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WILZEL RESOURCES LIMITED

GEOLOGICAL REPORT

for the

MATACHEWAN WEST PROJECT

Argyle, Hincks, and Bannockburn Townships

Larder Lake Mining Division

Ontario

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MINING LANDS SECTION

R. A. Bennett & Associates Sudbury, Ontario

December 16th, 1988.



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Geological Report - Matachewan West Project, Ontario

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Geological Report - Matachewan West Project, Ontario

INTRODUCTION

Line cutting and detailed geological grid mapping was completed over most of *Wilzel Resources*' **Matachewan West Project**, Northeastern Ontario during the Summer and Fall, 1988.

The Property consists of 217 contiguous staked mining claims numbered:

L. 737294 through L. 737299 inclusive L. 918091 through L. 918096 inclusive L. 918950 through L. 918952 inclusive L. 919362 through L. 919380 inclusive L. 919382 through L. 919406 inclusive L. 919437 through L. 919476 inclusive 919839 to Les -75-74. L. 953836 through L. 953859 inclusive L. 953917 through L. 953928 inclusive L. 953932 through L. 953961 inclusive L. 952974 through L. 954003 inclusive L. 979465 through L. 979478 inclusive 979466 to 63 - 7678L. 979490 through L. 979494 inclusive L. 983188 and L.983189 inclusive

that are registered in the name of *Wilzel Resources Limited*, 300 Elm Street West, Sudbury, Ontario, P3C 1V4.

The Property is located in Hincks, Argyle, and Bannockburn Townships, Larder Lake Mining Division, approximately 12 miles west-northwest of the Village of Matachewan and 40 miles west-southwest of the Town of Kirkland Lake.

Access to the Property from Trans-Canada Highway # 11 is via Highway #66 west to Matachewan and continue west via gravel Highway #566 for 12 miles to the center of the Property. Several seasonal, gravelled, forest access roads provide excellent access to most portions of the Property. The general location of the Property is illustrated on Figure 1, page 3, and the Claim and Location Map, Figure #2, is provided in the back pocket.

HISTORY

Prospecting in the West Matachewan Area started around 1909 as overflow from the Larder and Porcupine gold rushes, but significant gold mineralization wasn't discovered until 1930 when B. Ashley uncovered a rich gold-bearing quartz vein in northwestern Bannockburn Township. The Ashley Gold Mining Corporation Limited brought the property into production in 1932 via a 403 ft inclined shaft, an internal winze, and 6 levels (17,316 ft of development). The mine produced 50,099 troy ounces of gold and 7,644 troy ounces of silver from 157,636 tons of ore (0.32 opt Au grade) until its closing in 1936. Other, similar veins, such as the Garvey Vein were discovered and prospected near the Ashley Vein, but none have been mined. The Ashley Property has seen several 'episodes' of exploration since its closure. The most recent was by Petromet Resources Limited (1981 - 83) when geology and geophysical surveys, trenching, and limited diamond drilling were completed. More work has been recommended and is planned at the Ashley in the near future (personal communication, 1987, H. Tremblay, MPH Ltd.).

Wilzel Resources' Matachewan West Property has seen only very limited work by past explorers. Near Erza Lake in Hincks Township, McCollum Gold Mines (1931) discovered two large quartz veins associated with granitic rocks. One vein (in present claim L.918095) strikes southernly for at least 600 feet and returned two grab samples assaying \$25.00 and \$8.20. The north vein (in present claim L.918092) strikes northwest for at least 150 ft and assayed only trace gold. This same area was further explored by Prestige Mines in 1973 who completed geological mapping and drilled 3 short holes into the south vein. The best assay returned



0.02 oz/ton over 2.5 ft in drill core. In 1984, Marjel Resources re-mapped and sampled the Erza Lake South Showing and most of the vein samples returned significant assays (0.05 to 1.23 troy oz/ton gold).

Other exploration work over the Hincks claims include a small ground magnetic and electromagnetic survey by Imperial Oil around 1978; an airborne magnetic and electromagnetic survey by Canamax Resources in 1985; a ground VLF-EM survey and limited trenching by T. Obradovich in 1984 and 1985 (present claims L.737294 - 99); and, scattered pitting, trenching, and prospecting by George Sunisloe between 1965 and 1981.

In Bannockburn Township, the only exploration work of record on the present Property is a VLF-EM survey over a 400 ft line-spaced grid by Marjel Resources in 1984 - 85. Past exploration on *Wilzel's* Argyle Township claims included magnetometer, electromagnetic, and geological surveys completed by Petromet Resources as part of their Ashley exploration program in 1982, an electromagnetic survey over 4 claims by H. D. Carlson, and the continuation of the Bannockburn VLF-EM survey by Marjel Resources. Several overgrown pits and trenches were found during prospecting, but no record of this work could be found in the assessment files.

In 1987, *WILZEL RESOURCES* completed airborne magnetic and electromagnetic surveys over their entire claim group, gridding and prospecting, stripping and trenching on their west grid (Hincks Township claims), and drilled 5 diamond drill holes for a total of 1,902 feet. The prospecting survey on the west grid located 6 new gold showings within the claim group. The trenching and sampling over three old gold showings returned many 'ore quality' assays. Four of the diamond drill holes tested the old Sunisloe showing for gold; while the other hole sectioned part of the large layered gabbroic sill in Bannockburn Township for PGM's.

GENERAL GEOLOGY

WILZEL RESOURCES' Matachewan West claims are located within the Abitibi Greenstone Belt in the Superior Province of the Canadian Shield. The belt is approximately 800 by 250 kilometers in dimension and hosts a large number of world-class gold camps; namely, the Porcupine, the Kirkland Lake-Larder Lake, the Cadillac-Malartic-Val d'Or, and the Chibougamau Camps. The supracrustal lithologies within the Abitibi are dominated by various volcanic formations and their derived sediments which have been folded and intruded by batholiths of granitic composition. The lavas are predominantly tholeiitic basalts with lesser komatiitic tholeiites, calcalkaline andesites to rhyolites, and rare alkalics. Syn-volcanic intrusives include peridotite and gabbro to syenite and felsic porphyry. The sediments are mostly locally derived clastics that can contain cherty exhalites, iron formation, and carbonate beds. The volcano-sedimentary succession can be divided stratigraphically and lithochemically into four mega-cycles. The Matachewan West claims likely occur near the middle of the third mega-cycle in volcanics equivalent to the Kinojevis Group.

The general geology of the Hincks, Argyle, and Bannockburn Township Area is described by H. C. Rickaby in the Ontario Department of Mines Annual Report Volume XLI, Part II published in 1932 - "Bannockburn Gold Area" and illustrated on ODM Map No. 41a. Rickaby describes the Property area to be underlain for the most part by Archean (Keewatin) mafic volcanic flows that have been intruded by Algoman granitic plugs and porphyries, Haileyburian mafic and ultramafic bodies, and cut by north-trending Matachewan quartz diabase dykes. Unconformably overlying this sequence are 'fingers' of Proterozoic (Huronian) Cobalt conglomerates. The mafic lavas are steeply dipping and strike northwest.

EXPLORATION PROGRAM

Gridding

EAST GRID - A grid of chainsaw-cut picket lines totalling 69.52 miles (112 kilometers) and 6 miles of base and tie-lines (9.7 kilometers) was cut to cover all the claims in the eastern claim group between September 6th and October 7th, 1988. The job was contracted to Laforest-Hlava Explorations Limited of Timmins, Ontario. The baseline strikes due east-west through the center of the claim group, and an east-west tie-line was cut along the old surveyed boundary between Argyll and Bannockburn Townships. The picket lines are perpendicular to the baseline and spaced at 400 ft intervals. Pickets were chained and set every 100 feet along all the cut lines.

WEST GRID - The western (Hincks) grid was chainsaw cut during the Summer and Fall of 1987 by contractor/prospector T. Obradovich of Kirkland Lake, Ontario. The 3.6 mile (5.8 km) baseline strikes at 125°/305° azimuth through the center of the Hincks group. A total of 72.1 miles (116 km) of picket lines spaced at 400 ft intervals were cut perpendicular to the baseline. Again, the pickets were chained and set every 100 feet along all the cut lines.

The extent of the gridding is illustrated on two Geological Maps that accompany this report.

Geological Mapping Program

Detailed geological and topographical mapping of all the claims covered by the two grids was completed between August 24th and November 4th, 1988 by the author and:

> Ron Burke, MSc. of Timmins, Ontario (field party chief) John Burton, BSc. of Timmins, Ontario Greg Carter, BSc. of Timmins, Ontario Toby Hughes, BSc. of Matheson, Ontario Ian Ross, Geo Tech. of Sudbury, Ontario Tom Obradovich, Mining Tech. of Kirkland Lake, Ontario.

The grid lines were used for mapping control, but in areas of outcrop, many pace and compass traverses were made in-between to ensure all the the outcrops were charted. A representative suite of rock specimens (totalling 933 in all) was collected from most of the bedrock exposures. These samples are stored at the author's offices in Matheson, Ontario. Each specimen was closely examined with the aid of a binocular microscope. All the suite sample locations and some of the assay sample locations are indicated on the two geology maps that accompany this report.

The field data has been presented in the form of two geology maps drafted at 1 inch = 400 ft (1:4800) scale; one map covers the cut grid in Hincks Township (Map 1), while the other covers the east grid in Argyll and Bannockburn Townships (Map 2). Geological contacts in overburden covered areas of the grids, and structural disruptions were interpreted with the aid of the aeromagnetic survey maps. Most of the description that follows was prepared by Ron Burke, MSc., who acted as the field party chief during the mapping program.

Geology for Map 1.

As shown on Map 1, back pocket, the western half of the Matachewan West Property is predominantly underlain by a sequence of mafic to intermediate flows which have been folded into a steeply dipping, southeasterly striking orientation. Intermediate pyroclastic rocks and less abundant flows lie north, and stratigraphically above the mafic lavas. A brief hiatus in the Archean volcanism is represented by a thin unit of interbedded chert and clastic sedimentary rock which lies at the contact between the mafic and intermediate volcanics.

A number of narrow dikes of intermediate to felsic composition commonly with feldspar porphyritic textures, intrude the volcanic rocks. Regionally, dikes of similar composition and appearence are spatially associated with occurrences of gold mineralization (Ashley Mine). In the northwest corner of the Map 1 area, the claims are underlain by a body of pinkish coloured syenitic to monzonitic rock with minor mafic phases found locally along the intrusive margin. The supracrustal rocks are also intruded by a number of northerly trending Proterozoic diabase dikes (Matachewan swarm). Finally, the youngest rocks observed consist of Huronian clastic sediments that unconformably overly the volanics along the western boundary of the Property.

Unit 1. - MAFIC VOLCANIC ROCKS

The considerable majority of mafic volcanic exposures shown on Map 1, consist of dark green, fine grained, massive rock of andesitic to basaltic composition. A prominent southwest-facing bluff located 800 to 1200 feet north of the baseline (and Bob's Lake) gives extensive exposure of this rock. Outcrops with pillow structures are common and widespread. Pillows are irregular in shape, defined by chloritic selvages, and locally are epidote-rich in their cores. Pillow structure symbols are indicated on the map where flow top directions could be established.

Flow top breccias or hyaloclastites were observed at a number of locations in the Map 1 area. In particular, there are two units of flow breccia with traceable strike lengths, one is located between lines 60+00W and 76+00W at about 9+00N, while the other zone occurs between lines 40+00E and 60+00E at about 5+00S.

Within the sequence of predominantly fine-grained mafic flows there are numerous exposures of massive, medium-grained mafic rock which are intrusive in appearance but may alternatively represent coarser grained portions of thick flows.

Unit 2. - INTERMEDIATE VOLCANIC ROCKS

Dacitic to andesitic flows and pyroclastic rocks underlie the north-central part of the Map 1 grid area, whereas flow rocks predominate along strike to the west. North of the main road to Matachewan, between lines 64+00W and 92+00W, there are numerous outcrops of light green, massive flow rock which are uniformily fine grained or porphyritic with either feldspar or mafic phenocrysts.

North of the basaltic lava sequence and southwest of Ezra Lake, massive intermediate flows are intercalated with units of fragmental

volcanic rock interpreted to be pyroclastic in origin. This rock typically consists of coarse feldspar crystal fragments surrounding lapilli and rarely bomb-sized clasts of fine-grained and porphyritic dacite which comprise up to 20 percent of the rock by volume. Fine-grained and thinly layered tuffaceous rock was observed only rarely.

Within the sequence of dacitic extrusive rocks on the north-central part of the grid there are two units of massive, medium-grained dioritic rock which are interpreted as sill-like bodies of synvolcanic intrusive rock.

Unit 4. - SEDIMENTARY ROCKS

The only exposure of Archean sedimentary rocks observed in the Map 1 area is located on line 40+00W at 26+00N. The outcrop consists of interbedded argillite, fine-grained wacke and chert layers which are up to 2 inches thick. This unit likely is a distal expression of the continuous pyroclastic band further to the east (2g). Much younger Huronian argillite, wacke and conglomerate are exposed only at the western end of the Property along line 120+00W (Unit 9). These rocks can be readily distinguished from the Archean sedimentary rocks by their shallow inclinations.

Unit 6. - MAFIC INTRUSIVE ROCKS

Massive, dioritic to gabbroic rocks form a marginal phase of the intrusive body located in the northwestern corner of the Property in Hincks Township. It is possible that these rocks represent mafic differentiates of the same magma source which gave rise to the syenitic to monzonitic body.

Exposures of medium-grained mafic rock are common and widespread within the sequence of mafic lavas. However, rather than being intrusive, it is quite plausible that most of these rocks represent the cores of thick flows which crystallized at slower rates than the marginal zones, giving rise to the relatively coarse grain size.



Unit 7. - INTERMEDIATE TO FELSIC INTRUSIVE ROCKS

A granitoid body has been mapped at the northwest end of the grid covering the Map 1 area (grid lines 96+00W to 116+00W). Generally massive and medium to coarse-grained, the pink to purplish coloured rock is composed of varying proportions of plagioclase, potassium feldspar, hornblende, biotite and quartz, with bulk compositions probably ranging from syenite to monzonite.

Feldspar porphyry dikes were observed intruding the intermediate pyroclastics and flows north of the Matachewan road at the west end of Map 1 grid as well as on lines 4+00E and 8+00E north of the baseline. The dikes tend to be less than 2 meters wide and appear to strike east-northeast. Typical porphyry rock consists of well formed, white to pinkish feldspar phenocrysts which are hosted by a dark grey, fine-grained matrix and constitute 25 to 50 percent of the total composition. At grid station 76+00W/37+00N, feldspar porphyry rock is exposed in a small overgrown pit within bleached and weakly pyritic volcanic rock. The exposures of feldspar porphyry are of interest because they host, or are at spatially related to gold-bearing quartz veins in the region, least. specifically at the McGill occurrence (Manville Canada Inc.) located immediately east of the Map 1 area, and the old Ashley Mine, 1.5 km to the southeast.

Unit 8. - LATE MAFIC INTRUSIVES (Matachewan Diabase)

Four northerly striking, Matachewan diabase dike of Proterozoic age has been identified crossing the Map 1 area. Other outcrops of diabase have been observed in the map area, however, additional dike structures could not be traced out in the field, nor on the aeromagnetics contour map for the area in question.

Map 1. - STRUCTURE

Mapping indicates that the volcanic sequence underlying most of the Property in Hincks Township has been folded into a nearly vertically dipping, 120°-125° striking orientation. The major contact between mafic and intermediate extrusives is interpreted to be gently undulating with only minor disruption along cross-structures (interpreted from the aeromag). Based on well defined pillow structures and grain size grading in dacitic tuff, it is suggested that the volcanic stratigraphy is northeast-facing.

The rocks in the area of Map 1 are almost invariably massive, which is to say that there is very little evidence of ductile deformation on the western portion of the Property. Two exposures of weakly foliated rock, which also happen to show the effects of hydrothermal alteration, are located at 76+00W/37+00N and 20+00E/26+00N. In both cases, the foliated rocks lie within a few hundred feet of the major mafic/intermediate volcanic contact.

Map 1. - ALTERATION AND MINERALIZATION

Three previously discovered gold occurrences are located on the claim group in Hincks Township. These showings are described in some detail in the report by Bennett (1988, p. 32-37) and will be mentioned only briefly here. The Sunisloe Gold Showing occurs at 61+00S on the baseline and consists of a series of white, vuggy quartz veins, 1 to 6 inches wide, which cut fine-grained basaltic lava. Two broadly parallel veins striking at 105° and dipping about 30° southwards contain visible gold in addition to pyrite and minor amounts of base metal sulfides. Sampling of these veins has yielded high grade gold assays (0.78 to 2.83 oz/ton) across narrow widths. The other two old gold showings occur in the vicinity of Ezra Lake just northeast of the area covered by Map 1 and consist of single, narrow quartz veins cutting pink granitic rocks. 'Ore quality' gold assays have been returned from these showings as well.

Late in the 1987 field season, the gridded portion of the Property in Hincks Township was prospected and a comprehensive sampling of the outcrops was done. A result of this work was the discovery of a previously unknown, narrow, gold-bearing quartz vein at 44+00E/4+50S. A grab sample of this vein assayed 0.29 oz gold/ton. The recent mapping program found the vein to be approximately one inch wide, hosted by massive, fine-grained, unaltered basalt, very similar to the rock hosting the Sunisloe veins. The prospecting/sampling program also identified a narrow auriferous quartz vein in weakly pyritic basalt at 3+90E/18+70N which gave samples assaying up to 0.024 oz gold/ton.

In addition to the gold-bearing quartz veins described above, there are two zones of hydrothermal alteration in the Map 1 area which were identified by the recent mapping. At 76+00W/37+00N dacitic flow rock containing mafic phenocrysts is weakly foliated and has been chemically altered such that the rock has been bleached to a buff colour with the mafic mineral clots replaced by bright green chromium sericite (fuchsite). The altered rock contains about 5 percent disseminated pyrite and appears to have undergone potassium enrichment and possibly some silicification. At least 9 samples have been collected from the zone, but none of these gave anomalous gold values upon assaying.

The second alteration zone unrelated to known auriferous quartz veins is located at 20+00E/26+00N. Here, yellowish grey, fine-grained, sericitic rock containing finely disseminated pyrite forms a low, north-facing bluff. The most sericite-rich rock resembles altered rhyodacite and grades laterally over about 70 feet into foliated and thinly laminated intermediate flow rock. The outline of this alteration zone suggests it transects the strike of the volcanics and may possibly be reflecting some type of volcanic vent structure. Five samples of altered rock were assayed, but no anomalous gold values were obtained.

Geology for Map 2.

As previously indicated, the Map 2 area encompasses the gridded portion of the Matachewan West Property located in Argyle and Bannockburn Townships. The majority of this area is again underlain by a thick sequence of mafic lavas which strike in an east-southeasterly direction. These flows, based on available aeromagnetics data, are in all probability the same series of flows which were mapped to the northwest in Hincks Township. As shown to the northwest (Map 1), the sequence of mafic flows is overlain to the northeast by magnetically unresponsive intermediate extrusive rocks. A small boss of granitic to syenitic intrusive rock has been mapped west of Powell Lake, while an ultramafic body has intruded the supracrustal rocks a mile further to the west. A long, narrow sheet of Huronian sedimentary rocks extends north-south across the map area, unconformably overlying the Archean volcanics and the central portion of the ultramafic body.

Unit 1. - MAFIC VOLCANIC ROCKS

The mafic volcanic rocks exposed in the Map 2 area are very similar in appearance to the stratigraphically correlateable lava rocks shown on Map 1. Typical mafic flow rock is dark green, massive and fine to medium grained. Mineral components, primarily actinolite and plagioclase, are consistent with greenschist facies metamorphism. Trace to minor amounts of disseminated pyrite are commonly present, and locally the rock is moderately to strongly magnetic in hand samples due to finely disseminated magnetite. Fractures in the rock are typically coated with epidote and hematite-stained carbonate.

Exposures of pillow structures are widespread in the Map 2 area, but are most common on the southeastern part of the grid. There are also sporadic occurrences of amygdaloidal and variolitic flows, while exposures of flow top breccia are quite sparse.

Unit 2. - INTERMEDIATE VOLCANIC ROCKS

Volcanic rocks confidently identified as intermediate in composition (dacite-andesite) were mapped across the northern part of the grid, with the best exposures located approximately 2000 feet west of Powell Lake. The contact between the mafic and intermediate volcanic sequences is not exposed; however, it is well defined by aeromagnetics data. From the limited number of exposures it appears that the intermediate



volcanic series consists of interdigitating flows, volcaniclastic sediments and pyroclastics.

Unit 5. - MAFIC TO ULTRAMAFIC INTRUSIVE ROCKS

The most prominent basic intrusion on the Matachewan West Property is located at the northwestern end of the Map 2 grid. The intrusive body is roughly 7800 feet long in the NW-SE direction and 2000 feet wide, and is broadly centered on the major mafic/intermediate volcanic contact. An 800 foot diamond drill hole collared near the turn-off to Camp Tru-Nor in claim L. 953974 in Argyle Township tested this intrusion for concentrations of platinum group elements (Bennett, 1988). Rock cored by this drill hole included coarse-grained gabbro, pyroxenitic gabbro, serpentinized pyroxenite and peridotitic pyroxenite. Another, smaller mafic intrusive is interpreted from the aeromagnetic survey to underlay the eastern edge of the grid.

Unit 7. - FELSIC INTRUSIVE ROCKS

A small body of pinkish coloured, massive, medium-grained felsic intrusive rock is exposed just west and south of Powell Lake and on line 8W along the Camp Tru-Nor road. Depending on the abundance of potassium feldspar, this intrusive can be classified as a granite or a syenite.

Unit 8. - MATACHEWAN DIABASE

A few outcrops of quartz diabase were mapped near the west side of the grid area. This dyke strikes near north-south and is readily recognizable on the aeromagnetic map.

Unit 9. - SEDIMENTARY ROCKS

The only sedimentary rocks observed in the Map 2 area are Huronian (Proterozoic) in age. Shallow dipping polymictic conglomerate and arkosic wacke unconformably overlie the volcanic sequences as well as the mafic/ultramafic body. Map 2. - STRUCTURE

Based on the magnetically defined mafic/intermediate volcanic contact, the archean supracrustal rocks strike at approximately 120 degrees. By and large, the rocks identified in the Map 2 area are massive and essentially undeformed. In the southeast corner of the Map 2 area is the major contact between the sequence of mafic flows and the overlying intermediate flows and pyroclastics to the north. Individual flows are magnetically defined within the mafic sequence, with the most northerly flows being strongly magnetic and up to 1300 feet thick. The pattern of alternating magnetic and weakly to non-magnetic flows which is revealed by the airborne survey is characteristic of Kenojevis Group volcanic sequences. Other rock units which are detected by the magnetic survey are the Matachewan diabase dikes, in particular the major dike which transects the central part of the Map 1 area and the other in the western part of the Map 2.

Features on the contoured aeromagnetics map which could be interpreted as reflecting gold-associated hydrothermal alteration or mineralization-controlling structures are not apparent within the Map 2 area. A number of outcrops of mafic lava have moderately to well developed foliations and show varying degrees of chlorite-calcite-ankerite alteration. Two foliation orientations have been mapped, one which broadly parallels the regional lithostratigraphic trend and a second one which strikes at about 070 degrees. However, the widely scattered outcrops of foliated rock could not be readily correlated to establish the existance of a distinct high strain (shear) zone.

MAP 2. - ALTERATION AND MINERALIZATION

The chlorite-carbonate replacement associated wih moderate foliation development in the southeast corner of the Map 2 area represents a weak and poorly defined alteration zone. More significant in terms of economic geology is the presence of three overgrown trenches which were likely excavated by prospectors in the 1930's.

page 16.

One trench is located at about 84+75W/63+00N and appears to follow ankeritized mafic lava rock containing a few percent disseminated pyrite. A narrow quartz vein was likely the source of the alteration; however, owing to the amount of debris in the trench, no vein material was found.

Another shallow trench lies about 400 feet north of the Matachewan road on line 60+00W. From loose rubble lying along the trench, it appears the target of the work was a 10 to 15 inch wide quartz-iron carbonate vein which is hosted by highly bleached (carbonatized \pm silicified) mafic volcanic rock which grades outwards from the vein into chlorite-iron carbonate schist and then quickly into unaltered mafic lava. Samples of the altered wall rock failed to yield anomalous gold assay values.

The third and most interesting mineral showing in the Map 2 area is in a 10 ft. x 4 ft. x 3 ft. pit located at 44+00E/10+00N. Here a 5 inch wide zone of quartz vein and granitized rock striking at 080 degrees and dipping nearly vertical is hosted by fine-grained mafic flow rock. At the margins of the vein and altered rock there is about one half to one inch of nearly massive pyrite mineralization. Judging from the amount of work done at this site, the vein and related sulfide mineralization likely contains appreciable amounts of gold. Two samples of mineralized rock collected during the recent mapping yielded gold contents of 926 and 196 ppb.

CONCLUSIONS and RECOMMENDATIONS

Based on the recent geological mapping, the following interpretations and conclusions are made:

1. The two large claim blocks of the Matachewan West Property which are covered by cut grids are essentially underlain by the same southeasterly striking sequence of Archean volcanic rocks. Thick, massive and pillowed basaltic flows can be distinguished by their magnetic susceptibilities, such that the overall mafic sequence consists of highly magnetic flows alternating with weakly to moderately magnetic units; a feature which is typical of Kenojevis Group mafic sequences in the Abitibi Greenstone Belt. Overlying the mafic flows to the northeast are andesitic to dacitic flows and pyroclastic units. Locally, thin accumulations of fine-grained sedimentary rocks separate the two volcanic sequences.

2. Three small granitic to syenitic bodies occur along the northern boundary of the Property and intrude the intermediate volcanic rocks. A line connecting these intrusions would be aligned roughly parallel to the regional strike of the supracrustal rocks, suggesting that their locations may be controlled by a deep-seated, NW-SE trending structure. Quartz veins hosted by the felsic body at Ezra Lake locally contain gold.

3. The intrusion of the bodies of layered mafic/ultramafic rock mapped on the Property may have been controlled to some extent by the regional contact between mafic and intermediate volcanic rocks which would theoretically be a major structural discontinuity in the volcanic pile.

4. The vast majority of the rocks exposed on the Property show very little or no foliation development, suggesting that if any high strain deformation zones exist, they are covered by overburden. Examination of the contoured aeromagnetics maps covering the Property shows the lavas to be locally disrupted. These areas could be important loci for mineralization localization.

It is postulated that the mafic/intermediate contact could have been an ancient shear or fault zone because of the structural competency contrast that exists between the two volcanic sequences. In addition, along this contact there is the presence of fine-grained sedimentary rocks which are structurally susceptible to shearing.

5. Economic concentrations of gold on the Matachewan West Property have so far been confined to quartz veins up to several inches wide hosted by massive, fine-grained basaltic rocks. High grade values, those greater than 0.5 oz/ton gold have been collected at the Sunisloe and Erza Lake South occurrences in Hincks Township. Of the 287 rock samples collected from bedrock exposures distributed across the Property during 1988, only two samples yielded anomalous gold concentrations (926 and 196 ppb), both of which were collected from an old pit in Bannockburn Township which was excavated on a narrow quartz-pyrite vein.

The results of the 1988 geological mapping program will be used to help plan the next stage of exploration on the Matachewan West Property. It is recommended that this work should include detailed prospecting in the showing areas and all the other potentially significant targets discussed in the foregoing. Special attention should be made to structural zones that cross-cut the volcanic stratigraphy.



Sudbury, Ontario

December 16th, 1988

Robert A. Bennett, MSc., PEng.

Consulting Geologist

WILZEL RESOURCES

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	300 F	Im Street	FUL	of Sudhard	1 Out Drug		
	Survey Company	// <u>\</u>	VVE	Date of Survey (from & t	Total Miles of line Cut		
	K. M. Denne	It, 1Eng		Day Mo. Vr. Day	10.85 61.5m.		
	R.A. Sum H	Row IFG	Mal				
	Credits Requested per Each	Claim in Columns at right	Mining C	leson, Onto	uis PORINO		
•	Special Provisions	Geophysical Days per		lining Claim Expand.	Mining Claim		
	For first survey:	Claim	Prefix	Number Days Cr.	Prefix Number Days Cr.		
	Enter 40 days. (This	- Electromagnetic		953836	L 953859		
•	includes line cutting)	- Magnetometer		953837	952017		
	For each additional survey:	- Radiometric		952920			
	using the same grid:	- Other		133030	453418		
31	Enter 20 days (for each)			422840	953919		
		Geological 4-0		953839	953920		
1.		Geochemical		953841	953921		
	Man Days	Geophysical Days per		953842	952922		
	Complete reverse side	- Electromagnetic		052042	155122		
	and enter totalls) here		100,520 (A) 100,747 (A)	<u> <735675</u>	453423		
·	F			953844	953924		
	1	Radiométric		953845	953925		
		0the) 1088	and a stranger	952846	953926		
		Geological		052047	9 5 2 9 2 7		
		Geochemication 0707101	and the second	070040	735741		
	Airborne Credits	Davs per		433840	953928		
		Claim		953849	953976		
	Note: Special provisions credits do not apoly	Electromagnetic		953850	953977		
	to Airborne Surveys.	Magnetometer		953851	952970		
- 94 - 1		Radiometric		052052			
	Expenditures (excludes powe	r-stripping)		933032	4>34/4		
	Type of Work Performed			453853	953980		
	Participant of the Oliver of the			953854	953981		
	Performed on Claim(s)	100)() ····		953855	952982		
	11:45	, <u>1900</u>		952856	0539 03		
				120057	997004		
	Calculation of Expenditure Days	Credits Total		935851	953984		
	10tal Expenditures	Days Credits		9 2 3 8 2 8	953985		
-	\$	+ 15 =			Total number of mining		
-	Instructions				report of work.		
	choice. Enter number of days	ortioned at the claim holder's credits per claim selected	F	or Office Use Only			
	in columns at right.		Total Days (Recorded	Cr. Date Recorded	Mining Recorder		
	Date / Becc	A Holder of Andre (Singerural)		1/00.15/82	M. U. Warman		
	New 14/88	[Lht A7 22]	2680		Branch Director		
	Certification Verifying Repor	t of Work	L	1 wel juve	AP2		
	I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work						
	Name and Postal Address of Person Certifying						
	R.A. Bennet	F PER R	0x 15	9 Mattacar	Outaria Porrivo		
				Date Certified ,	Certified y Signagurgh		
ļ				NOU 14/88	1 L LLANX		
	1302 (85/12)						

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WILZEL RESOURCES



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67 claims in total D.A.B.

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Northern Developme	Apport of w	Report of Work - Flease type of print. - If number of mining claims traversed					ng claims traversed
Ontario	Geochemical a	nd Expend	CUMENT	No.	Note: -	Only days credits	calculated in the
2.1	1949	W	<u>8808</u> ∙	565		in the "Expenditures" sect	ion may be entered Days Cr." columns.
Type of Survey(s)	·//				Township	Do not use shaded ar or Area	eas below.
GE	OLOGICAL	- 8	GRIL	DDING.	A	rayle Tw	0
Claim Holder(s)		day	$\alpha < \sim$	ط ب	T. Obradi	Prospector's Licence	No.
Address WIL2	EL KE	200	RCE	P LTL).j and	1.146	99,1219837
300 E	LM ST.	WE	ST.	SUDRO	IRV.	ONT P	3CIUA
Survey Company				Date of Survey	(from & to)	ID AS Total Mile	s of line Cut
Namerand Address of Author (c	T I'Eng	· · · · · · · · · · · · · · · · · · ·		67 148.1	Yr. Day	Mo. Yr. 13	_m; 60
K. but A. Ben	nett. P.	>0× 1:	59,	Matleson	.Out	tain POA	KINO
Credits Requested per Each	Claim in Columns at r	ight	Mining (Claims Traversed (I	List in nume	erical sequence)	
Special Provisions	Geophysical	Days per Claim	Prefix	Vining Claim Number	Expend. Days Cr.	Mining Clain Prefix Num	n Expend. ber Days Cr.
For first survey:	- Electromagnetic		L	953945			
includes line cutting)	- Magnetometer		Statistic &	953948			
For each additional survey	- Radiometric			052010	<u> </u>		
using the same grid:	Other		1 197-19-53-5 1 197-19-53-5 7-19-5 5-5-5-5	133171		- 1923 7 293	
Enter 20 days (for each)				453450			
	Geological	40		953951			
Mag Dave	Geochemical			953952			
RECE	IVED	Days per Claim		953953			
and enter total(s) here	- Electromagnetic		143.0479.34 1751 (1949)	953954			
DEC 2 9	1988 netometer			953955			
	- Radiometric			952956			
MINING LAND	s section			153157			
	Geological			935131			
	Geological		4.5 4.5	45 5938			
Airborne Credits	Geochemical	Dave par		453959			
		Claim	يې د د د مېلې د د د دې د مېلې د د د د	953960			
Note: Special provisions	Electromagnetic			953961			
to Airborne Surveys.	Magnetometer			953974			
I A E	- Radiometric	L .		953975			
Expenditures (excludes powe	er stripping)			979290			
Type of Work Performed				676461			
Performed on Claim(s)	IV -5 1988			9 1949 1			
11/45	· · ·	:		483188			
7 18.9	111-12 Content - 12 P			483189	I		
Calculation of Expenditure Days	Credits						
Total Expenditures	Days	Credits					
\$	+ 15 =					Total number of min	ing
Instructions claims covered by this z							
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected For Office Use Only							
in columns at right.	Cr. Date Recorded	0374.	Mining Recorder				
Detg							
NOU 14/00 11-14/14 070 Acc 88 Whan							
Certification Verifying Repor			AR				
I nereby certity that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.							
Name and Postal Address of Person Certifying							
KOBERT A	. BENNE	а	<u>/</u> 20	JX 157	N	FTHEFON,	ON
				Ndil 1	4 /88	The sum of	2/20
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· · .	nthern Developm d Mines	ient (Geophysical	Geologic	DOCURSES	a data 🕴	octions.	- If number of mining claims tr	ave
	On July	Geochemical	and Exper	W8800.	550	Note:	 Only days credits calculated 	h a in
- (1.194						"Expenditures" section may be a in the "Expend, Days Cr." or	ent
	Type of Survey(s)	·····		Mining	Act		- Do not use shaded areas below.	
	G	EOLOG	ICA	IX	n ADDIN)	C	LI, I. T	
	Claim Holder(s)			<u> </u>	1	/	Prospector's Licence No.	
•	WIL 2	EL KE	50	URCE	S LI	DITFL	T 4 6 99	
	300	FIM ST	111	CIA	RIDN			
	Survey Company		<u> </u>	, 200	DUI Y	UN Atrom & tol	1(., P3C104	
	K.A. Benn	ett, PEna			24 08	88 4	10 88 80 m 1	
•	Name and Address of Author (of Geo Technical reader				n. j bay j	Mo. Yr. UCMile	\$
	Credits Bequested por Each	$\frac{e}{100}$	<u>×15</u>	9 1	Vlathes	on, (Ontario POKIN	10
	Special Provisions		Davs per	Mining Cla	aims Traversed (List in num	erical sequence)	
•	For first survey:	Geophysical	Claim	Prefix	Number	Days Cr.	Prefix Number Day	per ys (
	Enter 40 days. (This	Electromagnetic		L	73729		L 919376.V	
	includes line cutting)	- Magnetometer		5	727100		010277	
	For each additional survey:	- Radiometric					7172/1/	
	using the same grid:	- Other	<u> </u>]		131276	¥	<u>919378</u>	
	Enter 20 days (for each)	Gaplasiani			137297		9193794	
		Geological			737298		9193801	
	Man Dave	Geochemical	Ļ	- O.	737299		919382	
	RECEIVE	Geophysical	Days per Claim		718950		61629211	
	Complete reverse side	- Electromagnetic			919951		919 205	
	DEC 2'9 1988	Magnetometer			710751	V	9193844	
		, wagne contater	<u> </u>]		418952		9193851	_
1	MINING LANDS SEC	TION			719362		919386	
		- Other			719363V	$(/ \neg)$	0193871	
		Geological	40		919364		010299	
		Geochemical			2102651	·	<u> 7172004</u>	
Ī	Airborne Credits		Days per			/	919389	
	Note: Special provisions	Electro	Claim		114360		9/9390	
	credits do not apply	clectionagnetic			1193671		9193917	
1	to Airborne Surveys.	Magnetometer			919368		919392	
L		Radiometric			9193691		919202	オ
9 6	Expenditures (excludes powe	er stripping)			9,0270		616 2021	
	Type of work Performed					1-1	7/7 3754	
F	Performed on Claim(s) 7	145 IUV - 5 14	88		717311	1	7/93944	
	-	\mathcal{Q}	1		414372	1	9193951	
					919373	1.	919296	
6	Calculation of Expenditure Davs	Credits			919374		9192971	
	Total Expenditures	Te Days	otal Credits		919275	7-1	01020A.	
	\$] ÷ [15] = [15903165			nuel 11210	
Ŀ						com	claims covered by this	Ŕ
	Total Days Credits may be app	portioned at the claim ho	ider's	r	<u> </u>		report of work.	4
	choice. Enter number of days in columns at right.	credits per claim selected	'	Fo Total Davs Cr.	Date Recorded		Miging Becorder	2
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P	Date Reco	del Holder of Agen 15	gnature)	3840	Date Approved as	Recorded	Brangh Director	
L	IVUV 14/ 88 /	I Mark	\$		11 fler	Xy_	uplan	
ř	I hereby certify that I have a n	ersonal and intimate kar		ha face to	- <u>'</u> /	79/13	-	
L	or witnessed same during and/	or after its completion ar	iveloge of the	ne racts set forti red report is true	n in the Report of e.	Work annexe	ed hereto, having performed the work	
N	DA Address of Perso	n Certifying)			······································			
┝	N.I.I.Sonnell	, Dax/	59	Wlath	eson, a	Int	1, 0	
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Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

January 26, 1989

Mining Recorder Ministry of Northern Development and Mines 4 Government Road East Kirkland Lake, Ontario P2N 1A2

Dear Sir:

Re: Notice of Intent dated January 11, 1989 - Geological Survey submitted on Mining Claims L 953836 et al in Bannackburn Township

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

W.R. Cowan

Provincial Manager, Mining Lands Mines & Minerals Division

AB:p1

Enclosure

cc: Mr. G.H. Ferguson Mining and Lands Commissioner Toronto, Ontario

> Wilzel Resources Ltd. 300 Elm Street West Sudbury, Ontario P3C 1V4

Mining Lands Section 3rd floor, 880 Bay Street Toronto, Ontario M5S 1Z8

Telephone: (416) 965-4888

Your file: W8808-539 Our file: 2.11949 ONTARIC GEOLOGICAL SURVEY ASSESSMENT FILES OFFICE JAN 30 1989

RECEIVED

Resident Geologist Kirkland Lake, Ontario

Mr. Robert Bennett Box 159 Matheson, Ontario POK 1NO



and Mines

Meeting of

	File
	2.11949
Date	Mining Recorder's Report of Work No.
<u>January 11,1989</u>	<u> W8808-539</u>

Wilzel Resources Limi	ited
Township or Area Bannackburn	
Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic days	L953836 to 59 incl.
Magnetometer days	953917-18-19 953921 to 28 incl. 953976-77
Radiometric days	953979 to 94 incl. 953996 to 954003 incl. 970402 04
Other	979492-94
Continer 77 (10) 0: (10) 1 0: 1 0: 1 0: 1 0: 1	
Geological days	
Geochemical days	
Man days 🗌 🛛 Airborne 🗌	· · · ·
Special provision	
Credits have been reduced because of partial coverage of claims.	
Credits have been reduced because of corrections to work dates and figures of applicant.	
Special credits under section 77 (16) for the following	mining claims
20 days	<u>l0 days</u>
L953920 l 953978 953995	_979493
No credits have been allowed for the following mining	claims
not sufficiently covered by the survey	insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

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THE TOWNSHIP OF Robertson Twp. ARGYLE DISTRICT OF 424108 740043 749045 924107 200372 TIMISKAMING . L LARDER LAKE 4 MINING DIVISION SCALE: 1-INCH=40 CHAINS 948820 948825 948831 948838 948843 700500 780500 780500 1200378 780377 LEGEND LÁND PATENTED CROWN LAND SALE 4. LEASES ʻ.1 ¢ LOCATED LAND 1026517 10265/8 LICENSE OF OCCUPATION C. 1 194 MINING , RIGHTS ONLY 25-1986 25-198 75199 10188 HISTOTION R. C. B22988 62295 ્રકં⊺ે SURFACE RIGHTS ONLY - 10 C ROADS 1751903 724204 8609 8608 IMPROVED ROADS - 03-L 10186,0265/4 627989 10186,0265/4 627989 10186,0265/4 627989 10265/1 724205 M.R. 622990 10265/1 10265 8604 L 8605 8604 L 10265 8604 L HIGHWAYS KING'S ----RAIL WAYS d M • • • • • • POWER LINES 1026612 1026513 102655 MR. C. 1026612 1026513 102655 MR. C. 1026516 1026516 1026516 1026516 1026516 1026516 MARSH OR MUSKEG MINES CANCELLED 12006 8606 3 M Baden M.R. C. 12007 NOTES 400' Surface rights reservation WITHDRAWALS AND REOPENINGS Distaking, section 36/80 order No. W. 8/86 Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W.18/86 1859110 859111 859 11-Surface and Mining Rights Withdrawn from Staking, section 36/80 order No. W. 101/85 541 PA 15 54 112 851113 REOPENED FOR STAKING 1015034 UNDER ORDER 0-90-87 NR 859.10\$ DATE OF ISSUE 015032 1016033 I M JUL 22 1988. LARDER LAKE PLAN NO.- M-203 # 5 ONTARIO 🧳 💡 MINISTRY OF NATURAL RESOURCES SURVEYS AND MAPPING BRANCH











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