## Structural setting and metal zoning of the Ag-Au veins of the Real de Minas de Zacualpan District, Central Mexico

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The Real de Minas de Zacualpan (Royal Mines of Zacualpan) District, located 100 km southwest of Mexico City is arguably the site of the oldest known mining activity in North America, pre-dating the arrival of Hernan Cortez in 1519, and second only to the Domincan Republic and Taxco, Mexico in terms of modern mining (mining using explosives) in the Americas.

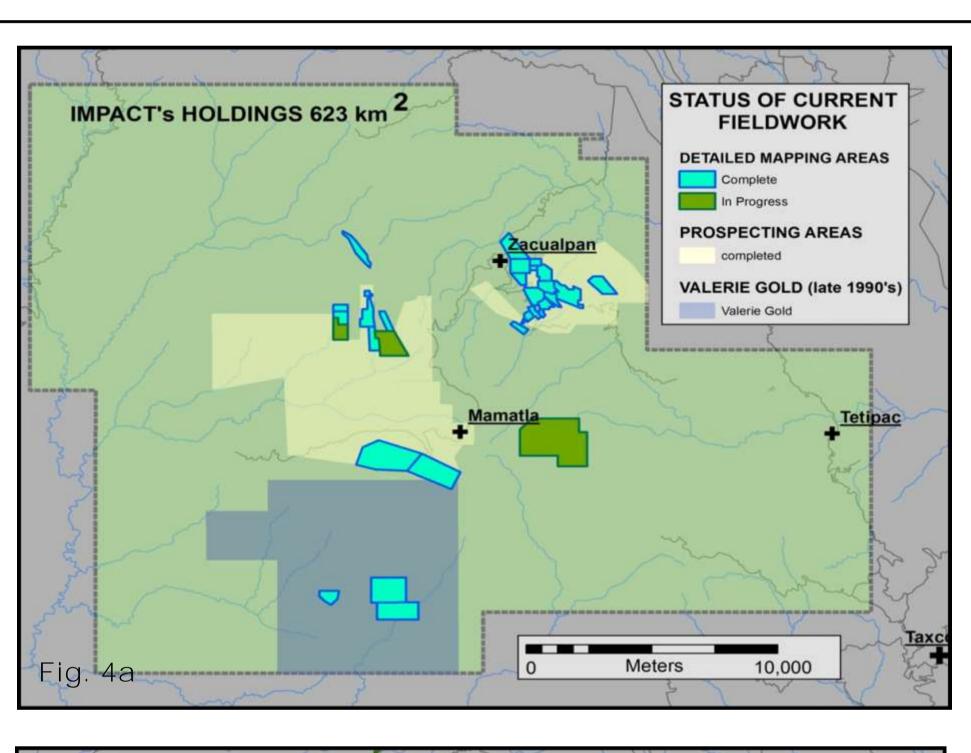
During the past seven years IMPACT Silver Corp. has been engaged in an aggressive exploration program, which has included the compilation of roughly 500 years of mining activity into a GIS database. Using the computer program ArcGIS 10.1 geological mapping and geochemical samples (>25,000) on some 1,900 veins, of which 792 contain elevated values for silver (>100 g/t) and gold (>0.5 g/t) have been inputted. As well over 3,100 old mine and exploration workings have been located.

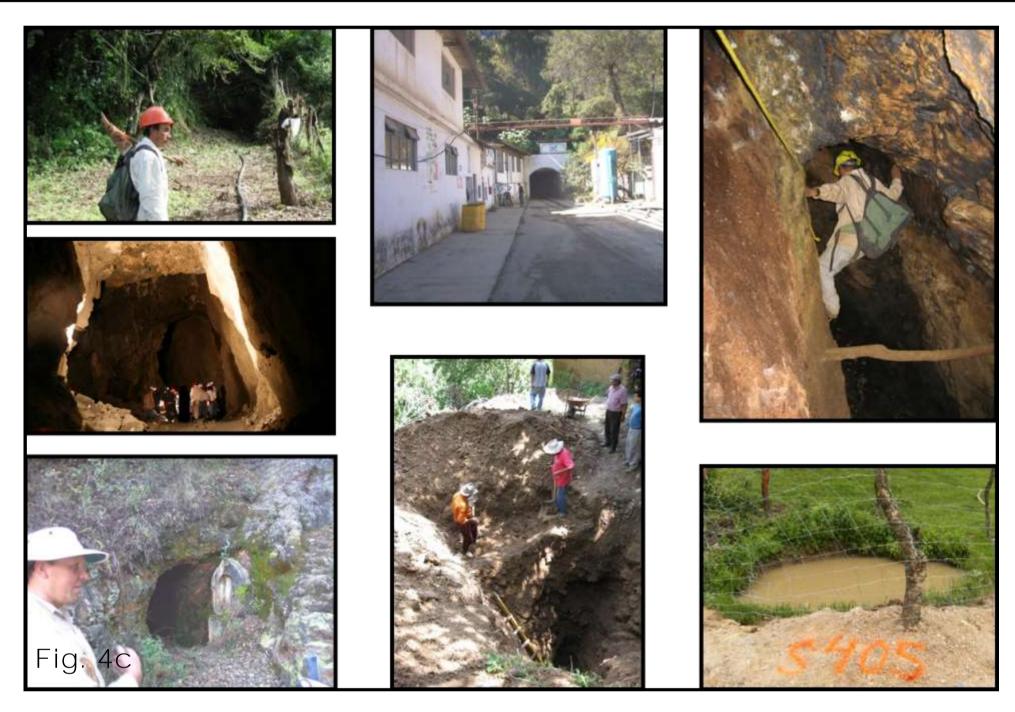
The 423 km² Zacualpan District is represented by an 18 km wide structural corridor of dextral transpressional shear, hosted in the Guerrero Terrane, in which andesitic volcanic rocks of the Vila de Ayala Formation act as a rigid block resulting in brittle deformation represented by faulting and fracturing. Felsic intrusive rocks of the Tilzapotla Formation, located midway between the Zacualpan and Taxco (located 27 km to the southeast) Districts appears to have acted as a point heat source that has focused the flow of the hydrothermal solutions. The age of the veins for the Taxco District range from 30 - 32 Ma (Pi, T. et al, 2005), and by analogy the Zacualpan veins are presumed similar, with the age of the Tilzpotla Formation at 32 Ma (Álaniz-Alvarez, S.A. et al 2002)

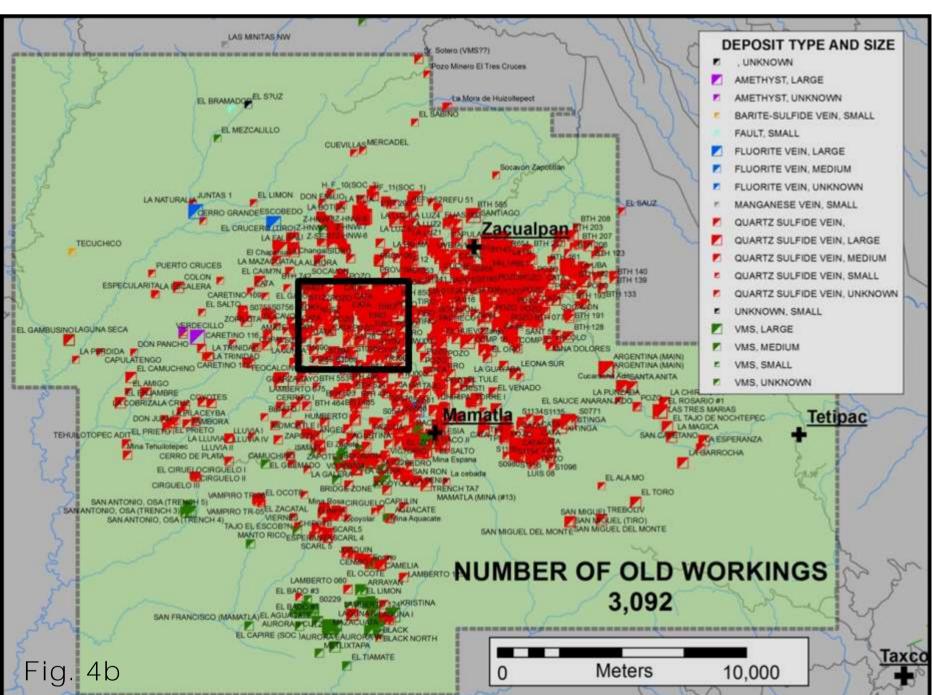
Important structural features include: 1) a series of northeast dipping dextral structures which often host veins that are tens of kilometers long, 2) south-south southwest dilational jog features, that have a vertical sense of displacement and are bounded by the northeast dipping dextral structures, 3) northeast dipping veins having a dextral sense of movement that appear to represent splays from the northeast dipping veins, 4) numerous smaller splay and transverse veins that are associated with both the northeast and southwest dipping dextral structures, and 5) an enigmatic series of north to northeast striking veins located in the central portion of the district that appears to have the overall structure of a horst.

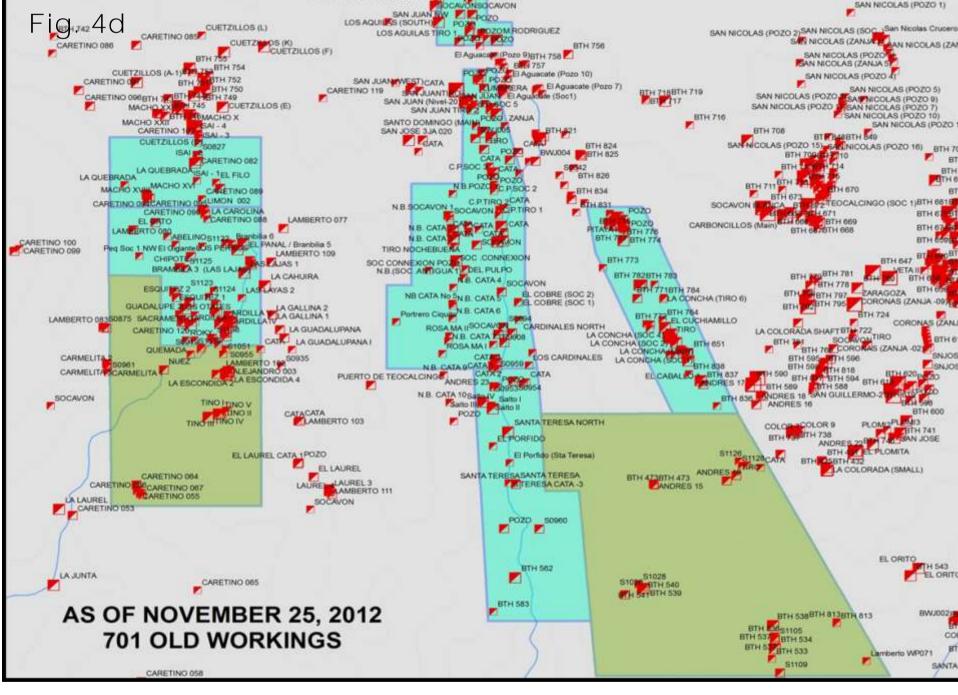
The district is zoned and tilted with Mesothermal Au-Cu-As veins occurring to the southwest and Epithermal Ag-Pb-Sb Veins in the northeast. Other factors controlling geochemistry of the veins are: 1) higher gold contents in proximity to felsic intrusives of the Tilzapola Formation, 2) higher gold values in local extensional structures, 3) a bias to higher gold values for the dilational jog structures, which again represent extensional structures, 4) depth of emplacement, and 5) topography.

Utilizing the data handling and analysis methods developed by IMPACT Silver Corp. a drilling success rate in excess of 60% in terms of intersecting economically significant veins has been achieved, which has resulted in the discovery and commissioning of five mines within the past six years.

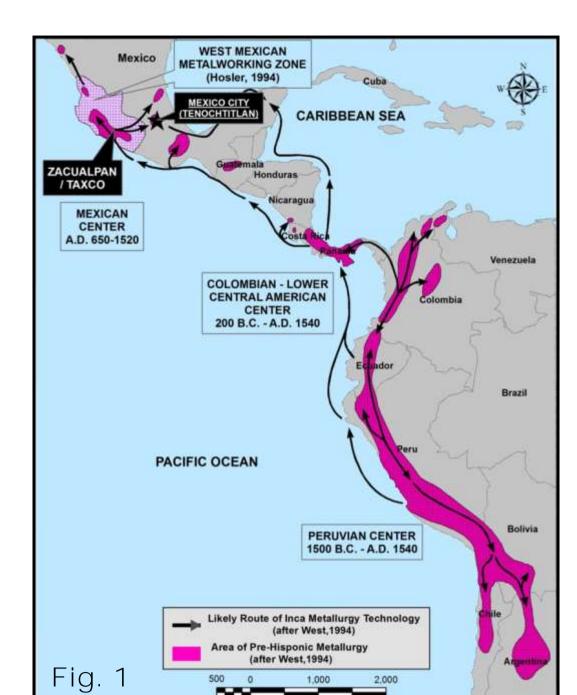






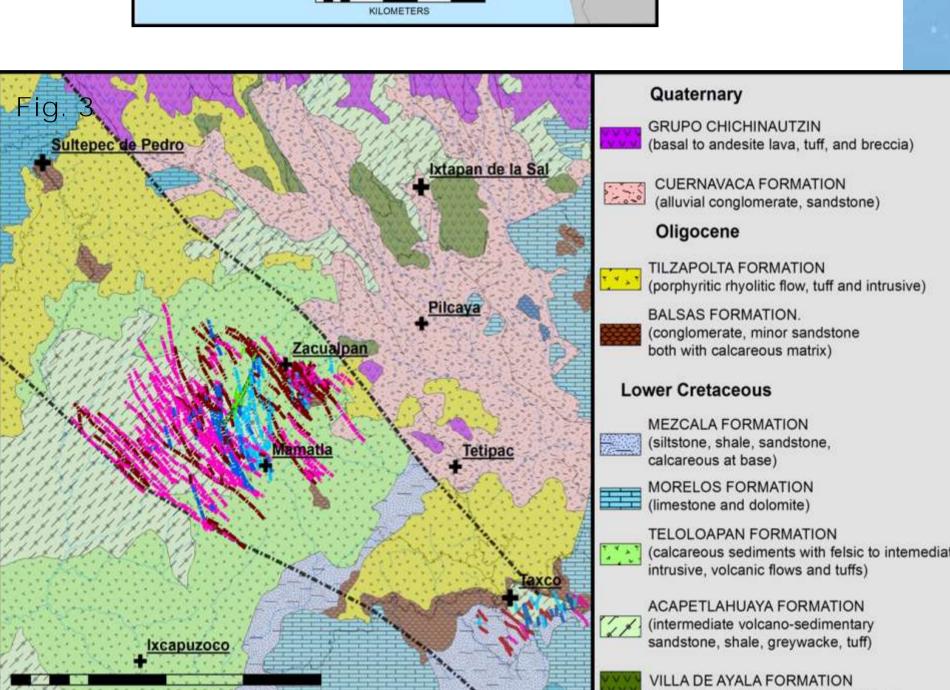


In 2009 Impact Silver announced the successful launch of the GIS Database using the computer program ArcGIS. One aspect of this Database is the documentation of 3,092 Historical Mine Workings, which continues to grow with the addition of ten each week. It has been found that the most cost effective manner to find and document the silver-gold veins is to first locate the old workings, many of which date back to the Spanish Colonial times. The larger workings (120) generally indicate areas of historic production, whereas the smaller workings can be used to trace the veins such that detailed mapping and sampling can be conducted. In order to systematically explore a 623 square kilometer property that is as richly endowed as the Zacualpan District, smaller areas are prioritized for detailed prospecting and geological mapping (Fig 4a) and subsequent drilling. Representing the black square in Fig 4b is a detailed subset centered over the Nochebuena– Carlos Pacheco Area (Fig 4d) which clearly



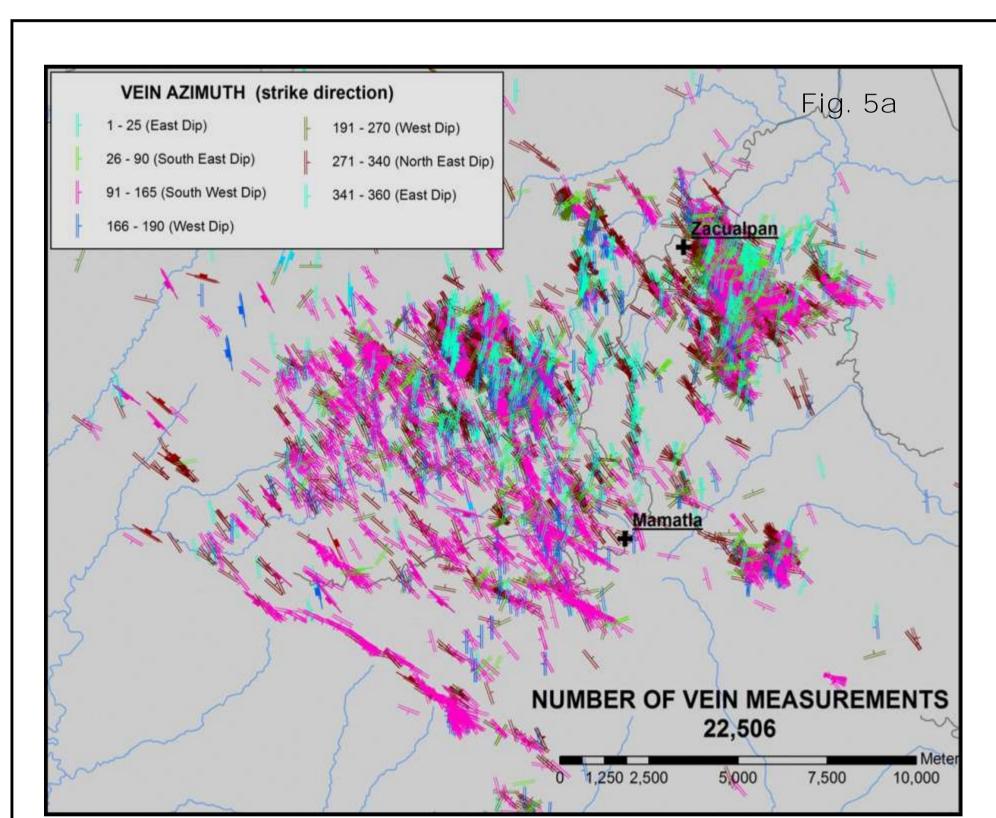
IMPACT SILVER CORP.

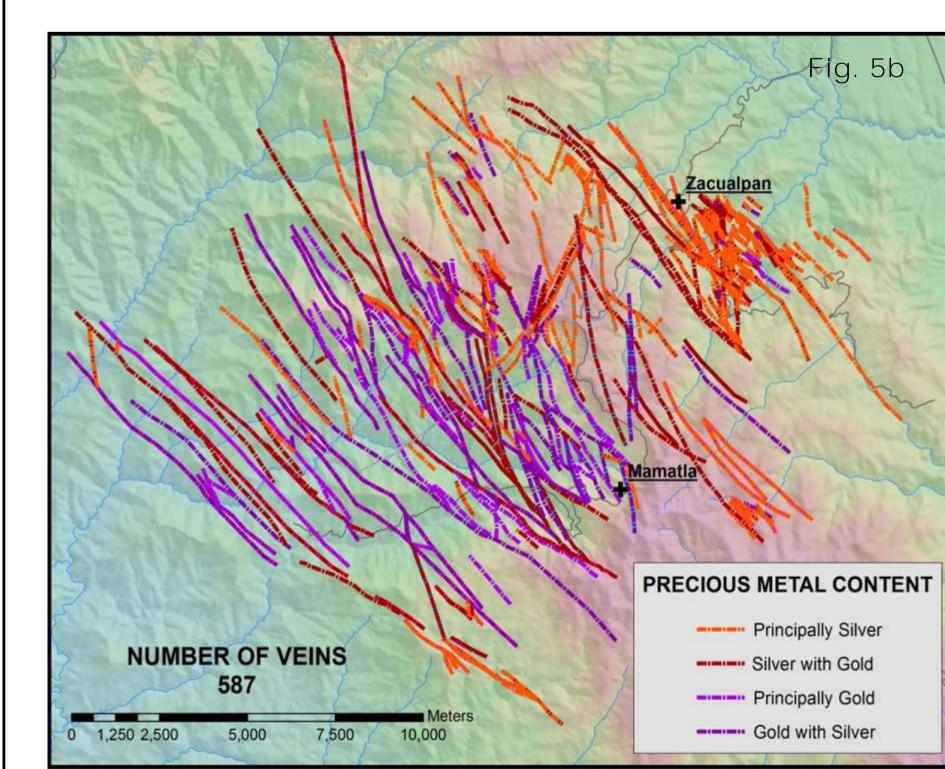
Shown on Fig 1 are the dispersion routes for the metal working techniques that were originally developed in Peru. When Cortés entered Mexico they first saw gold and silver ornaments in some abundance at the Aztec city of Tenochtitlan (now known as Mexico City) in 1521. Shortly afterward, the town of Zacualpan was incorporated in 1527, and mining leases bearing Cortés' name and the names of other conquistadors first appeared in the neighboring towns of Sultepec and Amatepec in 1531, and one

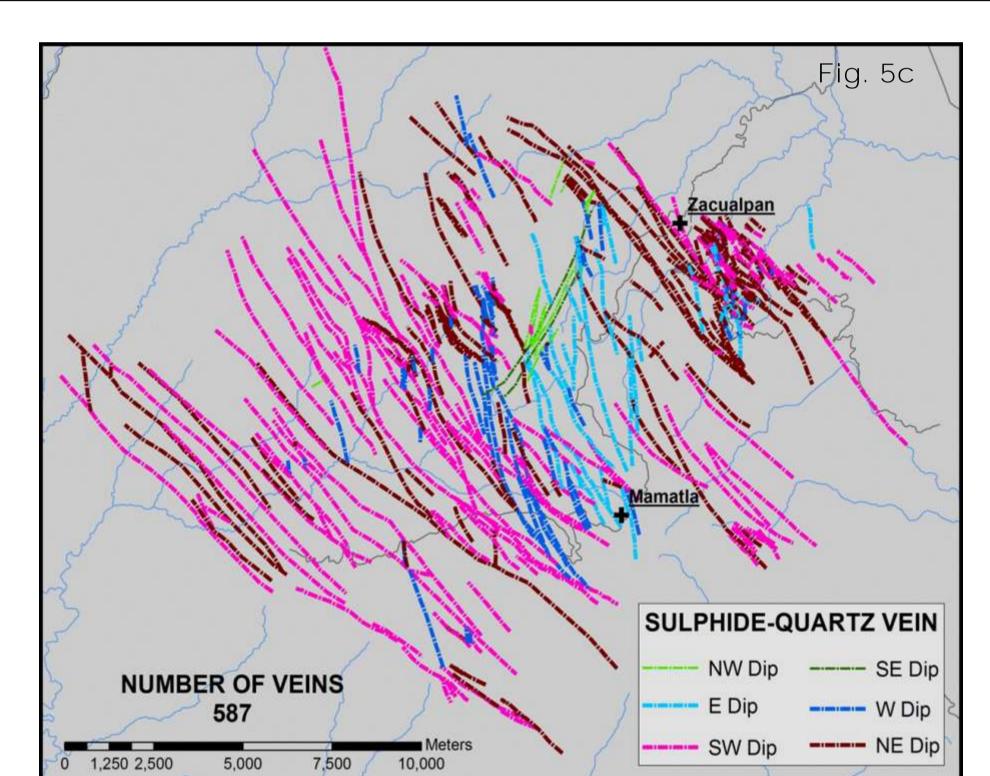


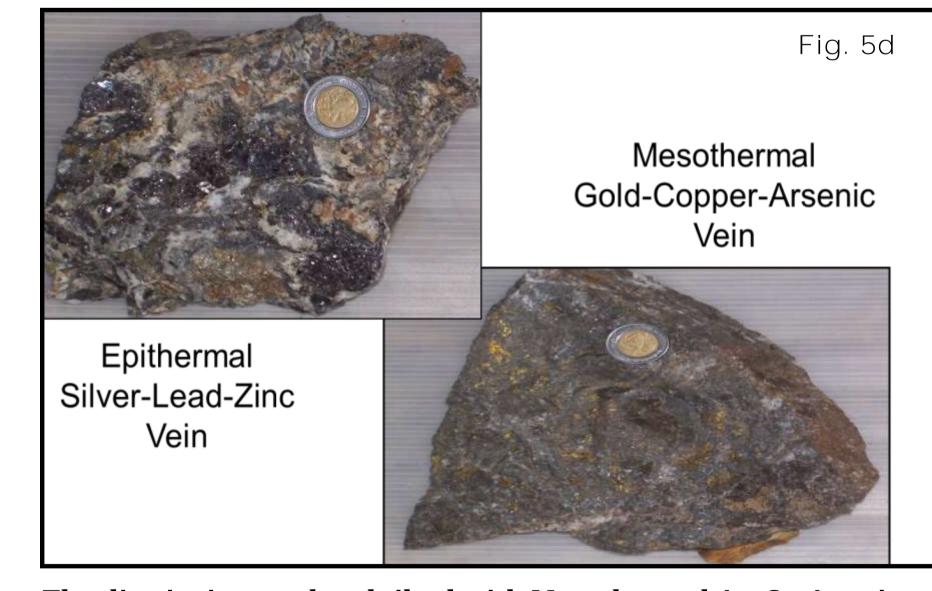
Cuernavaca Geology Mapsheet E4-6 (Rivera C.E., De La Teja S. M.A., Miranda H., A., Lemus B. O., and Motolinia G. O.)

Showing the distribution of the "Mexico Silver Belt" along with the location of Zacualpan is Fig 2. The geology of the Zacualpan along with the neighboring Taxco and Sultepec Silver-Gold Districts is shown in Fig 3. Of particular interest is the structural corridor, which attains a width of twenty kilometers in the Zacualpan District. The porphyritic rhyolites of Tilzapolta Fm (shown in yellow) are thought to represent a local heat source, which in turn is responsible for the veins.

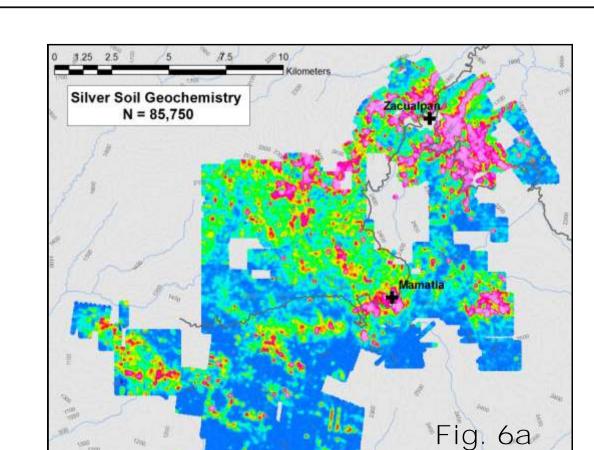


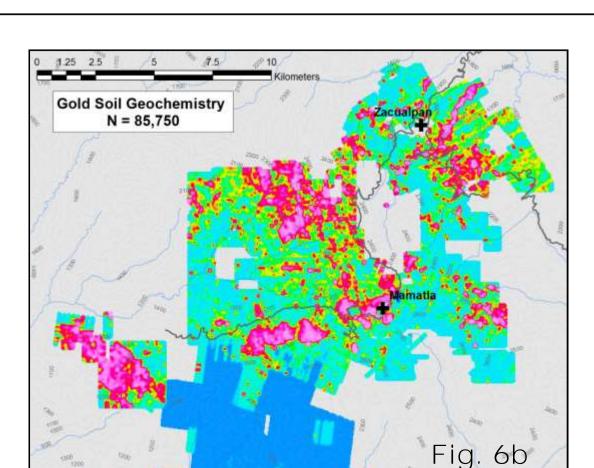


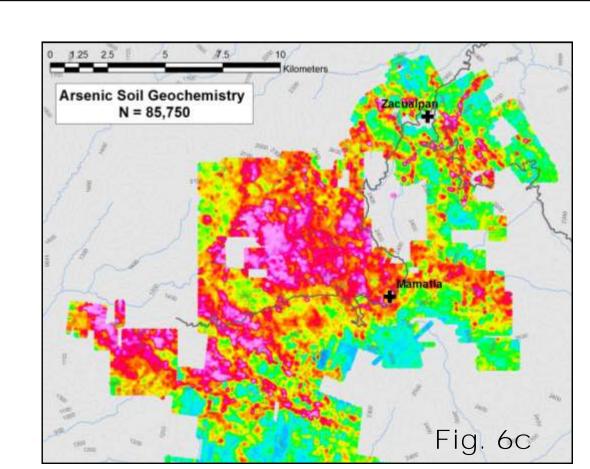


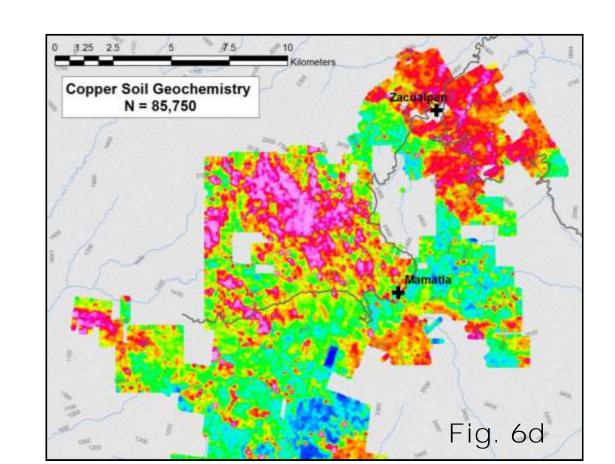


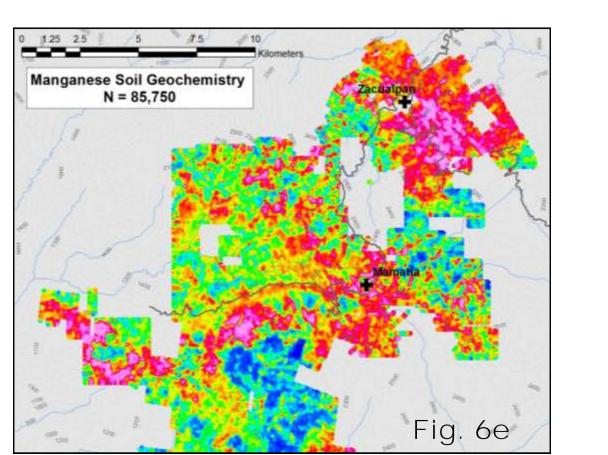
The district is zoned and tilted with Mesothermal Au-Cu-As veins occurring predominately to the southwest and the Epithermal Ag -Pb-Sb Veins in the northeast. As well based upon the dip directions of the major veins the overall structure appears to be that of a horst.

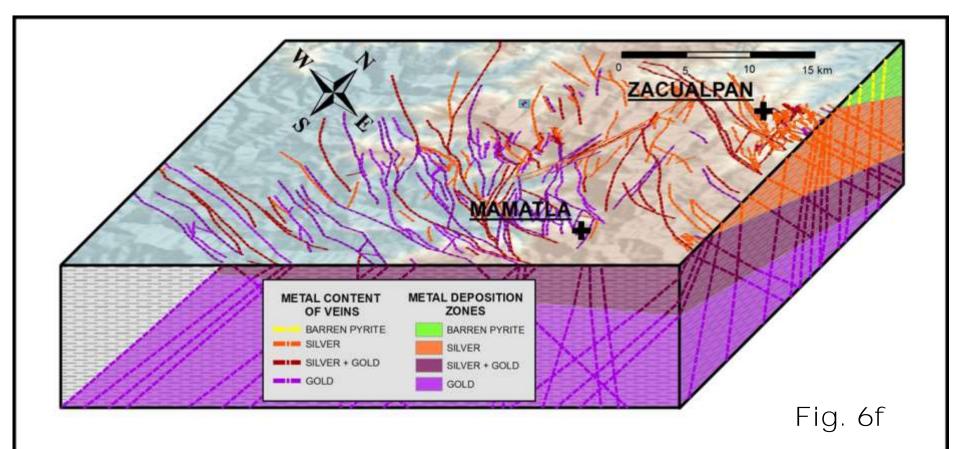






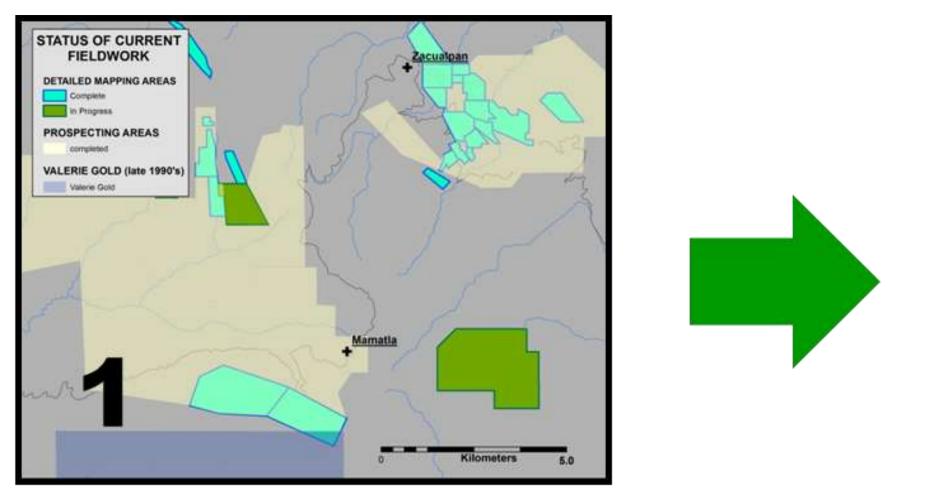


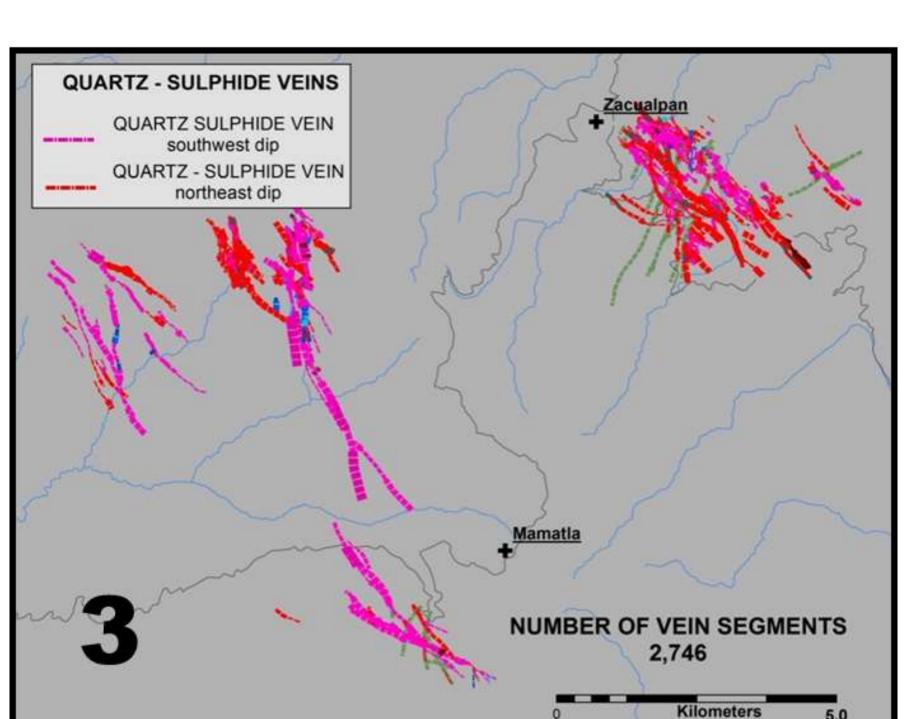


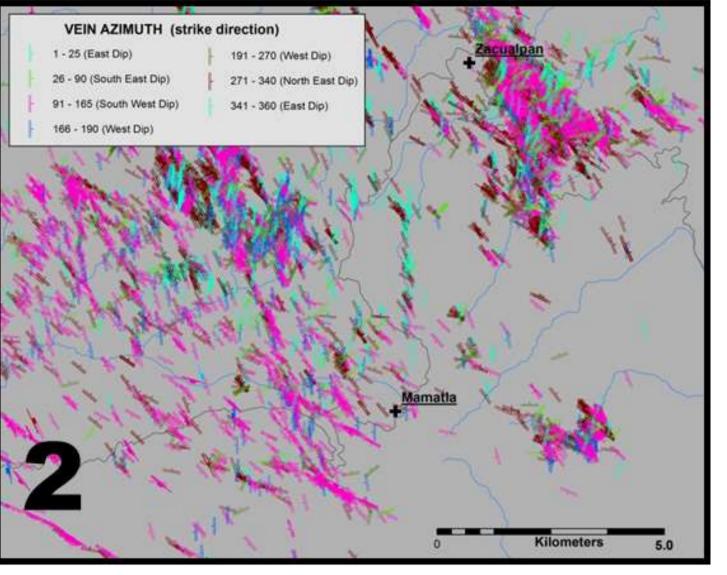


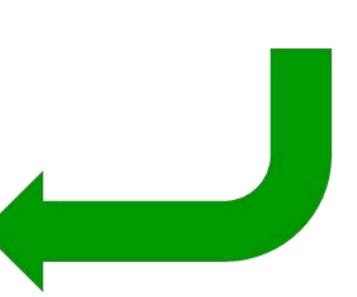
The soil geochemistry for silver and gold exhibit many of the same patterns, which in turn represent some of the more prominent veins, with silver being stronger in the central portion (Fig 6b). As well for arsenic (Fig 6c), copper (Fig 6d) and manganese (Fig 6e) a pronounced progression going from the central portion of the soil grid to the northeast is evident. This is interpreted in terms of the Zacualpan District having a northeast dip or tilt, with the deeper portions of the veins exposed in the center, and the uppermost and silver rich portions exposed in the northeast corner.

## Fig 7. CONSTRUCTION OF THE DETAILED VEIN INTERPETATION USING OUTCROP MEASUREMENTS, THEN DIGITIZED INTO VEIN SEGMENTS IN ARCGIS, AND COMBINED WITH THE ROCK SAMPLE GEOCHEMICAL DATABASE

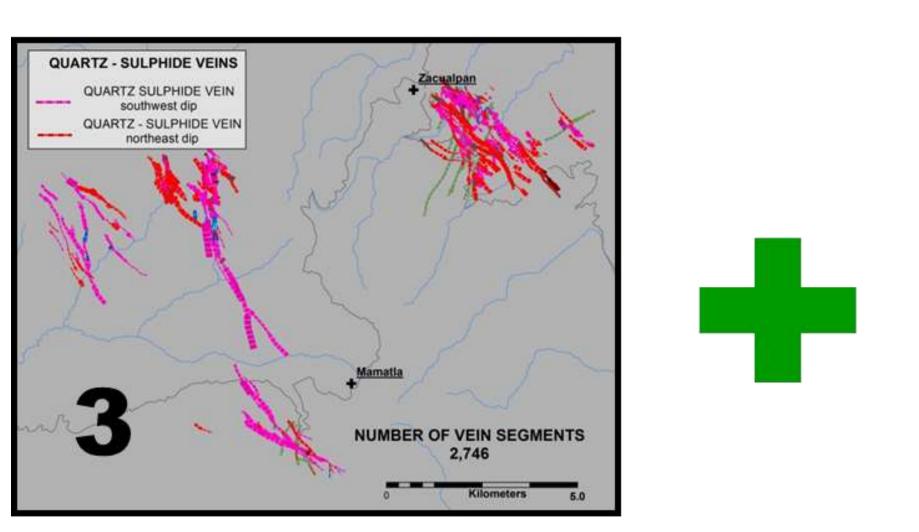


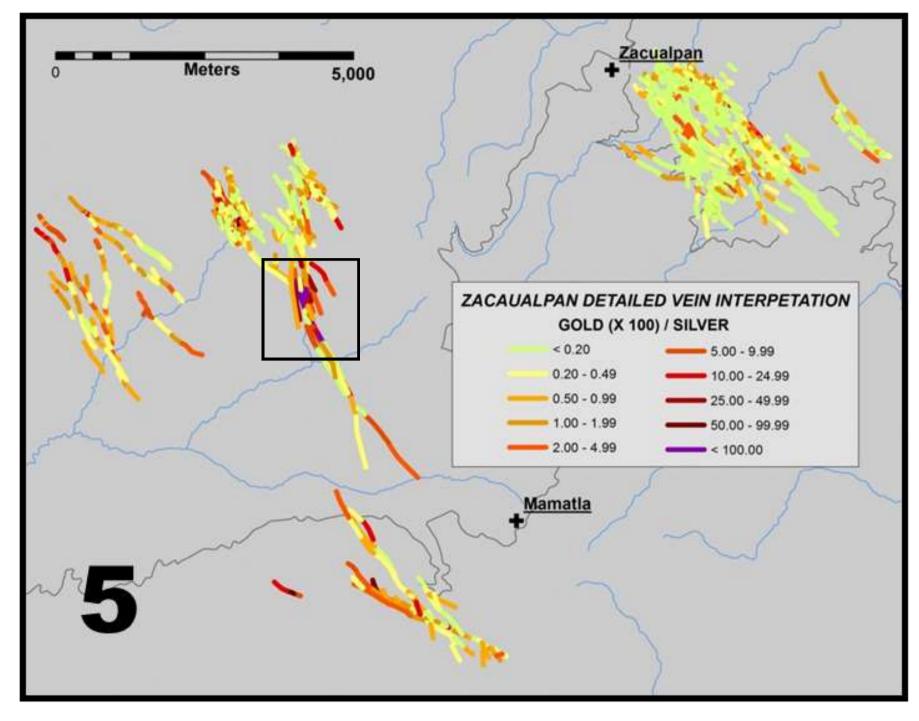


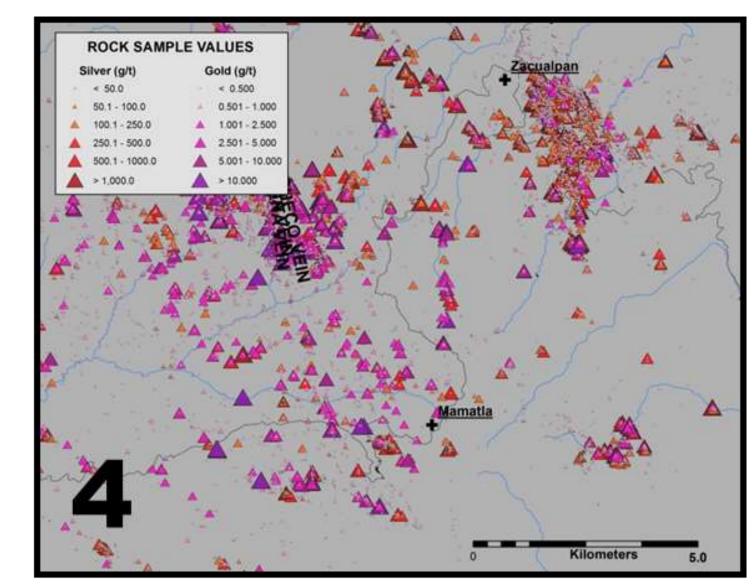


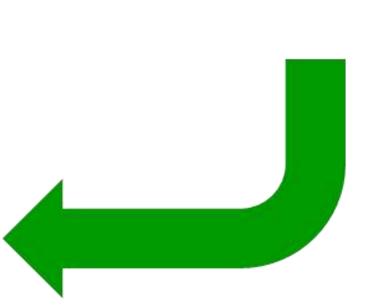


When constructing the Vein Interpretation Map, each vein is digitized into "vein segments," (Step 3) which represent those portions on which rock samples have been collected for chemical analysis, and precise structural information concerning the vein's orientation have been measured by geologists in the field.



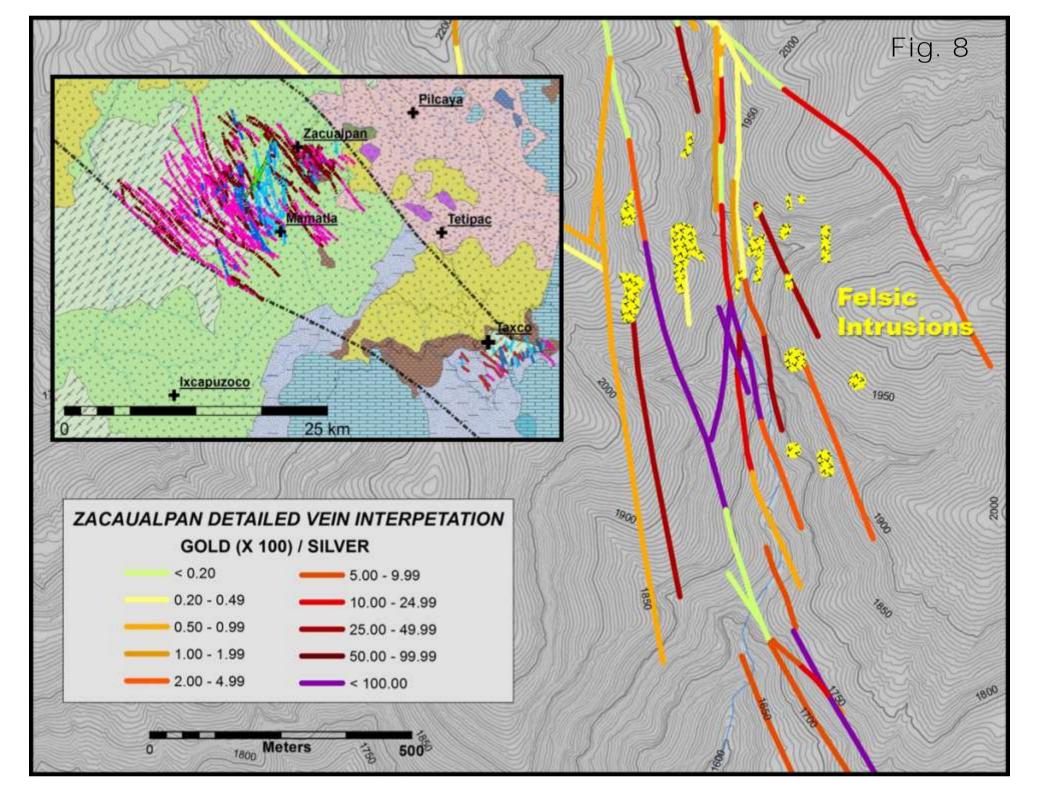




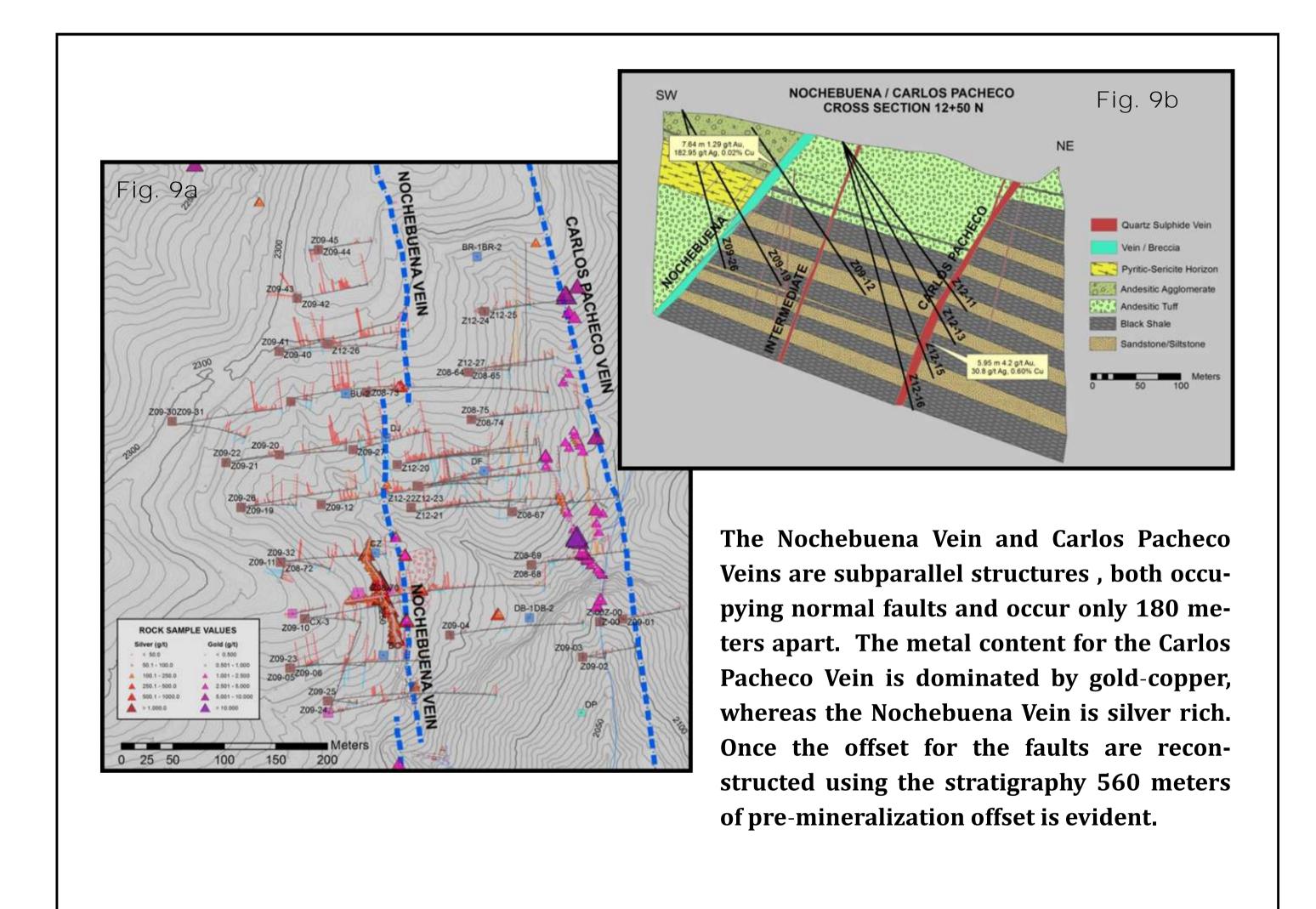


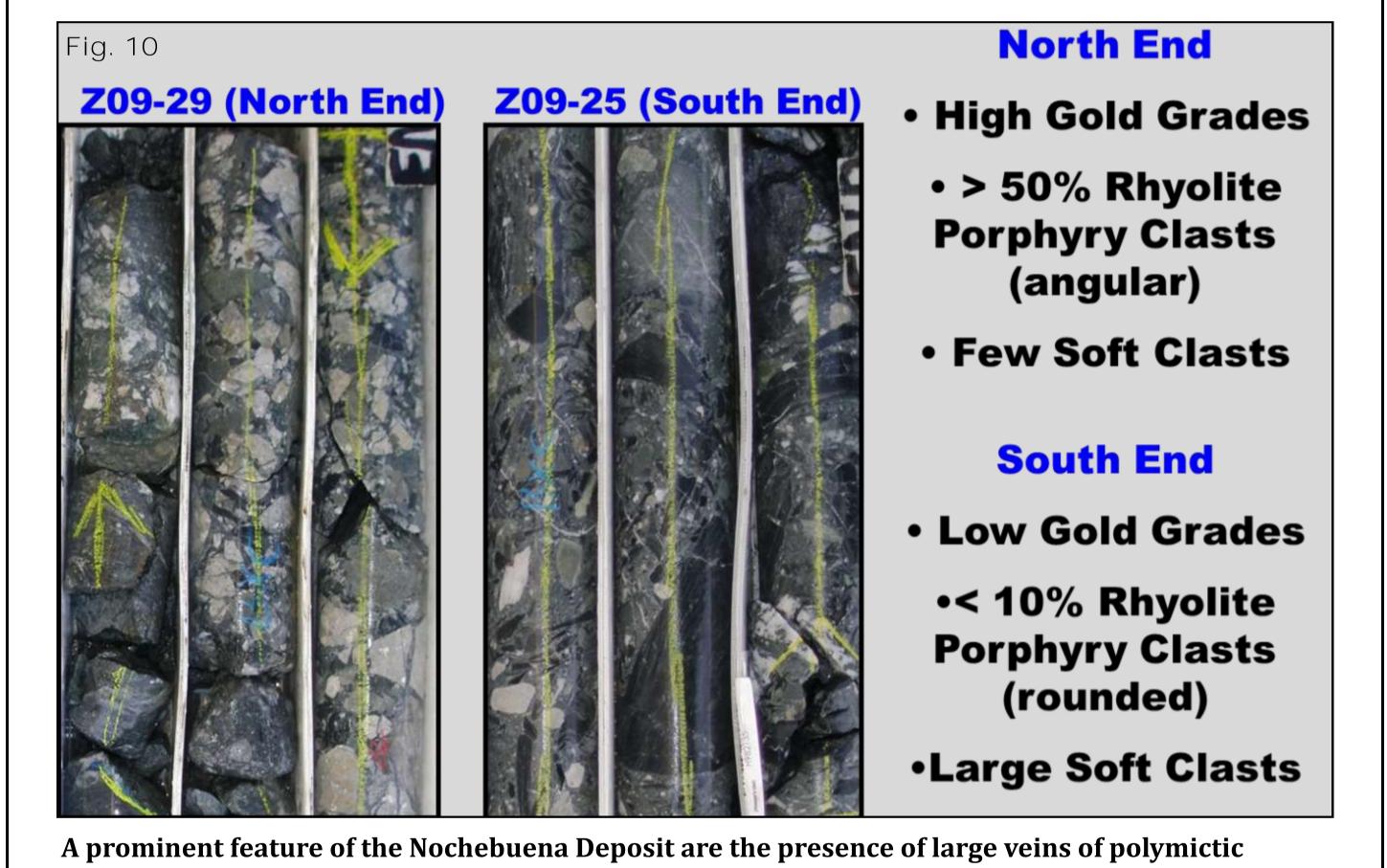
Step 4 shows the rock sample assay information, in which various-sized triangles represent differing silver contents. Combining the Vein Interpretation Map of Step 3 for the vein segments with the rock sample geochemical data from the Rock Sample Database (Step 4), produces the map in Step 5, which in this case represents the Gold / Silver ratios.





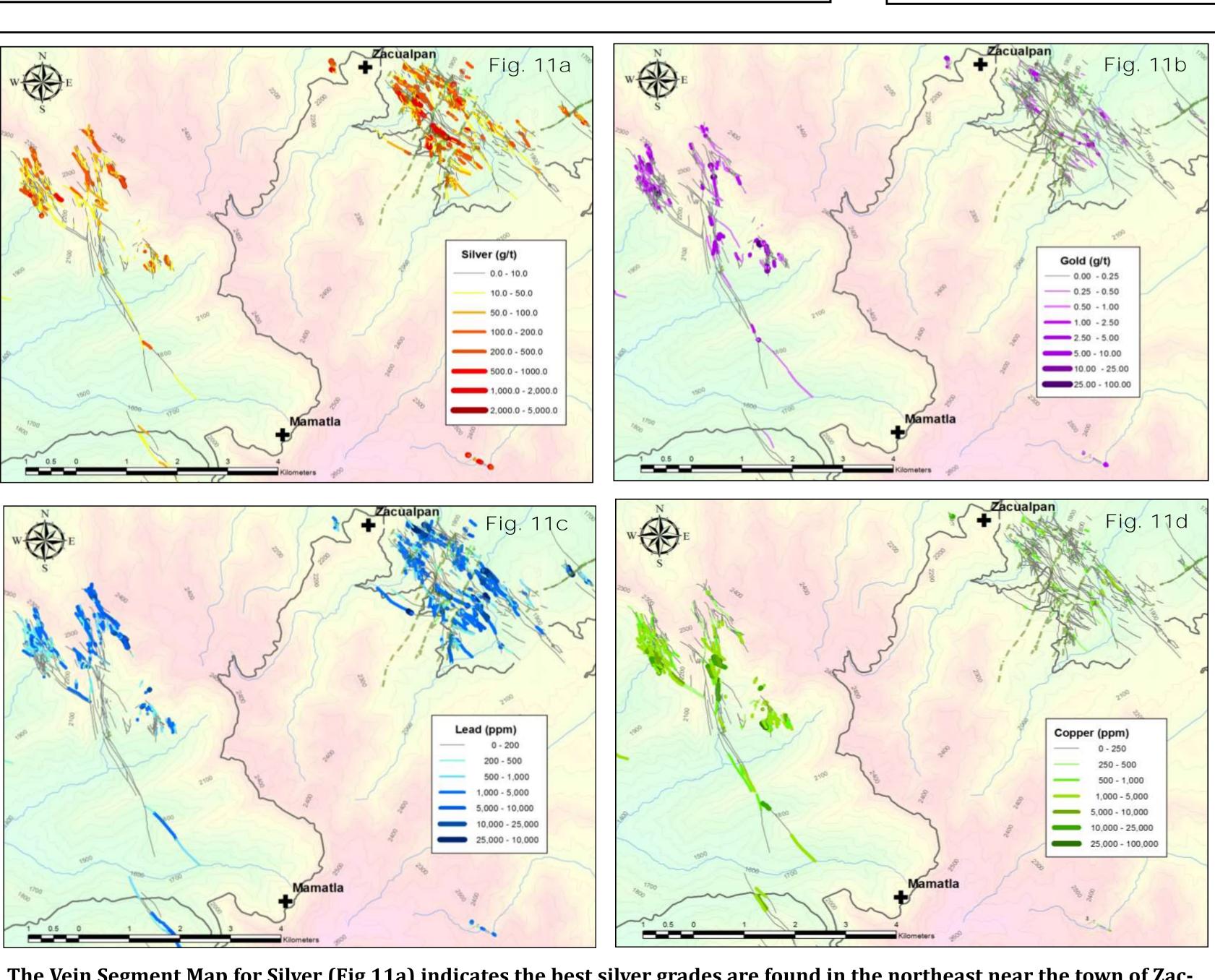
Shown in Fig 8 is the detailed area of Step 5 in Fig 7. This area attains the highest gold / silver ratios, and when viewed in terms of the geological mapping it is only in this specific area that felsic volcanic rocks of the Oligocene Tilzapolta Formation outcrop, again suggesting this rock type likely represents as heat source for the hydrothermal solutions.



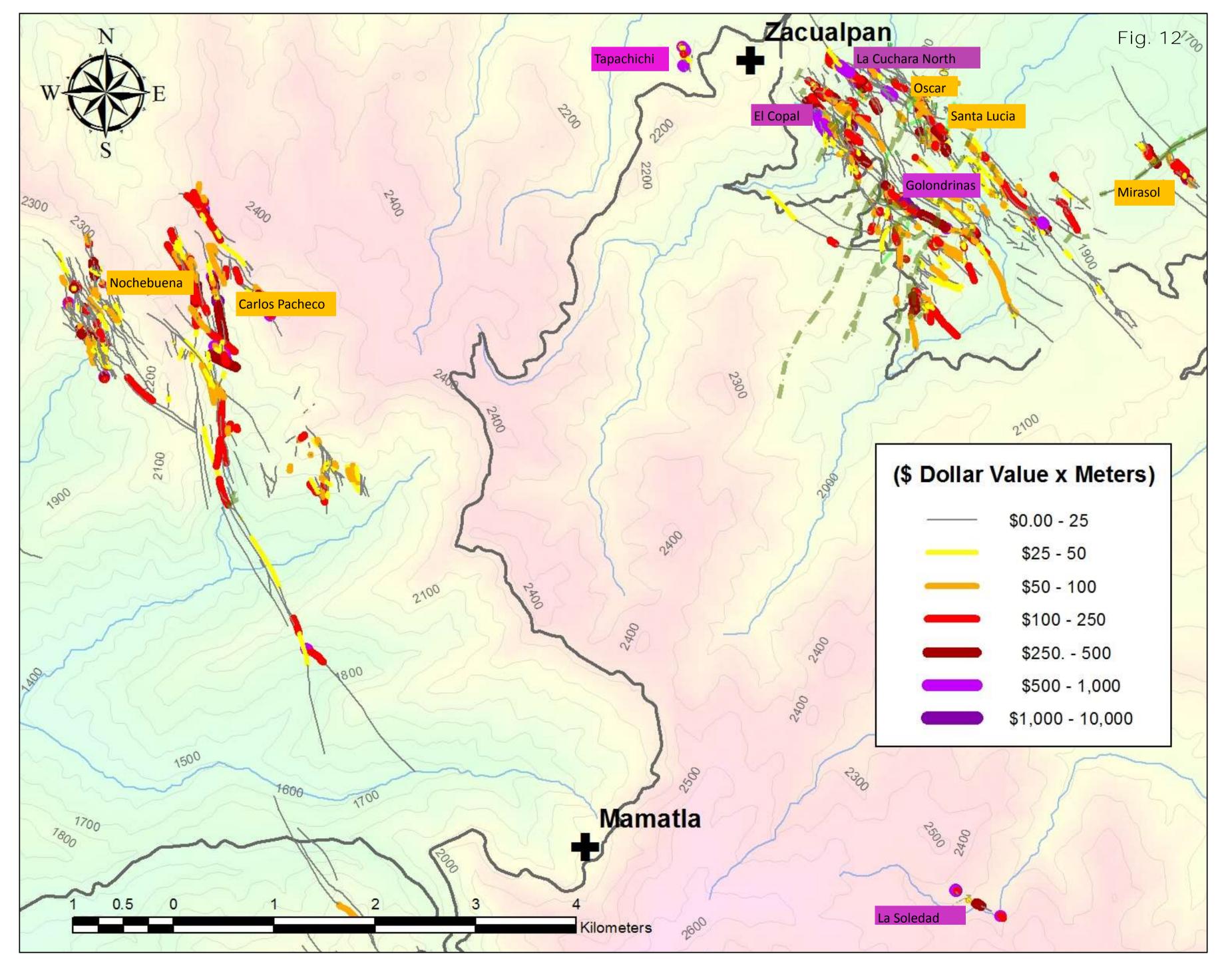


hyrdrothermal breccia. Drill core from the north end of the Nochebuena Deposit again shows an

affinity for higher gold grades associated with felsic volcanic clasts of the Tilzapolta Formation.



The Vein Segment Map for Silver (Fig 11a) indicates the best silver grades are found in the northeast near the town of Zacualpan and predominately within the north-westerly striking veins. Gold (Fig 11b) and Copper (Fig 11d) on the other hand tend to be more abundant in the northerly striking veins and at lower elevations.



Geologists have often been accused of producing a plethora of maps to express a concept, whereas management would prefer one simple map that nicely summarizes where the best targets are, and ranks them in there order of economic significance.

## Management here is your one map!!

Since the Zacualpan District can best be described as polymetallic, with silver, gold, lead and zinc contributing it was decided to go to an "in ground metal content" to provide a consistent datum for determining the value of a vein.

On this map the vein segments have symbolized according to the "in ground metal values" according to the rock sample database, which in turn have then been multiplied by the width of the veins, and coloured according to importance. For reference some of the drilled deposits are shown in the light orange boxes, with our more promising prospects show in the purple boxes. In the case of La Soledad and Tapachichi the process of digitizing the vein segments has only just commenced, and geological mapping is ongoing, hence the relatively small size for these vein areas.