

# **Woco Gold Property**

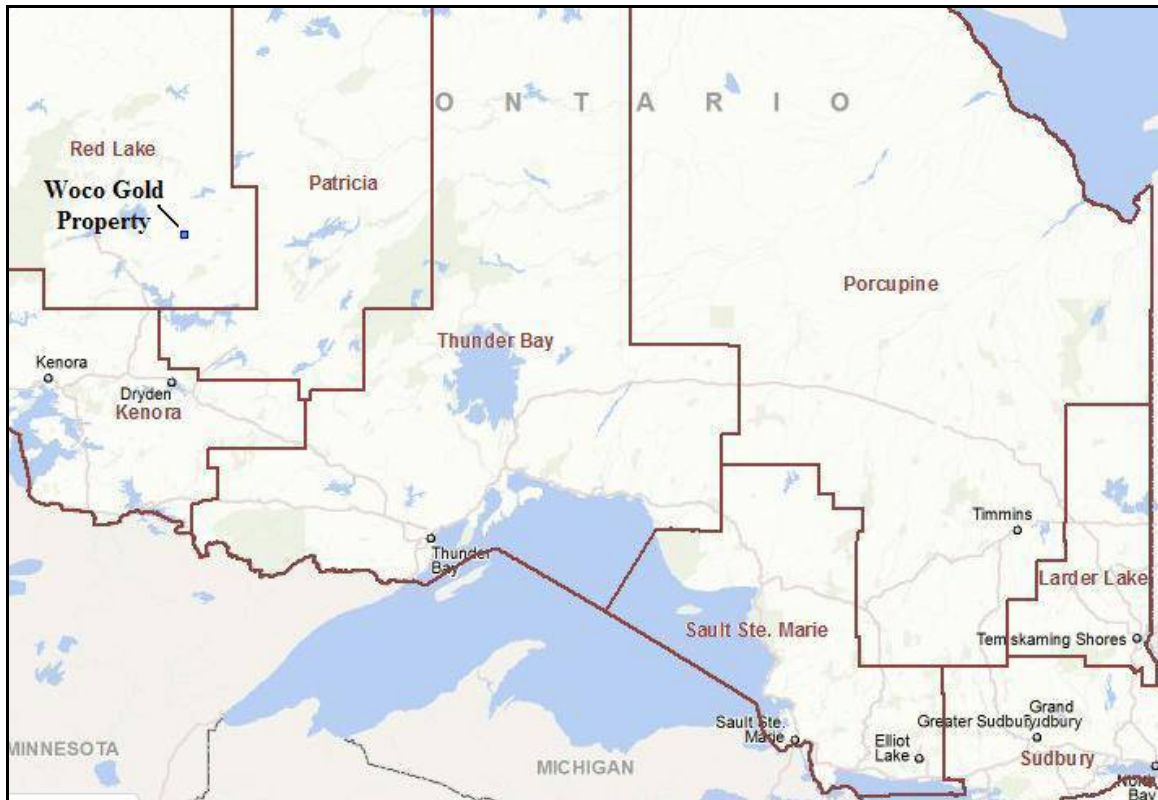
## Confederation Lake ó Uchi Lake Area

### **Location, Accessibility, Infrastructure and Local Resources**

The Woco Gold Prospect is located west of Uchi Lake at the south end of a series of historical gold mines (Uchi Mine) on a north-south trend.

The Woco prospect is east of the NE trending Uchi Lake Deformation Zone that straddles Uchi Lake. An old power line goes into the historic Uchi Mine area to the north of the Woco Property.

Access is by float plane to Uchi Lake from Red Lake or Earl Falls and then a kilometer cross-country. The property is also accessible from the South Bay Mine road and then east along winter road that follows an Ontario Hydro power line to the Uchi Gold Mine from which the Woco Prospect can be accessed on foot about 1.5 km to the south.

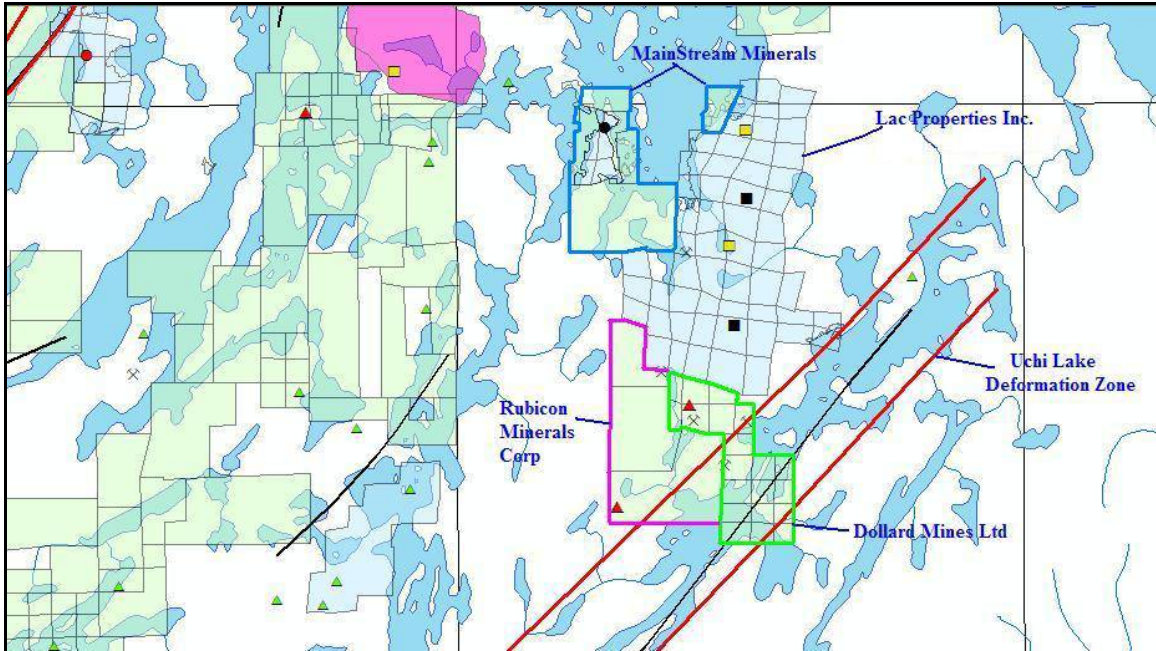


**Woco Gold Property Location Map**

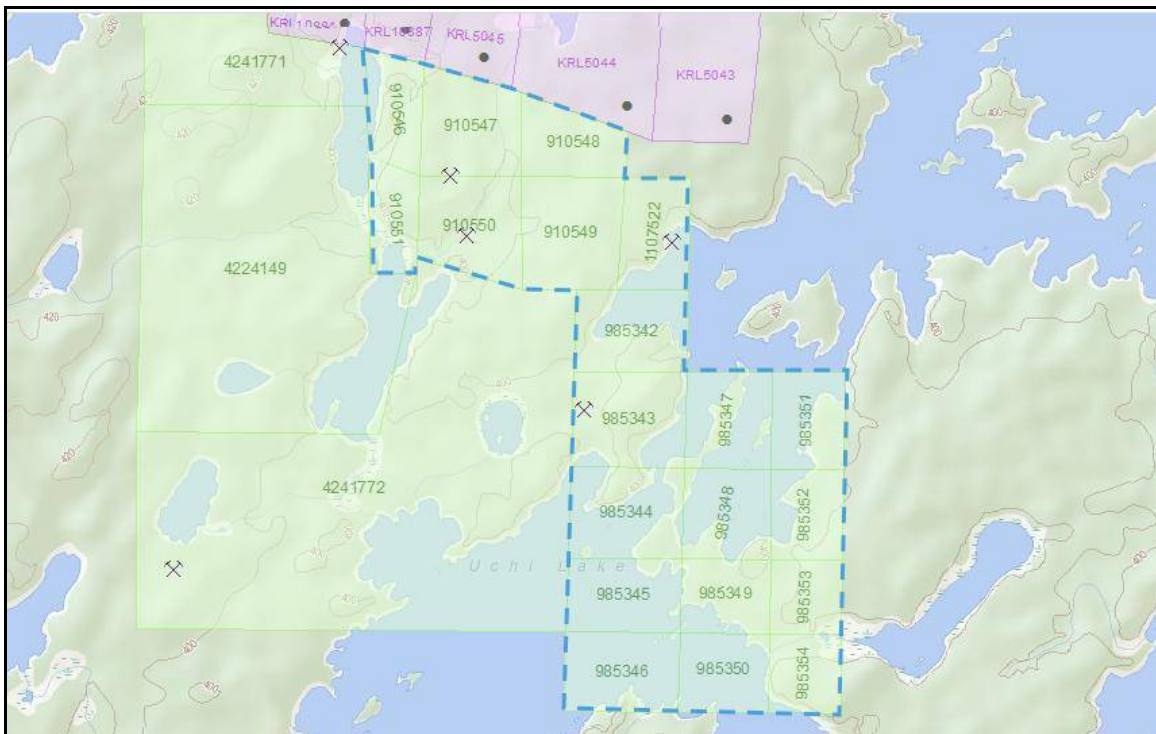
### **Mineral Tenure**

Argo Gold purchased the mineral rights to the Woco Property in October 2016 from Dollard Mines Ltd., a private company. The property consists of 20 claims (320 Ha) northwest of Uchi Lake in the Red Lake Mining Division. The property has \$21,007 in assessment reserve and requires \$8,000 to keep them in good standing (2.5 years).

Rubicon Minerals has claims to the south and Lac Properties Inc (Barrick Gold) has patents on the historic gold mines to the north. Lac Properties Inc. is a subsidiary of Barrick Gold Inc.



**Land Tenure in the Woco Property Area (Dollard Mines Ltd.)**



**Woco Gold Property Claims**

## Historical and Recent Exploration

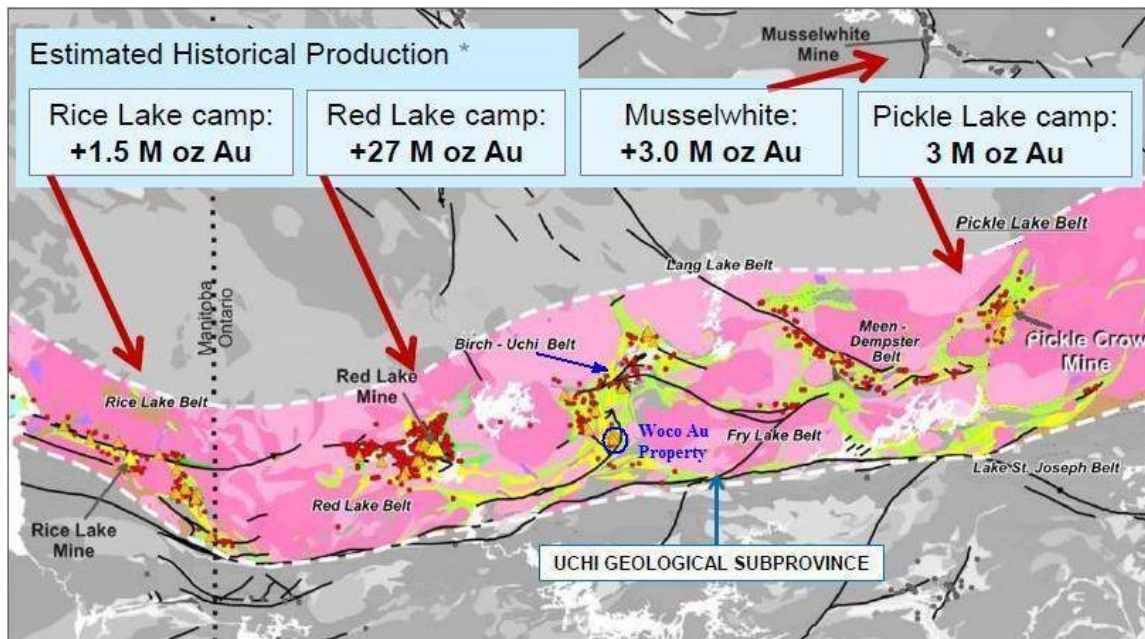
Tashota-Nipigon Mines completed geological mapping and ground geophysics in 1969 and recommended several drill holes in the area of the Woco Prospect.

From 1988 to 1995 St. Jude Resources Ltd. completed a number of exploration programs consisting of ground geophysics, geological mapping, geochemical soil sampling, stripping and sampling. This was followed by two diamond drilling programs that identified significant gold mineralization in a north-south trending shear-hosted quartz vein system at the contact between intermediate (dacite) and mafic metavolcanics.

In 2005 Golden Star acquired St. Jude Resources, at the same time that St. Jude sold the Woco Property to Dollard Mines. In 2010 Premier Gold entered an option and purchase agreement with Mainstream Minerals for the Bobjo Property and with Dollard Mines Ltd. for the Woco Property. In 2011 Premier Gold dropped its option on the Bobjo Property. There is no indication of any further work on the Woco Property by Premier Gold.

## Geology, Structure and Mineralization

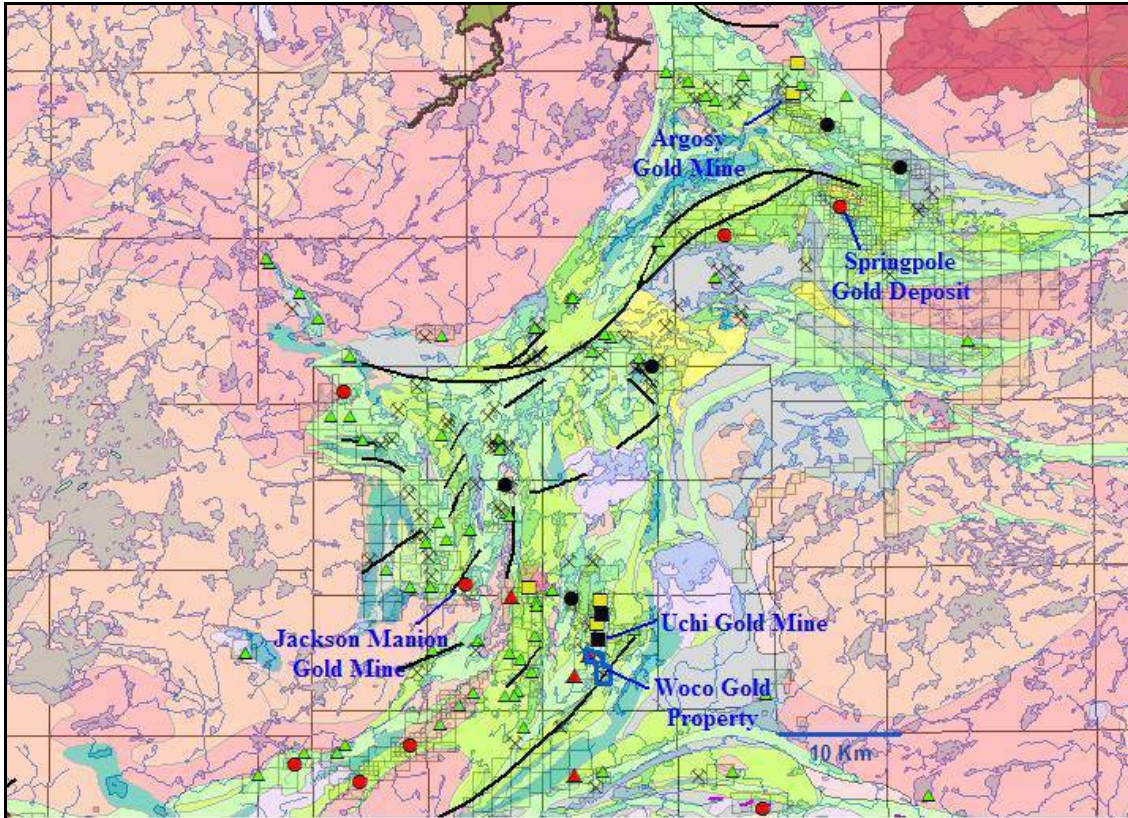
The Woco Property is underlain by north trending mafic metavolcanic flows of the Birch-Uchi Greenstone Belt which forms part of the Uchi Geological Province. The west part of the property includes massive to foliated mafic flows and coarse-grained mafic intrusive rocks. The central part of the property includes pillowed mafic flows and the east part of the property is underlain by felsic to intermediate pyroclastic rocks.



Uchi Geological Subprovince, Birch-Uchi Greenstone Belt, Woco Gold Property



Regional structures tend to strike parallel to the stratigraphy (north-south). East-west trending transverse faults are common. The Uchi Break is a north-south trending structure which hosts the Uchi Gold Mine located 1.5 km north of the Woco Prospect. The Uchi Break strikes through the Woco Property about 300 metres east of the Woco Prospect.



**Regional Geology, Birch-Uchi Greenstone Belt, Location of Woco Gold Property**

Woco Gold Prospect was intersected by St Jude Resources in DDH 22 and contained 1.832 oz/t over 4.3 feet. Several additional DDH gave high grade intersections. The prospect is considered to be a 'blind' deposit because the vein was thin (from 7 to 24 inches) and low to moderate grade near surface and widened to 4 feet and high grade at depth.

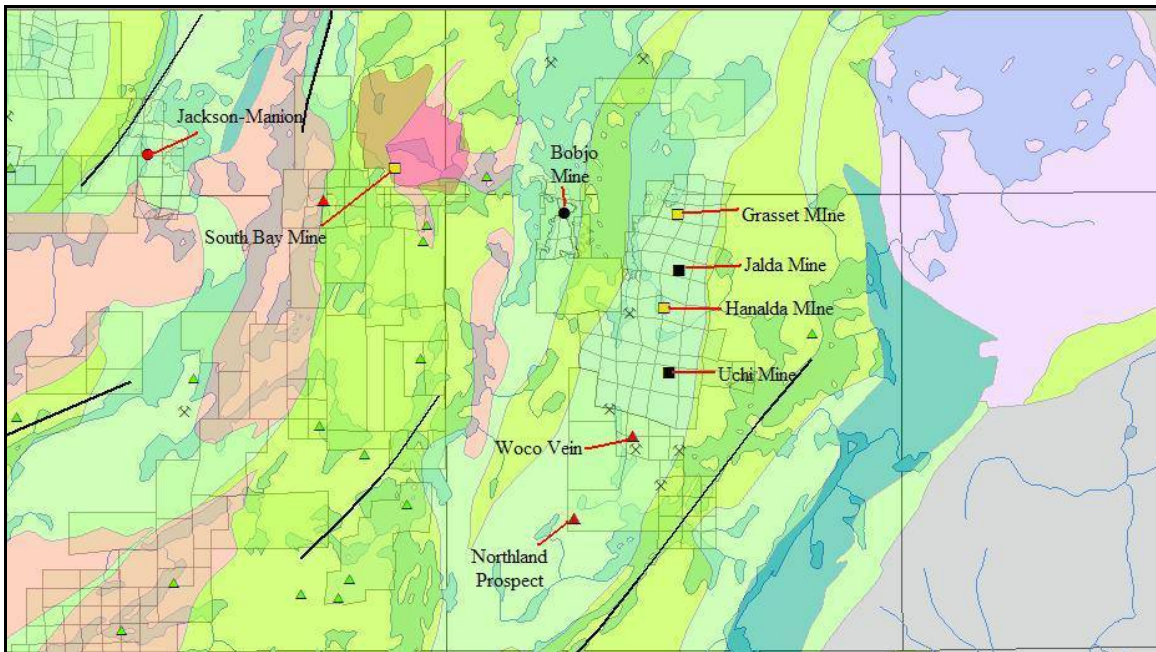
The Woco vein gold prospect is located at a well identified Precambrian stratigraphic horizon which consists of a narrow dacitic lava flow on the west side and a basalt pillowed lava on the east side. The pillowed lava which is relatively incompetent compared to dacite, was sheared at its contact with dacite, whereas the more competent dacite was fractured. The Woco quartz vein was emplaced along this sheared contact zone.

The stresses that formed the main shearing were in their final stages of adjustment which resulted in fine hairline fractures parallel to the trend of the Woco vein with their locations favouring the sheared pillow lava side. It was during the period of hairline

fracturing of the Woco vein that gold mineralization was introduced and as a result was more concentrated on its east side.

The occurrence of this gold-rich structure along a stratigraphic horizon opens up extended potential expansion for exploration along strike and down dip. A vertical east-west trending fault disrupted the southward trend of the rich mineralization, in the area drilled to date.

Wawa Assaying analyzed the 1993 drill core samples using Fire Assay with a Gravimetric finish. Assay certificates for analyses indicate that duplicates for high grade samples were done and verified original results.



**Local Geology, Confederation Lake – Uchi Lake area with location of gold deposits**

**Stripping, Sampling, Humus Geochemistry, and Geophysics**

Stripping and sampling of the Woco Vein was carried out in 1988 and 1992 by St. Jude Resources Ltd. Analyses of the quartz vein at three locations indicated significant gold values, as follows:

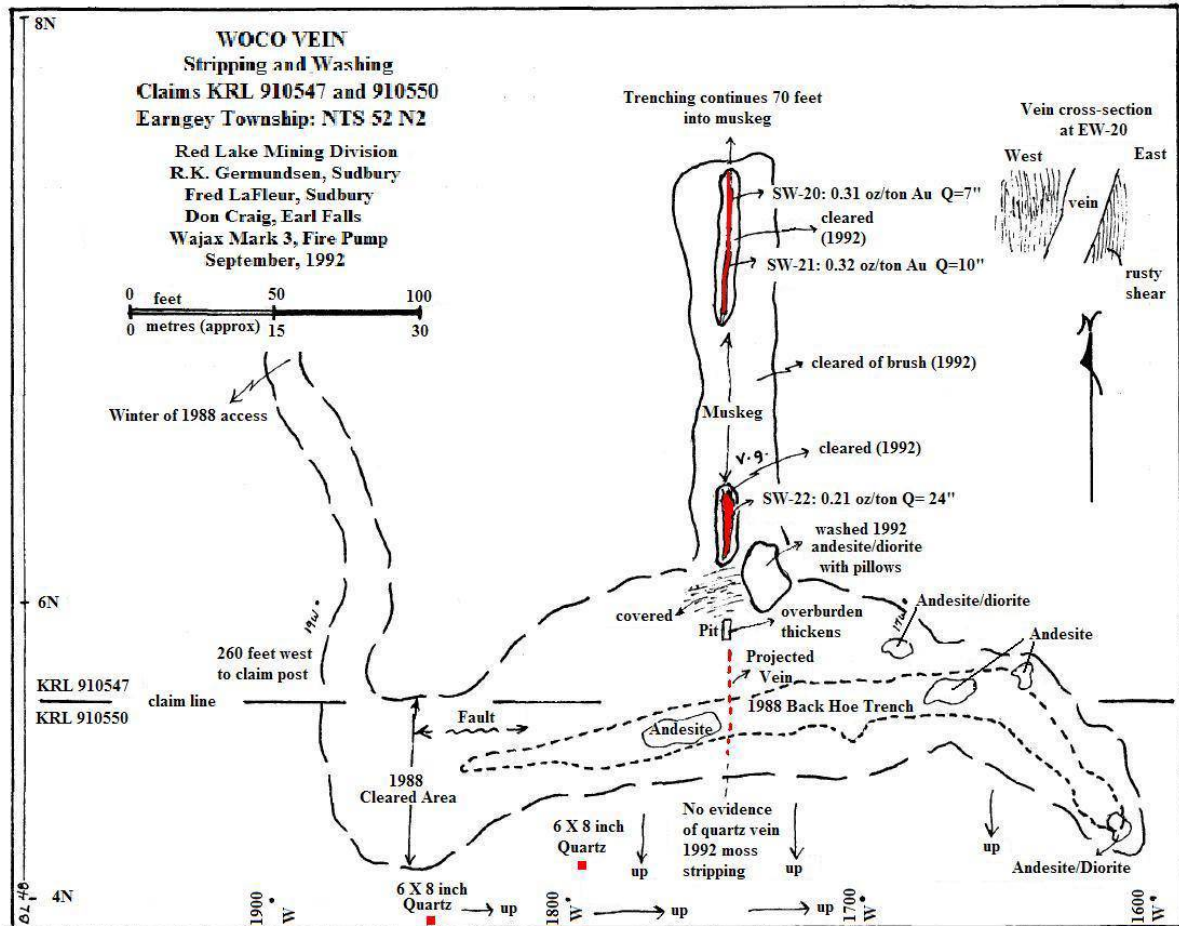
**Woco Vein Trench Samples, 1992**

Sample	Length (inches/feet)	Assay oz/ton Au	Rock Type	Trench
SW-20	7/ 0.58	0.31	Quartz	North Trench
SW-21	10 / 0.83	0.32	Quartz	North Trench
SW-22	24 / 2.0	0.21	Quartz	South Trench

The Woco Vein trends northerly and dips steeply to the west. The vein consists of a white to translucent quartz containing fine hairline fractures which contain chlorite and sericite and appear to be the location of the strongest gold mineralization. The contacts to the



Woco Vein consist of strongly sheared mafic metavolcanics (basalt) and intermediate metavolcanics (dacite). In both the 1993 and 1994 drill programs, numerous specks of visible gold were noted. Trace amounts of galena and chalcopyrite are associated with the quartz and gold mineralization.



**Woco Gold Prospect: Trenching, Stripping and Sampling 1988, 1993**

A humus geochemical survey was complete along east-west grid lines over the property in 1990 by St. Jude Resources. Geochemical analyses indicated anomalous gold values in an area 400-600 feet southwest of the Woco Vein. Prospecting and hand stripping of near-surface outcrop was recommended in the area with anomalous gold.

Ground magnetic surveys indicated that the strike of the metavolcanic units is north-south within the area, and that there are very rapid changes in magnetic susceptibility across strike. The variation in magnetism was thought to reflect intricate changes in the volcano-stratigraphic section.

An induced polarization survey was completed along the east-west grid lines. Increased chargeability was noted in more than one instance particularly in areas lying north of the humus anomalies. The model for the gold-pyrite system can be narrow enough so that

they may not be detected by induced polarization techniques. The presence of several chargeability anomalies indicate some response, and was considered to be encouraging.

### Woco Vein Drilling 1993

Twenty-three holes were drilled that totalled 7,709 feet. This program was very successful, it discovered the "rich Woco vein" and seven drill holes intersected the rich gold bearing vein. From the 1993 drilling program, the Woco Vein trends in a NNW direction and dips steeply to the west (-80°). The higher grade gold zone has its crest at about 175 foot depth with a northerly plunge to the crest.

### Woco Prospect DDH Summary Results (after Chester J. Kuryliw, St. Jude Resources Ltd., 1993)

#### SUMMARY RESULTS OF D. DRILLING

DRILL HOLE NO	FOOTAGES OF INTER - SECTION	AVERAGED ASSAY OUNCE AU PER TON	SAMPLED WIDTH OF VEIN IN FEET	CORRECTED VEIN WIDTH IN FEET	DEPTH OF INTER - SECTION	TOTAL DEPTH IN FEET OF DRILL HOLE
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#### LOWER "RICH WOCO VEIN" INTERSECTIONS

1	281.5-286.75	1.639	5.25	3.7	-225'	1336'
4	202.0-213.9	1.890	11.9	3.7	-190'	226'
11	339.2-343.1	0.650	5.4	3.0	-255'	336'
12	521.3-524.7	0.389	3.4	1.7	-485'	541'
13	722.75-727.0	0.030	4.25	2.1	-650'	816'
20	257.0-264.5	0.445	7.5	5.2	-190'	305'
21	289.8-294.4	0.400	4.6	3.1	-240'	306'
22	259.3-265.3	1.832	6.0	4.3	-200'	276'
23	Stopped short of vein? (Hole steepened)					346'

#### UPPER "WEAK WOCO VEIN" INTERSECTIONS

2	65.6-67.7	0.141	2.1	1.5	-45'	96'
3	99.25-101.8	0.044	2.55	1.5	-85'	166'
5	177.7-178.9	0.173	1.2	0.9	-60'	206'
6	93.0-94.8	0.057	1.8	1.1	-160'	96'
7	96.25-96.75	0.158	0.5	0.3	-60'	115'
8	147.9-149.5	0.146	1.6	1.0	-130'	186'
9	81.9-82.4	Trace	0.5	0.35	-60'	96'
10	178.0-180.2	0.482	2.2	1.0	-170'	201'
14	233.75-235.6	0.093	1.85	1.3	-155'	265'

#### SOUTH FAULT BLOCK

15	(Hole Bent Into S. Block)					376'
16						216'
17	240.8-241.5	0.004	0.7	0.4	-230'	306'
18	(Hole Bent Into S. Block)					396'
19	415.8-416.9	0.042	1.7	0.7	-360'	436'

**NOTE: For Drill Holes 1,4,11,20,21,22**

The weighted averages for the six drill holes intersections near the crest of the "Rich Woco Vein" are 1.15 ounces Gold per ton (uncut) over an averaged width of 3.83 ft. This can also be averaged to 1.10 ounces Gold per ton (uncut) over an averaged width of 4.0 feet for 300 foot length of vein it indicates: 100 tons per vertical foot at 1.10 ounces Gold (uncut) (after Chester J. Kuryliw, St. Jude Resources Ltd., 1993)

**Woco Vein Drilling 1994**

A second drill program was initiated in 1994 consisting of 11 BQ diamond drill holes by St. Jude Resources to fill-in areas of the lower Woco Vein and to test along strike and down plunge. From the longitudinal section along the Woco Vein there appears to be a steep plunge to the thicker, higher grade portion of the vein.

St. Jude Resources 1994 drill hole assay results for the Woco Vein:

<b>DDH</b>	<b>From (feet)</b>	<b>To (feet)</b>	<b>Length (feet)</b>	<b>oz/ton Au</b>
94-J-24	325.3	327.3	2.0	0.578
94-J-25	242.9	246.2	3.3	1.013
94-J-26	276.3	283.2	6.9	4.087
94-J-26	276.3	283.2	6.9	4.087
94-J-27	277.8	280.6	2.8	0.081
94-J-28	383.4	389.0	5.6	1.239
94-J-29	326.1	326.6	0.5	0.001
94-J-30	376.4	380.0	3.6	0.635
94-J-31	289.8	291.3	1.5	0.408
94-J-32	482.0	483.7	1.7	0.020
94-J-33	506.0	508.5	2.5	0.009

Note: Assay values represent calculated weighted assays based on drill logs and assay certificates; Assays were completed by Accurassay Laboratories, Thunder Bay, Ontario, 1994 using a standard fire assay method.

With the results of the two drill programs (35 drill holes), a mineral resource estimate was calculated by R. Dean for St. Jude Resources in 1994. Results of a polygonal mineral resource calculation indicated 52,334 tons of ore at a grade of 0.332 oz/ton gold for a total of 17, 365 ounces of gold (not compliant with NI 43-101 requirements).

**Conclusions (after C. Kuryliw)**

*“The drilling to date has discovered a high grade gold deposit, with results currently indicating a grade in the order of one ounce gold per ton over an average mineable width of four feet. This is essentially a "blind" gold deposit which has its crest at about 175 ft. depth, with a northerly plunge of the crest at - 5 degrees.*



*This "rich Woco vein" had been tested by six drill holes in an area 100 ft. below the crest and over a 200 ft. length. The most northerly hole (No. 22) has the best intersection which averaged 1.832 ounces of gold per ton over a true width of 4.3 feet. This indicates the vein is wide open northwards at this horizon. Drill hole (No.12) intersected with Woco vein 300 ft. below the crest of the rich vein and it is 50 ft. north of drill hole No. 22. This is an encouraging indication that the rich mineralization continues to depth.*

*Any ore reserve calculation is premature at this time but it is reasonable to project dimensions to date of a length of 300 ft., an average thickness of four ft. and an average uncut grade of one ounce gold per ton. This translates into - a minimum of 100 tons per vertical foot of 1.10 ounces gold per ton grade (uncut). NOTE: It must be kept in mind that the "rich Woco vein" mineralization is still open northwards which could materially increase this "tons per vertical foot" figure.*

*The Woco vein gold deposit is located at a well identified Precambrian stratigraphic horizon which consists of a narrow Dacitic lava flow on the West side and a Basalt pillowed Lava on the East side. The Woco vein occurs at this interface between the volcanic members. The pillowed lava which is relatively incompetent compared to Dacite, was sheared at its contact with Dacite, where as the more competent Dacite was fractured. The Woco quartz vein was emplaced along this sheared contact zone. The stresses that formed the main shearing were in their final stages of adjustment which resulted in fine hairline fractures parallel to the trend of the Woco vein with their locations favouring the sheared pillow lava side. It was during the period of hairline fracturing of the Woco vein that gold mineralization was introduced and as a result was more concentrated on its east side.*

*The occurrence of this rich structure along a stratigraphic horizon opens up extended potential expansion for exploration along strike and down dip. A vertical east-west trending fault disrupted the southward trend of the rich mineralization, in the area drilled to date.*

*Other potentially favourable sites for gold deposits may occur on the extension of the "Uchi break" onto the property. In the following recommended drilling program it is concluded that a minimum of 10,000 feet of drilling is both necessary and warranted.*

*A drilling pattern to test the rich Woco vein from the 200 ft. to 400 ft. horizon in depth northwards would consist of a grid at 50 ft. centers. Below the depth of 400 ft. a grid pattern of holes 100 ft. centers is required. Drilling to date indicates considerable difficulty in hitting targeted coordinates due to an unpredictable bending of the drill holes in both dip and bearing, with further experience, the bending patterns of drill holes can be utilized to hit predetermined targets.*

*Instrument testing of the drill holes while in progress is essential. Results to date indicate this gold deposit is rich enough to become a mineable deposit. It is therefore*

*imperative that all drill holes that intersect the Woco vein be cemented to eliminate future mining hazards of excessive ground water introduced from surface swamps through the drill holes.*

Source (Italics): October 8th, 1993 Report by Chester J. Kuryliw, M.Sc.. P.Eng. for St. Jude Resources Ltd., MNDM AFRI 52N02SE0015.

### **Summary of the Woco Property**

The Woco Gold Prospect and property has not seen any exploration since mid-1990. Orofino Resources completed exploration on the property immediately to the south west and identified a small gold deposit (Northgate Prospect) with non-compliant mineral resource of 64,600 tons @ 0.28 oz/t Au, however assessment files appear to be incomplete and this mineral resource cannot be verified. Rubicon Minerals currently has this southern property. The patented claims to the north, which include several small past producers (Uchi Gold Mine), is held by Lac Properties Inc. (subsidiary of Barrick Gold Inc.).

From a preliminary review of the assessment work on file, it would appear that Premier Gold did not complete any work on the Woco Property during the period of time they optioned the property from 2010 to 2011. It would also appear that no exploration has been done on the property since 1995, a period of over 20 years.

The Woco Prospect is cut-off or offset by an east-west trending late structure at the south end. The mineralized zone appears to be plunging steeply to the north ( $-60^{\circ}$ ) and the high-grade, thicker portion of the vein is at a depth between 150 and 350 feet (45.7 and 106.7 m) over a strike length of 300 feet (91.4 m).

Additional exploration is recommended on the property, starting with a complete review and compilation of historical information, digital transfer of selected hardcopy maps, trenching, stripping and sampling results, diamond drill-hole logs and assays, geochemical sampling and analyses. In addition, any Ontario Geological Survey information acquired since 1995 should be reviewed and incorporated. Any recent airborne geophysical survey should be acquired for re-processing and interpretation.

Initial field work should consist of prospecting, sampling, GPS location of drill collars, GPS georeferencing of historical stripped areas, soil geochemical survey using GPS control to verify historical humus anomalies, and detailed geological mapping of stripped surface exposures. A structural geologist should be contracted to measure various structural features to determine any potential offset on the Woco Vein to the south.

A 3D drill hole geology and assay model should be constructed to determine the morphology of the mineralized zone and variation on gold grade. Plan a drill program to test the Woco Vein based on targets identified by the compilation of historical data, preliminary field work, and 3D geological modeling.

High-grade gold mineralization was discovered at the Woco Prospect in 1993 by St. Jude Resources Ltd. Two drill programs identified a mineralized quartz vein extending over a distance of 100 m along strike and 150 m depth.

**Summary:**

- É The Woco Vein is located in a high strain zone that occurs at the contact between competent felsic metavolcanics (dacite) and pillowed mafic metavolcanics (basalt).
- É The Woco Vein and structure trend northerly and dip steeply west occurring 300 m west of the Uchi Break, a regional N-S structure hosting a series of past gold producers (Uchi Gold Mine).
- É Shearing and alteration extends 1-2 m from the vein contact; felsic metavolcanic (dacite) are sheared and strongly sericitized and mafic metavolcanics (basalt) are sheared and carbonatized.
- É The high-grade core plunges north at  $-60^{\circ}$  and is cut-off at the south end by a late E-W fault. The offset continuation has not been discovered.
- É Gold mineralization occurs as fine specks of gold disseminate in the quartz and closely associated with hairline fractures in the quartz;

**Conclusions:**

- É The Woco Gold Prospect and property has not seen any mineral exploration since mid-1990, a period of 20 years. The property is in good standing for 2 more years.
- É Limited drilling has been done immediately to the north of the current extents, at depth to test the down plunge continuation of the high-grade zone, and to the south of the east-west late fault to test for the continuation of the Woco Vein.
- É Additional targets were recommended by St. Jude Minerals based on Au in humus anomalies and IP chargeability anomalies; recommendations were made to test the Uchi Break on the property as well as known areas with quartz veining near the prospective dacite-basalt contact.
- É There is excellent continuity of the structure and the vein system as well as continuity of gold mineralization which suggests a lower nugget effect and thus greater confidence in drill results and future mineral resource estimates.
- É Several of the 1993, 1994 drill holes intersected lamprophyre dikes sub-parallel to the vein system which resulted in limited intersections of vein material and low gold grades; a better understanding of the structural significance and impact on the vein system is required.



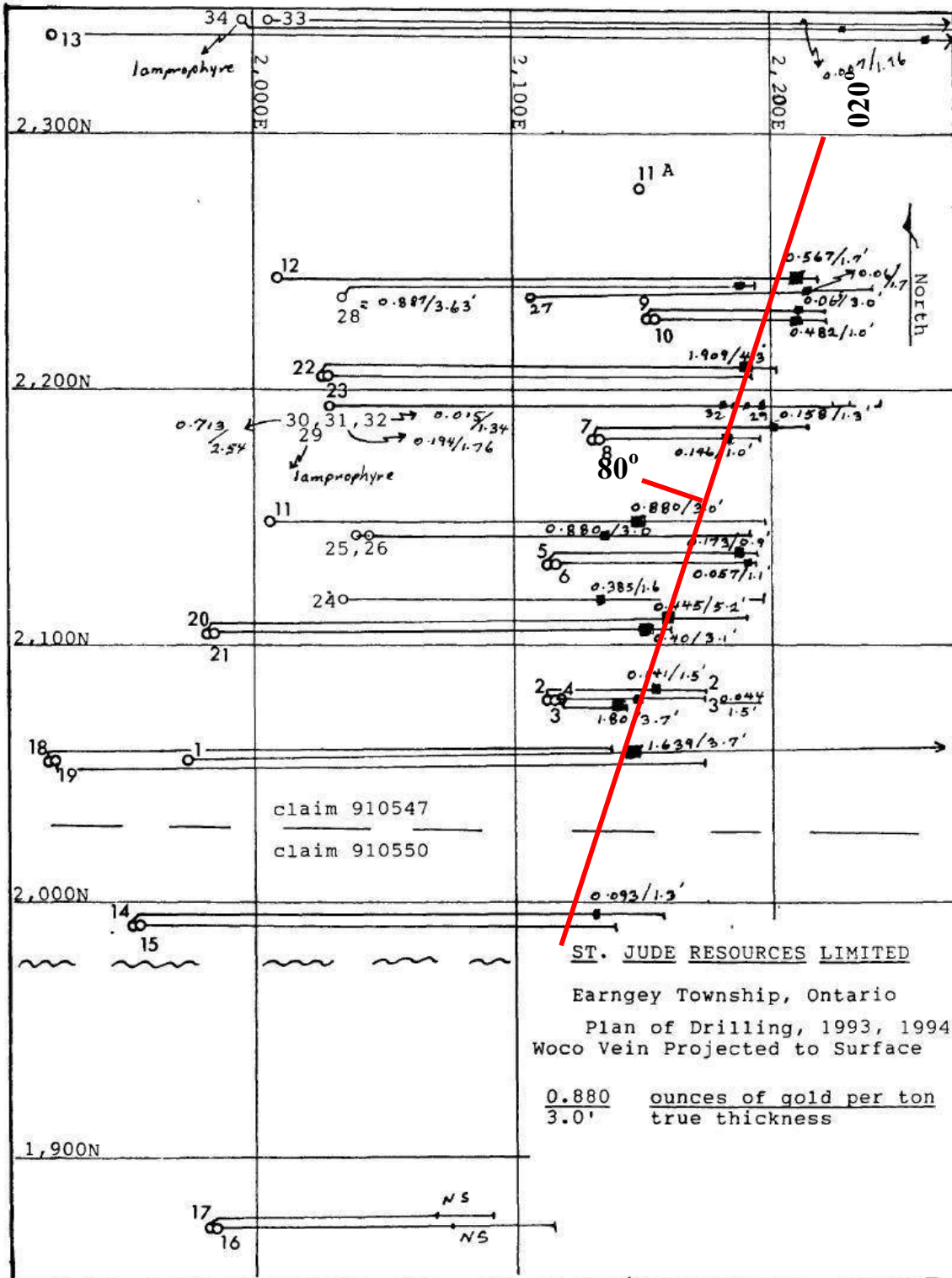
### **Recommendations:**

- É Complete a geological compilation of historical data; create a 3D model from the known drilling. Drill collars are noted as being left in-place.
- É Locate and georeference historic exploration such as stripping, trenching, sampling, grid lines, DDH collars.
- É Prospecting/stripping/trenching/sampling of identified mineralized areas; structural/geological mapping of mineralized shear zones.
- É Soil geochemical survey using GPS control to verify historical humus anomalies, and detailed geological mapping of stripped surface exposures.
- É A structural geologist should be contracted to measure various structural features to determine any potential offset on the Woco Vein to the south.
- É Establish a structural and geological model based on results of geophysics, geochemistry and geology in the area.
- É Drilling program of selected target areas based on fieldwork and geological / structural interpretation.

### **Knowledge Gaps:**

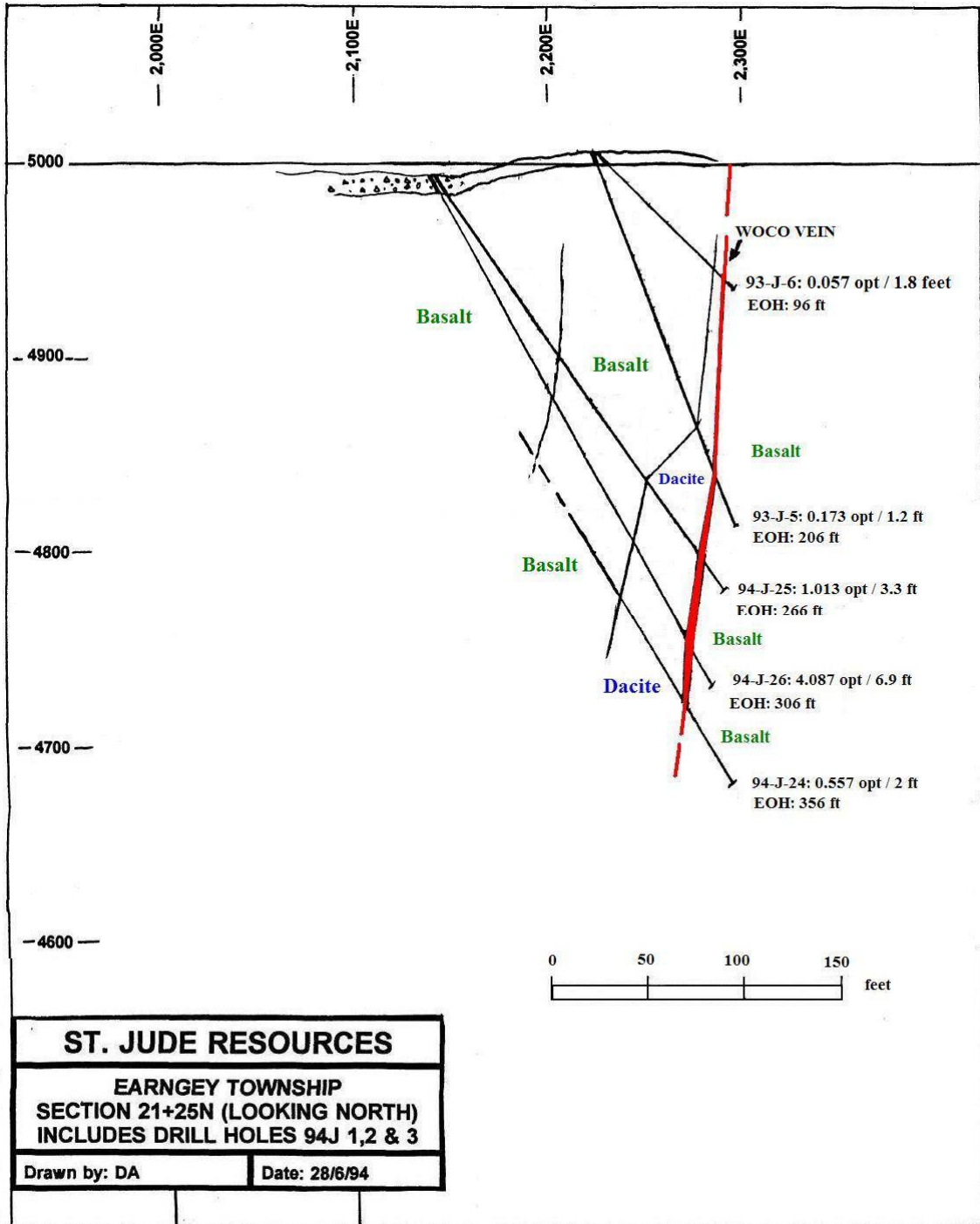
- É Is there a fault offset of the Woco Vein to the south? or does this fault represent a feeder for mineralizing hydrothermal fluids?
- É Although there is preliminary evidence for a steep northerly plunge to the high-grade zone, it is based on limited drilling at depth and along strike. Is there a single plunging zone or are there a series of these along the structure?
- É Drill hole cross sections indicated that there are several dacitic units before the dacite-basalt contact that is strongly sheared and hosts the Woco Vein; Why are these dacite-basalt contacts not sheared or mineralized?
- É How prevalent are lamprophyres along the Woco Structure? Is there any movement along the fracture/faults which are occupied by lamprophyry dikes?
- É How significant is the regional Uchi Break? or are associated structures more important in controlling gold mineralization?
- É There is only a small amount of sulphides associated with gold mineralization, so how effective is IP chargeability? Dacitic units in the mineralized area are not wide and not always sheared at the contact with mafic metavolcanics, so how effective would IP Resistivity surveys be ?

- É Is there any significance to the presence of spherulitic basalts to the west of the dacite host and pillowed metavolcanics (basalt) in contact to the east of the dacite?
- É How similar are the structures, host rocks, and gold mineralization at the Uchi Gold Mine and other mines to the north?

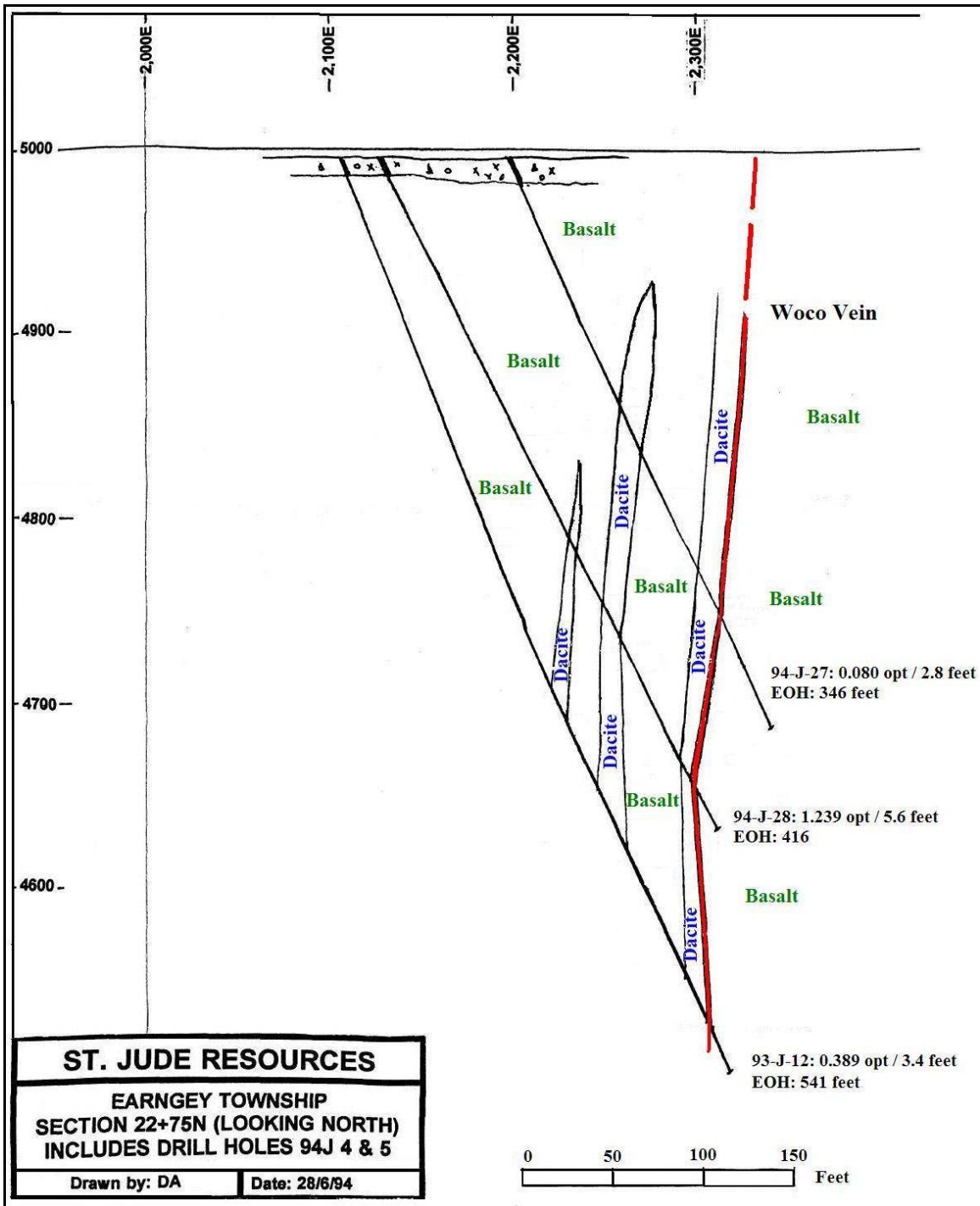


Woco Prospect, Plan of Drilling 1993, 1994 Projected to Surface

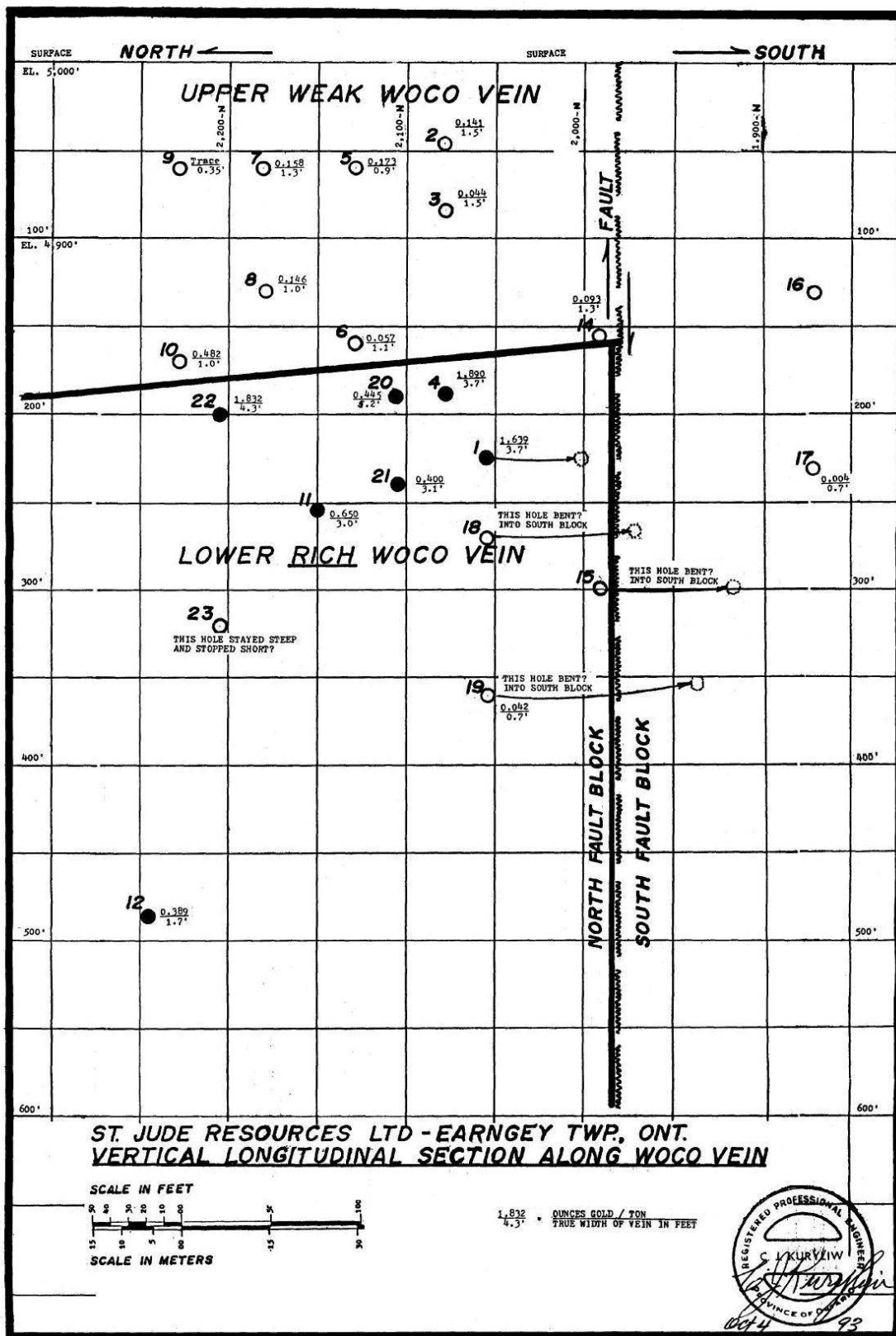




Woco Vein Drill hole Section 21+25 N, 1994 (modified after Germundsen, 1995)

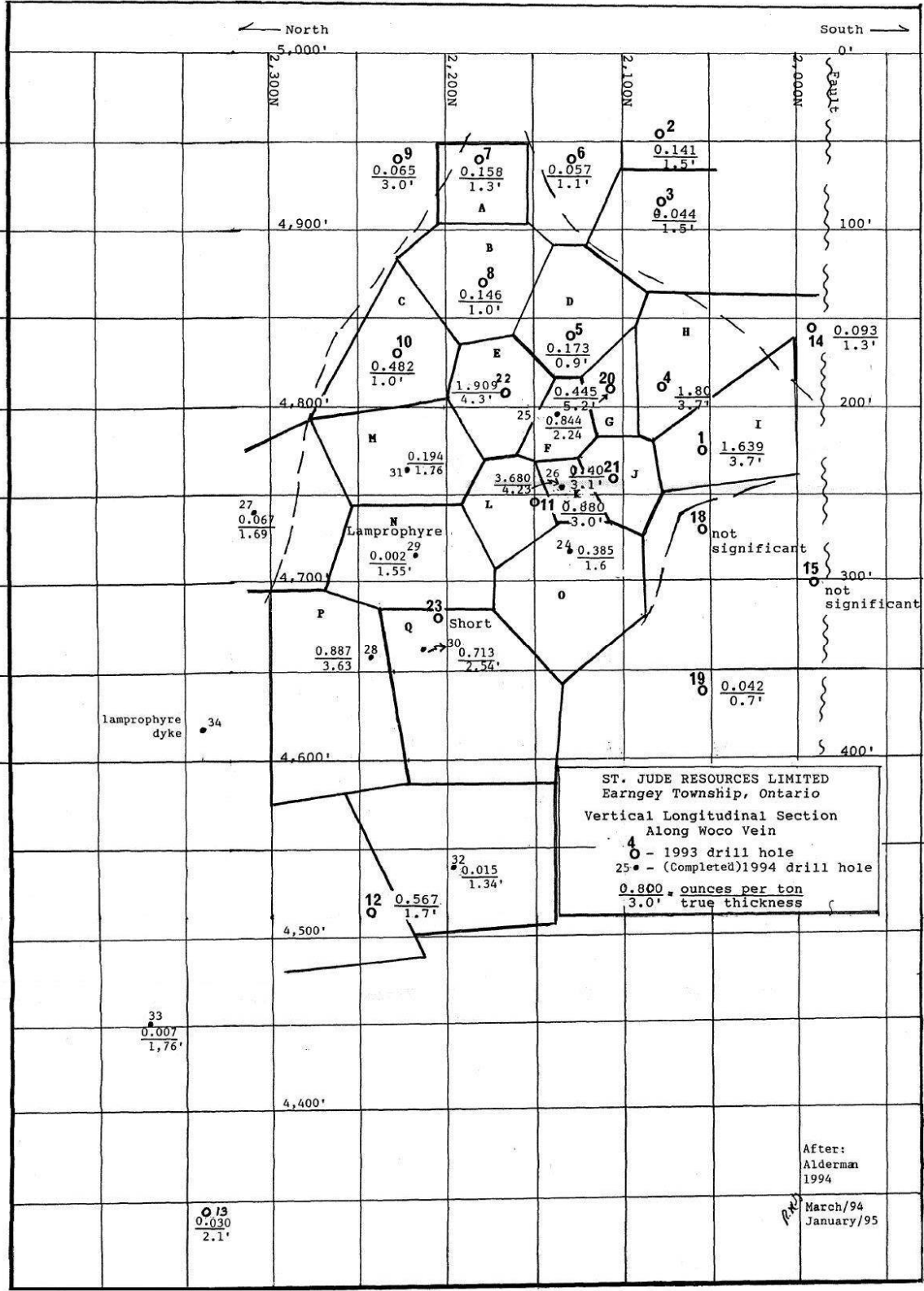


Woco Vein Drill hole Section 22+75 N, 1994 (modified after Germundsen, 1995)

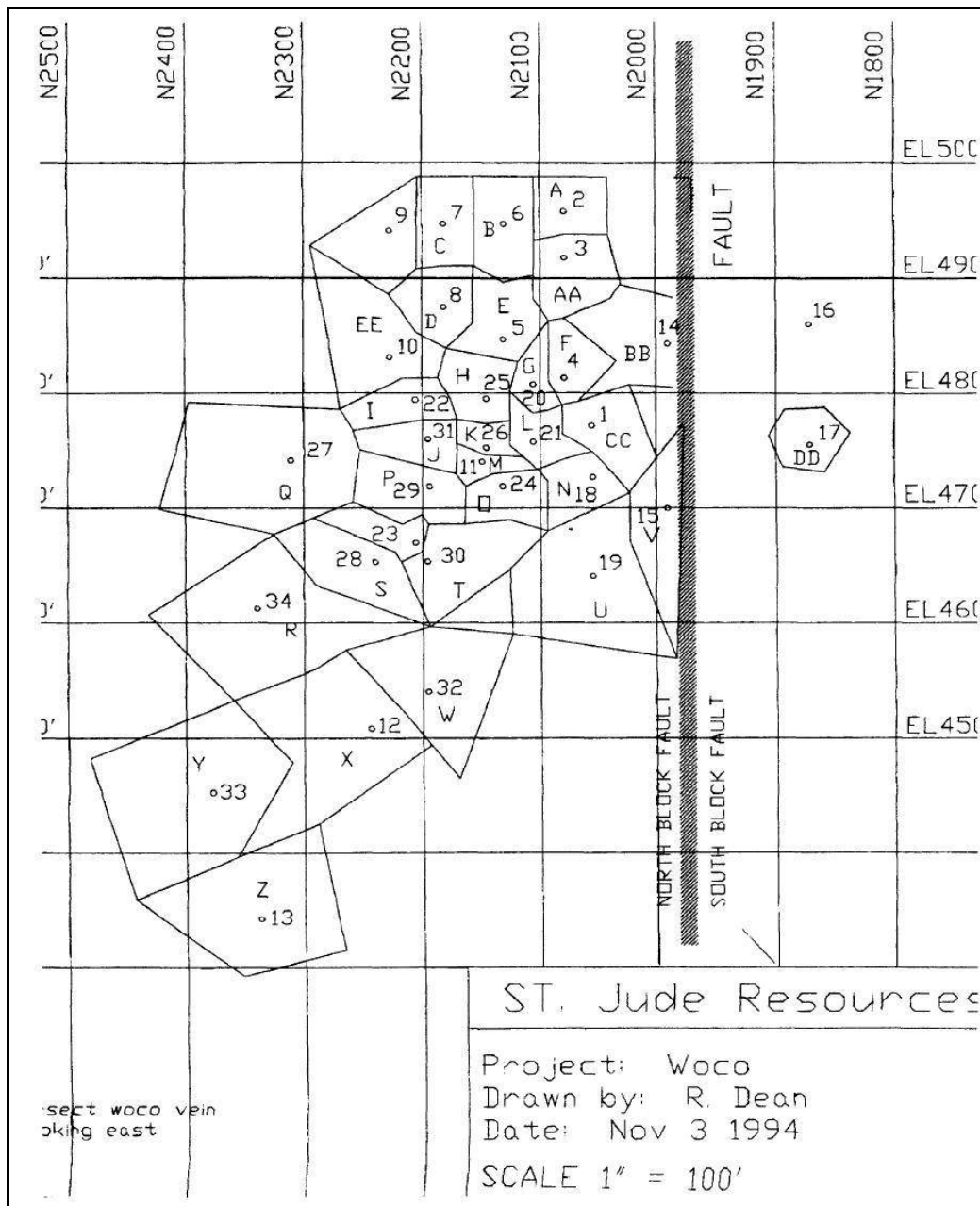


Vertical Longitudinal Section along the Woco Vein, 1993 (after Kuryliw, 1993)





Vertical Longitudinal Section along the Woco Vein for the 1993 and 1994 Drilling



**Polygons for mineral resource calculation by Dean, 1994 (not NI 43-101 compliant)**