ALPHABETICAL LIST.

66. Uncle Remus Shaft.
67. Eagle.
68. Little Leonard.
69. Yankee Boy.
70. Marriage Stake.
71. Smuggler.
72. Albera Chief.
73. Ranger.
74. St. Louis Shaft.
75. Calumet.
76. Futurity Tunnel.
77. Grand View Incline.
78. Rima Water.
79. Phoenix No. 1 Level.
80. Phoenix No. 4 Level.
81. Phoenix No. 5 Level.
82. Phoenix No. 7 Level.
83. Phoenix No. 8 Level.
84. Northern Incline.
85. Northern Lower Tunnel.
86. Ontario.
87. Old Battery Tunnel.
88. Hoosier Girl Shaft.
89. Bourbon.
90. Uncle Ned.
91. Worlds Fair.
92. Argentine.
93. Laxy.
94. Golden Fleece.
95. Mediterranean.
96. Black Hawk.
97. Allegheny.
98. Lelia Davis.
100. Wildcat Tunnel.
101. Silver Age.
102. Jumbo Shaft.
103. Silver Glance Shaft.
104. Logan Tunnel (site).
105. Union Corparate Tunnels.
106. St. Louis Shaft.
107. South Park.
108. Enterprise Group Tunnel.
110. Enterprise Group Level.
111. Hibernia.
112. Derby and Evans Shaft.
113. Revenue Return.
114. Drake Tunnel.
115. Ontonagon.
117. Whim.
118. Panhandle Tunnel.
119. Ironclad.
120. Iron Giant.
121. Argonaut.
122. Derby and Evans Shaft.
123. St. Louis Shaft.
124. Argonaut.
125. Little Maggie Group.
126. Tomale.
127. Staker and Payroll.
128. Chestnut (old tunnel).
129. Trinity Tunnel.
130. Deep Shaft.
131. Stephanite Tunnel.
132. Southern Tunnel.
133. Shehocton.
134. Syndicate Tunnel.
135. Stephens (old tunnel).
136. Tomale.
137. Chestnut.
138. Chestnut.
139. Klingender.
140. Swansea.
141. Lexington Tunnel.
142. Enterprise Group Tunnel.
143. Silver Swan.
144. Wakeman Tunnel.
145. Isabella Shaft.
146. Stanley Shaft.
147. Air shaft.
149. Site Shaft.
150. Wellington Shaft.
151. Songbird Shaft.
152. Jumbo Shaft.
153. Silver Wing.
154. Steinmetz Shaft.
155. Zulu Chief.
156. Silver Glance Shaft.
158. Jumbo Shaft.
159. Silver Glance Shaft.
160. Jumbo Shaft.
161. Silver Glance Shaft.
162. Jumbo Shaft.
163. Silver Glance Shaft.
164. Jumbo Shaft.
165. Silver Glance Shaft.
166. Jumbo Shaft.
167. Silver Glance Shaft.
168. Jumbo Shaft.
169. Silver Glance Shaft.
170. Jumbo Shaft.
171. Silver Glance Shaft.
172. Jumbo Shaft.
173. Silver Glance Shaft.
174. Jumbo Shaft.
175. Silver Glance Shaft.
176. Jumbo Shaft.


**GENERALIZED SECTION FOR THE RICO QUADRANGLE.**

**SCALE:** 1 INCH = 400 FEET.

<table>
<thead>
<tr>
<th>FORMATION NAME</th>
<th>THICKNESS (IN FEET)</th>
<th>CHARACTER OF FORMATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jurassic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolores</td>
<td>0-200</td>
<td>Sandy marl and fine-grained sandstone and shale of bright-red color with fine limestone concretions near the base.</td>
</tr>
<tr>
<td></td>
<td>250-500</td>
<td>Sandy marl and fine-grained sandstone and shale of bright-red color with fine limestone concretions near the base.</td>
</tr>
<tr>
<td></td>
<td>500-1000</td>
<td>Sandy marl and fine-grained sandstone and shale of bright-red color with fine limestone concretions near the base.</td>
</tr>
<tr>
<td></td>
<td>1000+</td>
<td>Sandy marl and fine-grained sandstone and shale of bright-red color with fine limestone concretions near the base.</td>
</tr>
<tr>
<td>Dakota</td>
<td>0-200</td>
<td>Dark reddish-brown sandstone and pink grit, with intercalated greenish or reddish shale and sandy, fossiliferous limestone.</td>
</tr>
<tr>
<td></td>
<td>250-500</td>
<td>Dark reddish-brown sandstone and pink grit, with intercalated greenish or reddish shale and sandy, fossiliferous limestone.</td>
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<td></td>
<td>1000+</td>
<td>Dark reddish-brown sandstone and pink grit, with intercalated greenish or reddish shale and sandy, fossiliferous limestone.</td>
</tr>
<tr>
<td>Tertiary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutler</td>
<td>400</td>
<td>A complex of alternating friable, fine-grained, yellowish or grayish sandstones and shales. The Gray or grayish-brown quartzites usually contain a variable conglomerate, containing quartz sand and shale. The quartz sand and shale are generally found in the Dakota sandstone.</td>
</tr>
<tr>
<td></td>
<td>100-300</td>
<td>A complex of alternating friable, fine-grained, yellowish or grayish sandstones and shales. The Gray or grayish-brown quartzites usually contain a variable conglomerate, containing quartz sand and shale. The quartz sand and shale are generally found in the Dakota sandstone.</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>A complex of alternating friable, fine-grained, yellowish or grayish sandstones and shales. The Gray or grayish-brown quartzites usually contain a variable conglomerate, containing quartz sand and shale. The quartz sand and shale are generally found in the Dakota sandstone.</td>
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<tr>
<td></td>
<td>1000+</td>
<td>A complex of alternating friable, fine-grained, yellowish or grayish sandstones and shales. The Gray or grayish-brown quartzites usually contain a variable conglomerate, containing quartz sand and shale. The quartz sand and shale are generally found in the Dakota sandstone.</td>
</tr>
<tr>
<td>Upper Cretaceous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mancos</td>
<td>0-200</td>
<td>Soft, dark gray, or almost black, carbonaceous clay shale containing thin layers or concretions of impure limestone. Embraces the Colorado group and a portion of the Pierre division of the Dakota sandstone. No fossils are present.</td>
</tr>
<tr>
<td></td>
<td>200-1000</td>
<td>Soft, dark gray, or almost black, carbonaceous clay shale containing thin layers or concretions of impure limestone. Embraces the Colorado group and a portion of the Pierre division of the Dakota sandstone. No fossils are present.</td>
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<td>1000+</td>
<td>Soft, dark gray, or almost black, carbonaceous clay shale containing thin layers or concretions of impure limestone. Embraces the Colorado group and a portion of the Pierre division of the Dakota sandstone. No fossils are present.</td>
</tr>
<tr>
<td>Lower Cretaceous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dakota</td>
<td>0-200</td>
<td>Soft, dark gray, or almost black, carbonaceous clay shale containing thin layers or concretions of impure limestone. Embraces the Colorado group and a portion of the Pierre division of the Dakota sandstone. No fossils are present.</td>
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</tr>
<tr>
<td>Unconformity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>reviewers</td>
<td></td>
<td></td>
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</tbody>
</table>

**CHARACTER OF FORMATIONS.**

**WHITE MAN CROSS,**

**ARTHUR C. SPENCER,**

**Geologists.**
FIG. 1.—THE SOUTHEASTERN PEAKS OF THE RICO MOUNTAINS, FROM THE WEST SIDE OF THE DOLORES RIVER.

In the center, on the skyline, is the porphyry cap of Dolores Peak, behind which rises Blackhawk Peak. Farther to the left is the north shoulder of Blackhawk Peak, with its light-colored porphyry cliffs. On the right is Whitecap Mountain, with its porphyry sheets, and in front of it Deadwood Gulch. Across the face of Dolores Mountain may be traced the limestone ledges in the middle of the Hermosa formation.

FIG. 2.—SANDSTONE MOUNTAIN, LOOKING ACROSS THE DOLORES FROM THE FOOT OF C. H. C. HILL.

The view illustrates the character of cliff exposures formed by the alternating limestone, sandstone, and shale beds of the Hermosa formation, and the similar ones of the lower portion of the Dolores red beds in the hills to the right. The crevice crossing the crest of Sandstone Mountain marks the line of a small fault.

FIG. 3.—DARLING RIDGE AND HORSE GULCH, FROM SANDSTONE MOUNTAIN.

At the head of Horse Gulch, on the right, is Calico Peak, and on the left Anchor Mountain. The snow-covered slope of Darling Ridge on the left, from the creek to the forested crest, is wholly occupied by landslide debris. The Puzzle mine is situated at the foot of the snowy slope, in a landslide area.

FIG. 4.—TORRENTIAL FAN AT THE MOUTH OF AZTEC GULCH, FROM EAST SIDE OF THE DOLORES RIVER.

The face at the bottom of the main fan is an erosion scarp cut by the river. A secondary fan is now being formed in front of that scarp.

FIG. 5.—TELESCOPE MOUNTAIN AND THE UPPER PART OF C. H. C. HILL, FROM SANDSTONE MOUNTAIN.

The highest point is the summit of Telescope Mountain. On the left is a scarp of Hermosa and Rico strata. On the right is the ridge leading down to Nigger Baby Hill. The scene shows the characteristic form and grade of a torrential fan. The Puzzle mine is situated at the foot of the snowy slope, in a landslide area.

FIG. 6.—DETAILS OF LANDSLIDE TOPOGRAPHY IN THE AREA ON THE NORTH SIDE OF HORSE GULCH.

The view shows characteristic landslide trenches, ridges, and mounds, where disintegration has occurred. The rocks on the floor of Horse Gulch are generally of slate beds. In the background is the remains of a tall Douglas fir.