DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

TRENCH 1, BARHAM RANCH,
TRENCH LOG LITHOLOGIC DESCRIPTIONS

OPEN FILE NO. 81-271

SOIL UNITS

S Chamise Series
The soils in the vicinity of trench site one are of the Chamise Series, specifically, Chamise loam and Chamise shaly loam. The terrain is gently to moderately sloping (2 to 9 percent). The land is covered with scattered oak and annual grasses and is used for range. The soils develop on elevated terrace remnants consisting of stream-layed silts and sands with abundant rounded fragments of Monterey shale.

S6(A) Colluvium; brown (10YR5/2) silty sand with abundant pebbles (1/4"-5") consisting of siliceous shale and chert; no cementation, easily friable; slightly moist at top becoming moist toward bottom; abundant worm borings and gopher holes, numerous very fine and fine roots; diffuse, irregular boundary.

S5(A) Colluvium; reddish brown (5YR4/4); as in S6; abrupt wavy boundary.

S4(A) Colluvium; brown (10YR5/3) gravelly medium grained sand with some silt; moist to wet, similar to S6, but without bioturbation.

S3(A) Collluvium; very pale brown (10YR7/3) to pale brown (10YR6/3) mottled with reddish gray (5YR5/2) silt with numerous pebbles; very porous with vesicular pores; dry to slightly damp; abrupt to clear, smooth to slightly wavy boundary.

S2(B) Buried "B" horizon; reddish brown (5YR4/3) to olive brown (2.5Y4/4) clayey silt; slightly plastic; moist; moderate to well developed prismatic peds (1/2" to 1-1/2"); clay skins with waxy appearance; small tubular pores; numerous very fine roots, abrupt, smooth boundary.

S1(C) Weathered Paso Robles; dark grayish brown (2.5Y4/2) clay and silty clay with pebbles; sticky and plastic; damp to moist; weak to moderate developed prismatic peds (1" to 3"), clay skins on peds and slickensides near the fault; occasional root hairs; basal contact is gradational, becoming yellowish brown (10YR6/4) and less clayey.

LITHOLOGIC UNITS

II Older Terrace Deposits
The terrace deposits consist of interbedded silty sands and gravels derived primarily from the Monterey shales to the north. The terrace deposits rest on the Paso Robles formation at an erosional disconformity.

IIG Olive gray (5Y4/2) to very dark gray (5Y3/1) mottled with light olive gray (5Y6/2), sandy silt with trace of clay; occasional pebbles and lenses of pebbles consisting of rounded, yellow-brown and red-brown shale clasts, some chert and chalcedony clasts; occasional stringers of white caliche (1/16" to 1/8"); stiff but will crumble between fingers; damp to slightly moist; massive; breaks into irregular hackly fragments; rare fine roots are decomposed and tubules sometimes lined with caliche.

IIF Olive (5Y5/4 with 5Y5/6) when moist, interbedded fine to medium-grained sand and gravelly sand, some lenses of silt and silty sand; pebbles consist of amorphous yellow-green siliceous shales and brown chert; easily friable; moist; subhorizontal bedding with lateral variations in sand and gravel content.

IIE Grayish brown (2.5Y5/2) clayey silt; stiff but will crumble between fingers, moist, massive.

IIE_1 Fine grained sand and clayey silt; as in IIE.

IID Grayish brown (2.5Y5/2) sandy gravel; friable; moist.

IIC Grayish brown (2.5Y5/2) clayey fine-grained sand and sandy clay, moist.

IIB Grayish brown (2.5Y5/2) mottled with light olive gray (5Y6/2) clayey sand with some gravel, moist.

IIA Pale brown (10YR6/3) when moist to light gray (10YR7/2) when dry; fine grained sandy gravel conglomerate with some silt, clayey in lower 1.5'; clasts are sub-angular to rounded siliceous shale and chert; friable becoming less friable where clayey; moist; slight traces of bedding are generally horizontal but with some variable dips; tops of some larger pebbles are coated with slightly cemented sand and small pebbles, wavy erosional boundary.

I Paso Robles Formation
The Paso Robles formation found in the trench is similar in lithology to the Paso Robles mapped in the vicinity of the trench. It primarily consists of fine-grained sand and silt which are often clayey, but also includes beds of gravel derived from Monterey shale. Where deeply weathered, clays appear waxy.

IF Light gray (10YR7/2), silty, very fine-grained sand; moderately cemented, slightly friable; top is often moist and has no cementation; dry to slightly damp; massive; occasional iron-stained fractures with root hairs.

IF_1 Fine and some medium grained sand; as in IF.

IF_2 Reddish brown (5YR4/3), fine- and medium-grained sand; as in IF.

IF_3 Gray brown (10YR5/2) when moist, light gray (10YR7/2) when dry, silty sand with abundant pebbles (1/8" to 3"); pebbles are subrounded shale and chert clasts; slightly cemented, slightly friable; slightly moist; massive; some very fine roots.

IE Pale brown (10YR6/3) medium- to coarse-grained sandy gravel with red (10R4/4) clay coating on sand grains and clasts that acts as a binder, some pockets and lenses of clean gravels with good bedding and pebble imbrication (similar lithology to IB).

IE_1 Good bedding within clean rounded gravels, some imbrication of pebbles.

IE_2 Brownish yellow (10YR6/4) clayey silt and fine-to medium-grained sand with occasional gravel clasts; moderately stiff; moist; irregular, near vertical fractures stained with manganese and iron, scattered very fine and fine roots (similar lithology to IC).

ID Dark grayish brown (2.5Y4/2), clayey gravel and sand with some areas grading to gravelly clay; mostly stiff, plastic when wet; random rough fractures in clayey areas.

IC Brownish yellow (10YR6/4) mottled with brown (10YR5/3), clayey silt and fine-to medium-grained sand, slightly coarser grained locally with occasional gravel clasts; moderately stiff; moist; irregular near vertical fractures stained with manganese and iron, scattered very fine and fine roots.

IB Pale brown (10YR6/3), medium to coarse grained sandy gravel with red (10R4/4) clay coating on sand grains and clasts that acts as a binder; clasts are siliceous shale and chert, sand is mainly quartz; sticky, plastic; friable; damp to moist; clear to abrupt boundary.

IA Grayish brown (2.5Y5/2) to olive (5Y5/3) clay and silty clay with pebbles; weak to moderate developed prismatic ped-like structure, waxy clay skins; damp to moist; concentric arcuate slickensided shear surfaces.

WOODWARD-CLYDE CONSULTANTS

LITHOLOGIC DESCRIPTIONS
BARHAM RANCH, TRENCH 1

Project No. 41173I
USGS CONTRACT: 14-08-0001-18255

PLATE 2
SHEET 2