

SILVER STANDARD MINES LIMITED  
(NON-PERSONAL LIABILITY)  
808-602 WEST HASTINGS STREET  
VANCOUVER 2, B.C.

2311

GEOCHEMICAL REPORT

on the

GOOSLY SOUTHEAST, SOUTH CENTRAL, SOUTHWEST,  
WEST SOUTHWEST, WEST, AND NORTHWEST GROUPS

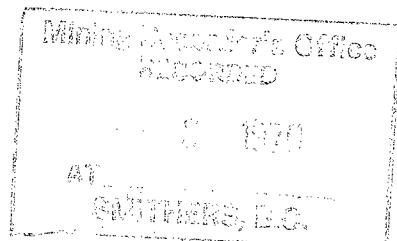
Lat. 54° 10' N., Long. 126° 10' W.

ONIONECA M.D.

CLAIMS OWNED

by

DORITA SILVER MINES LTD. (N.P.L.)



January 1970

Norman W. Burneister, P. Eng.  
Geological Engineer

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### INTRODUCTION

The following report is a documentation and discussion of geochemical work done on the Goosly Southeast, South Central, Southwest, West Southwest, West, and Northwest claim groups during the summer of 1969. Included in the report is a general discussion of the regional and local geology of the area. The description and discussion of the work performed on the six claim groups is given in this single report as the claim groups are contiguous and the work was performed under a single, continuous program. It is believed that such a grouping of data leads to a better interpretation of the results and presents a more comprehensive basis for evaluating the effectiveness of the work performed.

Four plates are included in the pocket as a part of this report.

### LOCATION AND ACCESS

The Goosly East and Goosly Northeast claim groups are situated in the Omineca Mining Division, approximately 30 miles southeast of Houston, B.C. Topographic coverage of the area at a scale of 1 : 50,000 is given on the Colleymount Sheets, 93 L/1E and 93 L/1W. Approximate coordinates of the claims are lat. 54° 10' north, and Long. 126° 10' west. The claims are situated north and east of Goosly Lake and are drained by the Buck Creek drainage.

Elevations of the claims range from 3000 feet, the elevation of Goosly Lake, to over 5100 feet. The relief on the SE, S.C., and SW groups is quite gentle, while steep slopes are prevalent on the West and Northwest groups. Excellent timber stands grow in the general Goosly district and on the Goosly claim groups, except in the lower regions where swampy conditions are common.

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The Buck River Road from Houston passes over the Goosly Southwest and West Southwest claim groups and access to the area is by car or pickup truck. Logging has gone on in the area for a number of years and numerous skid trails provide access to various points in the area by four-wheel drive vehicles. The Buck River Road is usually kept open year round by the Buck River Company to service the winter logging operations in the area.

PROPERTY

The Goosly Southwest group is comprised of 40 full-sized mineral claims as listed in Schedule A and shown on Plate I. Included in the group are the WD 15, 17, 19, 21-47, and 52-60 mineral claims. The Goosly South Central group - Schedule B and Plate I, includes 39 full-sized claims, the LUV 1 through 20; NWB 60 through 69; 71, 73, 75, 180 through 183; WD 48, and HOT 19; and one fractional claim - the Ron Fraction. The Southeast group - Schedule B, Plate I, includes 38 full-sized claims, the NWB 70, 72, 74, 80-93; HOT 1-18, 20; Ray 102; and two fractions - the Ray 3 and 4. The Northwest group - Schedule D, Plate II, includes 40 full-sized claims, the ACR 1-15; NWB 52-59, 125-130, 150-151, 153-161. The West and West Southwest groups - Schedule E and F respectively, Plate II, are both full groups of 40 full-sized claims, including the NWB 1-22, 27-28, 31-40, 123-124, K 1-8, and the WD 1-14, 16, 18, 20, 62-64, NWB 23-30, 35-38, 41-51 claims respectively. The claims are owned by Dorita Silver Mines Ltd. (F.M.C. #86164), with its registered office at 808-602 West Hastings Street, Vancouver 2, British Columbia.

GEOLOGY

The geology of the general Sam Goosly Lake area is shown on Map 671 A of the Geological Survey of Canada. The more recent compilation map prepared by the British Columbia Department of Mines and Petroleum Resources (Map 69-1) shows a few features of the Central area of interest in more detail. However, much of the overall geology has still only been mapped in a very reconnaissance manner and is subject to major revisions. The lack of published data on the area is a result of the thick blanket of glacial till which covers much of the district, and until recently, there has been little economic interest in this area.

A line between Houston, B.C., Sam Goosly Lake, and the west end of Francois Lake, approximately defines the highly irregular contact between the Jurassic Hazelton Series to the West and the Tertiary Ootsa and Endako volcanic groups to the East. The Hazelton Series is a thick, variable sequence of eugeosynclinal volcanic and sedimentary rocks. The volcanic flows range from rhyolite to andesite. Compositionally equivalent pyroclastics, including the complete textural range, form a substantial percentage of the full sequence.

The sedimentary units with the Hazelton Series are represented by argillites, siltstones, greywackes, and conglomerates. Individual units are believed to be somewhat restricted in relation to the overall distribution of the Hazelton and as a consequence the series has been subdivided on the basis of the frequency of certain volcanic types and the ratio of volcanic to sedimentary members.

Throughout the area the Hazelton Series has undergone considerable deformation. Faulting and shearing has taken place primarily along a northwest-southeast strike and is presumably related to the Coast Range igneous activity to the West. Laramide tectonic forces have resulted in

a complicated system of folding and warping; the result being that a well-defined regional attitude on the Series is absent.

The Tertiary volcanic rocks in the area around Sam Goosly Lake are represented by the Ootsa Group and the younger Endako Group. The Ootsa Group is comprised mainly of trachyite, andesite and latite volcanic flows of intermediate thicknesses. The development of trachytic textures and large plagioclase phenocrysts in these rocks is a distinctive feature of the Ootsa between Houston and Francois Lake. The Endako Group consists primarily of basaltic flows in which columnar jointing is commonly developed.

The Tertiary volcanics are largely undisturbed, and unaltered. Dips are gently to the northeast-east and are the result of regional late Tertiary uplift to the west.

The portion of the area of most economic interest, immediately northeast of Sam Goosly Lake, is believed to be a window of Hazelton rocks within the widespread Tertiary volcanic groups. In this district the Hazelton dips steeply to the west and is in contact with a gabbroic body believed to be the feeder for a portion of the Tertiary extrusive activity. Here the Hazelton is comprised of rhyolite flows and tuffs, conglomerates, cherts, siltstones, and breccias. The significant mineralization as known to date is restricted to these rocks but may be genetically related to the basic Tertiary volcanic activity. Several small granitic plugs intrude the Hazelton in this area and are exposed in the window. Although copper and molybdenum mineralization occurs within at least one of these, the economic significance of these bodies is not known at this time.

GEOCHEMISTRYGENERAL:

In the early summer of 1969 reconnaissance prospecting was done over portions of all the Goosly claim groups. It was found that a large percentage of the areas was covered by heavy overburden. The limited outcrops were restricted to cuts along tributaries of Buck Creek and the ridges immediately north and south of Goosly Lake, thus leaving large areas of essentially no geological information. The overburden was found to be glacially transported till ranging in thickness from a few feet to an assumed thirty to forty feet.

While this type of cover is not particularly conducive to geochemical exploration techniques, an orientation survey conducted in the area indicated that biological activity was of such a nature that bedrock sources of metal could be vertically mobilized and detected in the overlying transported soils. It was therefore decided to carry out a soil sampling survey on the groups, concentrating the sampling on the areas on which the least geological information was available by other means.

SOIL SAMPLING PROCEDURES:

A grid was cut over the claims and utilized for control on the soil sample site and for control in plotting the claims. A series of seven north-south base lines were cut off a surveyed east-west tie line (T.L.Z. on the accompanying maps). The base lines were cut out to approximately three feet in width and aligned with pickets. Cross lines along which the soil samples were taken were run east-west off the base lines with a Brunton compass and nylon chain, and marked with blazes, cut out brush, and flagging tape. Soil samples were subsequently taken at intervals along the lines and marked with flagging tape with the appropriate grid coordinates for future reference and re-checking.

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The soils were collected, utilizing a short handled shovel or 1 1/2 inch auger as root conditions dictated, from the top of the "B" soil horizon. The sampling depth ranged from about eight inches on the gentle slopes to over two feet in the swampy areas where a thick humic zone has developed. Each sample was collected and stored in a 5" x 7" high-wet-strength Kraft paper bag and air dried at the field camp. All samples were shipped in the original collection containers to a commercial laboratory in Vancouver for analysis. In addition to the soils, silts from all streams, water courses and springs were collected at suitable intervals and handled in a similar manner.

ANALYTICAL PROCEDURES:

When received by the laboratory in Vancouver drying of the samples was completed in a low-temperature oven. A portion of the minus 80 mesh fraction of the soil was separated using a stainless steel sieve and retained for analysis.

A standard scoop of the minus 80 mesh soil from each sample was digested using perchloric-nitric attack. Analyses for copper and silver were made using the atomic absorption method of trace analysis. Standard samples were run with each digestion batch (40 samples).

CONCLUSIONS AND RECOMMENDATIONS

Results of the survey indicate three broad areas anomalous in silver and two areas which are anomalous in copper. The copper anomalies are approximately coincident with the two highest silver anomalies.

The silver values have been contoured on the accompanying maps at values of 0.5, 1.0, and 1.5 parts per million silver. The

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highest silver value detected was 3.5 parts per million and background was determined to be less than the lower limit of detection (0.5 ppm). The copper values have been contoured on the accompanying maps at values of 40, 80, and 110 parts per million copper. The highest copper value was 318 parts per million against a background determined to be 26 parts per million.

A small area located in the western portion of the survey area was also found to be erratically anomalous in both total copper and silver. This area is located over an alluvial fan and may be related to copper-silver bearing float from known mineral occurrences near the head of the fan.

The broad copper and silver anomalies are situated on the gentle slopes south of Battery Hill on the Goosly South East and Goosly South Central claim groups. The anomalous values cannot be explained by soil conditions, float, outwash, or exposed mineralization. In the fall of 1969 a D-7 bulldozer was employed to investigate the western broad copper-silver anomaly on the Goosly South Central claim group. Trenches to a depth of over 30 feet on the highest portion of the anomaly failed to reach bedrock.

As the three silver and two coincident copper anomalies have not been explained as yet, further work is recommended to determine the source of the anomalous metals in these areas. Bulldozing has proven to be largely ineffective in testing the bedrock. It is therefore recommended that additional indirect exploration methods be employed to delimit diamond drill targets. Induced polarization surveying is believed to be the most applicable tool in this instance. It is recommended that an induced polarization survey be conducted over the northern portions of the Goosly South East and Goosly South Central

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claim groups. Any anomalies which are detected coincident with the geochemical anomalies should be tested by diamond drilling or percussion drilling.

Respectfully submitted,



Norman W. Burmeister, P. Eng.  
Chief Geologist

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EVIDENCE OF EXPENDITURES INCURREDSALARIES:

Engineering and Supervision	-	30 dys. @ 50.00/dy.	\$ 1,500.00
Line Cutting	-	240 dys. @ 25.00/dy.	6,000.00
Soil Sampling	-	200 dys. @ 25.00/dy.	5,000.00

ANALYTICAL WORK:

Copper-Silver determination	-	3850 samples @ 1.50/ea.	5,775.00
Sample preparation	-	3850 samples @ 0.20/ea.	770.00

TRANSPORTATION:

Truck Rental (2)	-	3 mos. @ 280.00/mo.	1,680.00
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<u>ACCOMMODATION AND BOARD</u>	-	470 man dys. @ 7.00/dy.	<u>3,290.00</u>
			\$ 24,015.00

\$4,000.00 done on Goosly Southeast Group  
\$4,000.00 done on Goosly South Central Group  
\$4,000.00 done on Goosly Southwest Group  
\$4,000.00 done on Goosly West Southwest Group  
\$4,000.00 done on Goosly West Group  
\$4,000.00 done on Goosly Northwest Group

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QUALIFICATIONS OF AUTHOR

I, Norman W. Burmeister, with business and residential addresses in Vancouver, B.C., do hereby certify that:

1. I am a geological engineer in the permanent employ of Silver Standard Mines Ltd. (N.P.L.) of 808-602 West Hastings Street, Vancouver 2, B.C.
2. I am a graduate of the Colorado School of Mines (Geological Engineering 1961).
3. I am a registered Professional Engineer of the Province of British Columbia.
4. I have practiced in the field of Geological Engineering for the past nine years.
5. I have personally supervised the geochemical survey completed on the Goosly Southeast, South Central, Southwest, West Southwest, West, and Northwest claim groups described in this report.

Respectfully submitted,



Norman W. Burmeister, P. Eng.  
Geological Engineer

## SILVER STANDARD MINES

SCHEDULE "A"GOOSLY SOUTHWEST GROUP

<u>Claim Name</u>	<u>Record Date</u>	<u>Tag No.</u>	<u>Record No.</u>
WD 15	Feb. 10, 1969	982843	66402
17	" "	982845	66404
19	" "	982847	66406
21	" "	982849	66408
22	" "	982850	66409
23	" "	982888	66410
24	" "	982889	66411
25	" "	940741	66412
26	" "	982890	66413
27	" "	982891	66414
28	" "	982892	66415
29	" "	982893	66416
30	" "	982894	66417
31	" "	982895	66418
32	" "	982896	66419
33	" "	982897	66420
34	" "	982898	66421
35	" "	982899	66422
36	" "	982900	66423
37	" "	940742	66424
38	" "	940743	66425
39	" "	940744	66426
40	" "	982501	66427
41	" "	982502	66428
42	" "	982503	66429
43	" "	982504	66430
44	" "	982505	66431
45	" "	982506	66432
46	" "	982507	66433
47	" "	982508	66434
52	" "	982511	66439
53	" "	982512	66440
54	" "	982513	66441
55	" "	982514	66442
56	" "	982515	66443
57	" "	982516	66444
58	" "	982517	66445
59	" "	982518	66446
60	" "	982519	66447
61	" "	982520	66448

## SILVER STANDARD MINES

SCHEDULE "B"GOOSLY SOUTH CENTRAL GROUP

<u>Claim Name</u>		<u>Record Date</u>	<u>Tag No.</u>	<u>Record No.</u>
LUV	1	Feb. 7, 1969	982608	66231
	2	" " "	982609	66232
	3	" " "	982610	66233
	4	" " "	982611	66234
	5	" " "	982612	66235
	6	" " "	982613	66236
	7	" " "	982614	66237
	8	" " "	982615	66238
	9	" " "	982616	66239
	10	" " "	982617	66240
	11	" " "	982618	66241
	12	" " "	982619	66242
	13	" " "	982620	66243
	14	" " "	982621	66244
	15	" " "	982622	66245
	16	" " "	982623	66246
	17	" " "	982624	66247
	18	" " "	982625	66248
	19	" " "	982626	66249
	20	" " "	982627	66250
RON	Fr.	Aug. 22, 1969	21480M	77928
NWB	60	Jan. 23, 1969	940701	66074
	61	" " "	940702	66075
	62	" " "	940703	66076
	63	" " "	940704	66077
	64	" " "	940705	66078
	65	" " "	940706	66079
	66	" " "	940707	66080
	67	" " "	940708	66081
	68	" " "	940709	66082
	69	" " "	940710	66083
	71	" " "	940712	66085
	73	" " "	940714	66087
	75	" " "	940716	66089
	180	" " "	982880	66145
	181	" " "	982881	66146
	182	" " "	982882	66147
	183	" " "	982883	66148
WD	48	Feb. 10, 1969	982509	66435
HOT	19	Feb. 7, 1969	982646	66229

## SILVER STANDARD MINES

SCHEDULE "C"GOOSLY SOUTHEAST

<u>Claim Name</u>	<u>Record Date</u>	<u>Tag No.</u>	<u>Record No.</u>
NWB 70	Jan. 23, 1969	940711	66084
72	" " "	940713	66086
74	" " "	940715	66088
80	" " "	940721	66090
81	" " "	940722	66091
82	" " "	940723	66092
83	" " "	940724	66093
84	" " "	940725	66094
85	" " "	940726	66095
86	" " "	940727	66096
87	" " "	940728	66097
88	" " "	940729	66098
89	" " "	940730	66099
90	" " "	940731	66100
91	" " "	940732	66101
92	" " "	940733	66102
93	" " "	940734	66103
HOT 1	Feb. 7, 1969	982628	66211
2	" " "	982629	66212
3	" " "	982630	66213
4	" " "	982631	66214
5	" " "	982632	66215
6	" " "	982633	66216
7	" " "	982634	66217
8	" " "	982635	66218
9	" " "	982636	66219
10	" " "	982637	66220
11	" " "	982638	66221
12	" " "	982639	66222
13	" " "	982640	66223
14	" " "	982641	66224
15	" " "	982642	66225
16	" " "	982643	66226
17	" " "	982644	66227
18	" " "	982645	66228
20	" " "	982647	66230
RAY 1	Jul. 22, 1969	875571	75996
2	" " "	875572	75997
RAY 3 Fr.	" " "	875573	75998
4 Fr.	" " "	875574	75999

## SILVER STANDARD MINES

SCHEDULE "D"GOOSLY NORTHWEST

<u>Claim Name</u>	<u>Record Date</u>	<u>Tag No.</u>	<u>Record No.</u>
ACR 1	Jan. 23, 1969	940668	65950
2	" " "	940669	65951
3	" " "	940670	65952
4	" " "	940671	65953
5	" " "	940672	65954
6	" " "	940673	65955
7	" " "	940674	65956
8	" " "	940675	65957
9	" " "	940676	65958
10	" " "	940677	65959
11	" " "	940678	65960
12	" " "	940679	65961
13	" " "	940680	65962
14	" " "	940681	65963
15	" " "	940682	65964
NWB 52	" " "	940652	66066
53	" " "	940653	66067
54	" " "	940654	66068
55	" " "	940655	66069
56	" " "	940656	66070
57	" " "	940657	66071
58	" " "	940658	66072
59	" " "	940659	66073
125	" " "	940662	66110
126	" " "	940663	66111
127	" " "	940664	66112
128	" " "	940665	66113
129	" " "	940666	66114
130	" " "	940667	66115
150	" " "	982850	66116
151	" " "	982851	66117
153	" " "	982853	66118
154	" " "	982854	66119
155	" " "	982855	66120
156	" " "	982856	66121
157	" " "	982857	66122
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
## SILVER STANDARD MINES


SCHEDULE "E"GOOSLY WEST GROUP

<u>Claim Name</u>	<u>Record Date</u>	<u>Tag No.</u>	<u>Record No.</u>
NWB 1	Jan. 23, 1969	940601	66015
2	" " "	940602	66016
3	" " "	940603	66017
4	" " "	940604	66018
5	" " "	940605	66019
6	" " "	940606	66020
7	" " "	940607	66021
8	" " "	940608	66022
9	" " "	940609	66023
10	" " "	940610	66024
11	" " "	940611	66025
12	" " "	940612	66026
13	" " "	940613	66027
14	" " "	940614	66028
15	" " "	940615	66029
16	" " "	940616	66030
17	" " "	940617	66031
18	" " "	940618	66032
19	" " "	940619	66033
20	" " "	940620	66034
21	" " "	940621	66035
22	" " "	940622	66036
27	" " "	940627	66041
28	" " "	940628	66042
31	" " "	940631	66045
32	" " "	940632	66046
33	" " "	940633	66047
34	" " "	940634	66048
39	" " "	940639	66053
40	" " "	940640	66054
123	" " "	940660	66108
124	" " "	940661	66109
X 1	Feb. 10, 1969	938573	66381
2	" " "	938574	66382
3	" " "	938575	66383
4	" " "	938576	66384
5	" " "	938577	66385
6	" " "	938578	66386
7	" " "	938579	66387
8	" " "	938580	66388

SCHEDULE "F"GOOSLY WEST SOUTHWEST GROUP

<u>Claim Name</u>	<u>Record Date</u>	<u>Tag No.</u>	<u>Record No.</u>
WD 1	Feb. 10, 1969	940691	66389
2	" " "	940692	66390
3	" " "	940693	66391
4	" " "	940694	66392
5	" " "	940756	66393
6	" " "	940757	66394
7	" " "	940758	66395
8	" " "	940759	66396
9	" " "	940760	66397
10	" " "	940761	66398
12	" " "	940695	66399
13	" " "	982841	66400
14	" " "	982842	66401
16	" " "	982844	66403
18	" " "	982846	66405
20	" " "	982848	66407
62	" " "	940747	66449
63	" " "	940748	66450
64	" " "	940749	66451
NWB 23	Jan. 23, 1969	940623	66037
24	" " "	940624	66038
25	" " "	940625	66039
26	" " "	940626	66040
29	" " "	940629	66043
30	" " "	940630	66044
35	" " "	940635	66049
36	" " "	940636	66050
37	" " "	940637	66051
38	" " "	940638	66052
41	" " "	940641	66055
42	" " "	940642	66056
43	" " "	940643	66057
44	" " "	940644	66058
45	" " "	940645	66059
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47	" " "	940647	66061
48	" " "	940648	66062
49	" " "	940649	66063
50	" " "	940650	66064
51	" " "	940651	66065





104+00W 100+00W 96+00W 92+00W 88+00W 84+00W 80+00W 76-00W 72+00W 68+00W 64+00W 60+00W 56+00W 52+00W 48+00W 44+00W 40+00W 36+00W 32+00W 28+00W 24+00W 20+00W 16+00W 12+00W 8+00W 4+00W 0+00 4+00E 8+00E 12+00E 16+00E



104+00W 100+00W 96+00W 92+00W 88+00W 84+00W 80+00W 76+00W 72+00W 68+00W 64+00W 60+00W 56+00W 52+00W 48+00W 44+00W 40+00W 36+00W 32+00W 28+00W 24+00W 20+00W 16+00W 12+00W 8+00W 4+00W 0+00 4+00E 8+00E 12+00E 16+00E








PLATE 4

GOOSLY SOUTH EAST, SOUTH CENTRAL, SOUTH WEST CLAIM GROUPS

### GEOCHEMICAL SURVEY

(SILVER)

DECEMBER 1969

DORITA SILVER MINES LTD. (N.P.L.)

SCALE: 1"=400' N.W. BURMEISTER





PLATE I  
GOOSLY SOUTHWEST-SOUTH CENTRAL-SOUTHEAST CLAIM GROUPS  
(OMINECA MINING DIVISION)

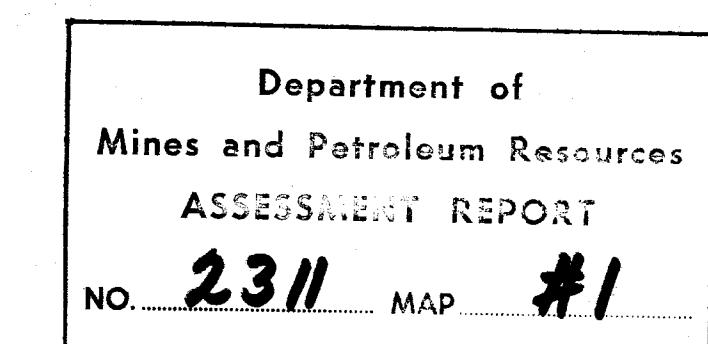
CLAIM LOCATION PLAN

DECEMBER, 1969

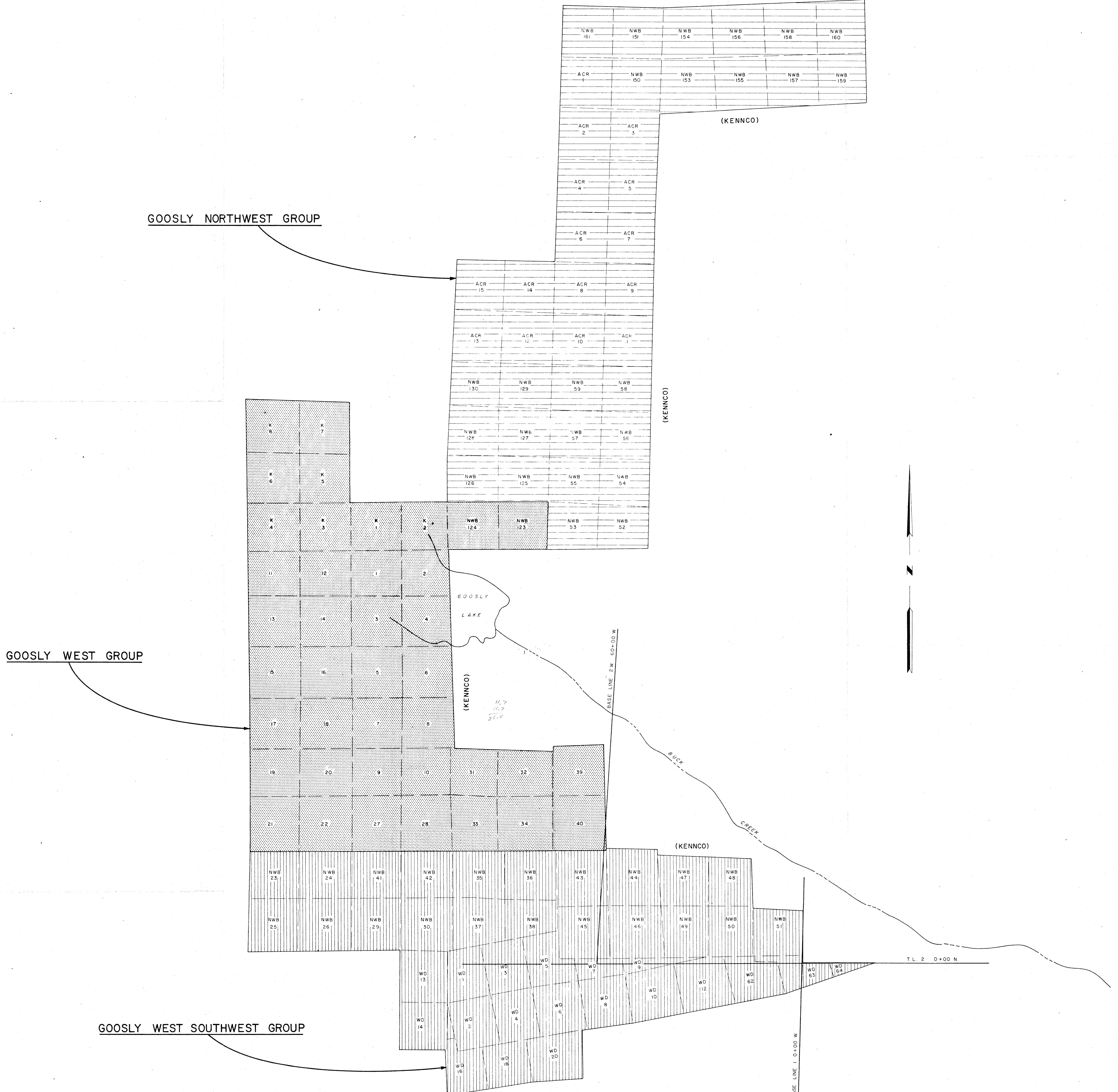
DORITA SILVER MINES LTD. (N.P.L.)

SCALE: 1" = 1000'

N.W. BURMEISTER



*[Signature]*



2311

PLATE 2

GOOSLY WEST - NORTHWEST - WEST SOUTHWEST CLAIM GROUPS  
(OMINECA MINING DIVISION)

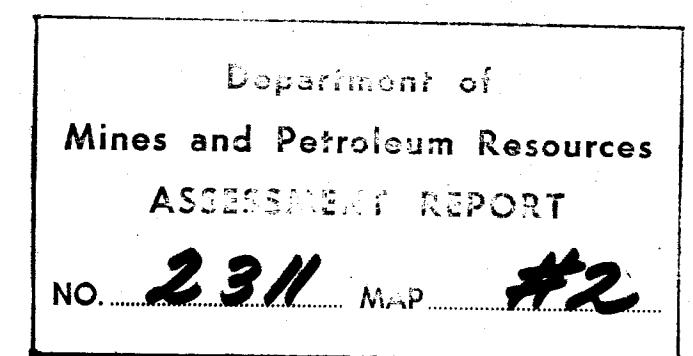
**CLAIM LOCATION PLAN**

DECEMBER, 1969

DORITA SILVER MINES LTD. (N.P.L.)

SCALE: 1"=1000'

N.W. BURMEISTER



Norman W. Burmeister

