American Geotechnical
A CALIFORNIA CORPORATION

October 19, 1987 File No. 2103

Mr. Larry Schmidt
Watt Industries
2716 Ocean Park Boulevard
Santa Monica, California 90406

SUBJECT: PRELIMINARY GEOTECHNICAL INVESTIGATION
Proposed Recreational Facility near Rancho Palos Verdes City Hall
Rancho Palos Verdes, California

Dear Mr. Schmidt:

Per your request, American Geotechnical has performed a preliminary geotechnical investigation at the proposed recreational facility near Rancho Palos Verdes City Hall. The results of the investigation, including our conclusions and recommendations, are presented herein.

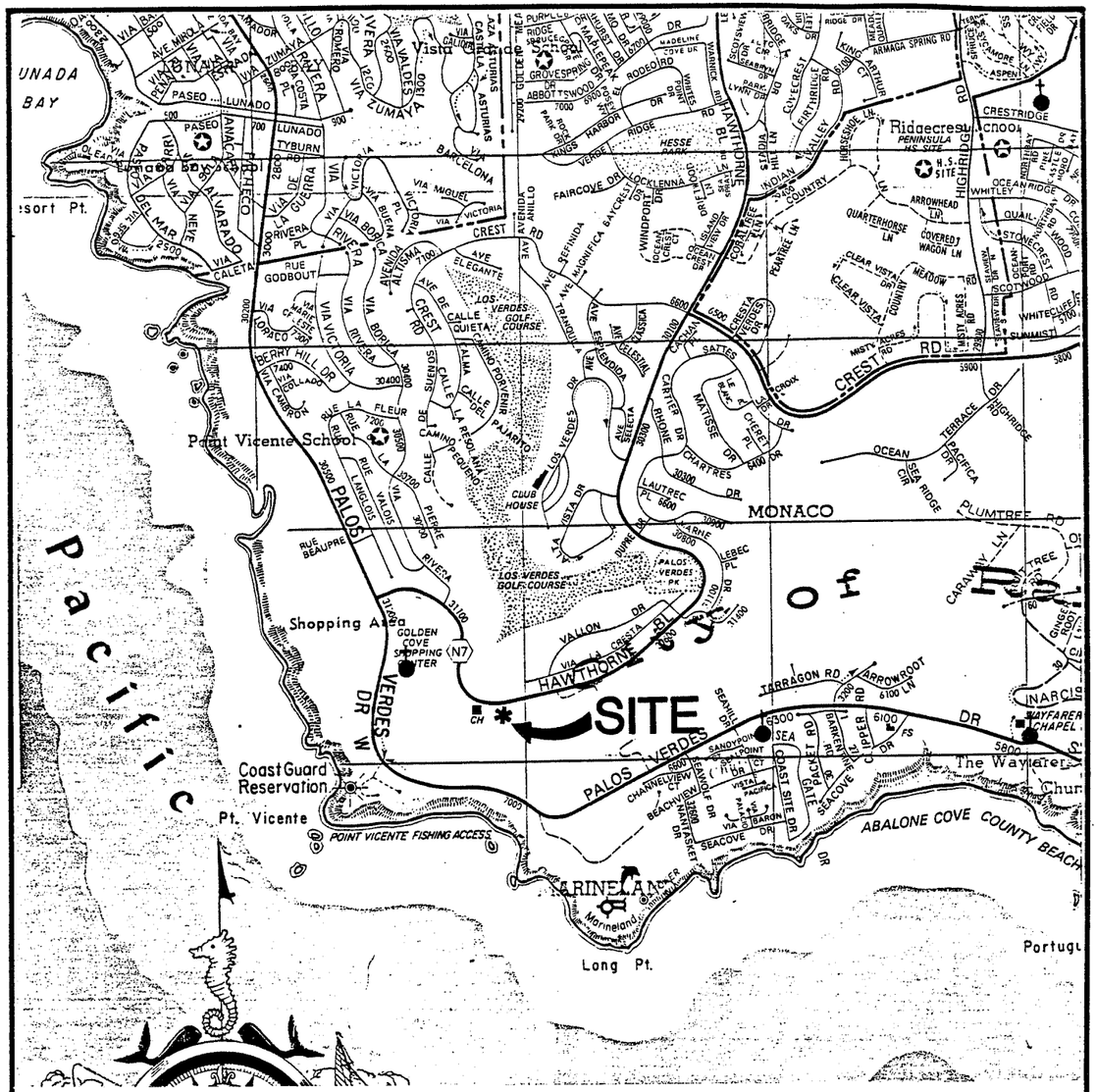
The site is located immediately southeast of the intersection of Hawthorne Boulevard and the access road to the Rancho Palos Verdes City Hall. Figure 1 depicts the geographic location of the site. It is understood that the site is being proposed to be developed into a public recreational facility. The facility will contain a soccer field, parking areas, picnic areas, restrooms, and other appurtenances. Figure 2 is a portion of the grading plan illustrating the proposed development and layout of the site.

SITE DESCRIPTION

In general, the site consists of an undeveloped parcel located southerly of Hawthorne Boulevard. The site is flanked by ascending slopes along the northern, eastern, and portions of the western boundaries. The site descends gently towards the south. A relatively steep slope, with an estimated gradient ranging from 1.5:1 (horizontal:vertical) to steeper, descends southerly away from the southern property boundary.

PURPOSE

The purpose of this preliminary geotechnical investigation was to determine the nature of on-site lithologic units. In particular, our objective was to determine the thickness of



BASE MAP ADAPTED FROM ROLLING HILLS BOARD OF REALTORS.

0 1/4 1/2 1

SCALE IN MILES

·SITE LOCATION MAP·

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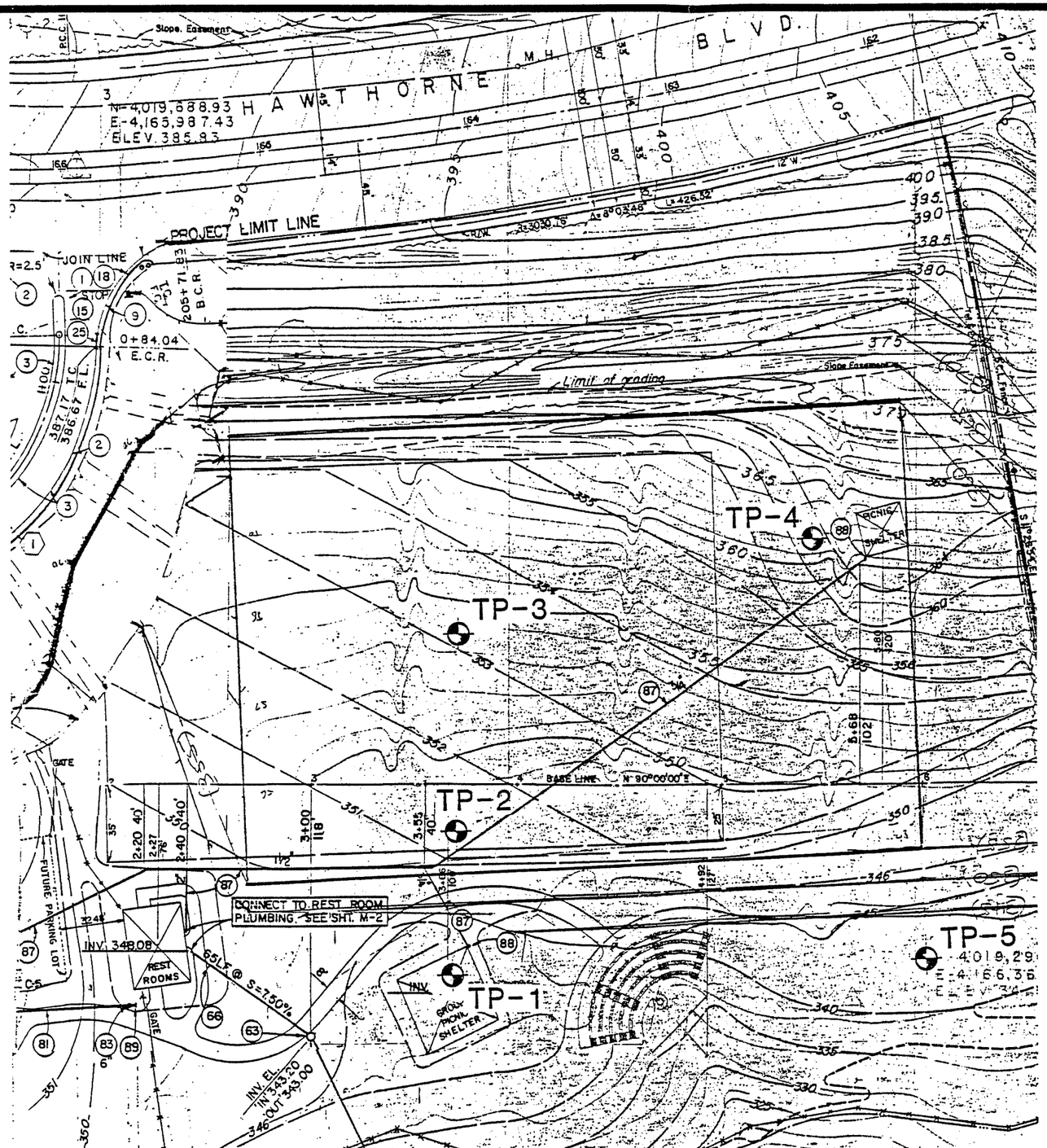

SCALE: 1" =60'

GRADING PLAN

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deleterious earth materials on-site that would require removal prior to the placement of fill. Estimates of the thickness of deleterious earth materials were obtained by subsurface exploration with a backhoe.

GEOLOGY

Five exploratory test pits were excavated with a backhoe at several locations on the site. Depths of the test pits ranged from three to eight feet. The test pits were logged by visual and tactile methods. Logs of the test pits are included at the end of this report.

The results of the subsurface exploration indicate that relatively thin veneers of deleterious earth materials, consisting of soil, fill, or terrace deposits, overlie Monterey Formation bedrock. Generally, the soils are estimated to have an average thickness of two feet. Fill materials and terrace deposits observed during this investigation have a maximum thickness of approximately six feet. Additionally, it appears that the earth materials overlying bedrock are thickest in the northern portion of the site and thin in a southerly direction. In general, the soils, fill materials, and terrace deposits are dry to slightly moist with loose to stiff consistency.

Bedrock was encountered in each test pit. The bedrock typically consists of basalt and brecciated chert, porcelanite, and sandstone of the Monterey Formation. The basalt is generally dense, friable, and has a granular texture. The chert and porcelanite are very hard, and the sandstone is moderately hard. No continuous through-going layering or bedding was observed, however, discontinuous contorted bedding was locally present in the sandstone.

CONCLUSIONS

Based upon examination of the materials exposed in the test pits, it is our conclusion that the earth materials that overlie bedrock should be considered deleterious because they are probably compressible. The materials generally have a loose to stiff consistency and are relatively porous. It is our opinion that these materials do not meet the intensity requirements for compacted structural fill. It is very likely that fill materials placed on the deleterious earth materials will be subject to some degree of settlement. Those areas on the site receiving the greatest amount of fill will generally undergo the largest amount of settlement. The degree of settlement cannot be precisely ascertained. Ordinarily, in preparation for placement of compacted fill, these unsuitable materials

would be overexcavated to the firm underlying formational material (at six feet maximum depth, see logs). If settlement can be tolerated in view of the non-critical nature of the improvements, surface processing could be adopted in lieu of overexcavation.

The site appears to be grossly stable with respect to the local bedrock structure. As previously mentioned, no continuous bedding or daylighted bedding conditions were observed on-site. During both the investigation and research, no indication of instability was noted. Because the slope below the site extends well off-site, further analysis of stability, if desired, would require subsurface exploration, both on and off-site.

RECOMMENDATIONS

Any structure underlain by fill that is placed directly on deleterious earth materials may be subject to stress as a result of fill settlement. Therefore, it is our recommendation, based on data obtained during this investigation and professional experience, that deleterious earth materials be removed to a depth exposing firm bedrock in those areas where proposed structures and structural fills are planned. The depth of removal required to expose firm bedrock is estimated to range from about two feet in the southern portion to about seven feet in the northern portion. As previously mentioned, it appears that the deleterious earth materials are thickest in the northern portion of the site and generally decrease in a southerly direction across the site.

Please review this report and accompanying illustrations carefully. Should you have any questions regarding this report, please contact us.

Respectfully submitted,
AMERICAN GEOTECHNICAL

Marc R. Egli
Senior Geologist
R.G. 4280

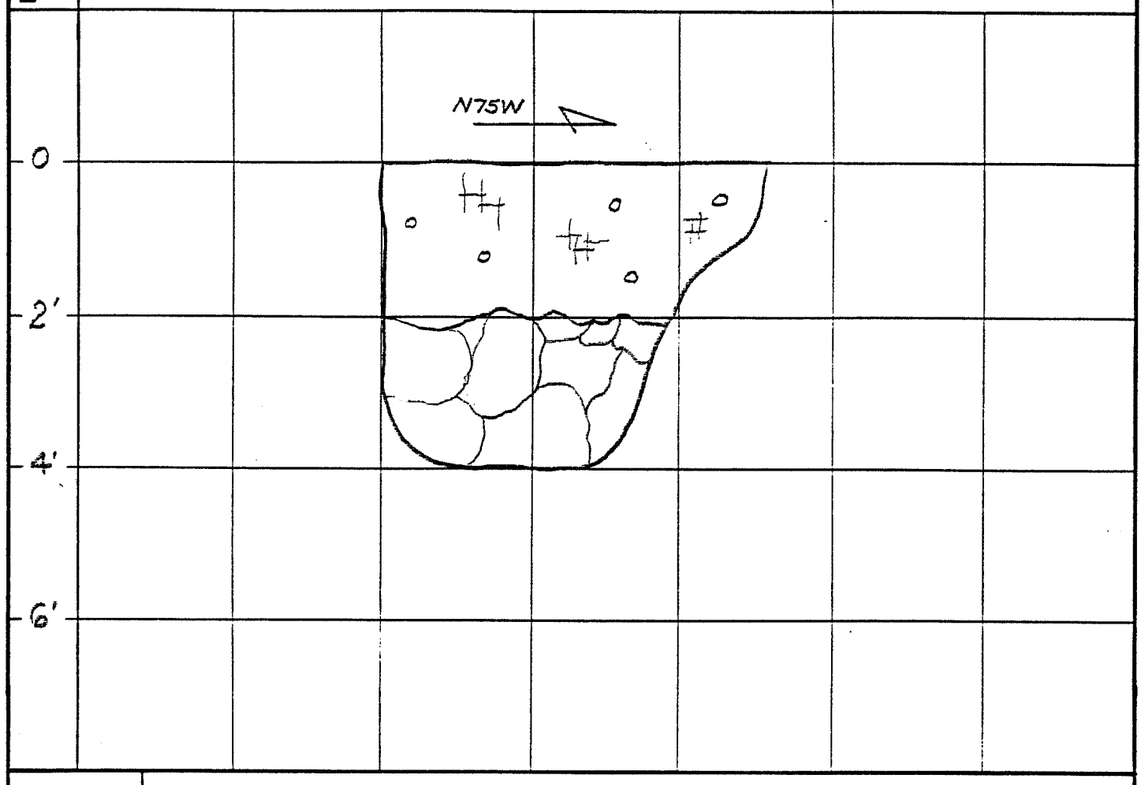
Gregory W. Axten
President
R.C.E. 26098

MRE/GWA:jh

GRAPHIC LOG

Approximate Scale: 1" = 2'

Test Pit 1



Depth (ft)	Description
0-2'	SOIL: silty clay; blackish brown; slightly damp; massive; loose to slightly firm; randomly scattered angular to subangular bedrock pebbles and cobbles.
2'-4'	BEDROCK: Monterey Formation. Brecciated chert and porcelanite; bluish-gray to brownish-orange; very hard; numerous veins of caliche; no continuous bedding was observed.

TOTAL DEPTH: 4 ft.

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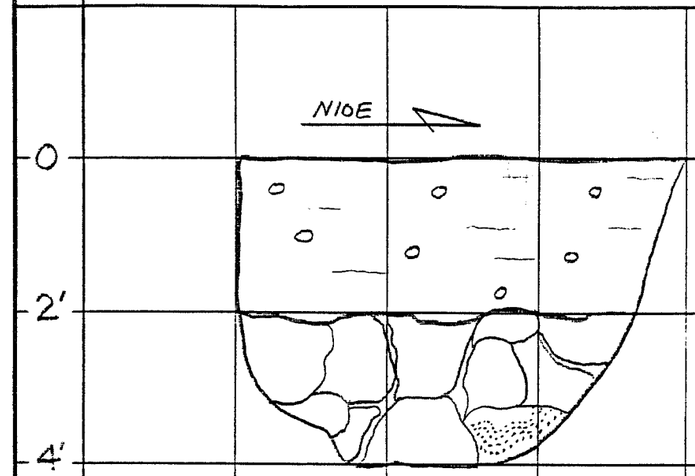
GRAPHIC LOG

Approximate Scale: 1"= 4'

Test Pit 2



Depth (ft)	Description
0-2'	FILL: silty clay; brownish-black; slightly moist; massive; firm to stiff; randomly scattered angular bedrock fragments. No individual lift layers were observed.
2'-4'	BEDROCK: Monterey Formation. Brecciated chert and sandstone. The chert is gray and the sandstone is yellowish-brown to orangish brown. The sandstone is fine- to medium-grained and moderately cemented. Discontinuous contorted layering was observed in the sandstone.

TOTAL DEPTH: 4 ft.

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Depth (ft)

GRAPHIC LOG

Approximate Scale: 1" = 2'

Test Pit 3

Depth (ft)	Description
0-6'	FILL: silty clay. Generally from a depth of 0-5' the fill is brownish-black to grayish-black, damp to slightly moist, and loose (does not appear to be well-compacted). From 5'-6' the fill is reddish brown and slightly tighter. Randomly scattered angular bedrock fragments and brick fragments occur throughout the fill.
6'-7'	BEDROCK: Monterey Formation. Brecciated chert and sandstone. Chert is grayish, very hard and typically coated with powderous calcite. The sandstone is orangish-brown, moderately cemented, friable, and has discontinuous contorted layering.
	TOTAL DEPTH: 7 ft.

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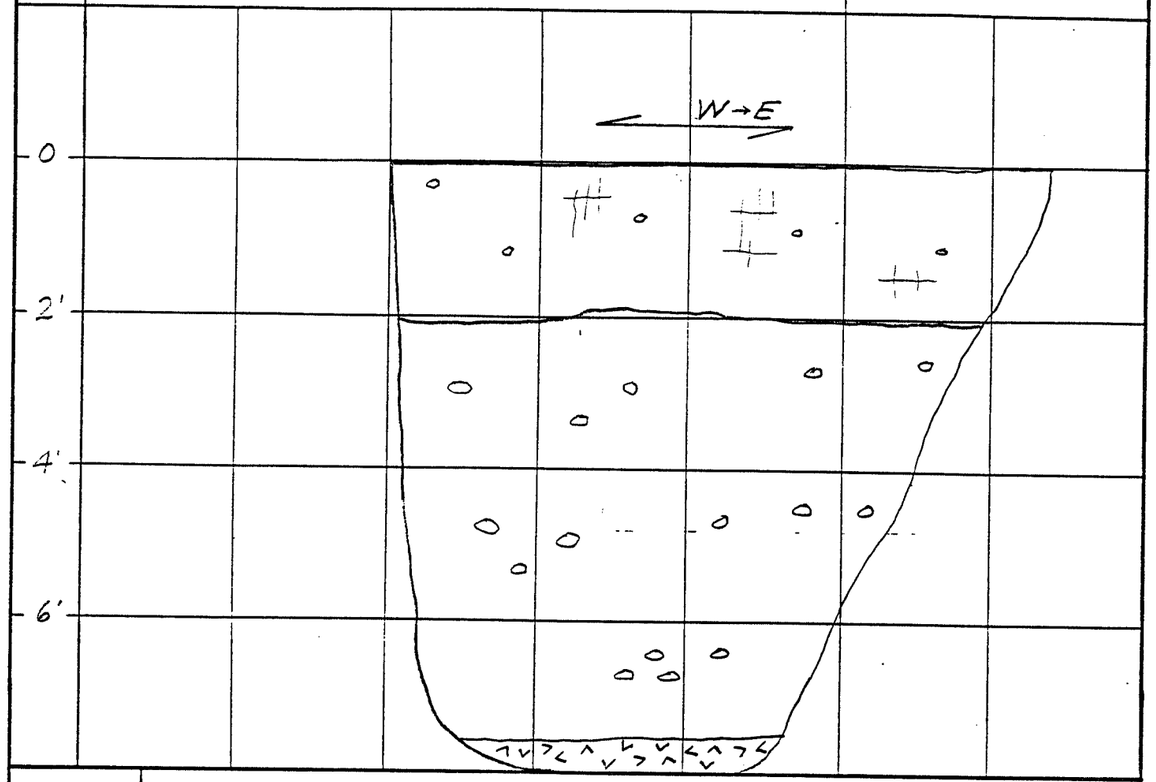
Depth (ft)

GRAPHIC LOG

Approximate Scale: 1" = 2'

Test Pit 4



Depth (ft)	Description
0-2'	FILL: silty clay; blackish-brown to grayish-brown; dry; loose to firm; randomly scattered bedrock fragments.
2'-7.5'	TERRACE DEPOSITS: silty clay; reddish-brown; slightly damp; loose to firm; scattered subround to subangular bedrock fragments; massive.
7.5'-8'	BEDROCK: Basalt. Reddish-brown; granular texture; weathered; massive; dense.
	TOTAL DEPTH: 8 ft.

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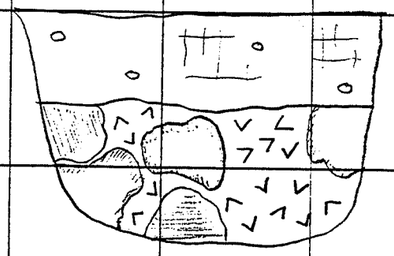
Depth (ft)

GRAPHIC LOG

Approximate Scale:

Test Pit 5



Depth (ft)	Description
0 - 1'	FILL : silty clay; blackish-brown to brownish-black; dry; loose; randomly scattered subangular to subround bedrock fragments; massive.
1' - 3'	BEDROCK : Monterey Formation. Basalt with brecciated chert and porcelanite. The basalt is orangish-brown, dense, friable and has a granular texture. The chert and porcelanite appear to have been brecciated by basalt emplacement. Both the chert and porcelanite are grayish, hard and have powderous caliche coatings.
	TOTAL DEPTH: 3 ft.

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