

20 August 2002

Mr. Barney Chan  
Alameda County Health Agency  
Division of Environmental Protection  
1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor  
Alameda, California 94502

RE: Proposed well abandonments at the Nestle Oakland Facility located at 1310 14<sup>th</sup> Street, Oakland, CA

Dear Mr. Chan:

As agreed in the 26 June 2002 meeting attended by you (representatives of the Alameda County Health Agency [ACHA]), Chuck Headlee (Regional Water Quality Control Board), Binayak Acharya (Nestle USA, Inc. [Nestle]), and Doug Oram and Brent Searcy (ETIC Engineering, Inc. [ETIC]), Nestle is proposing the abandonment of 128 additional wells at the above-referenced site. The wells proposed for abandonment are no longer needed for monitoring and gauging purposes at the site. It was also agreed, during the above-mentioned meeting, that a set of 10 wells would be retained in the event that future groundwater monitoring at the site is required.

Please refer to ETIC's January 2002 Groundwater Monitoring Report, Third and Fourth Quarters 2001 for historical data regarding groundwater concentrations and LPH thicknesses for the wells proposed for abandonment.

The following information is attached in support of this proposal for well abandonments at the site:

- Listing of the 128 wells proposed for abandonment and their well construction details (where available)
- Site map showing locations of wells proposed for abandonment
- Boring logs for wells proposed for abandonment (where available)


Complete well construction details and boring logs are not available for many of the wells proposed for abandonment. Approximate total depths for most wells can be estimated based on historical and typical well installation practices known to have been employed during previous drilling at the site. Well abandonment equipment and procedures will be modified appropriately for wells with unknown or approximate well constructions and depths, to ensure that each well is properly abandoned.

ETIC has used available records of well installation and construction in establishing the location and identity of the 128 wells proposed for abandonment. Given the number of wells historically

installed at the site, it is possible that additional wells may be identified during the proposed abandonment activities. Any such wells, which are not one of the 10 wells to be retained, may be abandoned during this operation if adequate well construction details can be ascertained in the field and the appropriate equipment is available for proper abandonment. Details of any additional abandoned wells will be recorded and reported as part of the post-abandonment submittal of Department of Water Resources forms.

Upon your approval of this well abandonment plan, ETIC will schedule the fieldwork with a licensed driller and apprise the ACHA of the schedule for these activities. We appreciate your time and consideration in this matter. If you have any questions or need any additional information, please do not hesitate to contact Doug Oram or me at ETIC at (925) 602-4710.

Sincerely,



Brent Searcy  
Project Manager

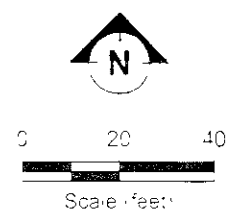
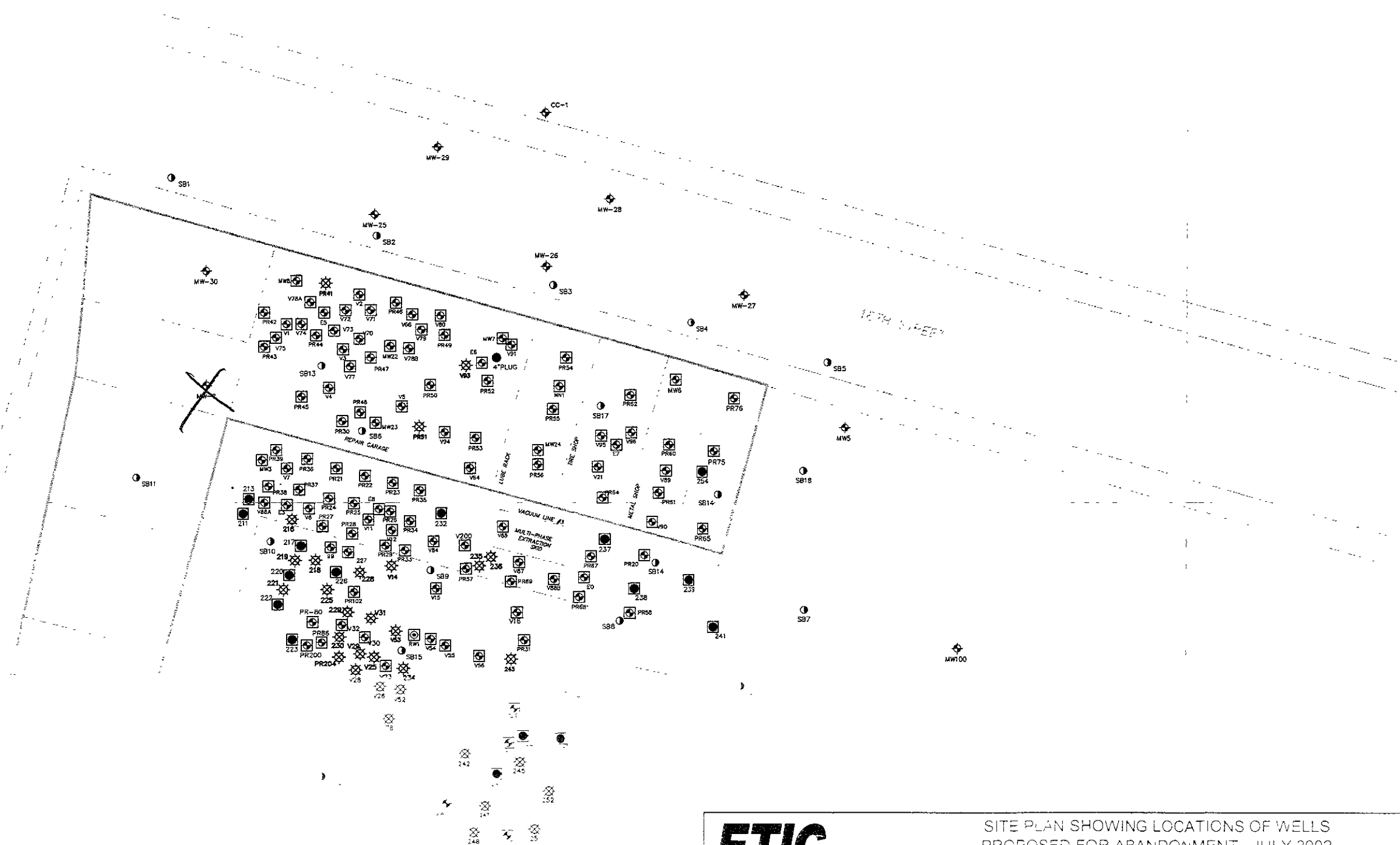
Attachments

cc: Binayak Acharya, Nestle USA, Inc.  
Chuck Headlee, Regional Water Quality Control Board

- LEGEND:**
- ◆ GROUNDWATER MONITORING AND VAPOR EXTRACTION WELLS
  - ⊕ LARGE DIAMETER GROUNDWATER RECOVERY WELL
  - WELL OF UNKNOWN CONSTRUCTION
  - SOIL BORING LOCATION
  - ⊗ ABANDONED GROUNDWATER MONITORING WELL
  - WELL PROPOSED FOR ABANDONMENT

STREET A

14TH STREET



**ETIC**  
Engineering, Inc.

SITE PLAN SHOWING LOCATIONS OF WELLS  
PROPOSED FOR ABANDONMENT - JULY 2002  
FORMER NESTLE OAKLAND FACILITY  
1310 14th STREET, OAKLAND, CALIFORNIA

FIGURE

**1**

NESTLE/OAKLAND  
WELLS PROPOSED FOR ABANDONMENT

Well Name	Casing Diameter (in.)	Total Casing Depth (ft. bgs)	Top of Screen (ft. bgs)	Bottom of Screen (ft. bgs)	Length of Screened Interval (ft.)	Screen Slot Size (in.)	Filter Pack Type	Seal Type	Seal Top Depth (ft. bgs)	Seal Base Depth (ft. bgs)
99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
213	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
217	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
222	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
223	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
226	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
227	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
237	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
239	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
241	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
244	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
246	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
253	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E-0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E-7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	4.0	25.0	7.0	25.0	18.0	0.030	#3 Sand	Bentonite	4.0	5.0
MW-33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	2.0	17.0	7.0	17.0	10.0	0.030	#3 Sand	Bentonite	4.0	5.0
MW-7	2.0	17.0	7.0	17.0	10.0	0.030	#3 Sand	Bentonite	4.0	5.0
MW-8	2.0	17.0	7.5	17.0	9.5	0.030	#3 Sand	Bentonite	4.0	5.0
NN-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PR-102	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PR-12	2.0	15.5	8.0	15.5	7.5	0.125	CAS	Bentonite	4.0	5.0
PR-20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PR-200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PR-21	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-22	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-23	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-24	NA	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-25	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-26	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-27	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-28	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-29	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PR-31	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-32	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0

NESTLE/OAKLAND  
WELLS PROPOSED FOR ABANDONMENT

Well Name	Casing Diameter (in.)	Total Casing Depth (ft. bgs)	Top of Screen (ft. bgs)	Bottom of Screen (ft. bgs)	Length of Screened Interval (ft.)	Screen Slot Size (in.)	Filter Pack Type	Seal Type	Seal Top Depth (ft. bgs)	Seal Base Depth (ft. bgs)
PR-33	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-34	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-35	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-36	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-37	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-38	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-39	2.0	15.0	8.0	15.0	7.0	0.125	CAS	Bentonite	4.0	6.0
PR-42	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-43	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-44	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-45	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-46	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-47	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-48	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-49	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-50	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-52	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-53	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-54	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-55	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-56	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-57	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-58	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-60	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-61	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-62	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-64	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-65	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-67	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-68	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-69	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-75	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-76	2.0	15.0	5.0	15.0	10.0	0.030	#3 Sand	Bentonite	3.0	4.0
PR-80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PR-86	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RW-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

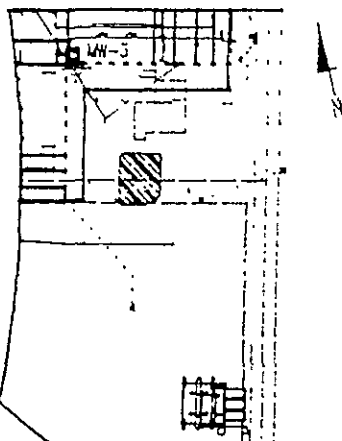
NESTLE/OAKLAND  
WELLS PROPOSED FOR ABANDONMENT

Well Name	Casing Diameter (in.)	Total Casing Depth (ft. bgs)	Top of Screen (ft. bgs)	Bottom of Screen (ft. bgs)	Length of Screened Interval (ft.)	Screen Slot Size (in.)	Filter Pack Type	Seal Type	Seal Top Depth (ft. bgs)	Seal Base Depth (ft. bgs)
V-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-56	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-77	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-78A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-78B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-79	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-84	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-88A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-88B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-89	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
V-96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

CAS = Coarse aquarium sand.

NA = Data not available.

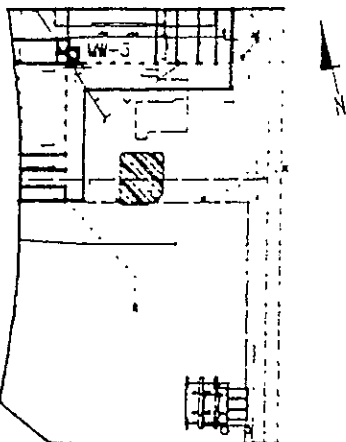
**Boring Logs**  
**(where available)**

LOCATION OF BORING 	SITE/LOCATION CARMATION/OAKLAND			BORING NO. MW-3	
	PROJECT NO. 004-68-059			SHEET 1 OF 2	
	WATER LEVEL			DRILLER	
	TIME			START	FINISH
	DATE			TIME	TIME
	CASING DEPTH			1:15	4:20
	DRILLING CONTRACTOR PC EXPLORATION			DATE	DATE
	DRILLER MIKE MOORE			3-21-89	3-21-89
	DRILLING METHOD HOLLOW STEM AUGER			LOGGER ERIC HOLM	
	SAMPLING METHOD MPS				
N/S N2813.2		E/W E3114.7	ELEV. 14.66		
BORING DIAMETER: 10 INCHES			WELL CASING DIAMETER: 4 INCHES		
REVIEWED BY:			DATE		

DIST. FROM SURF.	WELL CONST.		LEGEND	TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	STIMULUS							
1								GM	ASPHALT
2								GM	GRAVEL
3		4% BENTONITE CEMENT SLURRY				X	5		
4	BLANK			150	3829	X	6		SILTY FINE SAND- GREENISH GRAY, MAFICS, QUARTZ, SLIGHTLY MOIST, NON-PLASTIC, MEDIUM DENSE, HYDROCARBON ODOR.
5		3/8" BENT. PELL.			3830	X	6		
6				220	3831	X	7		SILTY SAND- REDDISH BROWN, QUARTZ, MAFICS, SLIGHTLY MOIST, SLIGHTLY PLASTIC, MEDIUM DENSE, HYDROCARBON ODOR.
7									
8						X	8		
9				660	3833	X	8	ML	SANDY SILT- REDDISH BROWN, AREAS OF GRAY, SOME REDDISH OXIDATION, MOIST, PLASTIC, MEDIUM DENSE, HYDROCARBON ODOR.
10					3834	X	9		
11									
12									
13									
14	0.030 INCH SLOT					X	5		
15				45	3835	X	6		
16					3836	X	5		SILTY SAND- REDDISH BROWN, MINOR LAMINATIONS, MAFICS, QUARTZ, WET, NON-PLASTIC, MEDIUM DENSE, NO ODOR.
17					3837	X	6		
18						X	7	SM	
19						X	7		
20				10		X	5		SILTY SAND- REDDISH BROWN, MINOR LAMINATIONS, MAFICS, QUARTZ, WET, NON-PLASTIC, MEDIUM DENSE, NO ODOR.
						X	5		
						X	6		



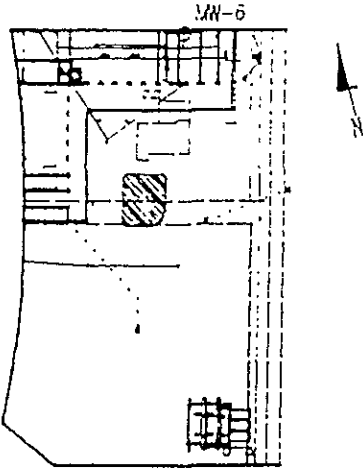
LOCATION OF BORING



SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-88-058		MW-3	
WATER LEVEL				SHEET 2	
TIME				OF 2	
DATE				DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR		PC EXPLORATION		TIME	TIME
DRILLER		MIKE MOORE		1:15	4:20
DRILLING METHOD		HOLLOW STEM AUGER		DATE	DATE
SAMPLING METHOD		MPS		3-21-89	3-21-89
LOGGER		ERIC HOLM			
N/S	N 26 T3.2	E/W	E 314.7	ELEV. 14.66	
BORING DIAMETER: 10 INCHES		BORING DIAMETER: 4 INCHES			
REVIEWED BY:				DATE	

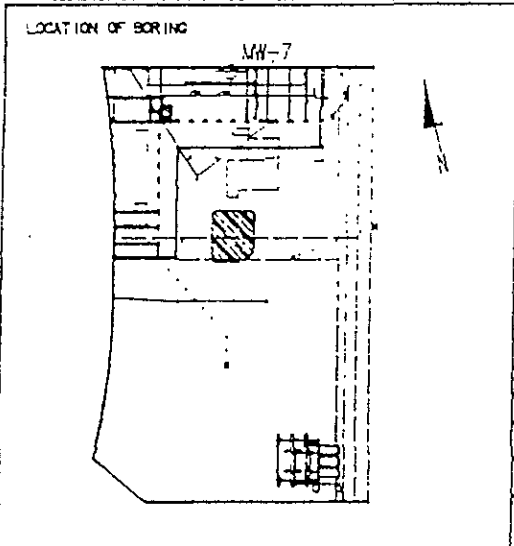
DIST. FROM SURF.	WELL CONST.		LEGEND	TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 8 IN.	USCS	LOG OF MATERIAL		
	CASING	SETTING									
21	0.03 INCH SLOT	#3 SAND						SM			
22											
23											
24									X	5	
25									X	5	
				4		X	6				
								TD	SILTY SAND- REDDISH BROWN, MINOR LAMINATIONS, MAFICS, QUARTZ, WET, NON-PLASTIC, MEDIUM DENSE, NO ODOR.		
									7 1/2 BAGS OF #3 SAND		
									1 1/2 BAGS OF CEMENT		
									1-3 GALLON BUCKET OF BENTONITE		

LOCATION OF BORING



SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-86-059		MW-6	
WATER LEVEL				SHEET 1 OF 1	
TIME				DRILLER	
DATE				START	FINISH
CASING DEPTH				14:00	14:30
DRILLING CONTRACTOR				DATE	DATE
ENSCO SERVICES				3-17-89	3-17-89
DRILLER		J R			
DRILLING METHOD		HOLLOW STEM AUGER			
SAMPLING METHOD		UPS			
LOGGER		NICK COFFEY			
N/S	N 2834.0	E/W	E 3259.1	ELEV. 14.79	
BORING DIAMETER:			6 INCHES	WELL CASING DIAMETER: 2 INCHES	
REVIEWED BY:				DATE	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1	BLANK	4% BENTONITE CELENT SLURRY	[Cross-hatched pattern]					SP	CONCRETE
2									SAND- OLIVE, VERY FINE TO FINE, ANGULAR TO SUB-ANGULAR GRAINS, LOOSE, HUMID, OILY ODOOR.
3									
4							6	SM	SILTY SAND- OLIVE, FINE, SUB-ANGULAR TO SUB-ROUNDED SAND, 15-20% SILT, MEDIUM DENSE, HUMID.
5		3/8" BENT. PELLET	[Diagonal lines pattern]		3164		11		3'20" - 4'2" : BLACK, OILY ODOOR.
6							19	SC	5'0" - APPROX. 8'0" : BLACK OILY ODOOR WITH 10% CLAY.
7									
8								SP	SAND- OLIVE, VERY FINE TO FINE, SUB-ANGULAR TO SUB-ROUNDED, UP TO 3% SILT + CLAY.
9							8		
10					3165		11		SILTY SAND- LIGHT YELLOWISH BROWN AND OLIVE, MOTTLED, FINE, SUB-ROUNDED TO ROUNDED SAND, 15-20% SILT, LOOSE, WET LITTLE TO NO ODOOR.
11	0.030 INCH SLOT	3% SAND	[Dotted pattern]						
12									
13									
14									
15									
16					3166		3		SILTY SAND- LIGHT YELLOWISH BROWN AND OLIVE, MOTTLED, FINE SUB-ROUNDED TO ROUNDED SAND, 15-20% SILT, LOOSE, WET, LITTLE TO NO ODOOR, OXIDIZED ZONES 1/4" X 1/84-1/32".
17							5		
							9		
								TD	4 BAGS OF #3 SAND 1 BAG OF CEMENT 2/3-3 GALLON BUCKET OF BENTONITE



SITE/LOCATION		CURNATION/GAWLAND		BORING NO.	
PROJECT NO.		004-88-089		MW-7	
WATER LEVEL				SHEET	
TIME				OF 2	
DATE				DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR		ENSCO SERVICES		TIME	TIME
DRILLER		J R		13:00	13:50
DRILLING METHOD		HOLLOW STEM AUGER		DATE	DATE
SAMPLING METHOD		MPS		3-16-89	3-16-89
LOGGER		NICK COFFEY			
N/S		N 2650.0		E/W	
		E 3199.2		ELEV. 14.74	
BORING DIAMETER:		6 INCHES		WELL CASING DIAMETER: 2 INCHES	
REVIEWED BY:				DATE	

DIST. FROM SURF.	WELL CONST.			T.V. READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1									CONCRETE
2									SILTY SAND- GRAY, FINE SAND, DAMP, GASOLINE OOR.
3									
4	BLANK	4% BENTONITE CEMENT SLURRY					4		
5		3/8" BENT. PELLET			323	6	7		
6						6	10	SM	
7									
8									
9						6	12		SILTY SAND- YELLOWISH BROWN, 15-20% SILT + CLAY, MOIST, SLIGHT
10					324	6	21		GASOLINE OOR.
11	0.030 INCH SLOT	F3 SAND				6	30		
12									
13									CLAYEY SAND- LIGHT YELLOWISH BROWN, FINE SAND WITH 20-40%
14									SILT + CLAY.
15						N/R	4		
16						N/R	5		
17						N/R	9	SC	
18					325	6	4		
19						6	5		
20						4	9		
								SP	
								SC	SAND- YELLOWISH BROWN, FINE SAND WITH 5-10% SILT, MEDIUM DENSE, WET.





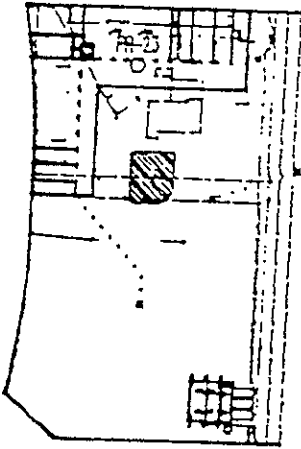








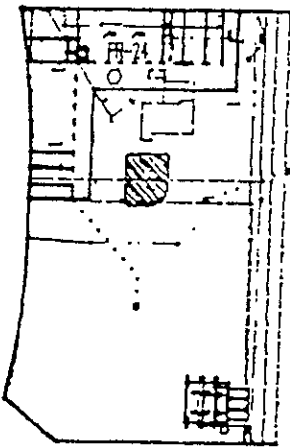
LOCATION OF BORING



SITE/LOCATION		CARNATION/DAGLAK		BORING NO.	
PROJECT NO.		004-08-059		PR-23	
PRODUCT LEVEL ELEVATION	13.44'			SHEET 1	
TIDE	045			OF 1	
DATE	2/24/89			DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR	PC EXPLORATION			TIDE	TIDE
DRILLER				705	800
DRILLING METHOD	HELICOY STEK ALGER			DATE	DATE
SAMPLING METHOD	140# HAMMER 30' DROP, MODIFIED CALIFORNIA SAMPLER			2/24/89	2/24/89
LOGGER	ERIC HELM				
N/S	26030	E/V	2593	ELEV. 14.41	
BORING DIAMETER	4 INCHES	CASING DIAMETER	2 INCHES		
REVIEWED BY:	MAX			DATE 2-28-89	

DIST. FROM SURF.	WELL CONST.		LITHO	TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 4 IN.	LOGS	LOG OF MATERIAL
	CASING	MATERIAL							
1		42 MENTHRITE CEMENT SLURRY							
2									
3									
4	BLANK					X	6		
5		3/4" MENT. PELLETS		3200		X	8		
6									SILTY SAND- RED BROWN MCLST, MEDIUM DENSE WITH AREAS OF COCCIDATION, QUARTZ, MAFICS, STRONG HYDROCARBON ODOR.
7									
8									
9						X	9	SM	
10				11,000		X	10		STRONG HYDROCARBON ODOR.
11									
12									
13									
14							6		
15				10,900		X	9		GRAVEL VET, MEDIUM DENSE, STRONG HYDROCARBON ODOR.
									TEST BORING TERMINATED @ 15 1/2' ON 2-24-89
									PRODUCT ENCOUNTERED
									MATERIALS: 1 3/4 BAGS OF SAND
									2/3 5 GALLON BUCKET OF MENTHRITE

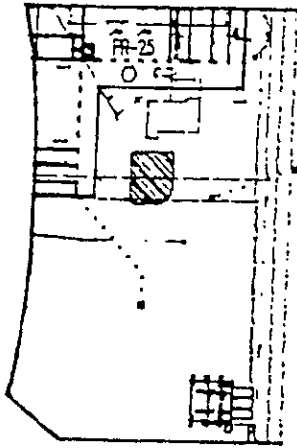
LOCATION OF BORING



SITE/LOCATION		CARNATION/DAKLAW		BORING NO.	
PROJECT NO.		001-00-029		PR-24	
PROJECT LEVEL ELEVATION	0.76	TIME		SHEET 1	
TIME	1000			OF 1	
DATE	2/24/89			DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR	PC EXPLORATION		TIME	TIME	
DRILLER			900	1040	
DRILLING METHOD	HOLLOW STEM		DATE	DATE	
SAMPLING METHOD	1400 HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER				
LOGGER	ERIC HOLM				
K/S	23968	E/V	30374	ELEV. 1457	
SURFACE CONDITIONS		ASPHALT			
REVIEWED BY:		MAK		DATE 6-28-89	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLDVS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1									SILTY SAND- RED BROWN MCLST, MEDIUM DENSE WITH QUARTZ, MAFICS
2									STRONG HYDROCARBON ODOR
3									
4	BLANK					X	8		
5		4% BENTONITE CEMENT SLURRY				X	13		
6		3/8" BENT. PELLETS		2000		X	14		STRONG HYDROCARBON ODOR
7									
8									
9							12		
10				1800		X	12		
11						X	11		STRONG HYDROCARBON ODOR
12									
13									
14							5		
15						X	6		
16						X	8		GRADES WET, MODERATE HYDROCARBON ODOR
									TEST BORING TERMINATED @ 15' ON 2-24-89
									PRODUCT ENCOUNTERED
									MATERIALS: 1 3/4 BAGS OF SAND
									2/3 5 GALLON BUCKET OF BENTONITE

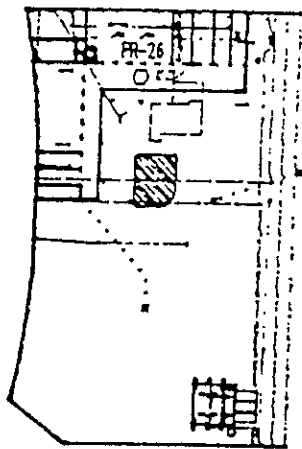
LOCATION OF BORING



SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		984-88-059		PR-25	
PRODUCT LEVEL ELEVATION	.84			SHEET 1	
TIME	11:05			OF 1	
DATE	2/24/89			DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR	PC EXPLORATION			TIME	TIME
DRILLER				11:00	12:05
DRILLING METHOD	HOLLOW STEM AUGER			DATE	DATE
SAMPLING METHOD	1448 HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			2/24/89	2/24/89
LOGGER	ERIC HOLM				
N/S 2596.1	E/V 2147.4	ELEV. 14.56			
BORING DIAMETER	6 INCHES	CASING DIAMETER	2 INCHES		
REVIEWED BY	MAM		DATE 6-28-89		

DIST. FROM CURB	WELL CONDT.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEAKS						
1		4X BENTONITE CEMENT SLURRY						SM	SILTY SAND- RED BROWN, DRY TO MOIST, MEDIUM DENSE WITH QUARTZ, MAFIC, STRONG HYDROCARBON ODOR.
2									
3									
4	BLANK					X	11		
5		3/4" BENT. PELLETS		5800		X	13		
6									STRONG HYDROCARBON ODOR.
7									
8									
9						X	9		
10				10,800		X	9		
11									STRONG HYDROCARBON ODOR.
12									
13									
14									
15									
16									
17									
18							18		
19							19		
20						X	12		
								GRADES VET. HYDROCARBON ODOR.	
								TEST BORING TERMINATED @ 15' ON 2-24-89	
								PRODUCT ENCOUNTERED:	
								MATERIALS: 1 3/4 BAGS OF SAND	
								2/3 5 GALLON BUCKET OF BENTONITE	

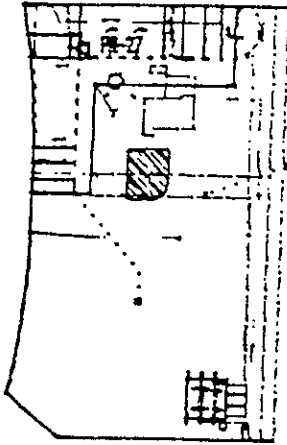
LOCATION OF BORING



SITE/LOCATION		CARNATION/DANLAW		BORING NO.	
PROJECT NO.		84-88-03		PR-26	
PRODUCT LEVEL	LS3			SHEET 1	
TIME	800			OF 1	
DATE	2/24/89			DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR				PC EXPLORATION	
DRILLER					
DRILLING METHOD				HOLLOW STEEL AUGER	
SAMPLING METHOD				145# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER	
LOGGER				ERIC HOLM	
N/S 25934	2593.4	E/W 20648	3156.8	ELEV. 1450	14.50
BORING DIAMETER		6 INCHES		CASING DIAMETER	
				2 INCHES	
REVIEWED BY				MARK	
				DATE 8-28-89	

DEPT. SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLDS PER 6 IN.	LOGS	LOG OF MATERIAL
	CASING	ANNULUS	LENERD						
1		4% BENTONITE CEMENT SLURRY							SILTY SAND- MOTTLED RED BROWN, MOIST, MEDIUM DENSE WITH QUARTZ, KAOLIN. STRONG HYDROCARBON ODOR.
2									
3									
4	BLANK					X	7		
5		3/8" BENT. PELLETS		10.00		X	9		STRONG HYDROCARBON ODOR.
6									
7									
8									
9						X	8		
10						X	8		
11		COURSE AQUICLUD SAND		LOGS		X	8	SM	STRONG HYDROCARBON ODOR.
12									
13									
14						X	9		
15						X	12		COLOR CHANGE TO BROWN GRAYES WET, SLIGHT HYDROCARBON ODOR.
									TEST BORING TERMINATED @ 17' ON 2-24-89.
									PRODUCT ENCOUNTERED
									MATERIALS 1 3/4 BAGS OF SAND
									2/3 5 GALLON BUCKET OF BENTONITE

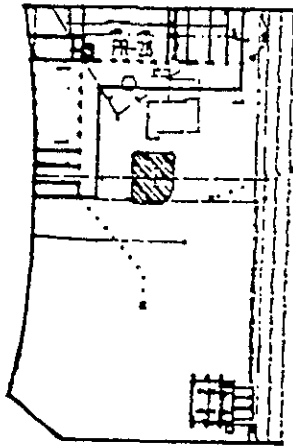
LOCATION OF BORING



SITE/LOCATION		CARRATON/DARLAND		BORING NO.	
PROJECT NO.		084-08-029		PR-27	
WATER LEVEL ELEVATION	8.72			SHEET 1	
TIME	408			OF 1	
DATE	2/24/89			DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR	PC EXPLORATION			TIME	TIME
DRILLER				MS	2-48
DRILLING METHOD	HOLLOW STEM AUGER			DATE	DATE
SAMPLING METHOD	1400 HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			2/24/89	2/24/89
LOGGER	ERIC HOLM				
N/S	25893	E/V	21346	ELEV. 1456	
BORING DIAMETER	6 INCHES		CASING DIAMETER	2 INCHES	
REVIEWED BY:	KAK		DATE	8-28-89	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLUYS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	MANIFOLD	LEGEND						
1			[Dotted pattern]					SM	SILTY SAND- RED BROWN, MOIST, MEDIUM DENSE WITH QUARTZ, NAFTICS, SLIGHT HYDROCARBON ODDOR.
2		4X BENTONITE CEMENT SLURRY							STRONG HYDROCARBON ODDOR.
3									
4	BLANK					X	7		
5		3/8" BENT. PELLETS	[Diagonal lines]	12		X	8		SLIGHT HYDROCARBON ODDOR.
6									
7									
8									
9							18		
10				12		X	18		SLIGHT HYDROCARBON ODDOR.
11						X	18		
12									
13									
14							9		
15				12		X	11		GRADES WITH INCREASING SILT CONTENT, AREAS OF OXIDATION, WET, NO HYDROCARBON ODDOR.
						X	13		
									TEST BORING TERMINATED @ 15' ON 2-24-89
									MATERIALS: 1 3/4 BAGS OF SAND
									2/3 5 GALLON BUCKET OF BENTONITE

LOCATION OF BORING



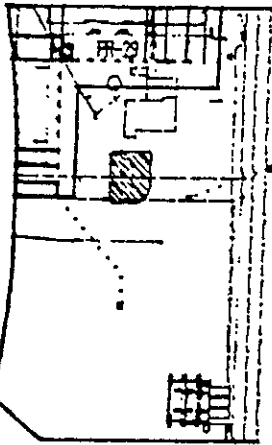
SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		04-08-05		PR-28	
WATER LEVEL ELEVATION	8.4			SHEET 1	
TIME	020			OF 1	
DATE	2/22/89			DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR	PC EXPLORATION			TIME	TIME
DRILLER				7:00	9:00
DRILLING METHOD	HOLLOW STEM AUGER			DATE	DATE
SAMPLING METHOD	140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			2/22/89	2/22/89
LOGGER	ERIC HOLM				
N/S	2586.5	E/V	2445	ELEV. 1452	
BORING DIAMETER	6 INCHES	CASING DIAMETER	2 INCHES		
REVIEWED BY: MAJL				DATE: 0-28-89	

FEET SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOVS PER 6 IN.	USCS	LOG OF MATERIAL		
	CASING	ANNULUS	LEGEND								
1		4% BENTONITE CEMENT SLURRY	[Pattern]					SM	SILTY SAND- RED BROWN, AREAS OF GREEN STAINING, DRY TO MOIST, MEDIUM DENSE WITH AREAS OF OXIDATION, QUARTZ, MAFICS, STRONG HYDROCARBON ODOR.		
2											
3											
4	BLANK									8	
5		3/8" BENT. PELLETS	[Pattern]	2500		X	18		STRONG HYDROCARBON ODOR.		
6											
7		COARSE AGGREGATE SAND	[Pattern]					STRONG HYDROCARBON ODOR.			
8											
9									X	9	
10									X	18	
11				1500		X	22				
12											
13											
14											
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TEST BORING TERMINATED @ 17' ON 2-22-89

MATERIALS: 1 3/4 BAGS OF SAND  
2/3 5 GALLON BUCKET OF BENTONITE

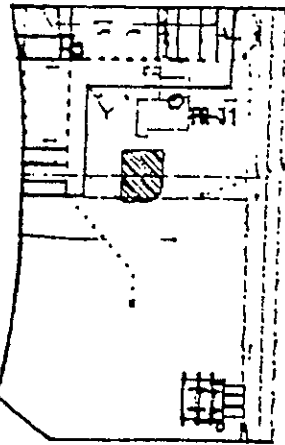
LOCATION OF BORING



SITE/LOCATION		CARNATION/DANLAND		BORING NO.	
PROJECT NO.		84-88-03		PR-29	
PRODUCT LEVEL ELEVATION	0.83			SHEET 1	
TIME	10:00			OF 1	
DATE	2/22/89			DRILLER	
CASING DEPTH				START TIME	FINISH TIME
DRILLING CONTRACTOR	PC EXPLORATION			9:40	10:45
DRILLER				DATE	DATE
DRILLING METHOD	HELICOY STEM AUGER			2/22/89	2/22/89
SAMPLING METHOD 1408 HAMMER 3/4" DROP, MODIFIED CALIFORNIA SAMPLER.					
LOGGER ERIC HELM					
N/S 2582.3	E/V 3132.3	ELEV. 14.32			
BORING DIAMETER 6 INCHES		CASING DIAMETER 2 INCHES			
REVIEWED BY MAX			DATE 8-28-89		

FEET DEPTH	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOVS PER 6 IN.	LOGS	LOG OF MATERIAL		
	CASING	MATERIALS	LEND								
1		4% PORTLAND CEMENT SLURRY	[Pattern]					SM	SILTY SAND- RED BROWN, MOIST, MEDIUM DENSE WITH AREAS OF MOTTLING QUARTZ, HAFTCS, STRONG HYDROCARBON ODDR.		
2											
3											
4	BLANK						X			7	
5		3/4" BENT. PELLETS	[Pattern]	588		X	7		STRONG HYDROCARBON ODDR.		
6											
7		COARSE AGGREGATE SAND	[Pattern]								
8											
9											
10						10.800		X	11		FLOATING GAS, STRONG HYDROCARBON ODDR.
11											
12											
13											
14											
15				12.200		X	8		GRADES VET, LOOSE, PRODUCT VISIBLE, STRONG HYDROCARBON ODDR.		
									TEST BORING TERMINATED 8 1/2' ON 2-22-89		
									MATERIALS: 1 1/2 BAGS OF SAND		
									2/3 5 GALLON BUCKET OF BENTONITE		

LOCATION OF BORING

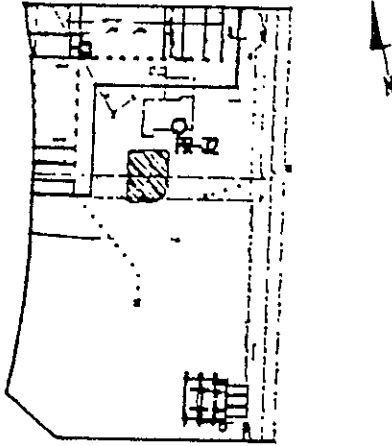


SITE/LOCATION		CARMATION/OAKLAND		BORING NO.	
PROJECT NO.		04-00-079		PR-31	
PRODUCT LEVEL ELEVATION	0.86			SHEET 1	
TIME	045			OF 1	
DATE	2/23/09			DRILLER	
CASING DEPTH				START TIME	FINISH TIME
DRILLING CONTRACTOR		PC EXPLORATION		704	045
DRILLER				DATE	DATE
DRILLING METHOD		HOLLOW STEM AUGER		2/23/09	2/23/09
SAMPLING METHOD 140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER.					
LOGGER ERIC HOLM					
N/S 2547.8		E/V 3202.5		ELEV. 14.74	
BORING DIAMETER		6 INCHES		CASING DIAMETER	
				2 INCHES	
REVIEWED BY: NAK					
DATE 2-28-09					

DIST. FROM SURF.	WELL CONST.		LEGEND	TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS							
1									ASPHALTIC CONCRETE
2								GM	SILTY GRAVEL - GRAY BROWN, MOIST, MEDIUM DENSE, ANGULAR (FILL), HYDROCARBON ODOR.
3									
4	BLANK					X	8		
5						X	9		HYDROCARBON ODOR.
6									
7									
8									
9							7		
10							9		
11				146		X	18		HYDROCARBON ODOR.
12									
13									
14							9		
15						X	11	SM	SILTY SAND - RED BROWN, VET, MEDIUM DENSE WITH LARGE OXIDATION DEPOSITS, QUARTZ, MAFICS, MODERATE HYDROCARBON ODOR.
				300		X	11		TEST BORING TERMINATED 8' BY DM 2-23-09
									PRODUCT ENCOUNTERED
									MATERIALS: 1 1/2 BAGS OF SAND
									2/3 5 GALLON BUCKET OF BENTONITE



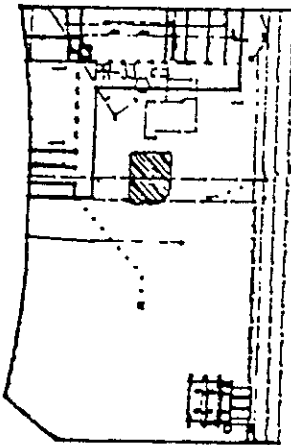
LOCATION OF BORING



SITE/LOCATION		DARNATION/DAKLAND		BORING NO.	
PROJECT NO.		804-88-039		PR-32	
PRODUCT LEVEL	L27			SHEET 1	
TIME	1010			OF 1	
DATE	2/23/89			DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR				TIME	TIME
DRILLER				925	1045
DRILLING METHOD				DATE	DATE
HOLLOW STEEL AUGER				2/23/89	2/23/89
SAMPLING METHOD 140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER					
LOGGER CHRIS KOELSON-CERGLONE					
N/S 2282.5		E/V 3193.8		ELEV. 15.00	
BORING DIAMETER		6 INCHES		CASING DIAMETER	
				2 INCHES	
REVIEWED BY: MAJL				DATE 8-28-89	

DIST. FROM SURF.	WELL CONST.		LEGEND	TLV READING	SAMPLE NO.	RECOVERY	BLOYS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS							
1									ASPHALTIC CONCRETE
2								GM	SILTY GRAVEL - GRAY BROVN, MOIST, MEDIUM DENSE, ANGULAR GILLS, HYDROCARBON ODOR.
3									
4	BLANK						7		
5		3/8" BENT. PELLETS		150		X	8		HYDROCARBON ODOR.
6									
7									
8									
9							7		
10							9		
11				300		X	9		HYDROCARBON ODOR.
12									
13	SLURRY SLUT								
14							9		
15							18		
16				800		X	18		GRADES WET, SLIGHT HYDROCARBON ODOR
									TEST BORING TERMINATED @ 15' ON 2-23-89
									PRODUCT ENCOUNTERED
									MATERIALS 1 1/2 BAGS OF SAND
									2/3 5 GALLON BUCKET OF BENTONITE

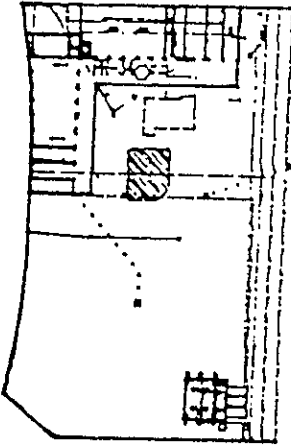
LOCATION OF BORING



SITE/LOCATION		CARNATION/DANLAND		BORING NO.	
PROJECT NO.		884-88-029		PR-33	
PROJECT LEVEL ELEVATION	8.91			SHEET 1 OF 1	
TIME	12:00			DRILLER	
DATE	2/27/89			START TIME	FINISH TIME
CASING DEPTH				11:28	12:30
DRILLING CONTRACTOR		PC EXPLORATION		DATE	DATE
DRILLER				2/27/89	2/27/89
DRILLING METHOD		HOLLOW STEM AUGER			
SAMPLING METHOD: 140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER.					
LOGGER: CHRIS NOELSON-CERGLONE					
N/S 2578.5	E/V 3162.2	ELEV. 14.53			
BORING DIAMETER		6 INCHES		CASING DIAMETER 2 INCHES	
REVIEWED BY: MARK				DATE: 8-28-89	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLDS PER 6 IN.	USCS	LOG OF MATERIAL	
	CASING	ANNULUS	LEGEND							
1		4% BENTONITE CEMENT SLURRY	[Pattern]					SM	SILTY SAND- GREEN BROWN, DRY TO MOIST, MEDIUM DENSE WITH QUARTZ MATRICES STRONG HYDROCARBON ODOR.	
2										
3										
4	BLANK									9
5		5/8" BENT. PELLETS	[Pattern]	2380	X		10		STRONG HYDROCARBON ODOR.	
6										
7		CELESTINE AGGREGATE SAND	[Pattern]							
8										
9										7
10						2380	X			
11		SLURRY SLUT	[Pattern]						STRONG HYDROCARBON ODOR.	
12										
13										8
14										
15										
									GRADES WITH AREAS OF OXIDATION, VET, STRONG HYDROCARBON ODOR.	
									TEST BORING TERMINATED @ 15' ON 2-27-89	
									MATERIALS: 1 1/2 BAGS OF SAND	
									2/3 5 GALLON BUCKET OF BENTONITE	

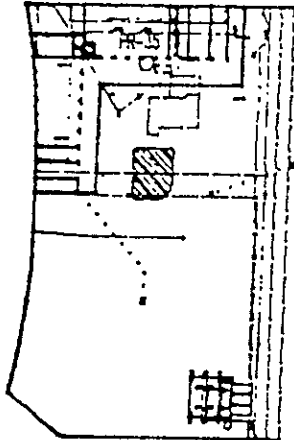
LOCATION OF BORING



SITE/LOCATION		CARNATION/DAKLAND		BORING NO.	
PROJECT NO.		804-88-059		PR-34	
PROJECT LEVEL ELEVATION		8.93		SHEET 1	
TIME		845		OF 1	
DATE		2/27/89		DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR		PC EXPLORATION		TIME	TIME
DRILLER				NO.	2021
DRILLING METHOD		HOLLOW STEM AUGER		DATE	DATE
SAMPLING METHOD		140# HAMMER ON DROP, MODIFIED CALIFORNIA SAMPLER		2/27/89	2/27/89
LOGGER		CHRIS NELSON-CERBUONE			
N/S 25904		E/V 31647		ELEV. 1464	
BORING DIAMETER		6 INCHES		CASING DIAMETER	
				2 INCHES	
REVIEWED BY		MAX		DATE 8-28-89	

FEET DEPT.	VELL CONST.			TLV READING	SAMPLE NO.	RECOVERYS	BLDS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LENDG						
1		42 BENTONITE CEMENT SLURRY						ML	SANDY SILT - RED BROWN, MOIST, MEDIUM DENSE WITH QUARTZ, MAFICS. SLIGHT HYDROCARBON ODOR.
2									
3									
4	BLANK						7		
5		3/8" BENT. PELLETS		120	X		9		
6					X		9		
7									
8									
9							11		
10					X		12		
11				14,000	X		13		
12									
13									
14							6		
15							6		
16				5,600	X		7		
								GRADES RED BROWN, VET, STRONG HYDROCARBON ODOR.	
								TEST BORING TERMINATED @ 15' ON 2-27-89	
								PRODUCT ENCOUNTERED	
								MATERIALS: 1 2/3 BAGS OF SAND	
								2/3 GALLON BUCKET OF BENTONITE	

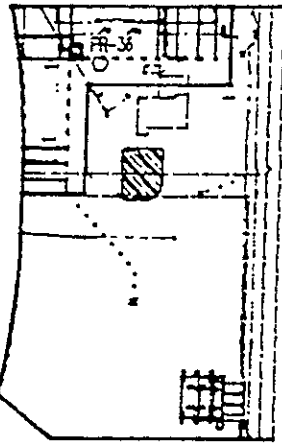
LOCATION OF BORING



SITE/LOCATION		DARNATION/DARLAND		BORING NO.	
PROJECT NO.		004-00-079		PR-35	
PRODUCT LEVEL ELEVATION	899			SHEET 1	
TIDE	400			OF 1	
				DRILLER	
DATE	2/27/89			START	FINISH
CASING DEPTH				TIDE	TIDE
DRILLING CONTRACTOR				300	505
DRILLER				DATE	DATE
DRILLING METHOD				2/27/89	2/27/89
SAMPLING METHOD 1400 HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER.					
LOGGER ERIC HOLM					
N/S 26003		E/V 26684		ELEV. 1441	
BORING DIAMETER		6 INCHES		CASING DIAMETER	
				2 INCHES	
REVIEWED BY: N.A.M.					
DATE 4-28-89					

DIST. FROM SURF.	VELL. CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLUYS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	MANULIS	LEGEND						
1		72 BENTONITE CEMENT SLURRY	[Pattern]					SM	SILTY SAND- RED BROWN, DRY TO MOIST, MEDIUM DENSE WITH AREAS OF COAGULATION, QUARTZ, KAOLIN, STRONG HYDROCARBON ODOR.
2									
3									
4	BLANK	3/4" BENT. PELLETS	[Pattern]			X	8		
5					4.000	X	9		
6		COARSE AQUICLUS SAND	[Pattern]						STRONG HYDROCARBON ODOR.
7									
8									
9									7
10								X	8
11						10.000		X	10
12									
13									
14									6
15									8
16				300		X	11		
17								COLOR CHANGE TO GREEN BROWN, GRADES WITH INCREASING SAND, WET, STRONG HYDROCARBON ODOR.	
18								TEST BORING TERMINATED @ 17' ON 2-27-89	
19								PRODUCT ENCOUNTERED	
20								MATERIALS: 1 1/2 BAGS OF SAND 2/3 5 GALLON BUCKET OF BENTONITE	

LOCATION OF BORING



SITE/LOCATION		CARNATION/DARLAND		BORING NO.		
PROJECT NO.		004-00-079		PR-36		
PROJECT LEVEL ELEVATION	6.00			SHEET 1		
TIME	7:45			OF 1		
DATE	3/1/09			DRILLER		
CASING DEPTH				START	FINISH	
DRILLING CONTRACTOR	PC EXPLORATION			TIME	TIME	
DRILLER				7:00	08:05	
DRILLING METHOD	HELLDY STEEL AUGER			DATE	DATE	
SAMPLING METHOD	1400 HAMMER DR. DROP, MODIFIED CALIFORNIA SAMPLER.				3/1/09	3/1/09
LOGGER	ERIC HELIX					
N/S BILLS	E/V	01044	ELEV.	14.59		
BORING DIAMETER	6 INCHES		CASING DIAMETER	2 INCHES		
REVIEWED BY	MAX		DATE	0-26-09		

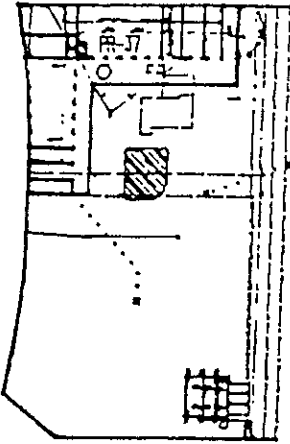
DIST. FROM SURF. FT.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOVS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LENDG						
1		4% BENTONITE CEMENT SLURRY						SM	SILTY SAND- RED BROWN, DRY TO MOIST, MEDIUM DENSE WITH AREAS OF OXIDATION, QUARTZ, MAFTCS, STRONG HYDROCARBON ODOR.
2									
3									
4	BLANK					X	8		
5		3/4" BENT. PELLETS		1,200		X	9		STRONG HYDROCARBON ODOR.
6									
7									
8									
9						X	10		
10				10,000		X	10		STRONG HYDROCARBON ODOR.
11									
12									
13									
14									
15						X	11		GRANES VET WITH INCREASING SAND CONTENT, STRONG HYDROCARBON ODOR.
16									
17									
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TEST BORING TERMINATED @ 15' ON 3-1-09

PRODUCT ENCOUNTERED

MATERIALS 1 1/2 BAGS OF SAND  
2/3 5 GALLON BUCKET OF BENTONITE

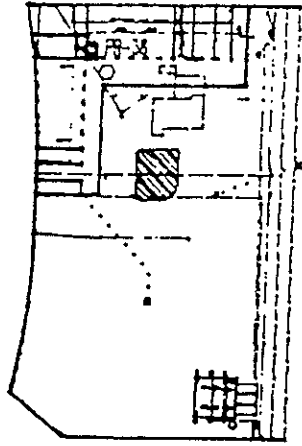
LOCATION OF BORING



SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		064-08-059		PR-37	
PROJECT LEVEL	ELEVATION	069		SHEET 1	
TIME	040			OF 1	
DATE		3/1/89		DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR		PC EXPLORATION		TIME	TIME
DRILLER				065	900
DRILLING METHOD		HOLLOW STEEL AUGER		DATE	DATE
SAMPLING METHOD		1400 HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		ERIC HOLM			
N/S 26021	E/V 3127.6	ELEV. 1433			
BORING DIAMETER		6 INCHES		CASING DIAMETER	
				2 INCHES	
REVIEWED BY: MAX				DATE: 8-28-89	

DIST. FROM SURF.	VELL. CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOVS PER 6" IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1								SM	SLTY SAND- RED BROWN DRY TO MOIST, MEDIUM DENSE WITH QUARTZ GRAIN. STRONG HYDROCARBON ODOR.
2									
3									
4	BLANK	4% MONTICITE, COARSE SILTY				X	5		
5		3 1/2" DIA. PELLETS		200		X	5		
6									STRONG HYDROCARBON ODOR.
7									
8									
9							6		
10							7		
11				7,800		X	8		
12									COLOR CHANGE TO GREEN GRAY, AREAS OF OXIDATION, STRONG HYDROCARBON ODOR.
13									
14						X	6		
15						X	8		
16				200		X	8		
								STRONG HYDROCARBON ODOR.	
								TEST BORING TERMINATED @ 15' ON 3-1-89	
								PRODUCT ENCOUNTERED	
								MATERIALS: 1 3/4 BAGS OF SAND	
								2/3 5 GALLON BUCKET OF MONTICITE	

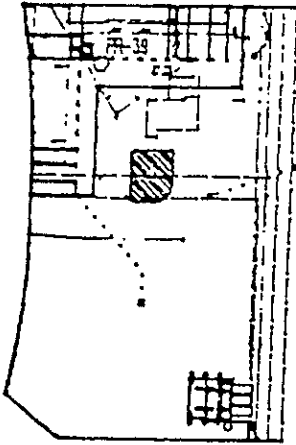
LOCATION OF BORING



SITE/LOCATION		DORRINGTON/DARLAND		BORING NO.	
PROJECT NO.		88-08-059		PR-38	
PROJECT LEVEL ELEVATION	8.89			SHEET 1	
TIME	9:30			OF 1	
DATE	2/1/89			DRILLER	
CASING DEPTH				START TIME	FINISH TIME
DRILLING CONTRACTOR	PC EXPLORATION			9:45	9:55
DRILLER				DATE	DATE
DRILLING METHOD	HOLLOW STEM AUGER			2/1/89	2/1/89
SAMPLING METHOD 1408 HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER.					
LOGGER ERIC HOLM					
N/S 20443	E/V 30183	ELEV. 14.57			
BORING DIAMETER		6 INCHES	CASING DIAMETER		2 INCHES
REVIEWED BY: KAM			DATE 8-28-89		

FEET FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL		
	CASING	ANNULUS	LEND								
1		4% PORTLAND CEMENT SLURRY	[Pattern]					SM	SILTY SAND - MOTTLED RED BROWN AND GREEN STAINED, MOIST, MEDIUM DENSE WITH AREAS OF OXIDATION, QUARTZ, MAFICS, HYDROCARBON ODOR.		
2											
3											
4	BLANK						X			3	
5		3" PORT. MENT. PELLETS	[Pattern]	179		X	7		HYDROCARBON ODOR.		
6											
7		COARSE AQUICLUS SAND	[Pattern]					SM	HYDROCARBON ODOR.		
8											
9											
10							X			18	
11						10.000	X			23	
12											
13											
14							4				
15					X	5					
16				108	X	7			STRONG HYDROCARBON ODOR.		
									TEST BORING TERMINATED @ 17' ON 3-1-89.		
									MATERIALS: 1 1/2 BAGS OF SAND		
									2/3 5 GALLON BUCKET OF MONTMORILLON		

LOCATION OF BORING



SITE/LOCATION		CARNATION/CALCADO		BORING NO.	
PROJECT NO.		004-00-079		PR-39	
PROJECT LEVEL ELEVATION	0.89			SHEET 1 OF 1	
TIME	1000			DRILLER	
DATE	3/1/89			START TIME	FINISH TIME
CASING DEPTH				1005	1100
DRILLING CONTRACTOR		PC EXPLORATION		DATE	DATE
DRILLER				3/1/89	3/1/89
DRILLING METHOD		HOLLOW STEM AUGER			
SAMPLING METHOD: 1408 HAMMER 36" DROP, MODIFIED CALIFORNIA SAMPLER.					
LOGGER: ERIC HELM					
N/S 2614.5	E/V 3126.9	ELEV. 1441			
BORING DIAMETER		6 INCHES		CASING DIAMETER	
				2 INCHES	
REVIEWED BY: MAJL			DATE: 0-28-89		

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOVS PER 6 IN.	USES	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1								SM	SILTY SAND - RED BROWN, MOIST, MEDIUM DENSE WITH QUARTZ, KAOLIN, AND AREAS OF OXIDATION.
2									
3									
4	BLANK	42 MENTONITE CEMENT CLURRY				X	9		
5		3/8" MENT. PELLETS		670		X	5		STRONG HYDROCARBON ODDOR.
6									
7									
8							7		
9							10		
10				10000		X	13		GRADES WITH TRACE GRAVEL, STRONG HYDROCARBON ODDOR.
11									
12									
13									
14							8		
15							9		
16						X	9		COLOR CHANGED TO GRAY GREEN, HYDROCARBON ODDOR.
17									
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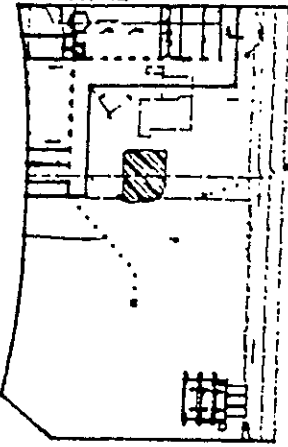
TEST BORING TERMINATED @ 15' ON 3-1-89

MATERIALS: 1 2/3 BAGS OF SAND  
2/3 5 GALLON BUCKET OF MENTONITE



LOCATION OF BORING

PR-42

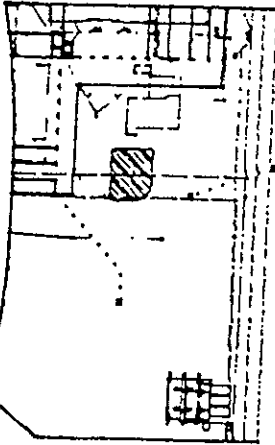


SITE/LOCATION		CARRINGTON/OAKLAND		BORING NO.	
PROJECT NO.		004-68-058		PR-42	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START	FINISH
				TIME	TIME
				11:00	11:48
DRILLING CONTRACTOR				DATE	DATE
DRILLER		MERCE MOORE		4-28-88	4-28-88
DRILLING METHOD		HOLLOW STEM AUGER			
SAMPLING METHOD		1448 HAMMER 30' DROP, MODIFIED CALIFORNIA SAMPLER.			
LOGGER		CHRIS NIELSON-GEORLOGE			
N/S	2942.8	2962.6	E/W	3178.3	ELEV. 14.48
BORING DIAMETER: 6 INCHES		WELL CASING DIAMETER: 2 INCHES			
REVIEWED BY: M.A.M.				DATE 6-28-88	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1		44 BENTONITE CEMENT SLURRY	[Cross-hatched pattern]					ML	PORTLAND CEMENT CONCRETE
2									SANDY GRAVEL
3									SILTY SAND- BLACK TO DARK BROWN, MOIST, MEDIUM STIFF, SEWAGE AND HYDROCARBON ODOR.
4		3/4" BENT. FILL	[Diagonal line pattern]					SW	
4									SILTY SAND- GRAY TO GREEN BROWN, DRY TO MOIST, MEDIUM DENSE, HYDROCARBON ODOR.
6									
6									GRADES MOIST TO WET
9									GRADES WET
10	0.030 INCH SLOT	36 SAND	[Dotted pattern]						
11									
12									
13									COLOR CHANGE TO YELLOW BROWN.
14									
15				200					TEST BORING TERMINATED @ 15' ON 4-28-88

LOCATION OF BORING

PR-43

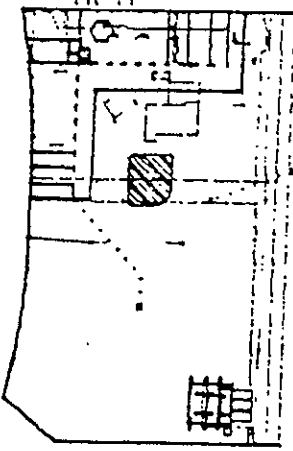


SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-43	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR				TIME	TIME
DRILLER		MIKE MOORE		11:00	15:30
DRILLING METHOD		HOLLOW STEM AUGER		DATE	DATE
SAMPLING METHOD		140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER		4-26-89	4-26-89
LOGGER		CHRIS NELSON-CERQUE			
N/S	2650.8	E/W	3126.3	ELEV. 14.53	
BORING DIAMETER: 6 INCHES			WELL CASING DIAMETER: 2 INCHES		
REVIEWED BY: M.A.M.				DATE 8-29-89	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEDSID						
1		4# BENTONITE CEMENT SLURRY						GP	PORTLAND CEMENT CONCRETE
2								ML	SANDY GRAVEL
3	BLANK								SANDY SILT- BLACK, MOIST, MEDIUM STIFF, SEWAGE AND HYDROCARBON ODOR.
4		3/8" BENT. PELL.						SM	SILTY SAND- GREEN/GRAY, MOIST, MEDIUM DENSE, STRONG SEWAGE ODOR.
5									
6									
7									
8									GRADES WET TO MOIST.
9									
10	0.000 INCH SLOPE								GRADES WET
11									
12									
13									COLOR CHANGE TO YELLOW BROWN.
14									
15									
									TEST BORING TERMINATED @ 15' ON 4-26-89

LOCATION OF BORING

PR-44

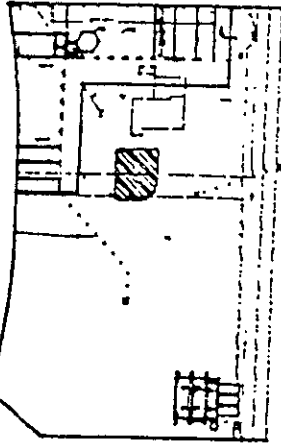


SITE/LOCATION		CIVILATION/DAM/AND		BORING NO.	
PROJECT NO.		004-88-008		PR-44	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START TIME	FINISH TIME
DRILLING CONTRACTOR				7:48	8:48
DRILLER		MIKE MOORE		DATE	DATE
DRILLING METHOD		HOLLOW STEM AUGER		4-27-89	4-27-89
SAMPLING METHOD: 140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER.					
LOGGER: CHRIS NIELSON-CERQUEJE					
N/S		2882.2 2652.2		ELEV. 14.58	
BORING DIAMETER: 6 INCHES		WELL CASING DIAMETER: 2 INCHES			
REVIEWED BY: M.A.M.			DATE: 8-29-89		

DIST. FROM SURF.	WELL CONST.			TLY. READING	SAMPLE NO.	RECOVERY	BLOCS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEND						
1		4" BENTONITE CEMENT SLURRY						GP	PORTLAND CEMENT CONCRETE
2	BLANK							ML	SANDY GRAVEL- GRAY, MOIST, MEDIUM DENSE.
3		3/8" BENT. FILL							SANDY SILT- BLACK TO GRAY BROWN, MOIST, MEDIUM STIFF WITH HYDROCARBON AND SEWAGE ODOOR.
4								SM	SILTY SAND- GREEN AND GRAY, MOIST, MEDIUM DENSE, HYDROCARBON ODOOR.
5				10					
6									
7									
8									
9									
10									
11									COLOR CHANGE TO YELLOW BROWN, GRADES BET.
12									
13									
14									
15				200					
									TEST BORING TERMINATED @ 15' ON 4-27-89

LOCATION OF BORING

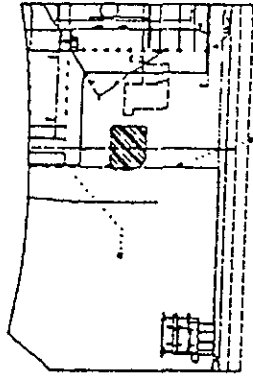
PR-45



SITE/LOCATION		CARPENTON/OAKLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-45	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR				TIME	TIME
DRILLER		MIKE MOORE		DATE	DATE
DRILLING METHOD		HOLLOW STEM AUGER		4-27-89	4-27-89
SAMPLING METHOD		143# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		CHRIS NIELSON-GERGLONE			
K/S	2833.3	E/W	3729.7	ELEV. 14.50	
BORING DIAMETER: 6 INCHES			WELL CASING DIAMETER: 2 INCHES		
REVISED BY: M.J.M.				DATE 8-29-88	

DIST. FROM SURF.	WELL CONST.			TLY. READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEADER						
1		4" BENTONITE CEMENT SLURRY						ML	PORTLAND CEMENT CONCRETE
2	BLANK							ML	SANDY SILT- BLACK, DRY TO MOIST, MEDIUM STIFF, SLIGHT HYDROCARBON ODOR.
3		3/8" BEAT- FELL						SM	SILTY SAND- GREEN TO GRAY BROWN, DRY TO MOIST, MEDIUM DENSE, HYDROCARBON ODOR.
4									
5							3		
6									
7									
8									
9									
10	0.030 INCH SLOT						3		GRADES MOIST TO WET.
11									
12									
13									COLOR CHANGE TO YELLOW BROWN, GRADES WET.
14									
15							220		
16									TEST BORING TERMINATED @ 15' ON 8-29-88

PR-46

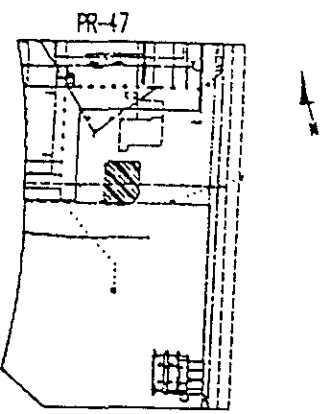


# ANANIA GEOLOGIC ENGINEERING

## BORING LOG

SITE/LOCATION		CARNATION/DAYLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-46	
WATER LEVEL				SHEET 1 of 1	
TIME				DRILLER	
DATE				START	FINISH
CASING DEPTH				TIME	TIME
DRILLING CONTRACTOR				DATE	DATE
DRILLER		MIKE MOORE		4-27-89	4-27-89
DRILLING METHOD		HOLLOW STEW AUGER			
SAMPLING METHOD		140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		CHRIS NIELSON-CERQUONE			
N/S	2663.6	E/W	3163.2	ELEV. 14.51	
BORING DIAMETER:		6 INCHES		WELL CASING DIAMETER: 2 INCHES	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1		4# BENTONITE CEMENT SLURRY	[Cross-hatched pattern]					ML	PORTLAND CEMENT CONCRETE
2									SANDY GRAVEL - GRAY, MOIST, MEDIUM DENSE.
3	BLANK								SANDY SILT - BLACK, DRY TO MOIST, MEDIUM STIFF, HYDROCARBON ODOOR.
4		3/8" BENT. FELL	[Diagonal hatched pattern]						SILTY SAND - GRAY/GREEN BROWN, DRY TO MOIST, MEDIUM DENSE, STRONG HYDROCARBON ODOOR.
5				10					
6									
7									
8									
9									
10	0.030 INCH SLOT	3/4 SAND	[Dotted pattern]		5			SM	
11									
12									
13									
14									
15									
16									
									TEST BORING TERMINATED • 15' ON 4-27-89



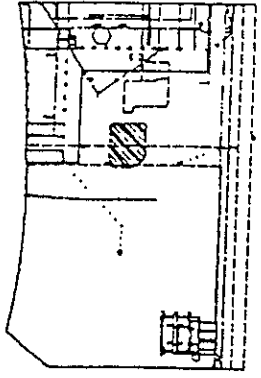
# ANANIA GEOLOGIC ENGINEERING

## BORING LOG

SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-47	
WATER LEVEL				SHEET 1 of 1	
TIME				DRILLER	
DATE				START    FINISH	
CASING DEPTH				TIME    TIME	
DRILLING CONTRACTOR				DATE    DATE	
DRILLER		MIKE MOORE		4-27-89    4-27-89	
DRILLING METHOD		HOLLOW STEW AUGER			
SAMPLING METHOD		140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		CHRIS NIELSON-CERULONE			
N/S		2645.4		E/W	
				J153.8	
				ELEV.	
				14.41	
BORING DIAMETER:		6 INCHES		WELL CASING DIAMETER:	
				2 INCHES	

DIST. FROM SURF.	WELL CONST.			TLY. READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL		
	CASING	ANNULUS	LENDG								
1	BLANK	4% BENTONITE CEMENT SLURRY	[Cross-hatched pattern]					ML	PORTLAND CEMENT CONCRETE		
2									SANDY GRAVEL- GRAY, MOIST, MEDIUM DENSE		
3										SANDY SILT- BLACK, DRY TO MOIST, MEDIUM STIFF.	
4											
4		3/8" CEMENT PELL.	[Diagonal hatched pattern]					SM	SILTY SAND- GRAY BROWN, MOIST, MEDIUM DENSE, STRONG HYDROCARBON ODR.		
5									HIT CONCRETE OBSTRUCTION, VERY STRONG SEWAGE OODR PRESENT.		
6		3/4 SAND	[Dotted pattern]								
7											
8											HIT OBSTRUCTION.
9											
10	0.030 INCH SLOT										CONTINUED DRILLING WITH NO CUTTINGS COMING TO SURFACE. WHEN AUGER WAS PULLED OUT THERE WAS A STRONG LEACHATE OODR.
11											
12											
13											
14											
15											TEST BORING TERMINATED • 15' ON 4-27-89

PR-48



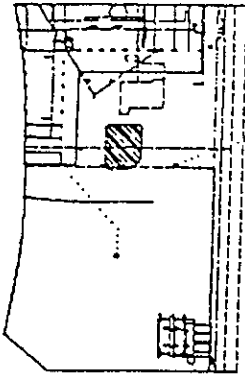
ANANIA GEOLOGIC ENGINEERING

BORING LOG

SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-48	
WATER LEVEL				SHEET 1 of 1	
TIME				DRILLER	
DATE				START FINISH	
CASING DEPTH				TIME TIME	
DRILLING CONTRACTOR				DATE DATE	
DRILLER		MIKE MOORE		4-27-89 4-27-89	
DRILLING METHOD		HOLLOW STEW AUGER			
SAMPLING METHOD		140# HAMMER 30' DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		CHRIS NIELSON-CERQUONE			
N/S		2527.1		E/W	
				3148.9	
				ELEV. 14.57	
BORING DIAMETER:		6 INCHES		WELL CASING DIAMETER:	
				2 INCHES	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL				
	CASING	ANNULUS	LEGEND										
1	BLANK	4% BENTONITE CEMENT SLURRY	[Cross-hatched pattern]					GP ML	PORTLAND CEMENT CONCRETE				
2									SANDY GRAVEL - MOIST, MEDIUM DENSE				
3										SANDY SILT - BLACK, DRY, SOFT, SLIGHT HYDROCARBON ODOR.			
4													
4	0.030 INCH SLOT	3% SAND	[Dotted pattern]					SM	SILTY SAND - GRAY/GREEN BROWN, MOIST, MEDIUM DENSE, MODERATE HYDROCARBON ODOR.				
5													
6													
7													
8												COLOR CHANGE TO BROWN AND MOTTLED GREEN GRAY.	
9													
10													COLOR CHANGE TO BROWN, GRADES WET, STRONG HYDROCARBON ODOR.
11													
12													
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15													
													TEST BORING TERMINATED • 15' ON 4-27-89

PR-49



ANANIA GEOLOGIC ENGINEERING

BORING LOG

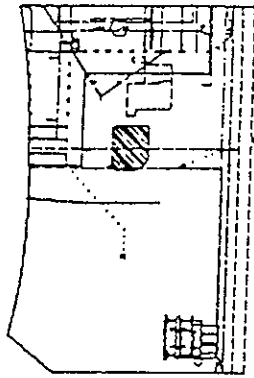
SITE/LOCATION		CARNATION/DAYLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-49	
WATER LEVEL				SHEET 1 of 1	
TIME				DRILLER	
DATE				START	FINISH
CASING DEPTH				TIME	TIME
DRILLING CONTRACTOR				13:30	14:20
DRILLER		MIKE MOORE		DATE	DATE
DRILLING METHOD		HOLLOW STEM AUGER		4-27-89	4-27-89
SAMPLING METHOD		1/4" HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		CHRIS NIELSON-CERQUONE			
N/S	2652.3	E/W	3179.1	ELEV. 14.50	
BORING DIAMETER:			6 INCHES		WELL CASING DIAMETER:
					2 INCHES

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL DATE: 8-24-89	
	CASING	ANNULUS	LEGEND							
1		4% BENTONITE CEMENT SLURRY	[Cross-hatched pattern]					GP	PORTLAND CEMENT CONCRETE	
2								ML	SANDY GRAVEL - MOIST, MEDIUM DENSE.	
3	BLANK								SANDY SILT - BLACK, DRY, MEDIUM STIFF, HYDROCARBON ODOUR.	
4		3/8" BENT. PELL.	[Diagonal lines pattern]					SM	SILTY SAND - MOTTLED BROWN AND GRAY GREEN, MOIST MEDIUM DENSE.	
5										
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10	0.030 INCH SLOT									COLOR CHANGE TO YELLOW BROWN, GRADES WET.
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TEST BORING TERMINATED @ 25' ON 4-27-89



PR-50



ANANIA GEOLOGIC ENGINEERING

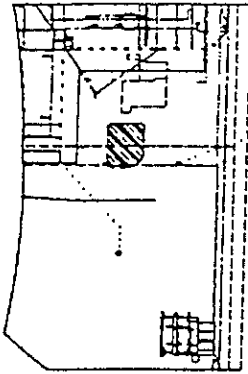
BORING LOG

SITE/LOCATION		CARNATION/DANLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-50	
WATER LEVEL				SHEET 1 of 1	
TIME				DRILLER	
DATE				START FINISH	
CASING DEPTH				TIME TIME	
DRILLING CONTRACTOR				14:30	
DRILLER		MIKE MOORE		DATE DATE	
DRILLING METHOD		HOLLOW STEM AUGER		4-27-89 4-27-89	
SAMPLING METHOD		14" HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		CHRIS NIELSON-CERQUENE			
N/S		2635.6		E/W	
				3173.2	
				ELEV.	
				14.37	
BORING DIAMETER:		6 INCHES		WELL CASING DIAMETER:	
				2 INCHES	

DIST. FROM SURF.	WELL CONST.		LEGEND	TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS							
1		4% BENTONITE CEMENT SLURRY						GP	PORTLAND CEMENT CONCRETE
2								ML	SANDY GRAVEL - MOIST, MEDIUM DENSE
3	BLANK								SANDY SILT - BLACK, DRY, MEDIUM STIFF.
4		3/8" BENT. PELL						SM	SILTY SAND - MOTTLED GRAY GREEN AND BROWN, MOIST, MEDIUM DENSE, STRONG SEWAGE AND HYDROCARBON ODOR.
5									
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10	0.000 INCH SLOT								
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TEST BORING TERMINATED • 15' ON 4-27-89

PR-52



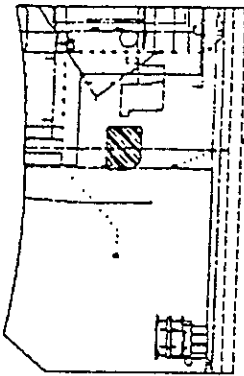
ANANIA GEOLOGIC ENGINEERING

BORING LOG

SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-85-059		PR-52	
WATER LEVEL				SHEET 1 of 1	
TIME				DRILLER	
DATE				START	FINISH
CASING DEPTH				TIME	TIME
DRILLING CONTRACTOR				15:30	
DRILLER				MIKE MOORE	
DRILLING METHOD				HOLLOW STEM AUGER	DATE
SAMPLING METHOD				14" HAWKER 30" DROP, MODIFIED CALIFORNIA SAMPLER	
LOGGER				CHRIS NIELSON-CERQUONE	
N/S	2621.5	E/W	3168.2	ELEV. 14.55	
BORING DIAMETER:			6 INCHES	WELL CASING DIAMETER:	
				2 INCHES	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL	
	CASING	ANNULUS	LEGEND							
1		4% BENTONITE CEMENT SLURRY	[Cross-hatched pattern]					OP	PORTLAND CEMENT CONCRETE	
2	BLANK							ML	SANDY GRAVEL - GRAY, MOIST, MEDIUM DENSE	
3									SANDY SILT - BLACK, DRY, MEDIUM STIFF.	
4		3/8" BENT. PELL.	[Diagonal lines pattern]					SM	SILTY SAND - GRAY/GREEN BROWN, DRY TO MOIST, MEDIUM DENSE.	
5				10						
6										
7										GRADES MOIST TO WET.
8										
9										
10	0.030 INCH SLOT									
11										
12										
13										
14										
15									TEST BORING TERMINATED @ 15' ON 4-27-89	

PR-53



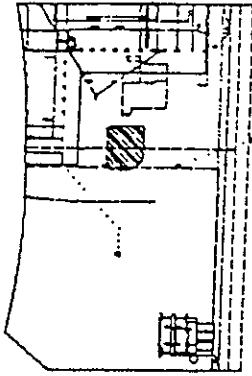
ANANIA GEOLOGIC ENGINEERING

BORING LOG

SITE/LOCATION		CARNATION/GAULAND		BORING NO.	
PROJECT NO.		004-88-059		PR-53	
WATER LEVEL				SHEET 1 of 1	
TIME				DRILLER	
DATE				START	FINISH
CASING DEPTH				TIME	TIME
DRILLING CONTRACTOR				TO:00	
DRILLER		MIKE MOORE		DATE	DATE
DRILLING METHOD		HOLLOW STEM AUGER		4-28-89	4-28-89
SAMPLING METHOD		1/4" HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		CHRIS NIELSON-CERUONE			
N/S	287.2	E/W	3187.9	ELEV. 14.13	
BORING DIAMETER:			6 INCHES		WELL CASING DIAMETER:
			2 INCHES		

DIST. FROM SURF.	WELL CONST.		LEGEND	TLY READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS							
1			[Cross-hatched pattern]					SM	PORTLAND CEMENT CONCRETE
2		4% BENTONITE CEMENT SLURRY							SANDY GRAVEL - MOIST, MEDIUM DENSE
3	BLANK								SILTY SAND - DARK BROWN TO BLACK, MOIST, MEDIUM DENSE, FINE GRAINED, SEWAGE ODOR.
4		3/8" BENT. PELL.							COLOR CHANGE TO GRAY/GREEN BROWN.
5			[Dotted pattern]						
6									
7									
8									
9									
10	0.030 INCH SLOT								
11									
12									
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15									
									COLOR CHANGE TO YELLOW BROWN, GRADES WET.
									TEST BORING TERMINATED • 15' ON 4-28-89

PR-54



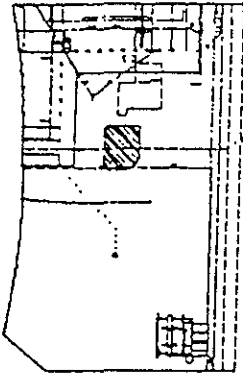
ANANIA GEOLOGIC ENGINEERING

BORING LOG

SITE/LOCATION	CARNATION/OAKLAND	BORING NO.	PR-54		
PROJECT NO.	004-88-059	SHEET	1 of 1		
WATER LEVEL		DRILLER			
TIME		START	FINISH		
DATE		TIME	TIME		
CASING DEPTH		DATE	DATE		
DRILLING CONTRACTOR		4-28-89			
DRILLER	MIKE MOORE				
DRILLING METHOD	HOLLOW STEM AUGER				
SAMPLING METHOD	140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER				
LOGGER	CHRIS NIELSON-DEGLIONE				
N/S	2642.4	E/W	348-5-3219.6	ELEV.	14.33
BORING DIAMETER:	6 INCHES	WELL CASING DIAMETER:	2 INCHES		

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1		4# BENTONITE CEMENT SLURRY						SM	PORTLAND CEMENT CONCRETE
2	BLANK								SANDY GRAVEL - MOIST, MEDIUM DENSE
3		3/8" BENT. PELL.							SILTY SAND - DARK BROWN TO BLACK, MOIST, MED DENSE, HYDROCARBON ODOR.
4									COLOR CHANGE TO GRAY/GREEN, SLIGHTLY PLASTIC, STRONG HYDROCARBON ODOR, NO CLASTICS.
5									
6									
7									
8									COLOR CHANGE TO YELLOW BROWN, MOIST TO WET.
9									
10	0.000 INCH SLOT								
11									
12									
13									
14									
15									TEST BORING TERMINATED • 15' ON 4-28-89

PR-55



ANANIA GEOLOGIC ENGINEERING

BORING LOG

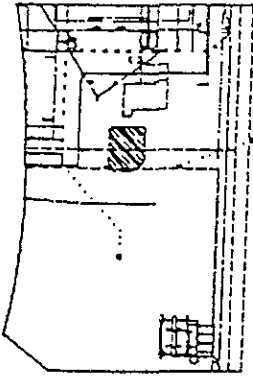
SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-55	
WATER LEVEL				SHEET 1 of 1	
TIME				DRILLER	
DATE				START	FINISH
CASING DEPTH				TIME	TIME
DRILLING CONTRACTOR				12:30	
DRILLER		MIKE MOORE		DATE	DATE
DRILLING METHOD		HOLLOW STEM AUGER		4-28-89	4-28-89
SAMPLING METHOD		140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		CHRIS NIELSON-CERQUONE			
N/S	2625.1	E/W	3274.7	ELEV.	14.48
BORING DIAMETER: 6 INCHES			WELL CASING DIAMETER: 2 INCHES		

DIST. FROM SURF.	WELL CONST.		LEGEND	TLY READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL	
	CASING	ANNULUS								
1		4x BENTONITE CEMENT SLURRY	[Cross-hatched pattern]					SP	PORTLAND CEMENT CONCRETE	
2	BLANK							SM	SANDY GRAVEL - MOIST, MEDIUM DENSE	
3									SILTY SAND - BROWN, MOIST, MEDIUM DENSE, STRONG HYDROCARBON ODO.	
4		3/8" BENT. PELL.		[Diagonal lines pattern]					COLOR CHANGE TO GRAY/GREEN, MOIST, HYDROCARBON ODO.	
5			[Dotted pattern]							
6										
7										
8										
9										
10	0.030 INCH SLOT									COLOR CHANGE TO YELLOW BROWN, GRADES MOIST TO WET.
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3600

TEST BORING TERMINATED • 15' ON 4-28-89

PR-56



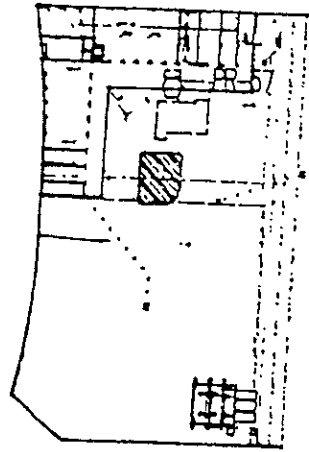
ANANIA GEOLOGIC ENGINEERING

BORING LOG

SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-56	
WATER LEVEL				SHEET 1 of 1	
TIME				DRILLER	
DATE				START	FINISH
CASING DEPTH				TIME	TIME
DRILLING CONTRACTOR				DATE	DATE
DRILLER		MIKE WOODR		4-28-89	4-28-89
DRILLING METHOD		HOLLOW STEM AUGER			
SAMPLING METHOD		140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER.			
LOGGER		CHRIS NIELSON-CERDUNE			
N/S	2506.9	E/W	3208.2	ELEV.	14.59
BORING DIAMETER:			6 INCHES		
WELL CASING DIAMETER:			2 INCHES		

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1		4% BENTONITE CEMENT SLURRY	[Cross-hatch pattern]					OP	PORTLAND CEMENT CONCRETE
2								SM	SANDY GRAVEL - MOIST, MEDIUM DENSE.
3	BLANK								SILTY SAND (FINE) - DARK BROWN, MOIST, MEDIUM DENSE, FINE GRAINED.
4		3/8" BENT. PELL.	[Diagonal lines]						COLOR CHANGE TO GRAY/GREEN BROWN, MEDIUM GRAINED, STRONG HYDROCARBON ODOR.
5									
6									
7									
8									GRADES MOIST TO WET
9									
10	0.030 INCH SLOT								GRADES WET
11									
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14									
15									
									TEST BORING TERMINATED • 15' ON 4-28-89

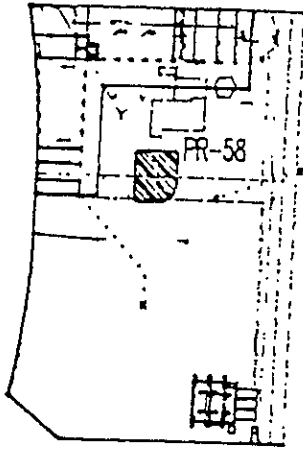
LOCATION OF BORING



SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-86-059		PR-57	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR				TIME	TIME
DRILLER		MOSE MOORE		10:30	11:20
DRILLING METHOD		HOLLOW STEM AUGER		DATE	DATE
SAMPLING METHOD		140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER		5-11-89	5-11-89
LOGGER		JOHN RUSSELL			
N/S	2572.7	E/W	381.1	ELEV.	14.31
BORING DIAMETER:		8 INCHES		WELL CASING DIAMETER: 2 INCHES	
REVIEWED BY:		M.A.M.		DATE 8-29-89	

DIST. FROM SURF.	WELL CONST.		LEND	T.V. READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS							
1									PORTLAND CEMENT CONCRETE
2									
3	BLANK	4# BENTONITE CEMENT SLURRY							
4		3/8" BENT. PELL.						SP	
5									
6									SAND- BROWN, MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ, MAFICS AND TRACE CLAY, SLIGHT HYDROCARBON ODOOR.
7									
8									
9									
10	0.630 INCH SLUT								
11									SILTY SAND- BROWN, MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ, MAFICS AND TRACE CLAY, SLIGHT HYDROCARBON ODOOR.
12									
13									
14									
15									SLIGHT HYDROCARBON ODOOR.
									TEST BORING TERMINATED @ 15' ON 5-11-89
									MATERIALS: 2 BAGS OF SAND
									1/2 5 GALLON BUCKET OF BENTONITE

LOCATION OF BORING



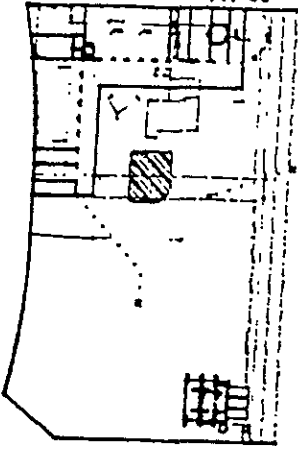
SITE/LOCATION		CARNATION/DARLAND		BORING NO.	
PROJECT NO.		004-88-059		PR-58	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR				TIME	TIME
DRILLER		MIKE MOORE		8:00	9:30
DRILLING METHOD		HOLLOW STEM AUGER		DATE	DATE
SAMPLING METHOD		1408 HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER		5-12-89	5-12-89
LOGGER		JOHN RUSSELL			
N/S	2555.8	E/W	3237.4	ELEV. 14.28	
BORING DIAMETER: 8 INCHES		WELL CASING DIAMETER: 2 INCHES			
REVIEWED BY: M.J.M.		DATE		8-29-89	

DIST. FROM SURF.	WELL CONST.		LEND	TLY READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS							
1		4" BENTONITE CEMENT SLURRY						SM	PORTLAND CEMENT CONCRETE
2	BLANK								
3		3/8" FEET. PELL.							
4				24					
5									SILTY SAND- BROWN, MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ. MAFES, HYDROCARBON ODOR.
6									
7									
8									
9	0.000 INCH SLOT	3/4 SAND		44					
10									COLOR CHANGE TO LIGHT BROWN WITH TRACE CLAY, FINE GRAINED, HYDROCARBON ODOR.
11									
12									
13									
14									
15				100					HYDROCARBON ODOR.
16									TEST BORING TERMINATED • 15' ON 5-12-89
									MATERIALS: 2 BAGS OF SAND
									1/2 5 GALLON BUCKET OF BENTONITE



LOCATION OF BORING

PR-60

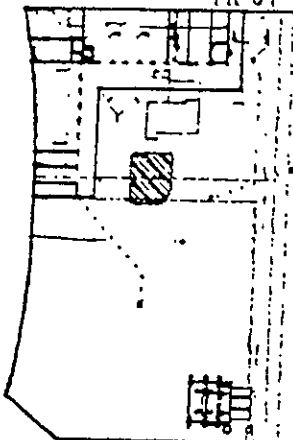


SITE/LOCATION		CARNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-88-068		PR-60	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR		WIRE MOORE		TIME	TIME
DRILLING METHOD		HOLLOW STEM AUGER		5-30	14:00
SAMPLING METHOD		1406 HAMMER 30' DROP, MODIFIED CALIFORNIA SAMPLER		DATE	DATE
LOGGER		JOHN RUSSELL		5-16-88	5-16-88
N/S	2811.4	E/W	3253.1	ELEV. 14.87	
BORING DIAMETER: 6 INCHES			WELL CASING DIAMETER: 2 INCHES		
REVIEWED BY: M.A.J.				DATE 8-29-88	

DIST. FROM SURF.	WELL CONST.		LENDG	TLY READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS							
1		4# BENTONITE CEMENT SLURRY							PORTLAND CEMENT CONCRETE
2	BLANK								
3		3/8" BENT. FILL							
4								SB	
5									SAND-GRAY, DRY TO MOIST, FINE-GRAINED, MEDIUM DENSE WITH MICA, QUARTZ, MAFICS, HYDROCARBON OIL.
6									
7									
8									
9	0.000 INCH SLOT								
10									
11									SILTY SAND- LIGHT BROWN, MOIST, MEDIUM DENSE, FINE-GRAINED WITH MICA, QUARTZ, MAFICS.
12								SM	
13									
14									
15									
16									
TEST BORING TERMINATED @ 15' ON 5-16-88									
MATERIALS: 2 BAGS OF SAND									
1/2 5 GALLON BUCKET OF BENTONITE									

LOCATION OF BORING

PR-61

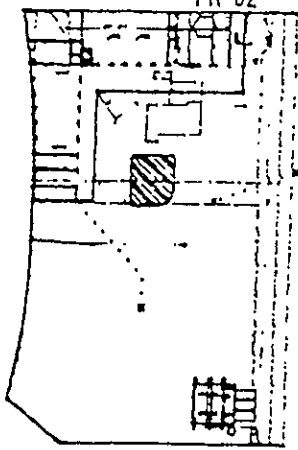


SITE/LOCATION		CANNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-85-050		PR-61	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR				TIME	TIME
DRILLER		MIKE MOORE		14:30	14:45
DRILLING METHOD		HOLLOW STEM AUGER		DATE	DATE
SAMPLING METHOD		1400 HAMMER 30' DROP, MODIFIED CALIFORNIA SAMPLER		5-18-88	5-18-88
LOGGER		JOHN RUSSELL			
N/S	2886.3	2575.3	E/W	3248.1	3248.1
BORING DIAMETER: 6 INCHES		WELL CASING DIAMETER: 2 INCHES			
ELEV. 14.54		14.56			
REVIEWED BY: M.J.M.		DATE 5-28-88			

DIST. FROM SURF.	WELL CONST.			TLY. READING	SAMPLE NO.	RECOVERY	BLOBS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1								SB	PORTLAND CEMENT CONCRETE
2		44 BENTONITE CEMENT SLURRY							SAND- BROWN, DRY TO MOIST, MEDIUM DENSE, FINE GRAINED WITH MICA, QUARTZ, MAFICS, HYDROCARBON ODOR.
3	BLANK								
4		3/8" BENTONITE CEMENT PELL.						SM	
5									
6									
7									
8									
9	0.000 INCH SLUT								
10		3/8" SAND							SAND- BROWN, DRY TO MOIST, MEDIUM DENSE, FINE GRAINED WITH MICA, QUARTZ, MAFICS, HYDROCARBON ODOR.
11									
12									
13									SILTY SAND- FINE-GRAINED, BROWN, MOIST, SEMI-PLASTIC, MICA, QUARTZ, MAFICS, HYDROCARBON ODOR.
14								TEST BORING TERMINATED @ 15' ON 5-18-88	
15									
16									
									MATERIALS: 2 BAGS OF SAND
									1/2 GALLON BUCKET OF BENTONITE

LOCATION OF BORING

PR-62

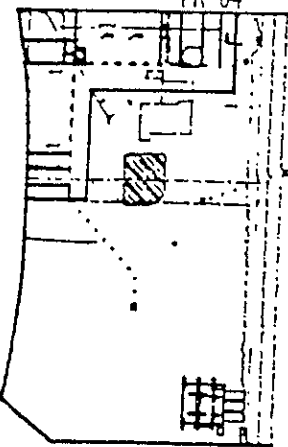


SITE/LOCATION		DUNNATION/OAKLAND		BORING NO.	
PROJECT NO.		004-85-054		PR-62	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START	FINISH
				10:10	10:40
DRILLING CONTRACTOR				DATE	DATE
DRILLER		MIKE MOORE		5-17-89	5-17-89
DRILLING METHOD		HOLLOW STEW AUGER			
SAMPLING METHOD		1404 HAMMER 30' DROP, MODIFIED CALIFORNIA SAMPLER			
LOGGER		JOHN RUSSELL			
N/S	2829.0	E/W	3240.8	ELEV. 14.53	
BORING DIAMETER: 8 INCHES		WELL CASING DIAMETER: 2 INCHES			
REVIEWED BY: W.J.M.		DATE		8-29-89	

DIST. FROM SURF.	WELL CONST.			TLY. READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	MATERIALS	LEAD						
1	6"	44 BENTONITE CEMENT SLURRY	PORTLAND CEMENT CONCRETE						
2									
3	BLANK								
4		3/8" BENTONITE CEMENT PELL.						SP	
5				125					
6									
7									
8									
9	0.070 INCH SLOT								
10		54 SAND		1300					
11								SM	
12									
13									
14									
15				2000					
16									
									HYDROCARBON ODOR.
									TEST BORING TERMINATED • 15' ON 5-17-89
									MATERIALS: 2 BAGS OF SAND
									1/2 5 GALLON BUCKET OF BENTONITE

LOCATION OF BORING

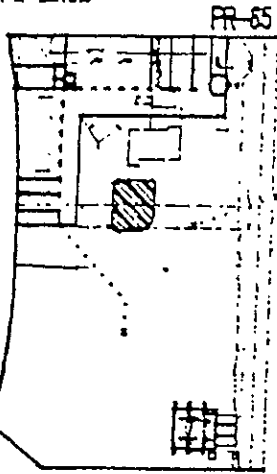
PR-64



SITE/LOCATION	CAPINATION/OAKLAND	BORING NO.	
PROJECT NO.	004-08-064	PR-64	
WATER LEVEL		SHEET 1	
TIME		OF 1	
DATE		DRILLER	
GASING DEPTH		START	FINISH
DRILLING CONTRACTOR		TIME	TIME
DRILLER	MIKE MOORE	5-17-89	12:00
DRILLING METHOD	HOLLOW STEM AUGER	DATE	DATE
SAMPLING METHOD	140# HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER	5-17-89	5-17-89
LOGGER	JOHN RUSSELL		
N/S	2594.5	E/W	3230.2
		ELEV. 14.56	
BORING DIAMETER: 6 INCHES		WELL CASING DIAMETER: 2 INCHES	
REVIEWED BY: M.A.M.		DATE 8-29-89	

DIST. FROM SURF.	WELL CONST.			TYL. READING	SAMPLE NO.	RECOVERY	BLOBS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	WALLIS	LENDG						
1		4" BENTONITE CEMENT SLURRY						SP	PORTLAND CEMENT CONCRETE
2	BLANK								SAND- BROWN, MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ. HYDROCARBON ODOR.
3		3/8" BENTONITE CEMENT PELL.							
4									
5				86					
6									
7									
8									
9	0.030 INCH SLOT	3" SAND		10000				SM	SILTY SAND- BROWN, MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ. MAFICS, HYDROCARBON ODOR.
10									
11									
12									
13				10000					HYDROCARBON ODOR.
14									TEST BORING TERMINATED @ 15' ON 5-17-89
15									
									MATERIALS: 2 BAGS OF SAND 1/2 5 GALLON BUCKET OF BENTONITE

LOCATION OF BORING

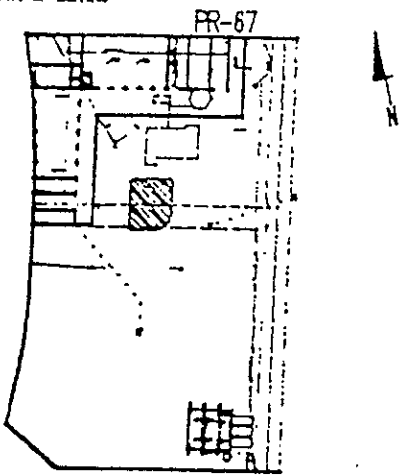


SITE/LOCATION		OPPINATION/DAKLAND		BORING NO.	
PROJECT NO.		004-88-060		PR-65	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START DATE	
				FINISH DATE	
DRILLING CONTRACTOR		MICHAEL MOORE		DATE	
DRILLER		MICHAEL MOORE		DATE	
DRILLING METHOD		HOLLOW STEM AUGER		5-17-88	
SAMPLING METHOD		140# HAMMER 30' DROP, MODIFIED CALIFORNIA SAMPLER		5-17-88	
LOGGER		JOHN RUSSELL			
N/S	2983.8	E/W	3263.9	ELEV. 14.50	
BORING DIAMETER: 6 INCHES		WELL CASING DIAMETER: 2 INCHES			
REVISED BY: M.J.M.		DATE 8-29-88			

DIST. FROM SURF.	WELL CONST.			TLY. READING	SAMPLE NO.	RECOVERY	BLDGS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	WALLS	LEND						
0	BLANK	4# BENTONITE CEMENT SLURRY	[Pattern]						PORTLAND CEMENT CONCRETE
1									
2									SAND- BROWN, DRY TO MOIST, MEDIUM DENSE, FINE-GRAINED WITH QUARTZ, MAFICS, NO HYDROCARBON ODOR.
3									
4		3/8" BENT. PELL.	[Pattern]						
5									
6									
7									
8									
9									
10	0.030 INCH SLIT	3# SAND	[Pattern]	7000					SILTY SAND- MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ, MAFICS, HYDROCARBON ODOR, SOME CLAY.
11									
12									
13									
14									
15									
16									HYDROCARBON ODOR.
17									TEST BORING TERMINATED @ 15' ON 5-17-88
18									
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MATERIALS: 2 BAGS OF SAND  
1/2 5 GALLON BUCKET OF BENTONITE

LOCATION OF BORING

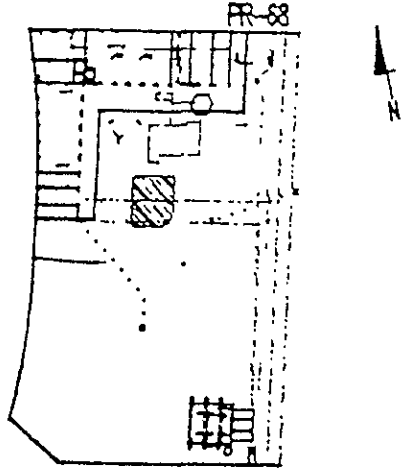


PR-67

SITE/LOCATION				CARPENTER/DARLAND		BORING NO.	
PROJECT NO.				004-88-058		PR-67	
WATER LEVEL						SHEET 1	
TIME						OF 1	
DATE						DRILLER	
CASING DEPTH						START	FINISH
DRILLING CONTRACTOR						TIME	TIME
DRILLER				MIKE MOORE		10:00	10:50
DRILLING METHOD				HOLLOW STEM AUGER		DATE	DATE
SAMPLING METHOD				1448 HAMMER 30' DROP, MODIFIED CALIFORNIA SAMPLER		5-18-88	5-18-88
LOGGER				JOHN RUSSELL			
N/S		2575 J		E/W		3224 J	
						ELEV. 14.12	
BORING DIAMETER:				8 INCHES		WELL CASING DIAMETER: 2 INCHES	
REVIEWED BY:				M.A.M.		DATE 8-29-88	

DIST. FROM SURF.	WELL CONST.			TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LEGEND						
1								SC	CONCRETE
2		4% BENTONITE CELENT SLURRY							SAND- GRAY, MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ, MAFICS, HYDROCARBON ODOOR.
3	BLANK								
4		3/8" BENT. FILL						SM	
5				2800					
6									
7									
8									
9									
10	0.030 INCH SLOT	3/4 SAND		10000					
11									SILTY SAND- BROWN, MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ, MAFICS, HYDROCARBON ODOOR.
12									
13									
14									
15				9000					
									HYDROCARBON ODOOR.
									TEST BORING TERMINATED @ 15' ON 5-18-88
									MATERIALS: 2 BAGS OF SAND
									1/2 5 GALLON BUCKET OF BENTONITE

LOCATION OF BORING

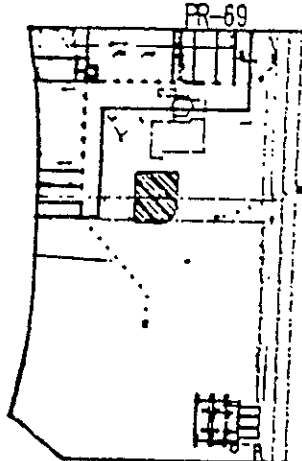


SITE/LOCATION		CARNATION/DARLAND		BORING NO.	
PROJECT NO.		004-88-058		PR-68	
WATER LEVEL				SHEET 1	
TIME				OF 1	
DATE				DRILLER	
CASING DEPTH				START	FINISH
DRILLING CONTRACTOR				TIME	TIME
DRILLER		MIKE MOORE		10:55	11:40
DRILLING METHOD		HOLLOW STEM AUGER		DATE	DATE
SAMPLING METHOD		1400 HAMMER 30" DROP, MODIFIED CALIFORNIA SAMPLER		5-18-89	5-18-89
LOGGER		JOHN RUSSELL			
N/S	2841.3	2561.5	E/W	3220.4	3220.6
BORING DIAMETER:		8 INCHES		WELL CASING DIAMETER: 2 INCHES	
REVIEWED BY:		M.A.M.		DATE 6-29-89	

DIST. FROM SURF.	WELL CONST.			TLY. READING	SAMPLE NO.	RECOVERY	BLDG. PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS	LENDG.						
1		AS BENTONITE CEMENT SLURRY						SP	PORTLAND CEMENT CONCRETE
2	BLANK								
3		3/8" BENT. FILL							
4									
5				800				SM	SAND- MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ, MAFICS, HYDROCARBON ODOUR.
6									
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10	0.030 INCH SLOT			8000					
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MATERIALS: 2 BAGS OF SAND  
1/2 5 GALLON BUCKET OF BENTONITE

LOCATION OF BORING



SITE/LOCATION CANNATION/OAKLAND				BORING NO. PR-69	
PROJECT NO. 004-88-050				SHEET 1 OF 1	
WATER LEVEL				DRILLER	
TIME				START TIME 11:45	
DATE				FINISH TIME 12:15	
CASING DEPTH				DATE 5-18-68	
DRILLING CONTRACTOR				DATE 5-18-68	
DRILLER WIRE MOORE					
DRILLING METHOD HOLLOW STEM AUGER					
SAMPLING METHOD 140# HAMMER 3" DROP, MODIFIED CALIFORNIA SAMPLER					
LOGGER JOHN RUSSELL					
N/S 2547.4		E/W 3197.8		ELEV. 14.27	
BORING DIAMETER: 8 INCHES			WELL CASING DIAMETER: 2 INCHES		
REVIEWED BY: M.J.M.				DATE 6-29-68	

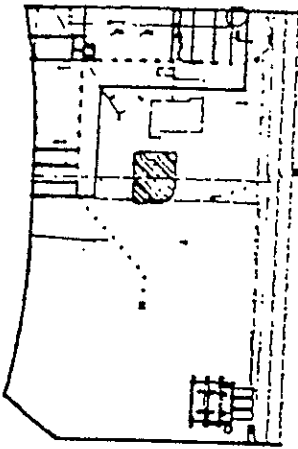
DIST. FROM SURF.	WELL CONST.		LEND	TLV READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	ANNULUS							
1								SM	PORTLAND CEMENT CONCRETE
2									SILTY SAND- GRAY, MOIST, MEDIUM DENSE, FINE TO COARSE GRAINED WITH COBBLES TO 5mm, HYDROCARBON ODOR.
3	BLANK	4# BENTONITE CEMENT SLURRY							
4		3/4" BENT. PELL.							
5				180					
6									
7									
8									
9	0.030 INCH SLOT								
10				5000				ML	SANDY SILT- GRAY, MOIST, MEDIUM STIFF WITH TRACE CLAY, QUARTZ, MINOR HYDROCARBON ODOR.
11									
12									
13									
14									
15				4400				SM	SILTY SAND- GRAY, MOIST, MEDIUM DENSE WITH TRACE CLAY, QUARTZ, HYDROCARBON ODOR.
									TEST BORING TERMINATED @ 15' ON 5-18-68
									MATERIALS: 2 BAGS OF SAND 1/2 5 GALLON BUCKET OF BENTONITE





LOCATION OF BORING

PR-76



SITE/LOCATION	CANNATION/OAKLAND	BORING NO. <b>PR-76</b>	
PROJECT NO.	004-88-060	SHEET 1 OF 1	
WATER LEVEL		DRILLER	
TIME		START	FINISH
DATE		TIME	TIME
CASING DEPTH		14:30	15:10
DRILLING CONTRACTOR		DATE	DATE
DRILLER	MIKE MOORE	5-25-89	5-25-89
DRILLING METHOD	HOLLOW STEM AUGER		
SAMPLING METHOD	140# HAMMER 3" DROP, MODIFIED CALIFORNIA SAMPLER		
LOGGER	JOHN RUSSELL		
N/S	2027.4	2627.6	E/W 3273.7
			ELEV. 14.34
BORING DIAMETER:	6 INCHES	WELL CASING DIAMETER:	2 INCHES
REVIEWED BY:	M.A.M.	DATE	6-29-89

DIST. FROM SURF.	WELL CONST.			LEND	TVL READING	SAMPLE NO.	RECOVERY	BLOWS PER 6 IN.	USCS	LOG OF MATERIAL
	CASING	MULLUS								
1									SP	PORTLAND CEMENT CONCRETE
2										
3	BLANK									
4		3/8" BENTONITE PELL.								
5										
6										SAND- DARK GRAY, MOIST, MEDIUM DENSE, FINE GRAINED WITH QUARTZ, WAFICS, HYDROCARBON ODOOR.
7										
8										
9										
10	0.030 INCH SLOT									
11										SILTZY SAND- DARK GRAY, MOIST, MEDIUM DENSE, FINE GRAINED WITH TRACE CLAY, QUARTZ, WAFICS, HYDROCARBON ODOOR.
12										
13										
14										
15										GRADES MOIST TO WET, HYDROCARBON ODOOR.
										TEST BORING TERMINATED @ 15' ON 5-25-89
										MATERIALS: 2 BAGS OF SAND
										1/2 5 GALLON BUCKET OF BENTONITE