- Revisions to 10/30/98 TPE PSA report.

99 FEB 8 PM 1:59

ENVIRONMENTAL PROTECTION

February 8, 1999

Tank Protect Engineering
2821 Whipple Road
Union City, CA. 94587

RE: Summary of Findings
Mission Valley Rock
799 Athenour Way
Sunol, Ca 94586
Project Number 384

At the end of December 1998, you asked me to address some concerns of Mr. ~~Bob~~ Seery, Alameda County Health Care Services Agency, about the Mission Valley Rock site(#384). Mr. Seery had read the Preliminary Site Assessment Report(PAR) submitted by TPE dated October 30, 1998.

The following is a summary of findings based on a review of the PAR and centered around Mr. Seery's concerns.

- Both the Log of Exploratory Boring and Construction Diagram, dated 6/18/98, have been neatly rewritten to be more legible(MW-1, MW-2, MW-3).

- ~~The aquifer appears to be a confined aquifer in the vicinity of the well locations~~ Top of the aquifer would correlate at the approximate base of a clay unit (top of sand unit) which extends to between 6.5 feet at MW-1(west) to 13 feet at MW-3(east).

- The upper clay is described as black,dense, and moist. It underlies the asphalt and aggregate base paving at MW-1 and MW-3. It cannot be ascertained from the exploratory logs if this clay is fill or natural, nor the areal extent of the clay. This would have no bearing on well completion.

- In MW-2 the upper clay is overlain by 3 feet of medium-grained sand which was described as wet and with "odor". This sand immediately underlies the asphalt/aggregate base paving. This sand may possibly be backfill for a utility water pipeline trench(see site map). At this location the clay was described as approximately 2.5 feet thick, dry, with a slight odor. In MW-1 and MW-3 the clay was described with no odor.

- Groundwater gradient for the upper boundary of the confined aquifer encountered during drilling appears to be to the east at a gradient of 0.046. During the initial groundwater sampling event of 6/23/98, 5 days later, static water level was measured between 1.32 and 2.66 BGS. ~~Flow direction was to the northeast at approximately 0.012~~ Except for being noticeably higher in the well bore, due to the aquifer being open to the atmosphere, gradient and direction were similar between confined and unconfined conditions. ~~Based on present information flow direction is toward the river to the east.~~

- Soil samples were analyzed at the following depths:

Well	Depth to water	Soil Sample Analyzed	ppm diesel
MW-1	7-8 feet	15-15.5 feet	<1
MW-2	9-10 feet	10-10.5 feet	14
MW-3	13 feet	20-20.5 feet	18

It appears the since saturated samples were analyzed, the results may reflect groundwater impact rather than soil impact of diesel. In other words, the porous soil particles may have been absorbing diesel from the water. Soil samples above the confined aquifer, in the overlying clay may not be impacted. MW-2 may be a special case in that the shallow "utility trench" sand may be directly impacted from the nearest UST, and thus impacted the immediately underlying clay, although there again water depth is nearly coincident with the soil sample depth.

- All monitoring wells were completed to acceptable standards based upon the conditions encountered at the time of drilling. Screen intervals, gravel pack, bentonite seal, cement grout, etc. were all properly placed. Subsequent groundwater sampling events should reflect site groundwater conditions.

Included in this summary are the following illustrations.

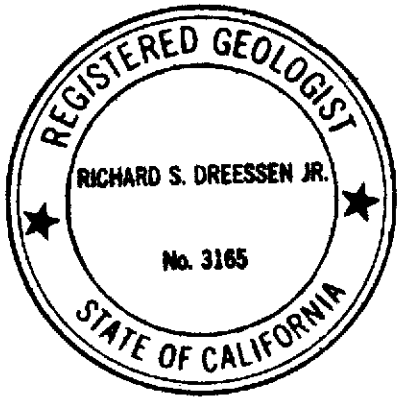
ILLUSTRATION	DESCRIPTION
Log of Exploratory Boring MW-1	Copied over for legibility
Log of Exploratory Boring MW-2	Copied over for legibility
Log of Exploratory Boring MW-3	Copied over for legibility
Construction Diagram MW-1	Copied over for legibility
Construction Diagram MW-2	Copied over for legibility
Construction Diagram MW-3	Copied over for legibility
Site Plan	Vadose Zone TPHD Concentrations
Site Plan	Comparison SWL and Top of Confined Aquifer Contours

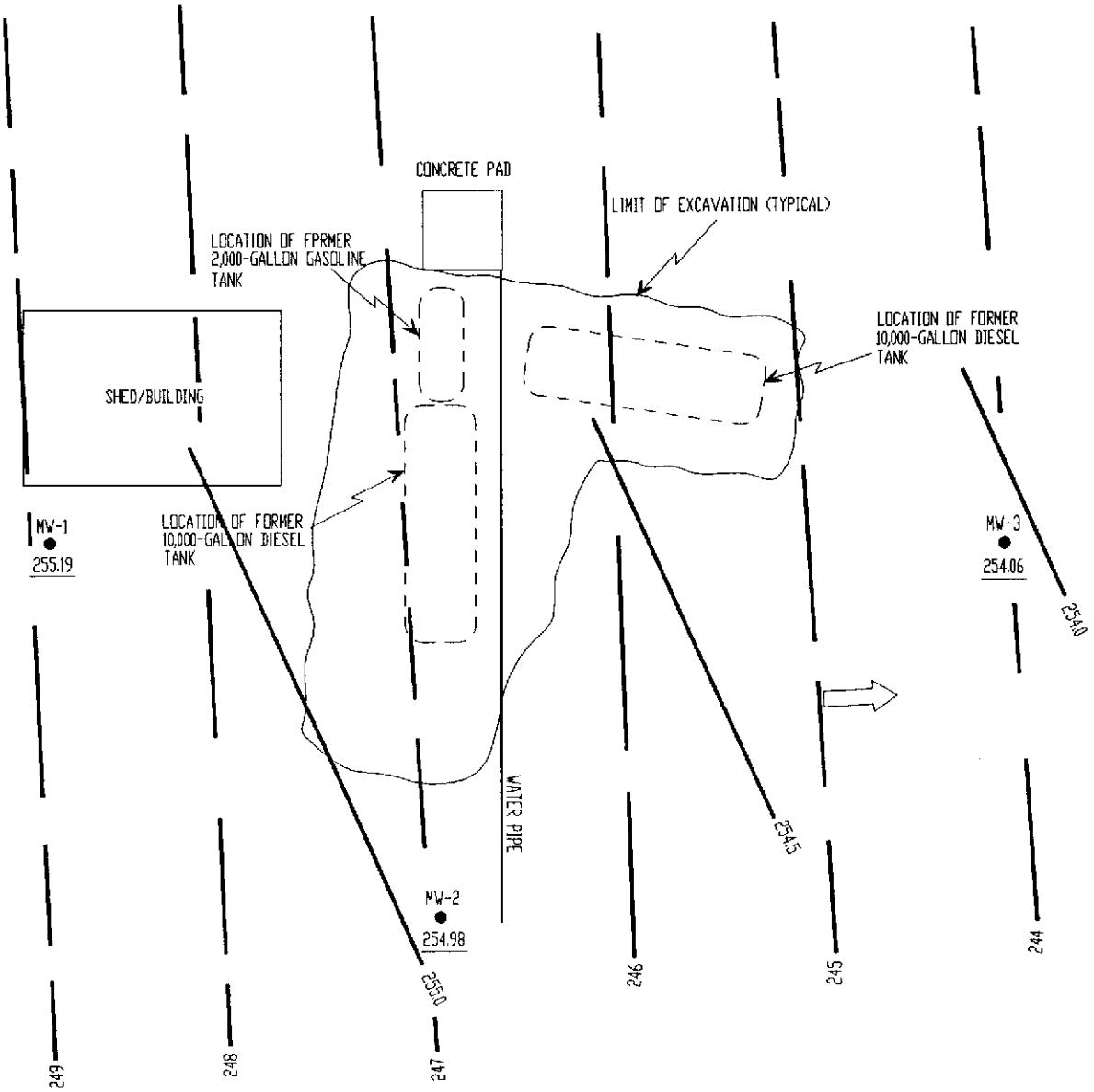
This summary should be sent to Mr. Seery the ACHCSA as an addendum the the PAR.

Sincerely,

Rick Dreessen Jr.

RICHARD S. DREESSEN JR.
REGISTERED GEOLOGIST





SWL IN SOLID LINE
CONFINED TOP IN DASH

LEGEND

MW-1 ● GROUNDWATER MONITORING WELL LOCATIONS

249 POTENTIOMETRIC ELEVATION

249 POTENTIOMETRIC CONTOUR

GROUNDWATER FLOW DIRECTION

0 20

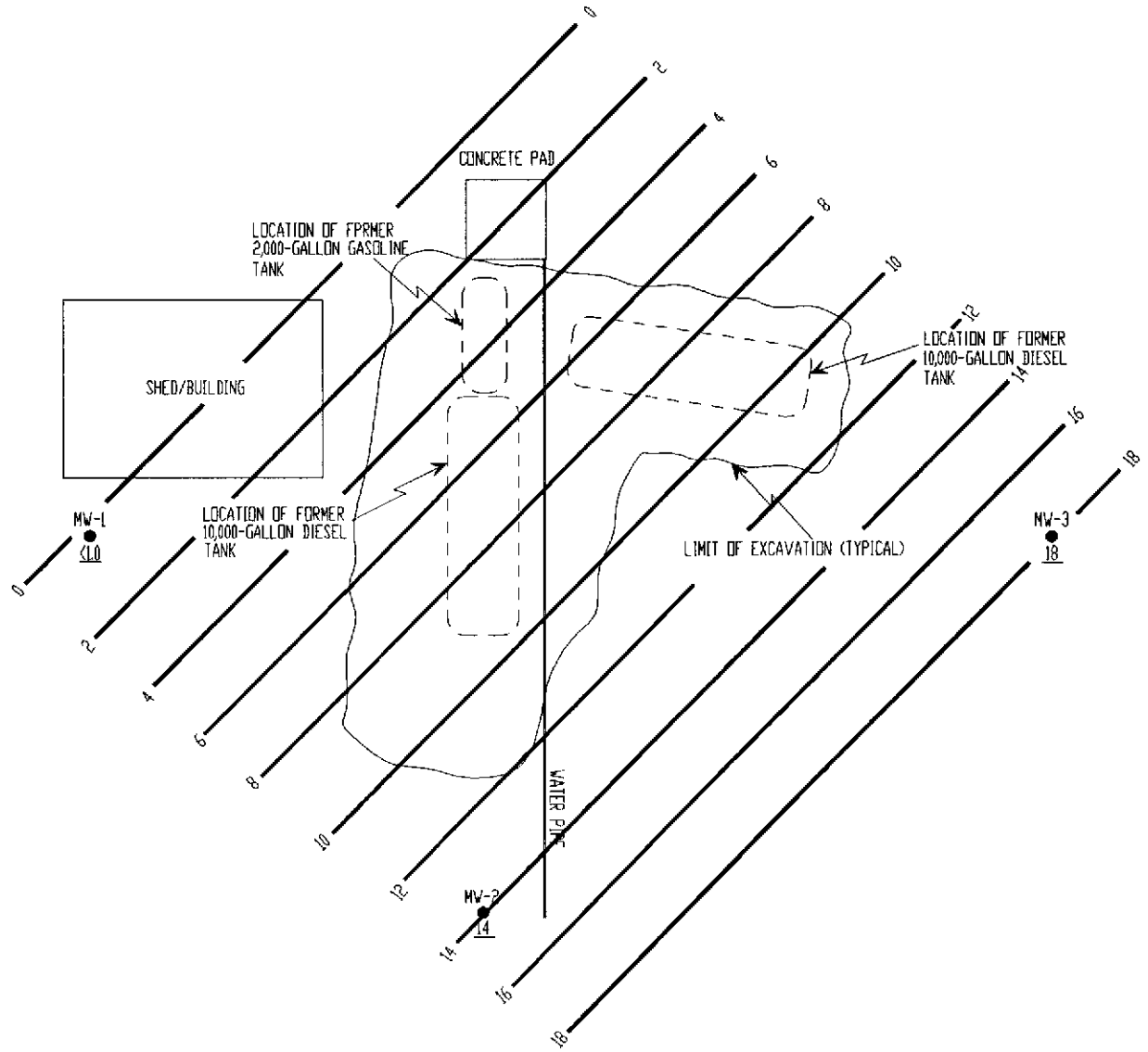
APPROXIMATE SCALE IN FEET

TANK PROTECT ENGINEERING

SITE PLAN:
GROUNDWATER ELEVATION AND GRADIENT MAP (06/23/98)

MISSION VALLEY ROCK
799 ATHENOUR WAY
SUNOL, CA 94586

DATE	02/08/99
FIGURE	1
FILE #	384-1T
DRAWN BY	VK
CHECKED BY	RD



LEGEND

MW-1 ● GROUNDWATER MONITORING WELL LOCATIONS

14 CONCENTRAION (ppm)

0 20

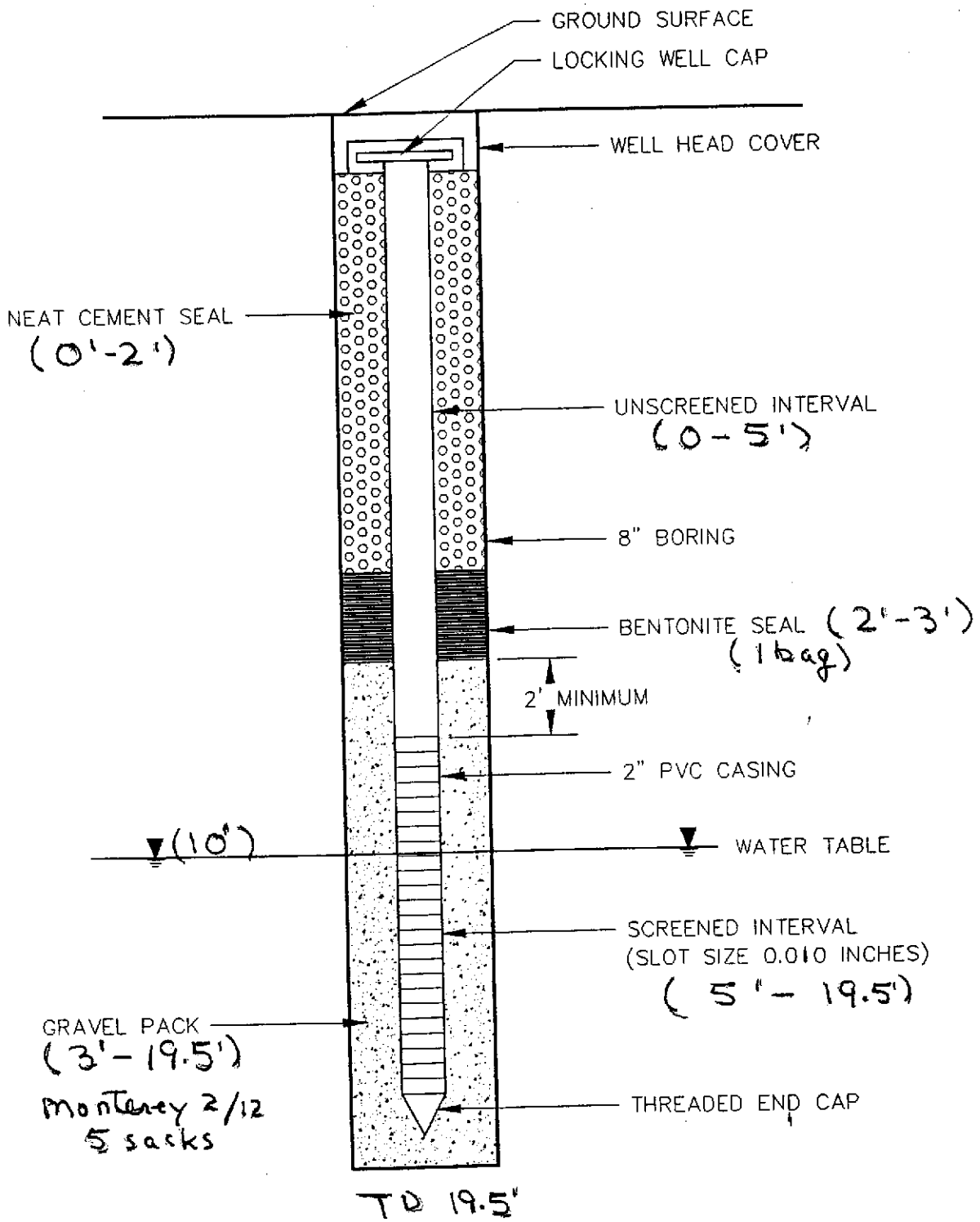
APPROXIMATE SCALE IN FEET

TANK PROTECT ENGINEERING

SITE PLAN:
VADOSE ZONE TPHD CONCENTRATIONS

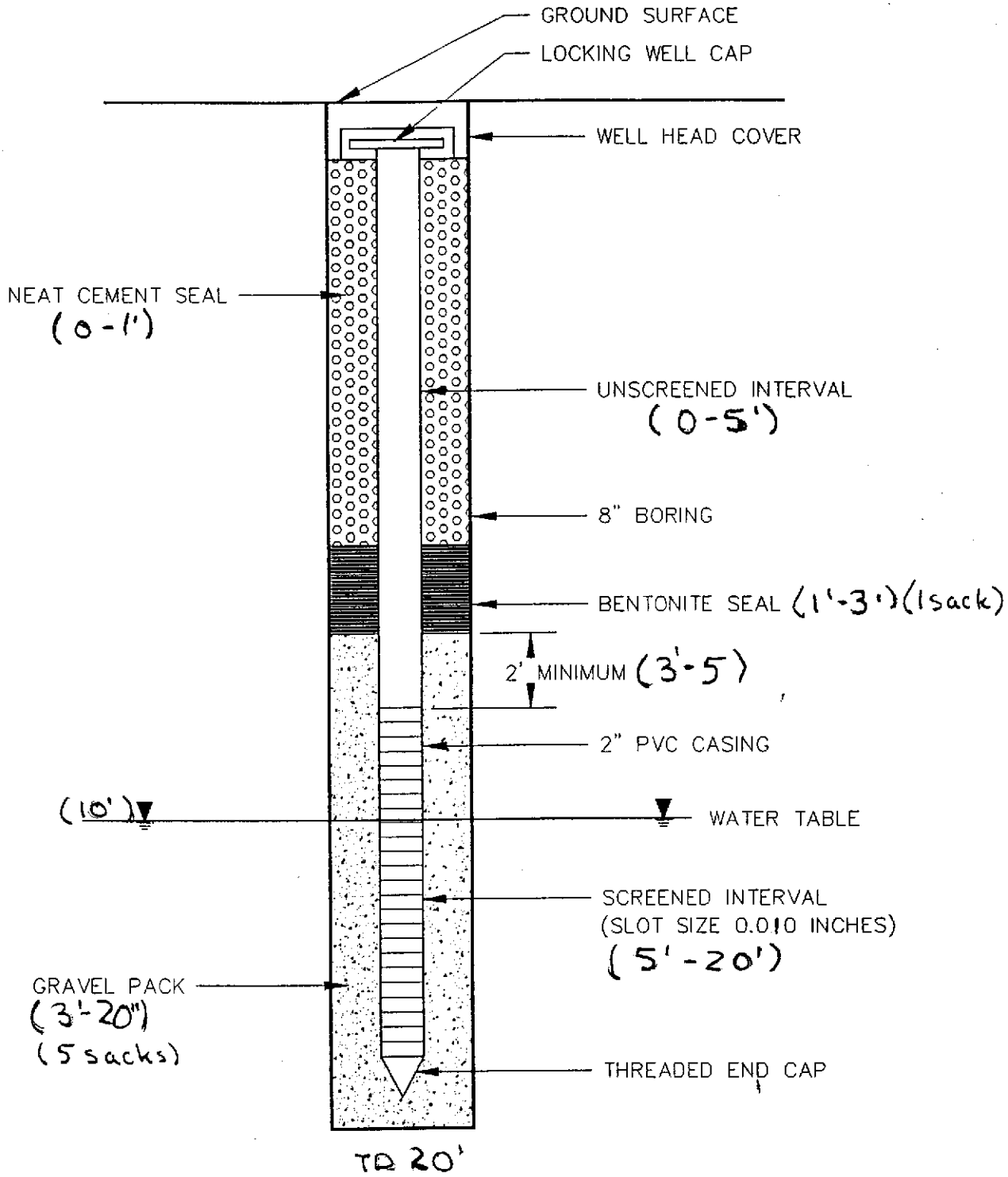
MISSION VALLEY ROCK
799 ATHENOUR WAY
SUNOL, CA 94586

DATE	02/08/99
FIGURE	2
FILE #	384-02T
DRAWN BY	VK
CHECKED BY	RD



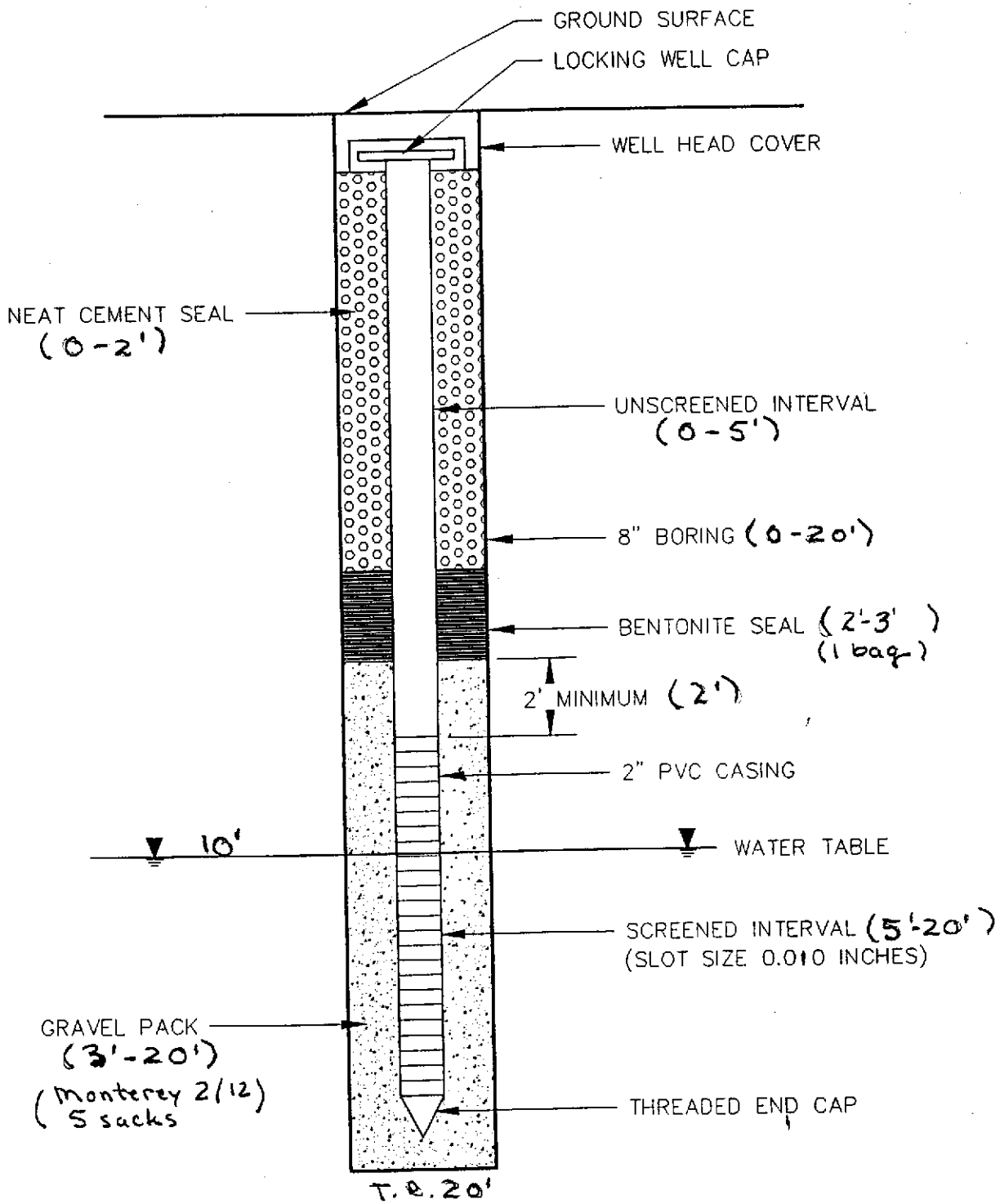
Well No: MW-1, Mission Valley Rock, 799 Athenour Way, Sunol; Construction Diagram

6-18-98



Well No: MW-2; Mission Valley Rock, 799 Athenour Way, Sunol; Construction Diagram

6-18-98



Well No: MW-3 Mission Valley Rock, 799 Athenour Way, Sunol, Construction Diagram

6-18-98

LOG OF EXPLORATORY BORING

PROJECT NUMBER 384 — BORING NO. MW-1

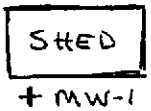
PROJECT NAME Mission Valley Rock, 799 Athenour Way (Sunol) — PAGE 1

BY LTM — DATE 6/18/98 — SURFACE ELEV.

Recovery (ft/ft)	OVA (ppm)	Penetration (blws/ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
							0-3" Aggregate Base (GW) brn, dry, no odor 3"-6" Clay (CH) Blk, stiff, moist
18/18	8	4/6/11		5'	5 6.5		5'-6' Clay (CH): blk, stiff, no odor, very dense 6'-6.5' Clay (CH): mottled, blk-brn, scattered gravel, dry to moist, very stiff, no odor
			▼ ~7'8"				
16/18	28	25/20/15		10'	10 11.5		10' Clayey Gravel. H_2O observed in drilling 10'-11.5' Clayey Gravel (CL/GW) mottled green to brn color, moist to wet, med-dense, no odor observed
9/18	38	30/50 for 5"	Sampler Refused	15'	15 18.5		15'-15.5' Clayey Gravel (CL/GW) mottled grn-brn color, scattered sand, wet, no odor, very soft Note: Top sandy gravel (SP/GW) Grey, hydrocarbon odor observed
		(50 for 2") >50	Sampler Refused	20'	20 20.2		20'-20.2' Gravelly Clay (GW/CL) mottled grn-grey color, very stiff, hydrocarbon odor, moist Note: Driller thought hole encountered rock - having a bad time drilling. Recorded 2" recovery from 18" sampler.
				25'			BORING TERMINATED @ 19.5'. Unable to COLLECT SAMPLES.

REMARKS

Started drilling @ 9:20AM
End drilling @ 11:00AM
Driller P.C. Exploration Inc



LOG OF EXPLORATORY BORING

PROJECT NUMBER 384 BORING NO. MW-2

PROJECT NAME Mission Valley Rock, 799 Athenour Way, Sunol PAGE 1

BY LT III DATE 6/18/98 SURFACE ELEV.

Recovery (ft/ft)	OVA (ppm)	Penetration (blws/ft)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
							0-3" Aggregate Base (GW) Brn, dry, no odor
							3"-3' Sand (SP) med grained, moist to wet light brn, [redacted] (possibly used to backfill around utility trench).
7/18	4	6/10/13		5'		5'	3'-5.5' Clay (CH) blk, stiff, dry, [redacted] odor
						6.5'	5.5'-5.6' Sand (SP) brn, hydrocarbon odor, med-grained
							5.7'-10' Gravelly-Clay (GW/CH) mottled, blk. to grn, strong hydrocarbon odor, wet @ 10', soft.
14	800	14/24/26	▼ @ 10'	10		10'	
						11.5'	Clayey-sandy-gravel (SP/GW). Grey to grey color. strong petroleum odor, moist to wet, med-grained, soft.
8/18	10	10 cent. for 6" >50		15		15'	First sign of H2O at 10'.
						16.5'	15'-16.5': Clayey gravel (CL/GW) grey, wet, hydrocarbon odor, soft.
-		>50/4		20		NR	No recovery.
							BORING TERMINATED AT 20.0' (3:30 PM)

REMARKS

SHED

+ MW-2

LOG OF EXPLORATORY BORING

PROJECT NUMBER 384 BORING NO. MW-3

PROJECT NAME Mission Valley Rock, 799 Athenour Way, Sunol PAGE 1

BY LT III DATE 6/18/93 SURFACE ELEV.

Recovery (ft/ft)	PID (ppm)	Penetration (blws/ft)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION	WELL DETAIL
							0-3" Aggregate base (GW) Brn, dry, no odor	
							3"-5' Clay (CH) mottled, Brn-blk, dry no odor, dense	
4/18		8/12/13		5			Clay (CH) blk, dense, no odor, dry to moist	
5/18		5"/50		10			Clay (CH) blk, dense, no odor, dry to moist. Observed H_2O in boring @ 10'	
			▼ 13'					
6/18		-		6"/35 15 1'/50			Clayey Gravel (GW/GC) mottled, blk. to grn. Scattered sand, wet, no odor.	
6/18		-		6/30 6/50 20			Gravelly Clay (GW/CL) Grey, wet, no odor	
							BORING TERMINATED AT 20'	

REMARKS

Started drilling @ 11:30 AM

SHED

+ MW-3