84-4669 - 12936

REPORT ON THE BULLDOG GROUP OF CLAIMS, BULLDOG MOUNTAIN AREA, TRAIL CREEK MINING DIVISION BRITISH COLUMBIA, CANADA

FUR:

SILVER DART MINERALS INC. ROBSON, BRITISH COLUMBIA

COVERING:

Record No.

Bulldog	1	1825	units	704(4)
Bulldog	2	12.20	units	764(10)
Bulldog	3	8	units	765(10)

LOCATED:

Latitude:	49°25'			
Longitude:	118°05'			
NTS 82E8				
Elevation:	1500' - 4000	Above	Sea	Level

PREPARED BY:

P.J. Santos, P. Eng. Anginel Resources Ltd. 626 - 9th Avenue Castlegar, British Columbia Canada VIN 1M4 August 10,1984 GEOLOGICAL BRANCH ASSESSMENT REPORT

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Plate No.

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1. SUMMARY AND CONCLUSION

The Bulldog property is a base metal and precious metal prospect located in the Lower Arrow Lake area of the Trail Creek Mining Division of British Columbia.

The Bulldog Property has been prospected before for base metals, namely copper, molybdenum, and tungsten. Recent geologic mapping, sampling, and prospecting by personnel of Silver Dart Minerals Inc. has shown that the property has a fair potential for precious (gold and silver) metal deposits.

Further exploration is being continued to pursue further the precious metal potential of the property. In addition roads and trails to the Lower Trenches, Upper Workings and cliff showings of Bulldog 1 and Bulldog 2 were cleared, the trenches and old workings on the Lower Trenches and Upper workings were cleaned up and rehabilitated. Some of the trenches and diggings were reblasted and channel sampled.

2. INTRODUCTION

Upon request of Max R. Wiesner President of Silver Dart Minerals Inc., geological study and evaluation work was conducted on the Bulldog Property of Silver Dart Minerals Inc.

LOCATION AND ACCESS

The Bulldog group of claims is located in the Trail Creek Mining Division on the northern side of Bulldog Mountain immediately south of Renata, British Columbia. The property is plotted on NtS 82E8 with coordinates 49°25' latitude and 118°05' longitude (see Plate 2).

The property is accessible by boat; it is 2 km due east across Lower Arrow Lake to Broadwater, B.C., it is 4 km southeast to Deer Park, B.C. and it is 18 km southeast to the Arrow Lake Yacht Club. The property is also accessible by a gravel road that joins Highway 3, 20 kilometers to the south, from this point it is 34 km to Castlegar going east and 34 km to Cristina Lake going west.

The property lies at an elevation between 1500 feet to 4000 feet above sea level. The topography of the property is rolling at elevations between 3000 feet to 4000 feet. It is steeply sloping on the western side of the property along Dog Creek and it is precipitous on the eastern side of the property along the bank of Lower Arrow Lake (Columbia River). The property is covered with merchantable timber. The snow-free period in the area is from middle of April to early December.

4. PROPERTY DESCRIPTION AND HISTORY

The Bulldog Group of claims consists of 3 metric claims totalling 38 units. Details of these claims are as follows:

	Area	Record No.	Due Date
Bulldog 1	18 units	704(4)	April 18, 1985
Bulldog 2	12 units	764(10)	Oct. 3, 1984
Bulldog 3	8 units	765(10)	Oct. 3, 1984

These claims are plotted on Plate 2.

Bulldog 1 which consists of 18 units was staked in 1983 and was optioned by Silver Dart Minerals in early 1984. Within Bulldog 1 is the old workings which used to be known as the Mountain Chief mine. The crown granted Mountain Chief claim (Lot No. 2393) still exist but does not cover the old workings. The property was originally known as the the Mountain Chief Group which consisted of the Mountain Chief, Morning Glory, Calgary, Sunset, and Morning Glory Fraction that were staked in 1896. The Mountain Chief was crown granted in 1897. A 30-foot shaft and various trenches were made. In 1918, Mountain Chief Mining company acquired the property and continued the development of the property which included the installation of a tramline 3250' long, the construction of an inclined shaft 120' deep, and a 50-foot drift. By this time a total of 1342 tons had been shipped to the Trail smelter. From 1922 to 1955 the property remained idle. In 1955, United Estella Mines optioned the property, the shaft was de-watered and four holes, totalling 400' were diamond drilled from the shaft and the level. The option was dropped after this work.

Adjacent to the Mountain Chief, the Peggy and Rickward were staked and several trenches were dug for exploration in 1918. In 1955 these trenches were deepened and extended. No work was recorded on this claim until 1967 when the property by then known as the North West Silver Groups was soil sampled. In 1970, some geologic mapping was done on the vicinity of the old workings. Nothing of note was done on the property ever since.

In 1983 and 1984 personnel of Silver Dart Minerals Inc. staked the Bulldog claims, rehabilitated, and cleaned up the lower trenches, and conducted geologic mapping, sampling, and prospecting of the Bulldog claims.

REGIONAL GEOLOGY

According to H.W. Little (1953-1956), the area around Renata, B.C. is underlain by Paleozoic greenstones and limestones

of the Mount Roberts Formation, Mesozoic granodiorite, porphyritic granite and diorite of the Nelson Intrusions, and Cenozoic syenite and monzonite of the Coryell Intrusions.

The Mount Roberts essentially consists of gray crystalline limestone, skarn, and silicified limestone (calc-silicate) that form roof pendants within the syenite and granite of the Coryell Intrusions.

The Nelson Intrusions consists mainly of granodiorite and porphyritic granite. The porphyritic granite contain large orthoclase phenocrysts in a matrix of medium to coarse grained quartz, feldspar, and biotite.

The Coryell Intrusions form massive, pink syenite bodies that intrude all the other rock formations in the area. The Coryell is usually cliff forming.

6. LOCAL GEDLOGY

The Bulldog claims are principally overlain by gray, coarse grained, thin-bedded limestone (marble), skarn, and silicified fine grained limestone of the Mount Roberts Formation that forms a huge roof pendant completely surrounded by pink, medium grained syenite of the Coryell Intrusions.

At the north end of Bulldog 1, the Mount Roberts exposed

in the Lower Trenches (see Plate 4) consists of green, thickbedded skarn intruded by an equigranular granodiorite of the Nelson Intrusions.

West of the Lower Workings on the edge of the Bulldog 1 claim, the Mount Roberts consists of a highly silicified, brittle, highly shattered, fine grained, gray limestone, and silicified gray argillites. The beds strike 235° Az. and dip 20°SE.

Along the Lower Arrow Lake from the Legal Corner Post of Bulldog No. 2 to Bulldog No. 3, (see Plate 3), the entire shoreline is overlain by pink, equigranular syenite of the Coryell.

About 500 meters southeast of the LCP and 100 meters above the high water mark of the lake, a bed of gray, coarse grained limestone (marble) is exposed on a cliff. In this exposure, the limestone is sandwiched between two masses of pink syenite. The limestone strikes 340 Az. and dips 15 SW.

The shoreline on Bulldog 2 and Bulldog 3 is underlain by pink syenite of the Coryell up to an elevation of 1000 feet above the shoreline (1600 feet ASL). At this elevation a thick sequence of silicified, pyritized, fine grained limestone overlies the syenite. This limestone is a continuation of a thick sequence of cliff-forming limestone that extends the entire length of

the cliff that border the shoreline. The limestone is thinbedded, well silicified and brittle and contains horizons that are rusty due to the presence of pyrite that forms contorted bands in the limestone. The "base" of this limestone is intruded by pink syenite of the Coryell Intrusions and the contact is very irregular. The syenite show no alteration at the contact but the limestone is intensely silicified, very brittle and pyritized. The silicification is so intense that the limestone is completely silicified into a calc-silicate.

The well-known Renata natural bridge which according to some literature was supposed to have gone underwater when the Castlegar Dam (Hugh Keenleyside) was built is actually a thousand feet above the shoreline on Bulldog 3. The natural bridge consists of a natural arc of silicified, buff colored, fine grained, medium-bedded limestone with the bottom of the two legs of the arc consisting of pink syenite, as shown on Plate 6. The northern leg has a lamprophyre dike cutting through the granite. By a process of exfoliation, a natural **cave** is being formed at the southern leg of the arc. The lamprophyre weathers faster than the calc-silicate and the syenite, and a combination of this weathering of the lamprophyre and the exfoliation weathering of the syenite have probably contributed to the formation of the natural bridge. A small stream flows underneath the arc and disappears under the talus below the arc and

reappears down stream into a series of waterfalls. The syenite at the base of the arc is not altered while the limestone is completely silicified and pyritized.

The limestone formation that occurs at the natural bridge continues up to an elevation of 3500' ASL on the northeastern slope of Bulldog Mountain. Outcrop of this silicified limestone is exposed along the Renata road two (2) kilometers south of the Bulldog workings.

At Bulldog 1 at an elevation of 2500 feet the above discussed silicified limestone forms outcrops and is exposed on the Bulldog 1 workings which were originally referred to as the Mountain Chief mine. The limestone here is very fine grained, completely silicified, and usually thick-bedded.

Granite and granodiorite intrudes the limestone in places. Outcroppings of this altered limestone were traced for two (2) kilometers southeast of the mine workings.

Two types of hydrothermal alteration are encountered in the Bulldog Property. At the Lower Trenches, a coarse grained skarn is developed with the occurrence of coarse epidote and pyroxene in the altered limestone beds. Skarn alteration is also developed to a lesser extent at the Upper Workings. A considerable amount of silicification is also encountered in the property; affecting mainly the limestone, resulting in the formation of jasperoid. Entire sections of limestone have been transformed to jasperoid; buff colored, cryptocrystalline and massive. This type of alteration is well illustrated on the cliffs that extend the entire northeast side of the property bordering the Lower Arrow lakes (see Plate 5).

7. MINERALIZATION

Three types of mineralization have been identified in the Bulldog property.

The first type is sulfide mineralization associated with exoskarn such as that found in the Lower Trenches of Bulldog 1. Here the sulfide consist of disseminations and veins of galena, sphalerite, chalcopyrite, and scheelite in green coarse grained skarn. The mineralization in the trenches were channel sampled and the results are plotted on Plate 4 and the assay certificate is found in the Appendix of this report. The lead mineralization ranged from 1.49% to 13.8%, zinc ranged from .63% to 5.8%, copper ranged from .09% to 1.10%, and silver from .32 oz/ton to 3.88 oz/ton. Gold mineralization appears to be absent while scheelite occur as fine disseminations in the skarn. Previous workers has shown the tungsten to grade around .25% WO₃. Using an ultraviolet lamp (short wave), the scheelite can be seen to occur as fine disseminations in the green skarn. Molybdenite has been reported in the Bulldog claims but so far none has been found by this author.

The second type of mineralization is associated with partly skarn - partly silicified alteration such as that found in the Upper Workings of Bulldog 1. Chalcopyrite is the principal sulfide involved in this type of mineralization but gold and silver mineralization are also present. The sulfide exposed in the Upper Workings were sampled and the results are plotted on Plate 5 and the assay certificate is found in the Appendix of this report. The copper assays ranged from 5.15% to 12.2%, the silver assays ranged from 1.98 oz/ton to 10.73 oz/ton and the gold assays ranged from trace to .016 oz/ton. The chalcopyrite occurs as disseminations to massive, irregular masses within the silicified and partly skarned limestone beds.

The third type of mineralization is rather subtle which is why it has not been noticed before. It consists of pyritization associated with the silicified limestone (Jasperoid). The pyrite occur as disseminations, irregular veins, and as veins concentrated along certain bedding plains of the altered limestone. This type of mineralization is associated with very low grade gold and silver mineralization. Some samples taken from this

type of mineralization are plotted on Plate 4 and the assay certificates are found in the Appendix of this report. Due to the fact that this gold - silver mineralization is associated with a more intense type of alteration in a rock formation that is more widespread than originally thought, this type of mineralization is considered quite significant.

8. STATEMENT OF COSTS

Dates of Work:

Max Wiesner (Labor, blasting, prospecting)

June 4, 5, 1983 August 15, 23, 1983 September 7, 8, 9, 10, 15, 16, 25, 26, 1983 October 17, 1983 February 1, 1984 July 28, 29, 30, 1984

Frank Wiesner (Labor, blasting, prospecting)

June 4, 5, 1983 September 8, 9, 10, 15, 25, 26, 1984 October 17, 1984 July 28, 29, 30, 1984

P. J. Santos (Geologist)

June	5, 1983
August	23, 1983
July	28, 29, 30, 1984
August	12, 13, 14, 15, 1984

Trenching (By Contract)	
Clean-up Blasting 1,000.00 \$2,300.00	\$2,300.00
Roads & Trails	
Clean-up (50 man hour @ \$12)	600.00
Materials (Sample bags, bits, explosives, shovel,	
sledge hammer, moil.)	240.00
Assays	409.75
Freight	34.00
Geologist Time	
9 man days @ \$210	1,890.00
Travel Expenses	
Truck Rental	
(11 days @ \$45) \$ 495.00	
Boat Rental	
(12 days @ \$75) 900.00	
Gas, oil, diesel fuel 525.00	
Groceries <u>350.00</u> - \$2,270.00	2,270.00 \$7,743.75

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P. J. Santos, P. Eng. Aug. 14, 1984

9. BIBLIOGRAPHY

Croteau, F.L. 1970

1971

Mill, G.L. 1967

Minister of Mines, B.C.

Santos, P.J. 1983 - Preliminary geological report on the "Ren" mining claims, Renata (Lower Arrow Lake), British Columbia; unpublished report, 12 pp.

 "Ren" mining claims, Trail Creek mining district, B.C.; Memorandum to F. Wiebe, 4 pp.

- The North West Silver group, Trail Creek mining division, British Columbia; unpublished report, 10 pp.
- Annual reports, Minister of Mines; 1927, pp. 328-329, 1955, pp. 65, 66.

- Corporate Information, Silver Dart Mineral Inc.; company internal report 8 pp.

10. STATEMENT OF QUALIFICATIONS

I, Perfecto J. Santos, of 626 - 9th Avenue, of the city of Castlegar, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geological Engineer with the firm of Anginel Resources Ltd. whose offices are located at 626 - 9th Ave., Castlegar, British Columbia, Canada,

That I am a registered Professional Engineer in the Province of British Columbia, Canada,

That I am a graduate of the College of Engineering, University of the Philippines with a Bachelor of Science degree in Mining Engineering (Geology Option),

That I have been practicing my profession continuously for the past twenty three years,

That I have prepared this report based on personal work on the property and I personally supervized the work done as described in this report on the Bulldog Group of Claims owned by Silver Dart Minerals Inc., of Castlegar, B.C.,

That in addition, pertinent available literature and maps were studied prior to the preparation of this report,

That I am a Director and Shareholder of Silver Dart Minerals Inc.

DATED at Castlegar, British Columbia, this 14th day of August, A.D. 1984.

P. J. Santos, P. Eng.

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(a)	Maps and Illustrations	16 - 19
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912 - 1 LAVAL CRESCENT — KAMLOOPS, B.C. V2C 5P5 PHONE: (604) 372-2784 — TELEX: 048-8320 CERTIFICATE OF ASSAY

TO Mr. P. J. Santos

626-9th Avenue

Castlegar, B.C. VIN 1M4

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

Kral No.	Marked	Au	Ag	Cu	РЬ	Zn	W	
		ounces/ton	ounces/ton	percent	percent	percent	percent	
1	10136	L.001	2.80	8.10	-	-	.01	
. 2	10137	.002	3.62	12.2	-	-	.04	
3	10138	.006	1.98	6.40	-	-	.04	
4	10139	.001	3.79	6.31	-	-	.01	
5	10140	.004	2.86	10.8	-	-	.01	
6	10141	.006	3.00	5.15	-	-	.03	8
7	10142	.016	10.73	6.46		-	.01	
8	10143	L.001	3.41	1.43	7.61	1.25	.09	
	L means "Less than"							
					-			

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

Registered Assayer, Province of British Columbia



samples

Date _____ September 19, 1983

Certificate No. _

K-5883



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

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

Registered Assayer, Province of British Columbia

Member Canadian Testing Association	c	912 - 1 LAVA PHONE: (8 CERT	L CRESCENT — K/ V2C 5P5 504) 372-2784 — TEL FIFICATE OF /	AMLOOPS, B.C. .EX: 048-8320 ASSAY			METALLURGISTS	
TO	Ar. P. J. Santos					Certificate	No. <u>K~6552</u>	
 31	Castlegar, B.C. VIN 1N JETEBY CETTIEN that the follo	14 owing are the result	s of assays made	e by us upon the	herein described	Date	August 9, 1984	
Kral No.	- Marked	Au	Ag	W				
		ounces/ton	ounces/ton	percent				
1	10306	.001	L.01	L.01				
3	10308	L.001	L.01	L.01				
	L means "Less than"							

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

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Registered Assayer, Province of British Columbia





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SILVER DART MINERALS INC.	-
MAP OF UPPER WORKINGS BULLDOG NO.1	
awn by: P.I. Santos Date: PLATE NO.5 Aug. 14, 1982	