

### RM 286 DAMSITE

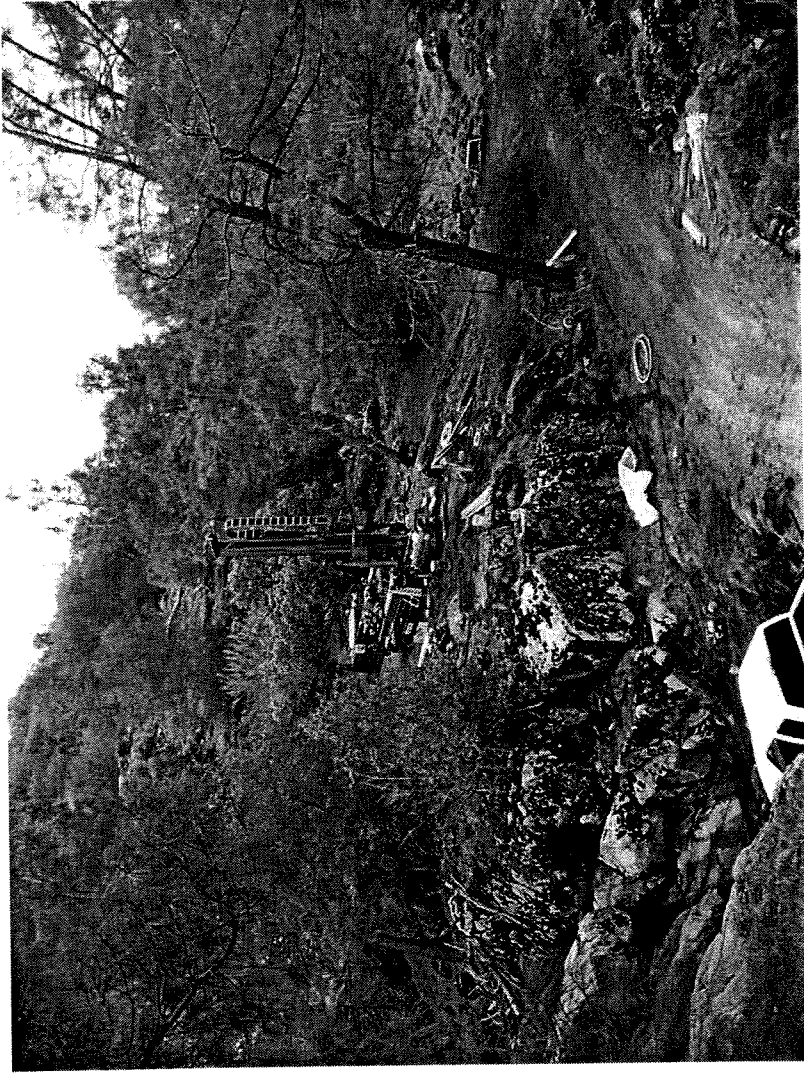
Upper San Joaquin River Basin Storage Investigation

Photo 16

View looking upstream (northwest) at the proposed damsite. Steep canyon walls expose hard, fresh to slightly weathered, jointed granitic rock. The portal of Adit 1, excavated as part of the excavation of the Kerckhoff No. 1 Tunnel in the early 1900's, is visible at photo right.

J. Sturm

January 2004



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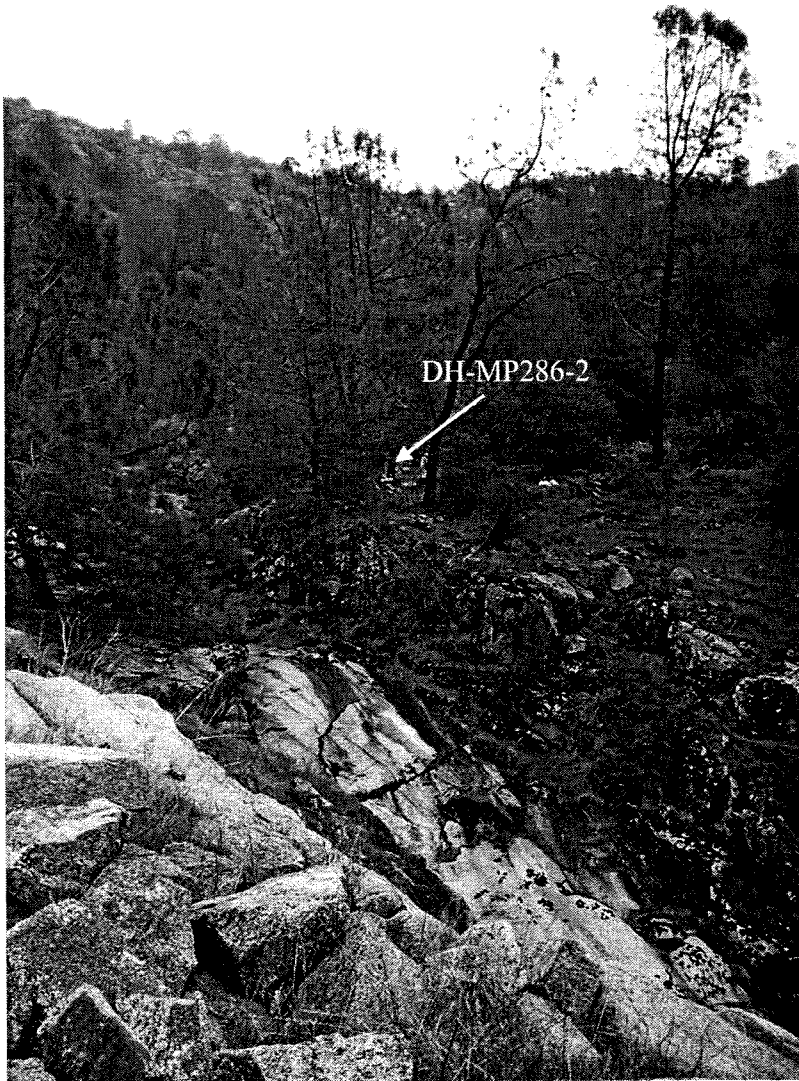
Upper San Joaquin River Basin Storage Investigation

Photo 17

View looking southeast at outcrops of jointed, granitic rock within a tributary drainage of the San Joaquin River, adjacent to drill hole MP286-04-2. From the vegetated ground surface to a depth of 20 to 30 feet, joints are strongly developed and open up to several inches. Below a depth of 20 to 30 feet, joints are tight and difficult to observe. These rock jointing conditions are believed to be representative of those present at the RM 286 Damsite.

J. Sturm

January 2004



### **FINE GOLD DAMSITE**

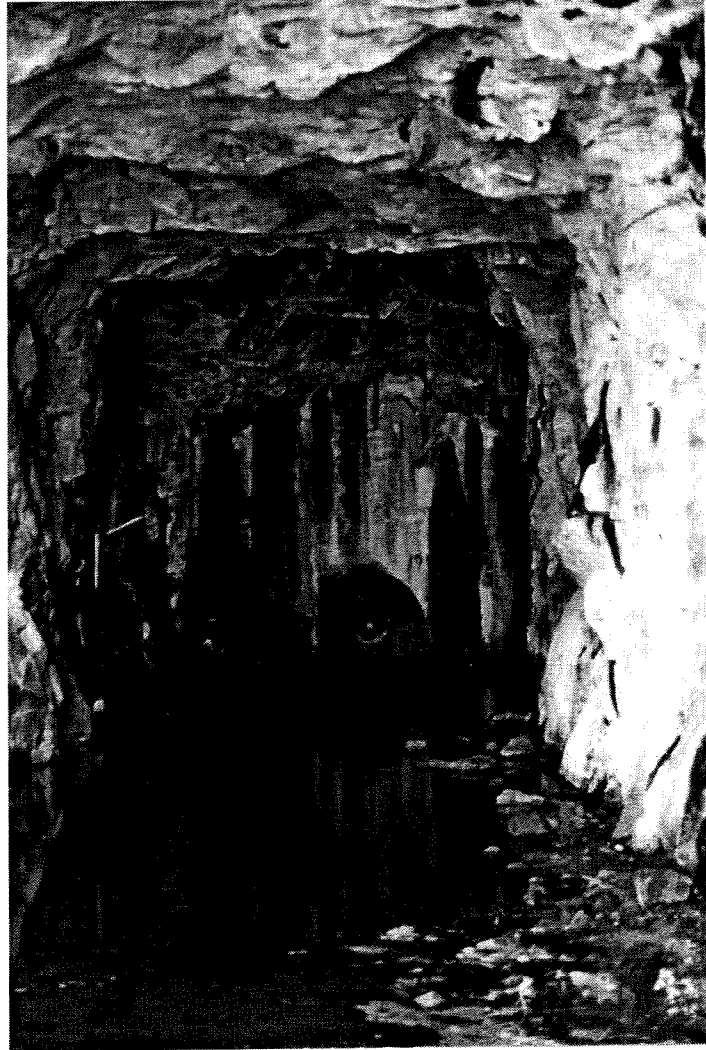
Photo 18

Upper San Joaquin River Basin Storage Investigation

View looking southwest at the site of drill hole MP286-04-2. As also shown in Photo 17, the upper 20 to 30 feet of granitic rock is characterized by open joints spaced several feet apart. No return of drilling water occurred to a depth of about 20 feet; all fluid was lost through open joints. Similarly, packer permeability tests lost all water and did not develop pressure above a depth of about 20 feet. Below a depth of about 20 feet, packer tests took small amounts of water indicating tight joints and relatively impermeable rock.

J. Sturm

January 2004



### **RM 286 DAMSITE**

Photo 19

Upper San Joaquin River Basin Storage Investigation

View looking east at Adit 2, excavated as part of the excavation of the Kerckhoff No. 1 Tunnel in the early 1900's. The adit walls exposed hard, fresh granitic rock with joints spaced mostly 1 to 5 feet. Very little seepage through joints in the rock mass was observed. The far end of the adit is sealed by a concrete wall which separates Adit 1 from the Kerckhoff No. 1 Tunnel. A 6-foot diameter access pipe and drainage system installed in the wall has never been used.

J. Sturm

January 2004



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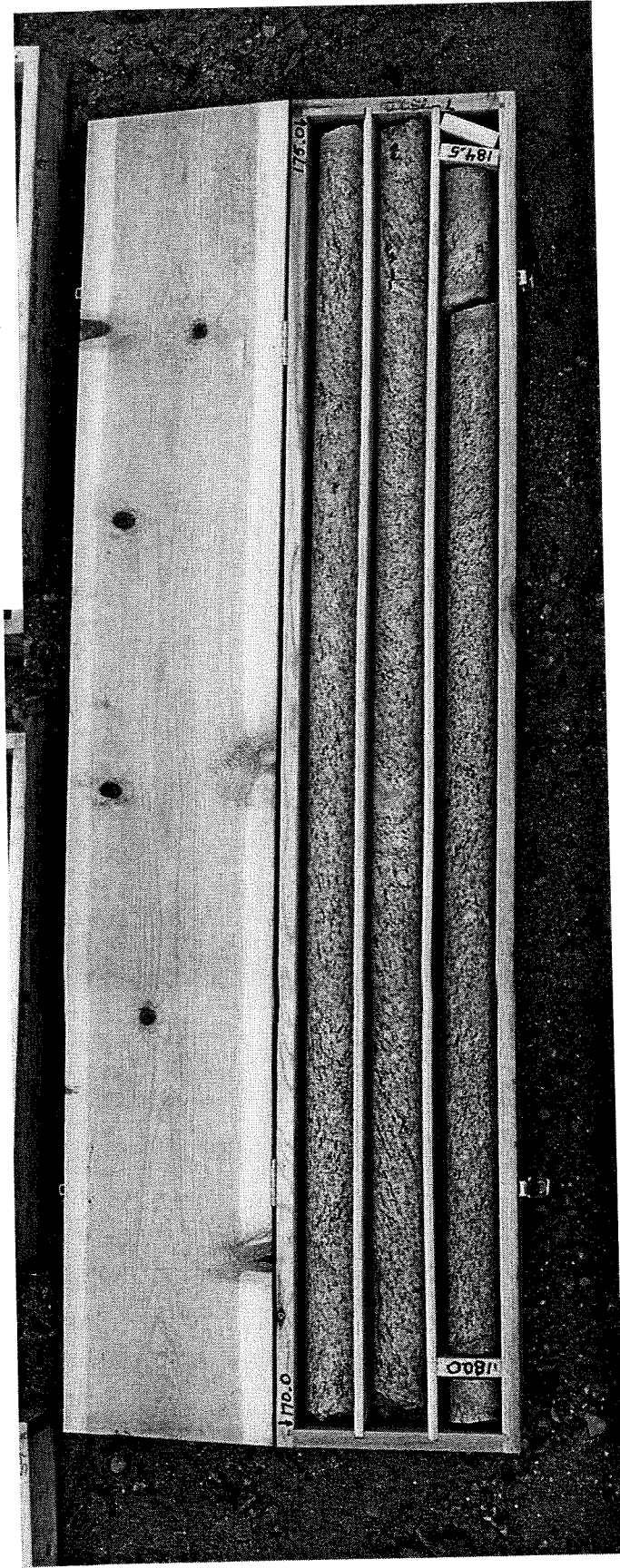
Upper San Joaquin River Basin Storage Investigation

Photo 20

Drill core from the 10.0 to 20.5 depth interval of drill hole MP286-04-2 showing open joints and fresh, hard granitic rock. These engineering geologic rock properties are representative of the upper 20 to 30 feet of the rock at the proposed damsite.

J. Sturm

January 2004



## RM 286 DAMSITE

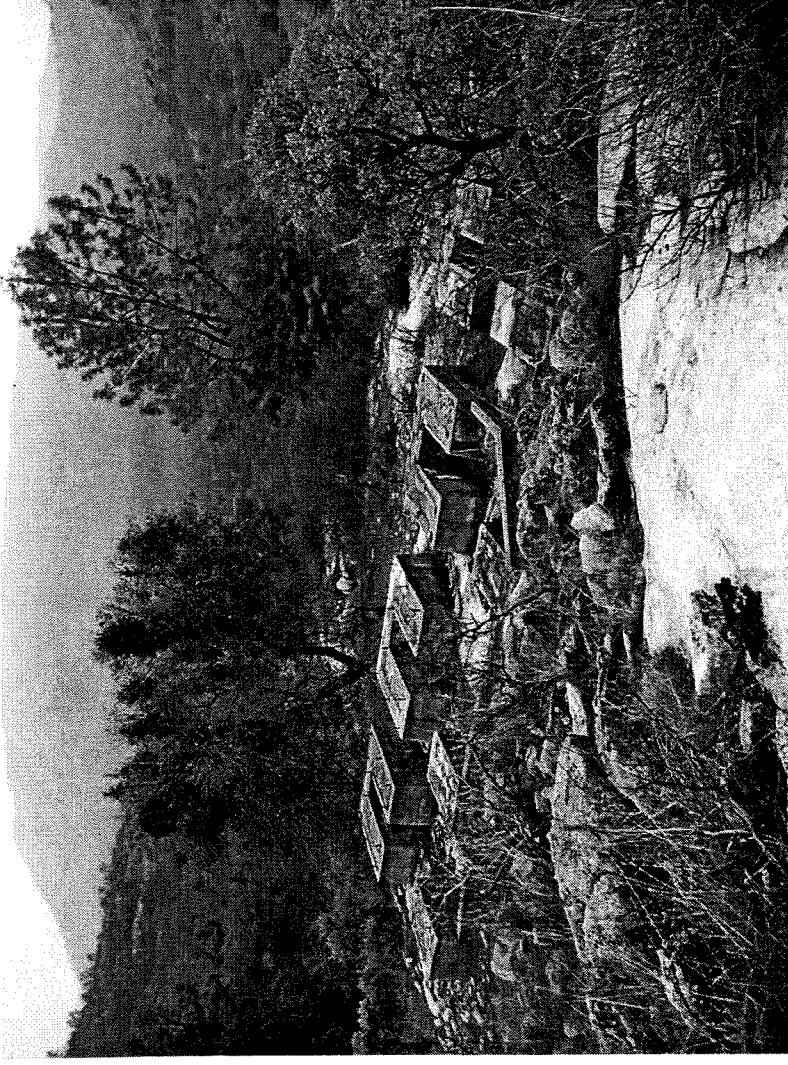
Upper San Joaquin River Basin Storage Investigation

Photo 21

Drill core from the 170.0 to 184.5 depth interval of drill hole MP286-04-2 showing tight joints and fresh, hard granitic rock. These engineering geologic rock properties are representative of rock below a depth of 20 to 30 feet below the existing ground surface and extending to a depth of at least 200 feet at the proposed damsite.

J. Sturm

January 2004



## RM 286 DAMSITE

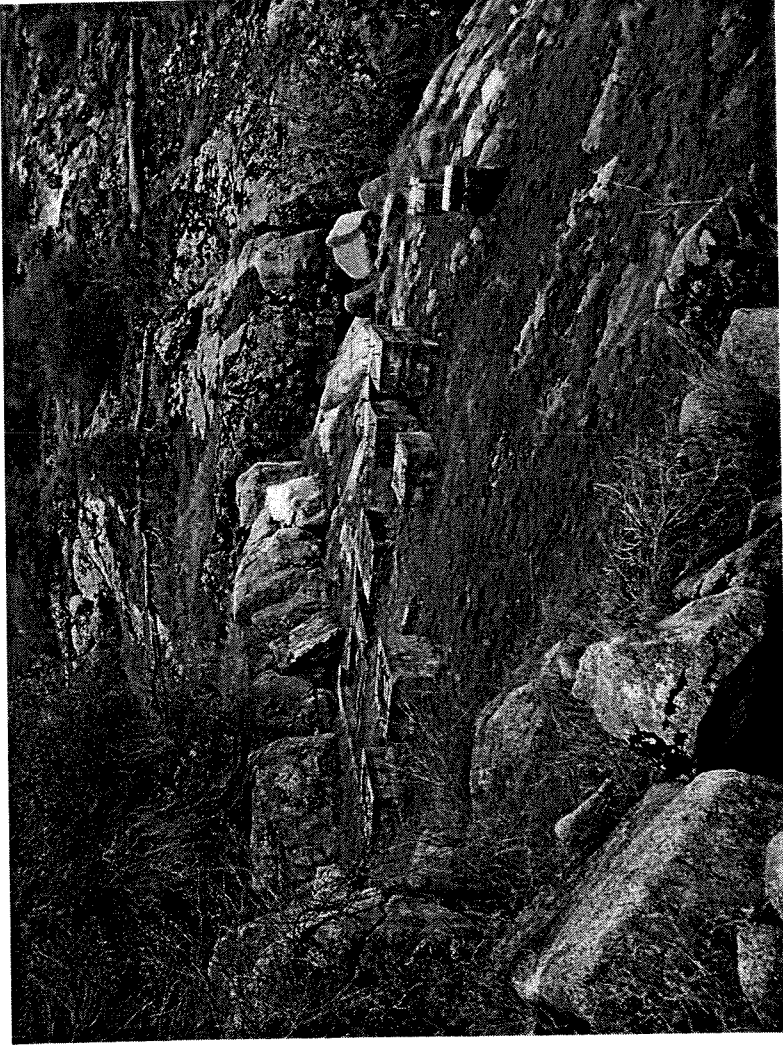
Photo 22

Upper San Joaquin River Basin Storage Investigation

View to the southwest (downstream) of the concrete foundations of the Adit 2 compressor station located upslope of Adit 2, about 600 feet southwest (downstream) of drill hole RM 286-04-2. The site is located just outboard of the jeep trail that leads to Adit 1. The compressors produced high pressure air to power pneumatic drills used in the drill and blast operations for Kerckhoff Tunnel No. 1 in the 1920's.

J. Sturm

January 2004



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Upper San Joaquin River Basin Storage Investigation

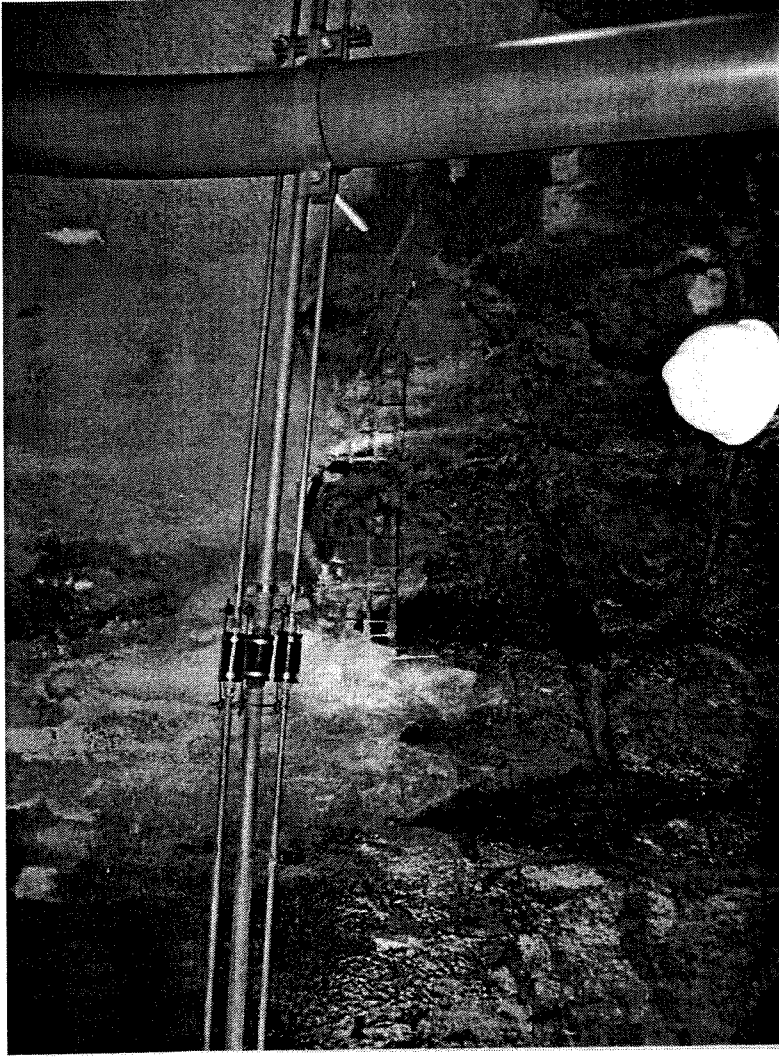
Photo 23

View to the southeast of the concrete foundations of the Adit 1 compressor station located about 800 feet east of Adit 1, just north of drill hole RM 286-04-2. The compressors produced high pressure air to power pneumatic drills used in the drill and blast operations for Kerckhoff Tunnel No. 1 in the 1920's.

J. Sturm

January 2004





**KERCKHOFF POWERPLANT NO. 2**

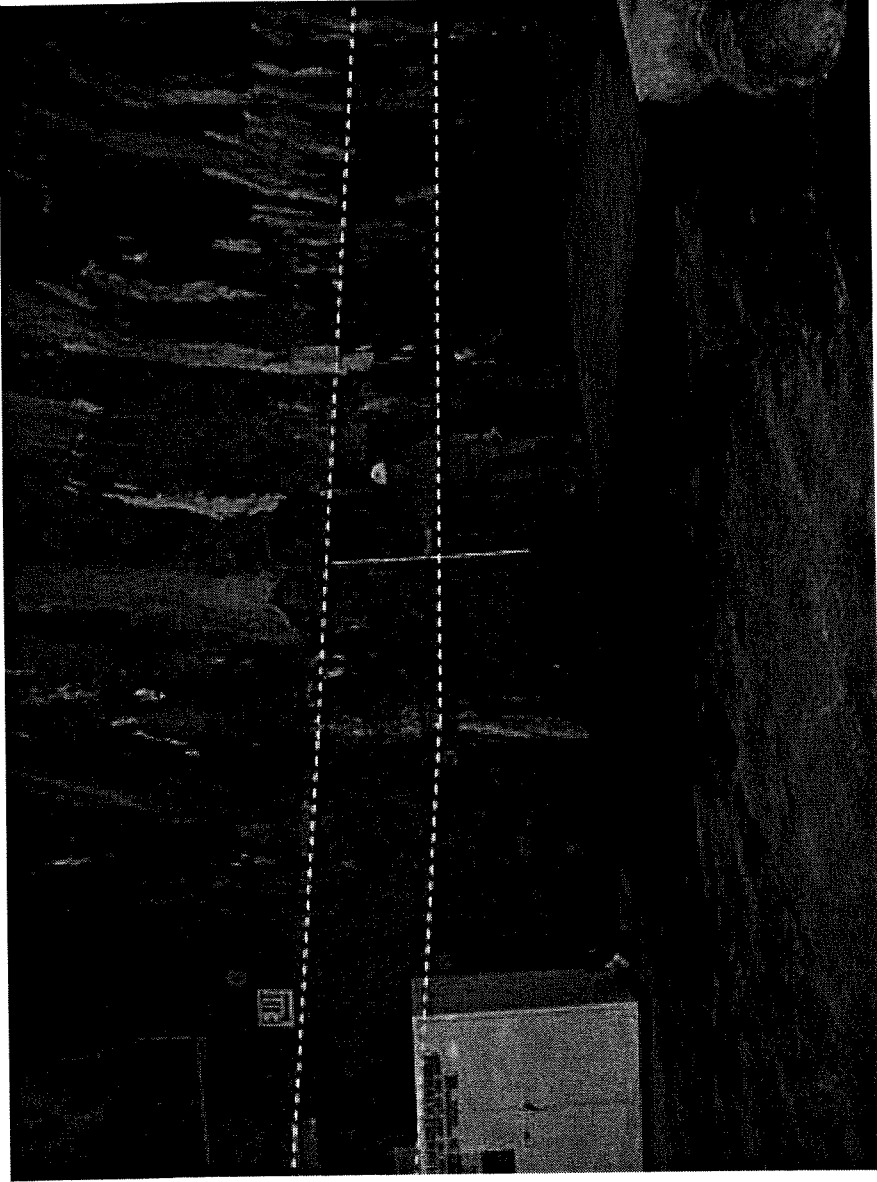
Upper San Joaquin River Basin Storage Investigation

Photo 24

View of welded-wire fabric and shotcrete exposed in a wall of the access tunnel to Powerplant No. 2.

L. Hobbs

March 2004



**KERCKHOFF POWERPLANT NO. 2**

Upper San Joaquin River Basin Storage Investigation

Photo 25

Continuous, low-angle joints exposed in a wall of the powerplant excavation. Joints are continuous over an observed distance of over 100 feet and are spaced 3 to 10 feet.

L. Hobbs

March 2004