0060 0041

Homestake Mining Company; Clayton Valley Project; Hole HKC-1

Esmeralda County, Nevada — SE 1/4 sec 13, T 2 S, R 39 E

Location: — Claim: Leprechaun Mining and Chemical, Inc. Lease

Inclination: Vertical Bearing: -- — Started Aug. 29, 1963 Stopped Sept. 9, 1963

Collar elevation: — Total depth: 560 — Logged by: S. E. Kesler

Core size, casing left in hole: NX (3 1/2") — 90-100; no sample, dry interval

hole--no caing--non core — 120-150; no samples, dry interval

240-250; good sample

320-340; good sample, water level remained at 100 feet.

420-430; good sample; water level remained at 70'

500-510; no sample, dry interval

550-560; no sample, dry interval

Depth in feet	Core Recovery	Lithology	Assay Data (ppm)	Mn	K	Li
0	Non Core	0- 9 Surface silt and evaporite material of a yellowish brown color				
10		9-150 Impermeable sediment-composed primarily of bluish-black clay materials and less than 10% fine to medium grained sand size particles of gypsum(?). Hole bailed at 100' and found to be dry--even after 30 minute wait. Similar attempts at 150', 140', and 120' were also dry. Occasional "artesian" flow noted during drilling between 100' and 150' evidently due to back pressure from lost circulation.				
20						
30						
40						
50						
60						
70						
80						
90						
100			90-100	no sample, dry interval		
110						
120						
130			120-150	no sample, dry interval		
140						
150		150-290 Sludge samples returned in this interval were sparse, but indicated a distinct increase in coarse sand sized particles which make up 40 to 70 per cent of the sample. These particles are euhedral crystals to anhedral grains of clear to whitish gypsum, and are accompanied by a finer grained matrix of clay balls (?), as well as some small detrital material and iron oxide flakes. This zone is probably permeable and porous through out, but does not produce brine samples above 240' where first good sample was taken. Hard drilling zone encountered from 290-260 may have been layer of massive gypsum (?).				
160						
170						
180						
190						
200						
210						
220			220-240	48,000	13,100	55
230						
240						
250						
260						
270						
280						
290		290-500 Sludge and bailer samples returned in this interval indicate 1) an upper 20' (?) zone of muddy, brown clay-rich material underlain by a thick layer of apparently brine-containing strata composed primarily of variably shaped gypsum fragments and clay-balls. The size of gypsum fragments decreases from coarse to fine downward. It is possible that this decrease is caused by the increasing depth of the hole which causes poor cutting return. Brine samples taken at 318-338 where water level was constant at 100' and good sample obtained and at 420-430 where water level was constant at 80 feet and good sample was obtained. Drilling ease and water pressure in this entire (290-500) zone indicates a considerable variation in hardness of the strata. This variation is not well explained by the cuttings. It is possible that layers of gypsum and/or soluble salts cause the resistant layers.				
300						
310						
320			318-338	46,000	13,500	16
330						
340						
350						
360						
370						
380						
390						
400						
410						
420			420-430	52,500	13,000	84
430						
440						
450						
460						
470						
480						
490						
500		500-560 This zone does not produce brine in noticeable quantity. Lithologically--there is no significant difference in cuttings between this and the overlying zones with the possible exception of less gypsum crystals and somewhat finer grained (medium to fine sand size) particles. Sand grains appear to be mainly quartz and altered volcanic rocks with traces of opaque minerals.	500-510	no sample; dry interval		
510						
520						
530						
540						
550			550-560	no sample; dry interval		
560						