

82M/12W

082M 021

PRELIMINARY REPORT ON THE GEOLOGY OF THE SURFACE CUTS 004823

ON THE

FLUORITE ZONE AT THE REXSPAR MINING PROPERTY.

The geology exposed by the trenching done on the fluorite zone in the spring of 1963 tends to confirm the general picture of the zone as it had previously been established. Nothing new was recognized that would change the former ideas. On the whole the cuts revealed good rock exposures over most of their lengths except for cuts 11, 12, and 13, which cross a narrow gully in the bottom of which large angular boulders obstructed trenching. Bare rock exposures between trenches, particularly on the slopes at the ends of the zone, were too few and scattered to allow the tracing of any particular horizons from one trench to the next.

In summary, the fluorite is in a foliated breccia zone in a highly feldspathic porphyritic rock, locally called trachyte. The zone strikes northeasterly, ranging from north 20° - 65° east and averaging north 35° east, and it dips northwesterly from 20 - 60 degrees, averaging 38 degrees. In this zone the fluorspar occurs in irregular lenses of markedly variable concentrations. The lenses are drawn out both along and up and down the foliation. They change thickness extremely rapidly. The fluorite concentration tends to decrease rapidly from about section 10 to the northeast and its place is taken by lenses of a highly micaceous material which contains only minor amounts of fluorite. Company sections suggest the same thing happens down the dip of the foliation. To the southwest the exposures in cuts 2 and 3 inches indicate the end of the fluorite zone in that direction. Similarly, to the northeast, the gradual disappearance of visible fluorite mineralization and the increasing appearance of mica indicates the end of the fluorite zone in that direction.

On the accompanying map an attempt has been made to show the geological features as recognized in the field and in hand specimens. No reliable marker horizon was recognized. A line marked limit of "coarse" breccia is shown. It is thought this may represent the contact of a definite horizon, however, it may be that different horizons in different trenches were correlated in error.

In general, the rock matrix is highly feldspathic material in which the only rock forming mineral confidently recognized was feldspar in scattered phenocrysts up to 1/2 inch long. The entire mass has been crushed to some extent but in places, particularly in cuts 3 to 9, a zone was noted in which the rock was markedly brecciated with widely scattered fragments up to 1 inch in diameter of a rock of apparent similiar character to the matrix, but darker in colour. This is the rock noted above as "coarse" breccia. Because of the scarcity of the dark fragments, this rock is difficult to recognize except in large exposures of freshly broken faces. Therefore, although shown as continuous to the southeast limits of mapping, this rock may not extend all the way, but may be confined to a narrow zone near the line indicated.

In general, the fluorite is in angular fragments mixed with pyrite, feldspathic rock, and a soft greenish gray mineral, probably celestite. In the sections mapped as "high concentration", fluorspar forms most of the rock, sometimes as coarse fragments cemented by fine grained fluorite and sometimes as extremely fine grained fragments. ~~In sections mapped as moderate concentration, the fluorite is in angular fragments:~~ In sections mapped as moderate concentration, the fluorite is in angular fragments 0 to 1/4 inch in diameter separated by feldspathic groundmass with scattered pyrite and probably celestite. In the "scattered but conspicuous" sections the fluorite occurs in very irregular but sometimes concentrated pods and streaks in feldspathic rock. In the "scarce fluorite" zones little or no fluorite was recognized. A discontinuous vein of high grade pods and lenses of pure purple to white massive fluorite with quartz roughly parallels the "coarse" breccia line to the southeast for 100 - 200 feet. It appears to have a steeper dip than the general foliation. Except for scattered 1/8 inch veinlets, no other "vein" fluorite was seen.

From cut 8 to the northwest, a peculiar micaceous rock was found. The rock consisted essentially of lead grey mica with pyrite, some fluorite, and a black powdery material, perhaps manganese oxide. This rock is in lensy masses similiar to the fluorite and appears to take the place of the fluorite in the shear zone to the northeast and down dip as previously mentioned. The number and the thickness of the mica lenses increases rapidly from cut 10 to the northeast.

Numerous attitudes were measured on the foliation. Since few good planes were exposed the accuracy of these measurements is low. For that reason the variations marked may be more apparent than real. There does however, appear to be a slight swing in the strike to the southwest at the southerly end of the zone and a general steepening of the dip toward the southeast edge of the zone. No close folding was recognized.

Except for a few minor ones, no faults were exposed. The covered area in the gully at cuts 11, 12, and 13 may conceal a fault but nothing was seen on strike at cut 10 or 14 to suggest this. This gully is more likely due to deep differential erosion on the mineralized zone which should outcrop in this area. There could well be some flat faults or faults nearly coincident with the general foliation that were unrecognized.

Joints are well developed at variable spacings over most of the area, but bear no apparent relationship to the mineralization. They are in two main sets, one set striking between north 15 - 45 degrees west, and the other striking between 45 - 90 degrees east. All are vertical or dip steeply south or east.

John Cannon
18 JUN 63