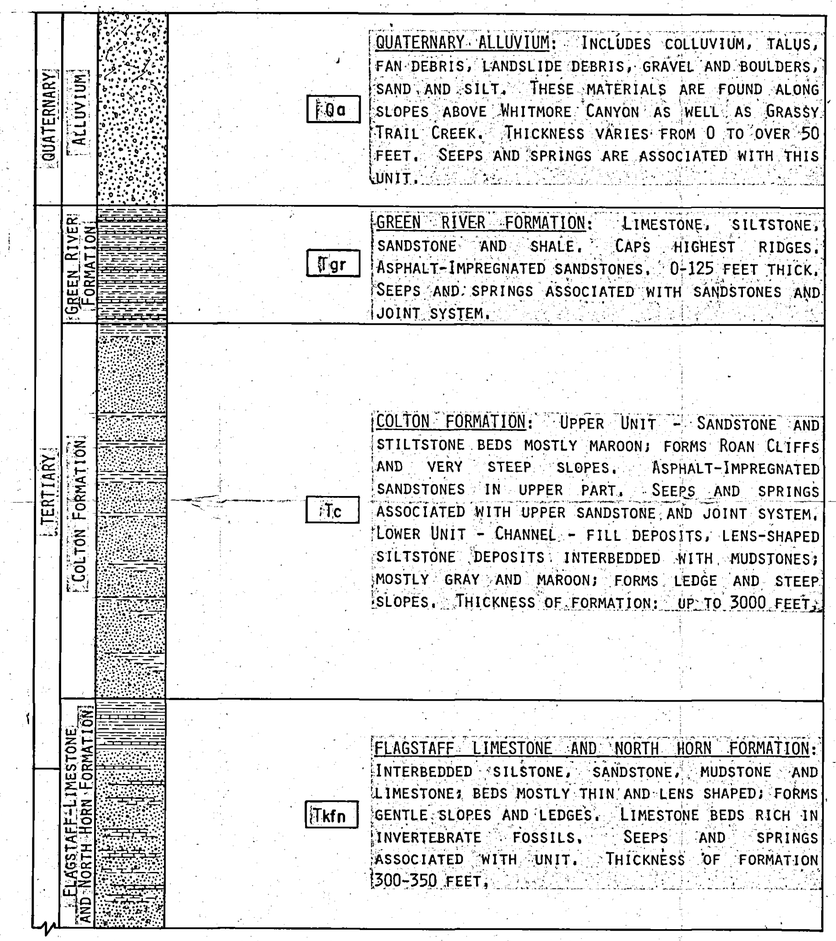
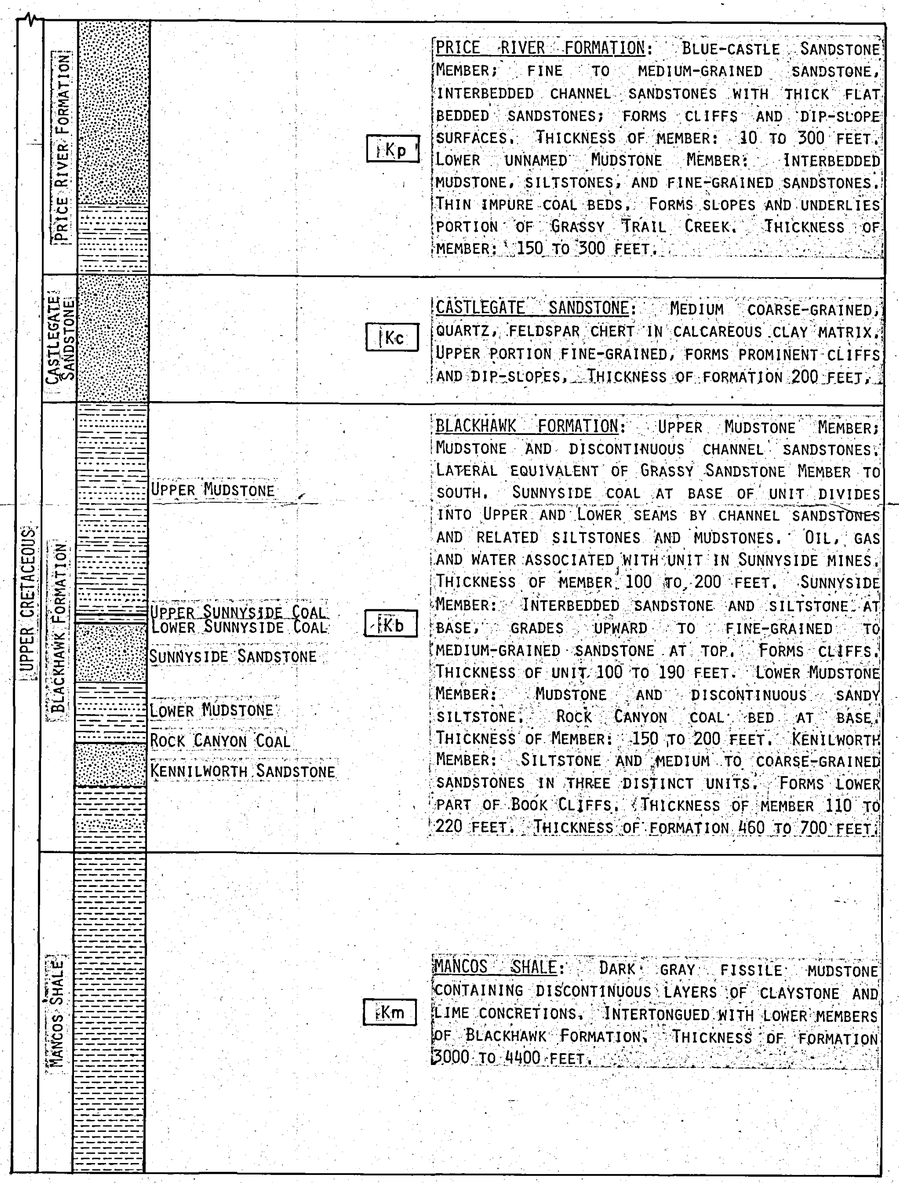


QUATERNARY ALLUVIUM: INCLUDES COLLUVIUM, TALUS, FAN DEBRIS, LANDSLIDE DEBRIS, GRAVEL AND BOULDERS, SAND AND SILT. THESE MATERIALS ARE FOUND ALONG SLOPES ABOVE WHITMORE CANYON AS WELL AS GRASSY TRAIL CREEK. THICKNESS VARIES FROM 0 TO OVER 50 FEET. SEEPS AND SPRINGS ARE ASSOCIATED WITH THIS UNIT.

GREEN RIVER FORMATION: LIMESTONE, SILTSTONE, SANDSTONE AND SHALE. CAPS HIGHEST RIDGES. ASPHALT-IMPREGNATED SANDSTONES. 0-125 FEET THICK. SEEPS AND SPRINGS ASSOCIATED WITH SANDSTONES AND JOINT SYSTEM.

COLTON FORMATION: UPPER UNIT - SANDSTONE AND STILTSTONE BEDS MOSTLY MAROON; FORMS ROAN CLIFFS AND VERY STEEP SLOPES. ASPHALT-IMPREGNATED SANDSTONES IN UPPER PART. SEEPS AND SPRINGS ASSOCIATED WITH UPPER SANDSTONE AND JOINT SYSTEM. LOWER UNIT - CHANNEL - FILL DEPOSITS, LENS-SHAPED SILTSTONE DEPOSITS INTERBEDDED WITH MUDSTONES; MOSTLY GRAY AND MAROON; FORMS LEDGE AND STEEP SLOPES. THICKNESS OF FORMATION: UP TO 3000 FEET.

FLAGSTAFF LIMESTONE AND NORTH HORN FORMATION: INTERBEDDED SILSTONE, SANDSTONE, MUDSTONE AND LIMESTONE; BEDS MOSTLY THIN AND LENS SHAPED; FORMS GENTLE SLOPES AND LEDGES. LIMESTONE BEDS RICH IN INVERTEBRATE FOSSILS. SEEPS AND SPRINGS ASSOCIATED WITH UNIT. THICKNESS OF FORMATION 300-350 FEET.



PRICE RIVER FORMATION: BLUE-CASTLE SANDSTONE MEMBER; FINE TO MEDIUM-GRAINED SANDSTONE, INTERBEDDED CHANNEL SANDSTONES WITH THICK FLAT BEDDED SANDSTONES; FORMS CLIFFS AND DIP-SLOPE SURFACES. THICKNESS OF MEMBER: 10 TO 300 FEET. LOWER UNNAMED MUDSTONE MEMBER: INTERBEDDED MUDSTONE, SILTSTONES, AND FINE-GRAINED SANDSTONES. THIN IMPURE COAL BEDS. FORMS SLOPES AND UNDERLIES PORTION OF GRASSY TRAIL CREEK. THICKNESS OF MEMBER: 150 TO 300 FEET.

CASTLEGATE SANDSTONE: MEDIUM COARSE-GRAINED, QUARTZ, FELDSPAR CHERT IN CALCAREOUS CLAY MATRIX. UPPER PORTION FINE-GRAINED, FORMS PROMINENT CLIFFS AND DIP-SLOPES. THICKNESS OF FORMATION 200 FEET.

BLACKHAWK FORMATION: UPPER MUDSTONE MEMBER; MUDSTONE AND DISCONTINUOUS CHANNEL SANDSTONES. LATERAL EQUIVALENT OF GRASSY SANDSTONE MEMBER TO SOUTH. SUNNYSIDE COAL AT BASE OF UNIT DIVIDES INTO UPPER AND LOWER SEAMS BY CHANNEL SANDSTONES AND RELATED SILTSTONES AND MUDSTONES. OIL, GAS AND WATER ASSOCIATED WITH UNIT IN SUNNYSIDE MINES. THICKNESS OF MEMBER 100 TO 200 FEET. SUNNYSIDE MEMBER: INTERBEDDED SANDSTONE AND SILTSTONE AT BASE, GRADES UPWARD TO FINE-GRAINED TO MEDIUM-GRAINED SANDSTONE AT TOP. FORMS CLIFFS. THICKNESS OF UNIT 100 TO 190 FEET. LOWER MUDSTONE MEMBER: MUDSTONE AND DISCONTINUOUS SANDY SILTSTONE. ROCK CANYON COAL BED AT BASE. THICKNESS OF MEMBER: 150 TO 200 FEET. KENILWORTH MEMBER: SILTSTONE AND MEDIUM TO COARSE-GRAINED SANDSTONES IN THREE DISTINCT UNITS. FORMS LOWER PART OF BOOK CLIFFS. THICKNESS OF MEMBER 110 TO 220 FEET. THICKNESS OF FORMATION 460 TO 700 FEET.

MANCOS SHALE: DARK GRAY FISSILE MUDSTONE CONTAINING DISCONTINUOUS LAYERS OF CLAYSTONE AND LIME CONCRETIONS. INTERTONGUED WITH LOWER MEMBERS OF BLACKHAWK FORMATION. THICKNESS OF FORMATION 3000 TO 4400 FEET.

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NOTE: GEOLOGIC DESCRIPTIONS DERIVED FROM USGS, PP1166, 1981, AND USGS MAP I - 798, 1974

KAISER COAL CORPORATION

SUNNYSIDE MINE PERMIT REVISION

GENERALIZED LITHOLOGIC SECTION

Scale:	Date:	Design By:	Drawn By:
N/A	NOV., 1985	CHP	JMH

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ENGINEERING AND ENVIRONMENTAL DIVISION
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