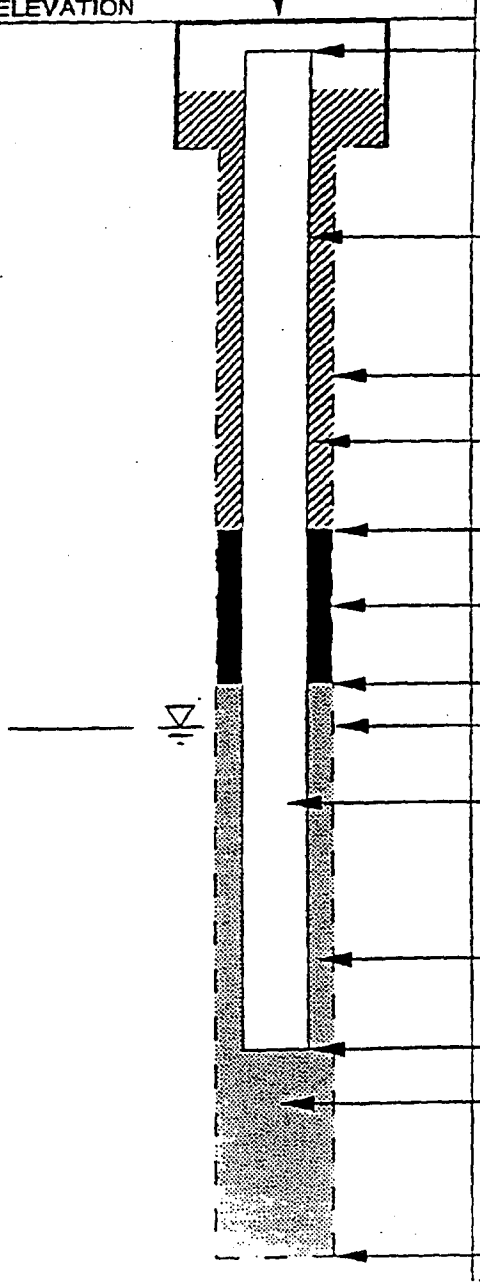
PROJECT NAS Alameda RI
LOCATION Site 7C
JOB NUMBER 044-Ø28Ø
LOGGED BY JEV
DATE DRILLED 8-18-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split Spoon
GROUND ELEVATION 13.86 Feet
TOC ELEVATION 13.59 Feet
BORING DIAMETER 8.5 inches
TOTAL DEPTH OF HOLE 13.5 Feet bgs
WATER LEVEL 5 Feet bgs
WELL INSTALLED? (Y/N) Y

WELL ~~BORING~~ NO. MØ7C-Ø7

MONITORING WELL SHEET

PROJECT NAS Alameda RI	LOCATION Alameda, California	DRILLER Woodward Drilling Co.
PROJECT NO. Ø44 Ø28Ø	BORING MØ7C-Ø7	DRILLING METHOD Hollow Stem Auger
~~ELEVATION~~ SITE 7C	DATE 8-18-94	DEVELOPMENT METHOD Surge/Bail/Pump
FIELD GEOLOGIST JEV		



(feet MLLW)

ELEVATION OF GROUND SURFACE: 13.86

ELEVATION OF TOP OF WELL CASING: 13.59

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 8.5 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL (feet bgs): 1.0

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK (feet bgs): 2.0

DEPTH TOP OF SCREEN (feet bgs): 3.5

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE ~~x LENGTH~~ Ø.Ø1 inch

I.D. OF SCREEN 2 inches

TYPE OF SAND PACK: #2/16 Monterey Sand

DEPTH BOTTOM OF SCREEN (feet bgs): 13.5

DEPTH BOTTOM OF SAND PACK (feet bgs): 13.5

TYPE OF BACKFILL BELOW OBSERVATION WELL: Not Applicable

DEPTH OF HOLE (feet bgs): 13.5

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING M07C-02

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
								FILL
			Ø	23			ML	Sandy silt (ML), gray, fine sand, dense, dry
	CHEMICAL	28Ø-S7C-Ø24					SP	Sand (SP), light brown, fine sand, dense, slightly moist
				6				Same as above
	CHEMICAL	28Ø-S7C-Ø25	Ø					
							SC	Sandy clay (SC), gray, fine sand, slightly plastic
				4			SP	Sand (SP), light to dark brown, fine sand, dense
5	CHEMICAL	28Ø-S7C-Ø26	Ø					same as above, but wet
	DUPE	28Ø-S7C-Ø27						
10			NA	33				Same as above, but gray and red brown, trace clay
								MERRITT SAND
								TD = 13.5 Feet bgs
15								
20								

Water Level

Split Spoon

Sample Collected

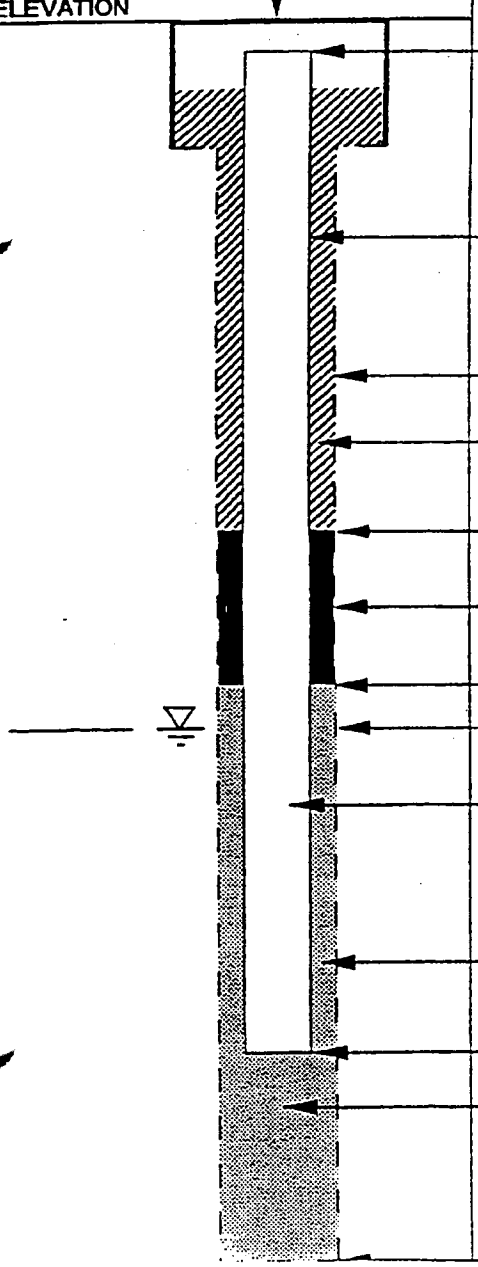
PROJECT NAS Alameda RI
LOCATION Site 7C
JOB NUMBER Ø44-Ø28Ø
LOGGED BY JEV
DATE DRILLED 8-18-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 14.24 Feet
TOC ELEVATION 13.9 Feet
BORING DIAMETER 8.5 inches
TOTAL DEPTH OF HOLE 13.5 Feet bgs
WATER LEVEL 5.5 Feet bgs
WELL INSTALLED? (Y/N) Y

WELL ~~BORING~~ NO. MØ7C-Ø8

MONITORING WELL SHEET

PROJECT NAS Alameda RI	LOCATION Alameda, California	DRILLER Woodward Drilling Co
PROJECT NO. Ø44 Ø28Ø	BORING MØ7C-Ø8	DRILLING METHOD Hollow Stem Auger
~~ELEVATION~~ SITE 7C	DATE 8-18-94	DEVELOPMENT METHOD Surge/Bail/Pump
FIELD GEOLOGIST JEV		



(feet MLLW)

ELEVATION OF GROUND SURFACE: 14.24

ELEVATION OF TOP OF WELL CASING: 13.90

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 8.5 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL (feet bgs) 1.0

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK (feet bgs) 2.0

DEPTH TOP OF SCREEN 3.5

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE ~~x LENGTH~~ Ø.Ø1 inch

I.D. OF SCREEN 2 inches

TYPE OF SAND PACK: #2/16 Monterey Sand

DEPTH BOTTOM OF SCREEN (feet bgs) 13.5

DEPTH BOTTOM OF SAND PACK 13.5

TYPE OF BACKFILL BELOW OBSERVATION WELL: Not Applicable

DEPTH OF HOLE (feet bgs) 13.5

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING MW7C-1

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S7C-095	Ø	26			SP	FILL Sand (SP), light brown, fine sand, dense, slightly moist
	CHEMICAL	280-S7C-096	1.3	12				Same as above with gravel
	✓ GEOTECH			4				Same as above, but no gravel
5	CHEMICAL	280-S7C-097	Ø.7					Same as above, but wet
10	✓ GEOTECH		NA	53				Same as above
								TD = 14 Feet bgs
15								
20								

Water Level

Split Spoon

Sample Collected

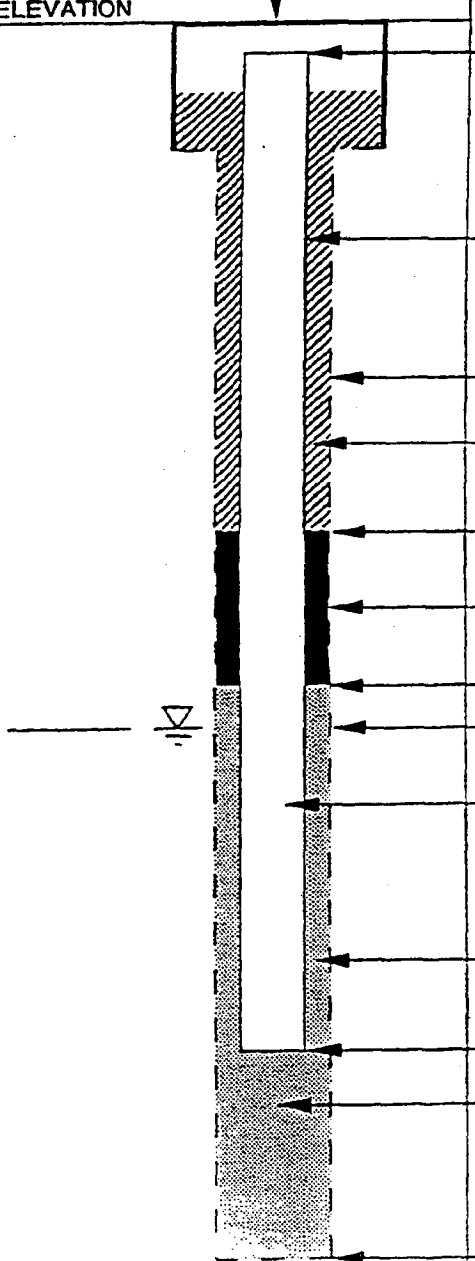
PROJECT NAS Alameda RI
LOCATION Site 7C
JOB NUMBER 044-Ø28Ø
LOGGED BY JEN
DATE DRILLED 8-17-94
DRILLER Woodward Drilling Co
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 13.96 Feet
TOC ELEVATION 13.62 Feet
BORING DIAMETER 8.25 Inches
TOTAL DEPTH OF HOLE 14 Feet bgs
WATER LEVEL 5 Feet bgs
WELL INSTALLED? (Y/N) Y

WELL ~~BORING~~ NO. MØ7C-Ø9

MONITORING WELL SHEET

PROJECT NAS Alameda RI	LOCATION Alameda, California	DRILLER Woodward Drilling
PROJECT NO. Ø44 Ø28Ø	BORING MØ7C-Ø9	DRILLING METHOD Hollow Stem Auger
~~ELEVATION~~ SITE 7C	DATE 8-17-94	DEVELOPMENT METHOD Surge/Bail/Pump
FIELD GEOLOGIST JEV		



(feet MLLW)

ELEVATION OF GROUND SURFACE: 13.96

ELEVATION OF TOP OF WELL CASING: 13.62

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 8.5 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL (feet bgs) 1.5

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK (feet bgs) 2.5

DEPTH TOP OF SCREEN 4.0

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE ~~x LENGTH~~ Ø.Ø1 inch

I.D. OF SCREEN 2 inches

TYPE OF SAND PACK: #2/16 Monterey Sand

DEPTH BOTTOM OF SCREEN (feet bgs) 14.0

DEPTH BOTTOM OF SAND PACK 14.0

TYPE OF BACKFILL BELOW OBSERVATION WELL: Not Applicable

DEPTH OF HOLE (feet bgs) 14.0

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING 07C

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
								FILL
							ML/CL	(ML/CL) Sandy silt/Sandy clay, light orange brown, 20% fine sand, 20% medium sand, 60% silt/clay, loose, moist
5			Ø	24			SP	Sand (SP), dark gray, 30% fine sand, 45% very fine sand, 25% medium sand, medium dense, wet
							CL	Clay (CL), black to dark gray, soft, wet, trace fine sand
							SM	Silty sand (SM), orange brown with orange red mottling, 20% medium sand, 40% fine and very fine sand, 40% silt, loose, wet
10			Ø	10				MERRITT SAND
15			Ø	62				Same as above, but orange brown with dark red mottling, 50% fine sand, 20% medium sand, 30% silt, dense, very moist to wet, inclusions of light tan silty sand
20								

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 7C
JOB NUMBER ~~044~~-0280
LOGGED BY DEK
DATE DRILLED 11-4-94
DRILLER Tonto Drilling Services Co.
DRILL METHOD Mud Rotary

SAMPLING METHOD Split spoon
GROUND ELEVATION
TOC ELEVATION 14.27 Feet
BORING DIAMETER 7.75 inches
TOTAL DEPTH OF HOLE 60.5 Feet bgs
WATER LEVEL 5.8 Feet bgs
WELL INSTALLED? (Y/N) Y

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING DØ7C-Ø1

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	77	☒		SP-SM/SP-SC	Sand with silt and clay (SP-SM/SP-SC), tannish brown, 60% fine sand, 20% very fine sand, 10% medium sand, 10% silt/clay, dense, wet, trace mottling
~~5~~ 25			Ø	5Ø/6	☒			Same as above, with fine gravel 1-inch thick layer at 25 Feet bgs
~~10~~ 3Ø			Ø	34/6 5Ø/6	☒			Same as above
~~15~~ 35			Ø	6Ø	☒		SP-SM	Silty sand (SP-SM), orange brown, with dark orange brown mottling, 50% fine sand, 30% very fine sand, 5% medium sand, 5-25% silt, dense, wet
~~20~~ 4Ø								

▼ Water Level	PROJECT	SAMPLING METHOD
	LOCATION	GROUND ELEVATION
☒ Split Spoon	JOB NUMBER 044-	TOC ELEVATION
	LOGGED BY	BORING DIAMETER
■ Sample Collected	DATE DRILLED	TOTAL DEPTH OF HOLE
	DRILLER	WATER LEVEL
	DRILL METHOD	WELL INSTALLED? (Y/N)

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	34/6 50/6	☒		SP-SM	Same as above, but light brown with dark red mottling, 30% fine sand, 10% very fine sand, 40% silt, very dense, moist to wet
45/5			Ø	50/6	☒		SP	Sand (SP), light brown, 50% fine sand, 35% very fine sand, 5% medium sand, 5% silt, very dense, wet, trace dark red/orange mottling
50/10			NA	50/5	☒			Same as above, but 15% very fine sand, 60% fine sand, 20% medium sand, 5% silt/clay
55/15			Ø	50/5	☒			same as above
60/20								

▼ Water Level

☒ Split Spoon

■ Sample Collected.

PROJECT _____ SAMPLING METHOD _____

LOCATION _____ GROUND ELEVATION _____

JOB NUMBER 044- _____ TOC ELEVATION _____

LOGGED BY _____ BORING DIAMETER _____

DATE DRILLED _____ TOTAL DEPTH OF HOLE _____

DRILLER _____ WATER LEVEL _____

DRILL METHOD _____ WELL INSTALLED? (Y/N) _____

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D97c-p1

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			NA	50/6	☒		SP	Same as above.
								TD = 60.5 Feet bgs
65								
70								
75								
80								

▼ Water Level

☒ Split Spoon

■ Sample Collected

PROJECT _____

LOCATION

JOB NUMBER 044-

LOGGED BY .

DATE DRILLED _____

DRILLER

DRILL METHOD _____

SAMPLING METHOD

GROUND ELEVATION _____

TOC ELEVATION _____

BORING DIAMETER

TOTAL DEPTH OF HOLE _____

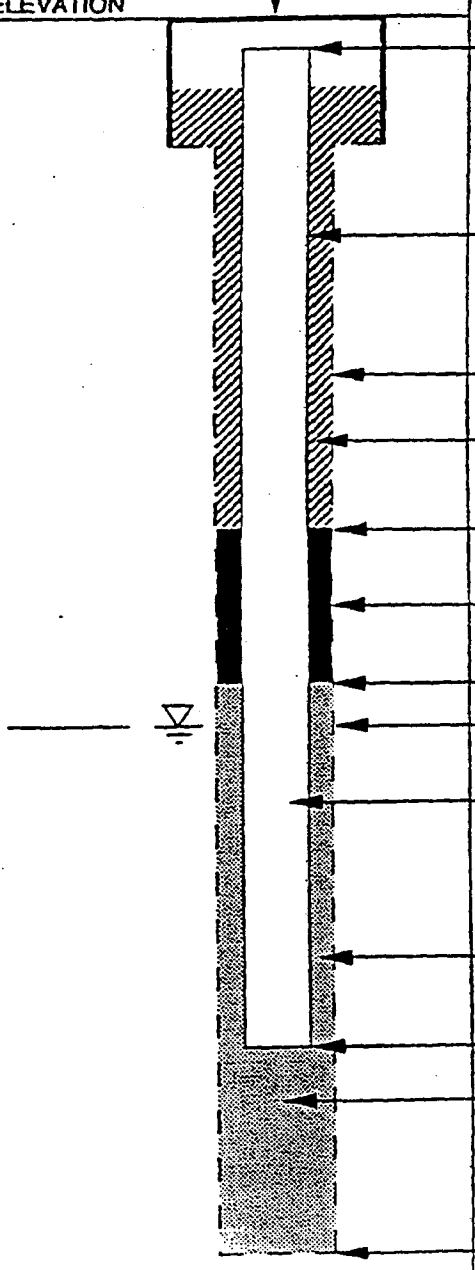
WATER LEVEL

WELL INSTALLED? (Y/N) _____

WELL ~~BORING~~ NO. DØ7C-Ø1

MONITORING WELL SHEET

PROJECT NAS Alameda RI	LOCATION Alameda, California	DRILLER Tonto Drilling Services, Inc.
PROJECT NO. Ø44 Ø28Ø	BORING DØ7C-Ø1	DRILLING METHOD Mud Rotary
~~ELEVATION~~ SITE 7C	DATE 11-4-94	DEVELOPMENT METHOD Surge/Bail/Pump
FIELD GEOLOGIST DEK		



(feet MLLW)

ELEVATION OF GROUND SURFACE: ?

ELEVATION OF TOP OF WELL CASING: 14.27

RISER PIPE I.D.: 3 inches

TYPE OF RISER PIPE: Schedule 4Ø PVC

BOREHOLE DIAMETER: 7.75 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL: (feet bgs) 42.6

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK: (feet bgs) 46.0

DEPTH TOP OF SCREEN: 49.0

TYPE OF SCREEN: Schedule 4Ø

SLOT SIZE ~~x LENGTH~~ Ø.Ø1 inch

I.D. OF SCREEN 3 inches

TYPE OF SAND PACK: #2/12 Monterey Sand

DEPTH BOTTOM OF SCREEN: (feet bgs) 59.0

DEPTH BOTTOM OF SAND PACK: 60.5

TYPE OF BACKFILL BELOW OBSERVATION WELL: #2/12 Monterey Sand

DEPTH OF HOLE: (feet bgs) 60.5

TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY
On Site Loc:CPT-S7C-01
Job No. :2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/08/94 11:24
Cone Used :962
Water table (meters) : 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	71.42	0.27	0.38	0.02	sand to silty sand	>90	>48	17	UNDEFINED
0.50	1.64	209.72	1.55	0.74	0.07	sand	>90	>48	40	UNDEFINED
0.75	2.46	171.14	1.53	0.89	0.12	sand	>90	>48	33	UNDEFINED
1.00	3.28	110.44	0.89	0.81	0.17	sand to silty sand	>90	>48	26	UNDEFINED
1.25	4.10	37.44	0.23	0.62	0.21	silty sand to sandy silt	60-70	42-44	12	UNDEFINED
1.50	4.92	19.76	0.04	0.19	0.26	silty sand to sandy silt	<40	38-40	6	UNDEFINED
1.75	5.74	14.30	0.05	0.33	0.31	sandy silt to clayey silt	UNDFND	UNDFD	5	1.3
2.00	6.56	13.64	0.03	0.25	0.35	sandy silt to clayey silt	UNDFND	UNDFD	5	1.3
2.25	7.38	18.90	0.03	0.18	0.40	silty sand to sandy silt	<40	36-38	6	UNDEFINED
2.50	8.20	20.78	0.04	0.17	0.45	silty sand to sandy silt	<40	36-38	7	UNDEFINED
2.75	9.02	25.84	0.48	1.87	0.50	sandy silt to clayey silt	UNDFND	UNDFD	10	2.5
3.00	9.84	47.18	1.10	2.34	0.54	sandy silt to clayey silt	UNDFND	UNDFD	18	4.6
3.25	10.66	135.88	2.29	1.69	0.58	sand to silty sand	80-90	44-46	33	UNDEFINED
3.50	11.48	71.16	2.28	3.21	0.60	sandy silt to clayey silt	UNDFND	UNDFD	27	7.0
3.75	12.30	129.34	3.69	2.86	0.62	sandy silt to clayey silt	UNDFND	UNDFD	50	12.8
4.00	13.12	116.24	3.21	2.76	0.64	sandy silt to clayey silt	UNDFND	UNDFD	45	11.5
4.25	13.94	141.90	2.96	2.09	0.66	silty sand to sandy silt	80-90	44-46	45	UNDEFINED
4.50	14.76	171.76	2.67	1.55	0.68	sand to silty sand	80-90	44-46	41	UNDEFINED
4.75	15.58	203.72	2.61	1.28	0.71	sand	>90	44-46	39	UNDEFINED
5.00	16.40	225.96	2.66	1.18	0.73	sand	>90	44-46	43	UNDEFINED
5.25	17.22	193.68	2.42	1.25	0.75	sand to silty sand	80-90	44-46	46	UNDEFINED
5.50	18.04	165.52	2.14	1.30	0.77	sand to silty sand	80-90	44-46	40	UNDEFINED
5.75	18.86	164.44	3.02	1.84	0.79	sand to silty sand	80-90	44-46	39	UNDEFINED
6.00	19.69	174.64	3.21	1.84	0.81	sand to silty sand	80-90	44-46	42	UNDEFINED
6.25	20.51	275.16	1.86	0.67	0.84	sand	>90	46-48	>50	UNDEFINED
6.50	21.33	273.40	1.87	0.68	0.86	sand	>90	44-46	>50	UNDEFINED
6.75	22.15	316.48	3.50	1.11	0.88	sand	>90	46-48	>50	UNDEFINED
7.00	22.97	293.42	1.96	0.67	0.90	sand	>90	46-48	>50	UNDEFINED
7.25	23.79	284.58	2.44	0.86	0.92	sand	>90	44-46	>50	UNDEFINED
7.50	24.61	253.84	1.47	0.58	0.94	sand	>90	44-46	49	UNDEFINED
7.75	25.43	294.54	3.10	1.05	0.96	sand	>90	44-46	>50	UNDEFINED
8.00	26.25	254.46	3.76	1.48	0.99	sand to silty sand	>90	44-46	>50	UNDEFINED
8.25	27.07	215.98	3.55	1.64	1.01	sand to silty sand	80-90	44-46	>50	UNDEFINED
8.50	27.89	220.46	2.04	0.92	1.03	sand	80-90	44-46	42	UNDEFINED
8.75	28.71	248.82	2.11	0.85	1.05	sand	>90	44-46	48	UNDEFINED
9.00	29.53	237.86	2.21	0.93	1.07	sand	>90	44-46	46	UNDEFINED
9.25	30.35	214.86	3.54	1.65	1.09	sand to silty sand	80-90	42-44	>50	UNDEFINED
9.50	31.17	263.70	2.42	0.92	1.12	sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

*** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY On Site Loc:CPT-S7C-01 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	265.04	1.74	0.66	1.14	sand	>90	44-46	>50	UNDEFINED
10.00	32.81	292.92	2.16	0.74	1.16	sand	>90	44-46	>50	UNDEFINED
10.25	33.63	273.60	2.85	1.04	1.18	sand	>90	44-46	>50	UNDEFINED
10.50	34.45	223.16	2.95	1.32	1.20	sand	80-90	42-44	43	UNDEFINED
10.75	35.27	276.12	2.66	0.97	1.22	sand	>90	44-46	>50	UNDEFINED
11.00	36.09	300.14	2.74	0.91	1.24	sand	>90	44-46	>50	UNDEFINED
11.25	36.91	237.66	1.83	0.77	1.27	sand	80-90	42-44	46	UNDEFINED
11.50	37.73	245.72	1.86	0.76	1.29	sand	80-90	42-44	47	UNDEFINED
11.75	38.55	108.08	0.56	0.52	1.31	sand	60-70	40-42	21	UNDEFINED
12.00	39.37	73.78	1.61	2.19	1.33	silty sand to sandy silt	50-60	38-40	24	UNDEFINED
12.25	40.19	122.42	2.84	2.32	1.35	silty sand to sandy silt	60-70	40-42	39	UNDEFINED
12.50	41.01	109.38	2.16	1.98	1.37	silty sand to sandy silt	60-70	40-42	35	UNDEFINED
12.75	41.83	99.90	1.61	1.61	1.40	silty sand to sandy silt	60-70	38-40	32	UNDEFINED
13.00	42.65	57.24	1.69	2.95	1.42	sandy silt to clayey silt	UNDFND	UNDFD	22	5.4
13.25	43.47	102.16	3.13	3.06	1.44	sandy silt to clayey silt	UNDFND	UNDFD	39	9.9
13.50	44.29	241.38	9.64	3.99	1.46	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
13.75	45.11	155.72	6.93	4.45	1.48	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.00	45.93	260.20	6.90	2.65	1.50	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
14.25	46.75	418.56	2.88	0.69	1.52	gravelly sand to sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E

TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY
On Site Loc:CPT-S7C-03
Job No. :2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/08/94 13:51
Cone Used :962
Water table (meters) : 3

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	62.20	0.40	0.65	0.02	sand to silty sand	>90	>48	15	UNDEFINED
0.50	1.64	67.98	0.45	0.67	0.07	sand to silty sand	>90	>48	16	UNDEFINED
0.75	2.46	33.26	0.25	0.75	0.12	silty sand to sandy silt	60-70	44-46	11	UNDEFINED
1.00	3.28	19.56	0.17	0.89	0.17	sandy silt to clayey silt	UNDFND	UNDFD	7	1.9
1.25	4.10	16.46	0.17	1.05	0.21	sandy silt to clayey silt	UNDFND	UNDFD	6	1.6
1.50	4.92	10.24	0.17	1.63	0.26	clayey silt to silty clay	UNDFND	UNDFD	5	.9
1.75	5.74	17.98	0.05	0.28	0.31	silty sand to sandy silt	<40	38-40	6	UNDEFINED
2.00	6.56	15.24	0.01	0.06	0.35	sandy silt to clayey silt	UNDFND	UNDFD	6	1.4
2.25	7.38	19.72	0.07	0.34	0.40	silty sand to sandy silt	<40	36-38	6	UNDEFINED
2.50	8.20	48.78	0.23	0.47	0.45	sand to silty sand	50-60	40-42	12	UNDEFINED
2.75	9.02	51.04	0.09	0.18	0.50	sand to silty sand	50-60	40-42	12	UNDEFINED
3.00	9.84	21.60	0.00	0.02	0.54	silty sand to sandy silt	<40	36-38	7	UNDEFINED
3.25	10.66	13.64	0.37	2.69	0.58	clayey silt to silty clay	UNDFND	UNDFD	7	1.3
3.50	11.48	63.58	1.58	2.48	0.60	sandy silt to clayey silt	UNDFND	UNDFD	24	6.2
3.75	12.30	22.32	0.54	2.40	0.62	clayey silt to silty clay	UNDFND	UNDFD	11	2.1
4.00	13.12	61.32	1.69	2.76	0.64	sandy silt to clayey silt	UNDFND	UNDFD	23	6.0
4.25	13.94	90.72	1.92	2.12	0.66	silty sand to sandy silt	60-70	42-44	29	UNDEFINED
4.50	14.76	167.80	4.39	2.62	0.68	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
4.75	15.58	213.16	3.71	1.74	0.71	sand to silty sand	>90	44-46	>50	UNDEFINED
5.00	16.40	192.00	3.32	1.73	0.73	sand to silty sand	80-90	44-46	46	UNDEFINED
5.25	17.22	183.22	4.98	2.72	0.75	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
5.50	18.04	219.58	5.17	2.35	0.77	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
5.75	18.86	211.44	3.98	1.88	0.79	sand to silty sand	>90	44-46	>50	UNDEFINED
6.00	19.69	209.60	4.54	2.17	0.81	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
6.25	20.51	289.02	2.92	1.01	0.84	sand	>90	46-48	>50	UNDEFINED
6.50	21.33	258.38	2.50	0.97	0.86	sand	>90	44-46	49	UNDEFINED
6.75	22.15	292.34	3.36	1.15	0.88	sand	>90	46-48	>50	UNDEFINED
7.00	22.97	256.80	2.08	0.81	0.90	sand	>90	44-46	49	UNDEFINED
7.25	23.79	284.20	4.16	1.46	0.92	sand to silty sand	>90	44-46	>50	UNDEFINED
7.50	24.61	248.98	3.84	1.54	0.94	sand to silty sand	>90	44-46	>50	UNDEFINED
7.75	25.43	157.70	3.74	2.37	0.96	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
8.00	26.25	160.40	2.78	1.73	0.99	sand to silty sand	80-90	42-44	38	UNDEFINED
8.25	27.07	232.80	3.65	1.57	1.01	sand to silty sand	>90	44-46	>50	UNDEFINED
8.50	27.89	223.36	2.14	0.96	1.03	sand	80-90	44-46	43	UNDEFINED
8.75	28.71	246.30	3.09	1.26	1.05	sand	>90	44-46	47	UNDEFINED
9.00	29.53	223.78	3.03	1.35	1.07	sand to silty sand	80-90	44-46	>50	UNDEFINED
9.25	30.35	225.18	1.89	0.84	1.09	sand	80-90	44-46	43	UNDEFINED
9.50	31.17	200.90	1.89	0.94	1.12	sand	80-90	42-44	38	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

*** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

Z TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY On Site Loc:CPT-S7C-03 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	212.54	2.29	1.08	1.14	sand	80-90	42-44	41	UNDEFINED
10.00	32.81	262.74	3.42	1.30	1.16	sand	>90	44-46	>50	UNDEFINED
10.25	33.63	268.44	3.41	1.27	1.18	sand	>90	44-46	>50	UNDEFINED
10.50	34.45	200.90	2.89	1.44	1.20	sand to silty sand	80-90	42-44	48	UNDEFINED
10.75	35.27	225.00	2.56	1.14	1.22	sand	80-90	42-44	43	UNDEFINED
11.00	36.09	297.14	4.73	1.59	1.24	sand to silty sand	>90	44-46	>50	UNDEFINED
11.25	36.91	299.12	4.60	1.54	1.27	sand to silty sand	>90	44-46	>50	UNDEFINED
11.50	37.73	211.94	2.17	1.02	1.29	sand	80-90	42-44	41	UNDEFINED
11.75	38.55	118.56	0.85	0.72	1.31	sand to silty sand	60-70	40-42	28	UNDEFINED
12.00	39.37	92.88	1.49	1.60	1.33	silty sand to sandy silt	60-70	38-40	30	UNDEFINED
12.25	40.19	212.68	3.82	1.79	1.35	sand to silty sand	80-90	42-44	>50	UNDEFINED
12.50	41.01	167.50	3.51	2.10	1.37	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
12.75	41.83	45.48	0.72	1.58	1.40	silty sand to sandy silt	<40	34-36	15	UNDEFINED
13.00	42.65	125.96	4.82	3.82	1.42	sandy silt to clayey silt	UNDFND	UNDFD	48	12.3
13.25	43.47	193.84	6.29	3.25	1.44	sandy silt to clayey silt	UNDFND	UNDFD	>50	19.1
13.50	44.29	109.64	4.36	3.97	1.46	clayey silt to silty clay	UNDFND	UNDFD	>50	10.7
13.75	45.11	133.70	5.59	4.18	1.48	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.00	45.93	244.84	6.63	2.71	1.50	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
14.25	46.75	332.26	7.05	2.12	1.52	sand to silty sand	>90	44-46	>50	UNDEFINED
14.50	47.57	346.14	4.10	1.19	1.55	sand	>90	44-46	>50	UNDEFINED
14.75	48.39	281.38	4.27	1.52	1.57	sand to silty sand	80-90	42-44	>50	UNDEFINED
15.00	49.21	230.04	4.68	2.04	1.59	sand to silty sand	80-90	42-44	>50	UNDEFINED
15.25	50.03	326.04	2.96	0.91	1.61	sand	>90	44-46	>50	UNDEFINED
15.50	50.85	404.78	4.79	1.18	1.63	sand	>90	44-46	>50	UNDEFINED
15.75	51.67	404.56	3.87	0.96	1.65	sand	>90	44-46	>50	UNDEFINED
16.00	52.49	283.14	3.27	1.16	1.68	sand	80-90	42-44	>50	UNDEFINED
16.25	53.31	397.12	2.31	0.58	1.70	gravelly sand to sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Janiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY WATSO
On Site Loc:CPT-S7C-04
Job No. :2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/08/94 9:11
Cone Used :962
Water table (meters) : 3

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	21.74	0.20	0.94	0.02	sandy silt to clayey silt	UNDFND	UNDFD	8	2.1
0.50	1.64	147.16	1.27	0.86	0.07	sand	>90	>48	28	UNDEFINED
0.75	2.46	101.74	1.36	1.34	0.12	sand to silty sand	>90	>48	24	UNDEFINED
1.00	3.28	47.08	0.43	0.92	0.17	silty sand to sandy silt	70-80	44-46	15	UNDEFINED
1.25	4.10	53.14	1.12	2.11	0.21	sandy silt to clayey silt	UNDFND	UNDFD	20	5.2
1.50	4.92	24.56	0.31	1.26	0.26	sandy silt to clayey silt	UNDFND	UNDFD	9	2.4
1.75	5.74	14.34	0.08	0.53	0.31	sandy silt to clayey silt	UNDFND	UNDFD	5	1.4
2.00	6.56	19.16	0.17	0.87	0.35	sandy silt to clayey silt	UNDFND	UNDFD	7	1.8
2.25	7.38	35.96	0.28	0.78	0.40	silty sand to sandy silt	50-60	40-42	11	UNDEFINED
2.50	8.20	43.38	0.32	0.73	0.45	silty sand to sandy silt	50-60	40-42	14	UNDEFINED
2.75	9.02	39.32	0.19	0.48	0.50	silty sand to sandy silt	40-50	40-42	13	UNDEFINED
3.00	9.84	20.60	0.53	2.57	0.54	clayey silt to silty clay	UNDFND	UNDFD	10	2.0
3.25	10.66	62.32	1.80	2.90	0.58	sandy silt to clayey silt	UNDFND	UNDFD	24	6.1
3.50	11.48	77.68	2.50	3.21	0.60	sandy silt to clayey silt	UNDFND	UNDFD	30	7.7
3.75	12.30	79.32	1.77	2.23	0.62	silty sand to sandy silt	60-70	42-44	25	UNDEFINED
4.00	13.12	118.44	4.04	3.41	0.64	sandy silt to clayey silt	UNDFND	UNDFD	45	11.7
4.25	13.94	155.82	4.32	2.77	0.66	silty sand to sandy silt	80-90	44-46	50	UNDEFINED
4.50	14.76	199.36	3.56	1.79	0.68	sand to silty sand	>90	44-46	48	UNDEFINED
4.75	15.58	189.26	2.89	1.53	0.71	sand to silty sand	80-90	44-46	45	UNDEFINED
5.00	16.40	155.70	5.08	3.26	0.73	sandy silt to clayey silt	UNDFND	UNDFD	>50	15.4
5.25	17.22	196.68	6.00	3.05	0.75	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
5.50	18.04	272.70	4.64	1.70	0.77	sand to silty sand	>90	46-48	>50	UNDEFINED
5.75	18.86	293.54	4.34	1.48	0.79	sand to silty sand	>90	46-48	>50	UNDEFINED
6.00	19.69	322.02	3.57	1.11	0.81	sand	>90	46-48	>50	UNDEFINED
6.25	20.51	303.86	3.26	1.07	0.84	sand	>90	46-48	>50	UNDEFINED
6.50	21.33	230.16	1.96	0.85	0.86	sand	>90	44-46	44	UNDEFINED
6.75	22.15	251.74	2.12	0.84	0.88	sand	>90	44-46	48	UNDEFINED
7.00	22.97	293.20	3.65	1.25	0.90	sand	>90	46-48	>50	UNDEFINED
7.25	23.79	265.34	3.39	1.28	0.92	sand	>90	44-46	>50	UNDEFINED
7.50	24.61	241.60	3.40	1.41	0.94	sand to silty sand	>90	44-46	>50	UNDEFINED
7.75	25.43	223.66	3.94	1.76	0.96	sand to silty sand	>90	44-46	>50	UNDEFINED
8.00	26.25	240.02	3.81	1.59	0.99	sand to silty sand	>90	44-46	>50	UNDEFINED
8.25	27.07	332.48	5.16	1.55	1.01	sand to silty sand	>90	46-48	>50	UNDEFINED
8.50	27.89	303.14	3.36	1.11	1.03	sand	>90	44-46	>50	UNDEFINED
8.75	28.71	249.30	3.39	1.36	1.05	sand	>90	44-46	48	UNDEFINED
9.00	29.53	303.10	4.85	1.60	1.07	sand to silty sand	>90	44-46	>50	UNDEFINED
9.25	30.35	287.86	3.25	1.13	1.09	sand	>90	44-46	>50	UNDEFINED
9.50	31.17	235.56	2.42	1.03	1.12	sand	80-90	44-46	45	UNDEFINED

Dr - All sands (Janiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

*** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

E TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY WATSO On Site Loc:CPT-S7C-04 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	273.26	4.97	1.82	1.14	sand to silty sand	>90	44-46	>50	UNDEFINED
10.00	32.81	304.64	3.85	1.27	1.16	sand	>90	44-46	>50	UNDEFINED
10.25	33.63	299.50	3.43	1.15	1.18	sand	>90	44-46	>50	UNDEFINED
10.50	34.45	289.94	2.78	0.96	1.20	sand	>90	44-46	>50	UNDEFINED
10.75	35.27	279.62	3.62	1.29	1.22	sand	>90	44-46	>50	UNDEFINED
11.00	36.09	143.24	2.53	1.77	1.24	silty sand to sandy silt	70-80	40-42	46	UNDEFINED
11.25	36.91	71.56	1.57	2.19	1.27	silty sand to sandy silt	50-60	38-40	23	UNDEFINED
11.50	37.73	124.56	2.28	1.83	1.29	silty sand to sandy silt	60-70	40-42	40	UNDEFINED
11.75	38.55	140.88	3.01	2.14	1.31	silty sand to sandy silt	70-80	40-42	45	UNDEFINED
12.00	39.37	148.44	3.04	2.05	1.33	silty sand to sandy silt	70-80	40-42	47	UNDEFINED
12.25	40.19	114.56	1.53	1.34	1.35	sand to silty sand	60-70	40-42	27	UNDEFINED
12.50	41.01	53.52	1.74	3.26	1.37	clayey silt to silty clay	UNDFND	UNDFD	26	5.1
12.75	41.83	75.60	3.32	4.39	1.40	clayey silt to silty clay	UNDFND	UNDFD	36	7.3
13.00	42.65	145.26	4.91	3.38	1.42	sandy silt to clayey silt	UNDFND	UNDFD	>50	14.2
13.25	43.47	120.32	2.96	2.46	1.44	silty sand to sandy silt	60-70	40-42	38	UNDEFINED
13.50	44.29	240.46	8.27	3.44	1.46	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
13.75	45.11	293.48	5.28	1.80	1.48	sand to silty sand	>90	44-46	>50	UNDEFINED
14.00	45.93	352.18	6.12	1.74	1.50	sand to silty sand	>90	44-46	>50	UNDEFINED
14.25	46.75	388.86	3.29	0.85	1.52	sand	>90	44-46	>50	UNDEFINED
14.50	47.57	321.82	5.99	1.86	1.55	sand to silty sand	>90	44-46	>50	UNDEFINED
14.75	48.39	359.64	3.18	0.88	1.57	sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Janiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

Boring Logs for DGS Site 22

Direct Push Boring	Direct Push Soil Gas Boring	Vacuum Excavation Boring	Hydro Punch Borings
	S22-DGS-SG01		
	S22-DGS-SG02		
	S22-DGS-SG04		

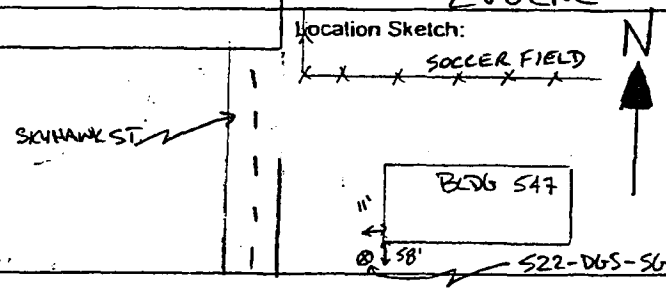
Sheet 1 of 1

TETRA TECH EM INC.

SOIL BORING AND WELL INSTALLATION AND VISUAL CLASSIFICATION LOG

CTO-385
Bldg./Site:
Project Name: ALAMEDA POINT SUPPLEMENTAL REMEDIAL INVESTIGATION DATA GAP SAMPLING

Boring Number: S22-DGS-SG01	Date Started: 7/10/01
Drilling Method: (Circle one) HSA Continuous Core/GeoProbe/Hand Auger	Date Completed: 7/10/01
Air Rotary/Mud Rotary/Dual Tube Percussion/Sonic/Vacuum	Logged By: LAURA GENIN
Outer Diameter of Boring: 4"	Drilling Subcontractor: PRECISION
Inner Diameter of Well Casing:	Driller: EUGENE
Depth to Water (ft./bgs.) NA	Location Sketch:



Depth (ft) bgs	Drive Interval	Recovered Interval	Sample ID	Blow count (per 6 inches) / V.B. utility type, dia.	Description	USCS soil symbol	Well construction	OVM (ppm)
1125 1	X		385-S22-011	NA	SAND; PALE OLIVE (5Y 6/4); SLT. MOIST; LOOSE; FINE GRAINED; WELL SORTED.	SW	NA	
2					TOTAL DEPTH = 2' BORING BACKFILLED w/ CEMENT GROUT			

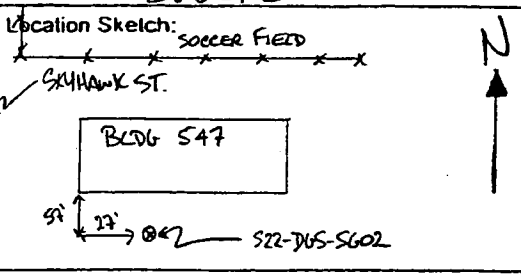
Sheet 1 of 1

TETRA TECH EM INC.

SOIL BORING AND WELL INSTALLATION AND VISUAL CLASSIFICATION LOG

CTO-385
Bldg./Site:
Project Name: ALAMEDA POINT SUPPLEMENTAL REMEDIAL INVESTIGATION DATA GAP SAMPLING

Boring Number: S22-DGS-SG02	Date Started: 7/10/01
Drilling Method: (*Circle one*) HSA Continuous Core/GeoProbe/Hand Auger	Date Completed: 7/10/01
Air Rotary/Mud Rotary/Dual Tube Percussion/Sonic/Vacuum	Logged By: LAURA GENIN
Outer Diameter of Boring: 4"	Drilling Subcontractor: PRECISION
Inner Diameter of Well Casing:	Driller: EUGENE
Depth to Water (ft./bgs.) 4.5'	Location Sketch:



Time	Depth (ft) bgs	Drive Interval	Recovered Interval	Sample ID	Blow count (per 6 inches) / V.S. utility type, dia.	Description	USCS soil symbol	Well construction	OVM (ppm)
1148				385-S22 012		CLAYEY SAND; DK. GREENISH GREY (4/5G); SLT. MOIST, M.DENSE; WELL SORTED; FINE GRAINED; NON PLASTIC; SAND-80%, CLAY-20%.	SC		
	2						SW		
	4					SAND; DK. GREENISH GREY (1-GLEY 4/5G); SLT. MOIST, LOOSE; WELL SORTED; FINE GRAINED WET @ 4.5' FINING DOWNWARD			
	6								
	8								
	10					TOTAL DEPTH = 9' BORING BACKFILLED W/ CEMENT GROUT			

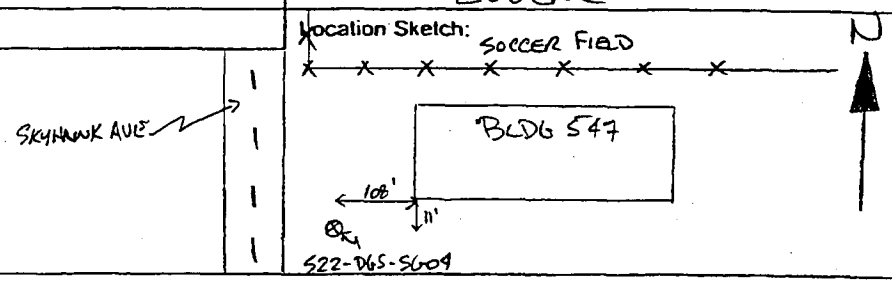
Sheet 1 of 1

TETRA TECH EM INC.

SOIL BORING AND WELL INSTALLATION AND VISUAL CLASSIFICATION LOG

CTO- 385
Bldg./Site:
Project Name: ALAMEDA POINT SUPPLEMENTAL REMEDIAL INVESTIGATION DATA GAP SAMPLING

Boring Number: S22-DGS-SG04	Date Started: 9/7/01
Drilling Method: (Circle one) HSA Continuous Core/GeoProbe/Hand Auger	Date Completed: 9/7/01
Air Rotary/Mud Rotary/Dual Tube Percussion/Sonic/Vacuum	Logged By: KIRK MARTIN
Outer Diameter of Boring: 4"	Drilling Subcontractor: PRECISION
Inner Diameter of Well Casing:	Driller: EUGENE
Depth to Water (ft./bgs.) 5'	Location Sketch:



Depth (ft) bgs	Drive Interval	Recovered Interval	Sample ID	Blow count (per 6 inches) / V.O. utility type, dia.	Description	USCS soil symbol	Well construction	OVM (ppm)
					NO RECOVERY			
1245 2			385-S22 015		SILTY CLAYEY SAND w/ GRAVEL; DK. BROWN (7.5YR 3/2); DRY; DENSE; SLT. PLASTIC; SILT-25%, CLAY-25%, GRAVEL-15%, SAND-35%.	SM		
4		VERY POOR RECOVERIES		NA	SANDY GRAVEL; DK. REDDISH BROWN (5YR 3/2); MOIST; LOOSE; NON PLASTIC; POORLY SORTED; GRAVEL-55%, SAND-35%, CLAY-5%, SILT-5%.	GP	NA	
6					COLOR CHANGE @ 2.5' - DK BROWN (10YR 4/3).			
8					WET @ 5'			
10					TOTAL DEPTH = 9'			

BORING BACKFILLED w/ CEMENT GROUT

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B001

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.0 in	N 2,110,455.6 E 6,043,669.6	13.2 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.5 ft / 8.7ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0590947		9:15:00 AM	NR					**SILTY SAND (SM)**: Brown [10YR 5/3], moist, 10% fine angular gravel, 60% sand, 30% fines. (FILL).	FID Background = 0 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0590948		9:19:00 AM	NR						
					11.2	2		**GRAVEL with SAND (GW)**: Dark brown [10YR 3/3], moist, fine grained sand, 60% fine angular to subrounded gravel, 30% sand, 10% fines. (FILL).	
C0590949		9:22:00 AM	NR			3			
						4			
				▽				at 4.5 ft.: saturated.	
					8.2	5		**SILTY SAND (SM)**: Dark greenish gray [GLEY1 4/1], wet, fine grained sand, 10% fine subrounded gravel, 60% sand, 30% fines. (FILL).	
C0590950		9:27:00 AM	NR			6			
						7			
					5.2	8			

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.0 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S022B001

Report form: C10-009 ALAMEDA BORING LOG Time: 1:53:56 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B002

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-[redacted]

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3.0 in	N 2,110,453.7 E 6,043,735.9	14.1 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.5 ft / 9.6ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					13.8			**ASPHALT**	
C0595095[illegible]		11:02:00 AM	NR					**SILTY SAND (SM)**: Dark brown [10YR 3/3], moist, fine grained sand, shell fragments, trace fine angular gravel, 70% sand, 30% fines. (FILL).	FID Background = 0 ppm Hole backfilled with bentonite-cement grout after completion
						1			
C0590952		11:05:00 AM	NR						
						2			
					11.1	3		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, shell fragments, 0% gravel, 90% sand, 10% fines. (FILL).	
C0590953		11:07:00 AM	NR						
						4			
				▽				at 4.5 ft.: saturated.	
						5		at 5.0 ft.: Dark greenish gray [Gley1(4/1)].	
						6		at 6.0 ft.: Very dark grayish brown [2.5Y 3/2].	
C0590954		11:09:00 AM	NR						
						7			
						8			
					5.8			**TOTAL DEPTH = 8.3 FEET**	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B002

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B003

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3.0 in	N 2,110,442.9 E 6,043,805.1	13.9 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.5 ft / 9.4ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					13.6			**ASPHALT**	
C0590956 C0590955		9:39:00 AM	NR					**SILTY SAND (SM)**: Dark brown [10YR 3/3], moist, fine grained sand, roots, trace fine angular gravel, 70% sand, 30% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
					12.9	1		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, shell fragments, 0% gravel, 90% sand, 10% fines. (FILL).	
C0590957		9:42:00 AM	NR						
						2			
						3			
C0590958		9:42:00 AM	NR						
						4			
				▽				at 4.5 ft.: saturated.	
						5			
					8.1				
					8.0	6		**CLAY (CL)**: Dark greenish gray [Gley1 4/1], wet, 0% gravel, 10% sand, 90% fines. (FILL).	
C0590959		9:46:00 AM	NR					**SILTY SAND (SM)**: Dark brown [10YR 3/3], wet, fine grained sand, 0% gravel, 70% sand, 30% fines. (FILL).	
						7			
						8			
					5.6				

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.3 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B003

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B004

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3.0 in	N 2,110,457.2 E 6,043,869.1	14.2 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 10.2ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					13.9			**CONCRETE**	
C0590960		11:27:00 AM	NR					**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, shell fragments, 0% gravel, 90% sand, 10% fines. (FILL).	FID Background = 0 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0590961		11:28:00 AM	NR						
						2			
						3			
C0590962		11:30:00 AM	NR						
				▽		4		at 4.0 ft.: saturated.	
					9.2	5		**CLAY (CL)**: Dark greenish gray [Gley1 4/1], soft, wet, Black [Gley1 2.5/black] mottles/streaks. (FILL).	
					8.7			**SILTY SAND (SM)**: Dark brown [10YR 3/3], wet, fine grained sand, 0% gravel, 70% sand, 30% fines. (FILL).	
						6			
C0590963		11:32:00 AM	NR						
						7			
						8			
					5.9				

TOTAL DEPTH = 8.3 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S022B004

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B005

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.0 in	N 2,110,455.6 E 6,043,933.6	12.3 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 8.3ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0590964		10:13:00 AM	NR					**SILTY SAND (SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, angular, trace gravel, 70% sand, 30% fines. (FILL).	FID Background = 0 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0590966 C0590965		10:14:00 AM	NR						
						2			
C0590967		10:18:00 AM	NR			3		at 3.0 ft.: Black [2.5Y 2.5/1].	
				▽		4		at 4.0 ft.: saturated.	
						5		at 5.0 ft.: Very dark grayish brown [2.5Y 3/2].	
C0590968		10:20:00 AM	NR			6			
						7			
					4.8			**CLAYEY SAND (SC)**: Light olive brown [2.5Y 5/6], wet, fine grained sand, 0% Gravel, 70% sand, 30% fines. (FILL).	
					4.3	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST CATHIE L. STUMPENHAUS No. 4451 2/3/04 STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B005

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B006

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3.0 in	N 2,110,389.6 E 6,043,668.8	13.6 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ 5.0 ft / 8.6ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					13.3			**ASPHALT**	
C0590969		10:42:00 AM	NR			1		**SAND with GRAVEL (SW)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, fine gravel, 35% gravel, 55% sand, 10% fines. (FILL).	FID background = 0 ppm Hole backfilled with bentonite-cement grout after completion
C0590970		10:45:00 AM	NR		12.1	2		**SAND with SILT (SP-SM)**: Greenish grey [GLEY 6/1], moist, fine grained sand, petroleum odor, shell fragments, 0% gravel, 90% sand, 10% fines. (FILL).	
C0590971		10:46:00 AM	NR			3			
						4		at 4.0 ft.: Greenish Grey [GLEY1 5/1].	
				▽	8.6	5		**CLAY** Greenish Grey [GLEY1 5/1], soft, saturated, 0% gravel, trace sand, 100% fines. (FILL).	
					8.1			**SILTY SAND (SM)**: Dark brown [10YR 3/3], wet, fine grained sand, 0% gravel, 70% sand, 30% fines. (FILL).	
C0590972		10:49:00 AM	NR			6			
						7			
						8			
					5.3			**TOTAL DEPTH = 8.3 FEET**	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B006

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B007

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,110,389.7 E 6,043,735.6	14.5 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 7.5ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0590973		8:55:00 AM	NR		14.0			**GRAVEL with SAND (GW)**: Light olive brown [2.5Y 5/6], moist, 60% fine angular gravel, up to 2", 35% sand, 5% fines. (FILL).	
						1		**SAND (SP)**: Olive brown [2.5Y 4/4], moist, 10% fine rounded gravel up to 1/2", 80% sand, 10% fines, very strong gasoline odor, trace shell fragments up to 1". (FILL).	Hole backfilled with bentonite-cement grout after completion
C0590974		8:57:00 AM	NR					at 1.0 ft.: Olive gray [5Y 4/2].	
						2		at 2.0 ft.: Olive [5Y 5/3], 100% sand.	
C0590976 C0590975		8:59:00 AM	NR			3			
						4			
						5		at 5.0 ft.: Greenish gray [5GY 5/1], very strong gasoline odor from 4 to 8 feet bgs unable to determine groundwater depth due to oily core consistency, estimated groundwater depth at 7 feet bgs.	
C0590977		9:01:00 AM	NR		8.5	6		**SILTY CLAY (CL)**: Dark greenish gray [5GY 4/1], soft, low plasticity, 5% sand, 95% silt, outer core stained with black oily product. (FILL).	
				▽	7.5	7		**SILTY SAND (SM)**: Dark olive gray [5Y 3/2], saturated, 0% gravel, 85% sand, 15% fines, oily consistency. (FILL).	
					6.5	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B007

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B008

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,110,389.6 E 6,043,801.6	14.8 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 7.8ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0590978		9:32:00 AM	NR		14.3			**GRAVEL with SAND (GW)**: Light olive brown [2.5Y 5/6], moist, 70% gravel up to 1.25", 30% sand. (FILL).	
					13.8	1		**SANDY CLAY (CL)**: Olive yellow [2.5Y 6/8], rounded, low plasticity, 5% gravel up to 1/3", 60% sand, 35% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0590979		9:34:00 AM	NR		13.7			**GRAVEL with SAND (GW)**: 50% gravel up to 1", 45% sand, 5% clay, shell fragments up to 1". (FILL).	
					13.0			**SAND with CLAY (SP-SC)**: Yellowish brown [10YR 5/6], wet, 0% gravel, 90% sand, 10% clay>silt. (FILL).	
						2		**SAND (SP)**: Dark greenish gray [5G 4/1], wet, 0% gravel, 98% sand, 2% silt. (FILL). at 2.0 ft.: Olive gray [5Y 4/2], moist, 100% sand.	
C0590980		9:36:00 AM	NR			3			
						4		at 4.0 ft.: 0% gravel, 95% sand, 5% silt. slight hydrocarbon odor. at 4.5 ft.: 100% sand.	
						5			
C0590981		9:38:00 AM	NR			6			
				▽		7		at 7.0 ft.: saturated. at 7.5 ft.: Light brown [7.5YR 6/3], wet, 0% gravel, 98% sand, 2% clay.	
					6.8	8		**TOTAL DEPTH = 8.0 FEET**	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S022B008

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B009

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,110,381.9 E 6,043,877.0	13.4 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.5 ft / 7.9ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0590982		9:57:00 AM	NR					**SAND (SP)**: Light olive brown [2.5Y 5/4], dry, 0% gravel, 95% silt, 5% fines. (FILL).	
								at 0.5 ft.: moist, 5% rounded gravels up to 1/2", 85% sand, 2% clay, 3% fines.	Hole backfilled with bentonite-cement grout after completion
						1			
C0590983		9:59:00 AM	NR						
						2		at 2.0 ft.: shell fragments up to 1/2".	
C0590984		10:01:00 AM	NR			3			
					9.6			**CLAYEY SAND (SC)**: 80% sand, 20% fines. (FILL).	
						4			
					9.2			**SAND with SILT (SP-SM)**: wet, poorly graded, 90% sand, 10% fines. (FILL).	Slumping from ground surface (top 3-inches) excluded from sample
					8.9			**SILTY CLAY (CL)**: Light olive brown [2.5Y 5/3], soft, wet, color grading over interval to Olive [5Y 5/3], 100% fines, very soft. (FILL).	
						5			
				▽				at 5.5 ft.: saturated.	
C0590986 C0590985		10:03:00 AM	NR		7.4	6		**CLAY (CL)**: Black [2.5Y 2/0], soft, wet, low plasticity, 100% fines, no visible particles, sticky consistency. no hydrocarbon odor (BAY MUD).	
					6.9			**SAND (SP)**: Dark gray [5Y 4/1], wet, 95% sand, 5% fines. (BAY SEDIMENT).	
						7			
					5.4	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B009

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022[illegible]0

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,110,390.2 E 6,043,923.9	13.0 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.5 ft / 6.5ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0590987		10:38:00 AM	NR					**SAND (SP)**: Olive brown [2.5Y 4/4], dry, fine grained sand, rounded, 5% gravels up to 1/4", 85% sand, 5% silt. (FILL).	
						1			Hole backfilled with bentonite-cement grout after completion
C0590988		10:40:00 AM	NR						
						2			
C0590989		10:42:00 AM	NR			3		at 2.8 ft.: Light olive brown [2.5Y 5/4], poorly graded, 100% sand.	
					9.5			**CLAY (CL)**: Light olive brown [2.5Y 5/3], 10% sand, 90% clay, crumbly. (FILL).	
					9.0	4		**CLAYEY SAND (SC)**: Black [2.5Y 2/0], wet, 90% sand, 10% fines. (FILL).	exclude top 6" of recovered core from sample - slumped dry material from ground surface
						5			
C0590990		10:46:00 AM	NR			6			
				▽	6.5			**SAND (SP)**: Dark greenish gray [5GY 4/1], saturated, 100% sand. (FILL).	
						7			
					5.4			**SILTY SAND (SM)**: Olive gray [5Y 4/2], wet, 50% sand, 50% fines. (FILL).	
					5.0	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S022B010

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B011

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,110,323.6 E 6,043,669.6	13.9 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 6.9ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0590991		11:24:00 AM	NR		13.5			**GRAVEL with SAND (GW)**: Light olive brown [2.5Y 5/4], moist, poorly graded, subangular, 80% gravels up to 1", 15% sand, 5% fines. (FILL).	
								SAND (SP): Dark olive brown [2.5Y 3/3], moist, poorly graded, 95% sand, 5% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
						1			
C0590992		11:26:00 AM	NR					at 1.0 ft.: Light yellowish brown [2.5Y 6/4], moist, 100% sand, shell fragments up to 1" (1%).	
						2			
C0590993		11:28:00 AM	NR			3			
						4			
						5			
					8.4			**SILTY CLAY (CL)**: Dark greenish gray [5GY 4/1], soft, 100% fines. (FILL).	
C0590994		11:30:00 AM	NR		7.9	6		**SAND (SP)**: wet, poorly graded, 100% sand. (FILL).	
					7.4			**CLAYEY SAND (SC)**: Very dark gray [5Y 3/1], wet, 95% sand, 5% fines, slight hydrocarbon odor at 6.5 feet bgs to 6.6 feet bgs. (FILL).	
				▽		7		at 7.0 ft.: saturated.	
					6.3			**SAND (SP)**: Dark olive gray [5Y 3/2], saturated, poorly graded, (FILL).	
					5.9	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUSEN
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B011

Report form: C10-059 ALAMEDA BORING LOG Time: 15:42:24 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B012

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,110,323.6 E 6,043,735.6	14.5 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0590996 C0590995		1:25:00 PM	NR		14.1 14.0			**GRAVEL with SAND (GW)**: Light olive brown [2.5Y 5/3], wet, well graded, subangular, 65% up to 1", 30% sand, 5% fines. (FILL).	
					13.5	1		**CLAYEY SAND (SC)**: Yellowish brown [10YR 5/6], moist, medium plasticity, 50% sand, 50% fines. moderate hydrocarbon odor (FILL).	Hole backfilled with bentonite-cement grout after completion
C0590997		1:27:00 PM	NR					**SANDY CLAY (CL)**: Dark greenish gray [5GY 4/1], stiff, 40% sand, 60% fines. (FILL).	
						2		**SAND (SP)**: Dark gray [5Y 4/1], wet, poorly graded, 98% sand, 2% fines, shell fragments <1% up to 1/2". strong hydrocarbon odor (FILL). at 2.0 ft.: Greenish gray [5GY 5/1], wet, poorly graded, 100% sand, strong hydrocarbon odor.	
C0590998		1:29:00 PM	NR			3			
						4			
					10.0			**SANDY CLAY (CL)**: Dark greenish gray [5GY 4/1], soft, wet, 20% sand, 80% silt/clay. strong hydrocarbon odor (FILL).	High FID reading (30 ppm) must wait to log and sample
						5		at 5.0 ft.: color change due to hydrocarbon products (0.2 feet thick).	
					9.3			**SAND (SP)**: Black [5Y 2.5/2], wet, 100% sand, color change to dark greenish gray [5GY 4/1]. (FILL).	
C0590999		1:31:00 PM	30			6			
					7.5	7		**CLAYEY SAND (SC)**: soft, wet, 80% sand, 20% fines, oily. (FILL).	
					6.9			**SAND (SP)**: Black [5Y 2.5/1], 100% sand, oily. (FILL).	
					6.5	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S022B012

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B013

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,110,321.9 E 6,043,800.9	14.5 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591000		2:10:00 PM	NR		14.4			**GRAVEL (GW)**: Light olive brown [2.5Y 5/3], wet, well graded, subangular, 85% gravel up to 1", 10% sand, 5% fines. (FILL).	
					14.2				
					14.1			**GRAVEL with SAND (GW)**: Olive brown [2.5Y 4/3], wet, subangular, 50% gravel up to 0.5", 45% sand, 5% clay. (FILL).	
					13.5	1			Hole backfilled with bentonite-cement grout after completion
C0591001		2:12:00 PM	NR					**GRAVEL (GW)**: well graded, fine gravel, subangular, Oxidized gravel and sands. (FILL).	
								CLAYEY SAND (SC): Greenish gray [5GY 5/1], 50% sand, 50% fines. (FILL).	
						2		**SAND (SP)**: Dark gray [5Y 4/1], wet, 100% sand, trace shell fragments up to 1/2". (FILL).	
C0591002		2:14:00 PM	NR			3			
						4			
						5			
C0591003		2:16:00 PM	NR						
						6		at 6.0 ft.: Dark greenish gray [5GY 4/1], moderate hydrocarbon odor.	
					7.5	7		**SILTY CLAY (CL)**: Dark greenish gray [5GY 4/1], (FILL).	
					7.0			**SILTY SAND (SM)**: Black [5Y 2.5/1], wet, 85% sand, 15% fines, trace rootlets. (MARSH CRUST).	Excluded 7.5 feet bgs to 8 feet bgs from sample
					6.5	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S022B013

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B014

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,110,317.7 E 6,043,866.4	12.7 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 7.7ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591004		9:10:00 AM	NR					**SAND (SP)**: Olive [5Y 5/3], loose to medium dense, moist, poorly graded, fine grained sand, subrounded, (FILL).	
						1			Hole backfilled with bentonite-cement grout after completion
C0591006 C0591005		9:15:00 AM	NR						
						2			
C0591007		9:20:00 AM	NR			3			
						4			
				▽		5		at 5.0 ft.: saturated.	
					7.2 / 7.0			**CLAY (CH)**: Greenish Gray [10gy 5/1], high plasticity, (FILL).	
C0591008		9:25:00 AM	NR			6		**SILTY SAND (SM)**: Very dark grayish brown [2.5Y 3/2], medium dense, wet, fine grained sand, 70% sand, 25% silt, 5% organics. (MARSH CRUST).	
						7		at 7.5 ft.: Greenish gray [5GB 5/1], no organics.	
					4.7	8		**TOTAL DEPTH = 8.0 FEET**	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S022B014

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B015

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,110,323.2 E 6,043,921.8	12.4 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 8.4ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591009		9:35:00 AM	NR					**SAND (SP)**: Olive [5Y 5/3], loose to medium dense, moist, poorly graded, fine grained sand, subrounded, (FILL).	
						1			Hole backfilled with bentonite-cement grout after completion
C0591010		9:40:00 AM	NR						
						2			
C0591011		9:45:00 AM	NR			3			
				▽		4		at 4.0 ft.: saturated.	
					7.7			**CLAY (CH)**: Greenish gray/black, Mottled. (FILL).	
					7.4	5		**SILTY SAND (SM)**: Very dark grayish brown [2.5Y 3/2], medium dense, wet, fine grained sand, subangular, 70% sand, 25% silt, 5% organics (stems and roots). (MARSH CRUST).	
C0591012		9:50:00 AM	NR			6			
						7			
					4.4	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUSS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B015

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B016

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,110,254.4 E 6,043,672.6	13.6 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.5 ft / 9.1ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					13.1			**ASPHALT and BASEROCK**	FID Background = 2.1 ppm
C0591013		1:05:00 PM	NR			1		**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subrounded, (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591014		1:10:00 PM	NR			2			
						3			
C0591016 C0591015		1:15:00 PM	NR	▽		4		at 4.5 ft.: saturated.	
						5			
						6			
C0591017		1:20:00 PM	NR		7.1			**CLAY (CH)**: Greenish Gray [10GY 5/1], high plasticity, (FILL).	
					6.9	7		**SILTY SAND (SM)**: Greenish Gray [10GY 5/1], wet, fine grained sand, 75% sand, 25% silt, trace organics. (MARSH CRUST).	
						8		at 7.8 ft.: Black.	
					5.1				

TOTAL DEPTH = 8.5 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · C.E.G. No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B016

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B017

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03
DRILLING METHOD	**HOLE DIAMETER**	**COORDINATES**		**ELEVATION**	**TOTAL DEPTH**
Direct-Push	1.5 in	N 2,110,260.3	E 6,043,735.9	13.4 ft	8.5 ft
DEPTH / ELEVATION TO WATER		**LOGGED BY**	**REVIEWED BY**	**ANGLE (from Horiz)**	**ABANDON DATE**
▼ 5.0 ft / 8.4ft		Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT and BASEROCK	
					12.9			**SILTY SAND WITH GRAVEL (SM)**: Strong Brown, (FILL).	FID Background = 1.8 ppm
C0591018		11:35:00 AM	NR			1			Hole backfilled with bentonite-cement grout after completion
C0591019		11:40:00 AM	NR		11.7	2		**SAND (SP)**: Greenish gray [5G 5/1], loose to medium dense, moist, fine grained sand, some ~ 2-5% shells. (FILL).	
						3			
C0591020		11:45:00 AM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591021		11:50:00 AM	NR						
					6.4	7		**CLAY (CH)**: Greenish gray/black mottles, high plasticity, (FILL).	
					6.1			**SILTY SAND (SM)**: Black, medium dense, wet, fine grained sand, 70% sand, 25% silt, 5% organics. (MARSH CRUST).	
						8			
					4.9			**TOTAL DEPTH = 8.5 FEET**	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B017

Report from: C:\0-050 ALAMEDA BORING LOG Time: 15:42 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B018

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,110,257.7 E 6,043,801.7	14.1 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.5 ft / 9.6ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					13.6			**ASPHALT AND BASEROCK**	FID Background = 1.4 ppm
C0591022		10:55:00 AM	NR			1		**SAND (SP)**: Olive [5Y 5/3], loose to medium dense, moist, poorly graded, fine grained sand, (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591023		11:00:00 AM	NR			2			
						3			
C0591024		11:05:00 AM	NR			4			
				▽				at 4.5 ft.: saturated.	
						5			
						6		at 6.0 ft.: Greenish gray [5GY 5/1].	
C0591026 C0591025		11:10:00 AM	NR						
						7			
						8			
					5.6				

TOTAL DEPTH = 8.5 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S022B018

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B019

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,110,258.2 E 6,043,870.6	13.5 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 9.5ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591027		10:35:00 AM	NR		13.0			**SAND with GRAVEL (SW)**: Reddish brown [5YR 4/4], dense, moist, fine grained sand, coarse gravel, angular, brick. (FILL).	FID background = 0.9 ppm
								SAND (SP): Olive [5Y 5/3], moist, poorly graded, (FILL).	Hole backfilled with bentonite-cement grout after completion
						1			
C0591028		10:40:00 AM	NR						
						2			
								at 2.5 ft.: CLAY (CH), Olive [5Y 5/3], high plasticity.	
C0591029		10:45:00 AM	NR			3			
				▽	9.5	4		**SILTY SAND (SW)**: Dark brown [7.5YR 3/3], dense, saturated, fine grained sand, 80% sand, 20% silt and clay. (FILL).	
						5			
C0591030		10:50:00 AM	NR			6			
					6.5	7		**SAND (SP)**: Greenish gray [10GY 5/1], wet, fine grained sand, black laminations. (BAY SEDIMENT).	
					5.5	8			

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

TOTAL DEPTH = 8.0 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S022B019

Report form: C10-059 ALAMEDA BORING LOG Time: 1:54:47 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S0[illegible]020

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,110,248.8 E 6,043,916.0	12.8 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 8.8ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591031		10:10:00 AM	NR					**SAND (SP)**: Olive [5Y 5/3], loose to medium dense, moist, poorly graded, fine grained sand, subangular to subrounded, Trace rootlets in upper 12", trace <2% fine gravel of red brick. (FILL).	FID Background = 1.8 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0591032		10:15:00 AM	NR						
						2			
C0591033		10:20:00 AM	NR		9.8	3		**GRAVEL (GP)**: olive, dense, fine gravel, angular, gravel composed of sandstone. (FILL).	
					9.3			**SAND (SP)**: same as above though "subrounded". (FILL).	
				▽		4		at 4.0 ft.: saturated.	
					8.3			**SILTY SAND (SM)**: Very dark grayish brown [2.5Y 3/2], medium dense, wet, fine grained sand, 65% sand, 30% silt, 5% organics. (FILL).	
						5			
C0591034		10:25:00 AM	NR			6		at 6.0 ft.: Very dark gray [2.5Y 3/1].	
						7			
					4.8	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B020

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B021

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,110,203.6 E 6,043,803.7	12.5 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 8.5ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT AND BASEROCK	
					12.0				FID Background = 0.98 ppm
C0591036 C0591035		2:15:00 PM	NR			1		**SILTY SAND (SM)**: Strong brown [7.5YR 5/6], dense to very dense, moist, fine to coarse grained sand, fine and coarse gravel, angular, (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591037		2:20:00 PM	NR		10.5	2		**SILTY SAND (SM)**: Dark olive brown [2.5Y 3/3], dense, moist, fine grained sand, 75% sand, 20% silt, 5% organics. (FILL).	
						3			
C0591038		2:25:00 PM	NR	▽		4		at 4.0 ft.: saturated.	
						5			
						6			
C0591039		2:30:00 PM	NR			7			
						8			
					4.0				

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B021

Report form: C10-059 ALAMEDA DOBINS LOG Time: 14:43 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S022B022

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 22	Alameda Point	7-31-03	7-31-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,110,202.2 E 6,043,868.8	12.3 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 3.5 ft / 8.8ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	7/31/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT AND BASEROCK	
					11.8			**SAND with GRAVEL (SM)**: Strong brown [7.5YR 5/6], dense to very dense, moist, fine to coarse grained sand, fine and coarse gravel, angular, (FILL).	FID Background = 0.91 ppm
C0591040		2:50:00 PM	NR			1			Hole backfilled with bentonite-cement grout after completion
C0591041		2:55:00 PM	NR		10.3	2		**SILTY SAND (SM)**: Dark olive brown [2.5Y 3/3], dense, moist, fine grained sand, 75% sand, 20% silt, 5% organics. (FILL).	
						3			
C0591042		3:00:00 PM	NR	▽				at 3.5 ft.: saturated.	
						4			
						5		at 5.2 ft.: 8-inches of 90% sand.	
						6			
C0591044 C0591043		3:05:00 PM	NR						
						7			
						8			
					3.8				

TOTAL DEPTH = 8.5 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/5/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 3, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S022B022

Site 23

SITE 23 SOIL BORING AND CONE PENETROMETER LOGS

Remedial Investigation Report for OU-2A, Alameda Point, Alameda, California
(Page 1 of 2)

Boring ID	Date Drilled	Investigation
MW530-1	7/13/1990	Phase 1 & 2A
MW530-2	7/13/1990	Phase 1 & 2A
MW530-3	7/13/1990	Phase 1 & 2A
B10B-04	8/19/1994	Follow On Investigation 1994
B10B-05	8/19/1994	Follow On Investigation 1994
B10B-06	8/19/1994	Follow On Investigation 1994
B10B-07	8/19/1994	Follow On Investigation 1994
M10B-01	11/5/1994	Follow On Investigation 1994
D10B-01	11/1/1994	Follow On Investigation 1994
D10B-02	11/7/1994	Follow On Investigation 1994
CPT-S10B-01	7/5/1994	Follow On Investigation 1994
CPT-S10B-2	7/1/1994	Follow On Investigation 1994
CPT-S10B-03	7/5/1994	Follow On Investigation 1994
CPT-S10B-04	7/1/1994	Follow On Investigation 1994
CPT-S10B-05	7/5/1994	Follow On Investigation 1994
CPT-S10B-06	7/1/1994	Follow On Investigation 1994
M09-05	11/5/1994	Follow On Investigation 1994
S23-DGS-DP01	8/1/2001	Data Gap Sampling 2001
S23-DGS-DP02	8/14/2001	Data Gap Sampling 2001
S23-DGS-SG01	7/10/2001	Data Gap Sampling 2001
S23-DGS-SG02	7/10/2001	Data Gap Sampling 2001
S23-DGS-VE01	8/8/2001	Data Gap Sampling 2001
S23-DGS-VE02	8/21/2001	Data Gap Sampling 2001
C3S023B001	8/6/2003	PAH Study
C3S023B002	8/6/2003	PAH Study
C3S023B003	8/6/2003	PAH Study
C3S023B004	8/7/2003	PAH Study
C3S023B005	8/5/2003	PAH Study
C3S023B006	8/5/2003	PAH Study
C3S023B007	8/7/2003	PAH Study
C3S023B008	8/6/2003	PAH Study
C3S023B009	8/6/2003	PAH Study
C3S023B010	8/5/2003	PAH Study
C3S023B011	8/5/2003	PAH Study
C3S023B012	8/5/2003	PAH Study
C3S023B013	8/5/2003	PAH Study
C3S023B014	8/6/2003	PAH Study
C3S023B015	8/6/2003	PAH Study
C3S023B016	8/6/2003	PAH Study
C3S023B017	8/5/2003	PAH Study
C3S023B018	8/5/2003	PAH Study
C3S023B019	8/6/2003	PAH Study
C3S023B020	8/6/2003	PAH Study
C3S023B021	8/6/2003	PAH Study
C3S023B022	8/5/2003	PAH Study
C3S023B023	8/5/2003	PAH Study
C3S023B024	8/5/2003	PAH Study
C3S023B025	8/1/2003	PAH Study
C3S023B026	8/1/2003	PAH Study
C3S023B027	8/1/2003	PAH Study
C3S023B028	8/6/2003	PAH Study
C3S023B029	8/6/2003	PAH Study
C3S023B030	8/6/2003	PAH Study
C3S023B031	8/5/2003	PAH Study
C3S023B032	8/5/2003	PAH Study
C3S023B033	8/5/2003	PAH Study
C3S023B034	8/1/2003	PAH Study
C3S023B035	8/5/2003	PAH Study
C3S023B036	8/7/2003	PAH Study
C3S023B037	8/6/2003	PAH Study
C3S023B038	8/5/2003	PAH Study

SITE 23 SOIL BORING AND CONE PENETROMETER LOGS

Remedial Investigation Report for OU-2A, Alameda Point, Alameda, California

C3S023B039	8/5/2003	PAH Study
C3S023B040	8/5/2003	PAH Study
C3S023B041	8/5/2003	PAH Study
C3S023B042	8/5/2003	PAH Study
C3S023B043	8/5/2003	PAH Study
C3S023B044	8/1/2003	PAH Study
C3S023B045	8/1/2003	PAH Study
C3S023B046	8/1/2003	PAH Study
C3S023B047	8/7/2003	PAH Study
C3S023B048	8/7/2003	PAH Study
C3S023B049	8/5/2003	PAH Study
C3S023B050	8/5/2003	PAH Study
C3S023B051	8/5/2003	PAH Study
C3S023B052	8/5/2003	PAH Study
C3S023B053	8/5/2003	PAH Study
C3S023B054	8/5/2003	PAH Study
C3S023B055	8/1/2003	PAH Study
C3S023B056	8/1/2003	PAH Study
C3S023B057	8/1/2003	PAH Study
C3S023B058	8/1/2003	PAH Study
C3S023B059	8/1/2003	PAH Study
C3S023B060	8/1/2003	PAH Study

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. MW530-1
LOGGED BY RMD

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: NE corner of Building 530 in fire lane SURFACE ELEV. 114.11 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/13/90 FINISH 7/13/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
													Asphalt. (Fill)	
	1	CS	0.5	2.0	16	23	15	13	SM			0.5	Dense, mottled light and dark brown, silty sand, moist, trace of gravel.. (Fill)	
	2	CS	2.0	3.5	11	14	16	15	SM					
5	3	CS	3.5	5.0	11	15	6	15	SM			4.3	Medium dense, light brown, silty fine sand, moist.	
	4	CS	5.0	6.5	3	2	2	14	SM					X
												6.8	thin layer of gray clay at 6.25 feet.	X
	5	CS	6.5	8.0	5	6	20	17	SP				Medium dense, black to dark brown, silty gravelly sand, saturated, oily odor.	X
	6	CS	8.0	9.5	7	3	4	15	SM					X
10												8.3	Loose, gray, silty fine sand, saturated, black streaks, oily odor.	X
	7	CS	9.5	11.0	4	4	5	16	SM					X
	8	CS	11.0	12.5	5	7	12	16	SM				some brick debris at 8.0 feet.	X
													becomes medium dense at 11.5 feet.	X
	9	CS	12.5	14.0	7	7	5	16	SM					X
15	10	CS	14.0	15.0	20	50	-	13	SC			14.0	Very dense, light yellow brown, clayey fine sand, saturated.	X
												15.0		
													Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 6.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings:
   a) 200 ppm at 8.0 feet. Oily odor.
   b) 200-300 ppm at 11.0 feet. Oily odor.
   c) 20-30 ppm at 13.0 feet.
   d) 50 ppm at 15.0 feet.

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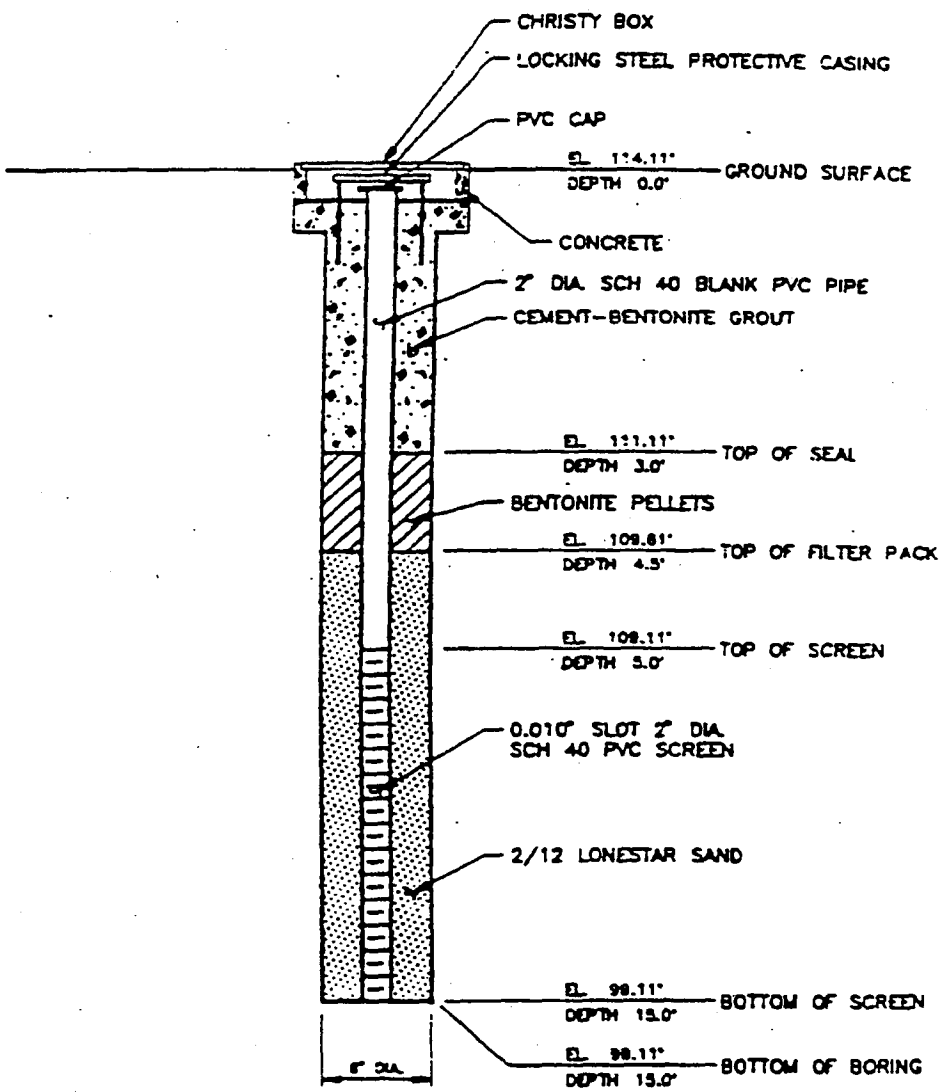
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MW530-1

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION BUILDING 530, NORTHEAST CORNER DATE 7-13-90 BY RMD



NOTES:

1. NOT DRAWN TO SCALE.
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

Soil Boring Log

PROJECT No. 86-018-1804
BORING No. MW530-2
LOGGED BY BB

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: Southwest corner of Building 530 SURFACE ELEV. 114.47 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/13/90 FINISH 7/13/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER	DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	10	13	15	14	SM			0.3		Asphalt. (Fill)	
														Medium dense, light brown, silty fine sand, moist, some shells, trace of gravel.	
	2	CS	1.5	3.0	9	11	15	14	SM						
	3	CS	3.0	4.5	5	12	13	15	SM						
5														no shells below 5.0 feet.	
	4	CS	4.5	6.0	5	13	14	15	SM						X
	5	CS	6.0	7.5	14	9	10	17	SM					color change to gray at 6.0 feet.	X
														saturated below 6.0 feet.	X
	6	CS	7.5	9.0	9	8	10	15	SM						X
10	7	CS	9.0	10.5	5	4	3	13	SM						X
														becomes loose at 9.0 feet.	X
	8	CS	10.5	12.0	4	4	7	14	SM		Fill				X
	9	CS	12.0	13.5	2	2	4	16	SC			12.5			X
											BS			Loose, gray to dark brown, clayey fine sand, saturated, with some pockets of clay.	X
15	10	CS	13.5	15.0	2	3	4	15	SC						X
												15.0		abundant gray clay and tiny shells at t[illegible] of unit.	
20														Bottom of Boring at 15.0 feet.	
														Notes:	
25														1. Boring was advanced using 8-inch-diameter hollow stem augers.	
														2. Groundwater was encountered at 6.0 feet during drilling.	
30														3. Sampler type: California Sampler (CS) O.D.: 2.5 inches I.D.: 2.0 inches	
35														4. Boring was converted to a monitoring well upon completion of drilling.	
														5. OVA readings: No OVA readings were found during drilling.	
40															

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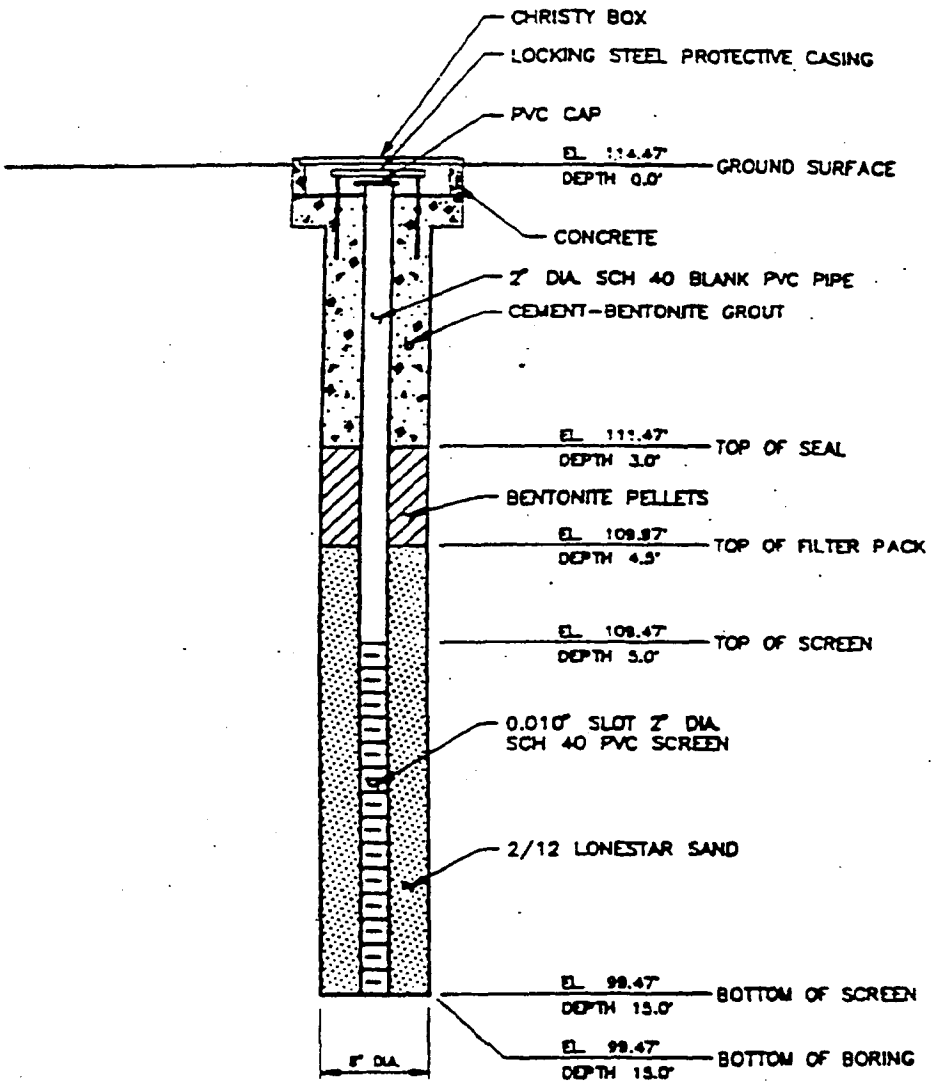
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MW530-2

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION BUILDING 530, WEST SIDE, BY SW CORNER DATE 7-13-90 BY BB



NOTES:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION

PROJECT No. 86-018-1804
BORING No. MW530-3
LOGGED BY RMD

PROJECT NAME: NAS Alameda - Phase 2A Site Investigations
BORING LOCATION: Southwest of Building 530 by tanks SURFACE ELEV. 112.67 feet
DRILLER: Spectrum Exploration - Garry Buss DATE: START 7/13/90 FINISH 7/13/90

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0"-6"	6"-12"	12"-18"	REC (in)	USCS SOIL TYPE	WC (%)	qu (TSF)	LAYER DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
	1	CS	0.0	1.5	30	20	20	14	SM				Asphalt. (Fill)	
												0.8	Dense, light brown to brown, silty fine sand, moist, some shells. (Fill)	
	2	CS	1.5	3.0	30	17	20	14	SM					
	3	CS	3.0	4.5	7	14	20	14	SM					
5												4.5	Medium dense, gray, silty fine sand, saturated.	
	4	CS	4.5	6.0	7	13	15	16	SM					X
	5	CS	6.0	7.5	7	10	14	16	SM				some scattered intervals of shells.	X
														X
	6	CS	7.5	9.0	10	8	7	15	SM				becomes very loose at 9.0 feet.	X
10	7	CS	9.0	10.5	2	1	1	10	SM		Fill			X
												10.5	Soft, gray, clay, saturated.	X
	8	CS	10.5	12.0	4	6	7	17	SM		BS	11.0	Medium dense, gray, silty medium sand, saturated, with small white shells.	X
	9	CS	12.0	13.5	3	3	4	8	SM					X
												12.0	Loose, gray, silty fine sand, saturated, (soupy texture)	X
15	10	CS	13.5	15.0	5	5	5	0	SC					X
												15.0	Bottom of Boring at 15.0 feet.	
20														
25														
30														
35														
40														

Notes:

1. Boring was advanced using 8-inch-diameter hollow stem augers.
2. Groundwater was encountered at 4.5 feet during drilling.
3. Sampler type:
   California Sampler (CS)
   O.D.: 2.5 inches
   I.D.: 2.0 inches
4. Boring was converted to a monitoring well upon completion of drilling.
5. OVA readings:
   a) 5 ppm at 11.5 feet.
   b) 20 ppm at 12.0 feet.

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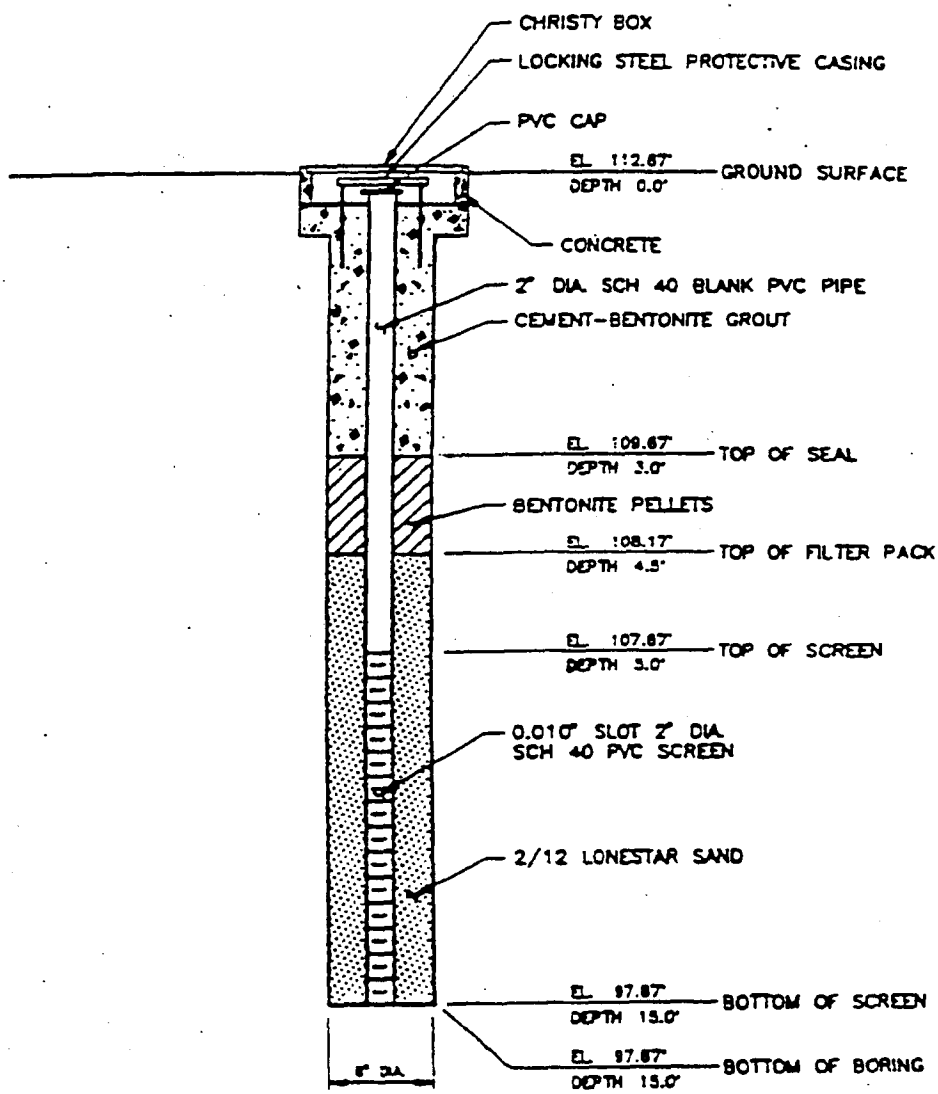
Monitoring Well Detail

PROJECT No. 86-018-1804

WELL No. MW530-3

PROJECT NAME NAS ALAMEDA-PHASE 2A SITE INVESTIGATION

WELL LOCATION SOUTHWEST OF BUILDING 530 BY TANKS DATE 7-13-90 BY RMD



NOTES:

1. NOT DRAWN TO SCALE.
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING B10B-04

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S10B-001	Ø	16			GW	FILL Sandy gravel (GW), gray brown, medium sand, medium dense, dry
							SP	Sand (SP), light brown, fine sand, dense, damp
	CHEMICAL	280-S10B-002	Ø.1	21				Same as above
				12				Same as above, but wet
5	CHEMICAL	280-S10B-003	Ø					
10								
15								
20								

TD = 6 Feet bgs

Borehole abandoned as follows:

6.Ø to Ø.Ø feet bgs: Neat Cement

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI

LOCATION Site 10B

JOB NUMBER 044-0280

LOGGED BY JEV

DATE DRILLED 8-19-94

DRILLER Woodward Drilling Co.

DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon

GROUND ELEVATION 12.70 Feet

TOC ELEVATION Not Applicable

BORING DIAMETER 8.5 inches

TOTAL DEPTH OF HOLE 6 Feet bgs

WATER LEVEL 4 Feet bgs

WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING B10B

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S10B-004	NA	39			SW	FILL Gravelly sand (SW), gray brown, fine to medium sand, dense, dry
							SP	Sand (SP), light brown, fine sand, dense, damp
	CHEMICAL	280-S10B-005		46				Same as above, with trace shells
	CHEMICAL	280-S10B-006		41				Same as above, but gray
5	CHEMICAL	280-S10B-007						Same as above but wet
10								
15								
20								

TD = 6 Feet bgs

Borehole abandoned as follows:
6.0 to 0.0 feet bgs: Neat Cement

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 10B
JOB NUMBER 044-0280
LOGGED BY JEV
DATE DRILLED 8-19-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 12.87 Feet
TOC ELEVATION Not Applicable
BORING DIAMETER 8.5 inches
TOTAL DEPTH OF HOLE 6 Feet bgs
WATER LEVEL 3 Feet bgs
WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING B10B-06

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	280-S10B-00B	0	50			SP	FILL Sand (SP), light brown, fine sand, dense, damp, trace gravel, trace pebbles
	CHEMICAL	280-S10B-009	0	33				Same as above, but no gravel, no pebbles
5	CHEMICAL	280-S10B-010	101	54				Same as above, but gray, mild hydrocarbon-like odor Same as above, but wet
10								
15								
20								

TD = 6 Feet bgs

Borehole abandoned as follows:
6.0 to 0.0 feet bgs: Neat Cement

Water Level
Split Spoon
Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 10B
JOB NUMBER 044 0280
LOGGED BY JEV
DATE DRILLED 8-19-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 13.15 Feet
TOC ELEVATION Not Applicable
BORING DIAMETER 8.5 inches
TOTAL DEPTH OF HOLE 6 Feet bgs
WATER LEVEL 5 Feet bgs
WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING B/ØB-

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
	CHEMICAL	28Ø-S1ØB-Ø11	Ø.3	54			SW	FILL Gravelly sand (SW), light brown, medium sand, dense, dry
							SP	Sand (SP), light brown, medium sand, dense, dry
	CHEMICAL	28Ø-S1ØB-Ø12	Ø	85				Same as above, but fine grain, damp
				42				Same as above
5	CHEMICAL	28Ø-S1ØB-Ø13	Ø					same as above, but wet
10								
15								
20								

TD = 6 Feet bgs

Borehole abandoned as follows:
Unknown

▼ Water Level
☒ Split Spoon
■ Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 1ØB
JOB NUMBER 044-Ø28Ø
LOGGED BY JEV
DATE DRILLED 8-19-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION 14.66 Feet
TOC ELEVATION Not Applicable
BORING DIAMETER 8.5 inches
TOTAL DEPTH OF HOLE 6 Feet bgs
WATER LEVEL 6 Feet bgs
WELL INSTALLED? (Y/N) N

ok

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING M10B-01

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			NA					3 inches asphalt over sand and gravel base FILL
	CHEMICAL	280-S10B-134		33			SP	Sand (SP), light olive brown (2.5Y5/4), very fine to fine sand, dense, moist
	CHEMICAL	280-S10B-135		16				
	DUPE	280-S10B-136						
5	CHEMICAL	280-S10B-137		17				Same as above, but medium dense, wet, trace shells
				2				Same as above, but greenish gray (5GY5/1), very loose, shells common
10							CL	Silty clay (CL), dark greenish gray (5GY4/1), very soft, very moist
								TD = 11 Feet bgs
								BAY SEDIMENTS
15								
20								

Water Level

Split Spoon

Sample Collected

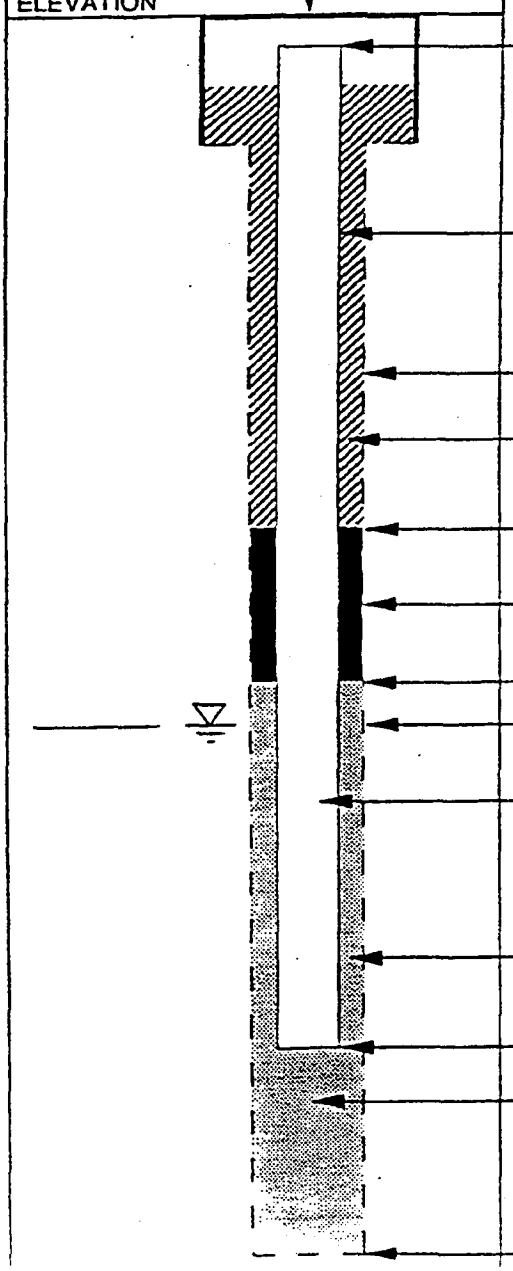
PROJECT NAS Alameda RI
LOCATION Site 10B
JOB NUMBER 044-0280
LOGGED BY WPW
DATE DRILLED 11-5-94
DRILLER Woodward Drilling Co.
DRILL METHOD Hollow-Stem Auger

SAMPLING METHOD Split spoon
GROUND ELEVATION
TOC ELEVATION 14.28 Feet
BORING DIAMETER 8 inches
TOTAL DEPTH OF HOLE 11 Feet bgs
WATER LEVEL 5.2 Feet bgs
WELL INSTALLED? (Y/N) Y

WELL ~~BORING~~ NO. M1ØB-Ø1

MONITORING WELL SHEET

PROJECT NAS Alameda RI	LOCATION Alameda, California	DRILLER Woodward Drilling Co.
PROJECT NO. Ø44 Ø28Ø	BORING M1Ø8-Ø1	DRILLING METHOD Hollow Stem Auger
SITE 1ØB	DATE 11-5-94	DEVELOPMENT METHOD Surge/Bail/Pump
FIELD GEOLOGIST WPW		



(feet MLLW)

ELEVATION OF GROUND SURFACE: ?

ELEVATION OF TOP OF WELL CASING: 14.28

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Schedule 4Ø PVC

BOREHOLE DIAMETER: 8 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL (feet bgs) 2.0

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK (feet bgs) 2.5

DEPTH TOP OF SCREEN 3.0

TYPE OF SCREEN: Schedule 4Ø PVC

SLOT SIZE ~~x LENGTH~~ Ø.Ø1 inch

I.D. OF SCREEN 2 inches

TYPE OF SAND PACK: #2/12 Monterey Sand

DEPTH BOTTOM OF SCREEN (feet bgs) 11.0

DEPTH BOTTOM OF SAND PACK 11.0

TYPE OF BACKFILL BELOW OBSERVATION WELL: Not Applicable

DEPTH OF HOLE (feet bgs) 11.0

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D10B-01

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø					6 inches asphalt
							SP	FILL
5			Ø	15	X			Sand (SP), light brown (7.5Y 6/3), fine sand, loose, dry to slightly moist
								BAY SEDIMENTS
10			Ø	22	X			Same as above
15			Ø	18	X		SM/SC	Silty clayey sand (SM/SC), reddish yellow (5YR 6/8), fine sand, dense, slightly moist
								MERRITT SAND
20								

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 10B
JOB NUMBER 044-0280
LOGGED BY NA
DATE DRILLED 10-31-94 to 11-1-94
DRILLER Tonto Drilling Services Co.
DRILL METHOD Mud Rotary

SAMPLING METHOD Split spoon
GROUND ELEVATION
TOC ELEVATION 12.29 Feet
BORING DIAMETER 7.25 inches
TOTAL DEPTH OF HOLE 61.5 Feet bgs
WATER LEVEL Not Available
WELL INSTALLED? (Y/N)

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D10B-

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	41			SM	Silty sand (SM), yellow red (5YR5/6), fine sand, dense, moist
25			Ø	73			SP	Sand (SP), light brown (7.5YR6/4) to yellow brown (10YR5/4), fine sand, dense, moist
30			Ø	83				Same as above
35			Ø	85				Same as above
40								

Water Level

Split Spoon

Sample Collected

PROJECT

LOCATION

JOB NUMBER 044-

LOGGED BY

DATE DRILLED

DRILLER

DRILL METHOD

SAMPLING METHOD

GROUND ELEVATION

TOC ELEVATION

BORING DIAMETER

TOTAL DEPTH OF HOLE

WATER LEVEL

WELL INSTALLED? (Y/N)

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D1Ø8-Ø1

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	62			SM	Silty sand (SM), reddish yellow (5YR6/8), fine sand, dense, moist
45 5			Ø	50/6 50/6			SP	Sand (SP), brown (7.5Y5/3), fine sand, very dense, moist
50 10			Ø	28/6 50/6			SM	Silty sand (SM), reddish yellow (5YR6/8), fine sand, medium dense, moist
							SP	Sand (SP), brown (7.5Y5/3), fine grain, very dense, moist
55 15			Ø	29/6 50/6				Same as above
60 20								

Water Level

Split Spoon

Sample Collected

PROJECT

LOCATION

JOB NUMBER 044-

LOGGED BY

DATE DRILLED

DRILLER

DRILL METHOD

SAMPLING METHOD

GROUND ELEVATION

TOC ELEVATION

BORING DIAMETER

TOTAL DEPTH OF HOLE

WATER LEVEL

WELL INSTALLED? (Y/N)

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D1ØB-Ø.

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	31/6 5Ø/6			SP	Same as above
								TD = 61.5 Feet bgs
5								
10								
15								
20								

Water Level

Split Spoon

Sample Collected

PROJECT _____ SAMPLING METHOD _____

LOCATION _____ GROUND ELEVATION _____

JOB NUMBER 5JJ- _____ TOC ELEVATION _____

LOGGED BY _____ BORING DIAMETER _____

DATE DRILLED _____ TOTAL DEPTH OF HOLE _____

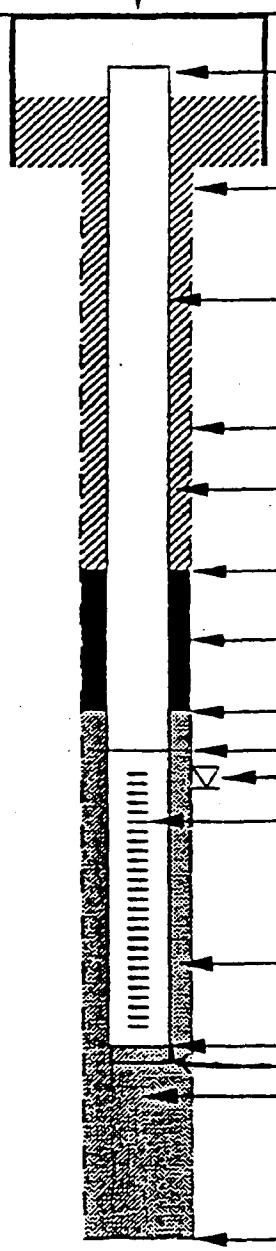
DRILLER _____ WATER LEVEL _____

DRILL METHOD _____ WELL INSTALLED? (Y/N) _____

BORING NO. D 10 B-01

MONITORING WELL SHEET

PROJECT NAS Alameda	LOCATION Site 10B	DRILLER Randy Gustafson
PROJECT NO. 2738.1406	BORING D10B-01	DRILLING Tonto Drilling
ELEVATION	DATE ~~to~~ 11-1-94	METHOD Mud Rotary
FIELD GEOLOGIST JOHN VALETT		DEVELOPMENT METHOD Surge, Bail, Pump



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: N/A

TYPE OF SURFACE CASING: N/A

RISER PIPE I.D.: 3"

TYPE OF RISER PIPE: SCH 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: PORTLAND CEMENT GROUT

ELEVATION / DEPTH OF SEAL: 44'

TYPE OF SEAL: BENTONITE CHIPS

DEPTH TOP OF SAND PACK: 46.5'

ELEVATION / DEPTH TOP OF SCREEN: 50'

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: SCH 40 PVC

SLOT SIZE x LENGTH 0.01 x 10'

I.D. OF SCREEN 3"

TYPE OF SAND PACK: MONTEREY 2/12 SAND

ELEVATION / DEPTH BOTTOM OF SCREEN: 60'

Bottom of End Cap 60.5'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 61.5'

TYPE OF BACKFILL BELOW OBSERVATION WELL: MONTEREY 2/12 SAND

ELEVATION / DEPTH OF HOLE: 61.5'

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D/Ø

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
								FILL
5			Ø	36	X		SP	Sand (SP), light brown, 70% fine sand, 15% medium sand, 15% very fine sand, loose, wet
10			Ø	5	X		SC	Clayey sand (SC), dark gray, 30% fine sand, 10% medium sand, 20% very fine sand, 40% clay, loose, wet
							CL	Clay (CL), very dark gray, sand inclusions, trace shells
								BAY SEDIMENTS
15			Ø	55	X			same as above
							SM	Silty sand (SM), ~~orangish brown~~ with red mottling, 50% fine sand, 30% silt, 5% medium sand, 15% very fine sand
								MERRITT SAND
20								same as above

Water Level

Split Spoon

Sample Collected

PROJECT NAS Alameda RI
LOCATION Site 1ØB
JOB NUMBER 094-Ø28Ø
LOGGED BY DEK
DATE DRILLED 11-7-94
DRILLER Tonto Drilling Services Co.
DRILL METHOD Mud Rotary

SAMPLING METHOD Split spoon
GROUND ELEVATION
TOC ELEVATION 14.ØØ Feet
BORING DIAMETER 7.25 inches
TOTAL DEPTH OF HOLE 81 Feet bgs
WATER LEVEL 5 Feet bgs
WELL INSTALLED? (Y/N) Y

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING DIØB-Ø2

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	63			SM	Same as above
							SP-SC	Sand with clay (SP-SC), light gray, 80% very fine sand, 10% fine sand, 10% clay, very dense, moist
							SP	Sand (SP), light gray, 70% fine sand, 20% very fine sand, 5% medium sand, 5% silt/clay, very dense, wet
25 ~~5~~			Ø	5Ø/6	☒			Same as above, but trace red mottling
30 ~~10~~			Ø	38/6 5Ø/5	☒			Same as above, but light orangish brown, 85% fine sand, 5% medium sand, 5% very fine sand, 5% clay/silt
35 ~~15~~			Ø	5Ø/6	☒			Same as above
40 ~~20~~								

▼ Water Level

☒ Split Spoon

■ Sample Collected

PROJECT		SAMPLING METHOD	
LOCATION		GROUND ELEVATION	
JOB NUMBER	643-	TOC ELEVATION	
LOGGED BY		BORING DIAMETER	
DATE DRILLED		TOTAL DEPTH OF HOLE	
DRILLER		WATER LEVEL	
DRILL METHOD		WELL INSTALLED? (Y/N)	

PRC ENVIRONMENTAL MANAGEMENT, INC. — **LOG OF BORING** D108

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	50/3	☒		SP	Same as above, but light tannish brown, 75-85% fine sand, 15% very fine sand, 5% medium sand, 5% clay/silt, very dense, wet
45 / 5			Ø	50/6	☒		SM	Silty sand (SM), orangish tan, with dark red mottling, 50% silt, 40% fine sand, 10% medium sand, very dense, moist
50 / 10			Ø	50/6	☒		SP	Same as above Sand (SP), light tannish brown, 75-85% fine sand, 10% very fine sand, 5% silt/clay, very dense, wet
55 / 15			Ø	50/5	☒			Same as above
60 / 20								

▼ Water Level

☒ Split Spoon

■ Sample Collected

PROJECT	SAMPLING METHOD
LOCATION	GROUND ELEVATION
JOB NUMBER 043-	TOC ELEVATION
LOGGED BY	BORING DIAMETER
DATE DRILLED	TOTAL DEPTH OF HOLE
DRILLER	WATER LEVEL
DRILL METHOD	WELL INSTALLED? (Y/N)

PRC ENVIRONMENTAL MANAGEMENT, INC. — **LOG OF BORING** D1ØB-02

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	5Ø/4	☒		SP	Same as above
65			Ø	5Ø/5	☒			Same as above, but 5% medium sand, no silt, no clay
70			Ø	27/6 5Ø/5	☒			Same as above
75			Ø	15/6 5Ø/6	☒		CL	SAN ANTONIO INTERBEDDED SAND & CLAY Clay (CL), dark grayish black, very stiff, moist Sandy clay (CL), dark grayish black, 25% fine sand, 5% medium sand, 10% very fine sand, 60% silt/clay, very dense, moist
80								

▼ Water Level
☒ Split Spoon
■ Sample Collected

PROJECT
LOCATION
JOB NUMBER 0JJ-
LOGGED BY
DATE DRILLED
DRILLER
DRILL METHOD

SAMPLING METHOD
GROUND ELEVATION
TOC ELEVATION
BORING DIAMETER
TOTAL DEPTH OF HOLE
WATER LEVEL
WELL INSTALLED? (Y/N)

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF BORING D1Ø8

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
			Ø	2Ø/6			CL	Clay (CL), greenish gray, hard, moist, trace organic matter
				5Ø/6				Sandy clay (CL), 40% very fine sand, 60% silt/clay, dense, moist
								TD = 81 Feet bgs
85 / 15								
90 / 10								
95 / 15								
100 / 20								

Water Level

Split Spoon

Sample Collected

PROJECT

LOCATION

JOB NUMBER 044-

LOGGED BY

DATE DRILLED

DRILLER

DRILL METHOD

SAMPLING METHOD

GROUND ELEVATION

TOC ELEVATION

BORING DIAMETER

TOTAL DEPTH OF HOLE

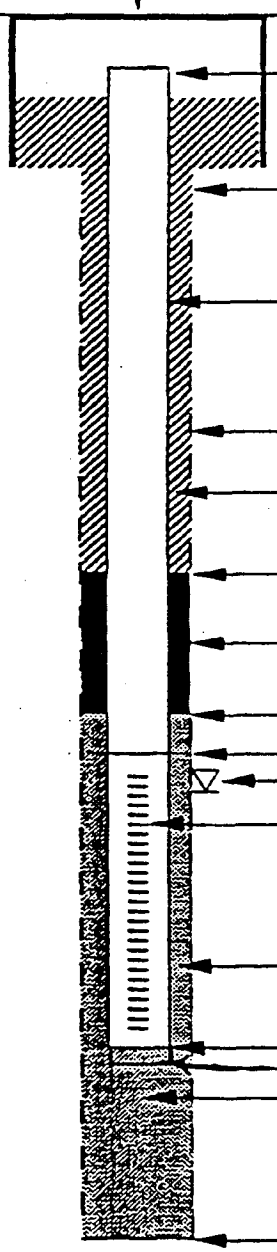
WATER LEVEL

WELL INSTALLED? (Y/N)

BORING NO. D10B-01

MONITORING WELL SHEET

PROJECT NAS Alameda	LOCATION Site 10B	DRILLER Randy Gustafson
PROJECT NO. 2738.1406	BORING D10B-01	DRILLING Tonto Drilling
ELEVATION	DATE ~~10~~ 11-1-94	METHOD Mud Rotary
FIELD GEOLOGIST JOHN VALETT		DEVELOPMENT METHOD Surge, Bail, Pump



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: N/A

TYPE OF SURFACE CASING: N/A

RISER PIPE I.D.: 3"

TYPE OF RISER PIPE: SCH 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: PORTLAND CEMENT GROUT

ELEVATION / DEPTH OF SEAL: 44'

TYPE OF SEAL: BENTONITE CHIPS

DEPTH TOP OF SAND PACK: 46.5'

ELEVATION / DEPTH TOP OF SCREEN: 50'

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: SCH 40 PVC

SLOT SIZE x LENGTH 0.01 X 10'

I.D. OF SCREEN 3"

TYPE OF SAND PACK: MONTEREY 2/12 SAND

ELEVATION / DEPTH BOTTOM OF SCREEN: 60'

Bottom of End Cap 60.5'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 61.5'

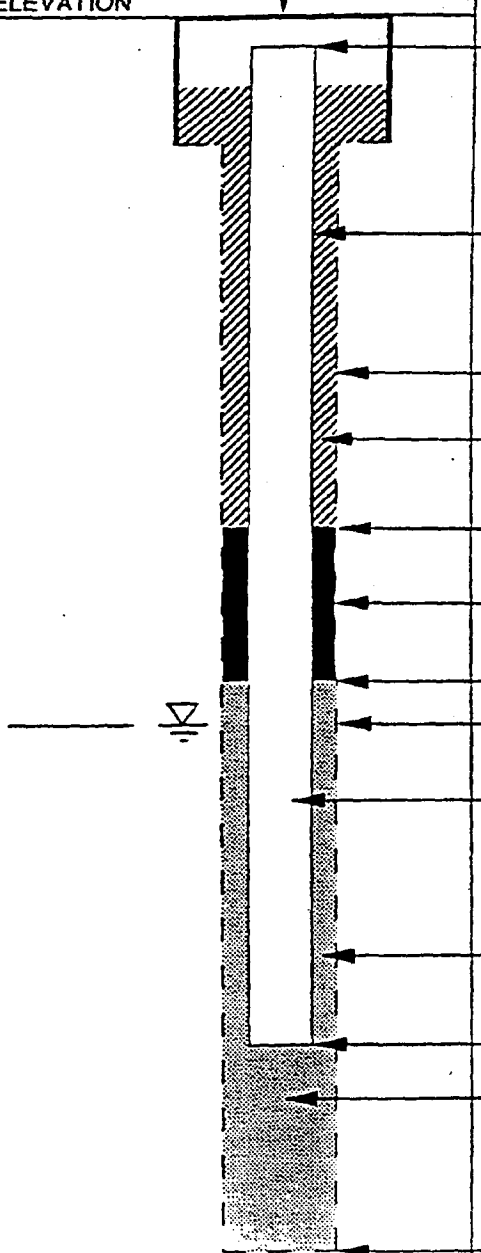
TYPE OF BACKFILL BELOW OBSERVATION WELL: MONTEREY 2/12 SAND

ELEVATION / DEPTH OF HOLE: 61.5'

WELL ~~BORING~~ NO. D1ØB-Ø2

MONITORING WELL SHEET

PROJECT NAS Alameda RI	LOCATION Alameda, California	DRILLER Tonto Drilling Services Co.
PROJECT NO. Ø44	BORING D1ØB-Ø2	DRILLING METHOD Mud Rotary
SITE D1ØB-Ø2	DATE 11-8-94	DEVELOPMENT METHOD Surge/Bail/Pump
FIELD GEOLOGIST JEV		



(feet MLLW)

ELEVATION OF GROUND SURFACE: ?

ELEVATION OF TOP OF WELL CASING: 14.00

RISER PIPE I.D.: 3 inches

TYPE OF RISER PIPE: Schedule 4Ø PVC

BOREHOLE DIAMETER: 7.25 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL (feet bgs) 44.0

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK (feet bgs) 47.0

DEPTH TOP OF SCREEN 50.0

TYPE OF SCREEN: Schedule 4Ø PVC

SLOT SIZE ~~x LENGTH~~ Ø.Ø1 inch

I.D. OF SCREEN 3 inches

TYPE OF SAND PACK: #2/12 Monterey Sand

DEPTH BOTTOM OF SCREEN (feet bgs) 60.0

DEPTH BOTTOM OF SAND PACK 60.5

TYPE OF BACKFILL BELOW OBSERVATION WELL: Bentonite

DEPTH OF HOLE (feet bgs) 81.0

TONTO ENVIRONMENTAL DRILLING

Operator :Montgomery Watso
On Site Loc:CPT-S10B-01
Job No. :2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/05/94 10:45
Cone Used :462
Water table (meters) : 3

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	0.42	18.88	4495.62	0.02	undefined	UNDFND	UNDFD	UDF	UNDEFINED
0.50	1.64	4.12	2.55	61.84	0.07	undefined	UNDFND	UNDFD	UDF	UNDEFINED
0.75	2.46	7.56	1.14	15.06	0.12	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.00	3.28	10.20	0.72	7.04	0.17	clay	UNDFND	UNDFD	10	1.0
1.25	4.10	11.56	0.37	3.23	0.21	silty clay to clay	UNDFND	UNDFD	7	1.1
1.50	4.92	12.50	0.40	3.19	0.26	silty clay to clay	UNDFND	UNDFD	8	1.2
1.75	5.74	15.08	0.17	1.12	0.31	sandy silt to clayey silt	UNDFND	UNDFD	6	1.4
2.00	6.56	41.78	0.26	0.62	0.35	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
2.25	7.38	58.58	0.39	0.66	0.40	sand to silty sand	60-70	42-44	14	UNDEFINED
2.50	8.20	55.20	0.37	0.67	0.45	sand to silty sand	60-70	40-42	13	UNDEFINED
2.75	9.02	44.28	0.37	0.83	0.50	silty sand to sandy silt	50-60	40-42	14	UNDEFINED
3.00	9.84	41.96	0.39	0.94	0.54	silty sand to sandy silt	50-60	38-40	13	UNDEFINED
3.25	10.66	32.86	0.32	0.97	0.58	silty sand to sandy silt	40-50	38-40	10	UNDEFINED
3.50	11.48	61.08	0.35	0.57	0.60	sand to silty sand	50-60	40-42	15	UNDEFINED
3.75	12.30	34.60	1.87	5.40	0.62	clay	UNDFND	UNDFD	33	3.3
4.00	13.12	6.22	0.20	3.18	0.64	clay	UNDFND	UNDFD	6	.5
4.25	13.94	25.66	0.67	2.62	0.66	clayey silt to silty clay	UNDFND	UNDFD	12	2.4
4.50	14.76	110.48	0.78	0.71	0.68	sand to silty sand	70-80	42-44	26	UNDEFINED
4.75	15.58	139.26	1.85	1.33	0.71	sand to silty sand	80-90	44-46	33	UNDEFINED
5.00	16.40	190.18	0.91	0.48	0.73	sand	80-90	44-46	36	UNDEFINED
5.25	17.22	202.62	0.80	0.39	0.75	sand	>90	44-46	39	UNDEFINED
5.50	18.04	179.72	1.60	0.89	0.77	sand	80-90	44-46	34	UNDEFINED
5.75	18.86	137.18	2.90	2.11	0.79	silty sand to sandy silt	70-80	42-44	44	UNDEFINED
6.00	19.69	160.92	1.76	1.10	0.81	sand to silty sand	80-90	44-46	39	UNDEFINED
6.25	20.51	172.96	1.42	0.82	0.84	sand	80-90	44-46	33	UNDEFINED
6.50	21.33	226.44	0.97	0.43	0.86	sand	>90	44-46	43	UNDEFINED
6.75	22.15	253.78	0.96	0.38	0.88	gravelly sand to sand	>90	44-46	41	UNDEFINED
7.00	22.97	220.30	0.84	0.38	0.90	sand	>90	44-46	42	UNDEFINED
7.25	23.79	235.14	0.88	0.37	0.92	sand	>90	44-46	45	UNDEFINED
7.50	24.61	216.96	0.91	0.42	0.94	sand	80-90	44-46	42	UNDEFINED
7.75	25.43	218.38	0.82	0.37	0.96	sand	80-90	44-46	42	UNDEFINED
8.00	26.25	229.18	0.78	0.34	0.99	sand	>90	44-46	44	UNDEFINED
8.25	27.07	269.68	0.93	0.34	1.01	gravelly sand to sand	>90	44-46	43	UNDEFINED
8.50	27.89	273.22	0.63	0.23	1.03	gravelly sand to sand	>90	44-46	44	UNDEFINED
8.75	28.71	246.36	1.06	0.43	1.05	sand	>90	44-46	47	UNDEFINED
9.00	29.53	300.88	0.69	0.23	1.07	gravelly sand to sand	>90	44-46	48	UNDEFINED
9.25	30.35	294.58	0.72	0.24	1.09	gravelly sand to sand	>90	44-46	47	UNDEFINED
9.50	31.17	142.36	1.37	0.96	1.12	sand to silty sand	70-80	42-44	34	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

*** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

E TONTO ENVIRONME..AL DRILLING

Operator :Montgomery Watso On Site Loc:CPT-S10B-01 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	67.30	1.81	2.69	1.14	sandy silt to clayey silt	UNDFND	UNDFD	26	6.5
10.00	32.81	130.28	1.64	1.26	1.16	sand to silty sand	70-80	40-42	31	UNDEFINED
10.25	33.63	156.38	1.88	1.20	1.18	sand to silty sand	70-80	42-44	37	UNDEFINED
10.50	34.45	217.86	1.62	0.74	1.20	sand	80-90	42-44	42	UNDEFINED
10.75	35.27	250.98	1.61	0.64	1.22	sand	>90	44-46	48	UNDEFINED
11.00	36.09	215.74	1.34	0.62	1.24	sand	80-90	42-44	41	UNDEFINED
11.25	36.91	233.58	1.25	0.53	1.27	sand	80-90	42-44	45	UNDEFINED
11.50	37.73	231.12	1.25	0.54	1.29	sand	80-90	42-44	44	UNDEFINED
11.75	38.55	300.64	1.24	0.41	1.31	gravelly sand to sand	>90	44-46	48	UNDEFINED
12.00	39.37	285.84	1.16	0.41	1.33	gravelly sand to sand	>90	44-46	46	UNDEFINED
12.25	40.19	274.16	8.47	3.09	1.35	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOM. WATSON
On Site Loc:CPT-510B-2
Job No. :2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :7-1-94 9:25
Cone Used :462
Water table (meters) : 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	100.10	1.28	1.28	0.02	sand to silty sand	>90	>48	24	UNDEFINED
0.50	1.64	361.18	5.09	1.41	0.07	sand	>90	>48	>50	UNDEFINED
0.75	2.46	210.74	3.10	1.47	0.12	sand to silty sand	>90	>48	>50	UNDEFINED
1.00	3.28	73.36	0.93	1.27	0.17	silty sand to sandy silt	80-90	46-48	23	UNDEFINED
1.25	4.10	58.12	0.87	1.50	0.21	silty sand to sandy silt	70-80	44-46	19	UNDEFINED
1.50	4.92	47.64	0.85	1.79	0.26	silty sand to sandy silt	60-70	42-44	15	UNDEFINED
1.75	5.74	71.24	2.68	3.77	0.31	clayey silt to silty clay	UNDFND	UNDFD	34	7.0
2.00	6.56	371.92	4.18	1.12	0.35	sand	>90	>48	>50	UNDEFINED
2.25	7.38	16.66	1.02	6.15	0.40	clay	UNDFND	UNDFD	16	1.6
2.50	8.20	21.26	0.28	1.32	0.45	sandy silt to clayey silt	UNDFND	UNDFD	8	2.0
2.75	9.02	22.22	0.34	1.52	0.50	sandy silt to clayey silt	UNDFND	UNDFD	9	2.1
3.00	9.84	28.70	0.47	1.65	0.54	sandy silt to clayey silt	UNDFND	UNDFD	11	2.8
3.25	10.66	36.92	0.49	1.34	0.58	silty sand to sandy silt	40-50	38-40	12	UNDEFINED
3.50	11.48	55.50	0.88	1.58	0.60	silty sand to sandy silt	50-60	40-42	18	UNDEFINED
3.75	12.30	39.86	0.42	1.05	0.62	silty sand to sandy silt	40-50	38-40	13	UNDEFINED
4.00	13.12	128.94	1.38	1.07	0.64	sand to silty sand	80-90	44-46	31	UNDEFINED
4.25	13.94	141.96	1.38	0.97	0.66	sand to silty sand	80-90	44-46	34	UNDEFINED
4.50	14.76	120.26	0.97	0.81	0.68	sand to silty sand	70-80	42-44	29	UNDEFINED
4.75	15.58	166.94	2.07	1.24	0.71	sand to silty sand	80-90	44-46	40	UNDEFINED
5.00	16.40	176.00	2.43	1.38	0.73	sand to silty sand	80-90	44-46	42	UNDEFINED
5.25	17.22	217.38	4.13	1.90	0.75	sand to silty sand	>90	44-46	>50	UNDEFINED
5.50	18.04	177.32	3.41	1.92	0.77	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
5.75	18.86	162.08	5.90	3.64	0.79	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
6.00	19.69	261.86	4.90	1.87	0.81	sand to silty sand	>90	44-46	>50	UNDEFINED
6.25	20.51	328.98	5.45	1.66	0.84	sand to silty sand	>90	46-48	>50	UNDEFINED
6.50	21.33	351.80	6.13	1.74	0.86	sand to silty sand	>90	46-48	>50	UNDEFINED
6.75	22.15	236.14	3.33	1.41	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
7.00	22.97	187.86	2.28	1.22	0.90	sand to silty sand	80-90	44-46	45	UNDEFINED
7.25	23.79	202.56	2.43	1.20	0.92	sand	80-90	44-46	39	UNDEFINED
7.50	24.61	219.44	2.52	1.15	0.94	sand	>90	44-46	42	UNDEFINED
7.75	25.43	243.56	3.30	1.36	0.96	sand to silty sand	>90	44-46	>50	UNDEFINED
8.00	26.25	209.60	3.38	1.61	0.99	sand to silty sand	80-90	44-46	>50	UNDEFINED
8.25	27.07	159.62	3.29	2.06	1.01	silty sand to sandy silt	70-80	42-44	>50	UNDEFINED
8.50	27.89	227.24	4.72	2.08	1.03	sand to silty sand	80-90	44-46	>50	UNDEFINED
8.75	28.71	216.04	3.04	1.41	1.05	sand to silty sand	80-90	44-46	>50	UNDEFINED
9.00	29.53	226.68	2.90	1.28	1.07	sand	80-90	44-46	43	UNDEFINED
9.25	30.35	322.86	6.05	1.87	1.09	sand to silty sand	>90	44-46	>50	UNDEFINED
9.50	31.17	157.48	3.46	2.20	1.12	silty sand to sandy silt	70-80	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

E TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOM. WATSON On Site Loc:CPT-S10B-2 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	272.96	6.52	2.39	1.14	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
10.00	32.81	207.30	3.21	1.55	1.16	sand to silty sand	80-90	42-44	50	UNDEFINED
10.25	33.63	233.26	3.40	1.46	1.18	sand to silty sand	80-90	44-46	>50	UNDEFINED
10.50	34.45	245.74	3.14	1.28	1.20	sand	80-90	44-46	47	UNDEFINED
10.75	35.27	284.38	5.93	2.08	1.22	sand to silty sand	>90	44-46	>50	UNDEFINED
11.00	36.09	247.14	4.43	1.79	1.24	sand to silty sand	80-90	44-46	>50	UNDEFINED
11.25	36.91	289.30	4.93	1.70	1.27	sand to silty sand	>90	44-46	>50	UNDEFINED
11.50	37.73	308.52	5.05	1.64	1.29	sand to silty sand	>90	44-46	>50	UNDEFINED
11.75	38.55	328.12	6.51	1.98	1.31	sand to silty sand	>90	44-46	>50	UNDEFINED
12.00	39.37	338.36	5.67	1.68	1.33	sand to silty sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :Montgomery Watso
On Site Loc:CPT-S10B-03
Job No. :2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/05/94 12:45
Cone Used :462
Water table (meters) : 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	7.80	1.16	14.93	0.02	undefined	UNDFND	UNDFD	UDF	UNDEFINED
0.50	1.64	7.62	0.96	12.62	0.07	undefined	UNDFND	UNDFD	UDF	UNDEFINED
0.75	2.46	8.36	0.66	7.95	0.12	clay	UNDFND	UNDFD	8	.8
1.00	3.28	7.38	0.47	6.39	0.17	clay	UNDFND	UNDFD	7	.7
1.25	4.10	28.18	0.84	2.98	0.21	clayey silt to silty clay	UNDFND	UNDFD	13	2.7
1.50	4.92	119.46	0.63	0.53	0.26	sand	>90	46-48	23	UNDEFINED
1.75	5.74	192.42	0.66	0.34	0.31	sand	>90	>48	37	UNDEFINED
2.00	6.56	133.66	0.36	0.27	0.35	sand	80-90	46-48	26	UNDEFINED
2.25	7.38	106.38	0.90	0.85	0.40	sand to silty sand	80-90	44-46	25	UNDEFINED
2.50	8.20	99.22	0.57	0.57	0.45	sand to silty sand	70-80	44-46	24	UNDEFINED
2.75	9.02	91.06	0.58	0.63	0.50	sand to silty sand	70-80	42-44	22	UNDEFINED
3.00	9.84	53.92	0.59	1.09	0.54	silty sand to sandy silt	50-60	40-42	17	UNDEFINED
3.25	10.66	44.76	0.57	1.26	0.58	silty sand to sandy silt	50-60	38-40	14	UNDEFINED
3.50	11.48	14.98	2.58	17.21	0.60	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.75	12.30	5.82	1.13	19.47	0.62	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.00	13.12	5.64	1.15	20.32	0.64	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	13.94	16.76	0.93	5.57	0.66	clay	UNDFND	UNDFD	16	1.5
4.50	14.76	62.76	0.72	1.15	0.68	silty sand to sandy silt	50-60	40-42	20	UNDEFINED
4.75	15.58	128.66	0.56	0.43	0.71	sand	70-80	42-44	25	UNDEFINED
5.00	16.40	128.30	0.62	0.48	0.73	sand	70-80	42-44	25	UNDEFINED
5.25	17.22	195.94	1.22	0.62	0.75	sand	>90	44-46	38	UNDEFINED
5.50	18.04	144.42	0.42	0.29	0.77	sand	80-90	42-44	28	UNDEFINED
5.75	18.86	114.42	0.61	0.53	0.79	sand	70-80	42-44	22	UNDEFINED
6.00	19.69	153.68	0.48	0.32	0.81	sand	80-90	42-44	29	UNDEFINED
6.25	20.51	161.00	1.65	1.03	0.84	sand to silty sand	80-90	42-44	39	UNDEFINED
6.50	21.33	187.52	2.79	1.49	0.86	sand to silty sand	80-90	44-46	45	UNDEFINED
6.75	22.15	197.32	1.79	0.90	0.88	sand	80-90	44-46	38	UNDEFINED
7.00	22.97	259.74	0.88	0.34	0.90	gravelly sand to sand	>90	44-46	41	UNDEFINED
7.25	23.79	240.70	0.86	0.36	0.92	sand	>90	44-46	46	UNDEFINED
7.50	24.61	295.68	1.16	0.39	0.94	gravelly sand to sand	>90	44-46	47	UNDEFINED
7.75	25.43	238.98	1.00	0.42	0.96	sand	>90	44-46	46	UNDEFINED
8.00	26.25	207.84	0.65	0.31	0.99	sand	80-90	44-46	40	UNDEFINED
8.25	27.07	207.10	0.59	0.29	1.01	sand	80-90	44-46	40	UNDEFINED
8.50	27.89	193.64	0.97	0.50	1.03	sand	80-90	42-44	37	UNDEFINED
8.75	28.71	300.86	1.13	0.37	1.05	gravelly sand to sand	>90	44-46	48	UNDEFINED
9.00	29.53	271.88	1.25	0.46	1.07	sand	>90	44-46	>50	UNDEFINED
9.25	30.35	263.88	1.25	0.48	1.09	sand	>90	44-46	>50	UNDEFINED
9.50	31.17	260.56	1.22	0.47	1.12	sand	>90	44-46	50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

*** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) **

E TONTO ENVIRONME..AL DRILLING

Operator :Montgomery Watso On Site Loc:CPT-S10B-03 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	259.60	0.90	0.35	1.14	gravelly sand to sand	>90	44-46	41	UNDEFINED
10.00	32.81	227.44	1.07	0.47	1.16	sand	80-90	42-44	44	UNDEFINED
10.25	33.63	238.12	0.86	0.36	1.18	sand	80-90	44-46	46	UNDEFINED
10.50	34.45	221.88	0.75	0.34	1.20	sand	80-90	42-44	43	UNDEFINED
10.75	35.27	195.72	0.94	0.48	1.22	sand	80-90	42-44	37	UNDEFINED
11.00	36.09	222.06	0.74	0.33	1.24	sand	80-90	42-44	43	UNDEFINED
11.25	36.91	190.46	1.19	0.63	1.27	sand	80-90	42-44	36	UNDEFINED
11.50	37.73	215.78	1.76	0.82	1.29	sand	80-90	42-44	41	UNDEFINED
11.75	38.55	229.32	1.47	0.64	1.31	sand	80-90	42-44	44	UNDEFINED
12.00	39.37	196.72	1.03	0.52	1.33	sand	80-90	42-44	38	UNDEFINED
12.25	40.19	214.86	0.95	0.44	1.35	sand	80-90	42-44	41	UNDEFINED
12.50	41.01	183.68	1.43	0.78	1.37	sand	70-80	42-44	35	UNDEFINED
12.75	41.83	115.00	1.75	1.52	1.40	sand to silty sand	60-70	40-42	28	UNDEFINED
13.00	42.65	197.08	1.92	0.97	1.42	sand	80-90	42-44	38	UNDEFINED
13.25	43.47	111.14	3.03	2.73	1.44	sandy silt to clayey silt	UNDFND	UNDFD	43	10.8
13.50	44.29	164.74	2.02	1.23	1.46	sand to silty sand	70-80	40-42	39	UNDEFINED
13.75	45.11	311.30	0.94	0.30	1.48	gravelly sand to sand	>90	44-46	50	UNDEFINED
14.00	45.93	369.62	1.91	0.52	1.50	gravelly sand to sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY WATSO
On Site Loc:CPT-S10E-04
Job No. :2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/01/94 1:17
Cone Used :407
Water table (meters) : 3

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	1.40	0.02	1.50	0.02	sensitive fine grained	UNDFND	UNDFD	1	.1
0.50	1.64	3.48	0.04	1.09	0.07	sensitive fine grained	UNDFND	UNDFD	2	.3
0.75	2.46	7.92	0.05	0.59	0.12	sensitive fine grained	UNDFND	UNDFD	4	.7
1.00	3.28	23.74	0.18	0.77	0.17	silty sand to sandy silt	50-60	42-44	8	UNDEFINED
1.25	4.10	34.14	0.15	0.43	0.21	silty sand to sandy silt	50-60	42-44	11	UNDEFINED
1.50	4.92	35.66	0.22	0.60	0.26	silty sand to sandy silt	50-60	42-44	11	UNDEFINED
1.75	5.74	124.36	0.84	0.67	0.31	sand	80-90	46-48	24	UNDEFINED
2.00	6.56	225.96	1.07	0.47	0.35	sand	>90	>48	43	UNDEFINED
2.25	7.38	268.66	1.53	0.57	0.40	sand	>90	>48	>50	UNDEFINED
2.50	8.20	288.96	1.36	0.47	0.45	gravelly sand to sand	>90	>48	46	UNDEFINED
2.75	9.02	253.40	1.38	0.54	0.50	sand	>90	46-48	49	UNDEFINED
3.00	9.84	188.44	1.06	0.56	0.54	sand	>90	46-48	36	UNDEFINED
3.25	10.66	137.20	0.82	0.60	0.58	sand	80-90	44-46	26	UNDEFINED
3.50	11.48	121.48	0.48	0.39	0.60	sand	70-80	44-46	23	UNDEFINED
3.75	12.30	75.88	0.41	0.54	0.62	sand to silty sand	60-70	40-42	18	UNDEFINED
4.00	13.12	48.74	0.41	0.85	0.64	silty sand to sandy silt	50-60	38-40	16	UNDEFINED
4.25	13.94	33.76	0.50	1.47	0.66	sandy silt to clayey silt	UNDFND	UNDFD	13	3.2
4.50	14.76	24.90	0.20	0.81	0.68	silty sand to sandy silt	<40	36-38	8	UNDEFINED
4.75	15.58	37.78	0.29	0.76	0.71	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
5.00	16.40	76.64	0.61	0.79	0.73	sand to silty sand	60-70	40-42	18	UNDEFINED
5.25	17.22	103.52	1.22	1.18	0.75	sand to silty sand	70-80	42-44	25	UNDEFINED
5.50	18.04	206.94	2.61	1.26	0.77	sand	>90	44-46	40	UNDEFINED
5.75	18.86	192.80	2.59	1.35	0.79	sand to silty sand	80-90	44-46	46	UNDEFINED
6.00	19.69	280.98	2.47	0.88	0.81	sand	>90	46-48	>50	UNDEFINED
6.25	20.51	228.24	1.92	0.84	0.84	sand	>90	44-46	44	UNDEFINED
6.50	21.33	207.24	1.88	0.91	0.86	sand	80-90	44-46	40	UNDEFINED
6.75	22.15	194.74	5.20	2.67	0.88	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
7.00	22.97	322.62	5.84	1.81	0.90	sand to silty sand	>90	46-48	>50	UNDEFINED
7.25	23.79	367.22	5.83	1.59	0.92	sand to silty sand	>90	46-48	>50	UNDEFINED
7.50	24.61	331.32	5.45	1.64	0.94	sand to silty sand	>90	46-48	>50	UNDEFINED
7.75	25.43	340.16	2.66	0.78	0.96	sand	>90	46-48	>50	UNDEFINED
8.00	26.25	265.36	2.57	0.97	0.99	sand	>90	44-46	>50	UNDEFINED
8.25	27.07	332.84	3.73	1.12	1.01	sand	>90	46-48	>50	UNDEFINED
8.50	27.89	297.54	2.43	0.82	1.03	sand	>90	44-46	>50	UNDEFINED
8.75	28.71	252.78	1.61	0.64	1.05	sand	>90	44-46	48	UNDEFINED
9.00	29.53	279.48	2.04	0.73	1.07	sand	>90	44-46	>50	UNDEFINED
9.25	30.35	257.70	2.90	1.13	1.09	sand	>90	44-46	49	UNDEFINED
9.50	31.17	191.04	2.49	1.30	1.12	sand to silty sand	80-90	42-44	46	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

*** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

E TONTO ENVIRONMENTAL DRILLING

Operator :MONTGOMERY WATSO On Site Loc:CPT-S10B-04 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	219.30	2.82	1.29	1.14	sand	80-90	42-44	42	UNDEFINED
10.00	32.81	153.86	2.02	1.31	1.16	sand to silty sand	70-80	42-44	37	UNDEFINED
10.25	33.63	209.36	3.98	1.90	1.18	sand to silty sand	80-90	42-44	>50	UNDEFINED
10.50	34.45	235.34	3.92	1.67	1.20	sand to silty sand	80-90	42-44	>50	UNDEFINED
10.75	35.27	132.82	2.41	1.82	1.22	silty sand to sandy silt	70-80	40-42	42	UNDEFINED
11.00	36.09	99.16	2.42	2.44	1.24	silty sand to sandy silt	60-70	40-42	32	UNDEFINED
11.25	36.91	83.40	1.33	1.59	1.27	silty sand to sandy silt	50-60	38-40	27	UNDEFINED
11.50	37.73	105.16	2.58	2.46	1.29	silty sand to sandy silt	60-70	40-42	34	UNDEFINED
11.75	38.55	202.86	3.32	1.64	1.31	sand to silty sand	80-90	42-44	49	UNDEFINED
12.00	39.37	195.34	3.40	1.74	1.33	sand to silty sand	80-90	42-44	47	UNDEFINED
12.25	40.19	332.60	5.37	1.62	1.35	sand to silty sand	>90	44-46	>50	UNDEFINED
12.50	41.01	340.48	3.43	1.01	1.37	sand	>90	44-46	>50	UNDEFINED
12.75	41.83	321.18	3.11	0.97	1.40	sand	>90	44-46	>50	UNDEFINED
13.00	42.65	184.44	1.97	1.07	1.42	sand	70-80	42-44	35	UNDEFINED
13.25	43.47	218.86	1.89	0.86	1.44	sand	80-90	42-44	42	UNDEFINED
13.50	44.29	365.90	4.91	1.34	1.46	sand	>90	44-46	>50	UNDEFINED
13.75	45.11	322.66	5.80	1.80	1.48	sand to silty sand	>90	44-46	>50	UNDEFINED
14.00	45.93	217.58	2.12	0.98	1.50	sand	80-90	42-44	42	UNDEFINED
14.25	46.75	255.74	5.49	2.15	1.52	sand to silty sand	80-90	42-44	>50	UNDEFINED
14.50	47.57	227.08	6.93	3.05	1.55	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
14.75	48.39	162.80	6.44	3.95	1.57	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
15.00	49.21	256.42	4.14	1.61	1.59	sand to silty sand	80-90	42-44	>50	UNDEFINED
15.25	50.03	255.70	3.16	1.24	1.61	sand	80-90	42-44	49	UNDEFINED
15.50	50.85	228.66	2.25	0.99	1.63	sand	80-90	42-44	44	UNDEFINED
15.75	51.67	195.46	5.99	3.06	1.65	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
16.00	52.49	337.16	6.88	2.04	1.68	sand to silty sand	>90	44-46	>50	UNDEFINED
16.25	53.31	365.70	6.29	1.72	1.70	sand to silty sand	>90	44-46	>50	UNDEFINED
16.50	54.13	317.58	3.17	1.00	1.72	sand	>90	42-44	>50	UNDEFINED
16.75	54.95	252.00	2.52	1.00	1.74	sand	80-90	42-44	48	UNDEFINED
17.00	55.77	45.02	1.24	2.75	1.76	sandy silt to clayey silt	UNDFND	UNDFD	17	4.1
17.25	56.59	162.42	1.55	0.95	1.78	sand	70-80	40-42	31	UNDEFINED
17.50	57.41	163.90	2.39	1.46	1.80	sand to silty sand	70-80	40-42	39	UNDEFINED
17.75	58.23	84.22	2.56	3.04	1.83	sandy silt to clayey silt	UNDFND	UNDFD	32	8.0
18.00	59.06	100.66	2.01	2.00	1.85	silty sand to sandy silt	50-60	38-40	32	UNDEFINED
18.25	59.88	201.12	3.07	1.53	1.87	sand to silty sand	70-80	40-42	48	UNDEFINED
18.50	60.70	285.48	2.25	0.79	1.89	sand	80-90	42-44	>50	UNDEFINED
18.75	61.52	206.78	2.09	1.01	1.91	sand	70-80	40-42	40	UNDEFINED
19.00	62.34	213.60	1.27	0.59	1.93	sand	70-80	40-42	41	UNDEFINED
19.25	63.16	112.18	1.37	1.23	1.96	sand to silty sand	60-70	38-40	27	UNDEFINED
19.50	63.98	288.36	2.76	0.96	1.98	sand	80-90	42-44	>50	UNDEFINED
19.75	64.80	262.60	3.88	1.48	2.00	sand to silty sand	80-90	42-44	>50	UNDEFINED
20.00	65.62	359.02	4.01	1.12	2.02	sand	>90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

(*) overconsolidated or cemented

* Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) *

TONTO ENVIRONMENTAL DRILLING

Operator :MontgomeryWatson
On Site Loc:CPT-S10B-05
Job No. : 2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/05/94 09:05
Cone Used :462
Water table (meters) : 3

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	5.00	0.08	1.64	0.02	sensitive fine grained	UNDFND	UNDFD	2	.4
0.50	1.64	4.00	0.06	1.55	0.07	sensitive fine grained	UNDFND	UNDFD	2	.3
0.75	2.46	8.00	0.04	0.45	0.12	sensitive fine grained	UNDFND	UNDFD	4	.7
1.00	3.28	9.00	-0.01	-0.07	0.17	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.25	4.10	12.20	-0.00	-0.02	0.21	undefined	UNDFND	UNDFD	UDF	UNDEFINED
1.50	4.92	13.80	0.05	0.38	0.26	sandy silt to clayey silt	UNDFND	UNDFD	5	1.3
1.75	5.74	30.20	0.15	0.51	0.31	silty sand to sandy silt	40-50	40-42	10	UNDEFINED
2.00	6.56	54.20	0.31	0.56	0.35	sand to silty sand	60-70	42-44	13	UNDEFINED
2.25	7.38	96.40	0.72	0.75	0.40	sand to silty sand	70-80	44-46	23	UNDEFINED
2.50	8.20	69.80	0.38	0.55	0.45	sand to silty sand	60-70	42-44	17	UNDEFINED
2.75	9.02	61.60	0.35	0.56	0.50	sand to silty sand	60-70	40-42	15	UNDEFINED
3.00	9.84	82.40	0.46	0.56	0.54	sand to silty sand	60-70	42-44	20	UNDEFINED
3.25	10.66	81.40	0.43	0.53	0.58	sand to silty sand	60-70	42-44	19	UNDEFINED
3.50	11.48	49.20	0.42	0.86	0.60	silty sand to sandy silt	50-60	40-42	16	UNDEFINED
3.75	12.30	18.00	0.29	1.62	0.62	sandy silt to clayey silt	UNDFND	UNDFD	7	1.7
4.00	13.12	7.20	0.10	1.42	0.64	clayey silt to silty clay	UNDFND	UNDFD	3	.6
4.25	13.94	5.00	0.10	1.92	0.66	silty clay to clay	UNDFND	UNDFD	3	
4.50	14.76	24.40	0.23	0.93	0.68	sandy silt to clayey silt	UNDFND	UNDFD	9	2
4.75	15.58	75.80	0.79	1.04	0.71	sand to silty sand	60-70	40-42	18	UNDEFINED
5.00	16.40	170.20	2.47	1.45	0.73	sand to silty sand	80-90	44-46	41	UNDEFINED
5.25	17.22	155.80	2.03	1.30	0.75	sand to silty sand	80-90	44-46	37	UNDEFINED
5.50	18.04	135.60	0.96	0.71	0.77	sand	70-80	42-44	26	UNDEFINED
5.75	18.86	217.80	2.21	1.02	0.79	sand	>90	44-46	42	UNDEFINED
6.00	19.69	301.80	2.35	0.78	0.81	sand	>90	46-48	>50	UNDEFINED
6.25	20.51	196.60	4.90	2.49	0.84	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
6.50	21.33	190.80	4.87	2.55	0.86	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
6.75	22.15	269.40	2.84	1.05	0.88	sand	>90	44-46	>50	UNDEFINED
7.00	22.97	238.40	1.32	0.55	0.90	sand	>90	44-46	46	UNDEFINED
7.25	23.79	206.40	2.04	0.99	0.92	sand	80-90	44-46	40	UNDEFINED
7.50	24.61	298.40	2.78	0.93	0.94	sand	>90	44-46	>50	UNDEFINED
7.75	25.43	292.80	2.71	0.93	0.96	sand	>90	44-46	>50	UNDEFINED
8.00	26.25	278.00	2.03	0.73	0.99	sand	>90	44-46	>50	UNDEFINED
8.25	27.07	216.60	2.47	1.14	1.01	sand	80-90	44-46	41	UNDEFINED
8.50	27.89	249.60	3.46	1.39	1.03	sand to silty sand	>90	44-46	>50	UNDEFINED
8.75	28.71	324.20	3.37	1.04	1.05	sand	>90	44-46	>50	UNDEFINED
9.00	29.53	350.20	3.81	1.09	1.07	sand	>90	46-48	>50	UNDEFINED
9.25	30.35	288.40	2.94	1.02	1.09	sand	>90	44-46	>50	UNDEFINED
9.50	31.17	227.60	2.81	1.23	1.12	sand	80-90	44-46	44	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MontgomeryWatson On Site Loc:CPT-S10B-05 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	182.40	2.84	1.56	1.14	sand to silty sand	80-90	42-44	44	UNDEFINED
10.00	32.81	215.40	3.47	1.61	1.16	sand to silty sand	80-90	42-44	>50	UNDEFINED
10.25	33.63	241.40	2.13	0.88	1.18	sand	80-90	44-46	46	UNDEFINED
10.50	34.45	244.80	2.08	0.85	1.20	sand	80-90	44-46	47	UNDEFINED
10.75	35.27	274.40	2.63	0.96	1.22	sand	>90	44-46	>50	UNDEFINED
11.00	36.09	336.00	4.67	1.39	1.24	sand	>90	44-46	>50	UNDEFINED
11.25	36.91	272.20	4.20	1.54	1.27	sand to silty sand	>90	44-46	>50	UNDEFINED
11.50	37.73	256.20	3.71	1.45	1.29	sand to silty sand	>90	44-46	>50	UNDEFINED
11.75	38.55	283.00	2.81	0.99	1.31	sand	>90	44-46	>50	UNDEFINED
12.00	39.37	291.40	2.85	0.98	1.33	sand	>90	44-46	>50	UNDEFINED
12.25	40.19	257.80	2.25	0.87	1.35	sand	80-90	42-44	49	UNDEFINED
12.50	41.01	247.00	2.64	1.07	1.37	sand	80-90	42-44	47	UNDEFINED
12.75	41.83	361.40	2.70	0.75	1.40	sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MontgomeryWatson
On Site Loc:CPT-S10B-06
Job No. : 2738.1402
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :07/01/94 03:36
Cone Used :462
Water table (meters) : 3

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	2.80	0.10	3.57	0.02	clay	UNDFND	UNDFD	3	.2
0.50	1.64	4.00	0.08	2.00	0.07	clay	UNDFND	UNDFD	4	.3
0.75	2.46	4.80	0.02	0.38	0.12	sensitive fine grained	UNDFND	UNDFD	2	.4
1.00	3.28	8.80	0.04	0.41	0.17	sensitive fine grained	UNDFND	UNDFD	4	.8
1.25	4.10	29.20	0.06	0.20	0.21	silty sand to sandy silt	50-60	42-44	9	UNDEFINED
1.50	4.92	55.60	0.08	0.14	0.26	sand to silty sand	60-70	44-46	13	UNDEFINED
1.75	5.74	168.80	0.62	0.37	0.31	sand	>90	>48	32	UNDEFINED
2.00	6.56	299.00	1.16	0.39	0.35	gravelly sand to sand	>90	>48	48	UNDEFINED
2.25	7.38	312.80	1.19	0.38	0.40	gravelly sand to sand	>90	>48	50	UNDEFINED
2.50	8.20	259.60	1.13	0.44	0.45	sand	>90	>48	50	UNDEFINED
2.75	9.02	219.80	0.97	0.44	0.50	sand	>90	46-48	42	UNDEFINED
3.00	9.84	151.80	0.76	0.50	0.54	sand	80-90	44-46	29	UNDEFINED
3.25	10.66	97.80	0.37	0.38	0.58	sand	70-80	42-44	19	UNDEFINED
3.50	11.48	100.60	0.66	0.65	0.60	sand to silty sand	70-80	42-44	24	UNDEFINED
3.75	12.30	56.20	0.51	0.91	0.62	silty sand to sandy silt	50-60	40-42	18	UNDEFINED
4.00	13.12	12.40	0.32	2.60	0.64	clayey silt to silty clay	UNDFND	UNDFD	6	1.1
4.25	13.94	3.20	0.03	0.81	0.66	sensitive fine grained	UNDFND	UNDFD	2	.2
4.50	14.76	15.20	0.15	1.00	0.68	sandy silt to clayey silt	UNDFND	UNDFD	6	1.4
4.75	15.58	101.20	0.86	0.85	0.71	sand to silty sand	70-80	42-44	24	UNDEFINED
5.00	16.40	217.60	3.61	1.66	0.73	sand to silty sand	>90	44-46	>50	UNDEFINED
5.25	17.22	217.20	4.04	1.86	0.75	sand to silty sand	>90	44-46	>50	UNDEFINED
5.50	18.04	198.00	2.78	1.41	0.77	sand to silty sand	80-90	44-46	47	UNDEFINED
5.75	18.86	204.40	1.85	0.91	0.79	sand	>90	44-46	39	UNDEFINED
6.00	19.69	198.60	0.99	0.50	0.81	sand	80-90	44-46	38	UNDEFINED
6.25	20.51	190.40	2.70	1.42	0.84	sand to silty sand	80-90	44-46	46	UNDEFINED
6.50	21.33	202.60	4.93	2.43	0.86	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
6.75	22.15	237.60	4.15	1.75	0.88	sand to silty sand	>90	44-46	>50	UNDEFINED
7.00	22.97	279.80	3.91	1.40	0.90	sand to silty sand	>90	44-46	>50	UNDEFINED
7.25	23.79	410.40	5.41	1.32	0.92	sand	>90	46-48	>50	UNDEFINED
7.50	24.61	357.20	3.37	0.94	0.94	sand	>90	46-48	>50	UNDEFINED
7.75	25.43	257.40	2.53	0.98	0.96	sand	>90	44-46	49	UNDEFINED
8.00	26.25	271.80	48.03	17.67	0.99	undefined	UNDFND	UNDFD	UDF	UNDEFINED
8.25	27.07	227.40	1.87	0.82	1.01	sand	>90	44-46	44	UNDEFINED
8.50	27.89	357.00	4.28	1.20	1.03	sand	>90	46-48	>50	UNDEFINED
8.75	28.71	293.80	3.67	1.25	1.05	sand	>90	44-46	>50	UNDEFINED
9.00	29.53	324.60	3.48	1.07	1.07	sand	>90	44-46	>50	UNDEFINED
9.25	30.35	266.00	2.80	1.05	1.09	sand	>90	44-46	>50	UNDEFINED
9.50	31.17	146.40	2.05	1.40	1.12	sand to silty sand	70-80	42-44	35	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Operator :MontgomeryWatson On Site Loc:CPT-S10B-06 Page No. 2

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	197.40	2.60	1.32	1.14	sand to silty sand	80-90	42-44	47	UNDEFINED
10.00	32.81	236.20	2.52	1.07	1.16	sand	80-90	44-46	45	UNDEFINED
10.25	33.63	287.40	2.15	0.75	1.18	sand	>90	44-46	>50	UNDEFINED
10.50	34.45	290.80	2.23	0.77	1.20	sand	>90	44-46	>50	UNDEFINED
10.75	35.27	273.00	1.99	0.73	1.22	sand	>90	44-46	>50	UNDEFINED
11.00	36.09	235.80	1.86	0.79	1.24	sand	80-90	42-44	45	UNDEFINED
11.25	36.91	217.20	2.69	1.24	1.27	sand	80-90	42-44	42	UNDEFINED
11.50	37.73	241.00	2.34	0.97	1.29	sand	80-90	42-44	46	UNDEFINED
11.75	38.55	319.40	2.81	0.88	1.31	sand	>90	44-46	>50	UNDEFINED
12.00	39.37	330.60	3.38	1.02	1.33	sand	>90	44-46	>50	UNDEFINED
12.25	40.19	365.00	3.35	0.92	1.35	sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 10

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

PRC ENVIRONMENTAL MANAGEMENT, INC.

LOG OF MONITORING WELL M09-05

Depth (ft)	Lab Analysis	Sample No.	PID Reading (ppm)	Blows/Foot	Sample Recovery	Graphic Log	USCS Code	MATERIALS DESCRIPTION
0			NA				AS	5 inches asphalt over sand and gravel base.
							SP	FILL
	CHEMICAL	280-S09-001		31				Sand (SP), light olive brown (2.5Y 5/4), fine sand, dense, moist, trace shells.
	CHEMICAL	280-S09-002		15				
5	CHEMICAL	280-S09-003		19				Same as above, but light yellowish brown (2.5Y 6/3), medium dense, wet.
				20				Same as above.
10							SM	Silty sand (SM), pale olive (5Y 6/3), loose, wet.
				5				BAY SEDIMENTS Same as above, but dark greenish gray (5GY 4/1), loose, wet, trace organic matter.
								TD=14 feet bgs

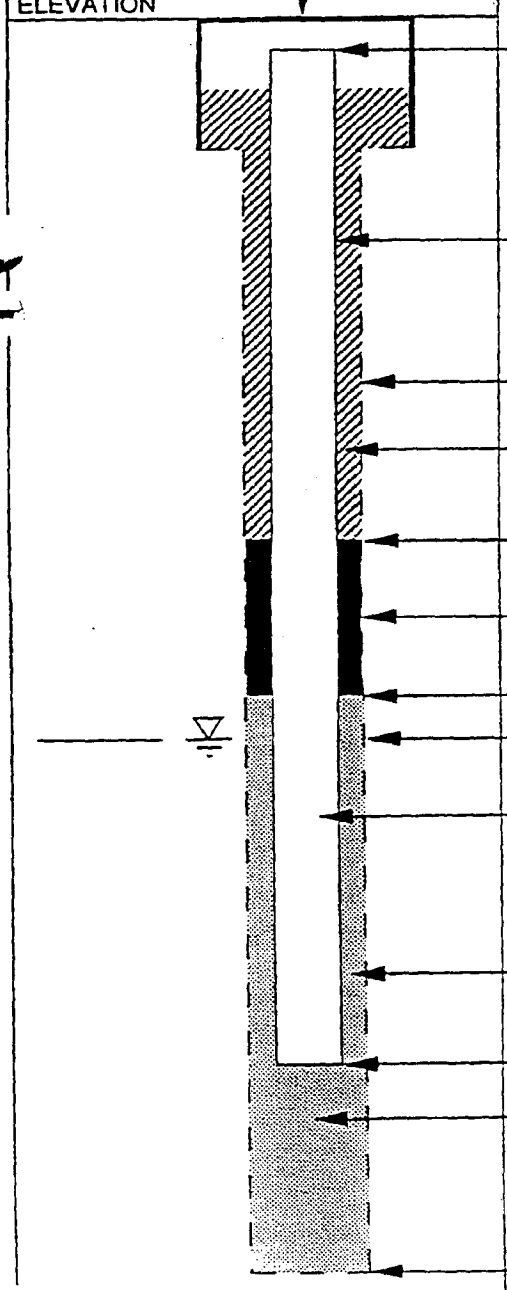
PROJECT	NAS Alameda RI	SAMPLING METHOD/HAMMER WT.	Split Spoon/140 lbs.
LOCATION	Site 9	GROUND ELEVATION	14.85 Feet
JOB NUMBER	044-0280	TOC ELEVATION	14.61 Feet
LOGGED BY	WPW	BORING DIAMETER	8 Inches
DATE DRILLED	11-5-94	TOTAL DEPTH OF HOLE	14 Feet bgs
DRILLER	Woodward Drilling Co.	WATER LEVEL	5.3 Feet bgs
DRILL METHOD	Hollow-Stem Auger	WELL INSTALLED? (Y/N)	Y

WELL ~~BORING~~ NO. MØ9-Ø5

MONITORING WELL SHEET

PROJECT NAS Alameda RI
LOCATION Alameda, California
PROJECT NO. Ø44 Ø28Ø
BORING MØ9-Ø5
SITE 9
DATE 11-5-94
FIELD GEOLOGIST WPW

DRILLER Woodward Drilling Co.
DRILLING METHOD Hollow Stem Auger
DEVELOPMENT METHOD Surge/Bail/Pump



(feet MLLW)

ELEVATION OF GROUND SURFACE: 14.85

ELEVATION OF TOP OF WELL CASING: 14.61

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Schedule 4Ø PVC

BOREHOLE DIAMETER: 8 inches

TYPE OF BACKFILL: Neat Cement Grout

DEPTH OF SEAL (feet bgs) 2.0

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK (feet bgs) 3.0

DEPTH TOP OF SCREEN 3.5

TYPE OF SCREEN: Schedule 4Ø PVC

SLOT SIZE ~~x LENGTH~~ Ø.Ø1 inch

I.D. OF SCREEN 2 inches

TYPE OF SAND PACK: #2/12 Monterey Sand

DEPTH BOTTOM OF SCREEN (feet bgs) 13.5

DEPTH BOTTOM OF SAND PACK 14.0

TYPE OF BACKFILL BELOW OBSERVATION WELL: #2/12 Monterey Sand

DEPTH OF HOLE (feet bgs) 14.0

MF

Boring Logs for DGS Site 23

Direct Push Boring	Direct Push Soil Gas Boring	Vacuum Excavation Boring	Hydro Punch Borings
S23-DGS-DP01	S23-DGS-SG01	S23-DGS-VE01	
S23-DGS-DP02	S23-DGS-SG02	S23-DGS-VE02	

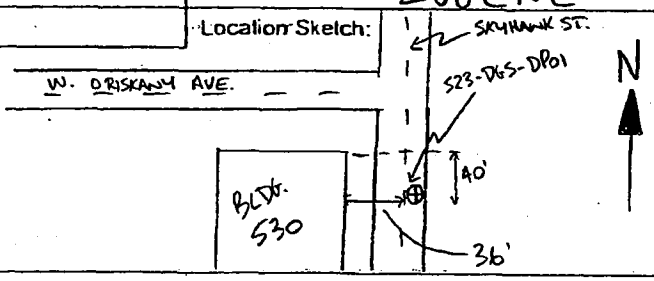
Sheet 1 of 1

TETRA TECH EM INC.

SOIL BORING AND WELL INSTALLATION AND VISUAL CLASSIFICATION LOG

CTO- 385
Bldg./Site:
Project Name: ALAMEDA POINT SUPPLEMENTAL REMEDIAL INVESTIGATION DATA GAP SAMPLING

Boring Number: S23- DGS- DP01	Date Started: 8/1/01
Drilling Method: (*Circle one*) HSA Continuous Core/GeoProbe/Hand Auger	Date Completed: 8/1/01
Air Rotary/Mud Rotary/Dual Tube Percussion/Sonic/Vacuum	Logged By: LAURA GENIN
Outer Diameter of Boring:	Drilling Subcontractor: PRECISION
Inner Diameter of Well Casing:	Driller: EUGENE
Depth to Water (ft./bgs.)	Location Sketch:



Time	Depth (ft) bgs	Drive Interval	Recovered Interval	Sample ID	Blow count (per 6 inches) / V.S. utility type, dia.	Description	USCS soil symbol	Well construction	OVM (ppm)
						ASPHALT			
1300	1			385 S23 001		CLAYEY SAND; OLIVE (5Y 5/3); SLT. MOIST; LOOSE; WELL SORTED; SLT. PLASTIC; SAND- 85%, CLAY 15%	SC		
	2					TOTAL DEPTH = 2' BORING BACKFILLED W/ CONCRETE GROUT			
	3								

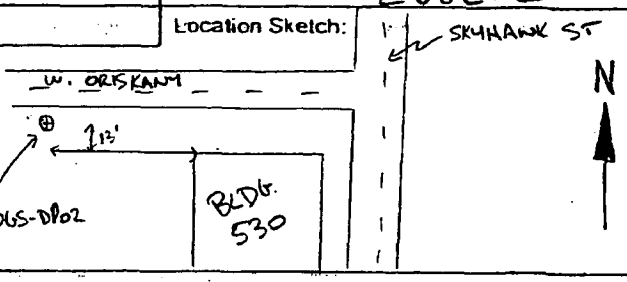
Sheet 1 of 1

TETRA TECH EM INC.

SOIL BORING AND WELL INSTALLATION AND VISUAL CLASSIFICATION LOG

CTO-385
Bldg./Site:
Project Name: ALAMEDA POINT SUPPLEMENTAL REMEDIAL INVESTIGATION DATA GAP SAMPLING

Boring Number: S23-DGS-DP02	Date Started: 8/14/01
Drilling Method: (*Circle one*) HSA Continuous Core/GeoProbe/Hand Auger	Date Completed: 8/14/01
Air Rotary/Mud Rotary/Dual Tube Percussion/Sonic/Vacuum	Logged By: KIRK MARTIN
Outer Diameter of Boring: 4"	Drilling Subcontractor: PRECISION
Inner Diameter of Well Casing:	Driller: EUGENE
Depth to Water (ft/bgs.) 5	Location Sketch:



Time	Depth (ft) bgs	Drive Interval	Recovered Interval	Sample ID	Blow count (per 6 inches) / V.S. utility type, dia.	Description	USCS soil symbol	Well construction	OVM (ppm)
	2				NA	SILTY SAND; DK. OLIVE BROWN (2.5Y 3/3); MOIST; LOOSE; POORLY SORTED; NON PLASTIC; SAND-85%, SILT-15%, STRONG PETROL ODOR.	SM	NA	
	4					COLOR CHANGE @ 1.5' DARK GREENISH GREY (10GY 5GY 4/1)			
	6					WET @ 5'; N 25% CLAY CONTENT FOR 2" + WOOD DEBRIS			
1615	8			385-S23-013					

TOTAL DEPTH = 10'
BORING BACKFILLED W/ CEMENT GROUT.

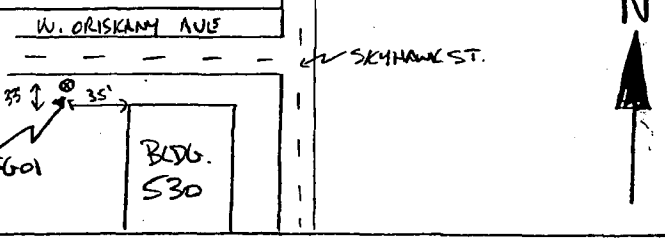
Sheet 1 of 1

TETRA TECH EM INC.

SOIL BORING AND WELL INSTALLATION AND VISUAL CLASSIFICATION LOG

CTO- 385
Bldg./Site:
Project Name: ALAMEDA POINT SUPPLEMENTAL REMEDIAL INVESTIGATION DATA GAP SAMPLING

Boring Number: S23-DGS-SG01	Date Started: 7/10/01
Drilling Method: (Circle one) HSA Continuous Core/GeoProbe/Hand Auger	Date Completed: 7/10/01
Air Rotary/Mud Rotary/Dual Tube Percussion/Sonic/Vacuum	Logged By: LAURA GENN
Outer Diameter of Boring: 4"	Drilling Subcontractor: PRECISION
Inner Diameter of Well Casing:	Driller: EUGENE
Depth to Water (ft./bgs.) 4.5'	Location Sketch:



Depth (ft) bgs	Drive Interval	Recovered Interval	Sample ID	Blow count (per 6 inches) / V.B. utility type, dia.	Description	USCS soil symbol	Well construction	OVM (ppm)
1453			385-S23 017		SAND; YELLOWISH BROWN; DRY; LOOSE; WELL SORTED; FINE GRAINED	SW		
2								
4				NA	WET @ 4.5'		NA	
6								
8					COLOR CHANGE @ 8' OLIVE BROWN (2.5YR 4/3)			
					TOTAL DEPTH = 9' BORING BACKFILLED W/ CEMENT GROUT.			

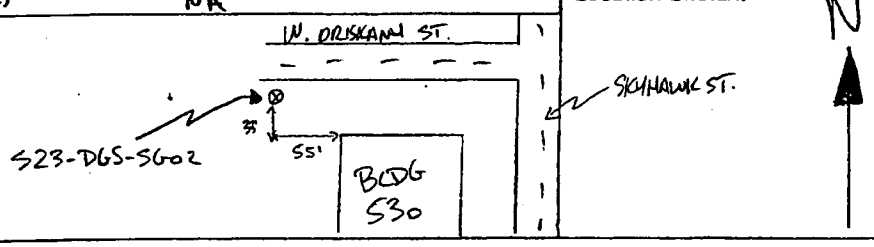
Sheet 1 of 1

TETRA TECH EM INC.

SOIL BORING AND WELL INSTALLATION AND VISUAL CLASSIFICATION LOG

CTO- 385
Bldg./Site:
Project Name: ALAMEDA POINT SUPPLEMENTAL REMEDIAL INVESTIGATION DATA GAP SAMPLING

Boring Number: S23-DGS-SG02	Date Started: 7/10/01
Drilling Method: (*Circle one*) HSA Continuous Core/GeoProbe/Hand Auger	Date Completed: 7/10/01
Air Rotary/Mud Rotary/Dual Tube Percussion/Sonic/Vacuum	Logged By: LAURA GENIN
Outer Diameter of Boring: 4"	Drilling Subcontractor: PRECISION
Inner Diameter of Well Casing:	Driller: EUGENE
Depth to Water (ft./bgs.) NA	Location Sketch:



Time	Depth (ft) bgs	Drive Interval	Recovered Interval	Sample ID	Blow count (per 6 inches) / V.B. utility type, dia.	Description	USCS soil symbol	Well construction	OVM (ppm)
1444	1			385-S23-01B	NA	SAND; YELLOWISH BROWN (2.5YR 6/4); DRY; LOOSE; WELL SORTED; FINE GRAINED	SP	NA	
	2					TOTAL DEPTH = 2' BORING BACKFILLED W/ CEMENT GROUT.			

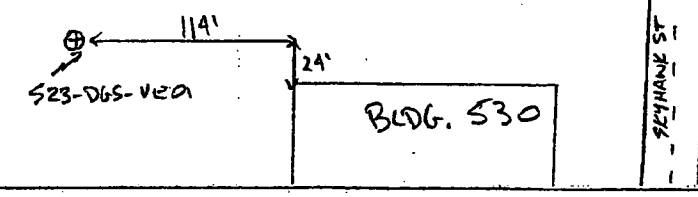
Sheet 1 of 1

TETRA TECH EM INC.

SOIL BORING AND WELL INSTALLATION AND VISUAL CLASSIFICATION LOG

CTO- 385
Bldg./Site:
Project Name: ALAMEDA POINT SUPPLEMENTAL REMEDIAL INVESTIGATION DATA GAP SAMPLING

Boring Number: S23- DGS- VE01	Date Started: 8/8/01
Drilling Method: (Circle one) HSA Continuous Core/GeoProbe/Hand Auger	Date Completed: 8/8/01
Air Rotary/Mud Rotary/Dual Tube Percussion/Sonic/Vacuum	Logged By: LAURA GENIN
Outer Diameter of Boring: 16" x 8"	Drilling Subcontractor: MILLER PIPELINE
Inner Diameter of Well Casing:	Driller: STEVE
Depth to Water (ft./bgs.)	Location Sketch:



Time	Depth (ft) bgs	Drive Interval	Recovered Interval	Sample ID	Blow count (per 6 inches) / V.B. utility type, dia.	Description	USCS soil symbol	Well construction	OVM (ppm)
						ASPHALT			
	2					SAND; (CLEM 5G4 4/1); MOIST; LOOSE; NON PLASTIC; SAND - 99% FINE GRAINED, SAND - 1% COARSE GRAINED, STRONG ODOR.	SW		
	4					A 24" PIPE ENCOUNTERED @ 7.75' BGS			
	6				NA	GROUNDWATER PARAMETERS TRB - 472 NTU PH - 6.53 DO - 1.08 mg/L CND - 4.53 mS/cm TMP - 20.9°C ORP - 143 mV		NA	
0925	8			385-S23 014					
940	10			WATER SAMPLE 385-S23 015					

TOTAL DEPTH = 10'
BORING BACKFILLED W/ CLEAN FILL MATERIAL AND FINISHED W/ A CONCRETE CAP

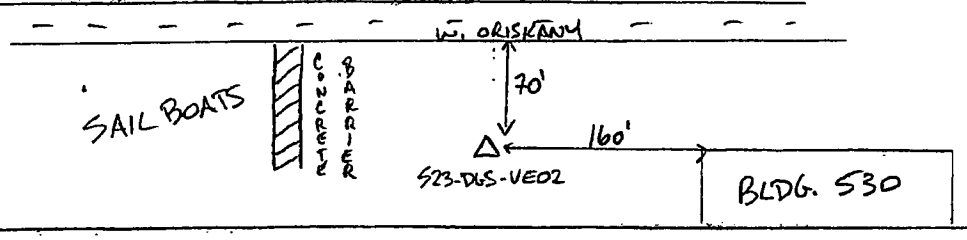
Sheet 1 of 1

TETRA TECH EM INC.

SOIL BORING AND WELL INSTALLATION AND VISUAL CLASSIFICATION LOG

CTO- 385
Bldg./Site:
Project Name: ALAMEDA POINT SUPPLEMENTAL REMEDIAL INVESTIGATION DATA GAP SAMPLING

Boring Number: S23-DGS-VE02	Date Started: 8/21/01
Drilling Method: (Circle one) HSA Continuous Core/GeoProbe/Hand Auger	Date Completed: 8/21/01
Air Rotary/Mud Rotary/Dual Tube Percussion/Sonic/Vacuum	Logged By: MIKE BARNES
Outer Diameter of Boring: 16" x 8"	Drilling Subcontractor: MILLER PIPELINE
Inner Diameter of Well Casing:	Driller:
Depth to Water (ft./bgs.) 7'	Location Sketch:



Time	Depth (ft) bgs	Drive Interval	Recovered Interval	Sample ID	Blow count (per 6 inches) / V.B. utility type, dia.	Description	USCS soil symbol	Well construction	OVM (ppm)
						ASPHALT			
	2					SANDY GRAVEL; DARK YELLOWISH BROWN (10YR 4/6); MOIST; M. DENSE, WELL GRADED; GRAVEL- 65%, SAND (FINE GRAINED) - 35%	GM SP		
	4					SAND; DARK YELLOWISH BROWN (10YR 4/6); MOIST; LOOSE; POORLY GRADED.			
	6				NA	WET @ 7.0'		NA	
						ENCOUNTERED 3' CONCRETE STORM DRAIN @ 7'3"			
1135	8			385-S23 022		GROUNDWATER PARAMETERS CND - 1913 µS/cm ORP - 192.8 mV TMP - 21.77°C TRB - 1389.5 NTU DO - 6.23 mg/L			
1145				WATER SAMPLE 385-S23 023					
	10					TOTAL DEPTH = 10.5' BORING BACKFILLED W/ CLEAN FILL MATERIAL FINISHED W/ ASPHALT CAP			

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B001

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,725.5 E 6,042,936.6	12.8 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.5 ft / 5.3ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.5			**ASPHALT**	
C0591103		11:40:00 AM	NR					**SAND with GRAVEL (SW)**: dense, moist, fine grained sand, 70% sand, 30% fine angular gravel. (FILL).	FID Background = 2.8 ppm
					11.8	1		**SAND (SP)**: Olive [5Y 5/3], dense, moist, poorly graded, fine grained sand, subrounded, (FILL).	Hole backfilled with special grout after completion: 3/8-inch bentonite chips, hydrated in 1-foot lifts, final 1-foot to surface filled with concrete. Special grouting required in conjunction with testing of chemical oxidation as a remedial alternative.
C0591104		11:45:00 AM	NR						
						2			
						3			
C0591105		11:50:00 AM	NR						
						4			
						5		at 5.5 ft.: Greenish gray [10GY 5/1].	
						6			
C0591106		11:55:00 AM	NR						
						7			
				▽				at 7.5 ft.: saturated.	
					4.8	8			

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.3 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B001

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B002

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,716.8 E 6,043,029.9	12.8 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 6.8ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.3			**ASPHALT**	FID Background = 2.1 ppm
C0591107		2:20:00 PM	NR			1		**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subrounded, trace (<2%) shells, vague magnetite-rich laminations. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591108		2:25:00 PM	NR			2			
						3			
C0591109		2:30:00 PM	NR			4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C0591110		2:35:00 PM	NR			7			
						8			
					4.3			at 8.3 ft.: Greenish gray [10GY 5/1].	
								TOTAL DEPTH = 8.5 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B002

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B003

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,708.0 E 6,043,124.5	13.3 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 8.3ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.8			**ASPHALT**	FID Background = 3.6 ppm
C0591112 C0591111		2:35:00 PM	NR			1		**SAND (SP)**: Greenish gray [5GY 5/1], medium dense, moist, poorly graded, fine grained sand, subrounded, trace (~3%) shells mostly in layers. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591113		2:40:00 PM	NR			2			
						3			
C0591114		2:45:00 PM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591115		2:50:00 PM	NR			7			
						8			
					4.8			**TOTAL DEPTH = 8.5 FEET**	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B003

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B004

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-7-03	8-7-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,711.9 E 6,043,231.3	13.2 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ NA	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/7/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.7			**ASPHALT**	
C0591116		1:40:00 PM	NR			1		**SAND (SP)**: Olive [5Y 4/3], dense, moist, fine grained sand, subrounded, trace (<1%) shells, some (10%) gravel in upper 6", vague magnetite-rich laminations. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591117		1:45:00 PM	NR			2			
						3			
C0591118		1:50:00 PM	NR			4			
						5			
						6			
C0591119		1:55:00 PM	NR			7			
						8			
					4.7			**TOTAL DEPTH = 8.5 FEET**	

REGISTERED GEOLOGIST
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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B004

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B005

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,709.9 E 6,043,309.3	13.3 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 6.3ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.8			**CONCRETE**	
C0591120		9:04:00 AM	NR			1		**SAND (SP)**: Olive brown [2.5Y 4/4], moist, poorly graded, 100% sand, trace fines, shell fragments up to 1". (FILL).	Hole backfilled with bentonite-cement grout after completion
					12.0 / 11.9			**CLAYEY SAND (SC)**: Light olive brown [2.5Y 5/6], moist, 80% sand, 20% fines, 20% shell fragments up to 1" from 1.3' - 1.5'. (FILL).	
C0591122 / C0591121		9:06:00 AM	NR			2		**SAND (SP)**: Light olive brown [2.5Y 5/3], moist, poorly graded, 100% sand. (FILL). at 1.5 ft.: trace (1%), 0.25 inch shell fragments from 1.5-2.5 feet bgs.	
						3			
C0591123		9:08:00 AM	NR			4		at 4.0 ft.: wet.	
						5			
						6			
C0591124		9:10:00 AM	NR	▽		7		at 7.0 ft.: saturated.	
						8			
					4.8			**TOTAL DEPTH = 8.5 FEET**	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B005

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B006

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-[redacted]

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,714.0 E 6,043,404.6	12.9 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.5 ft / 5.4ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.4			**CONCRETE**	
C0591125		9:38:00 AM	NR		12.1	1		**SAND (SP)**: Dark yellowish brown [10YR 3/6], moist, poorly graded, 100% sand, trace fines, shell fragments up to 1/2" (<1%). (FILL). **CLAYEY SAND (SC)**: Olive brown [2.5Y 5/4], moist, poorly graded, 80% sand, 20% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591126		9:40:00 AM	NR			2			
					10.4	3		**SAND (SP)**: Light olive brown [2.5Y 5/4], wet, poorly graded, 100% sand, trace fines. (FILL).	
C0591127		9:42:00 AM	NR		9.4	4		**SILTY CLAY (CL)**: Dark greenish gray [5GY 4/1], soft, 100% fines. slight hydrocarbon odor (BASE ROCK).	
						5			
						6			
C0591128		9:44:00 AM	NR			7			
				▽	5.4	8		**SAND (SW)**: Dark greenish gray [5GY 4/1], saturated, 100% sand. (BAY SEDIMENT).	
					4.4				

REGISTERED GEOLOGIST
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2/3/04
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TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B006

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B007

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-7-03	8-7-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,632.7 E 6,042,912.7	12.7 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 7.7ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/7/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.2			**ASPHALT**	
C0590551		11:35:00 AM	NR			1		**GRAVEL with SAND (GW)**: Light brownish gray [2.5Y 6/2], very dense, moist, fine and coarse gravel, angular, (FILL).	Hole backfilled with special grout after completion: 3/8-inch bentonite chips, hydrated in 1-foot lifts, final 1-foot to surface filled with concrete. Special grouting required in conjunction with testing of chemical oxidation as a remedial alternative.
C0590552		11:40:00 AM	NR			2			
						3			
C0590554 C0590553		11:45:00 AM	NR			4			
					8.2			**SAND (SP)**: Olive [5Y 4/3], medium dense, wet, fine grained sand, subrounded, (FILL).	
				▽		5		at 5.0 ft.: saturated.	
						6			
C0590555		11:50:00 AM	NR			7			
						8			
					4.2				
								TOTAL DEPTH = 8.5 FEET	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B007

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B008

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHE.
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,606.2 E 6,043,028.4	12.1 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.5 ft / 4.6ft	Andrew Liu	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591134		10:43:00 AM	NR					**SAND (SP)**: Dark olive brown [2.5Y 3/3], loose, dry, poorly graded, 10% gravel, 90% sand, trace fines. (FILL).	
					11.6			**SAND (SP)**: Light olive brown [2.5Y 5/4], loose, moist, poorly graded, 0% gravel, 100% sand, trace fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
						1			
C0591135		10:43:00 AM	NR						
						2			
C0591136		10:44:00 AM	NR			3			
					8.6			**CLAY (CH)**: Very dark gray [2.5Y N3], very dense, moist, medium to high plasticity, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
						4			
					7.1	5		**CLAYEY SAND (SC)**: Dark gray [2.5Y N4], dense, moist, 0% gravel, 80% sand, 20% fines. (BAY SEDIMENT).	
					6.6			**CLAY (CH)**: Very dark gray [2.5Y N3], very dense, moist, 0% gravel, 0% sand, 100% fines. (BAY MUD).	
C0591137		10:47:00 AM	NR			6			
					5.6			**CLAYEY SAND (SC)**: Dark gray [2.5Y N4], dense, moist, 0% gravel, 80% sand, 20% fines. (BAY SEDIMENT).	
						7			
				47				at 7.5 ft.: saturated.	
					4.1	8			
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST
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2/3/04
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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B008

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B009

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,606.1 E 6,043,108.1	12.2 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 7.2ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.7			**ASPHALT**	FID Background = 3.1 ppm
C0591138		2:55:00 PM	NR			1		**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subrounded, trace (<2%) shell. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591139		3:00:00 PM	NR			2			
						3			
C0591140		3:05:00 PM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591142 C0591141		3:10:00 PM	NR			7			
						8			
					3.7				

TOTAL DEPTH = 8.5 FEET

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B009

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B010

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,642.0 E 6,043,282.4	12.7 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591143		2:04:00 PM	NR					**SAND (SP)**: Dark brown [10YR 3/3], moist, poorly graded, 98% sand, 2% fines, shell fragment up to 0.5" (2%). (FILL). at 0.5 ft.: Light olive brown [2.5Y 5/4], wet, 100% sand.	
						1			Hole backfilled with bentonite-cement grout after completion
C0591144		2:06:00 PM	NR						
						2			
C0591145		2:08:00 PM	NR			3			
						4			
						5			
C0591146		2:10:00 PM	NR			6			
						7			
					4.7	8			

REGISTERED GEOLOGIST
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2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.0 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B010

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B011

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,621.8 E 6,043,323.8	12.9 ft	8.0

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 8.0 / 4.9ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591147		2:36:00 PM	NR		12.4			**SAND with GRAVEL (SP)**: Light olive brown [2.5Y 5/3], moist, angular, 25% gravel up to 1", 75% sand, trace fines. (FILL).	
								SAND (SP): Light olive brown [2.5Y 5/3], wet, poorly graded, 98% sand, 2% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
						1			
C0591148		2:38:00 PM	NR					at 1.2 ft.: 4-inch layer of angular gravels to 1.5".	
						2		at 2.0 ft.: 95% sand, 5% fines (clay).	
C0591149		2:40:00 PM	NR			3			
						4		at 4.0 ft.: rounded, gravels up to 1/2" (<1%), 100% sand, trace fines.	
						5			
C0591150		2:42:00 PM	NR			6			
						7			
				▽	4.9	8		at 8.0 ft.: saturated.	

TOTAL DEPTH = 8.0 FEET

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B011

Report form: CFD-059 ALAMEDA BORING LOG Time: 4:57:16 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S02[illegible]12

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,620.5 E 6,043,403.3	13.1 ft	6.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591152 C0591151		3:02:00 PM	NR		12.6			**SAND with GRAVEL (SW)**: Light olive brown [2.5Y 5/3], moist, 20% rounded gravel up to 1", 80% sand, trace fines. (FILL).	
						1		**SAND (SP)**: Olive brown [2.5Y 4/4], wet, poorly graded, 5% rounded gravel up to 1/2", 93% sand, 2% fines, Trace shell fragments up to 1/2". (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591153		3:04:00 PM	NR						
						2			
C0591154		3:06:00 PM	NR			3			
						4			
						5			
C0591155		3:10:00 PM	NR						
					7.1	6		**CLAYEY GRAVEL (GC)**: Reddish yellow [7.5 YR 6/6], oxidation staining, 70% fine rounded gravel up to 1 1/4", 15% sand, 15% fines. (FILL).	
					6.6				Refusal @ 6.5 feet

TOTAL DEPTH = 6.5 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B012

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B013

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision XD-2	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,616.5 E 6,043,492.8	12.7 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.5 ft / 5.2ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.5			**ASPHALT**	
					12.2			**ROADBASE**	FID Background = 0 ppm
C0591156		3:05:00 PM	NR			1		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, trace fine angular gravel, 90% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
					11.2			**SILTY SAND (SM)**: Dark brown [10YR 3/3], moist, fine grained sand, trace fine angular gravel, 70% sand, 30% fines. (FILL).	
C0591157		3:10:00 PM	NR		10.7	2		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, 0% gravel, 90% sand, 10% fines, wood debris. (FILL).	
						3			
C0591158		3:15:00 PM	NR			4		at 4.0 ft.: moist to wet.	
						5			
						6			
C0591159		3:20:00 PM	NR		6.2			**SILTY SAND (SM)**: Dark greenish grey [GLEY1 4/1], moist to wet, fine grained sand, (FILL).	
				▽		7		at 7.5 ft.: saturated.	
					4.7	8			

TOTAL DEPTH = 8.5 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B013

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:57:22 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S02[illegible]14

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,529.2 E 6,042,920.0	12.9 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 8.0 ft / 4.9ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	FID Background = 0 ppm
					12.4				
C0591160		11:58:00 AM	NR			1		**SILTY SAND with GRAVEL (SM)**: Dark yellowish brown [10YR 4/4], moist, fine grained sand, 35% fine angular gravel, 50% sand, 15% fines. (FILL).	Hole backfilled with special grout after completion: 3/8-inch bentonite chips, hydrated in 1-foot lifts, final 1-foot to surface filled with concrete. Special grouting required in conjunction with testing c chemical oxi as a remedial alternative.
					11.4				
C0591162 C0591161		12:02:00 PM	NR			2		**SILTY SAND (SP)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, trave gravel, 85% sand, 15% fines, shell fragments. (FILL).	
						3			
C0591163		12:05:00 PM	NR						
					8.9	4		**CLAY (CL)**: Very dark greenish gray [Gley1 3/1] with yellowish brown [10YR 5/4], soft, moist, 0% gravel, 10% sand, 90% fines. (BAY MUD).	
					7.9	5		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist to wet, fine grained sand, 0% gravel, 90% sand, 10% fines. (BAY SEDIMENT).	
						6			
C0591164		12:07:00 PM	NR						
						7			
				▽		8		at 8.0 ft.: Dark grayish brown [2.5Y 4/2], saturated.	
					4.4				
								TOTAL DEPTH = 8.5 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B014

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B015

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,523.2 E 6,043,026.6	12.0 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 5.0ft	Andrew Liu	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591165		10:07:00 AM	NR		11.5			**GRAVEL with SAND (GP)**: Olive brown [2.5Y 4/3], loose, moist, poorly graded, 60% gravel, 35% sand, 5% fines. (FILL).	
								SAND (SP): Light olive brown [2.5Y 5/4], loose, moist, poorly graded, 10% gravel, 90% sand, 0% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
						1			
C0591166		10:07:00 AM	NR						
						2		at 2.0 ft.: 0% gravel, 100% sand, trace fines.	
C0591167		10:08:00 AM	NR			3			
						4			
						5			
C0591168		10:12:00 AM	NR			6			
				▽		7		at 7.0 ft.: Dark bluish gray [5B 4/1], loose, saturated, poorly graded, 0% gravel, 100% sand, trace fines.	
					4.0	8			
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B015

Report Form: CTO-050 ALAMEDA BORING LOG Time: 4:57:28 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S0[illegible]16

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,523.2 E 6,043,095.5	11.8 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 4.8ft	Andrew Liu	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591169		9:35:00 AM	NR		11.3			**GRAVEL with SAND (GW)**: Olive brown [2.5Y 4/3], loose, dry, well graded, 55% gravel, 45% sand, trace fines. (FILL).	
								SAND (SP): Light olive brown [2.5Y 5/4], loose, moist, poorly graded, 10% gravel, 90% sand, trace fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
						1			
C0591170		9:37:00 AM	NR						
						2		at 2.0 ft.: 0% gravel, 100% sand, trace fines.	
C0591172 C0591171		9:39:00 AM	NR			3			
						4			
						5			
C0591173		9:43:00 AM	NR			6			
				▽		7		at 7.0 ft.: Dark bluish gray [5B 4/1], dense, saturated.	
					3.8	8			
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/5/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B016

Report form: CTO 059 ALAMEDA .LOG Time: 4:55:30 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B017

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,546.3 E 6,043,293.5	13.0 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.7			**CONCRETE**	
C0591174		1:06:00 PM	NR		12.2			**GRAVEL with SAND (GW)**: Light olive brown [2.5Y 5/3], moist, well graded, 60% fine subangular gravel up to 1", 40% sand, trace fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
						1		**SAND (SP)**: Light olive brown [2.5Y 5/4], wet, poorly graded, trace fine gravel up to 1/4", 98% sand, 2% fines (clay). (FILL).	
C0591175		1:08:00 PM	NR						
						2		at 2.0 ft.: shell fragments up to 0.5" (<1%).	
						3			
C0591176		1:10:00 PM	NR						
						4		at 4.2 ft.: Dark brown [10YR 3/3], lense at 4.2' - 4.3'.	
						5			
						6			
C0591177		1:12:00 PM	NR						
						7			
					5.0	8			

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.3 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B017

Report from: C:\0-059-ALAMEDA BORING.LOG Time: 4:57:33 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B018

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,571.2 E 6,043,315.8	13.1 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 6.1ft	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.8			**CONCRETE**	
C05901178		1:32:00 PM	NR			1		**SAND (SP)**: Olive brown [2.5Y 4/4], moist, 10% rounded gravels up to 3/4", 90% sand, trace fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
					11.6			at 1.1 ft.: Dark brown [10YR 3/3], 100% sand, shell fragments up to 1/2" (1%).	
C05901179		1:34:00 PM	NR		11.3	2		**SAND with GRAVEL (SP)**: Light olive brown [2.5Y 5/4], 50% rounded gravel up to 3/4", 50% sand. (FILL). **CLAYEY SAND (SC)**: Light olive brown [2.5Y 5/4], stiff, 80% sand, 20% fines. (FILL).	
					10.8			**SAND (SP)**: Light yellowish brown [2.5Y 6/3], wet, 100% sand, trace shell fragments. (FILL).	
						3			
C05901180		1:36:00 PM	NR			4			
								at 4.3 ft.: trace shell fragments up to 1/2".	
						5			
						6			
C05901182 C05901181		1:38:00 PM	NR	▽		7		at 7.0 ft.: saturated.	
						8			
					4.8			**TOTAL DEPTH = 8.3 FEET**	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B018

Report form: C10-059.AL.AMP

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B019

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,444.3 E 6,042,922.9	13.0 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 6.0ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	FID Background = 0 ppm
					12.5			**SAND with GRAVEL (SW)**: Yellowish brown [10YR 5/4], moist, fine grained sand, 35% angular gravel, 55% sand, 10% fines, shell fragments. (FILL).	
C0591183		10:13:00 AM	NR			1			Hole backfilled with special grout after completion: 3/8-inch bentonite chips, hydrated in 1-foot lifts, final 1-foot to surface filled with concrete. Special grouting required in conjunction with testing of chemical oxidation as a remedial alternative.
					11.5			**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, poorly graded, fine grained sand, shell fragments, trace fine angular gravel, 90% sand, 10% fines. (FILL).	
C0591184		10:15:00 AM	NR			2			
						3			
C0591185		10:16:00 AM	NR						
						4			
						5			
						6			
C0591186		10:17:00 AM	NR						
				▽		7		at 7.0 ft.: saturated.	
						8			
					4.5				

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B019

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S02[illegible]0

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,429.3 E 6,043,031.1	12.4 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 6.4ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.9			**ASPHALT**	FID Background = 0 ppm
C0591187		3:20:00 PM	NR			1		**SAND with GRAVEL (SW)**: Olive brown [2.5Y 4/3], moist, fine grained sand, fine angular to subrounded gravel. (FILL).	Hole backfilled with bentonite-cement grout after completion
					10.9			**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, trace fine angular to subrounded gravel, 90% sand, 10% fines, shell fragments. (FILL).	
C0591188		3:24:00 PM	NR			2			
						3			
C0591189		3:27:00 PM	NR			4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C0591190		3:30:00 PM	NR			7			
						8			
					3.9				

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/5/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B020

LOG: Time: 3:27:30 PM
Report forms: C 03-059 ALAMEDA

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B021

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,428.4 E 6,043,088.5	12.3 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 5.3ft	Andrew Liu	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591192 C0591191		9:02:00 AM	NR		11.8			**GRAVEL with SAND (GW)**: Brown [10YR 5/3], medium dense, moist, 55% gravel, 45% sand, trace fines. (FILL).	
						1		**SAND (SP)**: Light olive brown [2.5Y 5/4], loose, moist, poorly graded, 0% gravel, 100% sand, trace fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591193		9:03:00 AM	NR						
						2			
C0591194		9:05:00 AM	NR			3			
						4			
						5			
C0591195		9:10:00 AM	NR			6			
				▽		7		at 7.0 ft.: saturated.	
					4.3	8			

TOTAL DEPTH = 8.0 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B021

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:57:44 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B022

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,440.4 E 6,043,305.2	13.2 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591196		11:06:00 AM	NR					**SAND (SP)**: Dark yellowish brown [10YR 3/4], moist, poorly graded, 10% subangular gravel, (<1%), to 1" 90% sand, trace fines, shell fragment up tp 1/2" (<1%). (FILL).	
						1		at 0.8 ft.: Light olive brown [2.5Y 5/4], wet, 100% sand.	Hole backfilled with bentonite-cement grout after completion
C0591197		11:08:00 AM	NR					at 1.4 ft.: 2-inch CLAY (CL) lense, Brown [10YR 5/3], very soft, 100% fines, with rootlets (1%).	
						2			
C0591198		11:10:00 AM	NR			3			
						4			
						5		at 4.5 ft.: Light olive brown [2.5Y 5/3], shell fragments up to 1" (1%).	
C0591199		11:16:00 AM	NR			6			
						7			
					5.2	8		at 7.5 ft.: saturated, shell and clay rich lense 7.5' - 7.6', shells up to 1" (20%).	
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B022

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B023

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision XD-2	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,427.8 E 6,043,588.9	12.0 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.7			**ASPHALT**	
					11.5			**ROADBASE**	FID Background = 0 ppm
C0591200		12:04:00 PM	NR		11.2	1		**SAND with SILT and GRAVEL (SW-SM)**: Light olive brown [2.5Y 5/6], moist, fine grained sand, 30% fine angular gravel, 60% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591202 C0591201		12:08:00 PM	NR			2		**SAND with SILT (SP-SM)**: Olive brown [2.5Y 4/3], moist, fine grained sand, 0% gravel, 90% sand, 10% fines, trace shell fragments. (FILL).	
						3			
C0591203		12:11:00 PM	NR			4			
						5			
						6			
C0591204		12:15:00 PM	NR			7		at 7.0 ft.: Dark greenish gray (GLEY1 4/1).	
					4.0	8			

TOTAL DEPTH = 8.5 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
C.G. No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B023

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S02 24

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision XD-2	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,431.6 E 6,043,684.5	11.4 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.2			**ASPHALT**	
					10.9			**ROADBASE**	FID Background = 0 ppm
C0591205		12:22:00 PM	NR		10.7			**SAND with SILT and GRAVEL (SW-SM)**: Light olive brown [2.5Y 5/6], moist, fine angular and subrounded gravel, fine sand, 30% gravel, 60% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
						1		**SAND with SILT (SP-SM)**: Olive brown [2.5Y 4/4], moist, fine grained sand, trace fine angular to subrounded gravel, 90% sand, 10% fines, shell fragments. (FILL).	
C0591206		12:25:00 PM	NR						
						2			
						3			
C0591207		12:28:00 PM	NR					at 3.5 ft.: Light olive brown [2.5Y 4/4], moist to wet.	
						4			
						5			
						6		at 6.0 ft.: Dark greenish gray [GLEY1 4/1], wood fragments.	
C0591208		12:35:00 PM	NR						
						7			
						8			
					2.9				
								TOTAL DEPTH = 8.5 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B024

Report form: CTO 059 SLAMPD.

LOG Time: 4:57:51 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B025

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,443.9 E 6,043,791.1	10.1 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 6.1ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					9.6			**ASPHALT**	FID Background = 0 ppm
C0591209		12:02:00 PM	NR			1		**SAND with SILT and GRAVEL (SW-SM)**: Dark brown [10YR 3/3], moist, fine grained sand, 35% fine angular gravel, 55% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
					8.6			**SILTY SAND (SM)**: Olive Brown [2.5Y 5/4], moist, fine grained sand, trace gravel, 70% sand, 30% fines. (FILL).	
C0591210		12:04:00 PM	NR			2			
					7.1	3		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, 0% gravel, 90% sand, 10% fines, shell fragments. (FILL).	
C0591212 C0591211		12:07:00 PM	NR		6.6			**CLAY (CL)**: Light olive brown [2.5Y 5/4] and dark greenish gray [GLEY1 4/1], soft, moist, shell fragments. (FILL).	
				▽	6.1	4		**SAND with SILT (SP-SM)**: Dark greenish gray [GLEY1 4/1], saturated, 0% gravel, 90% sand, 10% fines. moderate hydrocarbon odor (FILL).	
						5			
						6			
C0591213		12:08:00 PM	NR			7			
						8			
					1.6				

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B025

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B026

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,439.0 E 6,043,869.7	11.3 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.5 ft / 6.8ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.0			**ASPHALT**	
C0591214		9:26:00 AM	NR					**SAND with SILT (SP)**: Light olive brown [2.5Y 5/4], moist, poorly graded, fine grained sand, shell fragments, 10% fine angular gravel, 80% sand, 10% fines. (FILL).	PID background = 0 ppm Hole backfilled with bentonite-cement grout after completion
						1			
C0591215		9:29:00 AM	NR						
						2		at 2.0 ft.: Dark greenish gray [GLEY1 4/1], nodules of clay, Dark greenish gray [GLEY1 4/1] and Black [GLEY1 2.5/black].	
						3			
C0591216		9:31:00 AM	NR						
						4			
				▽	6.8			**SILTY SAND (SM)**: Dark greenish gray [GLEY1 4/1], saturated, fine grained sand, shell fragments, 0% gravel, 70% sand, 30% fines. (FILL).	
						5			
						6			
C0591217		9:35:00 AM	NR						
						7			
						8			
					3.0			**TOTAL DEPTH = 8.3 FEET**	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B026

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B027

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,432.9 E 6,043,959.6	11.8 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 7.8ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.4			**ASPHALT**	FID background = 0 ppm
C0591218		1:46:00 AM	NR			1		**GRAVELLY CLAY (CL)**: Very dark grayish brown [10YR 3/2], fine gravel, angular, 30% gravel, 10% sand, 60% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591219		1:48:00 AM	NR		9.8	2		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, poorly graded, fine grained sand, shell fragments, 0% gravel, 90% sand, 10% fines. (FILL).	
C0591220		1:49:00 AM	NR	▽		3			
						4		at 4.0 ft.: saturated.	
					6.8	5		**SILTY SAND (SM)**: Black [7.5YR 2.5/1], wet, fine grained sand, roots, pieces of red brick, trace fine angular gravel, 70% sand, 30% fines, moderate hydrocarbon odor. (FILL).	
						6			
C0591222 C0591221		1:52:00 AM	NR			7			
						8			
					3.4				

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/5/04 · STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B027

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B028

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,340.1 E 6,042,928.6	13.1 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.5 ft / 5.6ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.6			**ASPHALT**	FID Background = 0 ppm
C0591223		10:30:00 AM	NR		12.1	1		**SAND with GRAVEL (SW)**: Yellowish brown [10YR 5/4], moist, fine grained sand, 35% fine angular gravel, 55% sand, 10% fines, shell fragments. (FILL).	
C0591224		10:31:00 AM	NR			2		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, shell fragments, trace fine angular gravel, 90% sand, 10% fines. (FILL).	Hole backfilled with special grout after completion: 3/8-inch bentonite chips, hydrated in 1-foot lifts, final 1-foot to surface filled with concrete. Special grouting required in conjunction with testing chemical o[illegible]n as a remedi[illegible] alternative.
						3			
C0591225		10:33:00 AM	NR			4			
						5			
						6			
C0591226		11:01:00 AM	NR			7			
						8		at 7.5 ft.: saturated.	
					4.6				

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B029

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,337.2 E 6,043,025.9	12.4 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz.)	ABANDON DATE
▼ 7.0 ft / 5.4ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.9			**ASPHALT**	FID Background = 0 ppm
C0591227		2:40:00 PM	NR			1		**SAND with SILT and GRAVEL (SW-SM)**: Olive brown [2.5Y 4/3], moist, fine grained sand, 30% angular to subrounded gravel, 60% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591228		2:42:00 PM	NR		10.4	2		**SAND with CLAY (SC)**: Light olive brown [2.5Y 5/4] with nodules of olive brown [2.5Y 4/3] clay, moist, fine grained sand, nodules of olive brown [2.5Y 4/3] clay, trace fine angular gravel, 90% sand, 10% fines, shell fragments. (FILL).	
						3			
C0591229		2:44:00 PM	NR			4			
						5			
						6			
C0591230		2:46:00 PM	NR			7		at 7.0 ft.: saturated.	
						8			
					3.9				

REGISTERED GEOLOGIST CATHIE L. STUMPENHAUS No. 4451 2/3/04 STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B030

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,342.0 E 6,043,072.3	12.3 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 5.3ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.8			**ASPHALT**	FID Background = 0 ppm
C0591232 C0591231		2:55:00 PM	NR			1		**SAND with SILT and GRAVEL (SW-SM)**: Olive brown [2.5Y 4/3], moist, fine grained sand, 35% fine angular to subrounded gravel, 55% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
					10.8			**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, trace gravel, 90% sand, 10% fines, shell fragments. (FILL).	
C0591233		3:01:00 PM	NR			2			
						3			
C0591234		3:06:00 PM	NR			4			
						5			
						6			
C0591235		3:10:00 PM	NR			7		at 7.0 ft.: saturated.	
						8			
					3.8				

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 8/3/04 · STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B031

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,336.4 E 6,043,277.1	12.6 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Tina Takagi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591236		10:29:00 AM	NR		12.1			**GRAVEL with SAND (GW)**: Light olive brown [2.5Y 5/4], moist, 60% subangular gravel, 40% sand, trace fines, shell fragments up to 3/4". (FILL).	
						1		**SAND (SP)**: Olive brown [2.5Y 4/4], wet, 5% subangular to rounded gravel up to 1/2", 90% sand, 5% fines, shell fragments (2%). (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591237		10:31:00 AM	NR						
						2		at 2.0 ft.: Light olive brown [2.5Y 5/4], wet, 100% sand, trace fines with sandy clay interlayers, shell fragments up to 1".	
C0591238		10:33:00 AM	NR			3			
						4		at 4.0 ft.: shell fragments up to 1/4" (1%).	
						5			
C0591239		10:42:00 AM	NR			6			
						7		at 7.5 ft.: Greenish gray [5GY 5/1], wet, 100% sand, trace fines.	
					4.6	8			
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
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2/3/04
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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B031

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B032

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision XD-2	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,336.6 E 6,043,589.4	12.6 ft	9.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 8.0 ft / 4.6ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.3			**ASPHALT**	
					12.1			**ROADBASE**	
C0591240		10:35:00 AM	NR			1		**SAND (SP)**: Very dark grayish brown [10YR 3/2], moist, poorly graded, fine grained sand, trace fine angular gravel, 90% sand, 10% fines. (FILL).	FID background = 0 ppm Hole backfilled with bentonite-cement grout after completion
C0591242 C0591241		10:40:00 AM	NR			2		at 2.0 ft.: Light olive brown [2.5Y 5/4], shell fragments.	
						3			
C0591243		10:44:00 AM	NR					at 3.5 ft.: moist to wet.	
						4			
						5		at 5.0 ft.: Dark greenish gray [GLEY1 4/1].	
						6			
C0591244		11:00:00 AM	NR						
						7			
				▽		8		at 8.0 ft.: saturated.	
						9			
					3.1				

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 9.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B032

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B033

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,336.5 E 6,043,682.7	11.9 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 8.0 ft / 3.9ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.7			**ASPHALT**	
					11.4			**ROADBASE**	FID background = 0 ppm
C0591245		12:38:00 PM	NR			1		**SAND with SILT and GRAVEL (SW-SM)**: Light olive brown [2.5Y 5/6], moist, well graded, fine grained sand, 30% fine angular to subrounded gravel, 60% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
					10.4			**SAND with SILT (SP-SM)**: Olive brown [2.5Y 4/3], moist, poorly graded, fine grained sand, shell fragments, trace fine angular to subrounded gravel, 90% sand, 10% fines. (FILL).	
C0591246		12:40:00 PM	NR			2			
						3			
C0591247		12:43:00 PM	NR			4		at 3.8 ft.: moist to wet.	
						5			
						6		at 6.0 ft.: Dark greenish gray [GLEY1 4/1].	
C0591248		12:55:00 PM	NR			7			
				▽		8		at 8.0 ft.: saturated.	
					3.4				

TOTAL DEPTH = 8.5 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B033

Report form: C10-059 ALAMEDA BORING LOG Time: 4:58:19 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S02[illegible]34

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,336.5 E 6,043,776.0	13.8 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 8.8ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					13.6			**ASPHALT**	
C0591249		10:12:00 AM	NR			1		**GRAVELLY CLAY (CL)**: Dark brown [10YR 3/3], moist, fine gravel, angular, 35% gravel, 10% sand, 55% fines. (FILL).	FID background = 0 ppm Hole backfilled with bentonite-cement grout after completion
C0591250		10:16:00 AM	NR		12.3	2		**SILTY SAND (SM)**: Dark brown [10YR 3/3], moist, fine grained sand, trace gravel, 70% sand, 30% fines. (FILL).	
C0591252 C0591251		10:20:00 AM	NR		10.8	3		**SAND (SP)**: Light olive brown [2.5Y 5/4], moist, poorly graded, fine grained sand, with nodules of soft, moist, light olive brown [2.5Y 5/4] clay. (FILL).	
				▽		4			
						5		at 5.0 ft.: saturated.	
C0591253		10:24:00 AM	NR			6			
						7		at 7.5 ft.: Dark greenish gray [GLEY1 4/1].	
						8			
					5.6			**TOTAL DEPTH = 8.3 FEET**	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B034

LOG Time: 4:58:22 PM

Report form: CTO-059 ALAMEDA

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B035

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision XD-2	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,336.5 E 6,044,056.1	11.9 ft	9.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 3.0 ft / 8.9ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.6			**ASPHALT**	
C0591254		9:05:00 AM	NR					**GRAVELLY CLAY (CL)**: Dark grayish brown [10YR 4/2], moist, fine and coarse gravel, 40% gravel, 10% sand, 50% fines. (FILL).	FID background = 0 ppm
						1		at 1.0 ft.: Dark yellowish brown [10YR 4/6].	Hole backfilled with bentonite-cement grout after completion
C0591255		9:10:00 AM	NR						
						2			
				▽		3			
C0591256		9:15:00 AM	NR					at 3.0 ft.: saturated, fine and coarse angular gravel.	
					7.9	4		**SANDY CLAY with GRAVEL (CL)**: Very dark gray [7.5YR 3/1], soft, wet, fine grained sand, 20% fine angular gravel, 30% sand, 50% fines. (FILL).	
						5			
					5.9	6		**CLAYEY SAND (SC)**: Light olive brown [2.5Y 5/6], wet, fine grained sand, trace fine to coarse angular gravel, 70% sand, 30% fines. (FILL).	
C0591257		9:22:00 AM	NR						
						7			
						8			
						9			
					2.6				
								TOTAL DEPTH = 9.3 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUSER
No. 4451
8/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B035

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S0[illegible]B03[illegible]

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-7-03	8-7-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,238.3 E 6,042,908.6	13.1 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 8.1ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/7/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.6			**ASPHALT**	
C0591258		11:55:00 AM	NR			1		**SAND (SP)**: Olive [5Y 4/3], medium dense, moist, poorly graded, fine grained subrounded sand. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591259		12:00:00 PM	NR			2			
						3			
C0591260		12:05:00 PM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591262 C0591261		12:10:00 PM	NR			7			
						8			
					4.6				

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B036

Report form: CTD-059 ATAMGD.[illegible] LOG Time: 4:58:27 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B037

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-6-03	8-6-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,243.2 E 6,043,029.3	12.0 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 6.0ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/6/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.5			**ASPHALT**	FID Background = 0 ppm
C0591263		3:36:00 PM	NR		11.0	1		**SAND with SILT and GRAVEL (SW-SM)**: Olive brown [2.5Y 4/3], moist, fine grained sand, 35% fine angular to subrounded gravel, 55% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591264		3:39:00 PM	NR			2		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, trace gravel, 90% sand, 10% fines, shell fragments. (FILL).	
						3			
C0591265		3:42:00 PM	NR			4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C0591266		3:48:00 PM	NR			7			
						8			
					3.5				

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B037

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:58:30 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B038

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,212.2 E 6,043,108.0	11.4 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ Not Encountered	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.2			**ASPHALT**	
C0591267		3:00:00 PM	NR					**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subrounded, trace (<2%) shells. (FILL).	FID Background = 3.0 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0591268		3:05:00 PM	NR						
						2			
						3			
C0591269		3:10:00 PM	NR						
						4			
						5			
						6			
C0591270		3:15:00 PM	NR						
						7			
						8			
					3.2				

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

TOTAL DEPTH = 8.3 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B038

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B039

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,246.8 E 6,043,268.5	11.7 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 6.7ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.2			**ASPHALT AND ROADBASE**	FID Background = 2.9 ppm
C0591272 C0591271		2:00:00 PM	NR			1		**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subangular, trace (<2%) shells, trace (2%) pockets of clay. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591273		2:05:00 PM	NR			2			
						3			
C0591274		2:10:00 PM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591275		2:15:00 PM	NR			7		at 6.5 ft.: Greenish gray [10GY 5/1].	
						8			
					3.2			**TOTAL DEPTH = 8.5 FEET**	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B039

		PROJECT: CLEAN 3	JOB NUMBER: 23818-059	SHEET NUMBER: 1 of 1	HOLE NUMBER: C3S02[illegible]40
DRILLING COMPANY: Precision Sampling, Inc.	DRILLING RIG: Truck Mounted Geoprobe	SITE: OU-2A IR Site 23	LOCATION: Alameda Point	BEGUN: 8-5-03	FINISHED: 8-5-03
DRILLING METHOD: Direct-Push	HOLE DIAMETER: 1.5 in	COORDINATES: N 2,109,243.0 E 6,043,312.3		ELEVATION: 12.9 ft	TOTAL DEPTH: 8.5 ft
DEPTH / ELEVATION TO WATER: ▼ 5.0 ft / 7.9ft		LOGGED BY: Pete Holland	REVIEWED BY: C. Stumpenhaus, R.G. 4451	ANGLE (from Horiz.): Vertical	ABANDON DATE: 8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.4			**ASPHALT AND ROADBASE**	FID Background = 3.3 ppm
C0591276		11:50:00 AM	NR			1		**SAND (SP)**: Olive [5Y 5/3], dense, moist, poorly graded, fine grained sand, subrounded, (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591277		11:55:00 AM	NR			2			
						3			
C0591278		12:00:00 PM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591279		12:05:00 PM	NR					at 6.5 ft.: Greenish gray [5G 5/1].	
						7			
						8			
					4.4				

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TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER: C3S023B040

Report form: CTO-059 ALAMEDA[illegible] LOG Time: 4:58:36 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B041

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,238.3 E 6,043,400.9	13.1 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 8.1ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.6			**ASPHALT AND ROADBASE**	
C0591280		2:20:00 PM	NR			1		**SAND (SP)**: Olive [5Y 4/3], medium dense, moist, poorly graded, fine grained sand, subrounded, trace (~3%) shells, some (~7%) fine angular gravel. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591282 C0591281		2:25:00 PM	NR			2			
						3			
C0591283		2:30:00 PM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591284		2:35:00 PM	NR			7		at 6.5 ft.: Greenish gray [10GY 5/1], fine to medium grained sand.	
						8			
					4.6				

REGISTERED GEOLOGIST
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No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B041

Report form: CTO-059-ALAMEDA BORING LOG Time: 4:58:38 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023[illegible]2

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision XD-2	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,267.1 E 6,043,565.9	12.7 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 7.7ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.5			**ASPHALT**	
					12.2			**ROADBASE**	FID Background = 0 ppm
C0591285		1:35:00 PM	NR			1		**SAND with SILT and GRAVEL (SW-SM)**: Dark brown [10YR 3/3], moist, fine grained sand, 30% fine angular to subrounded gravel, 60% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
					11.2			**SAND with SILT (SP-SM)**: Olive brown [2.5Y 4/3], moist, fine grained sand, 0% gravel, 90% sand, 10% fines, shell fragments, stratified, wood debris. (FILL).	
C0591286		1:38:00 PM	NR			2			
						3			
C0591287		1:40:00 PM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591288		1:45:00 PM	NR			7			
						8		at 7.5 ft.: Dark greenish gray (GLEY1 4/1), 8.5.	
					4.2			**TOTAL DEPTH = 8.5 FEET**	

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SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B042

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B043

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision XD-2	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,268.6 E 6,043,683.5	12.9 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 8.0 ft / 4.9ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.7			**ASPHALT**	
					12.4			**ROADBASE**	FID Background = 0 ppm
C0591289		1:00:00 PM	NR		11.9	1		**SAND with SILT and GRAVEL (SW-SM)**: Olive brown [2.5Y 4/3], moist, fine grained sand, 30% fine angular to subrounded gravel, 60% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591290		1:03:00 PM	NR			2		**SAND with SILT (SP-SM)**: Olive brown [2.5Y 4/3], moist, fine grained sand, trace fine angular to subrounded gravel, 90% sand, 10% fines, shell fragments. (FILL).	
						3			
C0591292 C0591291		1:05:00 PM	NR			4		at 4.0 ft.: moist to wet.	
						5			
						6		at 6.0 ft.: Dark greenish gray [GLEY1 4/1], moderate hydrocarbon odor.	
C0591293		1:10:00 PM	NR			7			
				▽		8		at 8.0 ft.: saturated.	
					4.4				

TOTAL DEPTH = 8.5 FEET

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B043

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B044

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,243.2 E 6,043,776.0	14.3 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 9.3ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					14.1			**ASPHALT**	
C0591294		10:56:00 AM	NR					**SILTY SAND with GRAVEL (SM)**: Dark brown [10YR 3/3], moist, fine grained sand, 20% fine angular gravel, 50% sand, 30% fines. (FILL).	FID Background = 0 ppm
						1			Hole backfilled with bentonite-cement grout after completion
C0591295		11:00:00 AM	NR						
						2			
					11.3	3		**CLAYEY SAND (SC)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, 0% gravel, 85% sand, 15% fines, shell fragments and nodules of light olive brown [2.5Y 5/4] clay (CL) with greenish gray mottles [GLEY1 5/1]. (FILL).	
C0591296		11:03:00 AM	NR						
						4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591297		11:10:00 AM	NR						
						7		at 7.0 ft.: Dark greenish gray [Gleyl 4/1], 8.25, no clay nodules, moderate hydrocarbon odor.	
						8			
					6.1			TOTAL DEPTH = 8.3 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B044

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B045

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,236.4 E 6,043,872.3	13.4 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.5 ft / 8.9ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT	FID Background = 0 ppm
					12.9			**SAND with SILT and GRAVEL (SW-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, 35% fine angular gravel, 55% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591298		11:25:00 AM	NR			1			
C0591299		11:27:00 AM	NR		11.4	2		**SAND with SILT (SP-SM)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, 0% gravel, 90% sand, 10% fines, shell fragments. (FILL).	
						3			
C0591300		11:29:00 AM	NR						
				▽		4		at 4.5 ft.: saturated.	
						5			
						6			
C0591302 C0591301		11:30:00 AM	NR						
						7		at 7.0 ft.: Dark greenish gray [GLEY1 4/1], moderate hydrocarbon odor.	
						8			
					4.9			TOTAL DEPTH = 8.5 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
8/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B045

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S0[illegible]46

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Precision DA-2	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,251.4 E 6,044,079.1	12.2 ft	7.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.5 ft / 6.7ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.9			**ASPHALT**	
C0591303		2:25:00 PM	NR					**SAND with SILT and GRAVEL (SW-SM)**: Olive brown [2.5Y 4/4], moist, fine grained sand, 35% fine angular gravel, 55% sand, 10% fines. (FILL).	FID Background = 0 ppm
					11.2	1		**SILTY SAND (SM)**: Olive brown [2.5Y 4/4], moist, (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591304		2:26:00 PM	NR						
					10.2	2		**SAND with SILT (SP)**: Light olive brown [2.5Y 5/4], moist, fine grained sand, trace gravel, 90% sand, 10% fines, shell fragments. (FILL).	
						3			
C0591305		2:28:00 PM	NR						
						4			
						5			
C0591306		2:35:00 PM	NR	▽				at 5.5 ft.: saturated.	
					6.2	6		**SILTY SAND (SM)**: Dark greenish gray [GLEY1 4/1], wet, fine grained sand, 0% gravel, 70% sand, 30% fines. (FILL).	
					5.2	7		at 6.9 ft.: hit refusal, rock-like obstruction.	

TOTAL DEPTH = 7.0 FEET

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B046

Report form: CTO-059 ALAMEDA LOG: Time: 4:58:55 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B047

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-7-03	8-7-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,147.9 E 6,042,938.1	12.6 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 7.6ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/7/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.1			**CONCRETE**	FID Background = 3.2 ppm
C0591307		2:25:00 PM	NR			1		**SAND (SP)**: Olive [5Y 4/3], medium dense to dense, moist, poorly graded, fine grained sand, vague laminations. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591308		2:30:00 PM	NR			2			
						3			
C0591309		2:35:00 PM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591310		2:40:00 PM	NR			7			
						8			
					4.1				

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B047

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B048

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-7-03	8-7

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,151.6 E 6,043,035.2	11.8 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ NA	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/7/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.3			**CONCRETE**	
C0591312 C0591311		2:55:00 PM 3:00:00 PM	NR			1		**NOT AVAILABLE**	Hole backfilled with bentonite-cement grout after completion
C0591313		3:05:00 PM	NR			2			
						3			
C0591314		3:10:00 PM	NR			4			
						5			
						6			
C0591315		3:15:00 PM	NR			7			
						8			
					3.3				

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B048

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B049

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,149.9 E 6,043,122.7	11.1 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 6.1ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					10.6			**CONCRETE**	FID Background = 2.8 ppm
C0591316		11:05:00 AM	NR			1		**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subrounded, trace (2%) shells. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591317		11:10:00 AM	NR			2			
						3			
C0591318		11:15:00 AM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6		at 5.5 ft.: Greenish gray [10GY 5/1], fine to medium grained sand.	
C0591319		11:20:00 AM	NR			7			
						8			
					2.6			**TOTAL DEPTH = 8.5 FEET**	

REGISTERED GEOLOGIST
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No. 4451
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STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B049

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B050

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,149.7 E 6,043,217.1	11.0 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 5.0 ft / 6.0ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
								ASPHALT AND ROADBASE	FID Background = 3.4 ppm
					10.5			**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, fine grained sand, subrounded, trace (~3%) shells. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591320		10:35:00 AM	NR			1			
C0591322 C0591321		10:40:00 AM	NR			2			
						3			
C0591323		10:45:00 AM	NR			4			
				▽		5		at 5.0 ft.: saturated.	
						6			
C0591324		10:50:00 AM	NR					at 6.5 ft.: Greenish gray [10GY 5/1], moderate hydrocarbon odor.	
						7			
						8			
					2.5				

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B050

Report form: CTO-059 ALASKA

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B051

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,149.9 E 6,043,309.4	11.7 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.5 ft / 7.2ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					11.2			**ASPHALT AND ROADBASE**	FID Background = 3.3 ppm
C0591325		10:05:00 AM	NR			1		SAND (SP): Olive [5Y 5/3], dense, moist, fine grained sand, subrounded, trace (~2%) shells. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591326		10:10:00 AM	NR			2			
						3			
C0591327		10:15:00 AM	NR			4			
				▽				at 4.5 ft.: saturated.	
						5			
						6			
C0591328		10:20:00 AM	NR						
						7		at 7.5 ft.: Greenish gray [10GY 5/1].	
						8			
					3.2			**TOTAL DEPTH = 8.5 FEET**	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B051

Report form: C10-059 ALAMEDA BORING LOG Time: 4:56:05 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B052

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-[illegible]

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,149.9 E 6,043,402.7	12.6 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ NA	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.1			**ASPHALT AND ROADBASE**	FID Background = 2.9 ppm
C0591329		9:30:00 AM	NR			1		**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subrounded, trace (~2%) shells. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591330		9:35:00 AM	NR			2			
						3			
C0591332 C0591331		9:40:00 AM	NR			4			
						5			
						6			
C0591333		9:45:00 AM	NR			7			
					4.6	8			

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

TOTAL DEPTH = 8.5 FEET

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B052

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B053

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	1.5 in	N 2,109,149.9 E 6,043,496.0	12.8 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 4.0 ft / 8.8ft	Pete Holland	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.3			**ASPHALT AND ROADBASE**	FID Background = 3.6 ppm
C0591334		9:10:00 AM	NR			1		**SAND (SP)**: Olive [5Y 5/3], medium dense, moist, poorly graded, fine grained sand, subrounded, some (~5%) shells. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591335		9:15:00 AM	NR			2			
						3			
C0591336		9:20:00 AM	NR	▽		4		at 4.0 ft.: saturated.	
						5			
						6			
C0591337		9:25:00 AM	NR			7		at 7.0 ft.: Greenish gray [10GY 5/1].	
						8			
					4.3			**TOTAL DEPTH = 8.5 FEET**	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B053

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B054

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Truck Mounted Geoprobe	OU-2A IR Site 23	Alameda Point	8-5-03	8-5-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	3 in	N 2,109,128.8 E 6,043,589.0	12.7 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 6.7ft	Lynelle Onishi	C. Stumpenhaus, R.G. 4451	Vertical	8/5/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.5			**ASPHALT**	
C0591338		2:35:00 PM	NR		12.2			**SILTY SAND (SM)**: Dark brown [10YR 3/3], moist, fine grained sand, trace fine angular gravel, 70% sand, 30% fines. (FILL).	FID Background = 0 ppm
						1		**SAND with SILT (SP-SM)**: Olive brown [2.5Y 4/3], moist, fine grained sand, 0% gravel, 90% sand, 10% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591339		2:40:00 PM	NR						
						2			
						3			
C0591340		2:42:00 PM	NR						
						4			
						5			
				▽		6		at 6.0 ft.: saturated.	
C0591342 C0591341		2:45:00 PM	NR						
						7		at 7.0 ft.: Dark greenish gray [GLEY1 4/1], shell fragments.	
						8			
					4.5				

TOTAL DEPTH = 8.3 FEET

REGISTERED GEOLOGIST CATHIE L. STUMPENHAUS No. 4451 2/3/04 STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B054

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B055

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,152.9 E 6,043,681.6	12.3 ft	8.3 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.5 ft / 4.8ft	Dax Daily	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.0			**ASPHALT**	
					11.8			**STEEL PLATING (1/8" thick)**	FID Background = 0.2 ppm
C0591343		10:29:00 AM	NR					**SAND (SP)**: Reddish brown [2.5YR 4/6], loose, dry, fine grained sand, oxidation. (FILL).	
						1		at 0.8 ft.: Light brown [7.5YR 6/3].	Hole backfilled with bentonite-cement grout after completion
C0591344		10:37:00 AM	NR						
						2		at 2.0 ft.: Yellowish brown [10YR 5/6], loose, moist, fine grained sand, homogeneous.	
						3		at 3.0 ft.: Light brownish gray [10YR 6/2].	
C0591345		10:39:00 AM	NR						
						4		at 4.0 ft.: Pale brown [10YR 6/3].	
						5			
						6			
C0591346		10:41:00 AM	NR						
						7			
				▽				at 7.5 ft.: Gray [10YR 5/1], medium dense to loose, saturated, fine grained sand, homogeneous.	
						8			
					4.0				
								TOTAL DEPTH = 8.3 FEET	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
1/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B055

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B056

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-1-03	8-[redacted]

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,150.0 E 6,043,774.0	14.2 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.8 ft / 7.5ft	Andrew Liu	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591347		1:25:00 PM	NR		13.7			**GRAVEL with SAND (GW)**: Brown - Dark brown [10YR, 4/3], loose, dry, 55% gravel, 45% sand, trace fines. (FILL).	
						1		**SAND (SP)**: Yellowish brown [10YR 5/4], loose, moist, poorly graded, 5% gravel, 90% sand, 5% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
C0591348		1:26:00 PM	NR						
						2		at 2.0 ft.: Light olive brown [2.5Y 5/4], loose, moist, 5% gravel, 95% sand, trace fines.	
C0591349		1:32:00 PM	NR			3			
						4		at 4.0 ft.: Light olive brown [2.5Y 5/3], loose, moist, 0% gravel, 100% sand, 0% fines.	
					9.2	5		**CLAY (CH)**: Dark gray [2.5Y N4], very stiff, moist, high plasticity, 0% gravel, 15% sand, 95% fines, oxidation. (FILL).	
					8.7			**SAND (SP)**: Olive brown [2.5Y 4/3], loose, moist, 0% gravel, 100% sand, trace fines. (FILL).	
C0591350		1:34:00 PM	NR			6			
				▽		7		at 6.8 ft.: saturated.	
					6.2	8		**TOTAL DEPTH = 8.0 FEET**	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS

Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B056

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B05'

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,149.8 E 6,043,869.4	13.7 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 7.7ft	Dax Daily	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591352 C0591351		1:00:00 PM	NR		13.2			**GRAVEL with SAND (GW)**: Dark yellowish brown [10YR 4/4], loose, moist, 55% gravel, 45% sand, 0% fines. (FILL).	
								SAND (SP): Dark yellowish brown [10YR 3/6], loose, moist, 10% gravel, 85% sand, 5% fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
						1			
C0591353		1:03:00 PM	NR						
						2		at 2.0 ft.: Light olive brown [2.5Y 5/4], 0% gravel, 100% sand, 0% fines.	
C0591354		1:06:00 PM	NR			3			
						4			
						5			
C0591355		1:11:00 PM	NR	▽		6		at 6.0 ft.: saturated.	
						7			
					5.7	8			
								TOTAL DEPTH = 8.0 FEET	

REGISTERED GEOLOGIST
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Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83)
Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929

HOLE NUMBER C3S023B057

Report form: CTO-059 ALAMEDA BORING LOG Time: 4:59:23 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B05

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISH
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,144.8 E 6,043,963.1	13.0 ft	8.5 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 6.0 ft / 7.0ft	Dax Daily	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
					12.6			**ASPHALT**	
C0591356		11:22:00 AM	NR		12.1			**SAND with GRAVEL (SW)**: Dark brown [7.5YR 3/3], loose, moist, fine to medium grained angular gravel, fine grained sand, (FILL).	Hole backfilled with bentonite-cement grout after completion
						1		**SAND (SP)**: Light brownish gray [10YR 6/2], loose, moist, fine grained sand, homogenous. (FILL).	
C0591357		11:25:00 AM	NR						
						2		at 2.0 ft.: Light olive brown [2.5Y 5/3].	
						3			
C0591358		11:28:00 AM	NR						
						4		at 4.0 ft.: Olive brown [2.5Y 4/3].	
						5			
				▽		6		at 6.0 ft.: saturated.	
C0591359		11:30:00 AM	NR						
						7		at 7.0 ft.: Dark gray [2.5YR N4], medium dense.	
						8			
					4.6			**TOTAL DEPTH = 8.5 FEET**	

REGISTERED GEOLOGIST
CATHIE L. STUMPENHAUS
No. 4451
2/3/04
STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B058

Report Form: CTD-809 ALAMEDA.GPJ LOG Time: 4:59:37 PM

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B059

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-03

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,076.5 E 6,043,963.8	12.3 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 5.3ft	Dax Daily	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591360		9:28:00 AM	NR					**SAND (SP)**: Reddish brown [5YR 5/4], loose, moist, fine grained sand, homogeneous. (FILL).	FID Background = 0.2 ppm
								at 0.5 ft.: Light gray [10YR, 6/1].	
						1			Hole backfilled with bentonite-cement grout after completion
C0591362 C0591361		9:29:00 AM	NR						
						2			
C0591363		9:31:00 AM	NR			3			
						4			
						5			
C0591364		9:35:00 AM	NR			6		at 6.0 ft.: Dark gray [7.5YR, N4], medium dense, very moist, fine grained sand, deposits of small shells.	
								at 6.5 ft.: Light gray [10YR, 6/1], loose, moist.	
				▽		7		at 7.0 ft.: saturated.	
					4.3	8		**TOTAL DEPTH = 8.0 FEET**	

REGISTERED GEOLOGIST · CATHIE L. STUMPENHAUS · No. 4451 · 2/3/04 · STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B059

PROJECT	JOB NUMBER	SHEET NUMBER	HOLE NUMBER
CLEAN 3	23818-059	1 of 1	C3S023B060

DRILLING COMPANY	DRILLING RIG	SITE	LOCATION	BEGUN	FINISHED
Precision Sampling, Inc.	Geoprobe 5400	OU-2A IR Site 23	Alameda Point	8-1-03	8-1-[redacted]

DRILLING METHOD	HOLE DIAMETER	COORDINATES	ELEVATION	TOTAL DEPTH
Direct-Push	2.5 in	N 2,109,058.4 E 6,044,065.5	12.7 ft	8.0 ft

DEPTH / ELEVATION TO WATER	LOGGED BY	REVIEWED BY	ANGLE (from Horiz)	ABANDON DATE
▼ 7.0 ft / 5.7ft	Andrew Liu	C. Stumpenhaus, R.G. 4451	Vertical	8/1/2003

SAMPLE ID	SAMPLER ADVANCE INTERVAL/RECOVERY	SAMPLE TIME	PID READING (PPM)	WATER LEVEL ATD	ELEVATION IN FEET	DEPTH IN FEET	GRAPHICS SYMBOL	DESCRIPTION and CLASSIFICATION	NOTES
C0591365		9:09:00 AM	NR		12.2			**SAND with GRAVEL (SP)**: Dark olive brown [2.5Y 3/3], loose, dry, poorly graded, 25% gravel, 75% sand, trace fines. (FILL).	FID Background = 0.2 ppm
								SAND (SP): Light olive brown [2.5Y 5/4], loose, moist, poorly graded, 0% gravel, 100% sand, trace fines. (FILL).	Hole backfilled with bentonite-cement grout after completion
						1			
C0591366		9:10:00 AM	NR						
						2			
C0591367		9:12:00 AM	NR			3			
						4			
						5			
C0591369 C0591368		9:15:00 AM	NR			6			
				▽		7		at 7.0 ft.: saturated. at 7.3 ft.: Gray [2.5Y N5], loose, wet.	
					4.7	8		**TOTAL DEPTH = 8.0 FEET**	

REGISTERED GEOLOGIST CATHIE L. STUMPENHAUS No. 4451 2/3/04 STATE OF CALIFORNIA

SEE EXPLANATION FOR SYMBOLS AND ABBREVIATIONS	Horizontal Coordinates: CA State Plane Coordinate System Zone 5, NAD83 (1992) (CCS83) Vertical Coordinates: National Geodetic Vertical Datum (NGVD) 1929	HOLE NUMBER C3S023B060

APPENDIX C
IN SITU PERMEABILITY RESULTS

APPENDIX C CONTENTS

Appendix C extracted from:

1. Draft Technical Memorandum Aquifer Test Data Analysis, Naval Air Station Alameda, Alameda, California. Prepared by PRC Environmental Management, Inc., August 6, 1996.
2. OU-2 Remedial Investigation, Alameda Point, Alameda, California. Prepared by Tetra Tech EM Inc., 1999.
3. Field Summary Report, In-situ Chemical Oxidation Pilot Tests at Installation Restoration Sites 9, 11/21, and 16, Alameda Point, Alameda, California. Prepared by Shaw, July 4, 2003.

COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY (CLEAN I)
Northern and Central California, Nevada, and Utah
Contract No. N62474-88-D-5086
Contract Task Order No. 0316

Prepared For

DEPARTMENT OF THE NAVY
Engineering Field Activity West
Naval Facilities Engineering Command
San Bruno, California

TECHNICAL MEMORANDUM
AQUIFER TEST DATA ANALYSIS

NAVAL AIR STATION ALAMEDA
ALAMEDA, CALIFORNIA

DRAFT

August 6, 1996

Prepared By

PRC ENVIRONMENTAL MANAGEMENT, INC.
10670 White Rock Road, Suite 100
Rancho Cordova, CA 95670
916/852-8300

Susan Willoughby, Project Manager

during the performance of the Site 5 aquifer test of nearly 2 feet in magnitude. Pumping well M-05-P was also affected by tidal fluctuations (Appendix A-3).

2.3.6 Constant Rate Aquifer test

Discharge at Site 5 pumping well M-05-P was monitored with a low-flow GPI digital flowmeter and confirmed with timed 1-L graduated cylinder readings. Flowmeter measurements ranged between 0.74 and 0.75 gpm throughout most of the test. Timed 1-L cylinder readings ranged between 0.73 and 0.76 gpm correlating very well with flowmeter readings. No adjustments to the discharge valve were required throughout the 75-hour test.

The Site 5 aquifer test was influenced by tidal fluctuations and rainfall on May 15 (1.69 inches), May 16 (0.26 inches), and May 17 (0.22 inches). However, due to the duration of the Site 5 aquifer test (75 hours) and less external influence to early drawdown data, curve matches were still possible during the analysis of the data. Late drawdown data were mostly masked by tidal influence.

Groundwater at Site 5 was the most saline of all test sites, which is expected considering the direct communication to the Oakland Inner Harbor via the storm drain. Salt was seen precipitating on the ground surface from the discharge water. Salinity in Site 5 discharged groundwater measured 1.41 percent (as compared to San Francisco Bay which measured 2.11 percent) and did not become higher later in the test. In fact, salinity decreased slightly as the test progressed (see Table 3).

2.4 SITE 13 AQUIFER TEST SETUP

In the following subsection, the Site 13 aquifer test setup is described. The description includes discharge setup, observation well setup, pretest monitoring and step drawdown test, background monitoring, tidal monitoring, and constant rate aquifer test.

2.4.1 Discharge Setup

The discharge setup at Site 13 was similar to that used at Sites 1 and 2 (see Section 2.1.1) except that groundwater was discharged via hard pipe directly to a storm drain manhole located about 70 feet east of the pumping well.

2.4.2 Observation Well Setup

Site 13 was set up with four observation wells ranging in distance between 14.76 to 112 feet from the pumping well (see Figure 4). Pumping well M-13-P (a 4-inch PVC well) and observation wells P-13-1, P-13-2, and P-13-3 (2-inch PVC wells) were installed in February 1996 specifically for the Site 13 aquifer test. One additional existing monitoring well was used for observation of the Site 13 test: well MWOR-1 (a shallow well located 112 feet east of the pumping well). As seen in Figure 4, the new observation wells were oriented in three directions (north, east, and southeast) from the pumping well and at increasing distance from the pumping well. Table 1 summarizes the distance of each observation well from the pumping well. As seen in Table 1, the wells were screened to fully penetrate the borehole saturated thickness, which was 32 feet in the pumping well and ranged from 9 to 31 feet in the observation wells.

As at Sites 1, 2, and 5, drawdown or recovery of water levels in observation wells was recorded on an 8-channel Hermit™ 2000 data logger. All other field setup procedures and recording methods were similar to those at Sites 1, 2, and 5.

2.4.3 Pretest Monitoring/Step Drawdown Test

During development of the pumping and observation wells in February 1996, well M-13-P was developed at an average rate of 5.25 gpm. Development discharge rates in observation wells ranged from 2.9 to 3.1 gpm. The anticipated discharge rate at pumping well M-13-P was 7 gpm. Pretest water levels were not recorded for a significant length of time prior to the start of the Site 13 step drawdown test. The step drawdown test was performed in well M-13-P on May 4, 1996. Recovery of water levels following the step drawdown test was performed for 33 hours (prior to the start of the Site 13 aquifer test) and was also monitored in all observation and the pumping wells. This recovery

period was plotted in the field for all four observation and the pumping wells. These plots (elapsed time versus drawdown) exhibit extremely similar curves indicative of tidal influence. These plots are not included in Appendix A-4; however, plots of the 35-hour recovery period following the Site 13 aquifer test are included. Following is a summary of the step drawdown results for Site 13.

STEP DRAWDOWN TEST RESULTS FOR SITE 13

Step No.	Pumping Rate (gpm)	Duration (minutes)	Results (feet of drawdown for pumping well only)
1	2	60	Maintained flow, steady but minimal drawdown (3.87 feet)
2	4	120	Steady continued drawdown (7.98 feet)
3	6	120	Steady continued drawdown (12.45 feet)
4	8	120	Steady continued drawdown (20.83 feet) projected to approach transducer/pump level
5	7	340	Water level stabilizes at 15.96 feet
6	0	1,980 (33 hours)	Recovery in M-13-P to within 0.09 feet of pretest water level; recovery at other observation wells to within 0.08 feet

2.4.4 Background Monitoring

The background well for Site 13 was monitoring well MW-1. It is located approximately 172 feet southeast of Site 13 pumping well M-13-P (Figure 4). Appendix A-4 contains the background plot of well MW-1. This 6-day plot exhibits erratic but correlatable data indicative of both tidal influence and drawdown due to the Site 13 aquifer test. Approximately 0.18 feet of drawdown is exhibited in this plot with tidal influence ranging 0.04 feet between peak highs and lows.

2.4.5 Tidal Monitoring

Tidal monitoring was performed at Port Services Seaplane Lagoon during the performance of the Site 13 aquifer test, the plot of which is included in Appendix A-4. Tidal effects were also monitored in Site 13 observation wells during the recovery period following the Site 13 step drawdown test (33 hours) and during the recovery period following the Site 13 aquifer test (35 hours). Plots of all observation wells during the aquifer test recovery period are included in Appendix A-4. As seen in the

35-hour recovery plot, tidal influence at Site 13 becomes apparent at 500 minutes into the recovery period and is observed in all Site 13 wells. However, the magnitude of tidal influence at Site 13 is only about 0.2 feet in all wells. This is consistent with the magnitude observed during the 33-hour step drawdown recovery period.

2.4.6 Constant Rate Aquifer test

Discharge at Site 13 pumping well M-13-P was very consistent for each measurement method, and consistent average discharge was maintained. A minor adjustment of the discharge valve was made 3 hours into the test. Orifice meter readings were 7.0 gpm consistently throughout the test. Flowmeter readings ranged from 6.78 gpm to 6.91 gpm consistently throughout the test. Timed-bucket readings ranged from 6.85 to 7.2 gpm.

The Site 13 aquifer test produced the most stable long-term response observed in all test sites. Consistent pumping produced nearly flat graphs (indicating stabilized drawdown) (see Appendix A-4) starting at about 500 minutes into the test. This type of aquifer response suggests a source of recharge either vertically from the deeper water-bearing zone or laterally from a boundary. This response was unlike Sites 1, 2, and possibly 5 in which a continuously increased drawdown was observed in the late test data.

3.0 AQUIFER TEST ANALYSIS

This section briefly explains the selection of the analytical approaches for aquifer test data analysis, discusses aquifer test data interpretation and hydraulic parameter calculation (curve matches), and summarizes the aquifer tests analysis.

3.1 SELECTION OF ANALYTICAL METHOD (MODELS)

The first step of aquifer test analysis is to select analytical models (type curves) that are applicable to the site-specific hydrology. Four aquifer tests were conducted at different portions of NAS Alameda (Sites 1, 2, 5 and 13), at which different hydrogeologic environments exist. In addition, the scales

(pumping rate and test duration) of the tests were different, and the testing scale can effect the drawdown responses observed during each test.

A five-step procedure is used to select appropriate analytical models and interpret the test data. These five steps are as follows:

1. Identify alternative analytical models corresponding to the hydrogeologic conceptual models and aquifer test environment

2. Evaluate the validity of the assumptions of each analytical model

3. Evaluate the correspondence between aquifer test data and theoretical type curves

4. Evaluate the applicability of alternative analytical models to the test data using various graphical plots

5. Estimate aquifer hydraulic parameters using applicable models (through type curve matching)

The hydrogeologic conceptual models of NAS Alameda are summarized in the "*Technical Memorandum: Protocol for Contaminant Fate and Transport Modeling. Naval Air Station Alameda*" (PRC 1996) and "*Remedial Investigation/Feasibility Study Aquifer Test Work Plan. Naval Air Station Alameda*" (PRC 1995). The following information and hydrogeologic interpretations are considered in the aquifer test data analysis:

- The water-bearing zones tested are generally unconfined even though semiconfined hydraulic conditions may exist at certain locations.

- Two water-bearing zones occur at Sites 1, 2, and 5. The first water-bearing zone is the target of the aquifer tests.

- A relatively thick ~~shallow water-bearing~~ zone exists at Site 13. The pumping well and the observation wells are completed in the upper portion of the aquifer. Thin layers of less permeable silt or silty sand may occur at different depths, which may behave as a thin underlying aquitard for the test zone.

- The tested water-bearing zone is a porus medium with laminar flow conditions.

- The top and bottom of the water-bearing zones are generally horizontal. The natural groundwater gradients are small enough that the initial water table (before pumping) can be assumed to be flat.

- The pumping and observation wells fully penetrate the target water-bearing zones.
- Drawdown during the aquifer tests is significantly less than the total water-bearing zone saturated thickness.
- There are no known lateral boundaries near test Sites 1, 2, and 13. San Francisco Bay, Seaplane Lagoon, and Oakland Inner Harbor are at a distance from the test sites. At Site 13, the Jet Engine Test Cell Exhaust Building foundation may extend below the water table (Figure 5), which may or may not form a boundary for Site 13.
- Tidal influence may or may not be significant during the aquifer tests.

Based on the site hydrogeologic conceptual model and aquifer test configuration for each site, five alternative models were selected to analyze the test data. These models include (1) Cooper-Jacob straightline (simplified Theis) (Cooper and Jacob 1946), (2) Theis unsteady flow (Theis 1935), (3) Neuman delayed yield (Neuman 1975), (4) Hantush leaky aquifer with storage in aquitard (Hantush 1960), and (5) Hantush leaky aquifer without storage in aquitard (Hantush and Jacob 1955).

Of the five models, the Neuman delayed yield model is most applicable to the site conditions and test data. Therefore, it is considered the primary data interpretation method to estimate aquifer hydraulic parameters. Theis curve match and Cooper-Jacob model are applied to evaluate the drawdown data characteristics, the early or late data deviations, and the applicability of other more sophisticated models. Hantush with and without storage in aquitard models are applied when the data indicate a leaky condition may exist and a characteristic leaky drawdown response is observed.

3.2 AQUIFER TEST DATA INTERPRETATION AND PARAMETER CALCULATION

The aquifer test data analysis is focused on the drawdown data analysis at this time. Data interpretation (type curve match) and aquifer hydraulic parameter calculation are conducted using AQTESOLV™, an aquifer test analysis computer software developed by Geraghty and Miller, Inc. (Duffield and Rumbaugh 1991). The software includes a group of computer programs to generate different type curves of the analytical models, to allow users to match the test data with type curves by visual match (manual estimation) or to calculate aquifer hydraulic parameters by statistical estimation methods (automatic estimation).

The aquifer test data are interpreted through the graphical curve matching technique. The visual type curve match provides a more consistent and accurate "best fit" between the test data and type curves than the automatic statistical parameter estimation because the automatic estimation (the least-square non-linear regression analysis) will bias on late time (large drawdown) data. In general, the test data fit the type curves very well, indicating the selected analytical models are applicable to the site hydrogeologic conditions and appropriate for the test data analysis.

Four different analytical models are applied to the test data: Theis, Neuman delayed yield, Hantush leaky aquifer with and without storage in aquitard. The Cooper-Jacob model, simplified from the Theis equation, is considered to be the same as Theis with some restrictions (for example, dimensionless parameter u is less than or equal to 0.05) on its application. A Theis curve match is always first applied because the Theis equation is the basis of many other analytical models. For parameter estimation, the Theis curve match is mainly applied to the early test data since the early drawdown should not be significantly impacted by delayed yield response and leaky aquifer conditions.

3.2.1 Site 1

Site 1 aquifer test data plots and type curve matches are presented in Appendix B-1. Type curve matches of three models (Theis, Neuman delayed yield, and Hantush with storage in aquitard) are presented. Semilog plots of drawdown versus time for the Cooper-Jacob analysis are also shown for comparison.

Site 1 test data are best analyzed using Neuman delayed yield and Hantush leaky aquifer with storage in aquitard models. First, the site hydrogeology is consistent with the analytical model assumptions. Second, the drawdown data plots (Appendix B-1) show that the data match closely with the Neuman delayed yield and Hantush leaky aquifer with storage type curves. Application of the Hantush with storage model may be interpreted to show that the pumping aquifer (first water-bearing zone) is recharging from the underlying bay sediment aquitard during the test.

Aquifer hydraulic parameter estimation is primarily based on the log-log type curve match of the three models. These parameter estimates are presented in Table 5. The Cooper-Jacob semilog method generally provides less accurate estimates because the straightline match is non-unique (Appendix B-1)

of site hydrogeology that a relatively thick layer of bay sediment underlies the target water-bearing zone, the Hantush leaky aquifer with storage model may be more applicable.

The Site 5 aquifer test provides the lowest quality of data because of the significant tidal influence on drawdown responses. This is also because the aquifer is relatively less transmissive at Site 5 and testing stress applied to the aquifer (pumping rate and drawdown magnitude) is relatively small. It appears that early data are less impacted by the tidal influence. The test data analysis is generally based on the early data. The data plots and type curve matches are presented in Appendix B-3.

Four models (Theis, Neuman delayed yield, Hantush with and without storage) are all used for graphical type curve matches and aquifer parameter estimations. The data analysis results for aquifer transmissivity and storativity, presented in Table 5, are consistent even though the different type curves match the late data differently.

3.2.4 Site 13

Site 13 aquifer test drawdown versus time plots and type curve matches are presented in Appendix B-4. Theis, Neuman delayed yield, and Hantush leaky without storage models are applied for aquifer hydraulic parameter estimation. The analysis results are listed in Table 5.

Site 13 data were mainly analyzed using the Neuman delayed yield and the Hantush leaky aquifer without storage models. Based on the site hydrogeology (unconfined shallow water-bearing zone) and the drawdown data curve match (Appendix B-4), the Neuman model is clearly applicable for the aquifer test data analysis at Site 13. However, the hydrogeologic basis on which the Hantush leaky without storage model is applicable is not obvious. Generally, the bay sediment aquitard at the southeastern portion of the base is thin or absent so the first and second water-bearing zones identified at other locations of the base are combined as one shallow aquifer (PRC 1996). Actually, thin layers of bay sediments or fine-grained deposits (silt or silty sand) do exist between the upper (testing portion) and lower portions of the shallow water-bearing zone (PRC 1995, 1996). These thin layers of fine-grained sediments likely behave as an aquitard without much storage. The lower portion of the shallow water-bearing zone then behaves as an underlying (unpumped) aquifer.

The test data closely match with both Neuman delayed yield and Hantush leaky without storage type curves. The aquifer parameter estimations using different analytical models and different data sets are generally consistent. The Cooper-Jacob straightline method provides higher transmissivity values than the other methods. The results from the Cooper-Jacob method are presented in Table 5 for reference purpose only.

3.3 SUMMARY OF RESULTS

The aquifer test analysis results are summarized in Table 6. For each aquifer test, ranges of the aquifer hydraulic parameters (transmissivity, storativity, and specific yield) estimated by different analytical methods for four observation wells are presented. A method average and site average (arithmetic) of parameter values are also presented. Results from the Cooper-Jacob method are not included because the quality of data match is poor and nonunique; the results are believed to be less dependable than those from the other four methods.

The transmissivity ranges from 0.22 to 0.65 square feet per minute (ft^2/min) with an average of 0.34 ft^2/min for Site 1. The average transmissivity at Site 2 is 0.3 ft^2/min with a range from 0.17 to 0.65 ft^2/min. For Sites 5 and 13, the average transmissivities are 0.11 and 0.1 ft^2/min with ranges from 0.07 to 0.16 and from 0.06 to 0.19, respectively. The average aquifer storativities at the four sites (Sites 1, 2, 5, 13) are 0.0018, 0.005, 0.007, and 0.0008, respectively. The specific yield values are 0.05, 0.12, 0.2, and 0.12 for the four sites.

4.0 CONCLUSION

Four aquifer tests were successfully conducted at Sites 1, 2, 5, and 13. The collected drawdown data are of good quality, which is essential for the data interpretation and aquifer hydraulic parameter estimation. The drawdown responses from the observation wells are consistent with the previous understanding of the site hydrogeology; therefore, the aquifer tests confirm the preliminary hydrogeologic conceptual models developed earlier for determining contaminant fate and transport modeling protocol.

Tidal influence was not observed in the pumping and observation wells completed in the target water-bearing zone before and during the aquifer tests at Sites 1 and 2. Tidal fluctuations were only observed at the second water-bearing zone well and at locations near the San Francisco Bay during the Sites 1 and 2 aquifer tests. Minimal tidal impact may be reflected in the Site 13 test data. Tidal influence was clearly observed during the aquifer test at Site 5. This observation is partially due to the low pumping rate and corresponding low drawdowns during the Site 5 test and partially due to the connection of Site 5 to Oakland Inner Harbor through an underground stormdrain. No tidal correction is needed for the drawdown data of Site 1, 2, and 13 tests. For Site 5 test data, tidal correction could be applied, but it is believed to be unnecessary. Tidal correction can be done if further data analysis is required.

Aquifer test data interpretation and hydraulic parameter estimation are completed by mainly four analytical models: Theis unsteady flow, Neuman delayed yield, Hantush leaky aquifer with storage in aquitard, and Hantush leaky aquifer without storage in aquitard. A log-log type-curve match method was used for parameter calculation.

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TABLE 1

AQUIFER TEST PUMPING WELL SUMMARY
NAS ALAMEDA

Site No.	Pumping Well	Well Diameter (Inches)	Screened Interval (ft bgs)	Depth to Groundwater	Depth to Pump (ft bgs)	Borehole Saturated Thickness (ft)	Pumping Rate (gpm)	Maximum Observed Drawdown (ft)	Pumping Test Start Date/ Time	Pumping Test Duration	Total Gallons Pumped	Recovery Test Duration	Recovery Test Stop Date/time
1	M-01-P	4	5 - 20	2.4	18	17	11.5	14.60	4/19/96 1430	3000 MIN / 50 HRS	34756	2380 MIN / 40 HRS	4/23/96 0935
2	M-02-P	4	3 - 23	2.9	21	16	4.5	12.82	4/29/96 1100	4480 MIN / 75 HRS	19703	2500 MIN / 42 HRS	5/4/96 0806
5	M-05-P	4	5 - 15	7.2	14.6	11	0.75	4.35	5/13/96 1000	4480 MIN / 75 HRS	3341.6	2620 MIN / 44 HRS	5/18/96 1110
13	M-13-P	4	10 - 35	4.2	34.3	32	7.0	16.32	5/6/96 0900	3580 MIN / 60 HRS	24511	2140 MIN / 35 HRS	5/10/96 0916

TABLE 2

AQUIFER TEST OBSERVATION WELL SUMMARY
NAS ALAMEDA

SITE NO.	OBSERVATION WELL	WELL DIAMETER (INCHES)	DISTANCE FROM PUMPING WELL (FT)	MAXIMUM OBSERVED DRAWDOWN (FT)	SCREENED INTERVAL (FT BGS)	BOREHOLE SATURATED THICKNESS (FT)	OBSERVATION WELL EXHIBITED TIDAL INFLUENCE	AQUIFER TEST BACKGROUND WELLS
1	P-01-1	2	10.4	2.60	4.5 - 19.5	17 +	NO	M-02-P TIDAL MONITORING AT OAKLAND INNER HARBOR
	P-01-2	2	20.5	1.94	4 - 19	17 +	NO	
	P-01-3	2	60.4	1.23	4 - 19	17 +	NO	
	M031-A	2	25.6	1.89	2.5 - 12.5	9 +	NO	
	M031-C[1]	3	14.2	0.42[3]	77.5 - 87.5	25 +	YES	
	M027-E[2]	3	384	0.35[3]	----	----	YES	
2	P-02-1	2	11.25	0.91	4 - 24	25 +	NO	M-014-A TIDAL MONITORING AT OAKLAND INNER HARBOR
	P-02-2	2	18.45	0.80	5 - 25	20 +	NO	
	P-02-3	2	59.2	0.45	6 - 26	19.5	NO	
	M-105-A	2	11.9	1.11	5.5 - 15.5	12.5	NO	
	M-105-B[1]	2	26.5	0.097[3]	58.5 - 68.5	60	YES	
5	P-05-1	2	10.4	0.29	5 - 15	9.5	YES	M-05-08 TIDAL MONITORING AT SEAPLANE LAGOON
	P-05-2	2	21.2	0.18	5 - 15	10.5	YES	
	P-05-3	2	59.3	0.15	5 - 15	9.5	YES	
	MW-05-1	2	16.1	0.19	4 - 14	6	YES	
	D-05-1[1]	3	12.2	0.07[3]	60 - 70	63.5	YES	
13	P-13-1	2	14.8	3.87	10 - 35	27.5	YES	MW-1 TIDAL MONITORING AT SEAPLANE LAGOON
	P-13-2	2	20.4	3.22	10 - 35	31	YES	
	P-13-3	2	52.7	2.02	10 - 35	26	YES	
	MWOR-1	2	112	1.12	5 - 15	9	YES	

Notes:

[1] Deep aquifer monitoring well - not used in test analysis
[2] Monitoring well did not exhibit drawdown from pumping well
[3] Response was due to tidal influence, not from pumping

TABLE 3

GROUNDWATER QUALITY MEASURED DURING AQUIFER TESTS
NAS ALAMEDA

SITE NO.	VOLUME DISCHARGED (GALLONS)	GROUNDWATER PARAMETERS					
		pH	CONDUCTIVITY (mS/cm)	SALINITY (%)	TEMPERATURE (Centigrade)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTU)
1	4,086	6.64	2.57	0.12	16.9	10.57	0
	15,280	7.35	2.54	0.12	16.7	3.40	0
	20,525	7.60	2.63	0.12	15.9	3.00	0
	28,870	7.61	2.50	0.12	17.9	4.75	0
	34,350	7.30	2.55	0.12	17.4	6.01	2
2	6,806	7.57	1.89	0.08	19.1	3.41	3
	12,470	7.61	1.87	0.08	18.8	3.31	0
	18,877	7.70	1.83	0.08	18.3	4.15	0
	19,640	7.92	1.80	0.08	19.1	4.19	0
5	123	7.02	28.6	1.77	21.3	1.85	0
	540	7.02	23.3	1.41	19.6	1.60	2
	1,620	7.05	21.8	1.32	19.7	1.47	3
	3341.6	7.04	21.8	1.32	20.1	2.37	10
13	490	6.73	5.38	0.28	18.7	2.39	0
	9,870	6.69	5.54	0.29	17.8	2.60	0
	19,717	6.67	5.59	0.29	17.7	2.65	0
	24,403	6.77	5.54	0.29	18.4	4.79	0

Notes:

1 All measurements made with Horiba U-10 Water Quality Probe, S.N. 307018
2 Calibration of Horiba U-10 was performed each day of use.

AQUIFER TEST ANALYSIS RESULTS
NAS ALAMEDA

TEST SITE	PUMPING AND OBSERVATION WELL NO.	RADIUS (ft)	AQUIFER TEST ANALYSIS RESULTS													
			COOPER-JACOB		THEIS		NEUMAN DELAYED YIELD				HANTUSH (LEAKY WITHOUT STORAGE)			HANTUSH (LEAKY WITH STORAGE)		
			T[a]	S[b]	T[a]	S[b]	T[a]	S[b]	Sy[c]	η[d]	T[a]	S[b]	r/B[e]	T[a]	S[b]	β[f]
1	M-01-P[g]	0.167	0.29	0.0001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	P-01-1	10.4	0.42	0.0018	0.29	0.0026	0.22	0.0026	0.1	0.01	NA	NA	NA	0.26	0.0023	0.06
	P-01-2	20.5	0.55	0.0012	0.27	0.0018	0.26	0.0015	0.05	0.02	NA	NA	NA	0.29	0.0014	0.1
	P-01-3	60.4	0.7	0.0015	0.65	0.0019	0.53	0.0017	0.005	0.01	NA	NA	NA	0.41	0.0014	0.12
	M031-A	25.6	0.5	0.0009	0.23	0.0013	0.27	0.0013	0.05	0.018	NA	NA	NA	0.36	0.0013	0.04
2	M-02-P[g]	0.167	0.091	8.31E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	P-02-1	11.25	0.52	0.007	0.25	0.012	0.25	0.0045	0.11	0.06	NA	NA	NA	NA	NA	NA
	P-02-2	18.45	0.72	0.0014	0.3	0.006	0.25	0.0045	0.11	0.06	NA	NA	NA	NA	NA	NA
	P-02-3	59.2	0.78	0.003	0.65	0.0024	0.32	0.0014	0.046	0.35	NA	NA	NA	NA	NA	NA
	M-105-A	11.9	0.4	0.0035	0.18	0.0048	0.17	0.0045	0.23	0.035	NA	NA	NA	NA	NA	NA
5	M-05-P[g]	0.167	0.0094	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	P-05-1	10.4	0.15	0.006	0.1	0.01	0.08	0.009	0.24	0.03	0.07	0.009	0.4	0.095	0.009	0.05
	P-05-2	21.2	0.17	0.009	0.2	0.008	0.13	0.0065	0.2	0.04	0.1	0.007	0.5	0.16	0.006	0.1
	P-05-3	59.4	0.18	0.005	0.13	0.007	0.094	0.0056	0.1	0.1	0.095	0.006	0.6	0.11	0.005	0.15
	MW05-1	16.1	0.21	0.0044	0.11	0.007	0.1	0.006	0.25	0.05	0.1	0.007	0.4	0.13	0.006	0.06
13	M-13-P[g]	0.167	0.049	0.014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	P-13-1	14.8	0.1	0.0008	0.073	0.0012	0.06	0.001	0.22	0.02	0.07	0.0012	0.18	NA	NA	NA
	P-13-2	20.4	0.12	0.0007	0.09	0.0011	0.07	0.0009	0.15	0.017	0.09	0.001	0.18	NA	NA	NA
	P-13-3	52.7	0.18	0.0004	0.11	0.0006	0.095	0.0005	0.06	0.042	0.11	0.0005	0.3	NA	NA	NA
	MWOR-1	112	0.26	0.0005	0.195	0.0006	0.08	0.0004	0.035	0.3	0.17	0.0006	0.4	NA	NA	NA

Notes:

[a] T= Transmissivity in ft^2/minute
[b] S= Storage Coefficient (dimensionless)
[c] S_y= Specific Yield (dimensionless)
[d] η = Neuman delayed yield factor (dimensionless)
[e] r/B = Hantush leaky factor without storage in aquitard (dimensionless)
[f] β = Hantush leakage factor with storage in aquitard (dimensionless)
[g] Pumping well (4 inch diameter)
NA = test method not applicable

All parameters are estimated using drawdown data.

TABLE 6

AQUIFER TEST ANALYSIS SUMMARY
NAS ALAMEDA

SITE NO.	ANALYSIS METHOD	TRANSMISSIVITY (ft^2/minute) METHOD RANGE	METHOD AVERAGE	SITE RANGE	SITE AVERAGE	STORAGE COEFFICIENT METHOD RANGE	METHOD AVERAGE	SITE RANGE	SITE AVERAGE	SPECIFIC YIELD METHOD RANGE	METHOD AVERAGE
1	THEIS	0.23-0.65	0.36	0.22-0.65	@ 20' K= 0.34	0.0013-0.0026	0.00190	0.0013-0.0026	0.0018	NA	NA
	NEUMAN	0.22-0.53	0.32			0.0013-0.0026	0.00178			0.005-0.1	0.05
	HANTUSH WITH STORAGE	0.26-0.41	0.33		0.017	0.0013-0.0023	0.00160			NA	NA
2	THEIS	0.18-0.65	0.345	0.17-0.65	@ 23' 0.3 K= 6.01	0.0024-0.012	0.00630	0.0014-0.012	0.0050	NA	NA
	NEUMAN	0.17-0.32	0.2475			0.0014-0.0045	0.00373			0.046-0.23	0.12
5	THEIS	0.1-0.2	0.135	0.07-0.16	0.11 @ 15' K= 0.007	0.007-0.01	0.00800	0.005-0.01	0.007131	NA	NA
	NEUMAN	0.08-0.13	0.101			0.0056-0.009	0.00678			0.1-0.25	0.2
	HANTUSH W/O STORAGE	0.07-0.1	0.09125			0.006-0.009	0.00725			NA	NA
	HANTUSH WITH STORAGE	0.095-0.16	0.12375			0.005-0.009	0.00650			NA	NA
13	THEIS	0.073-0.195	0.117	0.06-0.19	@ 90' 0.1 K= 0.001	0.0006-0.0012	0.00088	0.0004-0.0012	0.0008	NA	NA
	NEUMAN	0.06-0.095	0.07625			0.0004-0.001	0.00070			0.035-0.22	0.12
	HANTUSH W/O STORAGE	0.07-0.17	0.11			0.0005-0.0012	0.00083			NA	NA

1.0 /day

Notes:

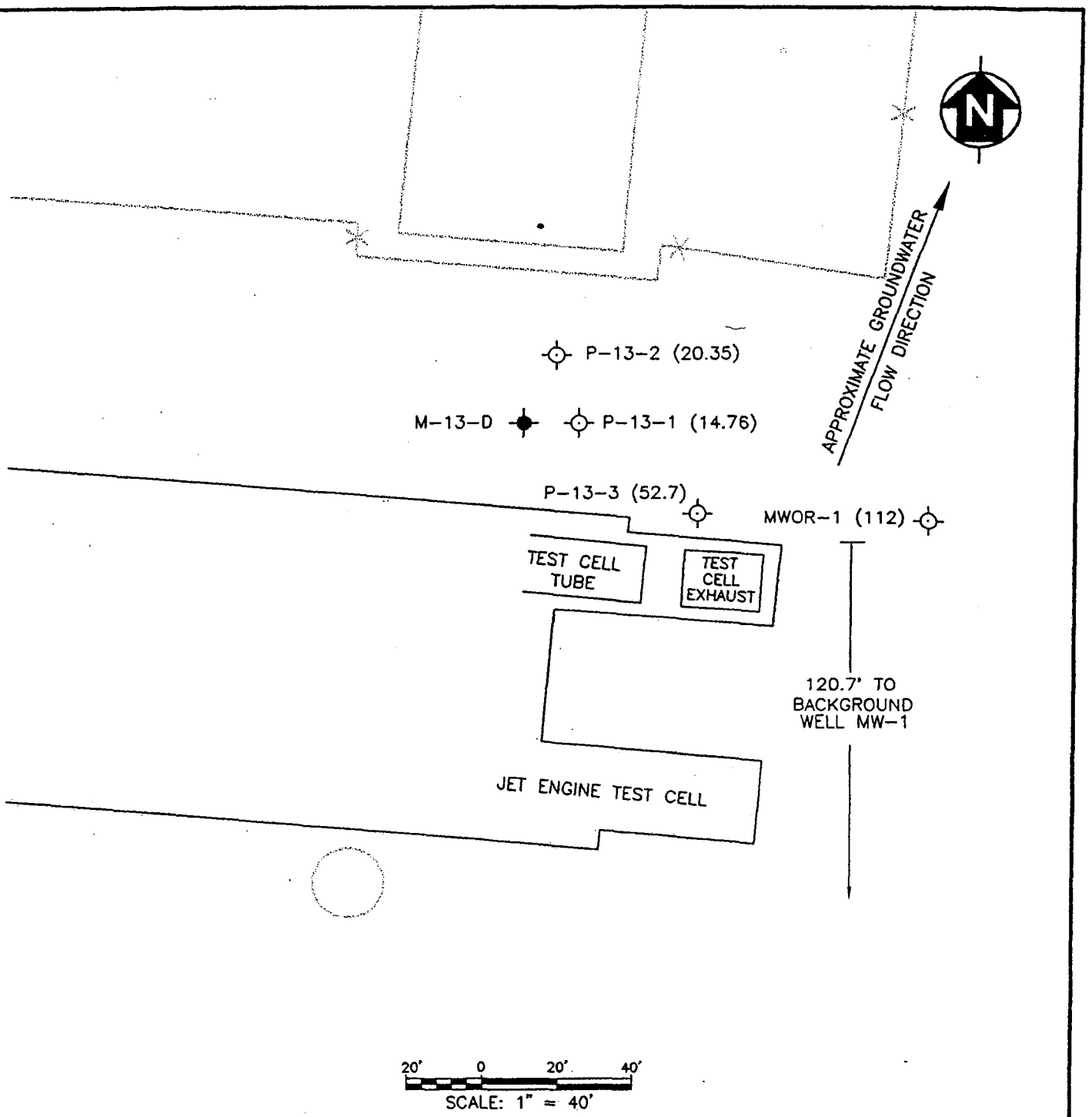
Pumping well results and results from Cooper-Jacob method are not included in this summary

NA Not Applicable
T Transmissivity in ft^2/minute
S Storage Coefficient (dimensionless)
Sy Specific Yield (dimensionless)

10.08 ft/day

$\frac{ft^2/min}{ft}$

ft/min



NOTE:

1. WELL ORIENTATION WITH RESPECT TO NORTH IS APPROXIMATE (WELLS CURRENTLY BEING SURVEYED) HOWEVER, DISTANCES SHOWN BETWEEN WELLS WAS MEASURED UNLESS INDICATED OTHERWISE.
2. TIDAL MONITORING PERFORMED AT SEAPLANE LAGOON.

LEGEND

PUMPING WELL

OBSERVATION WELL (DISTANCE FROM PUMPING WELL IN FEET)

FIGURE 5
NAVAL AIR STATION ALAMEDA
ALAMEDA, CALIFORNIA
SITE 13 AQUIFER TEST
PUMPING, OBSERVATION, AND
BACKGROUND WELL LOCATIONS

DATE: 08/05/96 BOB DN FILE: C:\B\ALAMEDA\PSSITES.DWG