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The Golden Arrow, Clifford & Ellendale Districts,
Nye Co., Nevada.

H. G. Ferguson.

USGS Bul. 640, Contributions to Economic Geology, 1916.
113 - 123.

Location. Golden Arrow & Clifford at W base of Kawich Range, Nye Co.
Clifford on main road between Tonopah & Ely, 35 mi. E of Tonopah. Golden Arrow 12 mi. SW of Clifford.
Ellendale - a few miles E of Tonopah & a short distance S of the Tonopah & Ely road - abandoned.

Kawich Range S continuation of Hot Creek Range, from which it is separated at its N end by a narrow transverse pass. From here it extends due S about 60 mi. where its S end runs into the desert valley. High, deeply eroded. Both sides steep, esp. W - cliffs. On the flanks, on both sides of the rugged backbone, are smooth mesa-like forms.

For details of a portion of the range see Ball, S.H., A geologic reconnaissance in Southwestern Nevada & eastern California: USGS Bull. 308, 99-114, 1907.

In the Hot Creek range see Spurr: Descriptive geology of Nevada South of the fortieth parallel: U.S.G.S. Bull. 208, p. 181, 1903.

Golden Arrow Dist. a few miles S of the N end of the Kawich Range, 40 mi. E of Tonopah. Mines on a narrow strip of rock-cut plain between the mts. & the desert valley to the W. No sharp line between desert wash & rock OC, & the loose material near the mts. = only a thin veneer on the underlying rock.

See plan & sections.

Deadhorse hill alaspite porphyry is white, almost granitic looking the phenocrysts exceeding the GM in volume. Felds. phenos large (to 6 mm) & far more numerous than those of qz. Orthoclase > oligoclase. Qz phenos rounded, deeply embayed. Very sparse small shreds muscovite & bi., latter = chlorite. GM extremely f-g mixture qz & felds.

altho' nothing in texture or occurrence to preclude rock being a well-cpt. portion of a rhy. flow (Tordrillite) seems more probable, from texture & mineral comp., that it is allied to the earlier granitic intrusions or represents a phase of the intrusive activity of early Tertiary time, which produced masses of various porphyries, chiefly silicic types, in several parts of S Nevada (Ball, op. cit. p. 32). If this is the case, the mass crowning Dead Horse Hill must be considered as remnants of the original roof of the andesite intrusion (see below).

Rhy forms the mt. range immediately E of the district. ~~Probably~~ Irving, J. D. (maps & sections from his examination of Cotter Mines Co) maps a white rhy & a light. pink rhy, but seems to be little other than color to distinguish the two. Rhy has abundant qtz phenos, felds. in smaller amts, & a little bi in prominent small xx. Felds = albite & orthoclase.

The andesite underlying the rock plane is rather f-g., porphyritic, with many felds. phenos, mostly < 3 mm. An_2 Ab_1. Felds. mostly replaced by cal. No slicate. FMS, specks, now chlorite, calcite, qtz -, rare zoisite mixture. Formerly hbl. No flow structure.

Andesite looks intrusive into Dead Horse alaskite, (why not vice versa?) although study of actual contacts not possible. The irreg. contact of andesite & rhy. exposed in Desert Shaft workings also suggests intrusion, but these relations of the 2 rhs. masked by extensive slipping. But specimens from 40' lev., gold bar shaft, collected from dumps show andesitic tuff in close association with the andesite, & OC's of similar tuff shown on map.

"The mineraly. is ~~thought~~ believed to have followed the faulting closely & to belong to the same general period. The Page flt. appears to be mineralized at the Golden Arrow mine & in the prospects to the SW, but from dump specimens the main OB was within the rhy."

Most veins in the Cotter prospects seem to branch out from the fault nearly at right angles & die out at no great distance from it. Veins subsidiary to main

fault. N of the Desert flt. the ore is in the rhy., & here the fracturing is less distinct than in the andesite. Same applies to veins E of Page flt., in the rhy.

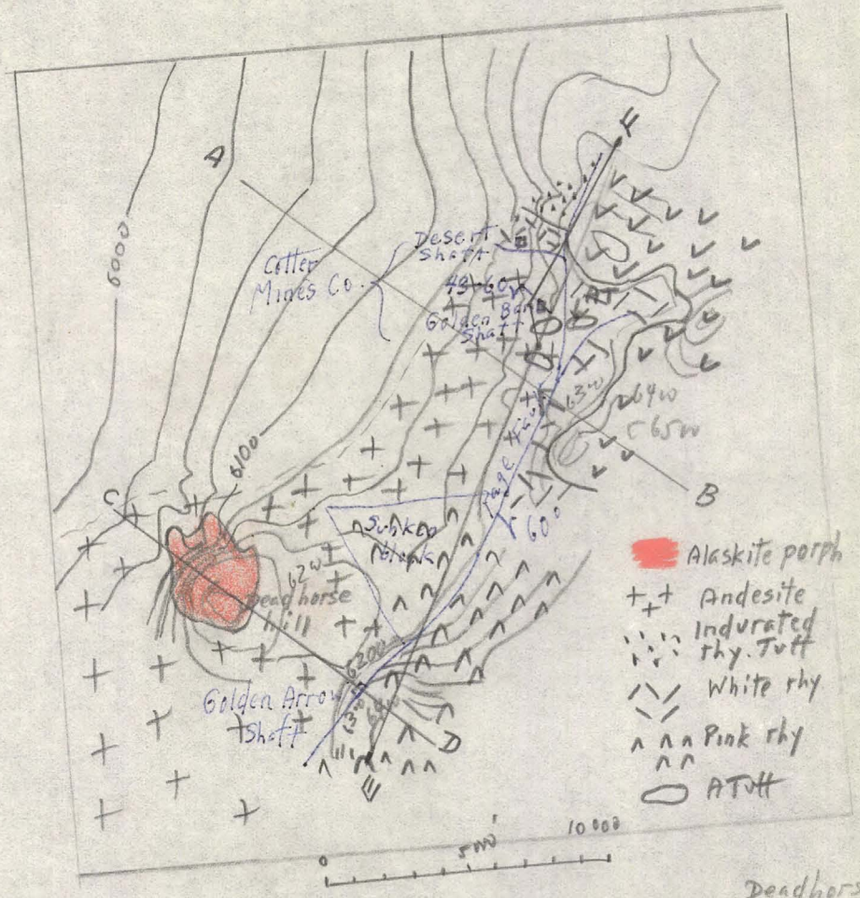
Golden Shaft ore in HW rhy. = small qtz-filled fissures with a few sulph. specks. NR near these fissures is silic. but not sev.

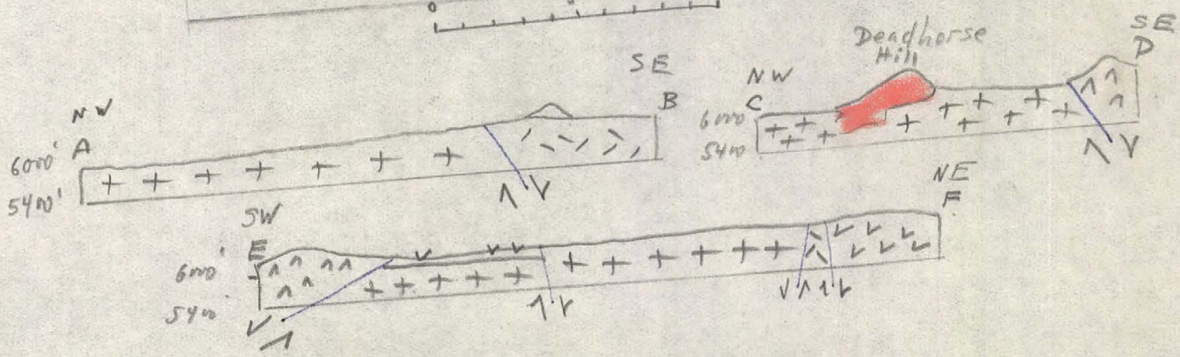
Qy., with very minute specks of ZnS (?) qtz glassy, vuggy. Slender xx up to 1" project from the walls or radially from included frags. of sil. rhy., or from qtz. In the vugs small qtz xx (2nd generation) line the faces of the larger xx. Less often lamellar qtz studded with minute xx. Ag ore.

Cotter - Gold Bar claim - 500' inclined shaft. Top 140' inspected. Where ven could be seen, = Series of closely spaced ∥ qtz veinlets with py. 2 shoots, 1 NW, 1 SE of shaft. NW lost in fw, other continues to bottom of workings. $25/ton, mainly gold. % Ag increases with depth. Qy

Desert - Ore in an irreg. crushed zone ± ∥ Desert flt., & 20' N of it - Ore spotty, irreg; in poorly defined zones of crushed rock within the rhy.

~~Cliffs of Dist.~~





Golden Arrow