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A Report on a Geological and Geochemical Survey  
of the  
Twin (1-3) Claims, Kamloops M.D., B.C.

NTS Sheet: 82M-4W  
51° 08' N. Lat., 119° 47' W. Long.

Prepared for  
Apex Energy Corporation  
(owner and operator)

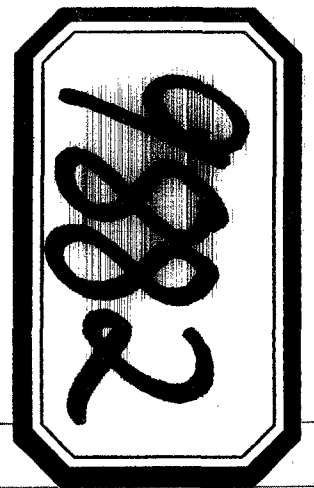
by

S. Croft, T. Sadlier-Brown, B. Fairbank

Consultants

Nevin Sadlier-Brown Goodbrand Ltd.

September 28, 1981



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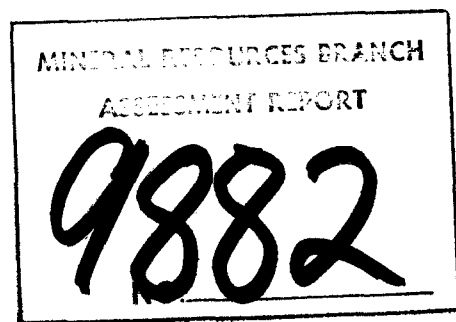


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## 1.0 INTRODUCTION

### 1.1 Terms of Reference

This report is based upon information obtained during the course of field work carried out on the Twin Claim group by Nevin Sadlier-Brown Goodbrand Ltd. personnel in July and August of 1981. The work was carried out at the request of directors of Apex Energy Corporation, a British Columbia company with offices at 1502 - 750 West Pender Street, Vancouver, B.C. The mapping and geochemical sampling comprised Phase I of a possible three phase work program recommended in earlier reports by C. Graf and T. Sadlier-Brown.

### 1.2 Claims and Ownership

The property under discussion comprises three metric grid system claims totalling 39 units located in the Kamloops Mining Division of south central British Columbia. Claim names and numbers are as follows:

<u>Name</u>	<u>Number</u>	<u>Record Date</u>
Twin 1 (18 units)	2403	February 13, 1980
Twin 2 (12 units)	2404	February 13, 1980
Twin 3 ( 9 units)	2405	February 13, 1980

The claims are recorded in the name of Apex Energy Corporation Ltd. and as of the date of this report are in good standing until February 13, 1982.

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The legal corner post of all three claims has been examined by the writer and was found to be located where shown on the Ministry of Energy, Mines and Petroleum Resources claim location map. In the writer's opinion staking of the Twin claims has been in a manner consistent with the regulations set forth in the B.C. Mineral Act.

### 1.3 Location and Access

The Twin claim group is centered about five kilometres north of Skwaam Bay on the west side of Adams Lake on NTS Sheet 82M4. They lie between elevations of 1200 and 1500 metres above sea level on the irregular plateau which forms the southeast flank of Samatosum Mountain.

The property is about 60 kilometres north-northwest of the city of Kamloops in south central British Columbia and is readily accessible from there by road. Skwaam Bay can be reached by good gravel road either from the Yellowhead Highway at Louis Creek 58 kilometres north of Kamloops or from the Trans Canada Highway northerly from Squilax about 95 kilometres east of Kamloops. From Skwaam Bay a well maintained logging road follows the west side of Adams Lake for 8 kilometres to a secondary logging road which leads northwesterly up the mountain to the claim group. A number of branch logging roads and a partly overgrown mining road provide reasonably good access to different parts of the property.

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#### 1.4 Physiography and Vegetation

The claims lie in irregular terrain with relief to the order of 450 metres. The area is part of the Adams Plateau a deeply incised highland lying north of the Thompson River and east of the North Thompson River in the Adams Lake area. The area is subject to moderate to heavy precipitation and is drained by Homestake Creek, Johnston Creek and Samatosum Creek all of which contribute to Adams Lake.

Vegetation in the area consists of mixed coniferous forest. Parts of the claim group are presently being actively logged and several large areas have been cleared out.

#### 1.5 Previous Work

An account of previous work on the property is contained in a private report prepared by C. Graf, P.Eng. He reports that the original prospect was known as the Twin Mountain Property and that the first claims were staked in December 1936.

"The claims were staked to cover showings containing galena, sphalerite and chalcopyrite in quartz lenses in a strong, continuous northwest-striking shear zone. Twelve hand trenches were dug that year to expose the mineralization.

"No further work was recorded until 1952, when the property was optioned to Camoose Mines Ltd. by C.C. Keller of Louis Creek. A 7½ mile long access road was built from Skwaam Bay in the fall of 1952, and in 1953 two exploration tunnels (100 m and 140 m) were driven. In the west tunnel, a mineralized vein was encountered and drifted on for 33 m to the northwest and 36 m to the southeast.

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"Again, no further work was reported until the claims were re-staked by Mr. Keller in 1966 and optioned to Sinmax Mines Ltd. In 1967 and 1968, detailed exploration including line cutting, geochemical and geophysical surveys, and some underground mapping and sampling was carried out."

Exploration work to date has been carried out with the objective in mind being the discovery of a base metal deposit. The comprehensive geochemical survey referred to above outlined a number of geochemical anomalies but base metal values in sufficient quantities to be of economic interest were not found and the claims were allowed to lapse. The Twin claims were staked to cover the old Sinmax ground in order to re-evaluate the area for precious metals. During the summer of 1980 the claims were prospected and a compilation of known data including geology, geochemistry, locations of workings, and physical features was prepared.

## 2.0 GEOLOGY

### 2.1 General Setting

The Twin claims are underlain entirely by rocks of the Eagle Bay Formation, an upper Paleozoic (carboniferous) sequence of sedimentary and volcanic rocks. These rocks are generally but not always metamorphosed to greenschist and, in the claim area are foliated in an easterly to southeasterly direction. Stratigraphic trends are northwest-southeast. The volcanic rocks are overlain by the Tshinakin limestone, the upper member of the Eagle Bay Formation which may underlie the extreme northeast corner of the property.

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## 2.2 Property Geology and Mineral Occurrences

The greenschist unit underlying the Twin Claims consists of metamorphosed volcanic rocks and includes numerous thin limestone and dolomite layers as well as remnant pillow basalt structures throughout the sequence. Rocks are moderately to strongly foliated trending southeasterly with a steep northeast dip. The rocks are essentially undeformed in the northwestern parts of the claims although structural complexity increases towards the southeast. In this area, the rocks are mildly to moderately contorted and, in places, exhibit kink banding. Fractures are commonly filled with silica and carbonate minerals.

Sulphide mineralization has been identified in at least two conformable zones on the property. These zones are hosted by the greenschist unit and include pyrite and sulphides of copper, lead and zinc in a barite-quartz-carbonate gangue. In addition, several limonitic horizons conformable to the greenstone foliation were noted although these did not appear to contain significant mineralization.

Of the two sulphide bearing zones, the northeasterly appears to be the most extensively explored. Old workings include a number of cuts and trenches and two caved adits referred to as East Tunnel and West Tunnel.

The zone is traceable across the property starting at "West Trench" just beyond the top end of Line 60 NW (Figure 3). In this area, pyrite, sphalerite and copper minerals including chalcopyrite, bornite, malachite, and cuprite occur within a

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predominantly barite gangue with minor quartz and carbonates. Wall rock consists of tightly foliated limonitic greenstone. A grab sample (No. 32104) from "West Trench" was assayed and found to contain 2.61% copper, 0.04% lead, 2.87% zinc, 0.22 oz/ton silver, and 0.006 oz/ton gold. A northwestward extension of the zone was not identified although the area is masked by overburden and extensive vegetation.

Towards the southeast the zone was next identified at the "Ski Lift Trenches", located on Line 32 NW. Approximately 150 m of bulldozer trenching has exposed material with extensive pyrite and copper mineralization including chalcopyrite, cuprite, malachite and azurite. Carbonate minerals predominate the gangue although barite and silica are significant. A sample of the material (No. 32102) was assayed and the results show 0.32% copper, 0.04% lead, 0.10% zinc, 0.01 oz/ton silver, and <0.003 oz/ton gold. Greenstone with extensive pyrite mineralization and limonitic boxwork comprises the hanging wall. Schistosity is markedly increased in the vicinity of the mineralized zone and the presence of talc sheets and sericite suggest that rocks have been subjected to some shearing movement.

Approximately 300 m to the southeast, two hand trenches have been cut into the barite-quartz zone. Foliated greenstone striking  $150^{\circ}$  and dipping  $48^{\circ}$  to the east hosts the rich mineralization. Sulphides comprise up to 35% of the rock and include galena, sphalerite, cuprite, malachite, chalcopyrite, bornite and sparse pyrite. Samples from the trenches were taken for assay and the results are as follows:

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<u>Sample No.</u>	<u>Description</u>	<u>Cu</u> <u>%</u>	<u>Pb</u> <u>%</u>	<u>Zn</u> <u>%</u>	<u>Ag</u> <u>oz/ton</u>	<u>Au</u> <u>oz/ton</u>
32106	Quartz-barite vein material bearing massive pods of sphalerite and galena. Some chalcopyrite present.	0.29	1.48	5.22	0.02	0.008
32107	Vuggy quartz-barite vein material. Strong galena and sphalerite mineralization with lesser chalcopyrite.	0.34	3.20	2.18	0.34	<0.003

The large proportion of barite in hand samples suggests that this mineral might be present in economic quantities in the area. West Tunnel is located approximately 100 m to the west of these hand trenches and they may well have provided the necessary incentive to drive the exploratory adit. The adit is partially caved at the collar and was not explored during the course of the program. With a moderate amount of work however, it could be made reasonably accessible. The dump at West Tunnel contains a substantial amount of sulphide bearing vein material. A number of samples of this material were assayed and results are as follows:

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<u>Sample No.</u>	<u>Description</u>	<u>Cu</u> <u>%</u>	<u>Pb</u> <u>%</u>	<u>Zn</u> <u>%</u>	<u>Ag</u> <u>oz/ton</u>	<u>Au</u> <u>oz/ton</u>
8891	Quartz carbonate vein material. Sparse disseminated sulphides. Representative grab sample.	0.02	0.37	1.74	0.11	0.002
8892	Quartz carbonate vein material. Strong galena mineralization, sparse disseminated pyrite.	0.02	3.9	7.6	0.51	0.036
8893	Representative dump material. Massive pods of pyrite and lesser sphalerite. Quartz carbonate gangue.	0.12	0.89	5.6	0.49	0.036
8894	Strongly disseminated to massive pyrite in quartz. Sparse disseminated sphalerite and galena.	0.02	1.32	6.5	0.18	0.005

West Tunnel strikes into the mountain at a bearing of 60° cross-cutting a grey chlorite-sericite schist which comprises about two-thirds of the dump material, the remaining third being sulphide bearing vein material. The tracks from the adit lead up to the sulphide dump suggesting that this was the last material to be mined.

East Tunnel, located approximately 400 m southeast of West Tunnel is collared in moderately foliated greenschist and intersects mineralized quartz-carbonate vein material at an unknown depth. Sparse fine-grained galena occurring in bands of pyrite are disseminated throughout samples from East

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Tunnel dump. A grab sample (No. 32101) was assayed and found to contain 0.02% copper, 0.14% lead, 0.05% zinc, 0.01 oz/ton silver, and <0.003 oz/ton gold. Barite content of the gangue is variable ranging from an estimated 20 to 70% in the grab sample from the dump.

Farther to the southeast the zone can be traced along the base of a cliff face near Station 8 SE 2 NE. Quartz-carbonate-barite material contains galena, pyrite and minor sphalerite and malachite mineralization up to 15%. Barite is the dominant gangue mineral with smoky-to translucent quartz and dolomite making up the remainder. A grab sample of the mineralized material (No. 32109) was assayed and found to contain 0.14% copper, 0.72% lead, 0.85% zinc, 0.58 oz/ton silver and <0.003 oz/ton gold.

An apparently unrelated vein lacking visible mineralization was noted approximately 30 m to the east. Although predominated by carbonate minerals, the vein contains barite up to an estimated maximum of 30%.

Several old trenches have exposed extensive mineralization in the vicinity of Line 20 SE. Quartz-carbonate-barite vein material was noted over a relatively large area. Here, the trend of the zone roughly parallels the topography thus producing the more numerous surface showings. Sulphide mineralization from this locale is predominantly galena and sphalerite with minor pyrite and chalcopyrite. Barite comprises a large proportion of gangue minerals although carbonates including

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siderite predominates. Silicification has indurated the mineralized zone making it very difficult to break. A number of samples were collected for assay and the results are as follows:

<u>Sample No.</u>	<u>Description</u>	<u>Cu</u> <u>%</u>	<u>Pb</u> <u>%</u>	<u>Zn</u> <u>%</u>	<u>Ag</u> <u>oz/ton</u>	<u>Au</u> <u>oz/ton</u>
32110	Quartz-carbonate vein material from trench. Well indurated tuffaceous host rock invaded by sulphide veinlets. Strong galena and sphalerite mineralization with minor pyrite.	0.46	3.92	3.47	0.42	0.006
32111	Grab samples of vein material from large trenched area. Galena and sphalerite with minor pyrite and chalcopyrite occur in predominately silica gangue.	0.21	1.57	1.64	0.46	0.003
32112	Massive sulphide mineralization in large quartz boulder near coordinates 20 SE 3 SW. Galena crystals (up to 10 cm across) fringe small pods of massive sphalerite.	-	14.00	1.77	1.80	0.024

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The mineral bearing system may extend southeastward of Line 24 SE, although this possibility was not investigated during the recent exploration program.

Another vein or zone, although not nearly extensively explored, is located approximately 300 m to the southwest of the northeast zone. The zone consists of a tuff rhyolite horizon with the greenschist, conformable to regional geological structure, and is mildly to moderately foliated with a southeasterly strike and a dip averaging 45° towards the northeast. Limonite stains surface exposures and the zone contains pyrite and numerous thin silica layers.

Exploration on the southwest zone has been minimal with only two or three small hand trenches observed. A sample of mineralized material (No. 32105) was assayed and contained 0.04% copper, 0.28 oz/ton silver and 0.006 oz/ton gold.

The full extent of the system is unknown although a zone approximately 30 m wide was traced for about 500 m along the strike.

A rusty outcrop on the new logging road between 1.2 and 1.5 km northwest of the adit area (Station A on Map #2) may represent the northwest extension of the mineralized unit intersected by the workings. The outcrop consists primarily of chlorite schist foliated with a strike of 135° and an easterly dip of 48°. The rock has been subjected to intense surface weathering and contains abundant disseminated pyrite

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but no visible base metals. Two samples of this material were taken for assay. Results are as follows:

<u>Sample No.</u>	<u>Description</u>	<u>Cu</u> <u>%</u>	<u>Pb</u> <u>%</u>	<u>Zn</u> <u>%</u>	<u>Ag</u> <u>oz/ton</u>	<u>Au</u> <u>oz/ton</u>
8889	Metavolcanic rock with disseminated pyrite.	0.03	0.13	0.39	0.07	0.002
8890	Metavolcanic rock or greenstone. Chloritic and with coarse to medium grained pyrite crystals disseminated and on fracture surfaces.	0.02	0.01	0.01	0.02	0.002

A number of blocks of grey cherty float were observed at various localities scattered along the slope in the general vicinity of West Tunnel. These occasionally contain sparse disseminated pyrite and may represent chert bands from within the Eagle Bay Formation or possibly silicified carbonates. One sample of this material was taken for assay and found to contain 0.01% copper, 0.01% lead, 0.01% zinc, 0.002 oz/ton gold and 0.02 oz/ton silver.

A road cut into sheared limestone in the vicinity of Station 20 SE 21 SW contains bands of pyrite up to 3 mm thick and disseminated euhedral magnetite crystals. The rocks may represent intercalated greenschist and limestone from lower in the Eagle Bay Formation. A sample was taken to test the possibility that the mineralization represented an extension of the southwest vein system. However, assays reveal that

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the sample (No. 32103) contained 0.01% copper, <0.01% lead, 0.01 oz/ton silver and <0.003 oz/ton gold. The results do not suggest any relationship between this material and that in other vein systems on the property.

The general geological setting of the main mineralized zone on the Twin claims resembles in many respects, the environment at the Kamad property at Skwaam Bay about 5 km to the south. Both zones resemble veins but are conformable, or approximately so, to the stratigraphy and may represent metal rich volcanogenic or exhalative horizons within the sequence.

### 3.0 GEOCHEMISTRY

#### 3.1 Survey Methods

A geochemical survey was performed on the Twin claims during July of 1981. Samples were taken, where possible, along the existing grid. Where the grid had been destroyed by logging activities, lines were controlled by hip chain and compass. As the existing grid was marked out in feet, English units have been maintained to facilitate comparison of results.

Samples of B Horizon soil were dug using a shovel, placed in paper sample bags and analyzed for copper, lead, zinc, silver and gold. Chemex Laboratories Ltd. in North Vancouver, B.C. performed the analyses by the methods described in Appendix D.

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## 3.2 Discussion of Results

### 3.2.1 Copper

The distribution of copper in soil samples taken in 1981 is erratic and inconsistent with previous results rendering any interpretation invalid.

### 3.2.2 Lead

The results of the lead soil geochemical survey accurately delineates known and suspected extensions of the northeast vein systems. Although the 1981 determinations tend to indicate a somewhat higher lead content they do compare favourably with previous geochemical surveys. The lead anomaly trends approximately northwesterly in a band ranging in width from 30 to 100 m (Figure 5). Soil lead values range from 8 to 2600 ppm. Threshold anomalous value is taken at 100 ppm.

### 3.2.3 Zinc

As with lead, zinc values in soil samples indicate a northwesterly trending anomalous zone which corresponds to the known location of mineralization. The recent survey correlates well with previous geochemical results in the area. Values range from 41 to 6250 ppm. Anomalous areas are defined by the 150 ppm cations.

High zinc concentrations in soil samples generally occur down slope from anomalous lead values.

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#### 3.2.4 Silver

Anomalous silver distribution was found in soils at two locations on the Twin claims property. High silver values are found in spotty locations along the trace of the northeast vein (Figure 7). In addition, a large zone on the western boundary of the recently sampled area exhibits anomalous silver values. The anomaly is open towards the northwest and southwest and is interpreted as a geochemical expression of the southwest vein. Values range between detection limit and 4 ppm with anomalous values being 0.5 ppm or higher.

High silver values are commonly associated with anomalous zinc values especially in the northeast zone on Lines 28 and 32. The relationship suggests that zinc may prove to be a valuable pathfinder element for silver.

#### 3.2.5 Gold

Gold values in geochemical samples were generally low and somewhat erratic with a substantial proportion of the results being below the detectable limit of the analytical method. Higher values (20 ppb and greater) tend to occur near the northeast vein system. The maximum observed value is 210 ppb.

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#### 4.0 CONCLUSION

##### 4.1 Summary of Observations and Conclusions

The Twin claim group is transected by two elongate mineralized zones which are conformable to the trend of the host volcanic rock, a greenschist unit within the Eagle Bay Formation. The geological mapping and geochemical sampling program conducted during July of 1981 successfully relocated and sampled portions of a pre-existing grid and defined these mineralized zones.

Metamorphosed mafic volcanic rocks containing remnant pillow basalt structures and numerous thin carbonate horizons host the mineralization. Pyrite and sulphides of copper, lead, and zinc are found within a quartz-carbonate-barite gangue in the vein-like zones which range in width from 20 to over 100 centimetres and are tentatively interpreted as stratabound exhalative units within the volcanic sequence. The northeast zone outcrops sporadically over a strike distance of about 2.5 km and it may reasonably be expected to extend both downdip and along strike to the northwest and southeast. During the course of the field work the zone was sampled at a number of exposures in pits and open cuts and assays were performed for copper, lead, zinc, silver and gold. A subjective average value of eleven samples considered to be representative of the mineralized zone is 0.18% copper, 0.90% lead, 2.15% zinc, 0.26 oz/ton silver and 0.005 oz/ton gold. An average of assays representative of higher grade shoots within the zone is

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0.19% copper, 3.4% lead, 3.9% zinc, 0.48 oz/ton silver and 0.01 oz/ton gold. The leading commercial commodities on the property then, are zinc and lead but the mineralized zone also contains barite in quantities sufficient to be of possible economic interest.

In addition to the two principal zones numerous other pyrite and limonite bearing horizons were observed throughout the volcanic sequence. These tend, however, to be lacking in base metal mineralization. There is some geological suggestion that barite/sulphide zones similar to those presently identified on the property may recur at other locations within the metamorphosed volcanic sequence either stratigraphically above or below the known mineralization.

Soils in the area of interest were sampled and geochemically tested for copper, lead, zinc, silver and gold. Base metal results correlate reasonably well with a previous geochemical survey except in the case of copper. Lead and zinc values accurately delineate suspected locations of the barite/sulphide zone. Silver shows a strong correlation with anomalous soil zinc values suggesting that zinc may prove to be a useful pathfinder element in any future silver exploration in the area. Gold values were generally low and somewhat erratic.

Work done to date on the Twin claims has not outlined mineralization of consistent tenor and persistence to be economically recoverable at prevailing prices. Values,

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particularly in zinc and lead, however, are locally strong and could make ore if reserves can be identified. Silver and barite are also potentially important. Additional exploration work for all four commodities is considered justified. This second phase work should be directed towards the discovery of lead, zinc, silver and barite which may be present within the partially explored segment of the mineralized zone or may occur either downdip or along the strike of the zone. The prospect of the presence of similar zones lying stratigraphically above or below the known mineralization should not be overlooked.

#### 4.2 Recommendations

As geochemical prospecting has been found to delineate the surface expression of the known mineralization we recommend that the remaining unsurveyed portion of the property be soil sampled. Samples should be run for lead and zinc and those considered anomalous in either of these elements should be tested for silver. Anomalous areas should be exposed and if warranted sampled and tested for the above elements as well as barite.

Geological mapping should be expanded to encompass the entire property at a reconnaissance scale. Additional trenching should be carried out at sites along the surface traces of the known mineralized zone. These, as well as the existing trenches and underground workings should be sampled and the zone re-evaluated as combined lead-zinc-silver-barite occurrences.

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A third phase of work, diamond drilling, should be contingent upon results obtained from the program outlined above.

#### 4.3 Estimate of Costs

##### Geology and Geochemistry - Personnel

Geology and Supervision	\$ 7,500
Geochemical Sampling	3,200
Grid Preparation	4,400
Trenching and sampling	1,200
Reaccessing Workings	4,500
Evaluation, Reporting, Administration	2,800

##### Services and Equipment

Geochemical analyses	\$ 6,000
Assays	800
Trenching and access	3,200
Meals and accommodation	3,800
Transportation and communication	3,100
Contingency	6,100

TOTAL \$46,600

##### Drill Program

Diamond drilling - allow for 2000 ft @ \$36/ft	\$72,000
Logging, assaying	2,800
Mobilization and demoblization and camp costs	1,800
Contingency	11,500

TOTAL \$88,100

SUMMARY

Apex Energy Corporation of Vancouver, B.C. is the owner of the Twin 1,2,3 Claims comprising 39 metric units located near Skwaam Bay, Kamloops M.D., B.C. During August of 1981 a program of geological mapping and geochemical sampling was carried out by personnel of Nevin Sadlier-Brown Goodbrand Ltd. The claims were found to be underlain by a sequence of meta-volcanics which comprise the Eagle Bay Formation in the area overlain in the north part of the property by the Tshinakin limestone. The metavolcanics or greenstones are host to at least two conformable mineralized zones on the property. These zones contain pyrite, chalcopyrite, sphalerite, galena and minor base metals and copper oxides in a barite-quartz-carbonate gangue. The main zone can be traced northwesterly almost completely across the property and is exposed in a number of surface cuts and trenches.

Soil samples were tested for copper, lead, zinc, silver and gold with lead and zinc proving to be the leading path finder elements. Silver values related well with anomalous soil zinc but gold values were generally low and erratic. Work to date on the property suggests that zinc and lead are the leading commercial commodities but that barite is present in commodities sufficient to be of possible economic interest.

Additional geological mapping, soil sampling and contingent diamond drilling are recommended.

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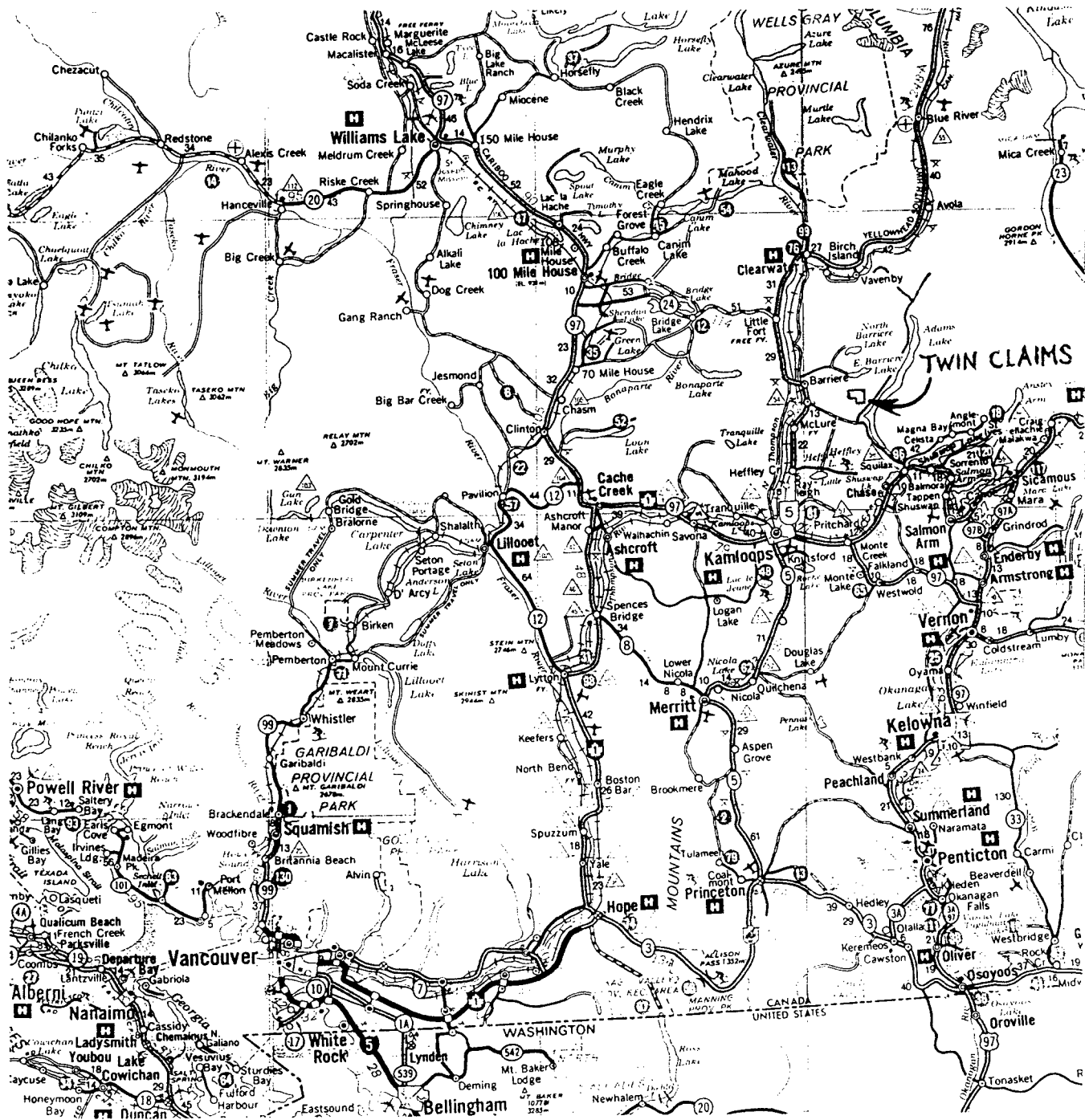


Figure 1 Index Map - Twin Claim Group

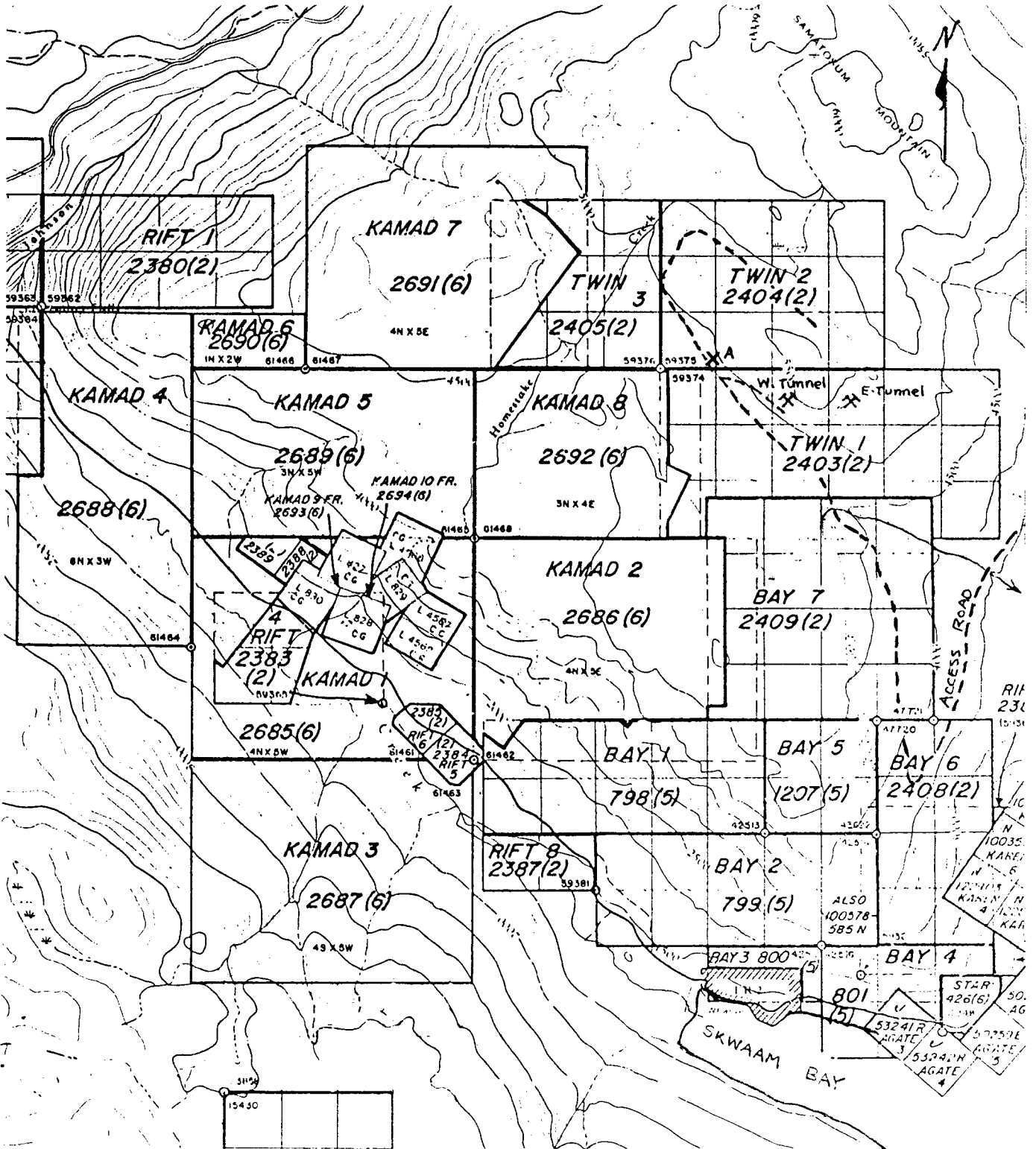


Figure 2 Claim Map and Location of Mineral Occurrences

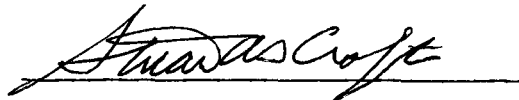
Appendix A

CERTIFICATES

CERTIFICATE AND STATEMENT OF QUALIFICATIONS

I, Stuart A.S. Croft hereby certify that:

1. My residence address is 1340 Inglewood Avenue, West Vancouver, B.C. V7T 1Y9
2. I am a consulting geologist with the firm of Nevin Sadlier-Brown Goodbrand Ltd., 401-134 Abbott Street, Vancouver, B.C. V6B 2K4
3. I was educated at the University of British Columbia in geological engineering and have been practicing my profession since June, 1981
4. I have examined the Twin Claim group and supervised the exploration program conducted July, 1981 and have reviewed the report prepared by T.L. Sadlier-Brown for Apex Energy Corporation
5. I hold no direct or indirect beneficial interest in the above property nor in the securities of Apex Energy Corporation.




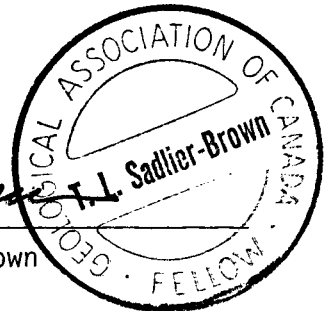
Stuart A.S. Croft

CERTIFICATE AND STATEMENT OF QUALIFICATIONS

I, Timothy L. Sadlier-Brown hereby certify that:

1. I am a consulting geologist and partner in the firm of Nevin Sadlier-Brown Goodbrand Ltd. with offices at 401-134 Abbott Street, Vancouver, B.C. V6B 2K4
2. I was educated at Carleton University in Ottawa, Ontario and am a Fellow of the Geological Association of Canada
3. I have acted in the field of exploration geology in positions of responsibility since 1965 and have been a principal in the firm of Nevin Sadlier-Brown Goodbrand Ltd. since 1972
4. I personally carried out sampling and geological fieldwork on the Twin Claim group and supervised the survey work described in this report
5. I hold no interest, direct or indirect, in the property described herein nor in the securities of Apex Energy Corporation Ltd. nor do I expect to receive such interest
6. I hereby consent to the use of this report in a Prospectus or Statement of Material Facts or other such filings as may be required by the office of the B.C. Superintendent of Brokers, the Vancouver Stock Exchange, or the B.C. Ministry of Energy Mines and Petroleum Resources.

  
T. L. Sadlier-Brown



CERTIFICATE AND STATEMENT OF QUALIFICATIONS

I, Brian D. Fairbank hereby certify that:

1. My residence address is 345 West 15th Street, North Vancouver, B.C. V7M 1S5
2. I am a consulting geologist with the firm of Nevin Sadlier-Brown Goodbrand Ltd., 401-134 Abbott Street, Vancouver, B.C. V6B 2K4
3. I hold a B.A.Sc. in Geological Engineering from the University of British Columbia. I have been practicing my profession since 1973, and I am a member of the Association of Professional Engineers (Geological) of the Province of British Columbia
4. I am a Fellow of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy
5. I have reviewed the report prepared by T.L. Sadlier-Brown for Apex Energy Corporation Ltd. but have not examined the Twin Claim group in the field
6. I hold no direct or indirect beneficial interest in the above property nor in the securities of Apex Energy Corporation Ltd.



Brian D. Fairbank, P.Eng.

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Appendix B  
Statement of Costs Incurred

Fees Paid (based on hourly rate rounded to nearest dollar)

T.L. Sadlier-Brown, July 22 - August 31, 1981 (7.5 days @ \$460)	\$ 3,450.00
S. Croft, July 16 - September 15, 1981 (18 days @ \$175)	3,149.00
J. Hsu, July 16 - July 31, 1981 (14 days @ \$73)	1,020.00
K. Pielak, July 16 - July 31, 1981 (14 days @ \$94)	1,320.00
J. Thomlinson, July 16 - July 31, 1981 (14 days @ \$118)	1,647.00
M. Carson, July 16 - July 31, 1981 (14 days @ \$100)	1,408.00
R. Bruce, July 16 - July 31, 1981 (14 days @ \$132)	1,848.00
B. MacDougall, July 15, 1981 (1.5 days @ \$105)	<u>157.00</u>
Total Wages	\$13,999.00

Expenses

Meals and Accommodation 6 men @ \$11.70/day x 14 days =	<u>\$ 983.00</u>	<u>983.00</u>
Transportation and Communication		
Air fares Vancouver-Kamloops return (x2)	238.00	
Vehicle rentals and gas (2 days)	176.00	
Vehicle rental (16 days @ \$32.75/day)	524.00	
Vehicle rental (16 days @ \$36.69/day)	587.00	
Telephone	<u>31.00</u>	
Sub total	<u>\$1,556.00</u>	<u>\$ 1,556.00</u>
Field Equipment - consumable	<u>\$ 317.00</u>	<u>\$ 317.00</u>

. . . .

Appendix B (cont'd)

Assays and Geochemical Analysis			
Bondar Clegg (7 samples, 5 elements)	\$	207.00	
Chemex Laboratories (12 samples, 5 elements)		289.00	
Chemex Laboratories (soil samples)		1,970.00	
sub total		<u>\$2,466.00</u>	<u>\$2,466.00</u>
Administration and Report Preparation Expenses			
Drafting	\$	157.00	
Map printing, copying, etc.		246.00	
Typing, copying		153.00	
Administration		824.00	
sub total		<u>\$1,380.00</u>	<u>\$1,380.00</u>
TOTAL			<u>\$20,701.00</u>



Appendix C  
Assay and Geochemical Certificates

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Suite 503 134 Abbott Street  
Vancouver, B. C. V6B 2K4

CERTIFICATE OF ASSAY

Samples submitted: June 5, 1981  
Results completed: June 11, 1981


PROJECT: NONE LISTED

RECEIVED JUN 15 1981

I hereby certify that the following are the results of assays made by us upon the herein described rock samples.

MARKED	GOLD		SILVER		Cu	Pb	Zn				
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent
8888	<0.002		<0.02		<0.01	<0.01	<0.01				
8889	<0.002		0.07		0.03	0.13	0.39				
8890	<0.002		0.02		0.02	<0.01	<0.01				
8891	0.002		0.11		0.02	0.37	1.74				
8892	0.036		0.51		0.02	3.90	7.60				
8893	0.036		0.49		0.12	0.89	5.60				
8894	0.005		0.18		0.02	1.32	6.50				

NOTE:  
Rejects retained three weeks  
Pulps retained three months  
unless otherwise arranged.

  
Registered Assayer, Province of British Columbia

**CHEMEX LABS LTD.**212 BROOKSBANK AVE.  
NORTH VANCOUVER, B.C.  
CANADA V7J 2C1TELEPHONE: (604)984-0221  
TELEX: 043-52597

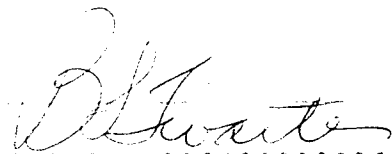
• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

**CERTIFICATE OF ASSAY**TO : Nevin Sadlier-Brown Goodbrand Ltd.,  
401 - 134 Abbott St.,  
Vancouver, B.C.  
V6B 2K4CERT. # : A81131C5-001-A  
INVOICE # : I81131C5  
DATE : 27-AUG-81  
P.C. # : NONE

Sample description	Prep code	Cu percent	Pb percent	Zn percent	Ag (FA) oz/t	Au (FA) oz/t	
321C1	2C7	0.02	0.14	0.05	0.01	<0.003	--
321C2	207	0.32	0.04	0.10	0.01	<0.003	--
321C3	2C7	0.01	<0.01	--	0.01	<0.003	--
321C4	207	2.61	0.04	2.87	0.22	0.006	--
321C5	2C7	0.04	--	--	0.23	0.006	--
321C6	207	0.29	1.48	5.22	0.02	0.008	--



.....  
Registered Assayer, Province of British Columbia

MEMBER  
CANADIAN TESTING  
ASSOCIATION

**CHEMEX LABS LTD.**

212 BROOKSBANK AVE.  
 NORTH VANCOUVER, B.C.  
 CANADA V7J 2C1  
 TELEPHONE: (604)984-0221  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

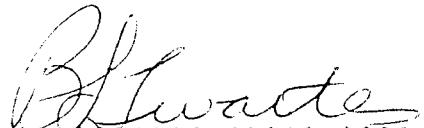
• REGISTERED ASSAYERS

CERTIFICATE OF ASSAY
----------------------

TC : Nevin Sadlier-Brown Goodbrand Ltd.,  
 401 - 134 Abbott St.,  
 Vancouver, B.C.  
 V6B 2K4

CERT. # : A8113072-CC1-A  
 INVOICE # : I8113072  
 DATE : 28-AUG-81  
 P.C. # : NONE  
 117

Sample description	Prep code	Cu percent	Pb percent	Zn percent	Ag (FA) oz/t	Au (FA) oz/t	
32107 C	207	0.34	3.20	2.18	0.34	<0.003	--
32108 C	207	--	0.06	--	0.01	<0.003	--
32109 C	207	0.14	0.72	0.85	0.58	<0.003	--
32110 C	207	0.46	3.92	3.47	0.42	0.006	--
32111 C	207	0.21	1.57	1.64	0.46	0.003	--
32112 C	207	--	14.00	1.77	1.80	0.024	--



.....  
 Registered Assayer, Province of British Columbia



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

Appendix D  
GEOCHEMICAL LABORATORY METHODOLOGY

SAMPLE PREPARATION

1. Soil samples are dried at 60°C and sieved to -80 mesh.
2. Rock samples are pulverized to -100 mesh.

Geochemical Analysis for Ag\*, Bi\*, Cd\*, Co, Cu, Fe, Mn, Mo, Ni, Pb, Sb\*, V, Zn

0.5 gram samples are digested hot dilute aqua regia in a boiling water bath and diluted to 10 ml with demineralized water.

All of the above elements are determined in the acid solution by Atomic Absorption.

\* demotes background detection.

Geochemical Analysis for Au

10.0 gram samples that have been ignited overnight at 600°C are digested with hot dilute aqua regia, and the clear solution obtained is extracted with Methyl Isobutyl Ketone.

Au is determined in the MIBK extract by Atomic Absorption using background correction (Detection Limit - 5 ppb direct AA and 1 ppb graphite AA.)

Geochemical Analysis for Au, Pd, Pt, Rh

10.0 - 30.0 gram samples are subject to Fire assay preconcentration techniques to produce silver beads.

The silver beads are dissolved and Au, Pd, Pt, and Rh are determined in the solution by Atomic Absorption.

Geochemical Analysis for As

0.5 gram samples are digested with hot dilute aqua regia and diluted to 10 ml.

As is determined in the solution by Graphite Furnace Atomic Absorption.

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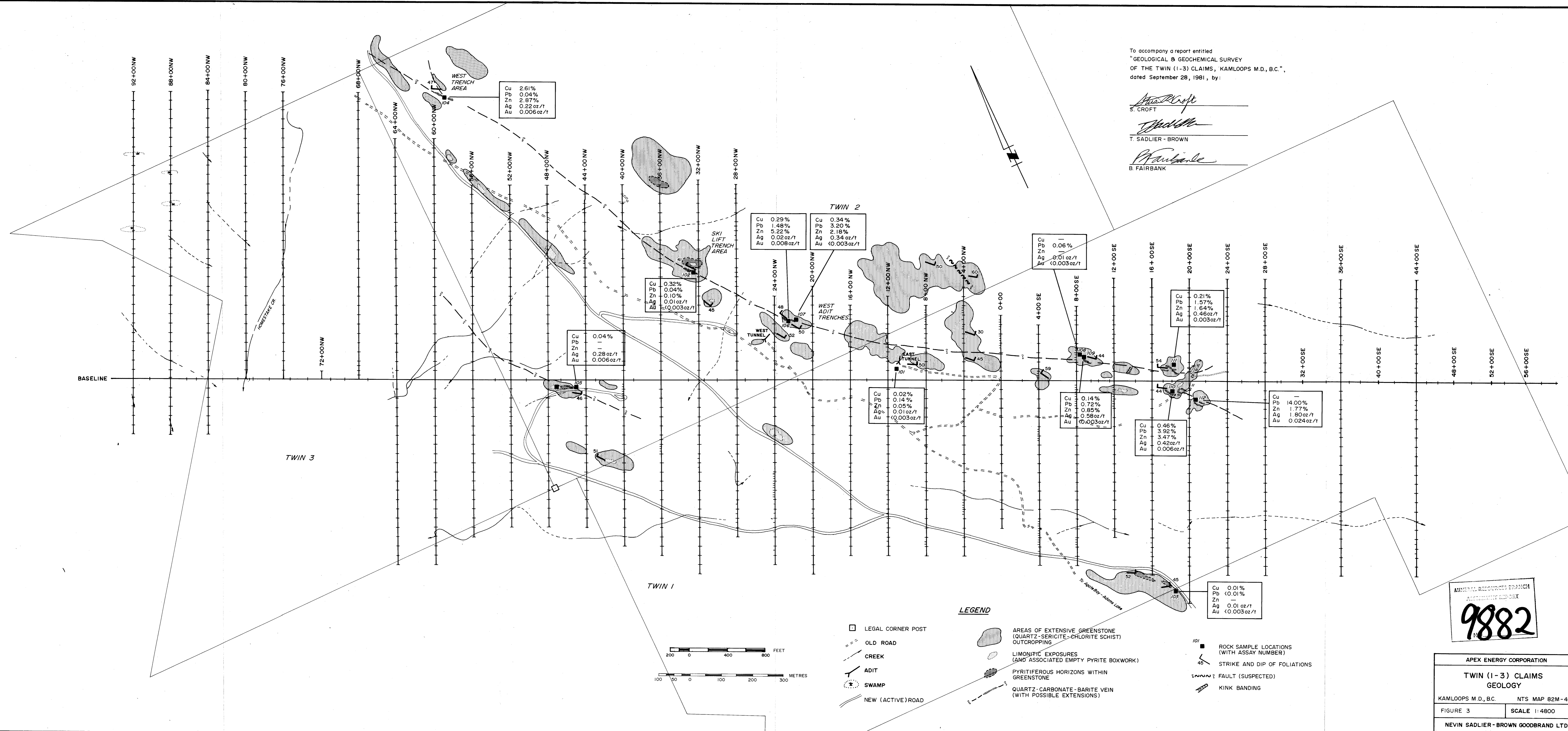
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BIBLIOGRAPHY

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- Graf, C. (January 1981) Twin Claims, Kamloops Mining Division  
unpublished assessment report.
- Preto, V.A. (1978) Barriere Lake - Adams Plateau Area Geological  
Field Work 1978 MEMPR Paper 79-1, pp 31-37.
- Preto, V.A. (1980) Barrier Lake - Adams Plateau Area MEMPR  
Paper 80-1, pp 28-36.
- Sadlier-Brown, T.L. (1981) A Report on a Geological Examination  
of the Twin Claims, Kamloops M.D., B.C. unpublished report.
- 
-

To accompany a report entitled  
 "GEOLOGICAL & GEOCHEMICAL SURVEY  
 OF THE TWIN (1-3) CLAIMS, KAMLOOPS M.D., B.C.",  
 dated September 28, 1981, by:

*S. Croft*  
 S. CROFT  
*T. Sadlier-Brown*  
 T. SADLIER - BROWN  
*B. Fairbank*  
 B. FAIRBANK



Cu 2.61%  
 Pb 0.04%  
 Zn 2.87%  
 Ag 0.22 oz/t  
 Au 0.006 oz/t

Cu 0.32%  
 Pb 0.04%  
 Zn 0.10%  
 Ag 0.01 oz/t  
 Au <0.003 oz/t

Cu 0.04%  
 Pb -  
 Zn 0.28 oz/t  
 Au 0.006 oz/t

Cu 0.29%  
 Pb 1.48%  
 Zn 5.22%  
 Ag 0.02 oz/t  
 Au 0.008 oz/t

Cu 0.34%  
 Pb 3.20%  
 Zn 2.18%  
 Ag 0.34 oz/t  
 Au 0.003 oz/t

Cu -  
 Pb 0.06%  
 Zn -  
 Ag 0.01 oz/t  
 Au <0.003 oz/t

Cu 0.02%  
 Pb 0.14%  
 Zn 0.05%  
 Ag 0.01 oz/t  
 Au <0.003 oz/t

Cu 0.14%  
 Pb 0.72%  
 Zn 0.85%  
 Ag 0.58 oz/t  
 Au <0.003 oz/t

Cu 0.46%  
 Pb 3.92%  
 Zn 3.47%  
 Ag 0.42 oz/t  
 Au 0.006 oz/t

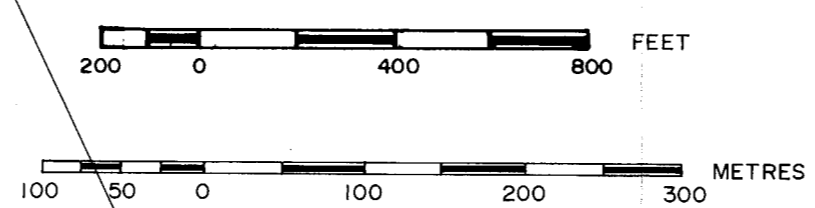
Cu 0.21%  
 Pb 1.57%  
 Zn 1.64%  
 Ag 0.46 oz/t  
 Au 0.003 oz/t

Cu -  
 Pb 14.00%  
 Zn 1.77%  
 Ag 1.80 oz/t  
 Au 0.024 oz/t

Cu 0.01%  
 Pb 0.01%  
 Zn -  
 Ag 0.01 oz/t  
 Au <0.003 oz/t

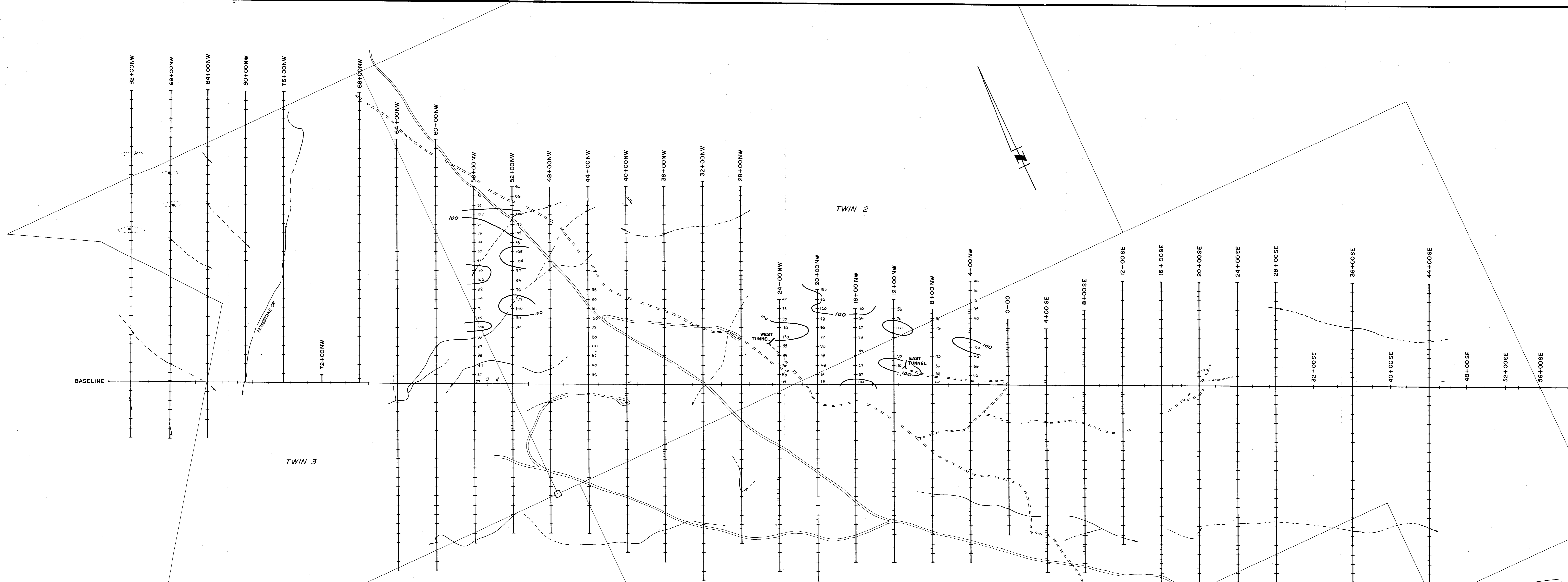
**LEGEND**

- LEGAL CORNER POST
- OLD ROAD
- - - CREEK
- - - ADIT
- SWAMP
- NEW (ACTIVE) ROAD
- AREAS OF EXTENSIVE GREENSTONE (QUARTZ-SERICITE-CHLORITE SCHIST) OUTCROPPING
- LIMONITIC EXPOSURES (AND ASSOCIATED EMPTY PYRITE BOXWORK)
- PYRITIFEROUS HORIZONS WITHIN GREENSTONE
- QUARTZ-CARBONATE-BARITE VEIN (WITH POSSIBLE EXTENSIONS)
- ROCK SAMPLE LOCATIONS (WITH ASSAY NUMBER)
- STRIKE AND DIP OF FOLIATIONS
- - - FAULT (SUSPECTED)
- ~ KINK BANDING



MINERAL RESOURCES BRANCH  
 ASSAY REPORT  
**9882**

APEX ENERGY CORPORATION  
 TWIN (1-3) CLAIMS  
 GEOLOGY  
 KAMLOOPS M.D., B.C. NTS MAP 82M-4W  
 FIGURE 3 SCALE 1:4800  
 NEVIN SADLIER - BROWN GOODBRAND LTD.  
 NOVEMBER 1981

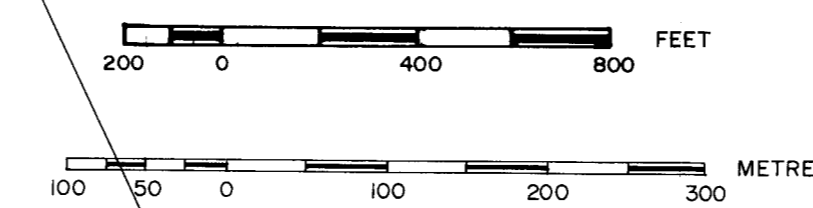


BASELINE

TWIN 3

TWIN 2

TWIN 1



**LEGEND**

- LEGAL CORNER POST
- - - OLD ROAD
- ~ CREEK
- ADIT
- ⊙ SWAMP
- NEW (ACTIVE) ROAD
- COPPER ISOLINE (100 ppm CONTOUR)
- 100  
110 COPPER GEOCHEM. GRID & VALUES (ppm) FROM 1981 SURVEY

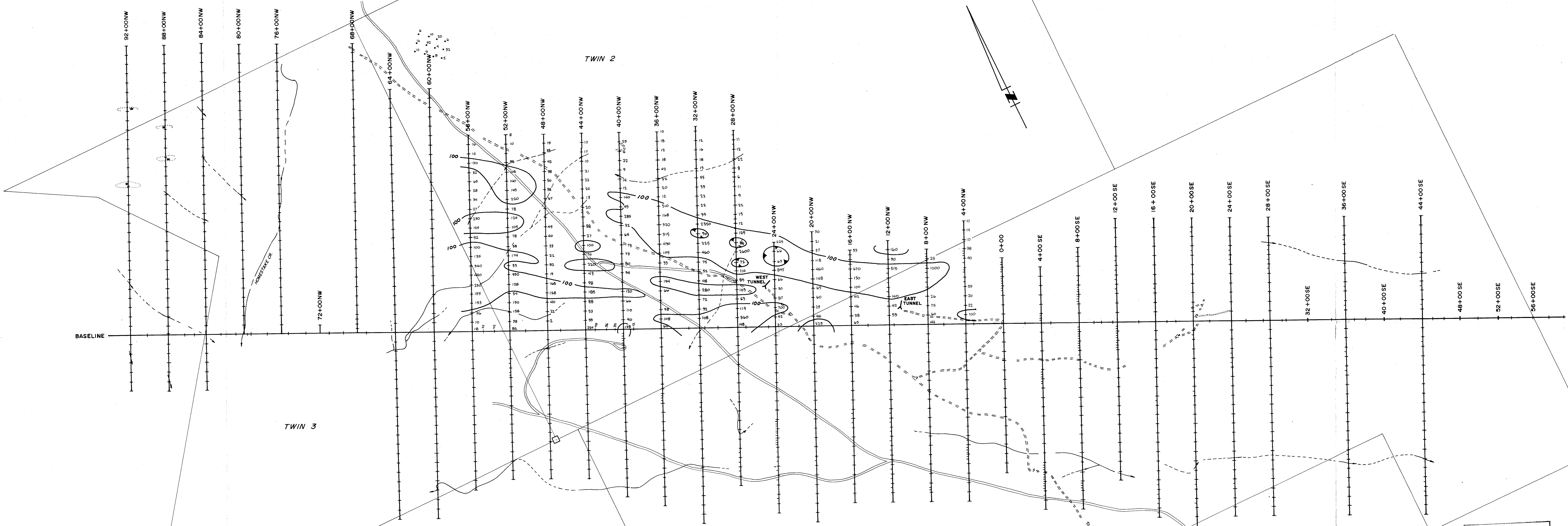
To accompany a report entitled  
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 dated September 28, 1981, by:

*S. Croft*  
 S. CROFT  
*T. Sadlier-Brown*  
 T. SADLIER-BROWN  
*B. Fairbank*  
 B. FAIRBANK

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**9882**

APEX ENERGY CORPORATION  
 TWIN (1-3) CLAIMS  
 GEOCHEMICAL PLAN  
 COPPER - 1981 SURVEY  
 KAMLOOPS M.D., B.C. NTS MAP 82M-4W  
 FIGURE 4 SCALE 1:4800  
 NEVIN SADLIER-BROWN GOODBRAND LTD.  
 NOVEMBER 1981





**LEGEND**

- LEGAL CORNER POST
- - - OLD ROAD
- - - CREEK
- - - ADIT
- ⊙ SWAMP
- NEW (ACTIVE) ROAD
- LEAD ISOLINE (100ppm CONTOUR)
- LEAD GEOCHEM. GRID & VALUES (ppm) FROM 1981 SURVEY

To accompany a report entitled  
 "GEOLOGICAL & GEOCHEMICAL SURVEY  
 OF THE TWIN (1-3) CLAIMS, KAMLOOPS M.D., B.C.",  
 dated September 28, 1981, by:

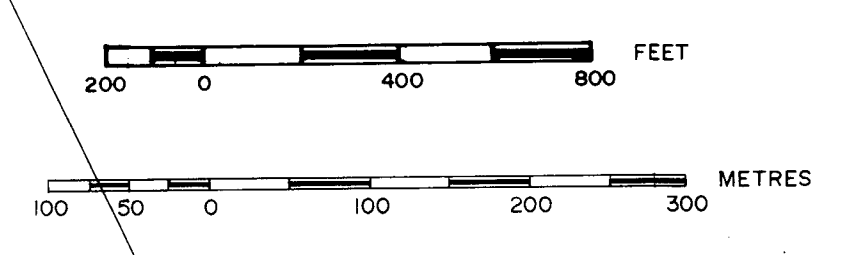
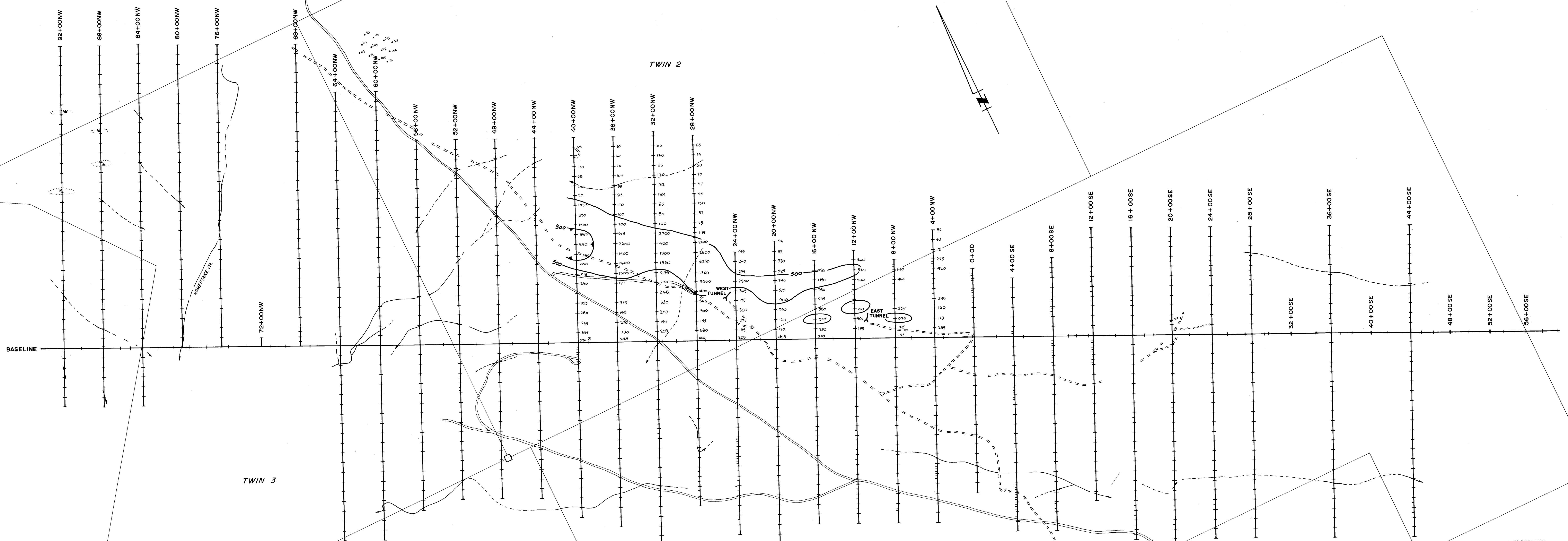
*S. Croft*  
 S. CROFT

*T. Sadlier-Brown*  
 T. SADLIER - BROWN

*B. Fairbank*  
 B. FAIRBANK

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**9882**

APEX ENERGY CORPORATION  
**TWIN (1-3) CLAIMS  
 GEOCHEMICAL PLAN  
 LEAD - 1981 Survey**  
 KAMLOOPS M.D., B.C. NTS MAP 82M-4W  
 FIGURE 5 SCALE 1:4800  
 NEVIN SADLIER - BROWN GOODBRAND LTD.  
 NOVEMBER 1981



- LEGEND**
- LEGAL CORNER POST
  - OLD ROAD
  - - - CREEK
  - ADIT
  - ⊛ SWAMP
  - == NEW (ACTIVE) ROAD
  - ZINC ISOLINE (500 ppm CONTOUR)
  - 500  
155 ZINC GEOCHEM GRID & VALUES (ppm) FROM 1981 SURVEY

To accompany a report entitled  
 "GEOLOGICAL & GEOCHEMICAL SURVEY  
 OF THE TWIN (1-3) CLAIMS, KAMLOOPS M.D., B.C.",  
 dated September 28, 1981, by:

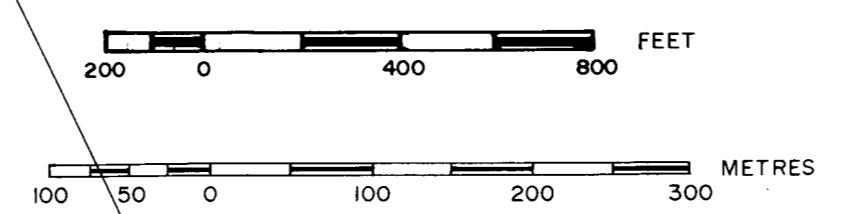
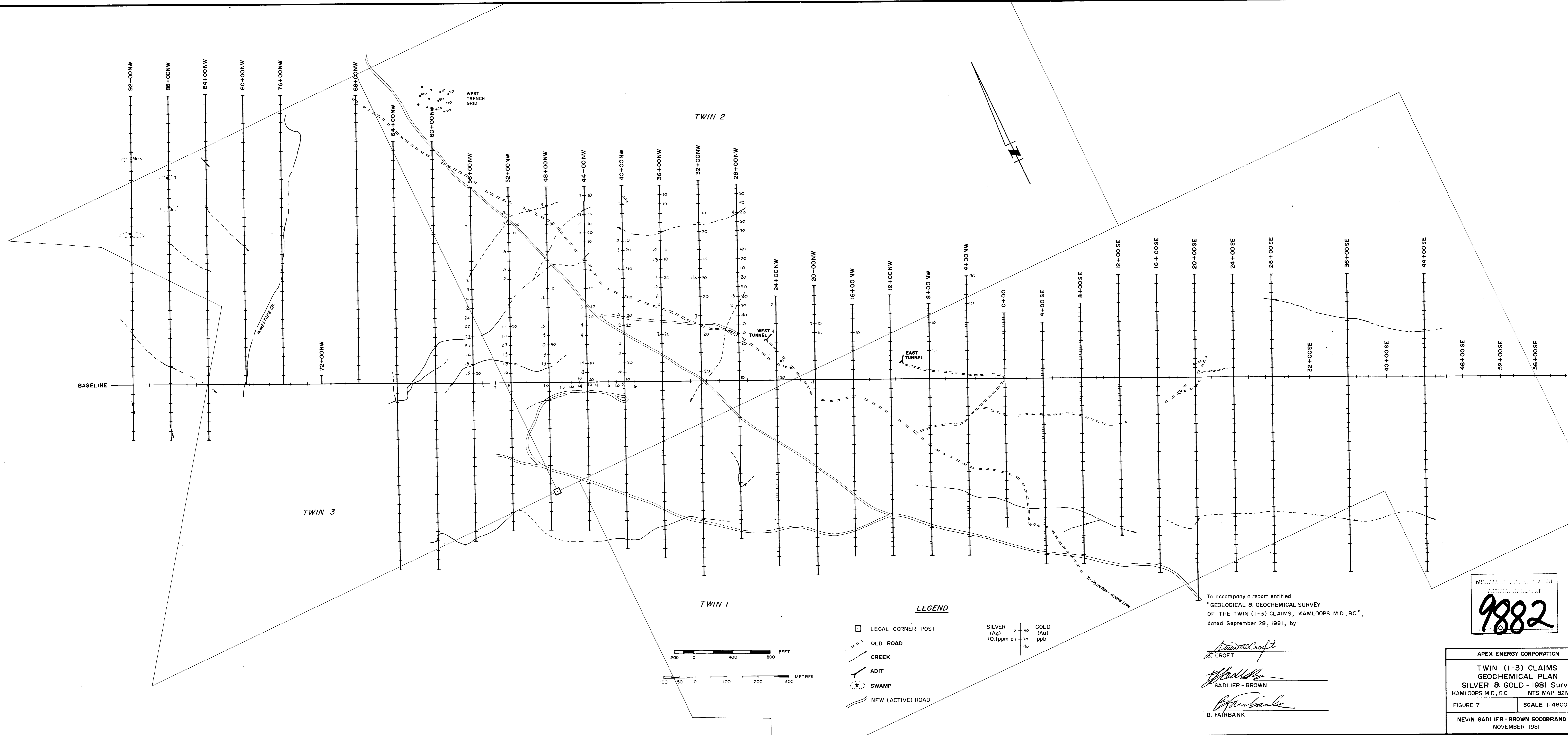
*S. Croft*  
 S. CROFT

*Nevin Sadlier-Brown*  
 SADLIER - BROWN

*B. Fairbank*  
 B. FAIRBANK

9882

APEX ENERGY CORPORATION	
TWIN (1-3) CLAIMS GEOCHEMICAL PLAN ZINC - 1981 Survey	
KAMLOOPS M.D., B.C.	NTS MAP 82M-4W
FIGURE 6	SCALE 1:4800
NEVIN SADLIER-BROWN GOODBRAND LTD. NOVEMBER 1981	



- LEGEND**
- LEGAL CORNER POST
  - OLD ROAD
  - - - CREEK
  - └ ADIT
  - ⊙ SWAMP
  - ══ NEW (ACTIVE) ROAD

SILVER (Ag)	30	GOLD (Au)	30
>0.1ppm	2.1	70	ppb
		40	

To accompany a report entitled "GEOLOGICAL & GEOCHEMICAL SURVEY OF THE TWIN (1-3) CLAIMS, KAMLOOPS M.D., B.C.", dated September 28, 1981, by:

*David Croft*  
D. CROFT

*Neil Sadlier-Brown*  
NEIL SADLIER - BROWN

*B. Fairbank*  
B. FAIRBANK

MINERAL RIGHTS DIVISION  
ASSESSMENT DISTRICT  
**9882**

APEX ENERGY CORPORATION

TWIN (1-3) CLAIMS  
GEOCHEMICAL PLAN  
SILVER & GOLD - 1981 Survey  
KAMLOOPS M.D., B.C. NTS MAP 82M-4W

FIGURE 7 SCALE 1:4800

NEVIN SADLIER - BROWN GOODBRAND LTD.  
NOVEMBER 1981