

remainder of Interior Bent 2 and Interior Bents 3 and 4 are in a forested portion of the floodplain that borders the river bank.

Interior Bents 5 and 6 lie in the channel, which is bordered by very steep, sandy, tree-lined banks that are 2 to 3 meters high. The channel bed is lined with about 0.5 meters of coarse sand, gravel, and cobbles. There are no obstructions. A small island partially overgrown with trees and brush lies about 50 meters upstream, at its closest point.

Interior Bent 7 and End Bent 2 lie in a cultivated field on the east bank floodplain. End Bent 2 is about 70 meters from the distal edge of the floodplain, which is bordered by a very gently sloping, older river terrace. A stream gauging station housed in a small brick structure is located about 100 meters downstream on the east bank.

Methods

Subsurface investigations were carried out from October, 1997, to February, 1998. A CME 550 all terrain drilling machine was used on all bents except Interior Bents 5 and 6, which were in the river channel. Drilling was accomplished there with a barge-mounted CME 45. Borings were made on both the east-bound (EBL) and west-bound (WBL) sides. They were carried to hard rock with a NXWL casing advancer, and continued in rock with a diamond bit and NXWL coring rods. Standard penetration tests were made at 1.52 meter intervals in soil and weathered rock, and soil quality samples were taken from each soil type encountered. 42 rock core samples were submitted for tests of unit weight, unconfined compressive strength, and Young's modulus.

Seismic tests to locate the rock line between borings have been done on all bents except Interior Bents 5 and 6, which are in the river channel. Results will be submitted as soon as they become available.

Soil and Rock Properties

Alluvial soils, saprolite, weathered rock, and hard rock were encountered in this investigation. Alluvial soils consisted of brown to gray, moist to wet, loose to very loose silty sand (A-2-4) 1.5 to 4.0 meters thick, overlying a basal layer 0 to 2.0 meters thick of brown to gray, wet, loose to dense, silty to coarse sandy gravel (A-1-b). Alluvial soils in the river channel comprise less than 0.5 meters of loose silty sand (A-2-4) or sandy gravel and cobbles (A-1-b). Alluvial soils overlie saprolite or soft weathered rock at depths of 3.0 to 4.5 meters beneath the floodplain, at elevations between 467.8 meters and 474.4 meters.

Saprolite consists of olive brown to olive gray, moist, stiff to very hard, fine sandy silt (A-4), with very little variation. With increasing hardness this soil grades into olive brown to olive gray, silty soft weathered rock. Soft weathered rock directly underlies alluvial soil at End Bent 1 and Interior Bents 1 and 2. Saprolite underlies alluvial soil at Interior Bent 3 with a thickness of 1 to 2 meters grading downward to soft weathered