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TGS → Del Santo

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TELKWA GOLD CORPORATION

TKW: TSX-V

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Del/Santo Property, Central B.C.

The Del/Santo property lies 37 kilometres southeast of Smithers at approximately elevations of about 1280 to 1290 meters (4200 to 4230 feet). Vegetation cover is relatively dense resulting in very little rock exposure and topography is gentle to moderate. NTS Map Sheet 93L10E

Access to the property is by four wheel drive road 13 kilometers east of Quick along the Deep Creek - Deception Lake road which starts about 5 kilometers east of Highway 16 and traverses about 8 kilometers northeasterly to the prospect area. Quick lies roughly 30 kilometres southeast of Smithers and three kilometres west of Yellowhead Highway 16.

The claim area is in the Babine Range and is characterized by low to moderate relief with elevations of 860 to 1460 meters. The main channel of Deep Creek and 3 small tributaries occur on the claims as well as four small lakes, which are from 1 to 7 hectares. Mature stands of spruce, balsam and lodgepole pine cover the area, and according to British Columbia Forest Service maps, are from 100 to 400 years old and from 10 to 28 meters tall.

Glacial drift is widespread and most rock outcrops are glacially polished. Overburden depths vary from a thin edge on higher hill slopes to unknown depths in areas of low relief. Outcrops are rare below elevations of 1380 meters (4500 feet). A layer of heavy, gray to buff-colored glacial clay occurs intermittently throughout the area and is observed to be up to 1 1/2 meters thick at the site of the 1998 trenches, and here it directly overlies massive sulfide mineralization.

CLAIMS

The Del Santo group is made up of 10 claims containing 100 units. The claims cover an area of 2500 ha (6178 acres) in a region of low to moderate relief at elevations ranging from 860 to 1460 meters (2820 to 4790 feet).

HISTORY AND EXPLORATION RECORD

The earliest record of work on the occurrences at Deep Creek is in 1915. In that year the B.C. Minister of Mines noted that claims were staked at Deep Creek. The next mention in the literature is 13 years later when it was reported that open cuts were made on pyrite-chalcopyrite occurrences by claim owners, Tom Brewer and Tom Brandon.

Thirty-nine years passed before the next work was recorded, when in 1967, claim owner Mel Chapman cut several bulldozer trenches. Texas Gulf Sulfur Co. optioned the claims from Chapman, and in 1968 conducted a ground magnetometer survey and a limited geochemical soil survey.

In 1969, Falconbridge Nickel Mines Ltd. optioned the claims from owners, Mel Chapman and Francis Madigan and in 1969 and 1970 conducted geochemical soil surveys, geological mapping, magnetometer surveys and electromagnetic surveys using a Ronka E.M.-16 and Ronka Mark IV equipment and drilled three short diamond drill holes for a total of 129.5 feet.

In 1970(?) Bovan Mines Ltd. drilled one BX diamond drill hole from a drill site near the trenched area. The hole was drilled to a depth of about 140 feet(?) but no records exist for that hole.

Union Minere Explorations and Mining Corporation, under an agreement with Mel Chapman, cut four bulldozer trenches in 1976 each about 3 by 20 meters and 0.3 meters deep.

Petra Gem Explorations of Canada, Ltd. acquired an option from Mel Chapman and Francis Madigan and staked an additional block of claims contiguous with Del Santo. They conducted geological work over the previously-cut grid lines and surveyed the trench area with a McPhar M-700 fluxgate magnetometer and conducted a pulse EM survey over a small (120 by 180 meters) area near the trenches.

In 1979 four diamond drill holes were drilled by D. Groot Logging in the area of the previous work. About 1000 feet (328 meters) were drilled, but no records exist for that drilling.

In 1992, Willard D. Tompson and Alan Burrows acquired the prospects by staking and in 1993 mapped and sampled the old trenches.

REGIONAL GEOLOGY

The Del Santo prospects occur in the southern part of the Babine Range in the Stikine Terrane and are underlain by a folded and faulted sequence of island arc submarine to subaerial volcaniclastic rocks of the Lower Jurassic Hazelton Group.

The prospect area is underlain by rocks of the Nilkitkwa Formation, which includes lower units consisting mostly of volcanic and volcaniclastic rocks which are subaerial to submarine amygdaloidal basalts and andesites and lesser dacite to rhyolite flows and tuffs.

PROPERTY GEOLOGY

The Del Santo prospect area was mapped during the summer of 1998. Rocks of the Nilkitkwa Formation predominate and these include maroon and lesser green amygdaloidal pillowed or massive flows and tuffs and lesser quantities of dacitic volcanic tuff with interlayered cherty slates and siltstones. Minor amounts of thin bedded argillaceous tuff, greywackes, limy manganiferous shales, cherts and thin, grey silty limestones occur locally.

Poorly bedded tuffaceous greywacke, cherty siltstone and pebble conglomerate of the Cretaceous Smithers Formation underlie the eastern part of the map area.

A small area east of the Del Santo prospects is underlain by a medium grained biotite granodiorite stock which is dated at 47.1 +/- 1.6 My.

LOCAL GRID GEOLOGY

During August, 1998 the main grid was prospected and mapped in detail extending 600 meters northwest and 1000 meters southeast from the prospect and trench area and along the suspected extensions of the Del Santo volcanogenic massive sulfide occurrence and extending over a width of more than 1000 meters. In this area outcrops occur along small knolls, steep creek gullies and fault breaks, otherwise most of the wide, low valleys and hillsides are swamp or tree covered, leaving about 10 percent rock exposure. Overburden along the hillsides is very thin and hand trenching is sufficient to locate underlying bedrock. In valleys, overburden is deep and contains considerable heavy glacial clay. Within the grid area two formations of the Hazelton Group have been identified, the Nilkitkwa Formation and the overlying Smithers Formation. The volcanic units of the older and more extensive Telkwa Formation were not identified, although the unit was mapped recently as occurring as extensive fault blocks to the south and east of the grid area. Two and possibly three younger granitic to diabase intrusive events have also been observed cutting the Hazelton rocks.

The Nilkitkwa Formation is known to host several syngenetic and epigenetic mineral occurrences in the Babine Range. It is the dominant formation at and around the Del Santo prospect. The Nilkitkwa Formation

is subdivided into four members according to rock type, from the lowermost volcanic members of IJN1 and IJN2 to marine sedimentary environments of IJN3 and IJN4. This transition from a bimodal volcanic environment to a sedimentary environment hosts several base metal syngenetic VMS prospects in the area, including Del Santo, Ascot and Grouse Mountain. It is this environment of lithological change that forms an important prospecting zone and constitutes a broad marker horizon for location of additional copper-silver-zinc mineralization at and around the Del Santo prospect.

Unit IJN1

A majority of the grid area is underlain with green to lesser maroon amygdaloidal mafic flows, tuffs and agglomerates. They are commonly highly vesicular with calcite/quartz fills and meter-scale pillow structures that are prominently rimmed with epidote. Tuffaceous sections are locally graded, and tops are generally hard to identify, but younging is to the east. Fine tuffaceous material usually forms the matrix of the coarser volcanic rocks. Subaerial maroon beds are tuffaceous and less often phyllitic, while deep water submarine green mafic basalts and andesites are ordinarily pervasively altered to epidote.

Mixing of both maroon and green ash tuff is common. An area of strong pervasive epidote alteration occurs flanking the footwall zone of the main Del Santo prospect, although it is not clear if this is related to mineralization. True bedding is difficult to distinguish, even though ash units appear to strike at about 140° to 185°, with dips moderate to steep to the east.

Unit IJN2

This Nilkitkwa member forms narrow outcrops of more resistant dacitic to rhyolitic (?) members of the upper part of the lower bimodal volcanic sequence. It includes an interfingering of siliceous slates, cherts and ash tuffs, but these are not common. Four locations on the grid were mapped as IJN2. Three small, narrow sulphide occurrences are in the west of the grid and one thicker occurrence is located in the northeast of the grid. There are faint bedding features in these outcrops, although the westerly contact with the underlying IJN1 mafic volcanic unit and/or the overlying IJN4 unit strikes 155 to 160 degrees. Dips are steep to the east.

Unit IJN4

This important member occurs in four locations on the grid. The thin bedded argillaceous tuff, limy manganiferous shales, cherts and gray silty limestones cap copper-silver mineralization at the Del Santo showings and represent the upper sedimentary member of the Nilkitkwa Formation. Because the manganiferous and silty limestones occur within tens of meters from bedded copper-silver ores, this specific unit is probably the best marker horizon on the grid area, for identifying other potential mineralized horizons. Four areas on the grid are underlain with similar rock types. Two occurrences, both with silty limestones are located in the western part of the grid and a third is located 100 meters east of the Del Santo showing. Unit IJN3 has yet to be recognized on the property and this may be a direct result of a lack of outcrop. Unit IJN3 consists of a felsic pebble conglomerate with intercalated volcanic tuff and fossiliferous siltstone. These fossils have helped to identify and correctly position the Nilkitkwa Formation in the current stratigraphic column.

General Geology of the Prospect Area

The Del Santo prospects occur in the Lower Jurassic (Pliensbachian) Nilkitkwa Formation of the Hazelton Group. The Hazelton Group is an island arc volcanic assemblage which was deposited in the Hazelton trough during Early to Middle Jurassic time. The Nilkitkwa Formation is subdivided into four map units: (1) interbeded red epiclastics and amygdaloidal flows; (2) rhyolitic volcanic rocks; (3) tuffaceous conglomerate, cherty tuff and siltstone; and (4) thin-bedded argillite, chert and limestone. The Del Santo prospects occur in Unit 1, the interbedded red epiclastic and amygdaloidal flow unit and/or in Unit 4, the thin-bedded argillite,(which at Del Santo includes argillaceous tuffs and agglomerates) chert and limestone unit.

Description of the Prospects

The Del Santo prospects lie along a fairly gentle east-facing slope at elevations, 1270 to 1285 meters. The mineralized exposures occur along a north-south strike length of 110 meters and width of 40 meters. All exposures were produced by trenching, starting from the earliest discovery of pyrrhotite-quartz-chalcopyrite at the sites of present trenches, 98-2 and 98-5. The earliest (1915) work on what is now the site of trench 98-5, was probably a short trench which was dug following the discovery of mineralized float.

Geology of the Prospects

The area of the trenches is underlain mostly by intermediate to mafic volcanic rocks; a few narrow, thin-bedded limestone beds, minor dacitic and felsic tuff beds and minor and very narrow (1-2m) granodiorite and quartz-dacite porphyry dikes or sills.

Massive sulfide mineralization and disseminated sulfide mineralization occur over widths up to 15 meters. The mineralization is strongly controlled by bedding, with beds dipping mostly at 65 to 75 degrees east. The zone of mineralization and bedding strikes about N. 15° W., but has many flexures. The massive sulfide mineralization appears to be thickened by folding where it is exposed in trenches 98-1 and 98-4. The axes of minor folds and drag folds plunge 60 to 65 degrees to the east and to the south. An isoclinal synclinal drag fold in the narrow limestone bed in trench 98-4 plunges 60° to the S. 80° E.

Pyrrhotite and pyrite are dominant sulfide minerals, with pyrrhotite commonly in greater volumes than pyrite. Chalcopyrite occurs in nearly equal volumes to pyrrhotite/pyrite in some exposures, but commonly is subordinate to the other sulfides. A pyrrhotite bed of 0.2-0.3 meters thickness in trenches 98-1 and 98-4 is nearly 100 percent pyrrhotite, but contains scattered masses of chalcopyrite. The pyrrhotite is strongly magnetic, and along with magnetite, which occurs in major to minor amounts throughout the mineralized rocks, should offer excellent opportunities for identifying blind ore zones with a magnetometer.

Host rocks of the strongest massive sulfide mineralization are patchy skarn and banded skarn and are composed of chalcopyrite, magnetite, pyrrhotite, clinopyroxene, epidote, garnet, ankerite, minor quartz and biotite.

Sphalerite occurs in minor amounts in a few places in the trenches.

Pyrolusite is widespread throughout the trench area and most rock exposures display prominent pyrolusite staining. Geochemical values for Mn are commonly >10,000ppm in rock samples from the trench area.

Rhodochrosite occurs in narrow bands in the thin-bedded limestone in trench 98-1. Rhodochrosite mineralization is weak, but the prominent pink color signifies its presence.

A pale, bluish-white fibrous mineral formed on the surface of the freshly blasted massive sulfide rocks in trenches 98-1 and 98-4, within a few days after the rocks were exposed to the warm, dry summer days of July, 1998. This mineral has not been positively identified, but an initial guess is ransomite, a hydrous copper-iron sulfate [$CuFe'''_2(SO_4)_4 \cdot 7H_2O$].

A prominent fault traverses the length of the trenches and apparently has a distinct control on the position of the mineralized beds. The fault strikes about N. 30° W. and dips 45 degrees east and has a sinuous pattern. The sense of displacement on the fault has not been determined.

The strike of bedding is somewhat variable, as the beds are folded, but bedding strikes mostly from north to N. 15° W. and dips from near-vertical to 60 to 70 degrees east.

It is apparent from mapping the trenches that the fault which is described above, has displaced and/or thinned the mineralised zone as it occurs in trenches 98-2, 98-3 and 98-5. It is also apparent that the small granodiorite dike, which is mapped in trenches 98-4 and 98-6 has displaced the mineralised zone in trench 98-6.

A soil geochemical survey in 1998 did not identify any highly anomalous base or precious metal anomalies around the Del/Santo prospect on Grid 1. On grid 2 a minor subdued anomaly in Copper, Zinc, Lead and Silver was identified. Additionally 5.26 km of magnetic surveys, 4.0 km of Max-Min Em surveys and 183 metres of downhole transient EM surveys in three of Telkwa drill holes. Six trenches were cut to expose the mineralization. Four diamond drill holes were drilled to test the extent of mineralization. Holes 98-1 and 98-2 failed to intersect mineralization; hole 98-03 failed to hit the targeted mineralization but intersected a new layer over 4.0 metres. These results indicated significant faulting in the area. Drill hole 98-4 hit 2.8 m of massive sulphide but was barren pyrrhotite. The diamond drilling failed to confirm the continuity of mineralization at depth, but did establish that the rocks which form the outcrops of the Del Santo prospect are complexly folded and faulted.

In 1999 five Max-Min Em anomalies from the 1998 geophysical program, were selected for follow-up. In order to test the depth to bedrock, a seismic refraction survey was conducted over several areas. Two trenches were dug but failed to find any mineralization. One diamond drill hole was drilled on a Max-Min EM anomaly but also failed to intersect any mineralization.

During the summer of 2000, two geophysical surveys were conducted by Frontier Geosciences, Inc. over the Del Santo grid, which is about 1600 meters by 1000 meters with grid lines spaced at 50 meters and line markers at a measured 20 meters. A continuous walking magnetic survey was conducted over 20 kilometers of grid lines using an Overhauser magnetometer. Additionally, a gravity survey was conducted over part of the grid area and about 1000 gravity readings were made using an auto-leveling gravimeter.

During the summer of 2000, four diamond drill holes were drilled for a total length of 307.1 meters (1007.5 feet). Diamond drill holes 2000-1 and 2000-2 were drilled in order to examine a gravity anomaly. Drill holes 2000-3 and 2000-4 were drilled to test a strong negative magnetic anomaly. Earlier investigation of this magnetic low showed that this zone is magnetic in a reverse direction and as such may actually be a strong magnetic positive and thus a promising linear magnetic anomaly.

Both drill holes encountered mostly epidotized and chloritized basalt plus small intervals of sedimentary rocks, supporting the concept that these rocks were deposited in a submarine environment and were subjected to extensive hydrothermal alteration.

However, no sulfide mineralization was discovered and it is believed that the targets were adequately tested.

A detailed petrographic study was carried out later in the season and interpreted the property in a new way identifying the mineral assemblages as more typical of a 'skarn' assemblage and identifying the mineralization as 'a massive sulphide magnetite skarn'.

During the summer of 2001, the Corporation sought to refine drill targets within the previously identified magnetic exploration fairway. To that end, detailed horizontal and vertical loop electromagnetics were recorded over a portion of the established grid in conjunction with systematic "B" horizon soil sampling for ICP multi-element analysis and subsequent fire assay analysis on a portion of the sample set.

The results of the TEM survey provided new targets for further exploration and helped to define the attitude of conductors identified in the survey. The survey was conducted on a 100-metre inter-line spacing with 50 metre infill lines recorded to track anomalies. In some cases, further definition was achieved with 20-25 metre line infill. Overall, new conductors identified by the survey demonstrated a different strike direction than those conductors noted in earlier work. Roughly 60% of these new conductors lie within a defined gravity high. Interpretation of the TEM data suggests the conductors are parallel to sub-parallel and doubly plunging rather than being simply planar, as was previously thought. Depths to the conductors are estimated at between fifteen and forty metres.

Geochemical soil sampling was undertaken with particular attention paid to the soil profile to ensure "B" horizon samples were taken in providing reliable data for analysis. In total, 381 soil samples were collected

for ICP multi-element analysis. Of these, 295 were found to contain anomalous copper (up to 563 ppm), silver (up to 3.6 ppm), lead (up to 82 ppm) and zinc (up to 1127 ppm). In addition, many samples were anomalous with respect to arsenic, and values of up to 1850 ppm were noted. Of the 295 samples anomalous in silver, base metals and/or arsenic, 179 were selected for further analysis for gold by fire assay. Anomalous gold values were observed in 10 of the 179 samples, exceeding three times background or 15 ppb. The maximum gold value returned from this soil survey was 50 ppb. Substantially all of the anomalous soil samples were associated with TEM conductors and, like the conductors, occurred in distinct clusters.

In 2002, 6 diamond drill holes totalling 318.7m were drilled on follow-up targets from the previous geochemical and geophysical surveys. No significant mineralization was discovered in any holes and it is believed that the targets were adequately tested.

Conclusions and Recommendations

Many anomalies have been tested with little encouragement. Although no work is planned for the immediate future, the property will be maintained in good standing. The property is available for option.