

**ASSESSMENT REPORT, 2012 METALLURGY, ORE LIBERATION AND  
PETROGRAPHY  
GREW CREEK PROPERTY, WHITEHORSE MINING DIVISION, YUKON, CANADA  
NTS MAP SHEET: 105K02, 105K03 AND 105F15**

62° 03' N latitude, 132° 54' W longitude, 611300 E, 6881600 N (NAD 83, UTM Zone 8)

**CLAIMS AND OWNERS:**

Claim Name	Claim Number	Grant Number	Registered Owner
ACS	1 - 11	YD31285 to YD31295	Golden Predator Canada Corp. -100%
Discovery	1-12	YC94616 --YC94697	A.M. Carlos - 100%
GCX	1 - 2	YD73177 to YD73178	Golden Predator Canada Corp. -100%
GCX	3 - 294	YD80003 to YD80294	Golden Predator Canada Corp. -100%
CANON	1 - 6	YC08793 to YC08798	A.M. Carlos - 100%
CANON	7 - 14	YC08939 to YC08946	A.M. Carlos - 100%
CANON	15 - 24	YC30113 to YC30122	A.M. Carlos - 100%
CANYON	1 - 32	YA75717 to YA75748	A.M. Carlos - 100%
CANYON	33 - 40	YA75753 to YA75760	A.M. Carlos - 100%
CANYON	41 - 66	YA81160 to YA81185	A.M. Carlos - 100%
CANYON	73 - 94	YA81192 to YA81213	A.M. Carlos - 100%
CANYON	293 - 300	YA85398 to YA85405	A.M. Carlos - 100%
DOZER	1 - 14	YC18135 to YC18148	A.M. Carlos - 100%
GRAND	91 - 98	YA85326 to YA85333	A.M. Carlos - 100%
GRAND	141 - 148	YA85376 to YA85383	A.M. Carlos - 100%
GRAND	159 - 162	YA85394 to YA85397	A.M. Carlos - 100%
KAOLIN	1 - 4	YC18762 to YC18764	A.M. Carlos - 100%
KAOLIN	4 - 10	YC19300 to YC19306	A.M. Carlos - 100%
KAOLIN	11 - 12	YC19374 to YC19375	A.M. Carlos - 100%
MAVERICK	1 - 12	YC19362 to YC19373	A.M. Carlos - 100%
MAVERICK	13 - 36	YC26055 to YC26078	A.M. Carlos - 100%
MAVERICK	37 - 48	YC30101 to YC30112	A.M. Carlos - 100%
RAIL	51 - 54	YC37856 to YC37859	A.M. Carlos - 100%
RAIL	56	YC37861	A.M. Carlos - 100%
RAIL	58	YC37863	A.M. Carlos - 100%
RAIL	61 - 70	YC37866 to YC37875	A.M. Carlos - 100%
RAIL	73 - 115	YC37878 to YC37920	A.M. Carlos - 100%
TINTINA	1 - 54	YC94562 to YC94615	A.M. Carlos - 100%
SLEEPER	1 - 10	YC29987 to YC29996	A.M. Carlos - 100%
SLEEPER	11 - 24	YC53920 to YC53933	A.M. Carlos - 100%

TOTAL OF 668 CLAIMS LISTED, (429 WITH WORK APPLIED)

**PERIOD OF WORK: MAY 29<sup>TH</sup> TO NOVEMBER 26<sup>TH</sup>, 2012.**

**OPERATOR:**

**GOLDEN PREDATOR CANADA CORP.**

1 Lindeman Road  
Whitehorse, Yukon, Y1A 5Z7

April 4<sup>th</sup>, 2012

Prepared by:

**GOLDEN PREDATOR CANADA CORP.**

Shane Carlos



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GCX	3 - 294	YD80003 to YD80294	Golden Predator Canada Corp. -100%
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CANON	7 - 14	YC08939 to YC08946	A.M. Carlos - 100%
CANON	15 - 24	YC30113 to YC30122	A.M. Carlos - 100%
CANYON	1 - 32	YA75717 to YA75748	A.M. Carlos - 100%
CANYON	33 - 40	YA75753 to YA75760	A.M. Carlos - 100%
CANYON	41 - 66	YA81160 to YA81185	A.M. Carlos - 100%
CANYON	73 - 94	YA81192 to YA81213	A.M. Carlos - 100%
CANYON	293 - 300	YA85398 to YA85405	A.M. Carlos - 100%
DOZER	1 - 14	YC18135 to YC18148	A.M. Carlos - 100%
GRAND	91 - 98	YA85326 to YA85333	A.M. Carlos - 100%
GRAND	141 - 148	YA85376 to YA85383	A.M. Carlos - 100%
GRAND	159 - 162	YA85394 to YA85397	A.M. Carlos - 100%
KAOLIN	1 - 4	YC18762 to YC18764	A.M. Carlos - 100%
KAOLIN	4 - 10	YC19300 to YC19306	A.M. Carlos - 100%
KAOLIN	11 - 12	YC19374 to YC19375	A.M. Carlos - 100%
MAVERICK	1 - 12	YC19362 to YC19373	A.M. Carlos - 100%
MAVERICK	13 - 36	YC26055 to YC26078	A.M. Carlos - 100%
MAVERICK	37 - 48	YC30101 to YC30112	A.M. Carlos - 100%
RAIL	51 - 54	YC37856 to YC37859	A.M. Carlos - 100%
RAIL	56	YC37861	A.M. Carlos - 100%
RAIL	58	YC37863	A.M. Carlos - 100%
RAIL	61 - 70	YC37866 to YC37875	A.M. Carlos - 100%
RAIL	73 - 115	YC37878 to YC37920	A.M. Carlos - 100%
TINTINA	1 - 54	YC94562 to YC94615	A.M. Carlos - 100%
SLEEPER	1 - 10	YC29987 to YC29996	A.M. Carlos - 100%
SLEEPER	11 - 24	YC53920 to YC53933	A.M. Carlos - 100%

TOTAL OF 668 CLAIMS LISTED, (429 WITH WORK APPLIED)

**PERIOD OF WORK: FEBRUARY 15 TO NOVEMBER 27, 2011**

**OPERATOR:**

**GOLDEN PREDATOR CANADA CORP.**  
1 Lindeman Road  
Whitehorse, Yukon, Y1A 5Z7

April 4<sup>th</sup>, 2012

Prepared by:

**GOLDEN PREDATOR CANADA CORP.**

Shane Carlos



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## 1.0 INTRODUCTION

This report serves as a template to present five reports prepared by contractors in the 2012 exploration season, namely: Petrographic Report on 3 Samples, Report on Bottle Roll Tests, Proposal MLIP-355, Grew Creek Scoping Metallurgical Testing, and MLA Characterization of Ore Samples. This report does provide additional sample collection and sample location information not present in the otherwise ‘standalone’ reports. Summaries, discussion, analysis and recommendations are not presented by the author and should be referred to within the appended reports.

Expenditures in field work were limited to the collection of 2010 drill core samples used in the cyanide leach tests. All other costs are attributed to invoices from the contractors: McClelland Laboratories, Craig Leitch, Ph.D, P.Eng and The Center for Advanced Mineral and Metallurgical Processing.

Americas Bullion Royalty Corp. is the current operator of the Grew Creek project working towards a 100% interest, subject to a 4% net smelter return by the owner, Allen Carlos. Americas Bullion has recently undergone a name change from Golden Predator Corp.

## 2.0 PROPERTY LOCATION AND DESCRIPTION

### 2.1 Location

The Grew Creek property is comprised of a 668 contiguous claims covering approximately 13,960 ha. The northern-most edge of the property is situated approximately 12 km Southeast of Faro, YT, and the southeastern most edge is approximately 6 km west of Ross River, YT. The claim block is approximately 43.5 km long, with a central point located at 62° 03' N and 132° 54' W (NAD 83, Zone 8N: 611300 m E, 681600 m N), and located on NTS map sheets 105K/02, 105K/03 and 105F/15.

### 2.2 Description and Ownership

The property covers approximately 13,960 ha and consists of 668 contiguous, unsurveyed two-post quartz claims (Table 2-1; Figure 2-2) staked according to the Yukon Quartz Mining Act. Golden Predator Canada Corp. has an agreement with Allen Carlos to acquire a 100% interest in the optioned claims (subject to the terms of the agreement and satisfying minimum expenditure requirements) and has 100% ownership of claims acquired through staking. Expiration dates in Table 2-1 are subject to acceptance of assessment covered by this report and include only those claims where work has been applied for 2012.

Figure 2-2, also highlights the two claims where the Carlos Zone gold Deposit lay and where the work in this report refers to.

**Table 2-1. Grew Creek Claim Information**

						Requested New Expiry +1 year		
DISTRICT	GRANT_NUMB	CLAIM_LABEL	COUNT	OWNER_NAME	EXPIRY_DATE	Day	Month	Year
Whitehorse	YA75717	CANYON 1	1	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75718	CANYON 2	2	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75719	CANYON 3	3	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75720	CANYON 4	4	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75721	CANYON 5	5	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75722	CANYON 6	6	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75723	CANYON 7	7	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75724	CANYON 8	8	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75725	CANYON 9	9	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75726	CANYON 10	10	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75727	CANYON 11	11	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75728	CANYON 12	12	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75729	CANYON 13	13	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75730	CANYON 14	14	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75731	CANYON 15	15	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75732	CANYON 16	16	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75733	CANYON 17	17	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75734	CANYON 18	18	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75735	CANYON 19	19	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75736	CANYON 20	20	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75737	CANYON 21	21	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75738	CANYON 22	22	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75739	CANYON 23	23	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75740	CANYON 24	24	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75741	CANYON 25	25	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75742	CANYON 26	26	A.M. Carlos - 100%	27/12/2037 0:00	27	12	2038
Whitehorse	YA75743	CANYON 27	27	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75744	CANYON 28	28	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75745	CANYON 29	29	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75746	CANYON 30	30	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75747	CANYON 31	31	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75748	CANYON 32	32	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75753	CANYON 33	33	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75754	CANYON 34	34	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75755	CANYON 35	35	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75756	CANYON 36	36	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75757	CANYON 37	37	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040



Golden Predator Canada Corp. (Americas Bullion Royalty Corp.)  
 Assessment Report – Grew Creek Property

						Requested New Expiry +1 year		
DISTRICT	GRANT_NUMB	CLAIM_LABE	COUNT	OWNER_NAME	EXPIRY_DATE	Day	Month	Year
Whitehorse	YA75758	CANYON 38	38	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75759	CANYON 39	39	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA75760	CANYON 40	40	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81160	CANYON 41	41	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81161	CANYON 42	42	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81162	CANYON 43	43	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81163	CANYON 44	44	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81164	CANYON 45	45	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81165	CANYON 46	46	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81166	CANYON 47	47	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81167	CANYON 48	48	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81168	CANYON 49	49	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81169	CANYON 50	50	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81170	CANYON 51	51	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041
Whitehorse	YA81171	CANYON 52	52	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041
Whitehorse	YA81172	CANYON 53	53	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041
Whitehorse	YA81173	CANYON 54	54	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041
Whitehorse	YA81174	CANYON 55	55	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041
Whitehorse	YA81175	CANYON 56	56	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041
Whitehorse	YA81176	CANYON 57	57	A.M. Carlos - 100%	27/12/2036 0:00	27	12	2037
Whitehorse	YA81177	CANYON 58	58	A.M. Carlos - 100%	27/12/2036 0:00	27	12	2037
Whitehorse	YA81178	CANYON 59	59	A.M. Carlos - 100%	27/12/2036 0:00	27	12	2037
Whitehorse	YA81179	CANYON 60	60	A.M. Carlos - 100%	27/12/2036 0:00	27	12	2037
Whitehorse	YA81180	CANYON 61	61	A.M. Carlos - 100%	27/12/2035 0:00	27	12	2036
Whitehorse	YA81181	CANYON 62	62	A.M. Carlos - 100%	27/12/2035 0:00	27	12	2036
Whitehorse	YA81182	CANYON 63	63	A.M. Carlos - 100%	27/12/2031 0:00	27	12	2032
Whitehorse	YA81183	CANYON 64	64	A.M. Carlos - 100%	27/12/2031 0:00	27	12	2032
Whitehorse	YA81184	CANYON 65	65	A.M. Carlos - 100%	27/12/2031 0:00	27	12	2032
Whitehorse	YA81185	CANYON 66	66	A.M. Carlos - 100%	27/12/2031 0:00	27	12	2032
Whitehorse	YA81192	CANYON 73	67	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81193	CANYON 74	68	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81194	CANYON 75	69	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81195	CANYON 76	70	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81196	CANYON 77	71	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81197	CANYON 78	72	A.M. Carlos - 100%	27/12/2039 0:00	27	12	2040
Whitehorse	YA81198	CANYON 79	73	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041
Whitehorse	YA81199	CANYON 80	74	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041
Whitehorse	YA81201	CANYON 82	75	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041



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DISTRICT	GRANT_NUMB	CLAIM_LABE	COUNT	OWNER_NAME	EXPIRY_DATE	Day	Month	Year
Whitehorse	YA81203	CANYON 84	76	A.M. Carlos - 100%	27/12/2040 0:00	27	12	2041
Whitehorse	YA81205	CANYON 86	77	A.M. Carlos - 100%	27/12/2036 0:00	27	12	2037
Whitehorse	YA81207	CANYON 88	78	A.M. Carlos - 100%	27/12/2036 0:00	27	12	2037
Whitehorse	YA81209	CANYON 90	79	A.M. Carlos - 100%	27/12/2035 0:00	27	12	2036
Whitehorse	YA81211	CANYON 92	80	A.M. Carlos - 100%	27/12/2031 0:00	27	12	2032
Whitehorse	YA81213	CANYON 94	81	A.M. Carlos - 100%	27/12/2030 0:00	27	12	2031
Whitehorse	YA85326	GRAND 91	82	A.M. Carlos - 100%	27/12/2028 0:00	27	12	2029
Whitehorse	YA85327	GRAND 92	83	A.M. Carlos - 100%	27/12/2029 0:00	27	12	2030
Whitehorse	YA85328	GRAND 93	84	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85329	GRAND 94	85	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85330	GRAND 95	86	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85331	GRAND 96	87	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85332	GRAND 97	88	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85333	GRAND 98	89	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85376	GRAND 141	90	A.M. Carlos - 100%	27/12/2029 0:00	27	12	2030
Whitehorse	YA85377	GRAND 142	91	A.M. Carlos - 100%	27/12/2028 0:00	27	12	2029
Whitehorse	YA85378	GRAND 143	92	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85379	GRAND 144	93	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85380	GRAND 145	94	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85381	GRAND 146	95	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85382	GRAND 147	96	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85383	GRAND 148	97	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85394	GRAND 159	98	A.M. Carlos - 100%	27/12/2028 0:00	27	12	2029
Whitehorse	YA85395	GRAND 160	99	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85396	GRAND 161	100	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85397	GRAND 162	101	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YA85398	CANYON 293	102	A.M. Carlos - 100%	27/12/2034 0:00	27	12	2035
Whitehorse	YA85399	CANYON 294	103	A.M. Carlos - 100%	27/12/2034 0:00	27	12	2035
Whitehorse	YA85400	CANYON 295	104	A.M. Carlos - 100%	27/12/2034 0:00	27	12	2035
Whitehorse	YA85401	CANYON 296	105	A.M. Carlos - 100%	27/12/2034 0:00	27	12	2035
Whitehorse	YA85402	CANYON 297	106	A.M. Carlos - 100%	27/12/2034 0:00	27	12	2035
Whitehorse	YA85403	CANYON 298	107	A.M. Carlos - 100%	27/12/2034 0:00	27	12	2035
Whitehorse	YA85404	CANYON 299	108	A.M. Carlos - 100%	27/12/2034 0:00	27	12	2035
Whitehorse	YA85405	CANYON 300	109	A.M. Carlos - 100%	27/12/2034 0:00	27	12	2035
Whitehorse	YC08793	CANON 1	110	A.M. Carlos - 100%	27/12/2028 0:00	27	12	2029
Whitehorse	YC08794	CANON 2	111	A.M. Carlos - 100%	27/12/2028 0:00	27	12	2029
Whitehorse	YC08795	CANON 3	112	A.M. Carlos - 100%	27/12/2028 0:00	27	12	2029
Whitehorse	YC08796	CANON 4	113	A.M. Carlos - 100%	27/12/2028 0:00	27	12	2029





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						Requested New Expiry +1 year		
DISTRICT	GRANT_NUMB	CLAIM_LABEL	COUNT	OWNER_NAME	EXPIRY_DATE	Day	Month	Year
Whitehorse	YC08797	CANON 5	114	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YC08798	CANON 6	115	A.M. Carlos - 100%	27/12/2032 0:00	27	12	2033
Whitehorse	YC08943	CANON 11	116	A.M. Carlos - 100%	27/12/2028 0:00	27	12	2029
Whitehorse	YC18135	DOZER 1	117	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18136	DOZER 2	118	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18137	DOZER 3	119	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18138	DOZER 4	120	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18139	DOZER 5	121	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18140	DOZER 6	122	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18141	DOZER 7	123	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18142	DOZER 8	124	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18143	DOZER 9	125	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18144	DOZER 10	126	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18145	DOZER 11	127	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18146	DOZER 12	128	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18147	DOZER 13	129	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18148	DOZER 14	130	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC18762	KAOLIN 1	131	A.M. Carlos - 100%	27/12/2021 0:00	27	12	2022
Whitehorse	YC18763	KAOLIN 2	132	A.M. Carlos - 100%	27/12/2021 0:00	27	12	2022
Whitehorse	YC18764	KAOLIN 3	133	A.M. Carlos - 100%	27/12/2021 0:00	27	12	2022
Whitehorse	YC19300	KAOLIN 4	134	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC19301	KAOLIN 5	135	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC19302	KAOLIN 6	136	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC19303	KAOLIN 7	137	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC19304	KAOLIN 8	138	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC19305	KAOLIN 9	139	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC19306	KAOLIN 10	140	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC19362	MAVERICK 1	141	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19363	MAVERICK 2	142	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19364	MAVERICK 3	143	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19365	MAVERICK 4	144	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19366	MAVERICK 5	145	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19367	MAVERICK 6	146	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19368	MAVERICK 7	147	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19369	MAVERICK 8	148	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19370	MAVERICK 9	149	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19371	MAVERICK 10	150	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19372	MAVERICK 11	151	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027



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DISTRICT	GRANT_NUMB	CLAIM_LABE	COUNT	OWNER_NAME	EXPIRY_DATE	Day	Month	Year
Whitehorse	YC19373	MAVERICK 12	152	A.M. Carlos - 100%	27/12/2026 0:00	27	12	2027
Whitehorse	YC19374	KAOLIN 11	153	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC19375	KAOLIN 12	154	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC26055	MAVERICK 13	155	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC26056	MAVERICK 14	156	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC26059	MAVERICK 17	157	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC26060	MAVERICK 18	158	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC26061	MAVERICK 19	159	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC26062	MAVERICK 20	160	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC26065	MAVERICK 23	161	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC26066	MAVERICK 24	162	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC26067	MAVERICK 25	163	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC26068	MAVERICK 26	164	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC26071	MAVERICK 29	165	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC26072	MAVERICK 30	166	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC26073	MAVERICK 31	167	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC26074	MAVERICK 32	168	A.M. Carlos - 100%	27/12/2023 0:00	27	12	2024
Whitehorse	YC29987	SLEEPER 1	169	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC29988	SLEEPER 2	170	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC29989	SLEEPER 3	171	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC29990	SLEEPER 4	172	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC29991	SLEEPER 5	173	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC29992	SLEEPER 6	174	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC29993	SLEEPER 7	175	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC29994	SLEEPER 8	176	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC29995	SLEEPER 9	177	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC29996	SLEEPER 10	178	A.M. Carlos - 100%	27/12/2019 0:00	27	12	2020
Whitehorse	YC30102	MAVERICK 38	179	A.M. Carlos - 100%	27/12/2021 0:00	27	12	2022
Whitehorse	YC30104	MAVERICK 40	180	A.M. Carlos - 100%	27/12/2021 0:00	27	12	2022
Whitehorse	YC30106	MAVERICK 42	181	A.M. Carlos - 100%	27/12/2021 0:00	27	12	2022
Whitehorse	YC30107	MAVERICK 43	182	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC30108	MAVERICK 44	183	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC30109	MAVERICK 45	184	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC30110	MAVERICK 46	185	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC30111	MAVERICK 47	186	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC30112	MAVERICK 48	187	A.M. Carlos - 100%	27/12/2020 0:00	27	12	2021
Whitehorse	YC37856	RAIL 51	188	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37857	RAIL 52	189	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023



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DISTRICT	GRANT_NUMB	CLAIM_LABE	COUNT	OWNER_NAME	EXPIRY_DATE	Day	Month	Year
Whitehorse	YC37858	RAIL 53	190	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37859	RAIL 54	191	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37861	RAIL 56	192	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37863	RAIL 58	193	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37866	RAIL 61	194	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37867	RAIL 62	195	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37868	RAIL 63	196	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37869	RAIL 64	197	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37870	RAIL 65	198	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37871	RAIL 66	199	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37872	RAIL 67	200	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37873	RAIL 68	201	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37874	RAIL 69	202	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37875	RAIL 70	203	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37878	RAIL 73	204	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37879	RAIL 74	205	A.M. Carlos - 100%	27/12/2022 0:00	27	12	2023
Whitehorse	YC37880	RAIL 75	206	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37881	RAIL 76	207	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37882	RAIL 77	208	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37883	RAIL 78	209	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37884	RAIL 79	210	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37885	RAIL 80	211	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37886	RAIL 81	212	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37887	RAIL 82	213	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37888	RAIL 83	214	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37889	RAIL 84	215	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37890	RAIL 85	216	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37891	RAIL 86	217	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37892	RAIL 87	218	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37893	RAIL 88	219	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37894	RAIL 89	220	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37895	RAIL 90	221	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37896	RAIL 91	222	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37897	RAIL 92	223	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37898	RAIL 93	224	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37899	RAIL 94	225	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37900	RAIL 95	226	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37901	RAIL 96	227	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019



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DISTRICT	GRANT_NUMB	CLAIM_LABE	COUNT	OWNER_NAME	EXPIRY_DATE	Day	Month	Year
Whitehorse	YC37902	RAIL 97	228	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37903	RAIL 98	229	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37904	RAIL 99	230	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37905	RAIL 100	231	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37906	RAIL 101	232	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37907	RAIL 102	233	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37908	RAIL 103	234	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37909	RAIL 104	235	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37910	RAIL 105	236	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37911	RAIL 106	237	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37912	RAIL 107	238	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37913	RAIL 108	239	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37914	RAIL 109	240	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37915	RAIL 110	241	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37916	RAIL 111	242	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37917	RAIL 112	243	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37918	RAIL 113	244	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37919	RAIL 114	245	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC37920	RAIL 115	246	A.M. Carlos - 100%	27/12/2018 0:00	27	12	2019
Whitehorse	YC53920	SLEEPER 11	247	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53921	SLEEPER 12	248	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53922	SLEEPER 13	249	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53923	SLEEPER 14	250	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53924	SLEEPER 15	251	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53925	SLEEPER 16	252	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53926	SLEEPER 17	253	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53927	SLEEPER 18	254	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53928	SLEEPER 19	255	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53929	SLEEPER 20	256	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53930	SLEEPER 21	257	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53931	SLEEPER 22	258	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53932	SLEEPER 23	259	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC53933	SLEEPER 24	260	A.M. Carlos - 100%	27/12/2015 0:00	27	12	2016
Whitehorse	YC94562	TINTINA 1	261	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94563	TINTINA 2	262	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94564	TINTINA 3	263	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94565	TINTINA 4	264	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94566	TINTINA 5	265	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018



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Whitehorse	YC94567	TINTINA 6	266	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94568	TINTINA 7	267	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94569	TINTINA 8	268	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94570	TINTINA 9	269	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94571	TINTINA 10	270	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94572	TINTINA 11	271	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94573	TINTINA 12	272	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94574	TINTINA 13	273	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94575	TINTINA 14	274	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94576	TINTINA 15	275	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94577	TINTINA 16	276	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94578	TINTINA 17	277	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94579	TINTINA 18	278	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94580	TINTINA 19	279	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94581	TINTINA 20	280	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94582	TINTINA 21	281	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94583	TINTINA 22	282	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94584	TINTINA 23	283	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94585	TINTINA 24	284	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94586	TINTINA 25	285	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94587	TINTINA 26	286	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94588	TINTINA 27	287	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94589	TINTINA 28	288	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94590	TINTINA 29	289	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94591	TINTINA 30	290	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94592	TINTINA 31	291	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94593	TINTINA 32	292	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94594	TINTINA 33	293	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94595	TINTINA 34	294	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94596	TINTINA 35	295	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94597	TINTINA 36	296	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94598	TINTINA 37	297	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94599	TINTINA 38	298	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94600	TINTINA 39	299	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94601	TINTINA 40	300	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94602	TINTINA 41	301	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94603	TINTINA 42	302	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94604	TINTINA 43	303	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018



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						Requested New Expiry +1 year		
DISTRICT	GRANT_NUMB	CLAIM_LABE	COUNT	OWNER_NAME	EXPIRY_DATE	Day	Month	Year
Whitehorse	YC94605	TINTINA 44	304	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94606	TINTINA 45	305	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94607	TINTINA 46	306	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94608	TINTINA 47	307	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94609	TINTINA 48	308	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94610	TINTINA 49	309	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94611	TINTINA 50	310	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94612	TINTINA 51	311	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94613	TINTINA 52	312	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94614	TINTINA 53	313	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94615	TINTINA 54	314	A.M. Carlos - 100%	27/12/2017 0:00	27	12	2018
Whitehorse	YC94616	DISCOVER Y 1	315	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94617	DISCOVER Y 2	316	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94618	DISCOVER Y 3	317	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94619	DISCOVER Y 4	318	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94620	DISCOVER Y 5	319	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94621	DISCOVER Y 6	320	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94692	DISCOVER Y 7	321	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94693	DISCOVER Y 8	322	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94694	DISCOVER Y 9	323	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94695	DISCOVER Y 10	324	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94696	DISCOVER Y 11	325	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YC94697	DISCOVER Y 12	326	A.M. Carlos - 100%	06/09/2013 0:00	6	9	2014
Whitehorse	YD31285	ACS 1	327	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31286	ACS 2	328	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31287	ACS 3	329	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31288	ACS 4	330	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31289	ACS 5	331	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31290	ACS 6	332	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31291	ACS 7	333	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31292	ACS 8	334	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31293	ACS 9	335	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31294	ACS 10	336	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD31295	ACS 11	337	Golden Predator Canada Corp. - 100%	13/09/2020 0:00	13	9	2021
Whitehorse	YD73177	GCX 1	338	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD73178	GCX 2	339	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80003	GCX 3	340	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80004	GCX 4	341	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018



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						Requested New Expiry +1 year		
DISTRICT	GRANT_NUMB	CLAIM_LABEL	COUNT	OWNER_NAME	EXPIRY_DATE	Day	Month	Year
Whitehorse	YD80005	GCX 5	342	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80006	GCX 6	343	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80007	GCX 7	344	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80008	GCX 8	345	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80009	GCX 9	346	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80010	GCX 10	347	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80011	GCX 11	348	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80012	GCX 12	349	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80013	GCX 13	350	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80014	GCX 14	351	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80015	GCX 15	352	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80016	GCX 16	353	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80017	GCX 17	354	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80018	GCX 18	355	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80019	GCX 19	356	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80020	GCX 20	357	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80021	GCX 21	358	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80022	GCX 22	359	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80023	GCX 23	360	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80024	GCX 24	361	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80025	GCX 25	362	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80026	GCX 26	363	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80027	GCX 27	364	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80028	GCX 28	365	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
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Whitehorse	YD80030	GCX 30	367	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
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Whitehorse	YD80034	GCX 34	371	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80035	GCX 35	372	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80036	GCX 36	373	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80037	GCX 37	374	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80038	GCX 38	375	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80039	GCX 39	376	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80040	GCX 40	377	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80041	GCX 41	378	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80042	GCX 42	379	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018



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						Requested New Expiry +1 year		
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Whitehorse	YD80043	GCX 43	380	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80044	GCX 44	381	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80045	GCX 45	382	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80046	GCX 46	383	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80047	GCX 47	384	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80048	GCX 48	385	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80050	GCX 50	386	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80052	GCX 52	387	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80054	GCX 54	388	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
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Whitehorse	YD80072	GCX 72	390	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80073	GCX 73	391	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80074	GCX 74	392	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
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Whitehorse	YD80076	GCX 76	394	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80077	GCX 77	395	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80078	GCX 78	396	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80079	GCX 79	397	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80080	GCX 80	398	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
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Whitehorse	YD80084	GCX 84	401	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
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Whitehorse	YD80088	GCX 88	403	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
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Whitehorse	YD80096	GCX 96	405	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
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Whitehorse	YD80098	GCX 98	407	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80099	GCX 99	408	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80100	GCX 100	409	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80101	GCX 101	410	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80102	GCX 102	411	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80103	GCX 103	412	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80104	GCX 104	413	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80105	GCX 105	414	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80107	GCX 107	415	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80109	GCX 109	416	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80111	GCX 111	417	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018





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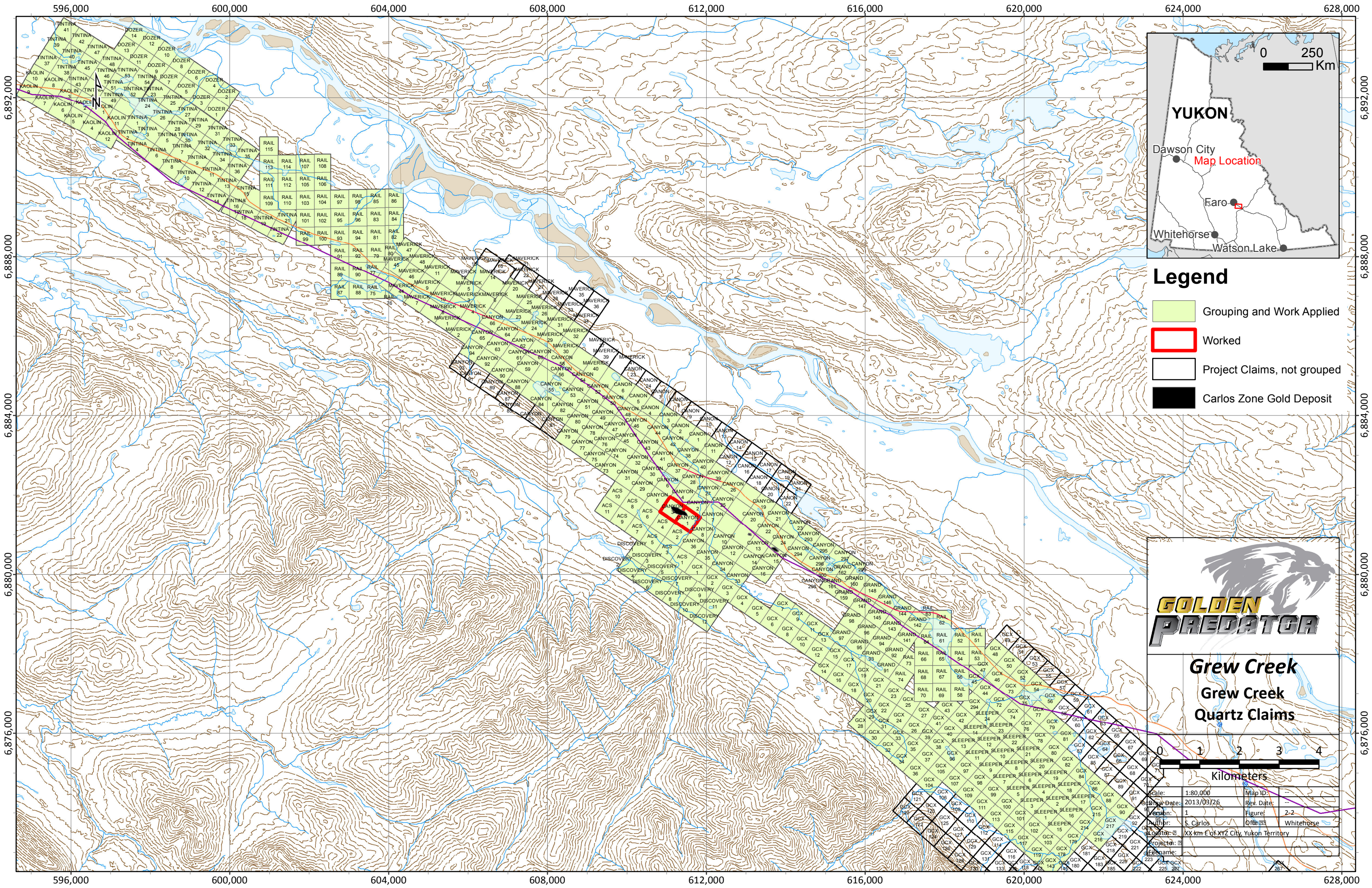
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Whitehorse	YD80119	GCX 119	421	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80143	GCX 143	422	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80178	GCX 178	423	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80179	GCX 179	424	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80214	GCX 214	425	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80215	GCX 215	426	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80216	GCX 216	427	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80217	GCX 217	428	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018
Whitehorse	YD80294	GCX 294	429	Golden Predator Canada Corp. - 100%	03/05/2017 0:00	3	5	2018

Total of 429 Claims

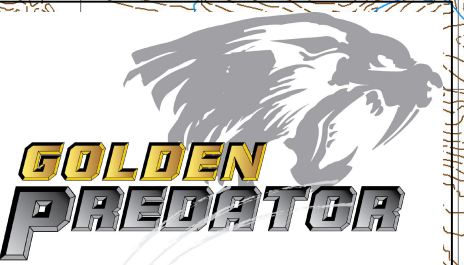


**Figure 2-1. Location of the Grew Creek property within the Yukon Territory**





- ### Legend
- Grouping and Work Applied
  - Worked
  - Project Claims, not grouped
  - Carlos Zone Gold Deposit



## Grew Creek Grew Creek Quartz Claims

0 1 2 3 4 Kilometers	
Scale: 1:80,000	Map ID:
Draw Date: 2013/03/26	Rev. Date:
Version: 1	Figure: 2-2
Author: S. Carlos	Office: Whitehorse
Location: XX km E of XYZ City, Yukon Territory	
File name:	

## **3.0 ACCESSIBILITY, CLIMATE, PHYSIOGRAPHY, AND INFRASTRUCTURE**

### **3.1 Accessibility**

The northern-most edge of the property is situated approximately 12 km southeast of Faro, Yukon Territory, Canada and the southeastern most edge is approximately 6 km west of Ross River, Yukon Territory, Canada. The Robert Campbell Highway bisects the claim block for approximately 32 km along its length between Faro and Ross River and the South Canol Road skirts the south eastern border for approximately 3.5 km. A network of existing roads and trails, as well as a power line utility corridor, provide access from multiple entry points along the Robert Campbell Highway and South Canol Road (Fig. 3-1).

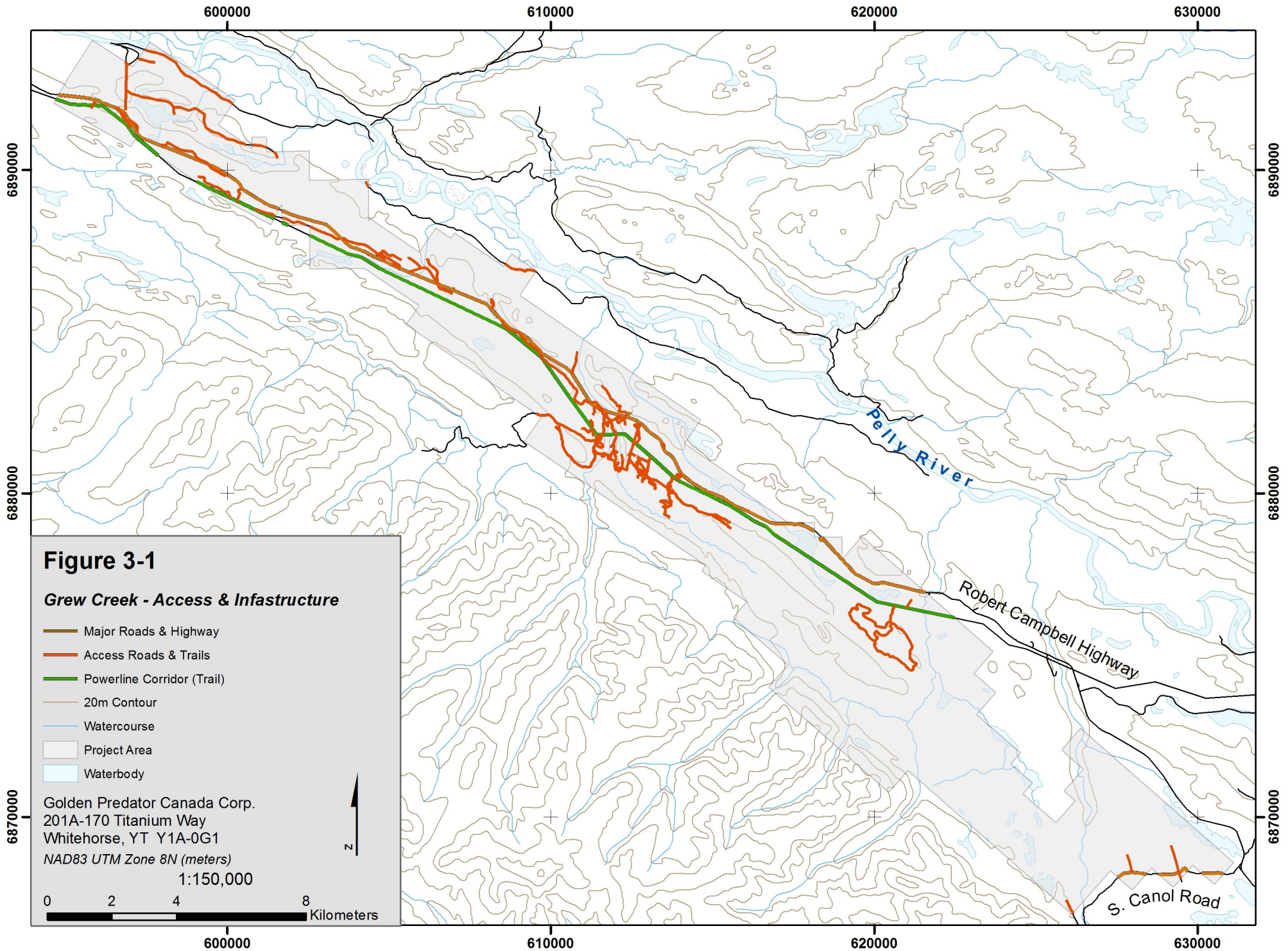
### **3.2 Infrastructure**

Yukon Energy high tension power line from Faro to Ross River parallels the Robert Campbell highway and crosses the property (Fig. 3-1).

### **3.3 Physiography**

The Property is located in the Tintina Trench, a large northwest-trending valley generally occupied by the Pelly River. Elevations range from approximately 700 m to 1,000 m above mean sea level. The property is transected by a series of drainages, including Danger Creek, Grew Creek, Rat Creek and the Lapie River that drain northerly to Pelly River.

The Property climate is typical for the Interior Plateau in the Yukon. Temperatures down to -50°C are possible in the winter and the summers are warm with daily highs averaging between 15°C to 21°C (Environment Canada). Precipitation rates are low to moderate, with an average of 316 mm annual precipitation in nearby Faro, YT (Environment Canada).



## 4.0 EXPLORATION HISTORY

(modified excerpt from Stroshein, 2011)

The first reported staking in the Grew Creek area was in 1967 during the Anvil staking rush. Gaylord Mining Ltd. conducted geophysical surveys and completed three diamond drill holes (354 meters) in 1968 testing for potential stratabound lead-zinc mineralization.

Mr. Carlos discovered gold mineralization in outcrop while prospecting in the Grew Creek area in 1983. Small scale placer gold mining was being carried out in the creek at the time. Carlos staked the Canyon 1-40 claims in June 1983. The discovery outcrop was trenched to reveal strongly silicified and veined brecciated volcanic rocks on a resistant knoll that subsequent exploration showed was located at the western end of the Carlos Zone.

Hudson Bay Exploration and Development Company, Limited (HBED) optioned the property in November, 1983 and added the Canyon claims in January and Grand claims in September 1984. HBED carried out ground geophysical and geochemical surveys, trenching, diamond drilling (13 holes, 1 732 meters), and reverse circulation drilling (19 holes, 1 660 meters) in 1984-85. HBED completed reconnaissance type exploration along the length of the property and identified a number of areas for detail investigations. This activity included line cutting followed by geophysical and geochemical surveys in 1986. HBED returned the property to Carlos in 1987. Noranda Exploration Company Ltd. optioned the property in 1987 and formed an exploration Joint

Venture (JV) with Golden Nevada Resources Inc., Brenda Mines Ltd. and Hemlo Gold Mines Ltd. to develop the property. The JV expanded the property by adding the Can and Ran claims surrounding the original claims. The JV carried out extensive diamond drilling on the Main Zone (67 holes, 16 180 meters) and in the Tarn Zone area (10 holes, 3 045 meters) in 1987-88. Reverse circulation drilling (13 holes, 1 669 meters) in 1988 was directed at testing various geophysical targets between the Carlos Zone and the Tarn Zone areas. Exploration along the trend of the Tintina Fault System by the JV included a 4 900 line kilometer airborne survey with 100 meter line spacing. The survey reported electro-magnetic, total field magnetic, vertical magnetic gradient, apparent resistivity and VLF-EM results. The JV collected approximately 5 000 till and humus samples along lines at one kilometer spacing along the structural trend on the Grew Creek Gold Property and adjoining claims.

Golden Nevada Resources Ltd. acquired a 100% working interest in the JV and carried out diamond drilling (10 holes, 1 158 meters) on the central portion of the Carlos Zone in 1989. Golden Nevada carried out backhoe trenching on four targets outside the Carlos Zone that had been identified in 1986. Golden Nevada returned the property to Carlos in 1991. Wheaton River Minerals Limited optioned the Carlos Zone area claims in 1991 and carried out a preliminary evaluation of the economical potential of mining the deposit before relinquishing the option in 1992.

Carlos conducted line cutting and VLF-EM on a grid in the Kilometer 410 area in 1992. He followed up on the anomalies with shallow test pits.

YGC Resources Ltd. acquired an option to earn a 100% interest in the property in November, 1992 (the agreement was signed in February 1993). YGC carried out diamond drilling (17 holes 1 944 meters), established line grids, and conducted soil sampling and geophysical surveys in target areas along the claim belt in 1993. Later in the program excavator trenching was carried

out near Danger Creek and on the Blackhawk claims and an additional five shallow diamond drill holes totaling 307 meters were drilled on the Carlos Zone.

In 1994, YGC drilled 14 diamond drill holes totaling 1 307 meters that included nine holes on the southern limits of the Carlos Zone and five holes on the east end of the Carlos Zone deposit. In 1995, YGC drilled a total of 17 holes (1 767 meters) on seven separate exploration grids along claim belt from Km. 410 near the west end to the South Canol geophysical target east of the Canol Road in the Watson Lake Mining District. The program included three holes at the Carlos Zone.

In 1996 YGC Resources Ltd. Carried out a diamond drill program (17 holes, 1 560.7 meters) that consisted of systematic shallow drill testing of the Carlos Zone mineralization on intermediate sections between 10+175 E and 10+287.5 E. YGC returned the property to Carlos in 1996.

In 2004 Freegold Ventures Limited (Freegold) optioned the property from Carlos and drilled 12 diamond drill holes (2 078 meters) on the Carlos Zone. The drilling was oriented to intersect extensions north and south of the previously identified mineralized veins.

In 2005 Freegold carried out two phases of diamond drilling in the Rat Creek area. An IP survey was carried out in the area between the two phases of diamond drilling. A continuation of the 2005 second phase drilling program in 2006 tested targets in the Rat Creek and Tarn areas following up IP chargeability and resistivity anomalies. The total drilling program consisted of 13 diamond drill holes (1 818 meters).

Between 2000 and 2006 Allen Carlos carried out a series of soil sampling programs using Enzyme Leach (EL) analysis of oxidation elements in soils. The analysis utilizes very low detection limits for an extensive suite of elements that are used to indirectly identify hydrothermal systems with the emphasis on elements typically related to gold mineralization. A detection limit of 0.005 ppm gold is used in the analysis.

The EL surveys were carried out over seven separate grids (total of 4 470 samples) including the test case sampling over the Carlos Zone at Grew Creek. The survey areas were selected by proximity to interpreted northerly trending extensional faults. Seventeen oxidation anomalies have been interpreted by G. Hill, M.Sc., Consulting Geologist from Enzyme Laboratories, Inc. in reports prepared for Allen Carlos. Carlos selected five separate anomalies from four grids for diamond drilling during this same period.

Carlos carried out shallow diamond drilling on five Enzyme Leach (EL) anomalies between 2000 and 2006. The drilling totaled 29 holes (1 688 meters). Drill-rig capabilities limited the depth of the holes. The results were inconclusive due to the short-comings of the drill programs and the number of untested anomalies.

In 2008, Emerick Resources Ltd. optioned the Grew Creek Property from Carlos and carried out a diamond drilling program in 2009. The program completed eight diamond drill holes totaling 1,592.3 meters, three additional drill holes were abandoned due to drilling conditions. Emerick Resources Ltd. dropped the option in 2009.

Golden Predator Canada Corp. optioned the property in July, 2010 and drilled three diamond drill holes on the Carlos Zone Zone totaling 710 meters during September, 2010. In the winter of 2011, a further 23 diamond holes were conducted on the Carlos Zone. During the summer of 2011, 47 reverse circulation holes were done on the Carlos zone and on other regional targets. The summer also saw, an airborne magnetics and radiometrics survey flown over the existing claims, new colour aerial photography over the entire property, and two lines of induced polarization over the Carlos zone.

**Table 4-1. Historical Drilling Summary**

Year	Operator	DD Holes	RC Holes	Target Area	Meters
1984	HBED	13	1	Carlos Zone	1732
1985	HBED		1	Extensions Carlos Zone, Tarn/drumlin, Till sections	1660
1987-1988	Noranda	67	15	Carlos Zone	15887
1987-1988	Noranda		1	Carlos Zone	1101
1987-1988	Noranda	10	3	Tarn zone area	345
1987-1988	Noranda		1	Tarn zone area	1568
1989	Goldenev	10	1	Carlos Zone	1158
1993	YGC	17	1	Regional exploration	1944
1994	YGC	14	1	Carlos Zone	1307
1995	YGC	17	1	Carlos Zone and regional	1767
1996	YGC	17	1	Carlos Zone	1561
2004	Freegold	12	2	Carlos Zone - east-west drilling	278
2005	Freegold	8	1	Rat Creek	120
2006	Freegold	5	7	Rat Creek and Tarn zone areas	798
2009	Emerick	8	1	EL Anomalies	1592
2010	Predator	3	7	Carlos Zone	710
2011	Predator	23	47	Carlos Zone, Knoll Zone, Rat, Canon, Anomaly D, Regional	19102

Between 1984 and 2011 diamond drilling outlined a gold-bearing quartz-adularia vein and vein stock-work zone in an area approximately 250 meters by 100 meters at the Carlos Zone, located 500 meters west of Grew Creek. The Carlos Zone has been drilled systematically on a 25 to 50 meter grid pattern to the 175 meter depth. Golden Nevada Resources in 1989 and YGC between 1993 - 1996 carried out in-fill drilling on 12.5 to 25 meter centers above the 750 meter elevation.

## 5.0 GEOLOGICAL SETTING

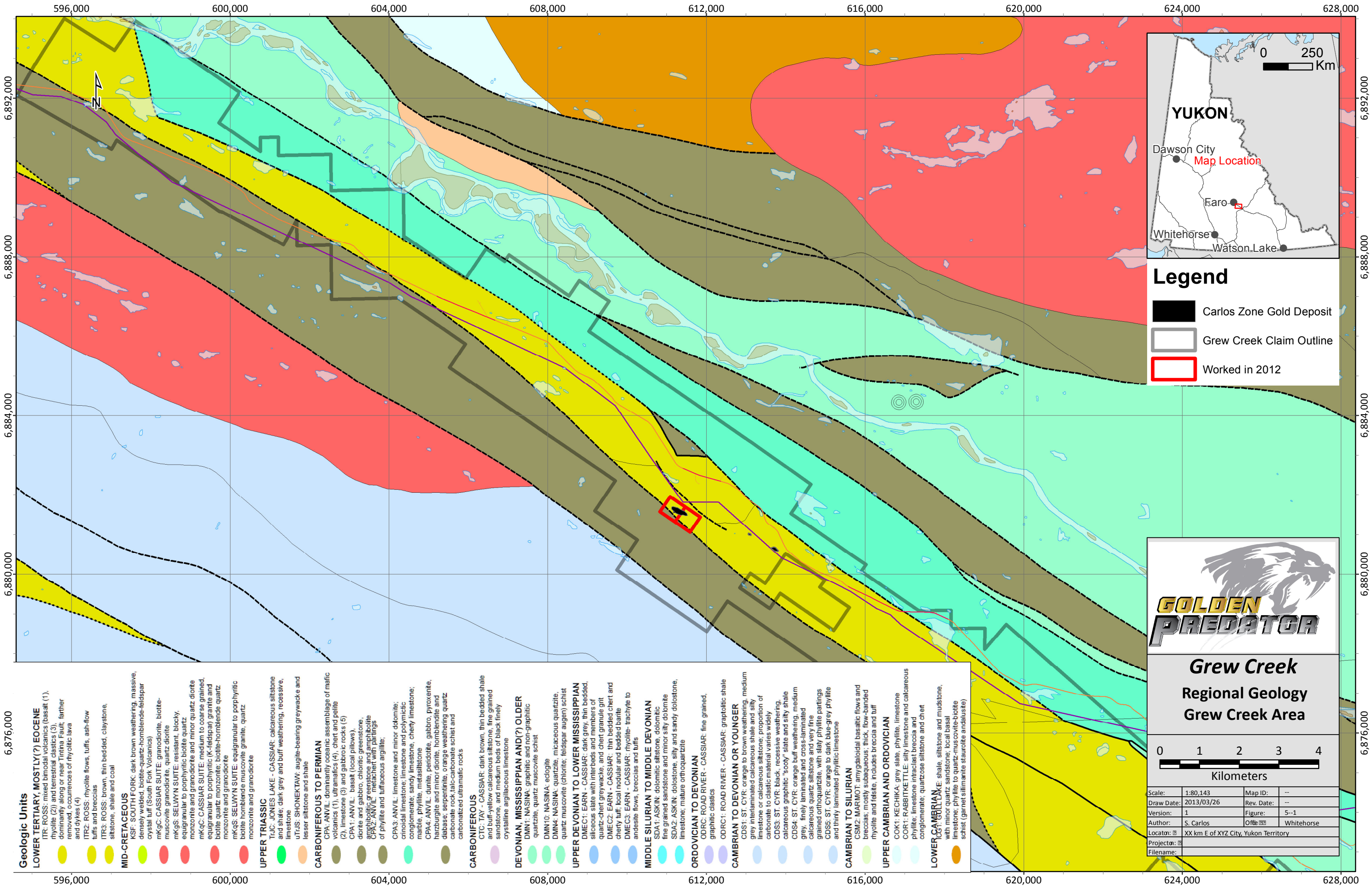
### 5.1 Regional Geology

The property is located along the Tintina Trench, a composite series of strike-slip faults comprising the Tintina Fault system. The system experienced approximately 450 km of trans-current dextral slip starting in the early Mesozoic Era and continuing through to the Late Tertiary Period.



In the area, the northeastern side of the Tintina Fault System is bounded by the Late Pennsylvanian to Permian aged Anvil Allocthonous assemblage, while the southwestern side of the system is bounded by Paleozoic assemblage from the Pelly Cassiar Platform (geology after Gordey and Makepeace, 2001; Figure 5-1.). Normal faulting during the Pliocene created the Tintina Trench which on the property hosts Eocene volcanic and clastic rocks within the Canyon Graben.

The Anvil Allocthon is composed of ophiolitic rocks including marine volcanics and limestone. The Tintina trench hosts Eocene aged bimodal (basalt and rhyolite) volcanics and fluvial sedimentary rocks from the Kamloops transitional arc volcanic assemblage. The Pelly Cassiar Platform is a continental margin sedimentary sequence from the Rocky Mountain assemblage, composed of clastics and carbonates.

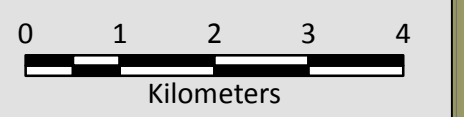


### Legend

- Carlos Zone Gold Deposit
- Grew Creek Claim Outline
- Worked in 2012



## Grew Creek Regional Geology Grew Creek Area



Scale:	1:80,143	Map ID:	--
Draw Date:	2013/03/26	Rev. Date:	--
Version:	1	Figure:	5--1
Author:	S. Carlos	Office:	Whitehorse
Location:	XX km E of XYZ City, Yukon Territory		
Projector:			
Filename:			

- ### Geologic Units
- LOWER TERTIARY, MOSTLY (?) EOCENE**
    - ITR: ROSS: mixed bimodal volcanics (basalt (1), rhyolite (2)) and terrestrial clastics (3), dominantly along or near Tintina Fault; farther removed, occurrences of rhyolitic lava and dykes (4)
    - ITR2: ROSS: rhyolite flows, tuffs, ash-flow tuffs and breccias
    - ITR3: ROSS: brown, thin bedded, claystone, siltstone, shale and coal
  - MID-CRETACEOUS**
    - KSF: SOUTH FORK: dark brown weathering, massive, densely welded, biotite-quartz-hornblende-feldspar crystal tuff (South Fork Volcanics)
    - mKGC: CASSIAR SUITE: granodiorite, biotite-muscovite granodiorite, quartz diorite
    - mKGS: SELWYN SUITE: resistant, blocky, equigranular to porphyritic biotite quartz monzonite and granodiorite and minor quartz diorite
    - mKQC: CASSIAR SUITE: medium to coarse grained, equigranular to porphyritic (K-feldspar) granite and biotite quartz monzonite; biotite-hornblende quartz monzonite and granodiorite
    - mKQS: SELWYN SUITE: equigranular to porphyritic biotite hornblende muscovite granite, quartz monzonite and granodiorite
  - UPPER TRIASSIC**
    - TuJC: JONES LAKE - CASSIAR: calcareous siltstone and shale; dark grey and buff weathering, recessive, limestone
    - uTrDS: SHONKETAU: augite-bearing greywacke and lesser siltstone and shale
  - CARBONIFEROUS TO PERMIAN**
    - CPA: ANVIL: dominantly oceanic assemblage of mafic volcanics (1), ultramafics (4), chert and pelite (2), limestone (3) and gabbroic rocks (5)
    - CPA1: ANVIL: basalt (local pillows), diorite and gabbro, chloritic greenstone, orthopyroxene amphibolite and phyllite of phyllite and tuffaceous argillite.
    - CPA3: ANVIL: limestone and minor dolomite; crinoidal limestone, limestone and polymictic conglomerate; sandy limestone, cherty limestone; marble, phyllite, metasiltstone
    - CPA4: ANVIL: dunite, peridotite, gabbro, pyroxenite, harzburgite and minor diorite, hornblende and diabase; serpentinite; orange weathering quartz carbonate rock, talc-carbonate schist and carbonatized ultramafic rocks
  - CARBONIFEROUS**
    - CTC: TAY - CASSIAR: dark brown, thin bedded shale and buff-yellow calcareous siltstone, fine grained sandstone, and medium beds of black finely crystalline argillaceous limestone
  - DEVONIAN, MISSISSIPPIAN AND (?) OLDER**
    - DMN1: NASINA: graphitic and non-graphitic quartzite, quartz, muscovite schist
    - DMN10: NASINA: eclogite
    - DMN4: NASINA: quartzite, metabasaltic quartzite, quartz muscovite (chlorite; feldspar augen) schist
  - UPPER DEVONIAN TO LOWER MISSISSIPPIAN**
    - DMEC1: EARN - CASSIAR: dark grey, thin bedded, siliceous slate with interbeds and members of quartz-chert greywacke, and chert granule grit
    - DMEC2: EARN - CASSIAR: thin bedded chert and cherty tuff; local nodular and bedded barite
    - DMEC3: EARN - CASSIAR: rhyolite-trachyte to andesite flows, breccias and tuffs
  - MIDDLE SILURIAN TO MIDDLE DEVONIAN**
    - SDA1: ASKIN: dolomitic siltstone, dolomitic fine grained sandstone and minor silty dolomite
    - SDA2: ASKIN: dolostone, silty and sandy dolostone, limestone, mature orthoquartzite
  - ORDOVICIAN TO DEVONIAN**
    - ODRC: ROAD RIVER - CASSIAR: fine grained, graphitic clastics
    - ODRC1: ROAD RIVER - CASSIAR: graptolitic shale
  - CAMBRIAN TO DEVONIAN OR YOUNGER**
    - CD51: ST. CYR: orange to brown weathering, medium grey interlamated calcareous shale and silty limestone or calcareous siltstone; proportion of carbonate to clastic material varies widely
    - CD53: ST. CYR: black, recessive weathering, calcareous graphitic "sooty" slate and silty shale
    - CD54: ST. CYR: orange buff weathering, medium grey, finely laminated and cross-laminated calcareous quartz siltstone and very fine grained orthoquartzite, with slaty phyllite partings
    - CD55: ST. CYR: orange to dark blue-grey phyllite and thinly laminated phyllitic limestone
  - CAMBRIAN TO SILURIAN**
    - CSM2: MARMOT: amygdaloidal basaltic flows and breccias; mostly subaqueous; thick, flow-banded rhyolite and felsite, includes breccia and tuff
  - UPPER CAMBRIAN AND ORDOVICIAN**
    - COK1: KECHIKA: grey slate, phyllite, limestone
    - COR1: RABBITKETTLE: silty limestone and calcareous phyllite; limestone intraclast breccia and conglomerate; quartzose siltstone and chert
  - LOWER CAMBRIAN**
    - CCB1: CARBONATE: shale, siltstone and mudstone, with minor quartz sandstone; local basal limestone, phyllite to quartz-muscovite-biotite schist; (garnet sillimanite staurolite andalusite)

## 5.2 Property Geology

At Grew Creek and along the Tintina Trench to the northwest and southeast, an Eocene volcanic sequence is straddled by Permian sediments of the Pelly Cassiar Platform to the west and Paleozoic metasediments of the Anvil Allocthon to the east (Figure 5-2).

A reconstructed conceptual model of the Canyon Graben Eocene volcanic stratigraphy was developed during the 2011 exploration program (Figure 5-3). Volcanic stratigraphy observed in the Grew Creek and Rat Creek drainages and Knoll Zone area is typical of continental volcanic fields and is characterized by silicic pyroclastics and epiclastic sediments bound by mafic lavas. Paleozoic marbles and phyllites occur to the southwest and northeast of the Grew Creek deposit. These units are bound by basin-scale faults that strike approximately 290°. Intrusive or depositional contacts between Eocene volcanics and Paleozoic rocks have not been observed, but may be obscured by erosion or surficial deposits.

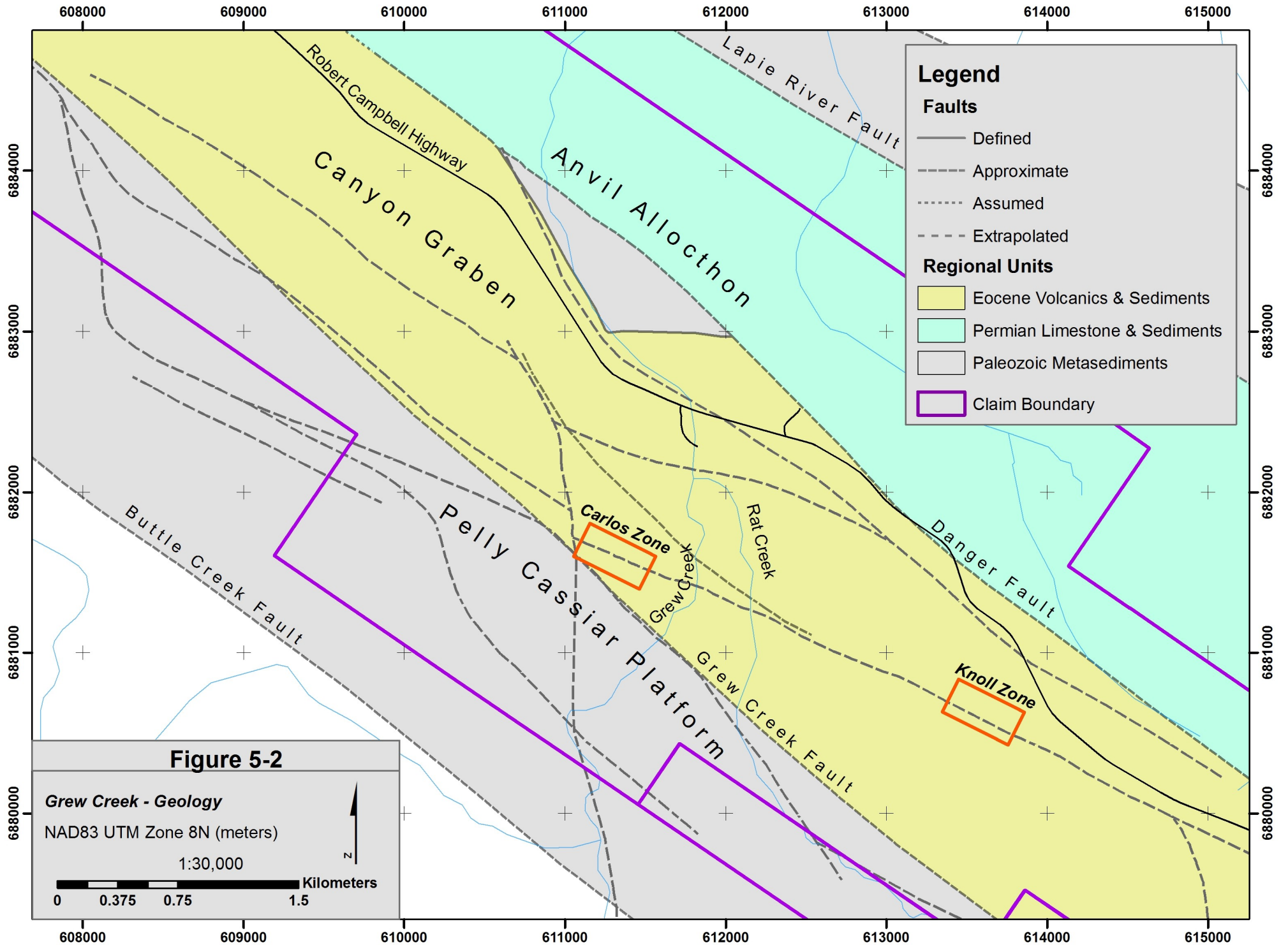
Quartz porphyry rhyolites occur throughout the claim block and represent the most areally extensive Eocene rock in the trench. They are typically buff to pale green, with distinctive 1-3 mm hexagonal quartz phenocrysts. Exposures of rhyolite usually occur as resistant, lobe-like bedrock highs with long axes parallel to the trend of the Tintina Trench. They are locally silicified or argillized, with some fluorite veining occurring in the Rat Creek area. To date, no significant Au values have been produced from these volcanics.

Thick basalt sections with associated volcanoclastics and debris flows occur both to the southwest and northeast of the Carlos Zone at Grew Creek. They exhibit local propylitic alteration, and like the rhyolites, do not appear to contain gold mineralization.

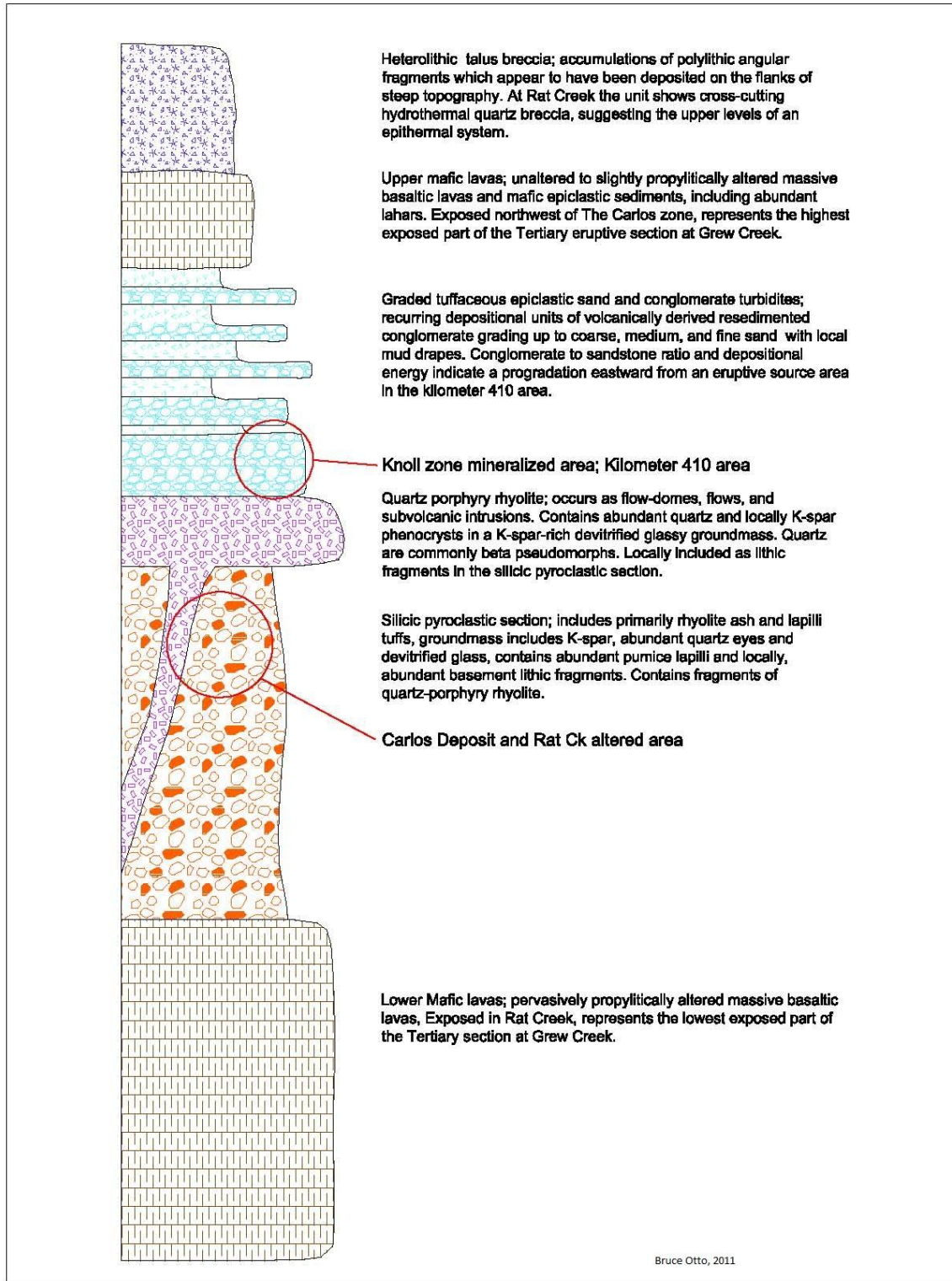
Felsic pyroclastic rocks host the stockwork epithermal gold mineralization at the Carlos Zone and are best exposed in drill core and along the canyon walls of Grew Creek. They are massive to poorly bedded, with abundant fragmental quartz and feldspar phenocrysts. Lithic clasts consist of strongly argillized rhyolite porphyry clasts with a flattened, elliptical cross-section. Local carbonaceous fragments are thought to represent carbonized organic material. Pyrite occurs locally, usually replacing clasts or finely disseminated in the tuff matrix. These tuffs likely represent part of an ignimbritic sequence, based on the lack of bedding and sorting.

At the Carlos Zone, a package of mixed strongly altered felsic tuffs, banded rhyolite, and rhyolite porphyry unconformably overlie the mineralized pyroclastics. This unit contains abundant, finely disseminated pyrite. Local quartz-carbonate veining and silicification occurs but without the associated gold mineralization of the felsic tuffs.

A thick package of mudstone to conglomerate unconformably overlies volcanoclastic units at the Carlos Zone and elsewhere. These rocks are interpreted as lithified basin fill sediments consisting of coarse quartz pebbles, phyllic fragments, and local volcanic clasts. It is interbedded with volcanic clast-rich debris flows and local basalts. This unit is of uncertain age, but due to the inclusion of Paleozoic phyllites and (presumably) Eocene volcanics, as well as interbeds of volcanic debris flows, was likely deposited shortly after felsic volcanoclastic activity. Gold mineralization at the Knoll Zone occurs within epiclastic conglomerates of this package.



**Figure 5-3. Conceptual Grew Creek district volcanic stratigraphy**



## 6.0 EXPLORATION/SUMMARY

### 6.1 Petrography

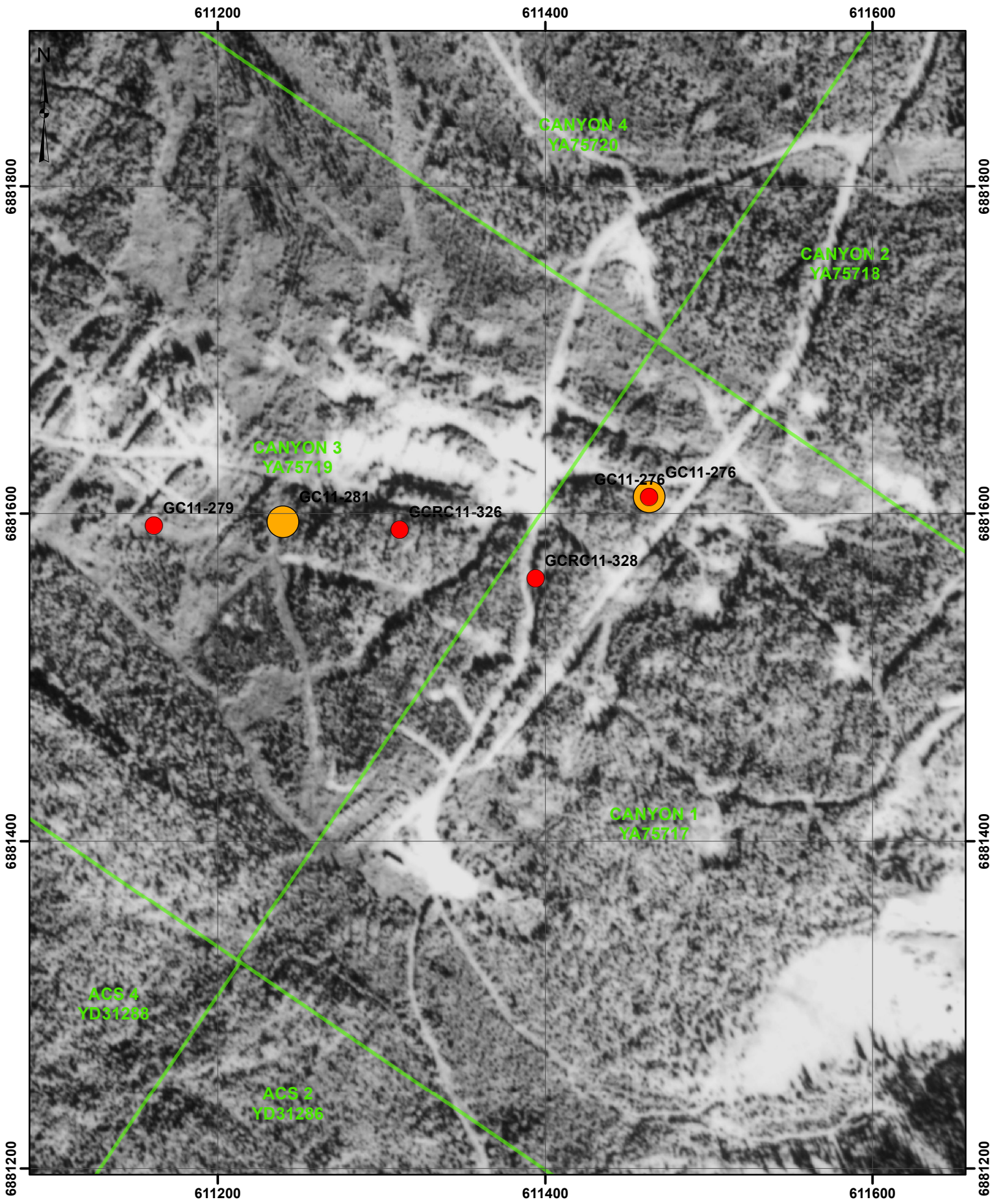
Three vein with wallrock samples from the Carlos Zone gold deposit were submitted to Craig Leitch, Ph.D., P.Eng for petrographic analysis in July of 2012. Shaun O’Connor, Golden Predator geologist was the person responsible for submitting the samples. The final report was received on July 27<sup>th</sup>, 2012 and is presented in Appendix 3. See Table 6-1, and 6-2 below for original location of petrographic samples. The samples were chosen because of high gold and silver assays and the hope that visible gold would be present in the banded veins. The mineral association and mode of occurrence would better help in understanding the processes involved in the deposition of the gold. No visible gold was seen in the polished sections, see Appendix 3 for full description.

**Table 6-1. Petrographic Samples Summary**

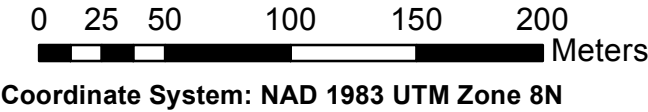
Sample ID	Thin Section Id	Drill Hole	From (m)	To (m)	Au ppm	Ag ppm
<b>K519440</b>	<b>GC12-TS1</b>	<b>GC11-281</b>	<b>120.05</b>	<b>122.05</b>	<b>16.45</b>	<b>81.4</b>
<b>K519060</b>	<b>GC12-TS2</b>	<b>GC11-276</b>	<b>130.39</b>	<b>132.39</b>	<b>38.6</b>	<b>273</b>
<b>K519439</b>	<b>GC12-TS3</b>	<b>GC11-281</b>	<b>118.05</b>	<b>120.05</b>	<b>3.77</b>	<b>15.1</b>

**Table 6-2. Drill Hole Collar Information**

Drill Hole	Collar East Nad83z8	Collar North Nad83z8	Collar Elevation (m)	Azimuth	Dip
<b>GC11-281</b>	<b>611239.688</b>	<b>6881595.117</b>	<b>842.721</b>	<b>060</b>	<b>-58</b>
<b>GC11-276</b>	<b>611463.456</b>	<b>6881610.304</b>	<b>840.501</b>	<b>245</b>	<b>-60</b>



**MLA and Petrographic Sample Locations**



- Drill Collars\_MLA
- Drill Collars Petrography

**Figure 6-1.**

## 6.2 Metallurgical Sample Collection

In April 2011, two >5kg ore samples labelled, “high grade” and “low grade” were delivered to McClelland Laboratories Inc. These samples were essentially ‘lost’ until the fall of 2012 when the renewed effort for metallurgical work was undertaken and 6 new samples were submitted. During the fall of 2012 the original two samples were analyzed and a report was submitted “Grew Creek Scoping Bottle Roll Tests, MLI Job No. 3546”, see Appendix 2. The exact location of these samples by drill hole and interval are unknown. An attempt was made to ask the former Golden Predator Corp. metallurgist, Rob Stepper about the history of these samples, however no response was forthcoming.

On the 27<sup>th</sup> of September, 2012, Mark Shetty, Shaun O’Connor and Shane Carlos collected six metallurgical samples from GC11 series core stored in Faro. Samples were composited by grade and elevation within the Carlos Zone and were comprised of remaining halved HQ drill core. Determining factors for sample source material was based on quality (least oxidized) and accessibility (coarse rejects for these and RC11 drilling are stored at GPD’s Kulan office in Whitehorse but are stacked in a mountain of palletized containers). Field work on the ELP claims NW of Faro brought all three to Faro and made the core an obvious choice.

Sample composite summary:

- GC11001 – High grade (6.10 ppm Au), upper-level composite
- GC11002 – High grade (6.54 ppm Au), mid-level composite
- GC11003 – Average grade (0.49 ppm Au), upper-level composite
- GC11004 – Average grade (0.98 ppm Au), mid-level composite
- GC11005 – Average grade (0.69 ppm Au), lower-level composite
- GC11006 – Low grade (0.27 ppm Au), mixed-level composite

**Table 6-3. 2012 Sample Composite Summary Table**

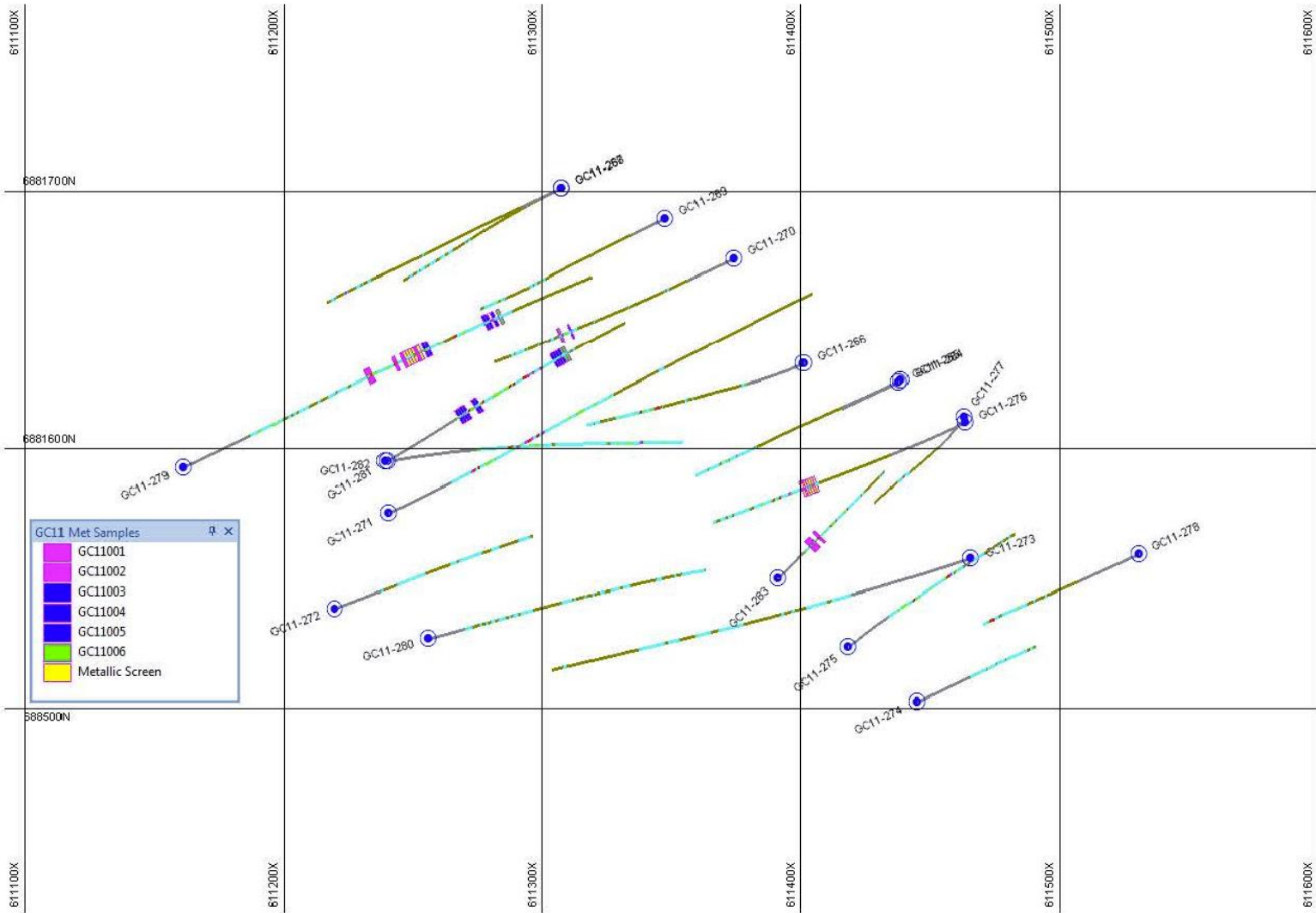
HoleID	From	To	Interval	SampleID	Au ppm	Au_Mth	Ag ppm	Zone	Sample GxT	Comp. ID	Comp. Weighted Grade (Au ppm)	Comp. Length (m)	Comp. Weight (Kg)
GC11-283	50.67	51.81	1.14	K900365	31.7	ALS_Au- GRA21	20.6	750- 825m	36.14	GC11001	6.10	11.69	32
GC11-283	51.81	53.81	2	K900367	1.605	ALS_Au-AA23	1.6	750- 825m	3.21				
GC11-283	53.81	55.81	2	K900368	2.36	ALS_Au-AA23	2.1	750- 825m	4.72				
GC11-283	55.81	57.01	1.2	K900369	10.85	ALS_Au- GRA21	6.5	750- 825m	13.02				
GC11-283	57.01	59.01	2	K900370	1.64	ALS_Au-AA23	1.3	750- 825m	3.28				
GC11-283	65.01	67.01	2	K900374	3.34	ALS_Au-AA23	2.2	750- 825m	6.68				
GC11-283	67.01	68.36	1.35	K900375	3.14	ALS_Au-AA23	3.2	750- 825m	4.24				
<b>GC11-279</b>	<b>138.87</b>	<b>140.87</b>	<b>2</b>	<b>K900085</b>	<b>2.48</b>	ALS_Au-AA23	<b>4.8</b>	<b>675- 750m</b>	<b>4.96</b>	GC11002	6.54	10.00	32
<b>GC11-279</b>	<b>140.87</b>	<b>142.87</b>	<b>2</b>	<b>K900086</b>	<b>3.69</b>	ALS_Au-AA23	<b>5.8</b>	<b>675- 750m</b>	<b>7.38</b>				



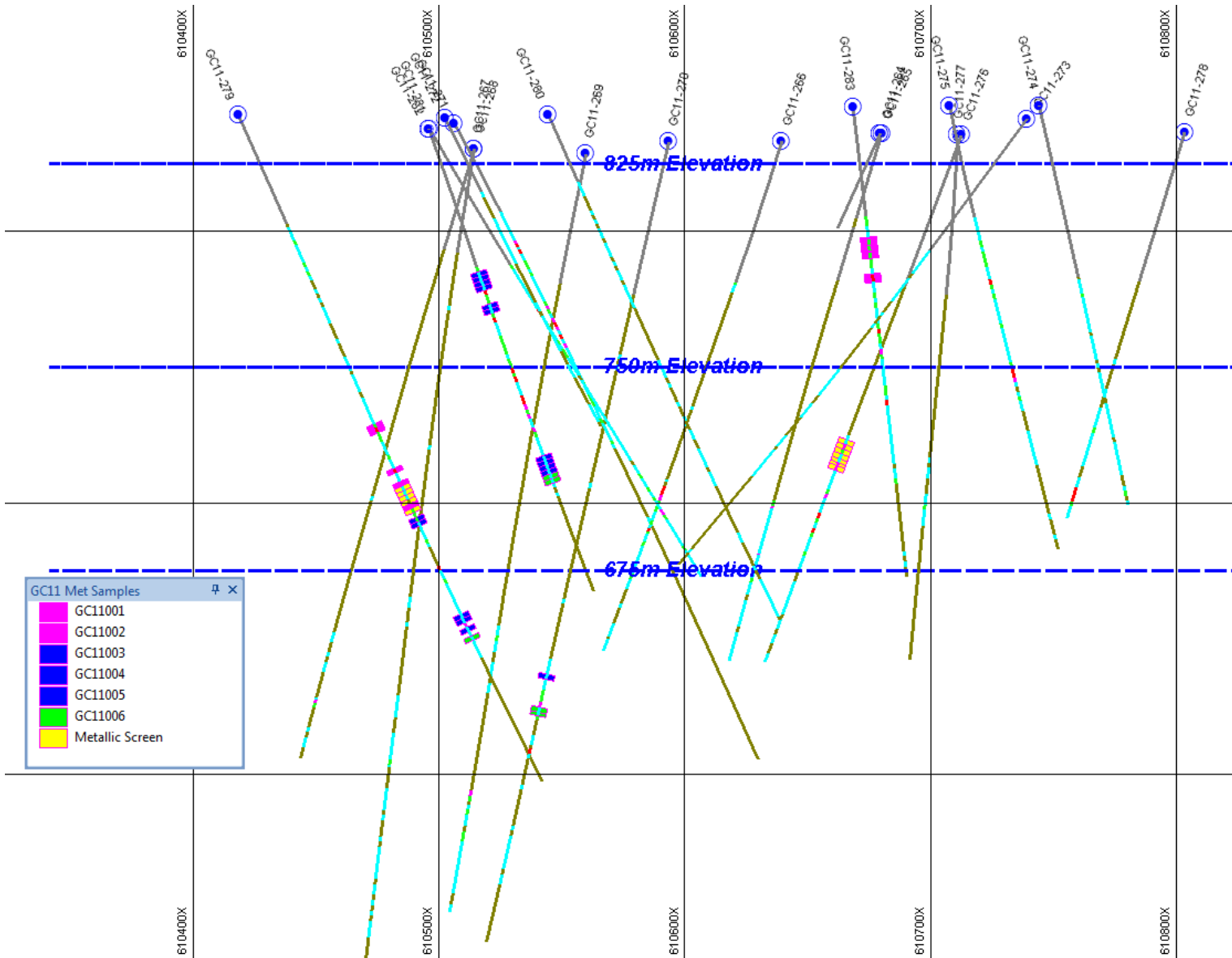
HoleID	From	To	Interval	SampleID	Au_ppm	Au_Mth	Ag_ppm	Zone	Sample GxT	Comp. ID	Comp. Weighted Grade (Au ppm)	Comp. Length (m)	Comp. Weight (Kg)
GC11-279	158.87	160.87	2	K900096	3.15	ALS_Au-AA23	10	675-750m	6.30				
GC11-279	164.87	166.87	2	K900099	11.4	ALS_Au-SCR21	18	675-750m	22.80				
GC11-279	174.87	176.87	2	K900104	12	ALS_Au-SCR21	26.5	675-750m	24.00				
GC11-281	62.05	64.05	2	K519408	0.794	ALS_Au-AA23	1.7	750-825m	1.59	GC11003	0.49	12.00	33
GC11-281	64.05	66.05	2	K519409	0.498	ALS_Au-AA23	1.5	750-825m	1.00				
GC11-281	66.05	68.05	2	K519410	0.289	ALS_Au-AA23	1.4	750-825m	0.58				
GC11-281	68.05	70.05	2	K519412	0.628	ALS_Au-AA23	1.5	750-825m	1.26				
GC11-281	76.05	78.05	2	K519416	0.406	ALS_Au-AA23	1.1	750-825m	0.81				
GC11-281	78.05	80.05	2	K519417	0.301	ALS_Au-AA23	0.9	750-825m	0.60				
GC11-281	142.05	144.05	2	K519452	0.859	ALS_Au-AA23	3.5	675-750m	1.72	GC11004	0.98	12.00	30
GC11-281	144.05	146.05	2	K519453	0.345	ALS_Au-AA23	2.6	675-750m	0.69				
GC11-281	146.05	148.05	2	K519454	0.51	ALS_Au-AA23	4.3	675-750m	1.02				
GC11-281	148.05	150.05	2	K519455	0.827	ALS_Au-AA23	11.5	675-750m	1.65				
GC11-279	178.87	180.87	2	K900107	1.38	ALS_Au-AA23	6.2	675-750m	2.76				
GC11-279	180.87	182.87	2	K900108	1.93	ALS_Au-AA23	2.5	675-750m	3.86				
GC11-270	208.1	210.1	2	K518792	0.785	ALS_Au-AA23	1.6	600-675m	1.57	GC11005	0.69	8.00	28
GC11-279	224.87	226.87	2	K900132	0.877	ALS_Au-AA23	2.7	600-675m	1.75				
GC11-279	226.87	228.87	2	K900133	0.597	ALS_Au-AA23	3.3	600-675m	1.19				
GC11-279	230.87	232.87	2	K900136	0.493	ALS_Au-AA23	2.9	600-675m	0.99				
GC11-270	220.9	222.9	2	K518799	0.127	ALS_Au-AA23	0.7	600-675m	0.25	GC11006	0.27	9.40	29
GC11-270	222.9	224.3	1.4	K518800	0.312	ALS_Au-AA23	0.7	600-675m	0.44				
GC11-281	150.05	152.05	2	K519456	0.349	ALS_Au-AA23	2.2	675-750m	0.70				
GC11-281	152.05	154.05	2	K519457	0.269	ALS_Au-AA23	1.1	675-750m	0.54				
GC11-279	234.87	236.87	2	K900138	0.291	ALS_Au-AA23	1.1	600-675m	0.58				



Figure 6-2. 2012 Composite sample locations – plan view. Scale 1:2500



**Figure 6-3. 2012 composite sample locations – looking 115°. Scale 1:2500**



### 6.3 Mineral Liberation Analysis (MLA)

Four gold ore grade drill samples were received by The Center for Advanced Metallurgical Processing on March 9<sup>th</sup>, 2012, submitted by Mark Shuttly (Golden Predator geologist). The samples were two meter intervals from a 2011 drilling campaign at the Carlos Zone gold deposit by Golden Predator Corp. Sample origins and original gold and silver analytical methods from 2011 are presented in Table 6-4 below. Table 6-5 summarizes drill hole location information and Figure 6-1 shows the collar locations underlain by orthophoto.

The MLA analysis was designed to determine where and what mineral/element associations the gold was occurring in. See Appendix 5, for the complete report.

**Table 6-4. MLA Sample Summary**

HoleID	From (m)	To (m)	Au ppm	Ag ppm	WtRe cvd_k g	Au_CertName	Au_Method	Ag_CertName	Ag_Method
GC11-276	130.39	132.39	33.1	273	7.18	FA11244749	ALS_Au-SCR21	WH11086241	ALS_Ag-OG46
GC11-279	174.87	176.87	12	26.5	6.96	FA11244749	ALS_Au-SCR21	WH11089113	ALS_ME-ICP41
GCRC11-328	68	70	1.32	76	12.25	FA11244749	ALS_Au-SCR21	FA11203173	ALS_Ag-OG46
GCRC11-326	34	36	15.55	43	7.6	FA11244749	ALS_Au-SCR21	FA11203171	ALS_Ag-OG46

Table 6-5 below presents collar information as to the exact position of the relevant samples.

**Table 6-5. Drill Hole Collar Summary**

HoleID	Dip	Elev	NAD83Z8_East	NAD83Z8_North
GC11-276	-60	835.46	611463	6881610
GC11-279	-55	842.83	611161	6881592
GCRC11-328	-90	845.4	611394	6881560
GCRC11-326	-90	844.48	611311	6881590

## 7.0 2011 EXPLORATION EXPENDITURES

Claimed expenditures for the 2011 exploration program were \$42,951.68, as summarized in table 10-1.

**Table 10-1. Summary of claimed exploration expenditures for 2012.**

**Grew Creek Project Statement of Expenditures  
 March 26, 2013**

**Work Performed February - December, 2012**

Expenditure	Units	Unit Cost	Per	Cost
<b>Golden Predator Personnel sample collection (September 27 )</b>				
Senior Project Geologist	1	\$ 550.00	day	\$ 550.00
Geologist	2	\$ 400.00	day	\$ 800.00
<b>Analytical</b>				
Vancouver Petrographics (invoice 120633)				\$ 1,079.68
Montana Tech Mineral Liberation Analysis (invoice GMET-058)				\$ 3,600.00
McCelland Laboratories Inc, metallurgical testing (invoice 3753/9988)				\$ 2,535.00
McCelland Laboratories Inc, metallurgical testing (invoice 3753/10041)				\$ 33,477.00
McCelland Laboratories Inc, metallurgical testing (invoice 3546/10197)				\$ 410.00
<b>Report</b>				
Report writing cost				\$ 500.00
<b>Total</b>				<b>\$ 42,951.68</b>



## 8.0 STATEMENT OF AUTHORSHIP

This Report titled “Assessment Report, **2012 Metallurgy, Ore Liberation and Petrography**, Grew Creek Project, Whitehorse Mining Division, Yukon Territory, Canada”, and dated April 4<sup>th</sup>, 2012 was prepared and signed by the following author:

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Shane Carlos

Dated: April 4<sup>th</sup>, 2013.

## 9.0 REFERENCES

Christie, A.B., Duke, J.L., and Rushton, R., 1992: Grew Creek Epithermal Gold-Silver Deposit, Tintina Trench, Yukon, (105 K/2). In: Yukon Geology, Vol. 2, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 223-259.

Environment Canada:

[http://www.climate.weatheroffice.gc.ca/climate\\_normals/results\\_e.html?stnID=1548&lang=e&dCode=0&province=YT&provBut=Search&month1=0&month2=12](http://www.climate.weatheroffice.gc.ca/climate_normals/results_e.html?stnID=1548&lang=e&dCode=0&province=YT&provBut=Search&month1=0&month2=12)

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Minfile, 2004: Minfile occurrence 105K 009, Grew Creek property; Yukon Minfile, Yukon Geological Survey, Whitehorse, Yukon.

Shutty, M., 2011: Assessment Report, 2011 Exploration Program, Grew Creek Property, Whitehorse Mining Division, Yukon, Canada

Stroshein, R.W., 2011: Geological Report on Diamond Drilling 2010 on the Carlos Zone, Grew Creek Property, Yukon, Canada: Technical Report filed with SEDAR, Using British Columbia Securities Commission National Instruments 43-101 Guidelines, May 2011.

## APPENDIX 1.

### STATEMENT OF QUALIFICATIONS

Shane Allen Carlos  
1 Lindeman Road  
Whitehorse, Yukon Territory  
Canada Y1A 5Z7  
E-mail: [scarlos@aubullion.com](mailto:scarlos@aubullion.com)

#### Certificate of Author

I, Shane Allen Carlos of, Whitehorse, Yukon Territory, certify that:

1. I graduated from the University of British Columbia with a Bachelor of Science in Earth and Ocean Sciences, in 2009.
2. I have worked in the mineral exploration business for the last 15 years on diamond drill rigs, as a line cutter, soil sampler, claim staker and core logger, and as a geologist for Golden Predator Canada Corp. since September 2010.
3. I participated in the collection of the drill core samples used in the metallurgical analysis.

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Shane Allen Carlos

Whitehorse, Yukon Territory

Dated, this 4<sup>th</sup> day of April, 2013.

**APPENDIX 2.**  
**PETROGRAPHIC REPORT**



## PETROGRAPHIC REPORT ON 3 SAMPLES

Report for: Shaun O'Connor, Geologist  
Golden Predator Canada Corp.  
201A-170 Titanium Way  
Whitehorse, Yukon Y1A 0G1 (867.633-4653)

Invoice 120633

July 27, 2012.

SUMMARY: Capsule descriptions are as follows:

GC12-TS1: banded (multistage) epithermal quartz-carbonate vein (with relict platy texture indicative of proximity to a boiling zone, local late narrow carbonate veinlets), cutting felsic crystal-lithic tuff with strong silicic/phyllitic (quartz-sericite-pyrite-trace rutile) alteration. No particles of gold could be located in the surface of the polished section.

GC12-TS2: banded (multistage) epithermal quartz-carbonate-Kspar vein (with relict platy texture indicating proximity to a boiling zone, and local late narrow quartz veinlets), cutting felsic crystal-lithic tuff with strong silicic/phyllitic (quartz-sericite-pyrite-trace rutile) alteration. No particles of gold were located in the surface of the polished section.

GC12-TS3: banded (multistage) epithermal quartz-carbonate-relict Kspar vein (with relict platy texture indicating proximity to a boiling zone, and late fracture veinlets of sericite), cutting felsic (possibly rhyolitic) crystal-lithic tuff with strong silicic/phyllitic (quartz-sericite-pyrite-trace rutile) alteration. No particles of gold were located in the surface of the polished section.

Detailed petrographic descriptions and photomicrographs are appended (on CD/by email attachment). If you have any questions regarding the petrography, please do not hesitate to contact me.

Craig H.B. Leitch, Ph.D., P. Eng. (250) 653-9158 dromore61@gmail.com  
492 Isabella Point Road, Salt Spring Island, B.C. Canada V8K 1V4



GC12-TS1: QUARTZ/PLATY CARBONATE VEIN CUTTING FELSIC CRYSTAL/LITHIC TUFF ALTERED TO QUARTZ-SERICITE-PYRITE-TRACE RUTILE

Described as contact of quartz-carbonate vein with felsic tuff wallrock, part of a drilled interval containing over 10 ppm Au; no hand specimen remaining, but the etched offcut shows creamy-buff vein in contact with greenish-grey, altered and pyritized wallrock. The rock is not magnetic, shows slow reaction to cold dilute HCl (mainly where scratched, with difficulty, by steel), and significant stain for K-feldspar (mainly in the wallrock) in the etched offcut. Modal mineralogy in polished thin section is approximately:

<u>Vein</u>		<u>Wallrock</u>	
Quartz (secondary, partly after platy calcite?)	80%	Quartz (phenocrysts/shards)	25%
Carbonate (dolomite?)	10%	(groundmass, partly secondary)	25%
Voids/vugs	~5%	K-feldspar (phenocrysts, groundmass)	25%
Sericite (mainly in vugs)	~5%	Sericite (partly plucked to leave voids)	15%
Sulfide (mainly pyrite)	<1%	Pyrite	10%
		Rutile, possible monazite (?)	<1%

The vein consists of fine-grained secondary quartz and minor interstitial carbonate, in part probably after well-developed, randomly oriented or radiating “platy carbonate” relicts with acicular shapes up to about 7 mm long (by mostly 0.15 mm thick). This texture, which is best developed in a 1-2 cm thick marginal zone of the vein, is typically indicative of proximity to a zone of rapid quenching or “boiling” in an epithermal vein system, and as such is prospective for the occurrence of native metals including Au and Ag. The secondary quartz forms interlocking, randomly oriented subhedra mainly <0.3 mm except where apparently replacing the former platy carbonate, where it occurs as more anhedral, very fine-grained crystals mostly <50 um in size, intimately intermixed with remnant carbonate as similar-sized (mostly <50 um, rarely to 0.1 mm) subhedral crystals. The carbonate may be partly to largely dolomite to explain the slow reaction to HCl in hand specimen. The inner zone of the vein, up to at least 1 cm thick, consists mainly of secondary quartz as bladed, more or less euhedral, randomly oriented crystals up to about 0.5 mm long, with clotty carbonate as subhedra to ~1mm. Both zones locally contain voids (mainly vugs) <0.5 mm in size that are locally partly filled with sericite as minute randomly oriented subhedral flakes mostly <15 um (and partly rimmed by carbonate), and are cut by narrow veinlets partly filled with carbonate, approximately perpendicular to vein walls. Sulfides are very rare within the vein, and are mostly minute pyrite as subhedra <0.1 mm, associated with either the vugs/sericite fillings or with the late, crosscutting veinlets.

In the wallrock, crystals/shards of quartz and Kspar (both mostly broken sub/euhedra up to ~1.5 mm in size; Kspar with very small 2V indicative of sanidine, i.e. high-T, volcanic Kspar) are prominent and closely packed, as are lithic clasts with sub-rounded/sub-angular outlines up to about 2 mm (5 mm in etched offcut). Quartz phenocrysts/shards show distinct quartz overgrowth rims up to ~75 um thick, indicative of silicification. The lithic clasts are typically strongly altered to very fine-grained secondary quartz (tightly interlocking subhedra mainly <0.1 mm) and/or sericite (subhedral flakes 20 um, except where after former biotite booklets up to ~1 mm, where the sericite may be up to 0.5 mm). Pyrite occurs in both clasts and matrix as euhedral, commonly fractured cubic crystals up to about 0.5 mm. The matrix is very fine-grained, apparently mostly secondary quartz and sericite, with minor relict (partly/largely sericitized) Kspar, and pyrite as cubic crystals mainly <0.1 mm in size. Pyrite aggregates up to 0.5 mm across locally show atoll texture. Traces of rutile (dark golden brown euhedra <60 um) occur with sericite and secondary quartz, rarely associated with possible monazite (?) as euhedra to 45 um.

No gold was observed in either vein or wallrock during routine observation in reflected light. It might be possible to locate some by SEM (scanning electron microscope) in backscattered mode, searching for bright specks (with high Z, atomic number).

In summary, this is confirmed as quartz-carbonate vein (with relict platy texture indicative of proximity to a boiling zone) cutting felsic crystal-lithic tuff with strong silicic/phyllitic (quartz-sericite-pyrite-trace rutile) alteration. No particles of gold were located in the surface of the polished section.

GC12-TS2: QUARTZ/PLATY CARBONATE-KSPAR (CLAY? ALTERED) VEIN CUTTING  
FELSIC CRYSTAL/LITHIC TUFF ALTERED TO QUARTZ-SERICITE-PYRITE±RUTILE

Described as contact of quartz-carbonate vein with felsic tuff wallrock, part of drilled interval with >10 ppm Au; no hand specimen remains, but etched offcut shows banded milky white (quartz)-pinkish brown (carbonate)-local Kspar epithermal vein in contact with greenish-grey altered/pyritized wallrock. The rock is not magnetic, shows slow reaction to cold dilute HCl (especially where scratched by steel), and significant stain for K-feldspar (mainly in the wallrock; minor in certain bands of the vein) in the etched offcut. Modal mineralogy in polished thin section is approximately:

<u>Vein</u>		<u>Wallrock</u>	
Quartz (secondary, partly after platy calcite?)	60%	Quartz (phenocrysts/shards)	25%
Carbonate (dolomite?)	20%	(groundmass, partly secondary)	25%
K-feldspar (clay? altered, adularia?)	10%	K-feldspar (phenocrysts, groundmass)	25%
Clay?/sericite (mainly after Kspar)	~5%	Clay?, sericite (partly plucked to voids)	15%
Voids/vugs	3-5%	Pyrite	8-10%
Sulfide (mainly pyrite)	1-2%	Rutile	~1%

The vein consists of banded fine-grained quartz and carbonate, the quartz in part likely after well-developed, randomly oriented or radiating “platy carbonate” relicts with acicular shapes up to about 2 mm long (mostly <0.15 mm thick). This texture, which is best developed in a <1 cm thick marginal zone of the vein, is typically indicative of proximity to a zone of rapid quenching or “boiling” in an epithermal vein system, and considered prospective for the occurrence of native metals including Au and Ag. The secondary quartz forms interlocking, randomly oriented subhedra mainly <0.25 mm except where apparently replacing the former platy carbonate, where it occurs as more anhedral, very fine-grained crystals mostly <50 um in size, intimately intermixed with remnant carbonate as similar-sized (mostly <50 um, rarely to 0.2 mm) subhedral crystals. The carbonate may be partly to largely dolomite to explain the slow reaction to HCl in hand specimen. The inner zone of the vein, up to at least 1 cm thick, consists mainly of secondary quartz as bladed, more or less euhedral, randomly oriented crystals mostly <0.2 mm long, with clotty carbonate as subhedra to ~1mm associated with vugs. A marginal zone contains relict Kspar as sub/euhedra to 2.5 mm (possibly formerly adularia?, strongly clay?/sericite altered, as minute randomly oriented subhedral flakes mostly <10 um), locally associated with vugs <0.5 mm in size that are also associated with carbonate bands), and are cut by narrow veinlets partly filled with quartz, approximately perpendicular to vein walls. Sulfides are relatively rare within the vein, and are mostly cubic pyrite euhedra <0.15 mm, associated with either the carbonate-Kspar (clay?/sericite) rich bands or zones with platy carbonate relicts.

In the wallrock, crystals/shards of quartz and Kspar (both partly broken euhedra up to ~2.5 / 3.5 mm respectively) are prominent and closely packed, as are lithic clasts with sub-rounded/sub-angular outlines up to about 4 mm. Kspar phenocrysts (sanidine, with very small 2V) are partly after relict plagioclase (likely albite; little relief difference against Kspar). Quartz phenocrysts/shards show partial quartz overgrowth rims up to ~75 um thick, indicative of silicification. The lithic clasts are typically strongly altered to very fine-grained secondary quartz (tightly interlocking subhedra mainly <0.15 mm) and/or sericite (subhedral flakes <15 um, except locally up to 50 um). Pyrite occurs in both clasts and matrix as euhedral, commonly fractured cubic crystals up to about 0.25 mm. The matrix is very fine-grained, apparently mostly secondary quartz and clay?/sericite, with minor relict (partly/largely sericitized), locally somewhat spherulitic (?) Kspar, and pyrite as cubic crystals mainly <0.1 mm in size. Pyrite aggregates up to 0.5 mm across are locally porous or fractured. Minor rutile (dark golden brown euhedra <50 um) occurs with secondary quartz, pyrite and sericite.

No gold was observed in either vein or wallrock during routine observation in reflected light. It might be possible to locate some by SEM (scanning electron microscope) in backscattered mode, searching for bright specks (with high Z, atomic number).

In summary, this is confirmed as quartz-carbonate-Kspar vein (relict platy texture indicating proximity to a boiling zone) cutting felsic crystal-lithic tuff with strong silicic/phyllitic (quartz-sericite-pyrite-trace rutile) alteration. No particles of gold were located in the surface of the polished section.

GC12-TS3: QUARTZ/PLATY CARBONATE-KSPAR (CLAY? ALTERED) VEIN, CUTTING FELSIC CRYSTAL/LITHIC TUFF ALTERED TO QUARTZ-SERICITE-PYRITE±RUTILE

Described as contact of quartz-carbonate vein with felsic tuff wallrock, part of drilled interval with >10 ppm Au; hand specimen shows fractured, banded (multiple generation) milky white quartz-brown carbonate-local Kspar epithermal vein in contact with greenish-grey altered/pyritized wallrock. The rock is not magnetic, shows slow reaction to cold dilute HCl (especially where scratched by steel), and significant stain for K-feldspar (mainly in the wallrock; but also in marginal bands of the vein) in the etched offcut. Modal mineralogy in polished thin section is approximately:

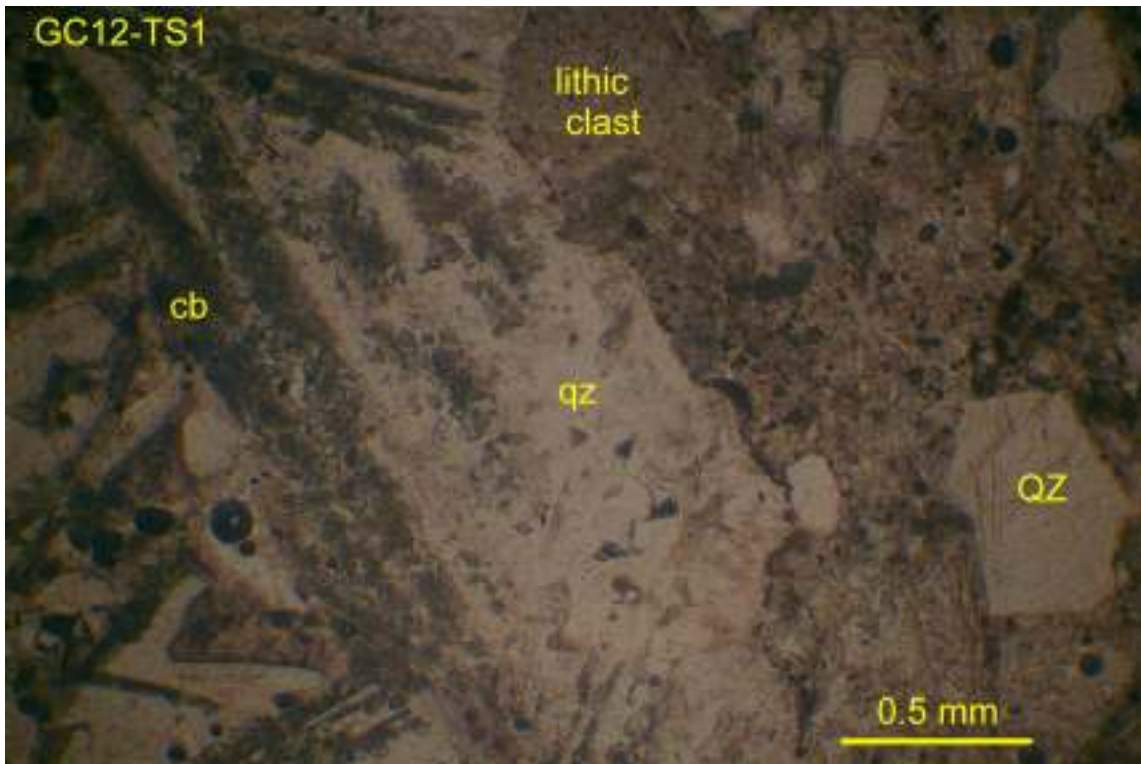
<u>Vein</u>		<u>Wallrock</u>	
Quartz (secondary, partly after platy calcite?)	60%	Quartz (groundmass; partly secondary)	40%
Carbonate (dolomite/ankerite?)	20%	(phenocrysts/shards)	20%
K-feldspar (clay? altered, adularia?)	10%	K-feldspar (phenocrysts, groundmass)	20%
Clay?/sericite (mainly after Kspar)	~5%	Clay?, sericite (partly plucked to voids)	15%
Voids/vugs	3-5%	Marcasite, minor pyrite	~5%
Sulfide (?marcasite or relict pyrite)	1-2%	Rutile	<1%

The vein consists of banded fine-grained quartz and carbonate, the quartz only locally after poorly preserved, randomly oriented/radiating “platy carbonate” relicts with acicular shapes up to about 2 mm long (mostly <0.05 mm thick). This texture, which is best developed in a <1.5 cm thick marginal zone of the vein, typically indicates proximity to a zone of rapid quenching or “boiling” in epithermal vein systems, and considered prospective for the occurrence of native metals including Au and Ag. The secondary quartz forms interlocking, randomly oriented sub/euhedra up to 0.35 mm long except where apparently replacing the former platy carbonate, where it occurs as more subhedral, very fine-grained crystals mostly <75 um in size, intimately intermixed with remnant carbonate as minute (mostly <20 um) subhedra. Most carbonate is concentrated in an irregular internal band/cross-cutting zone where it forms interlocking very dark brown (Fe-rich?) subhedra to 0.3 mm (dolomite/ankerite to explain the slow reaction to HCl in hand specimen). The inner zone of the vein, up to about 2 cm thick, consists essentially of secondary quartz as bladed, more or less euhedral, randomly oriented crystals mostly <0.2 mm long, with carbonate inclusions to ~2 mm partly associated with vugs. A marginal zone contains relict Kspar as sub/euhedra to 2.5 mm (possibly formerly adularia?, strongly clay?/sericite altered to minute randomly oriented subhedral flakes mostly <15 um), locally associated with vugs up to 1.5 mm in size that are rimmed by drusy quartz that also infills between layered clasts <1.5 mm long). Narrow late veinlets <50 um thick partly filled with sericite, carbonate and quartz cut the vein approximately perpendicular to vein walls. Sulfides are relatively rare within the vein, mostly aggregates to 0.25 mm of bladed euhedra <30 um thick with faint anisotropism (marcasite or pyrite after marcasite?), typically associated with either the carbonate-rich zones or zones rich in platy carbonate relics and associated Kspar (clay?/sericite).

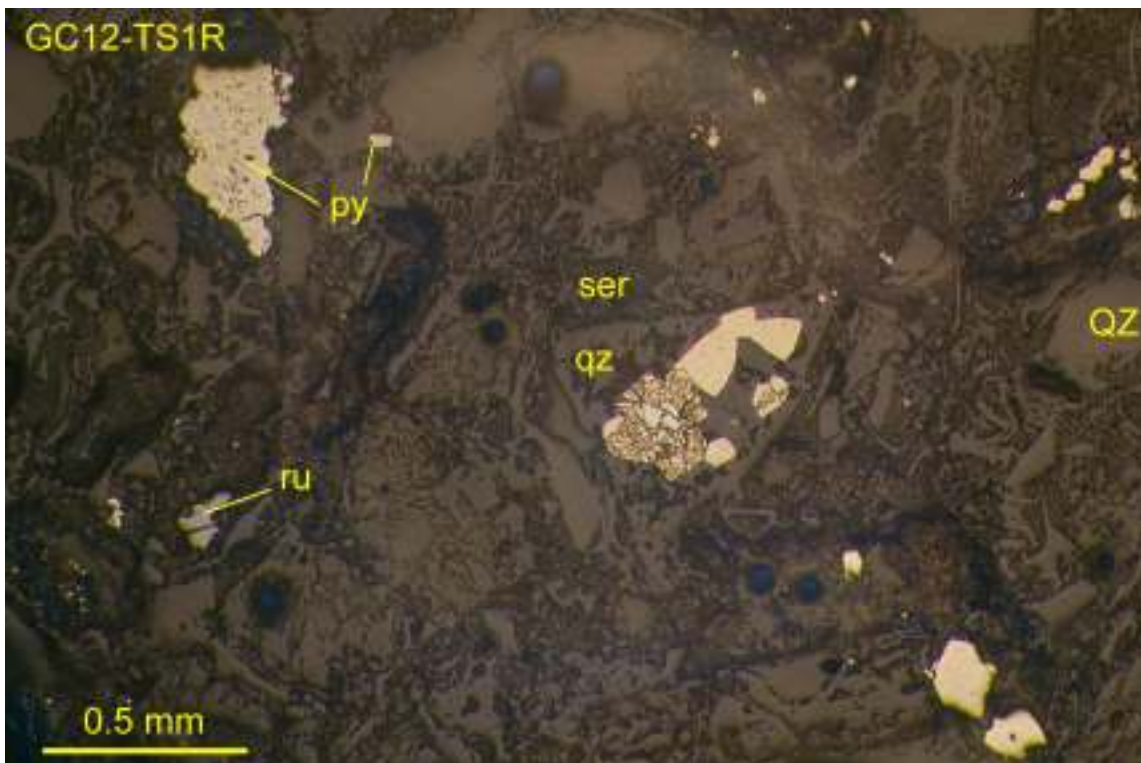
In the wallrock, crystals/shards of quartz and Kspar (both partly broken euhedra up to ~2.5 or <1.5 mm respectively) are less abundant and more scattered than in TS-1 or 2; lithic clasts are virtually unrecognizable due to silicification occurring as a network of veinlets with local vugs and rare carbonate. Kspar phenocrysts are also mostly replaced by secondary quartz. Quartz phenocrysts are fractured and show strong quartz overgrowths or coronas up to 0.15 mm thick, indicative of silicification. The lithic clasts are typically completely replaced by fine-grained secondary quartz (tightly interlocking subhedra mainly <0.15 mm) and they and quartz crystals are cut by sericite veinlets (subhedral flakes up to 50 um). Pyrite is mostly associated with silicification as euhedral, commonly fractured cubic crystals up to about 0.25 mm. The matrix is very fine-grained, apparently mostly secondary quartz and clay?/sericite, with minor relict (partly/largely silicified and sericitized) Kspar, and pyrite as cubic crystals mainly <0.1 mm in size. Sulfide aggregates up to 0.25 mm across are locally porous or fractured, and appear to be mostly of bladed euhedra of marcasite mostly <45 um long. Minor rutile (dark golden brown euhedra <50 um) occurs with secondary quartz, marcasite and sericite.

No gold was observed in either vein or wallrock during routine observation in reflected light. It might be possible to locate some by SEM (scanning electron microscope) in backscattered mode, searching for bright specks (with high Z, atomic number).

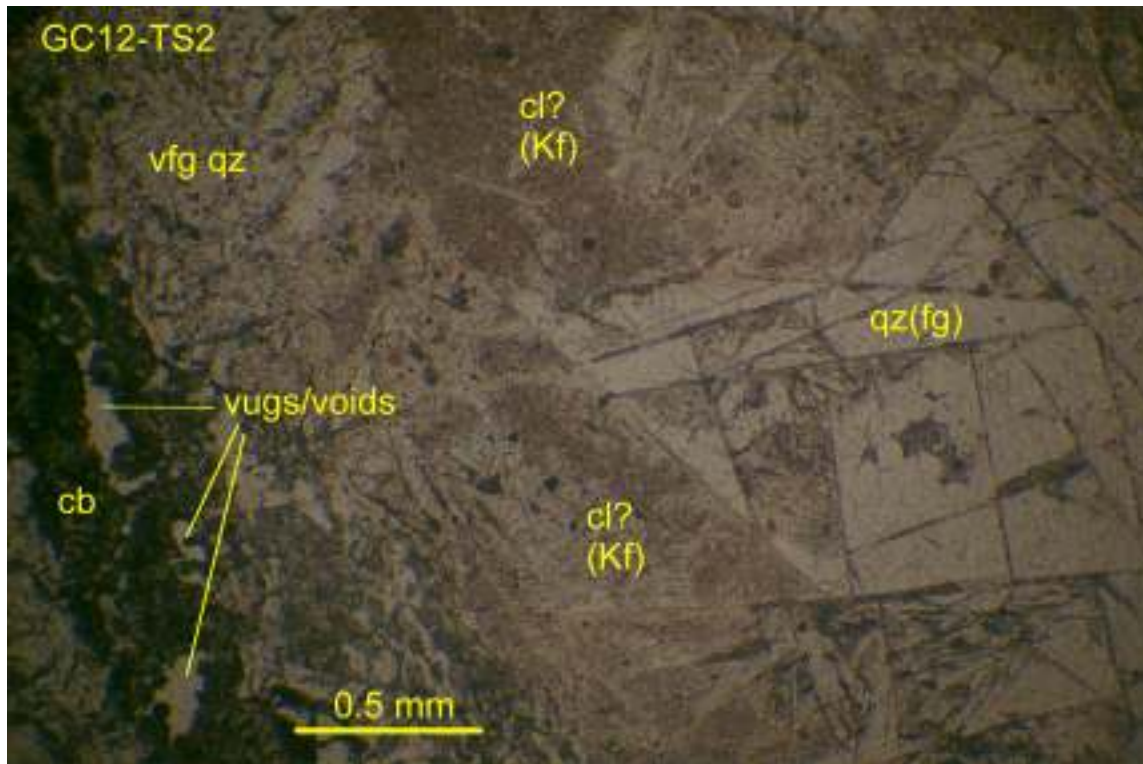
In summary, this is confirmed as banded (multistage) epithermal quartz-carbonate-relict Kspar vein (with relict platy texture indicating proximity to a boiling zone, and late fracture veinlets of sericite-quartz-carbonate) cutting felsic (possibly rhyolitic) crystal-lithic tuff with strong silicic/phyllitic (quartz-sericite-pyrite-trace rutile) alteration. No particles of gold were located in the surface of the polished section.



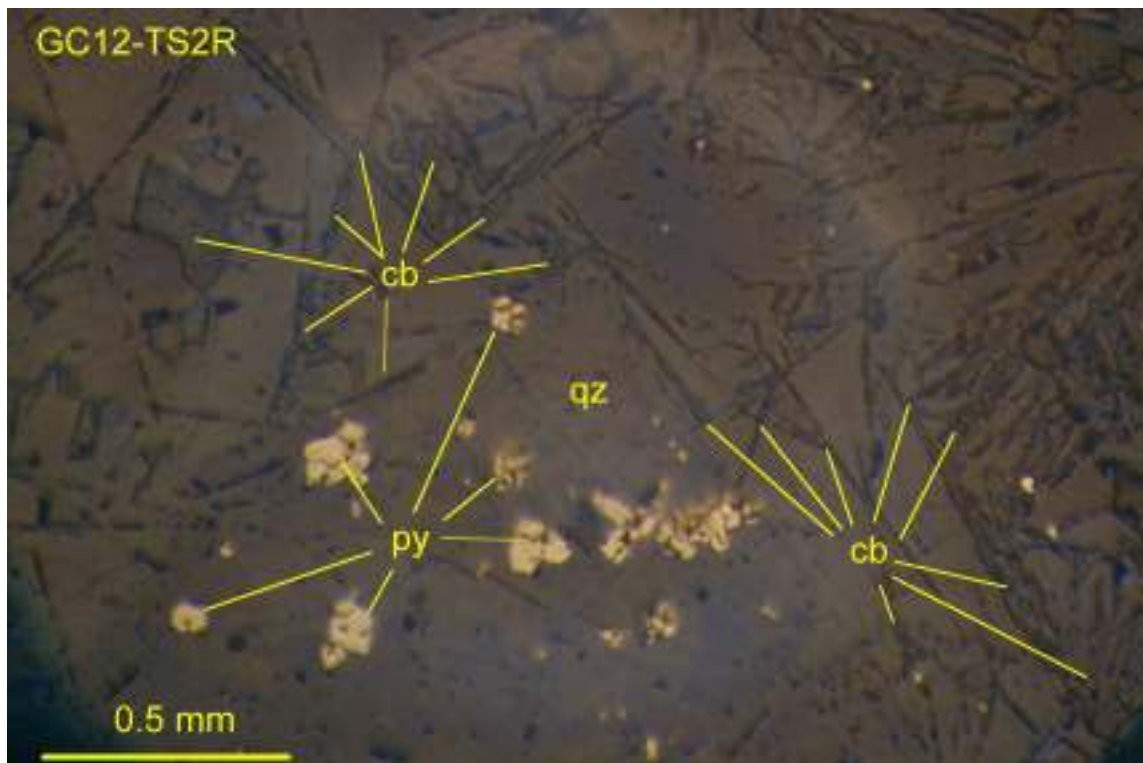
GC12-TS1: View across contact of vein composed of platy carbonate relicts (cb), in matrix of secondary quartz (qz), with wallrock composed of shards of quartz (QZ) and small lithic clasts altered to quartz and sericite, in matrix with minor pyrite (opaque). Transmitted plane light, field of view 3.0 mm wide.



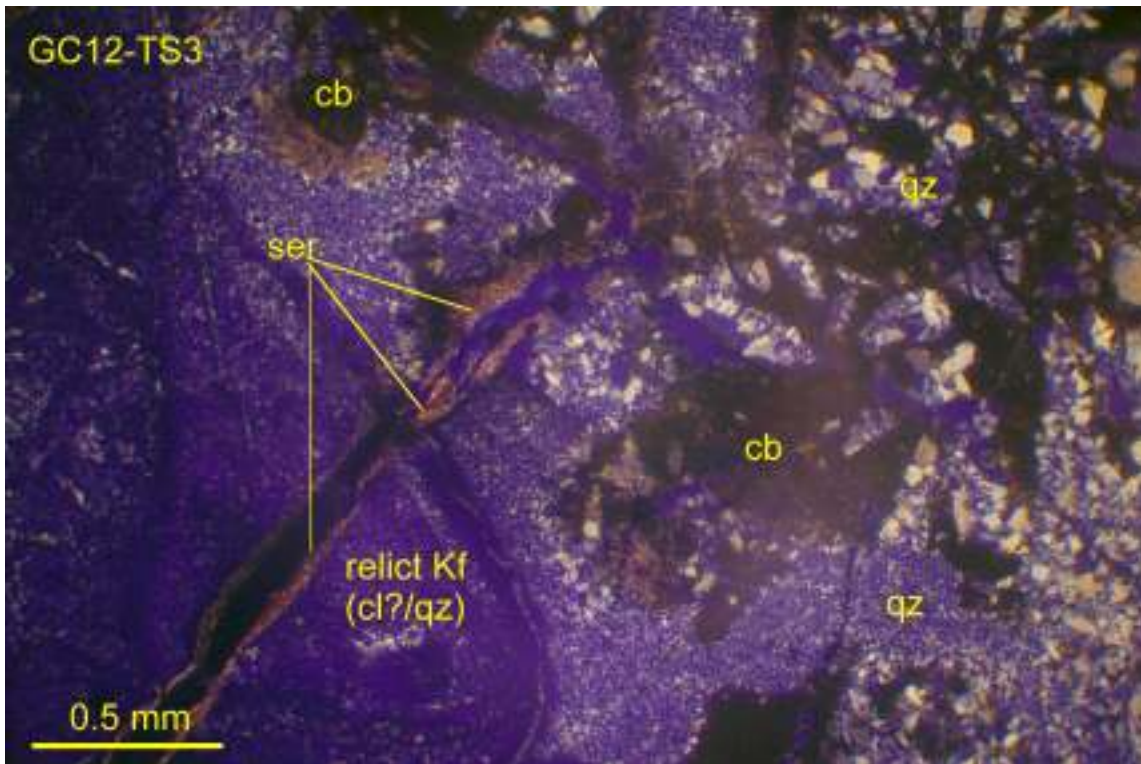
GC12-TS1R: Sub/euhedral, locally strongly fractured pyrite (py) and minor rutile (ru) associated with silicification and sericitization of crystal-lithic tuff wallrock to vein; minor very fine-grained pyrite also occurs in the tuff matrix. Reflected light, uncrossed polars, field of view 2.75 mm wide.



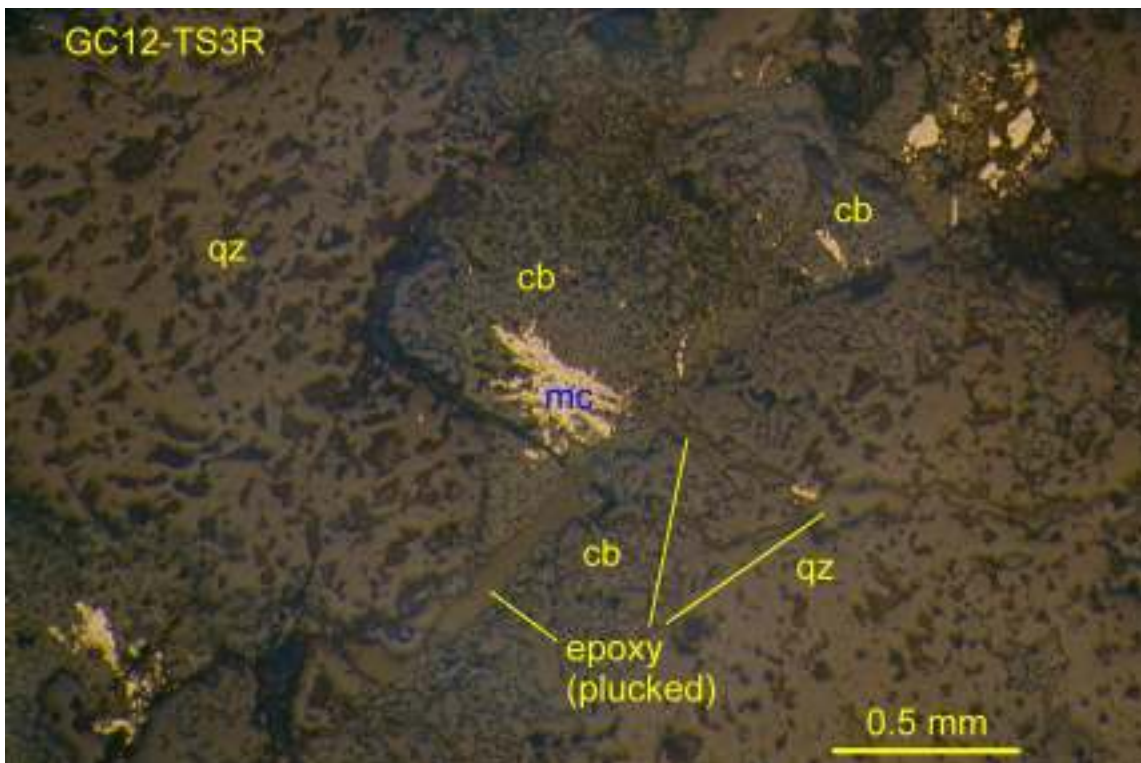
GC12-TS2: Banded epithermal vein showing rhomb-shaped outlines of relict Kspar (clay?/sericite altered adularia?) with random/radiating platy laths of carbonate mostly replaced by matrix of secondary quartz (qz), and band of carbonate (cb) associated with vugs. Transmitted plane light, field of view 3.0 mm wide.



GC12-TS2R: Minor cubic pyrite as fractured euhedra, associated with locally radiating, platy carbonate relicts (cb) partly replaced by and in matrix of fine-grained secondary quartz (qz), marginal band of vein. Reflected light, uncrossed polars, field of view 2.25 mm wide.



GC12-TS3: Band of epithermal vein showing subhedral outlines of relict Kspar (clay?/sericite and or quartz altered adularia?) associated with random/radiating platy laths of carbonate (cb) partly replaced by matrix of secondary quartz (qz), cut by late veinlet of sericite (ser). Transmitted light, crossed polars, field of view 3.0 mm wide.




GC12-TS3R: Sulfide, possibly mostly marcasite, forming aggregates of bladed, porous euhedra closely associated with carbonate (cb), likely dolomite/ankerite, in matrix of vein quartz (qz). Reflected light, uncrossed polars, field of view 2.25 mm wide.




Overview of thin sections and offcuts (blue semi-circles mark photomicrograph locations).



GRC 2011: List of Samples for Petrographic Analysis

		
<b>SampleID</b>	K519440	<b>Description</b>
<b>Thin Section</b>	GC12-TS1	
<b>HoleID</b>	GC11-281	Quartz-carbonate vein, multiple phases of brecciation, minor Fe-carbonate, in silicified crystal-lithic tuff.
<b>From</b>	120.05	
<b>To</b>	122.05	
<b>Au ppm</b>	16.45	
<b>Ag ppm</b>	81.4	

		
<b>SampleID</b>	K519060	<b>Description</b>
<b>Thin Section</b>	GC12-TS2	
<b>HoleID</b>	GC11-276	Quartz-carbonate vein in Fe-carbonate vein stockwork/breccia matrix Ts2
<b>From</b>	130.39	
<b>To</b>	132.39	
<b>Au ppm</b>	38.6	
<b>Ag ppm</b>	273	



<b>SampleID</b>	K519439	<b>Description</b>
<b>Thin Section</b>	GC12-TS3	
<b>HoleID</b>	GC11-281	Brecciated quartz-carbonate vein with Fe-carbonate and thin sulfidic selvages
<b>From</b>	118.05	
<b>To</b>	120.05	
<b>Au ppm</b>	3.77	
<b>Ag ppm</b>	15.1	

**APPENDIX 3.**  
**METALLURGICAL REPORT 1**



See Data Folder for Secured  
Metallurgical Report #1

**APPENDIX 4.**  
**METALLURGICAL REPORT 2**  
**AND MLIP-355**



See Data Folder for Secured  
Metallurgical Report #2



**McCLELLAND LABORATORIES, INC.**

1016 Greg Street, Sparks, Nevada 89431 (775) 356-1300

FAX (775) 356-8917

E-MAIL [mli@mettest.com](mailto:mli@mettest.com)

October 18, 2012

Mr. Michael G. Maslowski  
**Golden Predator Canada Corp.**  
170 Titanium Way  
Suite 201-A  
Whitehorse, YT Y1A 0G1

Dear Michael:

Enclosed is our proposal (MLIP-355) for metallurgical testing on six composites from your Grew Creek project.

Please review the planned scope of testing to ensure that it will meet your needs.

We appreciate the opportunity to submit this proposal, and look forward to working with you on the project.

Sincerely,

Jeffrey Olson  
Metallurgist / Project Manager

JLO:cd  
Enclosure



## **McCLELLAND LABORATORIES, INC.**

1016 Greg Street, Sparks, Nevada 89431 (775) 356-1300

FAX (775) 356-8917

E-MAIL [mli@mettest.com](mailto:mli@mettest.com)

**McClelland Laboratories, Inc.  
Proposal MLIP-355  
for  
Golden Predator Canada Corp.  
Grew Creek Project  
October 18, 2012**

### **I. GENERAL**

McClelland Laboratories, Inc. proposes to conduct laboratory scale testing to determine the response of metallurgical samples to various processing methods. Proposed testing will include scoping level evaluations of cyanidation at relatively coarse feed sizes (12.7mm and 9mm) and at a milled feed size (75 $\mu$ m), along with scoping level flotation and gravity concentration tests. This testing program was designed based on information and objectives provided by Mr. Michael Maslowski.

Half drill core from the Grew Creek project will be composited following the instructions provided by Golden Predator personnel. The proposed analyses for each composite include a fire assay to determine gold and silver content, a cyanide shake test to determine cyanide soluble gold and silver, a “spiked” cyanide shake test to determine preg-robbing characteristics, an ICP scan to determine contained metals (including Hg by cold vapor AA methods), carbon and sulfur speciation analyses, and a “classical” whole rock analysis to classify the gangue material.

Samples from each composite will be used to run agitated cyanidation tests at three different feed sizes: 80%-12.7mm, 9mm and 75 $\mu$ m. As alternatives to whole ore cyanidation treatment, gravity and flotation beneficiation tests will also be conducted. The batch gravity concentration test will be conducted using a bench scale Knelson concentrator. The flotation test will include rougher and cleaner flotation with collectors targeting most common sulfide minerals.

### **II. SAMPLE DESCRIPTION AND WEIGHT REQUIREMENTS**

Receipt of 150 to 180 kg of half drill core from the Grew Creek project is anticipated.

Weight required from each potential ore zone composite is 13 to 23 kg. This includes sample for head analyses (1 to 3 kg), head screens (2 to 4 kg), bottle roll testing (4 kg), flotation testing (1 kg), and gravity concentration testing (5 to 10 kg).



### **III. SCOPE OF WORK**

#### **A. Sample Receipt, Inventorying, Interval Preparation & Analyses**

Each drill core interval sample received will be unloaded, inventoried and weighed. Storage locations for each sample will be tracked in a computerized storage database throughout the testing program.

The uncrushed half core will be composited following instructions provided by the client to make six composites. Each composite will be stage crushed to an 80%-12.7mm (100%-24mm) feed size and blended. Representative samples from each composite will be taken for bottle roll testing (2 kg) and head screen analyses (4 kg). The remaining material will be stage crushed to an 80%-9mm (100%-19mm) feed size and blended. Representative samples will be taken for bottle roll testing (1 kg), triplicate head assays (1 kg each), and further crushing (14 kg). The sample taken for further crushing will be crushed to a nominal 850µm feed size. Representative samples will be taken from the 850µm material for gravity concentration testing (10 kg), bottle roll testing (1 kg), and flotation testing (1 kg). The remaining sample (2 kg) will be reserved for repeat testing as needed. All sample preparation costs are estimated on a reimbursable basis. Billing will be based on actual time required.

Each head sample will be analyzed by fire assay to determine gold and silver content. Two cyanide shake analyses will also be conducted on samples from each interval. One cyanide shake test will be done with a leach solution containing NaCN and NaOH, the second cyanide shake test will be done with a similar solution that is "spiked" with a known amount dissolved gold. The first test will determine cyanide soluble gold and silver content. Comparison of the second test with the first will determine the "preg-robbing" character of the sample. Certain intervals (~17 total) will be selected for a multi-element ICP scan and sulfur speciation (total, sulfate and sulfide) analyses.

Each head screen sample will be separated into various size fractions by wet screening using metal sieves. The sieve sizes that will be used are: 12.7mm, 9.5mm, 6.4mm, 1.7mm, 212µm, 150µm and 75µm. Material from each size fraction will then be dried, weighed and assayed for gold and silver to determine grade and distribution by size fraction of the contained precious metals.

#### **B. Bottle Roll Testing**

Direct agitated cyanidation tests will be run on each composite at 80%-12.7mm, 9mm and 75µm feed sizes to determine precious metal recovery, recovery rate, reagent requirements, and sensitivity to feed size.

Ore charges will be mixed with water to achieve 40 weight percent solids. Natural pulp pHs will be measured. Lime will be added to adjust the pH of the pulps to 11.0 before adding the cyanide. Sodium cyanide, equivalent to 1.0 gNaCN/L solution, will be added to the alkaline pulps.

Leaching will be conducted by rolling the pulps in bottles on the laboratory rolls for 72 (75µm feeds) or 96 hours. Rolling will be suspended briefly after 2, 6, 24, 48, and 72 hours to allow the pulps to settle so samples of pregnant solution can be taken for Au, Ag, pH, and NaCN analysis. Make-up water, equivalent to that withdrawn, will be added to the pulps. Cyanide concentration and pulp pH will be restored to initial levels. Rolling will then be resumed.

After 72 or 96 hours, the pulps will be filtered to separate liquids and solids. Final pregnant solution volumes will be measured and analyzed for Au, Ag, pH, and NaCN. Leached residues will be washed with water to recover dissolved precious metal values and to remove residual cyanide compounds. Washing will continue until no free cyanide or gold is detected in wash effluents. Washing in this manner will ensure that all dissolved values are recovered and will not report as tail grade. After washing, the residue will be dried, weighed, and assayed in triplicate to determine residual precious metal content.

C. Gravity Concentration Testing

Scoping level gravity concentration tests will be conducted at an 80%-106µm feed size to determine the amenability to gravity concentration. Samples from each composite (~10 kg) will each be stage ground in a laboratory steel ball mill to an 80%-106µm feed size. The milled samples will then be processed using a laboratory scale Knelson concentrator (3" bowl fixed bed, MD3). The product produced by the centripetal concentrator will be cleaned by hand panning methods to produce a clean concentrate and a clean tail. The cleaner concentrate and cleaner tail will be examined under a microscope, photographed, weighed and assayed to determine gold and silver content. The rougher tailings will be dried, weighed, blended and split to obtain triplicate tail assay samples. Tail assay samples will be assayed to determine residual gold and silver content.

D. Bulk Sulfide Flotation Testing

Scoping level bulk sulfide flotation testing will be conducted at an 80%-75µm feed size to determine amenability to flotation treatment. Samples from each composite (~1 kg) will be stage ground in a laboratory steel ball mill to an 80%-75µm feed size. Flotation will be conducted using a Denver laboratory scale flotation unit at 1,200 rpm. The ground pulp will be slurried with water to achieve 30 weight percent solids, and conditioned for 10 minutes with 0.25 kg/mt CuSO<sub>4</sub>. Flotation will be conducted in 5 stages with incremental additions of 0.005 kg/mt ore of PAX (potassium amyl xanthate) collector and 0.010 kg/mt ore of AERO 208 promoter. Total addition will be 0.025 kg/mt ore PAX and 0.050 AERO 208. AEROFROTH 65 will be used as a frother. The 5 stages of concentrate will be combined into a rougher concentrate. The rougher concentrate will be cleaned once to produce a cleaner concentrate and cleaner tail. The two float products will be examined under a microscope, and then assayed to determine gold, silver, and sulfide sulfur content. The rougher tails will be assayed directly in triplicate to determine residual gold, silver, and sulfide sulfur content.

E. Project Management/Reporting

Data updates will be provided on a weekly basis throughout the testing program, as new data become available. A formal typewritten report, including an executive summary, detailed descriptions of sample preparation and testing procedures and results, conclusions and recommendations, will be submitted upon completion of the testing program.

**IV. SCHEDULE**

It is estimated that sample preparation will begin two weeks after samples have been delivered and the compositing instructions have been confirmed. The test work and assays are estimated to be completed 4 weeks after sample preparation is complete. A report is expected to be issued one month after test results have been finalized.

**V. COSTS**

	<u>U.S. Dollars</u>
A. <u>Sample Receipt, Inventorying, Interval Preparation &amp; Analyses - Potential Ore Zone Composites - including compositing, crushing blending and splitting each composite, reimbursable estimate, 18 hours @ \$70.00/hr</u>	\$ 1,260.00
1. Fire assay - in triplicate, 6 samples x 3 tests @ \$35.00	\$ 630.00
2. Cyanide shake tests - CN solubility and preg-rob, 6 @ \$37.00	\$ 222.00
3. Carbon and Sulfur Speciation, 6 @ \$95.00	\$ 570.00
4. ICP Scan w/ Hg, 6 @ \$45.00	\$ 270.00
5. "Classical" Whole Rock Analysis, 6 @ \$45.00	\$ 270.00
6. Head Screen - 12.7mm feed - 8 size fractions with assays for Au and Ag for each size fraction, 6 @ \$585.00	\$ 3,510.00
B. <u>Bottle Roll Testing - including interim and final solution analyses for pH, free cyanide, Au and Ag</u>	
1. 80%-12.7mm feed - 2 kg charge - 96 hour leach time with tail screen, 6 @ \$1,105.00	\$ 6,630.00
2. 80%-9.5mm feed - 1 kg - 96 hour leach time - direct tail assay, 6 @ \$625.00	\$ 3,750.00
3. 80%-75µm feed - 1 kg - 72 hour leach time - direct tail assay, including grinding, 6 @ \$720.00	\$ 4,320.00
C. <u>Gravity Concentration Testing - Including grinding (est. 10 kg), gravity rougher concentration using a Knelson concentrator, hand-panning to produce a cleaner concentrate and tailings, microscopic examination and photos of cleaner concentrate and product assays for Au and Ag (Ro. Tails in triplicate), 6 @ \$650.00</u>	\$ 3,900.00

**(V. COSTS, Continued)**

**U.S. Dollars**

D. <u>Bulk Sulfide Flotation Testing</u> - Including grinding (est. 1 kg), rougher and cleaner flotation, concentrate product assays and triplicate tail assay (Au, Ag & S <sup>-</sup> ), 6 @ \$900.00	\$ 5,400.00
E. <u>Project Management/Reporting</u> - 15% of testing costs	\$ 4,600.00

**Total Estimate: \$ 35,332.00**

**VI. DEPOSIT AND PAYMENT SCHEDULE**

A deposit is not requested of Golden Predator. Invoices will be submitted on a calendar monthly basis for work completed during the preceding month. Invoices are net 15 days.

**VII. SAMPLE DISPOSITION**

It is assumed for the purposes of this proposal that all solid samples will be returned to the client (shipping costs reimbursable) upon completion of the testing program. A cost estimate for solid sample disposition can be provided upon request.



Jeffrey L. Olson  
Metallurgist / Project Manager

JLO/cd

**APPENDIX 5.**

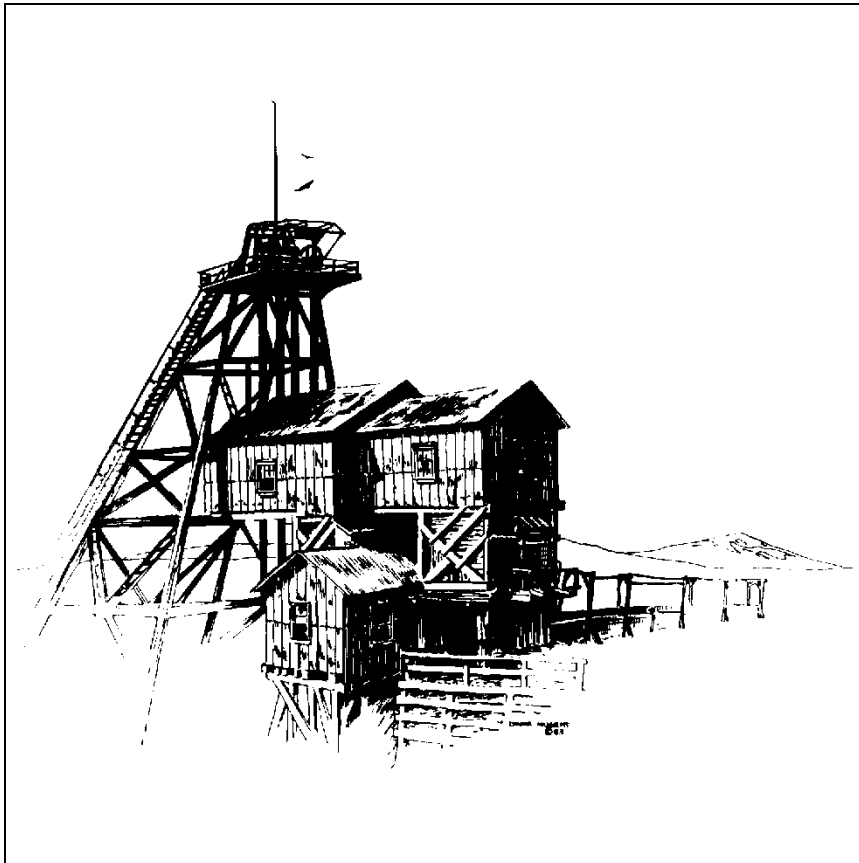
**MINERAL LIBERATION ANALYSIS (MLA)  
REPORT**



**MLA CHARACTERIZATION  
Of Ore Samples from Grew Creek**

**Prepared for**

**Mark Shutty  
Golden Predator Mines US**



**THE CENTER FOR ADVANCED  
MINERAL & METALLURGICAL PROCESSING  
Montana Tech of the University of Montana  
Butte, Montana**

**May 29, 2012**

**MLA CHARACTERIZATION  
Of Ore Samples from the Grew Creek**

**Prepared for**

**Mark Shutty**

**Golden Predator Mines US**

**775-623-6932 Ext 102**

**by**

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**Laboratory/Equipment Specialist**

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**May 29, 2012**

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## **EXECUTIVE SUMMARY**

The Center for Advanced Mineral and Metallurgical Processing (CAMP) received four (4) ore samples approximately +5 Kg each for MLA analysis on March 9, 2012. The Grew Creek samples from Golden Predator were submitted with the following ID's:

- K519060,
- K900104,
- K945728, and
- K946108.

The samples were split, crushed, and divided. The ground samples were screened with 70, 100, 140, 200, and 270 US mesh screens. The 140 X 200 mesh (75 to 106  $\mu\text{m}$ ) was selected for analysis and separation for gold particle analysis. Additionally, the 140 X 200 mesh sieve fraction was separated by heavy liquid separation (HLS) using tetrabromoethane (TBE) ( $\rho = 2.97 \text{ g/ml}$ ).

Modal mineralogical data was obtained from analysis of the 140 X 200 mesh sieve fraction using MLA XBSE. The 140 X 200 mesh HLS sink fraction was analyzed by MLA XBSE for mineral content and by MLA Sparse Phase Liberation (SPL) to identify gold/silver containing particles to aid in obtaining additional data on gold associations and particle size.

The gangue was composed primarily of silicates, ranging from 75 to 91% with quartz and potassium feldspar as the primary components. There was a prominent altered iron oxide phase that ranged from 6 to 14%. The mineral identity of the iron oxide phase could not be determined using SEM-EDX but it was often associated with silicates and carbonates indicating that it may have been transitional between ankerite and hematite/magnetite. Carbonates (excluding the FeO phase) ranged between 2 and 10% with ankerite appearing to be the main carbonate. Pyrite, the main sulfide, was found at 0.3 and 0.6% in the samples containing the least amount of gold/silver minerals and was 3.9 and 9.6% in samples that were highest in gold/silver minerals.

The main gold-bearing mineral was electrum (AgAu) with gold content typically 60-65% Au according to EDX "spot" analysis. Gold was also found in a silver-mercury phase called eugenite ( $\text{Ag}_{11}\text{Hg}_2$ ). The gold and mercury content was quite variable with gold found commonly from 10-25% Au and mercury 5-20% Hg in the particles selected for EDX analysis. According to modal analysis electrum was most abundant in sample K945728 at 0.33% and eugenite (Au) was most abundant in sample K519060 at 0.041%. Analysis of the HLS sink fraction indicated that sample K945728 was the richest in electrum followed by sample K519060 with samples K900104 and K946108 being the lowest grade. Silver occurred mainly as electrum in sample K945728 and as eugenite in all the other samples, while acanthite was relatively uncommon.

The HLS was shown to be effective for each sample by comparison of the mineral content of the original samples and sink fractions according to particle density distributions. The sulfides (pyrite), iron oxides, and gold/silver minerals consistently reported to the sink fraction. The particle density distributions also displayed good separation at around a density of 2.9 which near the density of the TBE.

Electrum was the primary gold carrier identified in the study with eugenite (AgHgAu) being important in sample K519060 and the low grade samples. Electrum occurred as large grains in the high grade sample K945728 (up to ~150  $\mu\text{m}$ ) and medium sized grains (~20-60  $\mu\text{m}$ ) in lower grade sample. Electrum and Euginite\_Au were often found in the silicates, mainly potassium feldspar and less often with quartz. The gold minerals were also found in the carbonate gangue minerals. Less frequently, small to medium-sized grains of electrum were found in pyrite; however, these electrum grains tended to be slightly higher in gold content.

Liberation was greatest in sample K945728 at over 70% for the 140 X 200 mesh sieve fraction, which also had the largest electrum grain size and highest grade. The lower grade samples would require finer grinding to improve gold mineral liberation.



**Gary F. Wyss**  
**Laboratory/Equipment Specialist**  
**May 29, 2012**

***Qualifying Statement***

*This confidential report was prepared for Golden Predator Mines US and is based on information available at the time of the report preparation. It is believed the information, estimates, conclusions and recommendations contained herein are reliable under the conditions and subject to the qualifications set forth. Furthermore, the information, estimates, conclusions and recommendations are based on the experience of CAMP and data supplied by others, but the actual result of the work is dependent, in part, on factors over which CAMP has no control. This report is intended to be used exclusively by Golden Predator Mines US and not distributed to other entities. Any other use of or reliance on this report is at the sole risk of the party that so relies.*

## **Scope of Work**

CAMP received four (4) ore samples from the Golden Predator Mines US. Gold and overall mineralogy were determined by MLA.

## **Experimental Work and Results**

The ore samples were split, crushed, and split with a Jones splitter into approximately 1 Kg samples. The samples were ground in a laboratory rod mill for 10 minutes and then sieved using 70, 100, 140, 200, and 270 US mesh screens. The following sieve fractions were obtained:

- +70 mesh (+212  $\mu\text{m}$ ),
- 70 X 100 mesh (150 to 212  $\mu\text{m}$ ),
- 100 X 140 mesh (106 to 150  $\mu\text{m}$ ),
- 140 mesh X 200 mesh (75 to 106  $\mu\text{m}$ ),
- 200 mesh X 270 mesh (53 to 75  $\mu\text{m}$ ), and
- -270 mesh (-53  $\mu\text{m}$ ).

The 140 X 200 mesh sieve fraction was separated by heavy liquid separation (HLS) using tetrabromoethane (TBE) ( $\rho = 2.97 \text{ g/ml}$ ) into float and sink sub-fractions. Approximately 30 grams of material was used for each HLS. After separation, the HLS sub-fractions were washed several times with isopropyl alcohol followed by a final rinse with acetone to remove residual TBE. The washed HLS sink material was dried and mounted in epoxy resin, cured, ground/polished, and carbon coated for SEM-MLA analysis.

Modal mineralogical data was obtained from analysis of the 140 X 200 mesh sieve fraction. The 140 X 200 mesh HLS sink fraction was analyzed by MLA XBSE for mineral content and by Sparse Phase Liberation (SPL) to identify more gold/silver containing particles to aid in obtaining additional data on gold associations and particle size. SPL is a selective technique where the sample is scanned for “bright” phases (i.e.- phases that are composed of material having high electron densities or average atomic number (AAN), which includes gold, silver, lead and other metals such as lead, iron, and manganese that have relatively large atomic numbers compared to the silicates. Acquisition of data by SPL limits the amount of data acquired to the particles that contain the phases of interest that potentially contain the gold and silver-bearing phases.

### **Sieve Analysis**

The samples submitted to CAMP were crushed, ground, split, dried, and sieved into six size fractions as noted above using 50, 70, 100, 140, 200, and 270 US mesh sieves.

The results of the sieve analysis are presented below in Table 1.

**Table 1. Distribution of the ground sample by sieve fraction (%).**

<i>Sieve Fraction</i>	<i>K519060</i>	<i>K900104</i>	<i>K945728</i>	<i>K946108</i>
+70 mesh	52.3	58.0	45.5	24.6
70 X 100 mesh	14.7	14.9	13.7	21.5

100 X 140 mesh	12.2	14.5	3.1	24.4
140 X 200 mesh	13.2	9.8	15.0	18.0
200 X 270 mesh	21.6	15.7	7.9	13.7
-270 mesh	24.5	22.7	14.7	48.2
Total	100.0	100.0	100.0	100.0

### **Heavy Liquid Separation (HLS)**

HLS separation of the 140 X 200 mesh sieve fraction resulted in “floating” over 90% of the sample, leaving the residual as the sink fraction. HLS was performed using the heavy organic liquid tetrabromoethane (TBE) which has a density of  $\rho = 2.97$  g/ml. Minerals with densities less than that of TBE were contained in the float fraction which typically consists of mainly of particles composed of silicate minerals. The sink fraction generally contains particles that have overall densities greater than TBE, and such as the sulfides and other dense minerals. The sink fractions from the 140 X 200 mesh sieve fractions were analyzed by SEM-MLA for overall mineralogy and gold and silver minerals. The results of the HLS procedure for each sample are shown in Table 2. The partition factor was calculated by dividing the amount of the float fraction by the sink fraction.

**Table 2. Heavy liquid separation (HLS) for the 140 X 200 mesh sieve fraction used for SEM-MLA analysis.**

<i>Sample ID.</i>	<i>Sieve Fraction (mesh)</i>	<i>Sink Fraction (%)</i>	<i>Float Fraction (%)</i>	<i>Partition Factor</i>
K519060	140 X 200	6.9	93.1	13.4
K900104	140 X 200	3.0	97.0	32.3
K945728	140 X 200	5.6	94.4	16.9
K946108	140 X 200	7.4	92.6	12.5

### **MLA Particle Size Analysis**

The MLA-generated particle size distributions for the HLS sink fractions are shown in Figure 1 below for the 140 X 200 mesh sieve fraction. The  $P_{80}$  for the HLS sink samples was about 90  $\mu\text{m}$ , except for sample K945728 where the  $P_{80}$  was 150  $\mu\text{m}$ .

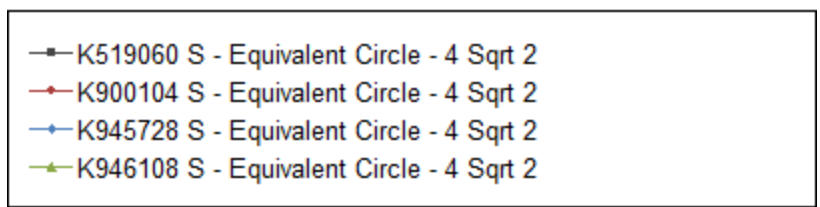
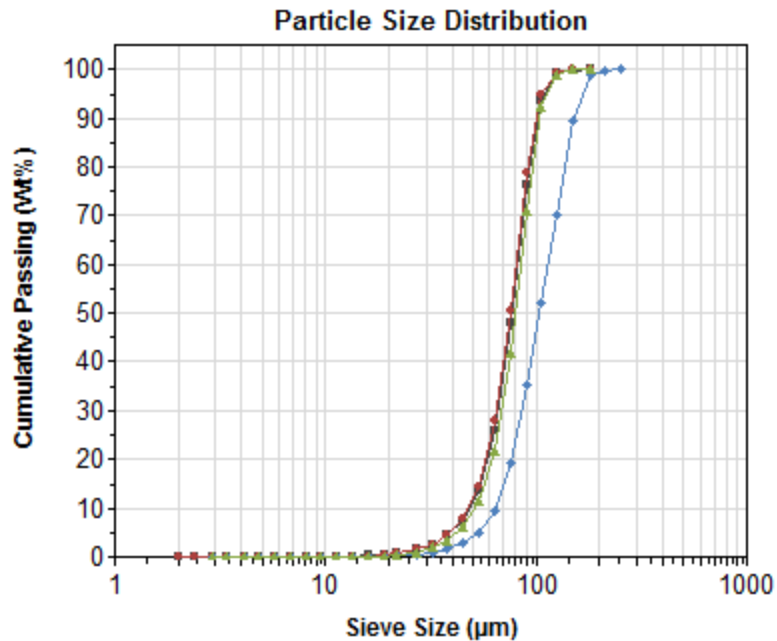


Figure 1. Particle size distributions for the 140 X 200 mesh HLS sink fractions.

The MLA-generated particle size distributions for the non-separated samples were virtually identical to the sink fraction particle distributions and are shown in Figure 2 below. It appeared that a larger size sieve fraction was used for sample K945728, perhaps the 100 X 140 mesh sieve fraction.



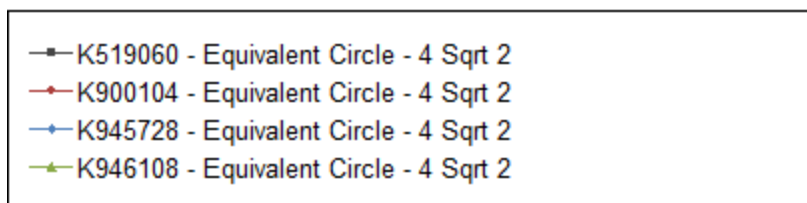
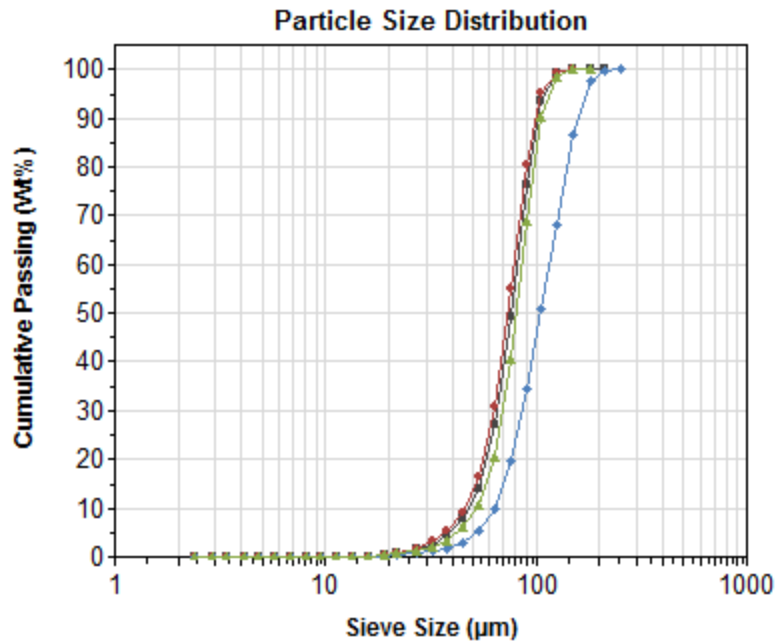


Figure 2. Particle size distributions for the original sample 140 X 200 mesh sieve fractions.

### MLA Assay

Overall mineralogy was determined by using MLA XBSE on the original ore sample 140 X 200 mesh sieve fractions.

### Modal Mineralogy

The major gangue phase minerals found in the set of samples were quartz and potassium feldspar. Quartz ranged from 42 to 55% and potassium feldspar was 16 to 34%. Minor gangue minerals were iron oxide (FeO), biotite, pyrite, albite, and the carbonates (ankerite, dolomite and calcite). The minor gangue minerals ranged from a few percent to as high as 14%, depending on the sample. Pyrite was the highest in samples K945728 and K519060 at 9.65 and 3.88%, respectively.

The gold and silver-bearing minerals identified were electrum (AuAg) and a silver mercury alloy, eugenite that often contained gold. Acanthite was found, but only rarely.

The complete mineral phase listing is shown in Table 3 below.

Table 3. Modal Mineral concentrations for ore samples (weight %).

Mineral	Formula	K519060	K900104	K945728	K946108
Quartz	SiO <sub>2</sub>	54.5	53.3	42.8	44.9
K_Feldspar	KAlSi <sub>3</sub> O <sub>8</sub>	20.3	34.4	26.4	16.6
FeO	Fe <sub>2.5</sub> O <sub>3.5</sub>	10.4	6.04	6.26	13.8
Biotite	K(Mg,Fe) <sub>3</sub> (AlSi <sub>3</sub> O <sub>10</sub> ) (OH) <sub>2</sub>	4.95	2.93	3.01	11.6
Pyrite	FeS <sub>2</sub>	3.88	0.26	9.65	0.57
Ankerite	CaFe(CO <sub>3</sub> ) <sub>2</sub>	2.50	1.07	2.48	6.42
Dolomite	CaMg(CO <sub>3</sub> ) <sub>2</sub>	1.30	0.14	0.79	1.24
Calcite	CaCO <sub>3</sub>	1.13	0.81	1.64	2.87
Albite	NaAlSi <sub>3</sub> O <sub>8</sub>	0.69	0.50	6.22	1.83
Fe	Fe	0.17	0.13	0.15	0.12
Zircon	ZrSiO <sub>4</sub>	0.092	0.045	0.19	0.004
<b>Eugenite_Au</b>	<b>Ag<sub>11</sub>Hg<sub>2</sub>Au</b>	<b>0.041</b>	<b>0.007</b>	<b>P</b>	<b>0.011</b>
Rutile	TiO <sub>2</sub>	0.038	0.24	0.10	0.022
Apatite	Ca <sub>5</sub> (PO <sub>4</sub> ) <sub>3</sub> F	0.017	0.068	0.026	0.030
Barite	BaSO <sub>4</sub>	0.015	ND	ND	P
<b>Electrum</b>	<b>AuAg</b>	<b>0.007</b>	<b>0.003</b>	<b>0.33</b>	<b>0.002</b>
Chalcopyrite	CuFeS <sub>2</sub>	0.005	P	0.004	0.025
<b>Acanthite</b>	<b>Ag<sub>2</sub>S</b>	<b>0.003</b>	<b>ND</b>	<b>P</b>	<b>P</b>
Galena	PbS	0.001	P	0.001	0.005
Sphalerite	ZnS	P	0.001	0.006	0.001

P – mineral present, but found at less than 0.001%

ND – mineral not detected

Table 4 shows the minerals grouped by composition. Silicates were 75 % or more of the modal mineralogy. Oxides, mainly iron oxide were 6-14% and carbonates were 2 to 10%. The sulfides were 6-14% of which pyrite was the main component.

Table 4. Modal content by mineral grouping (weight %).

Mineral	K519060	K900104	K945728	K946108
Silicates	80.5	91.2	78.6	74.9
Oxides	10.5	6.28	6.36	13.8
Carbonates	4.93	2.03	4.91	10.5
Sulfides	3.89	0.26	9.66	0.60
Iron	0.17	0.13	0.15	0.12
Eugenite_Au	0.041	0.007	P	0.011
Sulfates, phosphates, etc.	0.031	0.068	0.026	0.030
Electrum	0.007	0.003	0.33	0.002
Acanthite	0.003	ND	P	P

P – mineral present, but found at less than 0.001%  
 ND – mineral not detected

The MLA-calculated bulk elemental content for the samples is shown in Table 5. Gold was found in all of the samples. According to MLA XBSE analysis gold was highest in sample K945728 at 0.21%.

**Table 5. MLA-calculated elemental content for the Golden Predator ore samples (weight %).**

<b>Mineral</b>	<b>K519060</b>	<b>K900104</b>	<b>K945728</b>	<b>K946108</b>
Oxygen	46.3	48.6	43.5	46.5
Silicon	32.8	36.1	30.6	28.9
Iron	10.7	5.23	10.1	13.4
Potassium	3.30	5.10	3.98	3.40
Aluminum	2.35	3.57	3.39	2.53
Sulfur	2.08	0.14	5.16	0.32
Calcium	1.21	0.58	1.30	2.62
Carbon	0.58	0.24	0.58	1.22
Magnesium	0.45	0.19	0.28	0.83
Sodium	0.060	0.04	0.55	0.16
Zirconium	0.046	0.023	0.092	0.002
Silver	0.032	0.006	0.12	0.008
Hydrogen	0.024	0.014	0.014	0.055
Titanium	0.023	0.14	0.060	0.013
<b>Gold</b>	<b>0.009</b>	<b>0.003</b>	<b>0.21</b>	<b>0.003</b>
Mercury	0.009	0.002	P	0.002
Barium	0.009	ND	ND	P
Phosphorus	0.003	0.013	0.005	0.006
Copper	0.002	P	0.001	0.009
Fluorine	0.001	0.003	0.001	0.001
Lead	P	P	0.001	0.004
Zinc	P	P	0.004	0.001

P – element present, but found at less than 0.001%  
 ND – element not detected

### ***HLS Sink Fraction Assays***

The mineral content of the HLS sink fractions as determined by MLA analyses is presented below in Table 6. The sink fraction was 3 to 7.4% of the overall sample by weight in the 140 X 200 mesh fraction studied; therefore, the results are not modal, but rather reflect the mineral content of the dense particles from the original sample.

The major gangue minerals in the sink fraction were pyrite and iron oxide. Pyrite was 60% in sample K945728 which also had the highest electrum content of 1.75%. Iron oxide was greatest in sample K900104 and K946108 at 69.1 and 76.5%, respectively. Gold-bearing, silver-mercury containing mineral called eugenite in this study was most prevalent in sample K519060 at 0.85% which also had the second highest electrum content (0.22%) in the sink fraction for this set of samples.

**Table 6. Mineral concentrations in the HLS sink fractions, 140X 200 mesh sieve fraction (weight %).**

<b>Mineral</b>	<b>Formula</b>	<b>K519060</b>	<b>K900104</b>	<b>K945728</b>	<b>K946108</b>
FeO	Fe <sub>2.5</sub> O <sub>3.5</sub>	41.4	69.1	26.3	76.5
Pyrite	FeS <sub>2</sub>	33.8	7.61	60.1	5.87
K_Feldspar	KAlSi <sub>3</sub> O <sub>8</sub>	5.90	5.56	3.38	2.70
Ankerite	CaFe(CO <sub>3</sub> ) <sub>2</sub>	5.41	1.97	2.40	7.21
Quartz	SiO <sub>2</sub>	4.35	5.07	1.73	0.79
Biotite	K(Mg,Fe) <sub>3</sub> (AlSi <sub>3</sub> O <sub>10</sub> ) (OH) <sub>2</sub>	3.23	3.00	1.13	4.14
Dolomite	CaMg(CO <sub>3</sub> ) <sub>2</sub>	2.06	0.11	0.41	0.92
<b>Eugenite_Au</b>	<b>Ag<sub>11</sub>Hg<sub>2</sub>Au</b>	<b>0.85</b>	<b>0.027</b>	<b>0.002</b>	<b>0.014</b>
Zircon	ZrSiO <sub>4</sub>	0.81	2.91	1.11	0.37
Fe	Fe	0.74	1.65	0.50	0.62
Calcite	CaCO <sub>3</sub>	0.72	0.10	0.34	0.19
<b>Electrum</b>	<b>AuAg</b>	<b>0.22</b>	<b>0.042</b>	<b>1.75</b>	<b>0.052</b>
<b>Acanthite</b>	<b>Ag<sub>2</sub>S</b>	<b>0.19</b>	<b>0.003</b>	<b>P</b>	<b>0.002</b>
Rutile	TiO <sub>2</sub>	0.12	2.09	0.19	0.082
Albite	NaAlSi <sub>3</sub> O <sub>8</sub>	0.077	0.44	0.43	0.17
Apatite	Ca <sub>5</sub> (PO <sub>4</sub> ) <sub>3</sub> F	0.074	0.23	0.10	0.20
Barite	BaSO <sub>4</sub>	0.035	0.001	0.007	0.006
Chalcopyrite	CuFeS <sub>2</sub>	0.018	0.053	0.010	0.12
Sphalerite	ZnS	0.004	0.004	0.043	0.015
Galena	PbS	0.001	0.025	0.009	0.007

P – mineral present, but found at less than 0.001%

ND – mineral not detected

Oxides and sulfides were the main minerals found in the HLS sink fraction when evaluated by chemical grouping (Table 7). The oxides and sulfides combined were between 75 and 86% of the HLS sink fractions with the oxides at over 70% in the samples with the lowest gold and silver content while the sulfides were the highest in the samples with the highest gold/silver content.

**Table 7. HLS sink by mineral groupings in weight % (MLA XBSE).**

<b>Mineral</b>	<b>K519060</b>	<b>K900104</b>	<b>K945728</b>	<b>K946108</b>
Oxides	41.5	71.2	26.5	76.6

Sulfides	33.8	7.69	60.2	6.01
Silicates	14.4	17.0	7.77	8.17
Carbonates	8.19	2.19	3.15	8.32
Eugenite_Au	0.85	0.027	0.002	0.014
Iron	0.74	1.65	0.50	0.62
Electrum	0.22	0.042	1.75	0.052
Acanthite	0.19	0.003	P	0.002
Sulfates, phosphates, etc.	0.11	0.23	0.11	0.21

P – mineral present, but found at less than 0.001%

ND – mineral not detected

### **Gold & Silver Particles**

The gold and silver particles found by MLA in the HLS sink fractions are tabulated in Table 8. Electrum was found in every sample with the most particles found in sample K946108. The mercury-containing silver mineral that was commonly found with small percentages of gold, eugenite\_Au was most abundant in sample K519060. Acanthite-containing particles were also the most abundant in sample K519060. More particles are typically reported by the SPL MLA method because more surface area was analyzed when this method is used.

**Table 8. Number of gold/silver-containing particles found by MLA.**

Mineral	MLA				
	Method	K519060	K945728	K946108	K900104
Electrum	XBSE	79	41	312	22
Eugenite_Au	XBSE	217	17	17	15
Acanthite	XBSE	139	11	1	9
Electrum	SPL	208	43	398	44
Eugenite_Au	SPL	310	26	28	26
Acanthite	SPL	204	15	1	12

### **Electrum Grain Size & Liberation**

The electrum grain size was largest in the high grade gold sample K945728 where the electrum P<sub>80</sub> was about 130 µm. The electrum P<sub>80</sub> was smallest at about 45 µm in sample K900104 which was also the lowest in electrum (Figure 3).

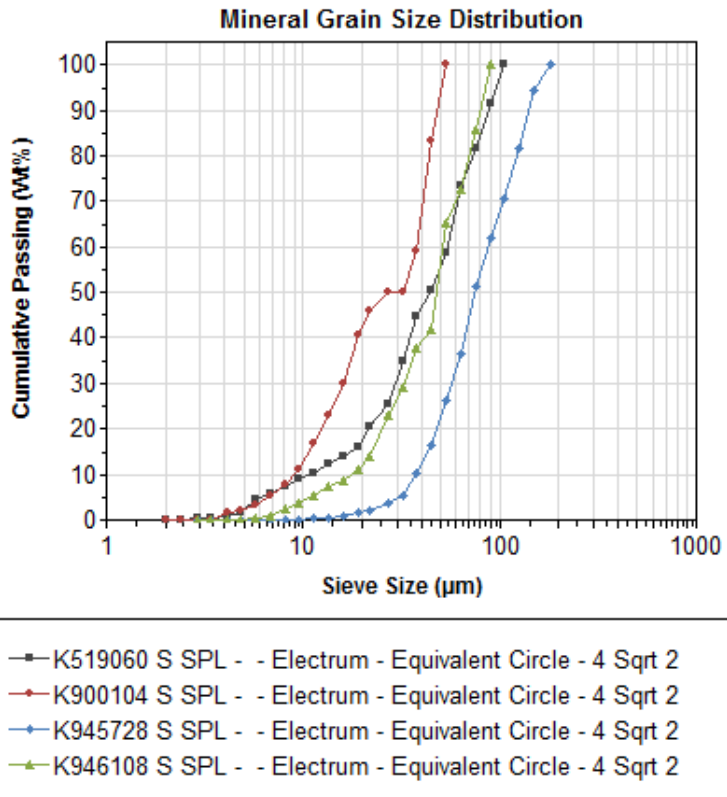


Figure 3. Electrum grain size distributions in the 140 X 200 mesh sieve fraction.

The mineral locking data for electrum is shown in Figure 4 below. Mineral locking appeared to be directly related to mineral grain size, with electrum being most liberated in sample K945728 at 72%, which also had the largest electrum grain size distribution. Electrum liberation was poorest in sample K900104 which had the smallest electrum particle size distribution.

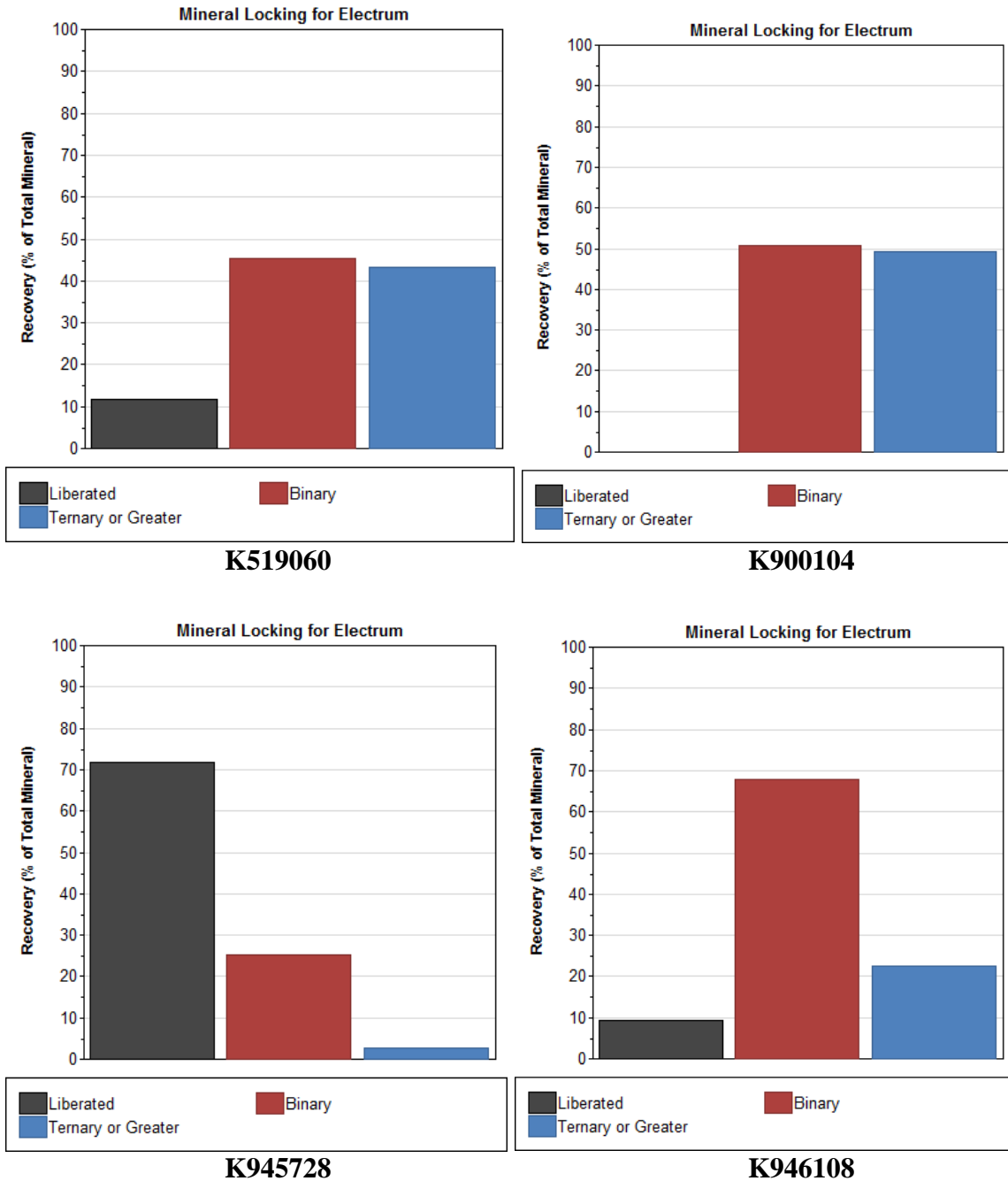


Figure 4. Mineral locking for electrum (140 X 200 mesh).

Eugenite\_Au mineral grain size distribution for sample K519060 had the largest  $P_{80}$  at 75  $\mu\text{m}$  (Figure 5) while the other samples exhibited smaller grain sizes and much lower abundance of the mineral.

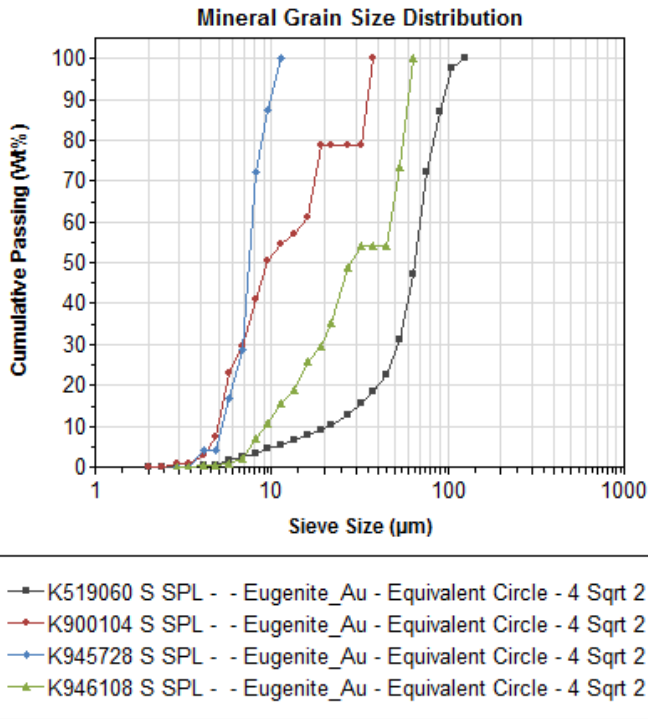
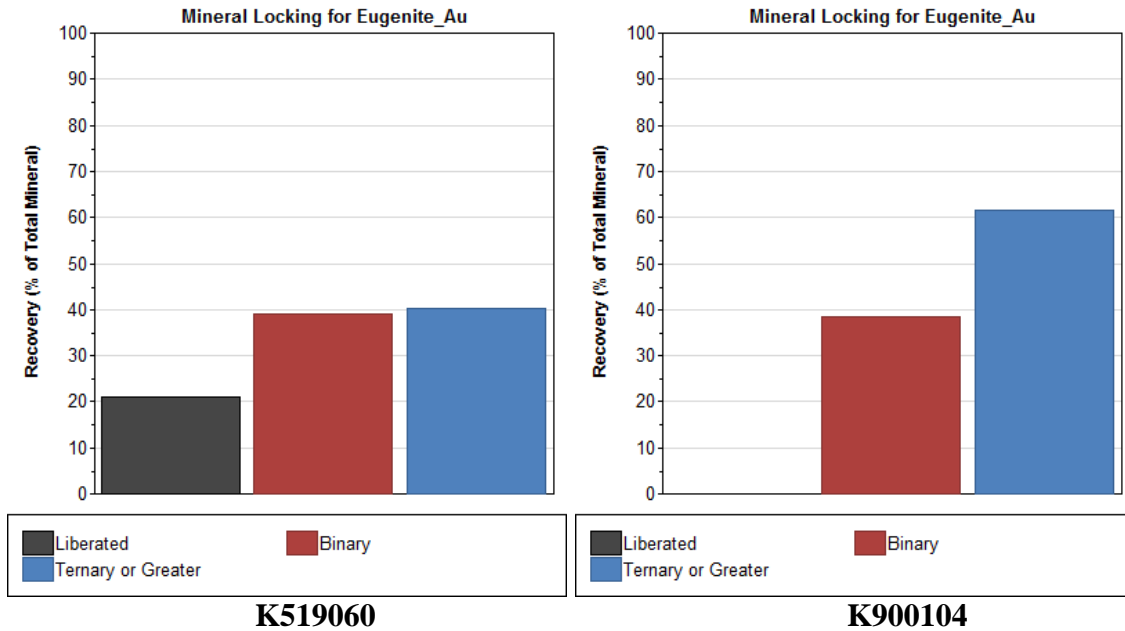


Figure 5. Eugenite\_Au mineral grain size distribution (140 X 200 mesh).

Overall, liberation was poor for Eugenite\_Au, but was best in sample K519060 (Figure 6) where it was found to be the most abundant in the samples studied.





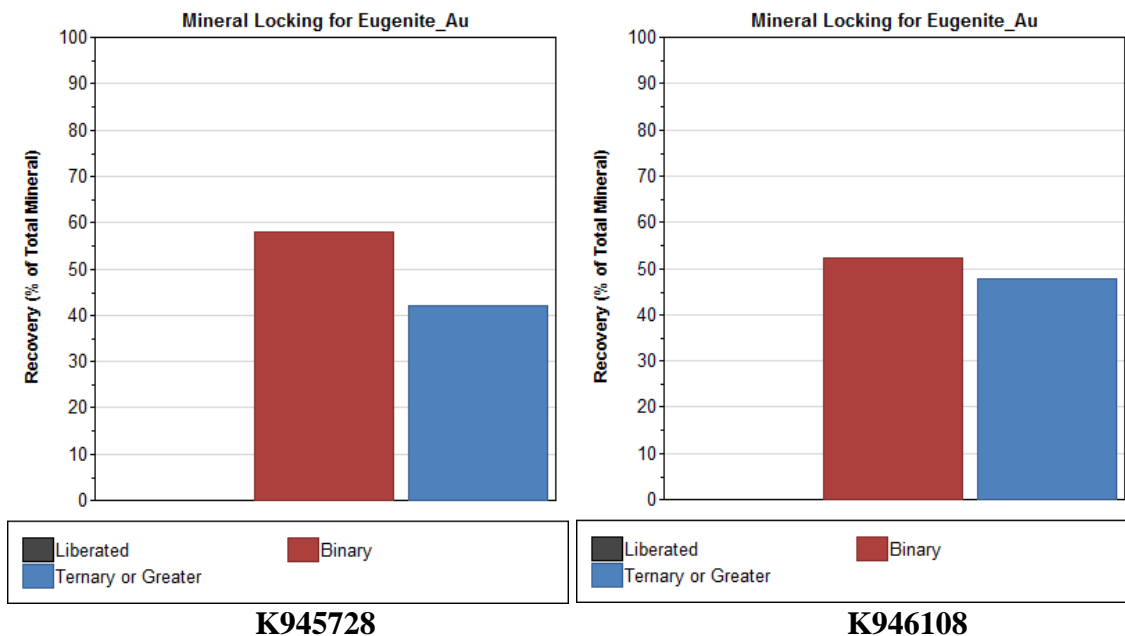


Figure 6. Mineral locking for Eugenite\_Au (140 X 200 mesh).

During the course of analysis several particles were manually “spotted” with EDX. Below in Table 9 is a compilation of the disposition of the gold mineral particles found during the manual observation process with the SEM. The gold minerals were identified as electrum or AgHgAu, the gold-bearing silver-mercury alloy called Eugenite\_Au in this study. The amount of gold found by EDX was reported and the mercury content was also indicated for the AgHgAu phase. The host mineral was the matrix mineral found with the gold particle and the associated mineral was provided if there were other non-matrix or trace minerals also observed. An example with electrum, it was found in host (gangue) mineral such as potassium feldspar, but was also found sharing a grain boundary with small inclusions of sphalerite. The approximate particle size range is provided. The liberation was estimated by free perimeter. Gold content of the electrum grains was generally 60-65% Au and was much lower in the AgHgAu particles ranging from essentially none to as much as 60% Au, but mostly from 10 to 20%. Mercury ranged from 0 to 27%.

Table 9. Host mineral, grain size, gold content, liberation and size fraction of manually "spotted" gold-bearing particles.

Sample	Gold Mineral	Host Mineral(s)	Particle Size (um)	Association	% Au	Liberation (%)	Comments
K519060	AgHgAu	Dolomite/ Iron Oxide/Ankerite	15-20		25-50	Locked	Hg 0-27%
K519060	AgHgAu		40-60		12-20	Liberated (100)	Hg 11-16%
K519060	AgHgAu	Iron oxide/Qtz/ Ankerite	10-30		15-17	50	Hg 12-14%
K519060	AgHgAu	Iron oxide/Dolomite	5-20		9-19	0-40	

/Mica						
K900104	AgHgAu	Quartz	5-10		21-31	50-100 Hg 4-6%
K945728	AuAg	Quartz/ K Feldspar	60-80		60-65	60-80
K945728	AuAg	K Feldspar	20-60	Quartz	63-66	0-40
K945728	AuAg	K Feldspar	20-50	Sphalerite/ Pyrite	60-62	0-50
K945728	AuAg	K Feldspar	20-25		61	50
K945728	AuAg		30-130		60	Liberated (100)
K945728	AuAg	K Feldspar	30	Sphalerite	63	0-40
K945728	AuAg	Quartz/Ankerite	125-250	Sphalerite	62	80-90
K945728	AuAg	K Feldspar	50-100		60-63	40-50
K945728	AuAg		50-250		60	Liberated (100)
K945728	AuAg		50-150		60	Liberated (100)
K945728	AuAg	Pyrite	50-75		68	20-30
K945728	AuAg					
K945728	AuAg	Pyrite	5-20		66	Locked
K946108	AgAuAg		30-50		0-40	Liberated (100)
K946108	AgHgAu	Qtz/Mica	30-60	Sphalerite	17-27	20-50 Hg 4-8%
K946108	Electrum	Qtz/Mica	5-15	AgHgAu	40	90-100 Hg 14-17
K946108	AuAg		5-10		50	50

## **MLA Image Analysis**

### **K519060 – Golden Predator**

A classified MLA image from a selected analysis frame from the 140 X 200 mesh sieve fraction for sample K519060 is shown in Figure 7. The corresponding back-scattered electron (BSE) image is shown in Figure 8. The silicates, quartz and potassium feldspar dominate the sample. The highlighted/circled carbonate particle contains a medium-sized inclusion of electrum and Eugenite\_Au. Electrum is white and Eugenite\_Au is orange in the classified MLA image and both are white in the BSE image.

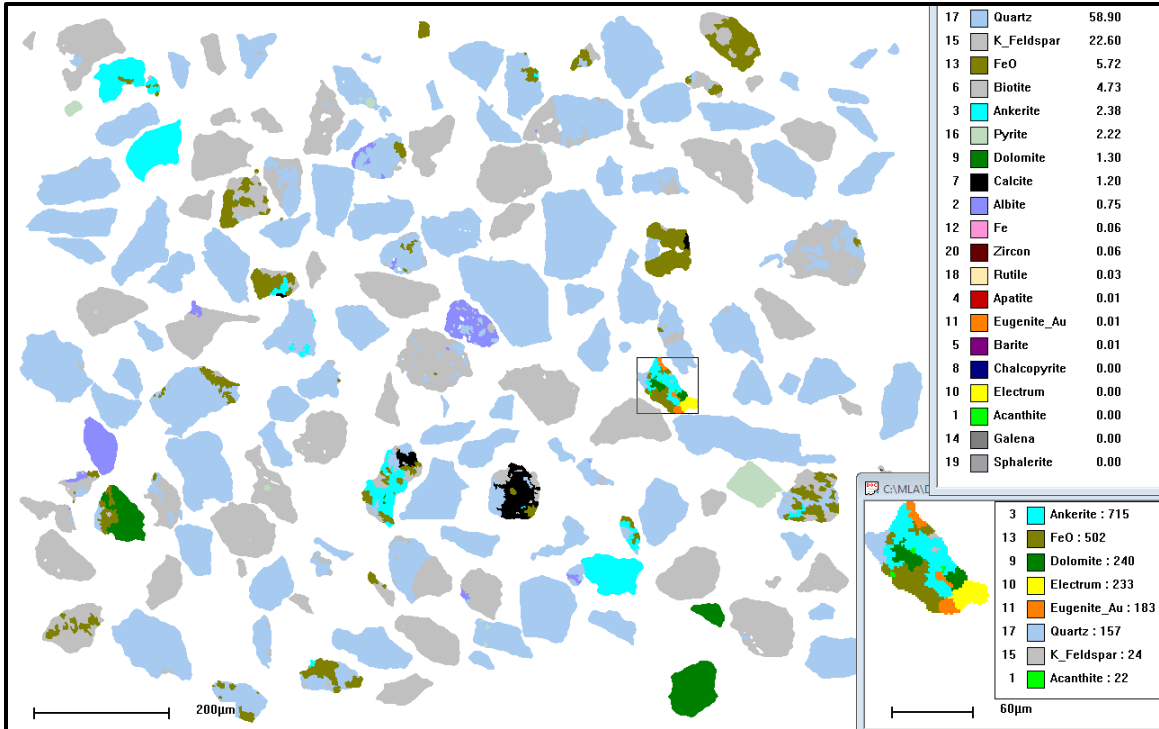


Figure 7. Classified MLA image from K519060 (140 X 200 mesh). Particle inset shows surface area in pixels and concentration palette shows area in percentage.

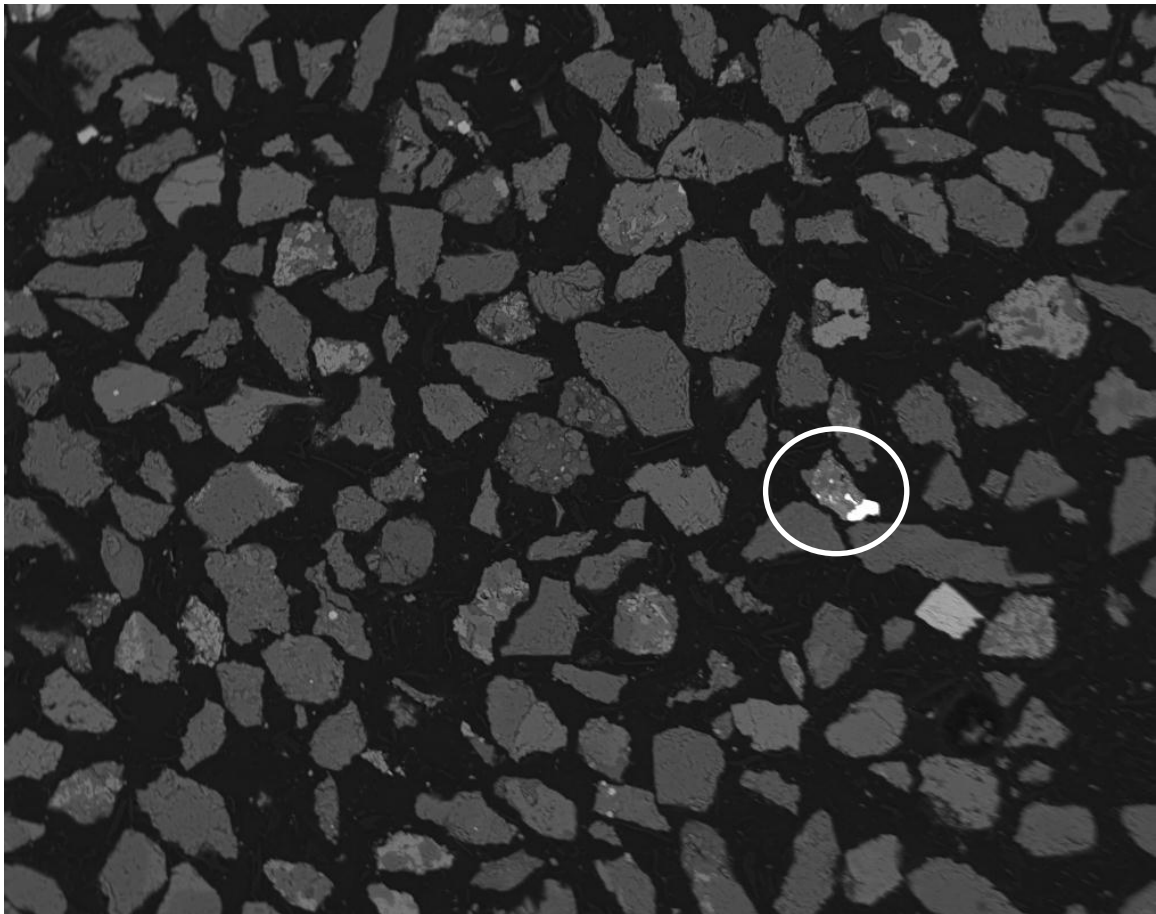


Figure 8. BSE image from sample K519060 (140 X 200mesh).

A MLA image for the sink fraction is shown in Figure 9. The BSE image for the sink fraction (Figure 10) contains more bright particles than the BSE image of the original sample because of the higher relative abundance of the more dense minerals. The carbonate/iron oxide particle contains a “locked” 20  $\mu\text{m}$  electrum inclusion.

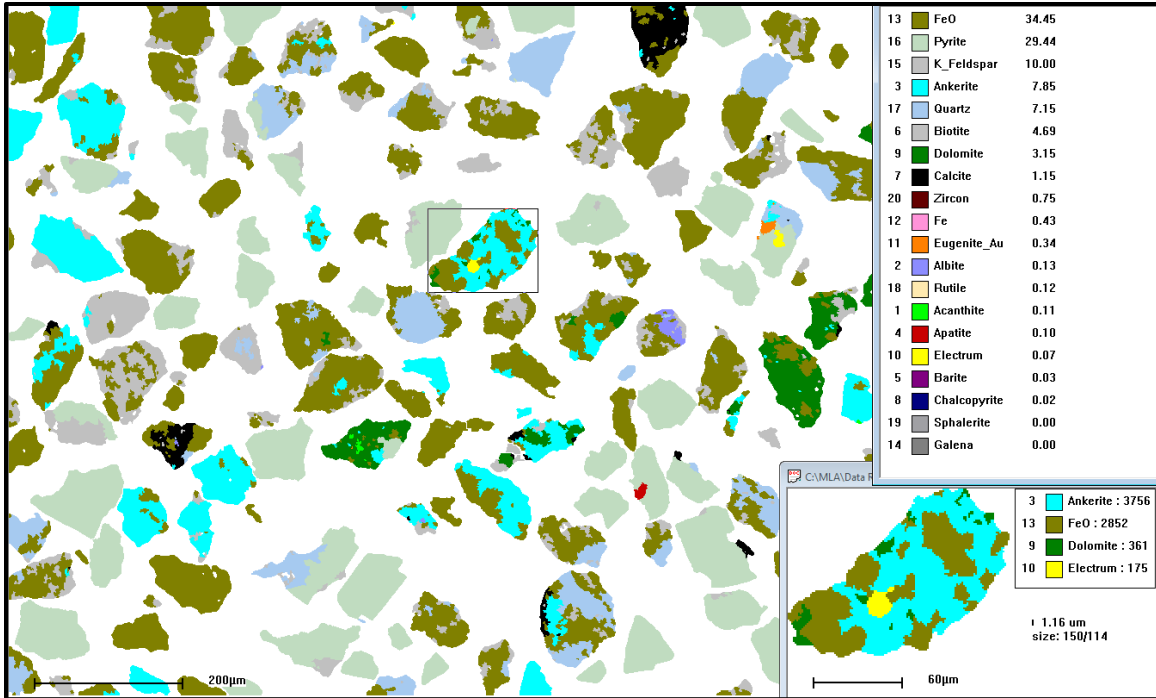


Figure 9. Classified MLA image from K519060 sample HLS sink fraction (140 X 200 mesh). Particle inset shows surface area in pixels and concentration palette shows area in percentage.

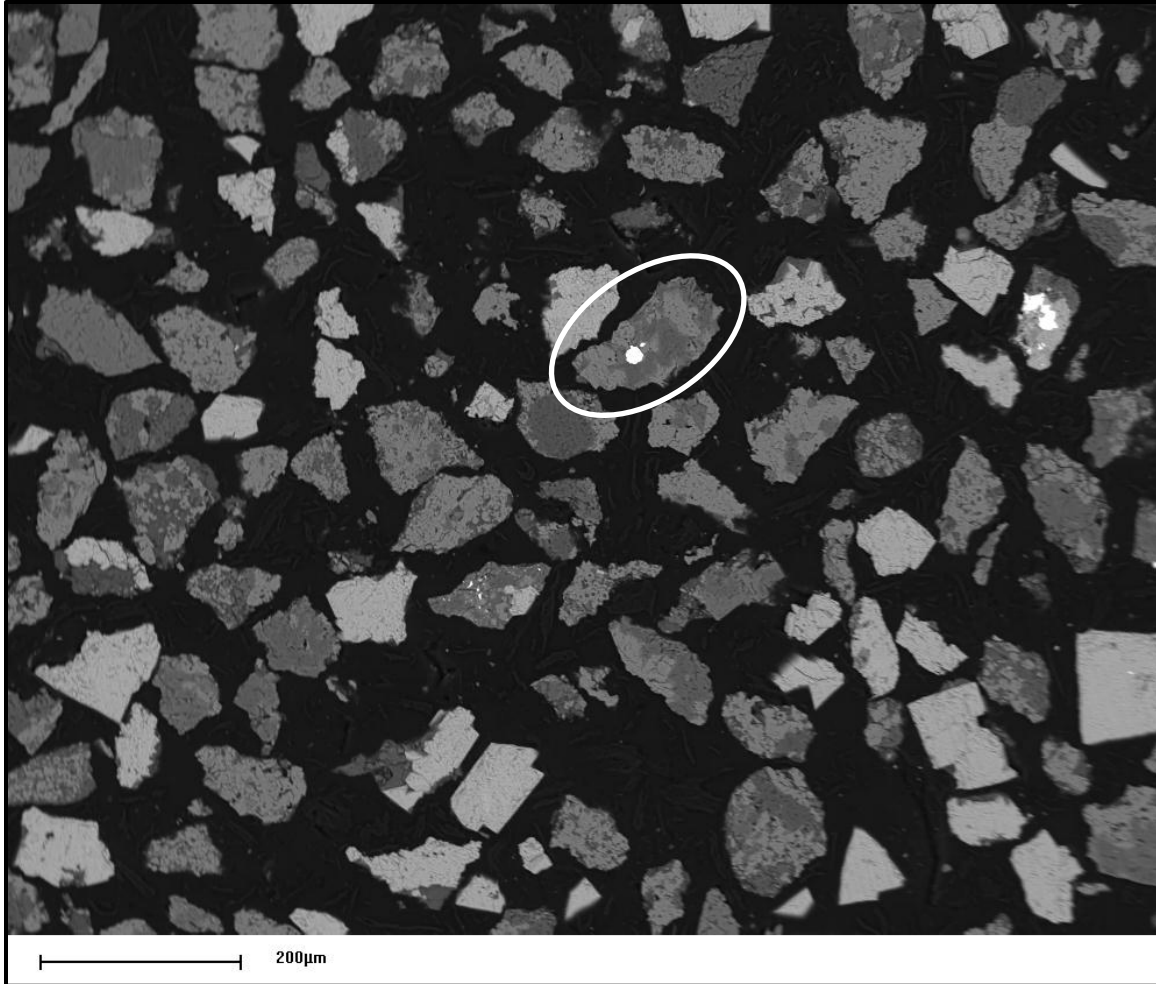


Figure 10. BSE image from HLS sink fraction from sample K519060 (140 X 200 mesh).

The mineral content for the original and sink fractions is compared in Table 10. It is apparent that the more dense minerals were concentrated effectively by the HLS as seen by the relative increase in the oxides, sulfides, iron and the gold and silver minerals.

Table 10. Comparison of the original and sink fraction by mineral groups for sample K519060 (140 X 200 mesh) in weight % (MLA XBSE).

Mineral	Original	Sink
Silicates	80.5	14.4
Oxides	10.5	41.5
Carbonates	4.93	8.19
Sulfides	3.89	33.8
Iron	0.17	0.74
Eugenite_Au	0.041	0.85
Sulfates, phosphates, etc.	0.031	0.11

Electrum	0.007	0.22
Acanthite	0.003	0.19

P – mineral present, but found at less than 0.001%

ND – mineral not detected

The particle density distribution verifies that the HLS sink fraction was composed of more dense minerals relative to the original sample (Figure 11).

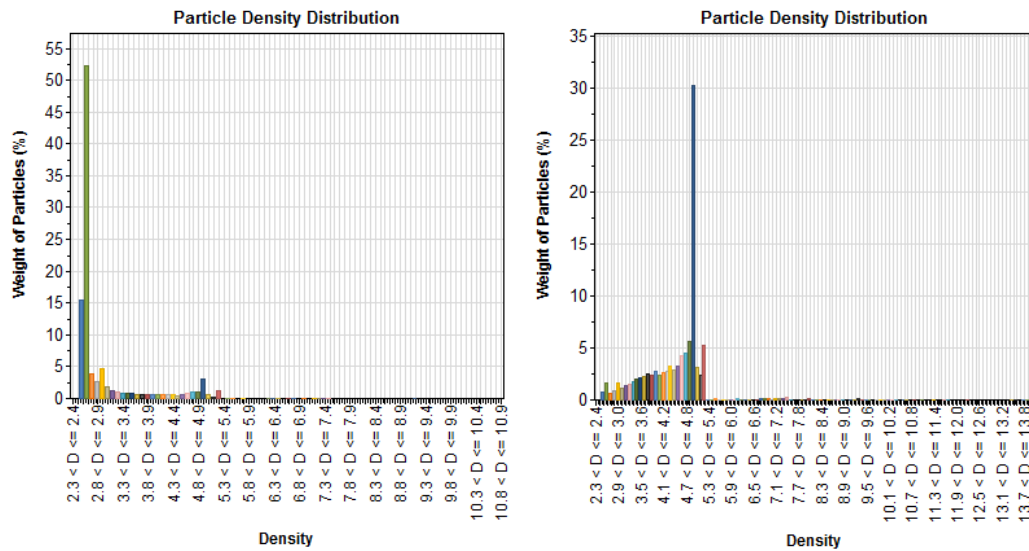
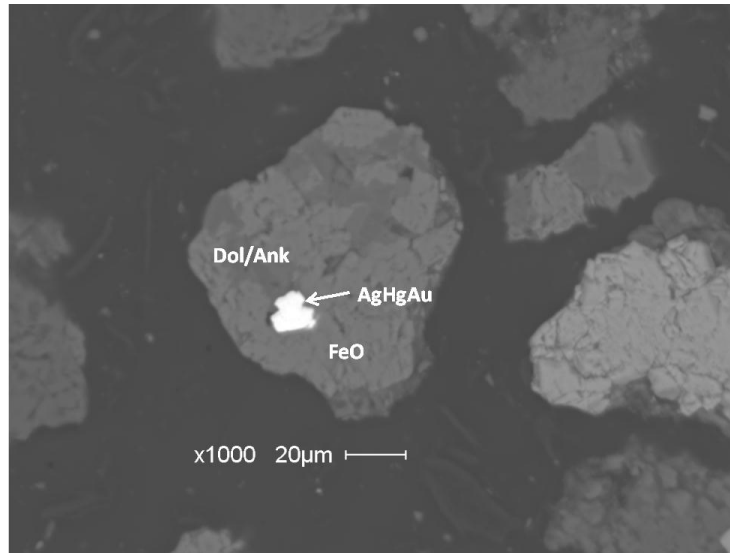


Figure 11. The particle density distributions for the original sample (left) and for the HLS sink fraction (right) from sample K519060 (140 X 200 mesh).

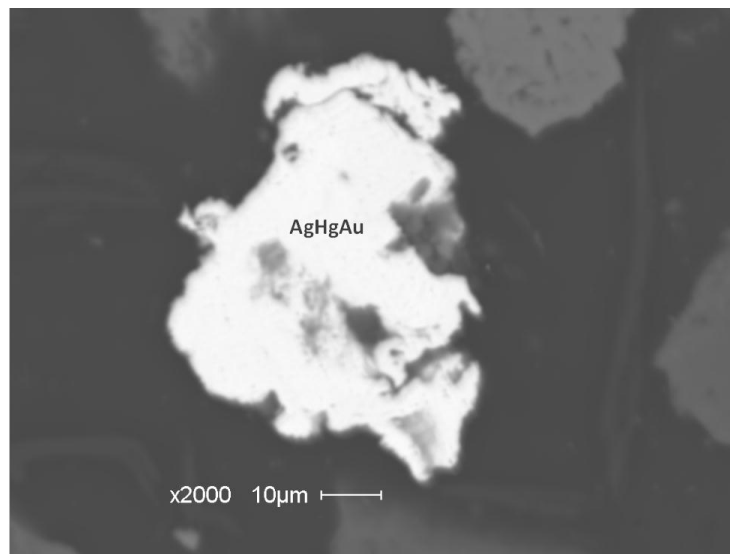
### **K519060 – Particle Micrographs**

An electrum/Eugenite\_Au grain of 15-20 μm was “locked” in a carbonate/oxide particle shown below in Figure 12.



**Figure 12. Electrum/Eugenite\_Au grain in carbonate/FeO (140 X 200 mesh sink).**

A liberated particle of Eugenite\_Au is shown in Figure 13 below. EDX “spot” analysis found gold at 15-20% and mercury was 12-16%.



**Figure 13. Liberated Eugenite\_Au particle (140 X 200 mesh).**

Eugenite (AgHg) was found separating the carbonate, ankerite (Ank), and albite (Alb) in the particle shown in Figure 14. The grain was 80% silver and 20% mercury with no gold according to EDX analysis.



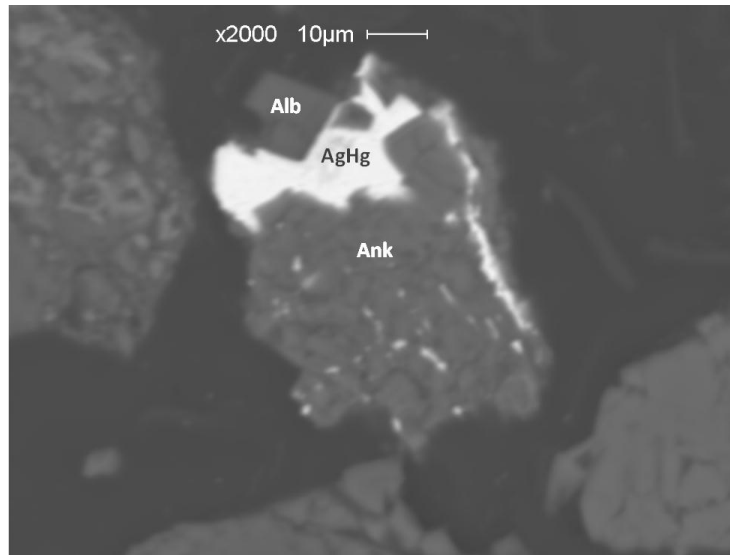


Figure 14. Eugenite in ankerite (Ank) and albite (Alb) (140 X 200 mm).

Figure 15 shows two mineralized particles. The lower particle is a large (~60 µm) grain of eugenite (80% Ag & 20% Hg) in iron oxide and mica. The upper particle contains the AgHgAu phase that has approximately 15-20% Au and 10-15% Hg in a matrix of quartz, ankerite and iron oxide.

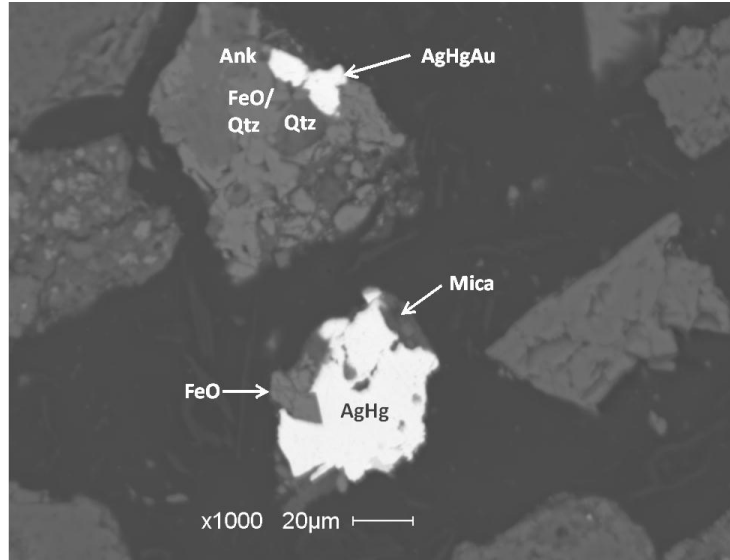


Figure 15. Eugenite and AgHgAu (140 X 200 mesh).

## **K900104 – Golden Predator**

A classified MLA image from a selected analysis frame from sample K900104 is shown in Figure 16. The corresponding back-scattered electron (BSE) image is shown in Figure 17. As seen with the previous sample, silicates predominate, and this is evident in the BSE image seen by the lack of bright phases.

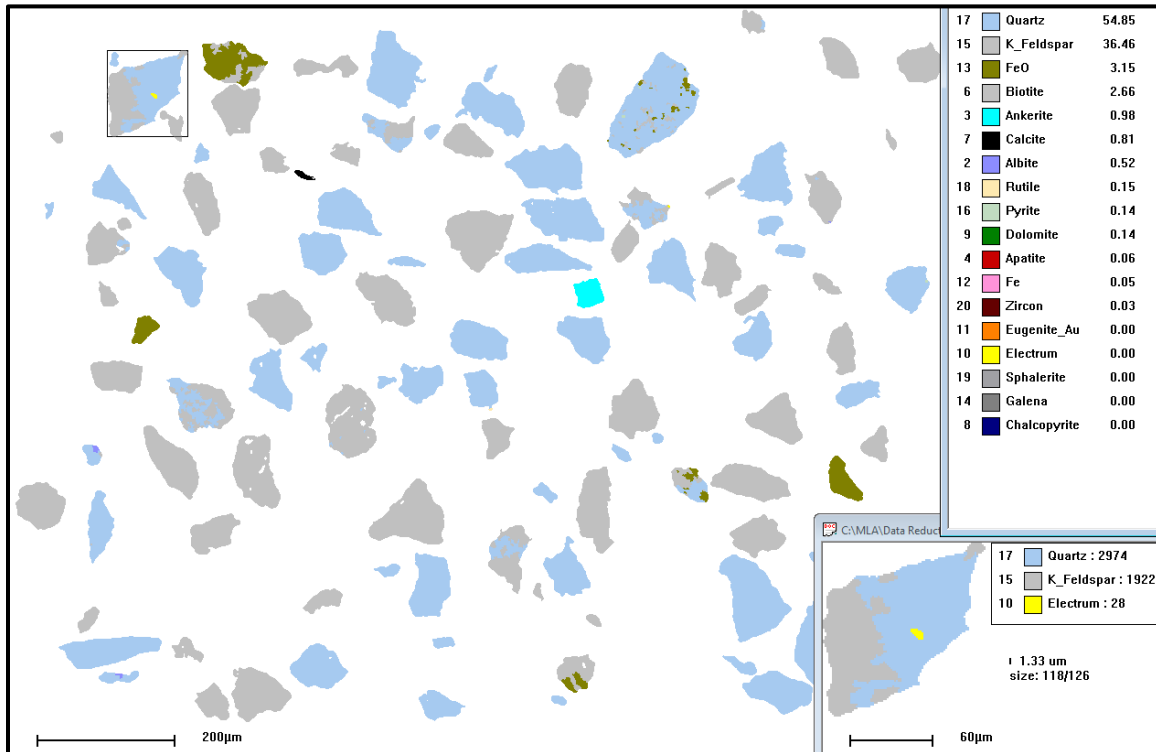
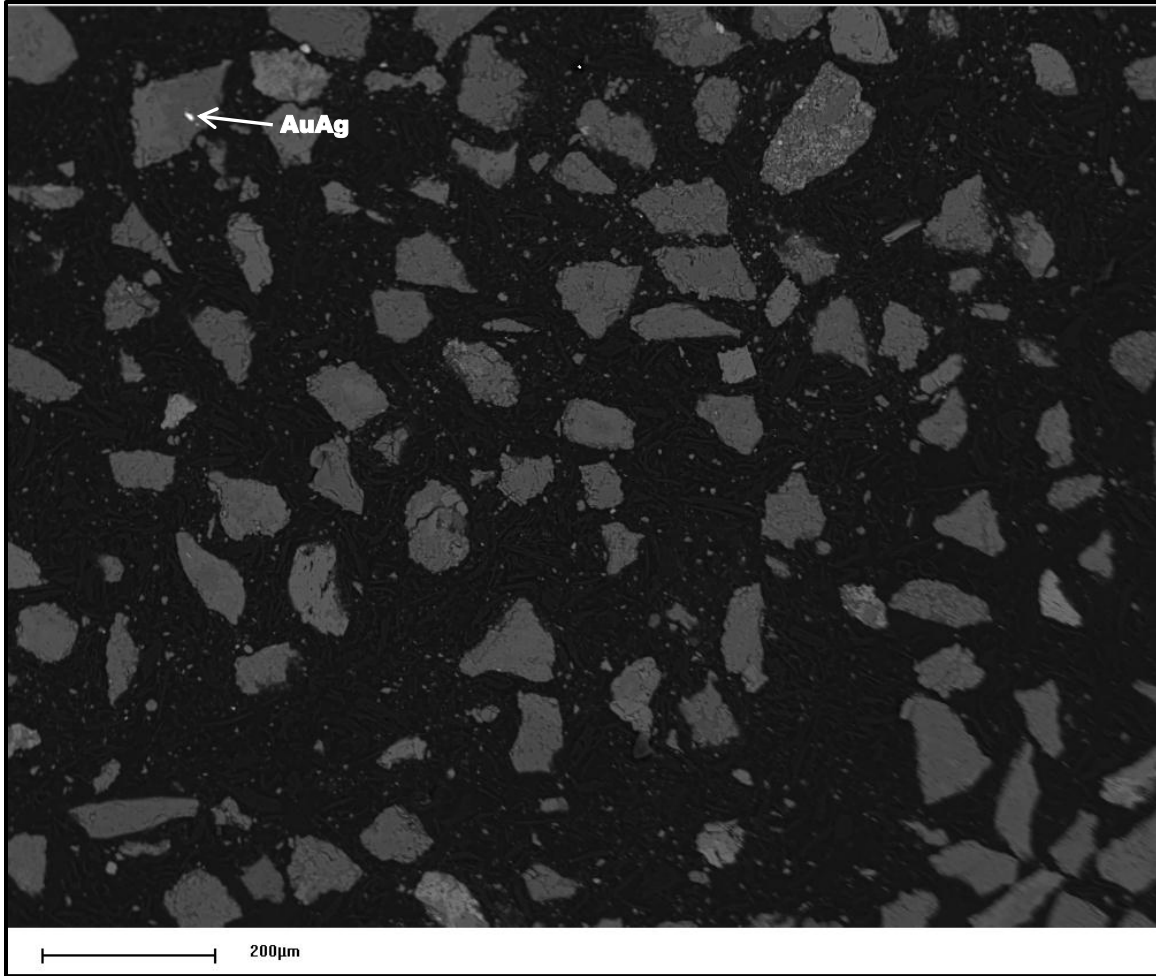


Figure 16. Classified MLA image from sample K900104 (140X 200 mesh). Particle inset shows surface area in pixels and concentration palette shows area in percentage.

A small electrum grain (5-10 µm) was found in the quartz in the particle shown in the BSE image in Figure 17.



**Figure 17.** BSE image from sample K900104 (140 X 200 mesh).

A MLA image for the sink fraction is shown in Figure 18. The highlighted particle contains an electrum grain of about 20  $\mu\text{m}$  in a larger pyrite particle. The same grain is circled in the BSE image in Figure 19.

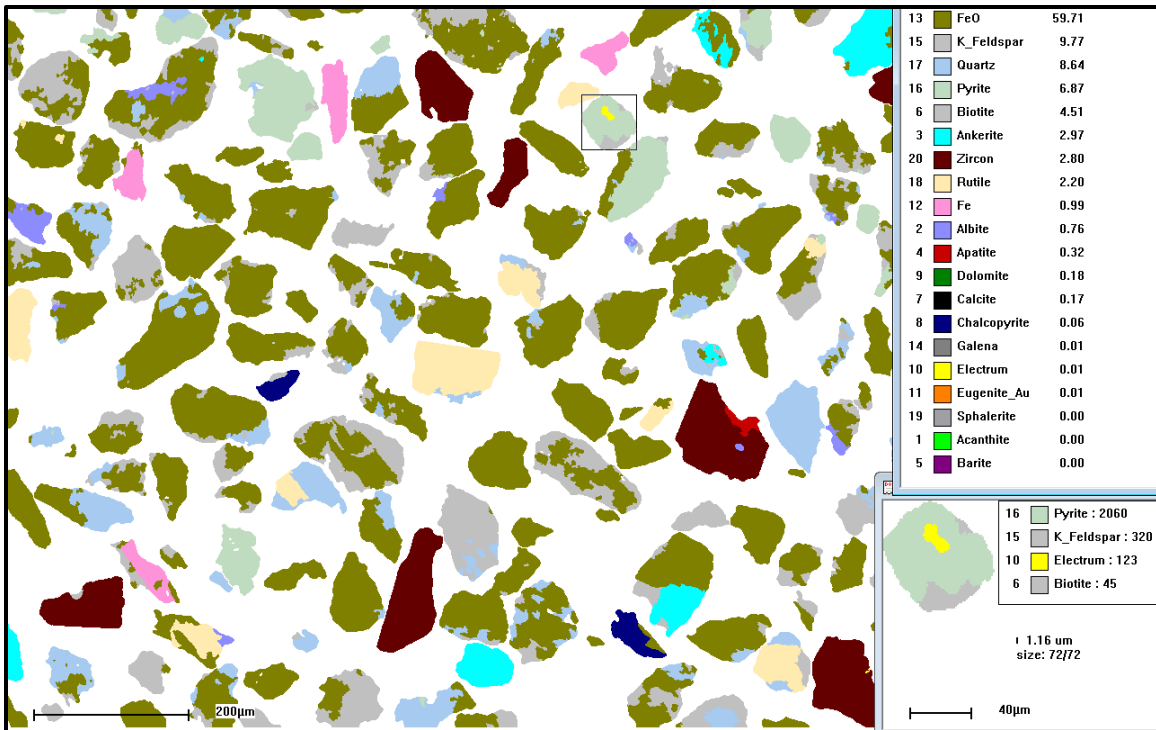


Figure 18. Classified MLA image from sample K900104 HLS sink fraction (140 X 200 mesh). Particle inset shows surface area in pixels and concentration palette shows area in percentage.

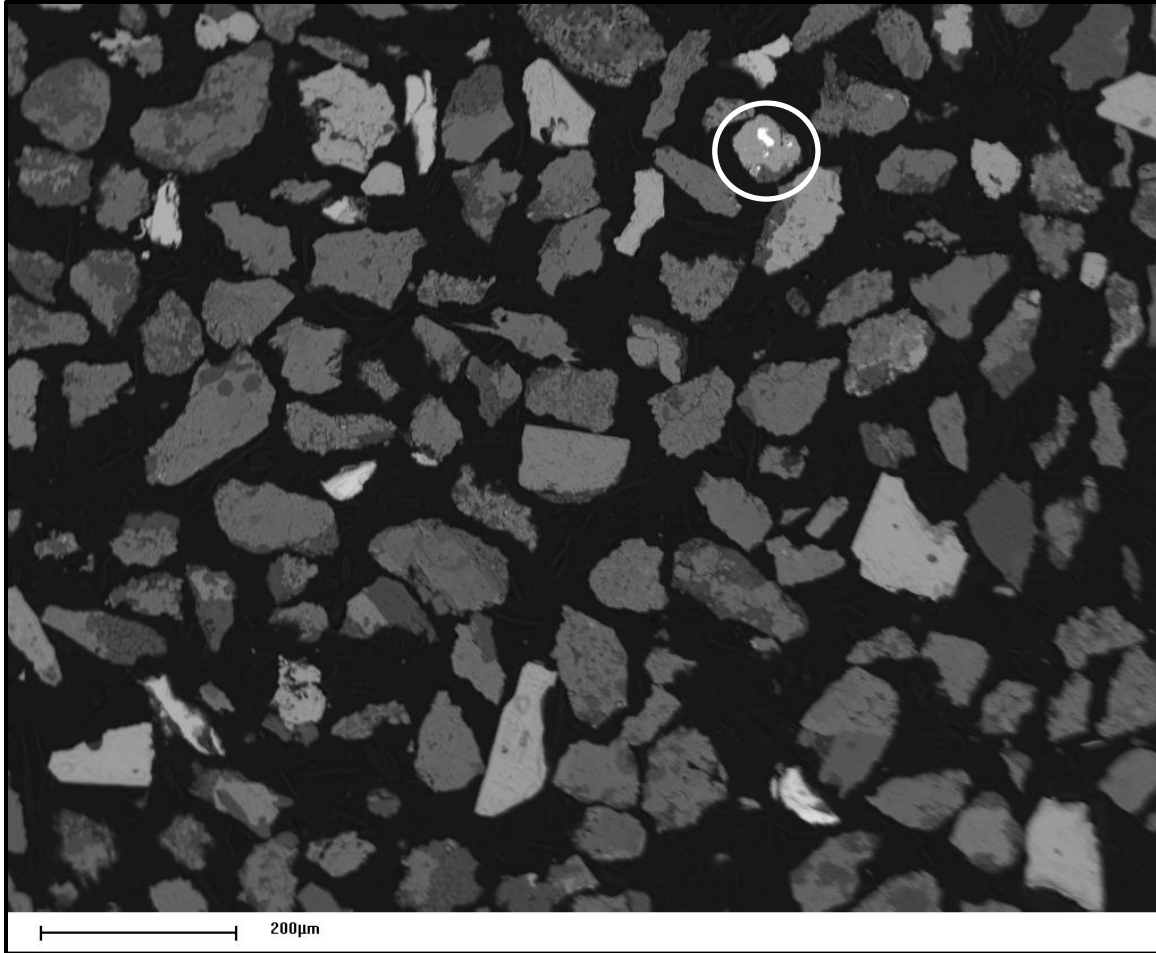


Figure 19. BSE image from HLS sink fraction sample K900104 (140 X 200 mesh).

The mineral content from the original sample and sink fraction is compared Table 11. Oxides, sulfides, iron and the gold/silver minerals were concentrated effectively by the HLS as seen by the relative increase between the original sample and sink fractions.

Table 11. Comparison of original sample and sink fraction by mineral groups for sample K900104 (140 X 200 mesh) in weight % (MLA XBSE).

Mineral	Original	Sink
Silicates	91.2	17.0
Oxides	6.28	71.2
Carbonates	2.03	2.19
Sulfides	0.26	7.69
Iron	0.13	1.65
Eugenate_Au	0.007	0.027
Sulfates, phosphates, etc.	0.068	0.23
Electrum	0.003	0.042

Acanthite	ND	0.003
P – mineral present, but found at less than 0.0001%		
ND – mineral not detected		

The particle density distribution verifies that the sink fraction was composed of more dense minerals than the original sample (Figure 20).

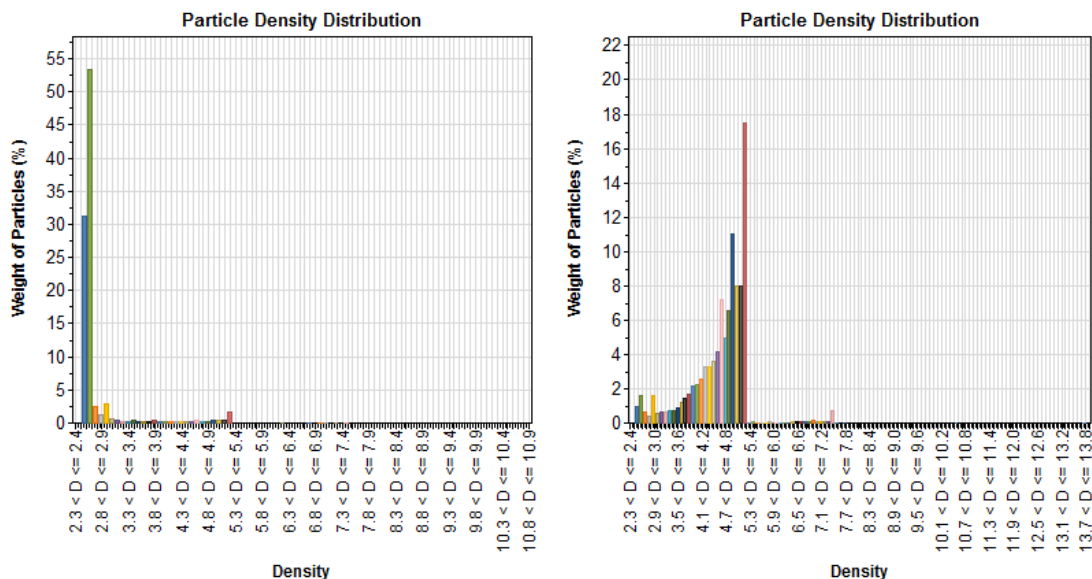
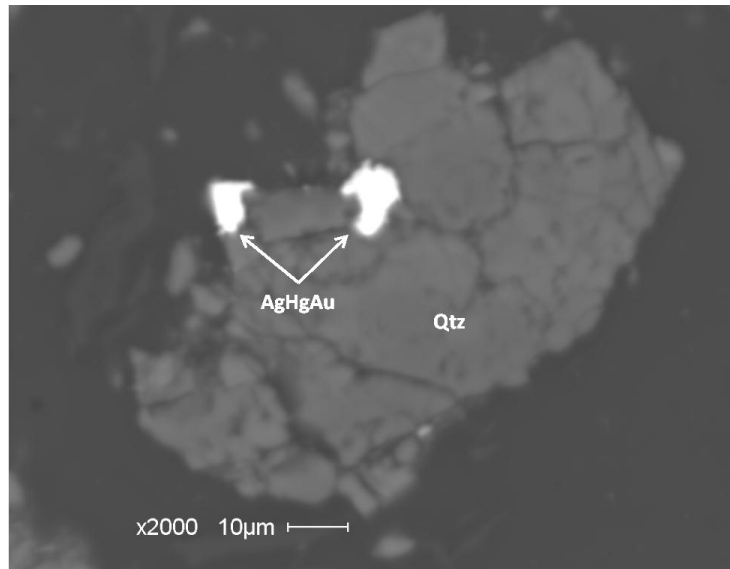


Figure 20. The particle density distributions for the original sample (left) and for the sink fraction (right) from sample K900104 (140 X 200 mesh).

### K900104 – Particle Micrograph

The quartz particle in Figure 21 from the 140 X 200 mesh fraction contains two AgAuHg grains of 10-15  $\mu\text{m}$  that were 20-30% Au and about 5% Hg with the balance being silver according to EDX analysis.



**Figure 21. AgAuHg grains in quartz from sample K900104 (140 X 200 mesh).**

## **K945728 – Golden Predator**

A classified MLA image from a selected analysis frame from sample K945728 is shown in Figure 22. The inset shows an electrum particle with residual silicates and carbonate on a portion of the perimeter.

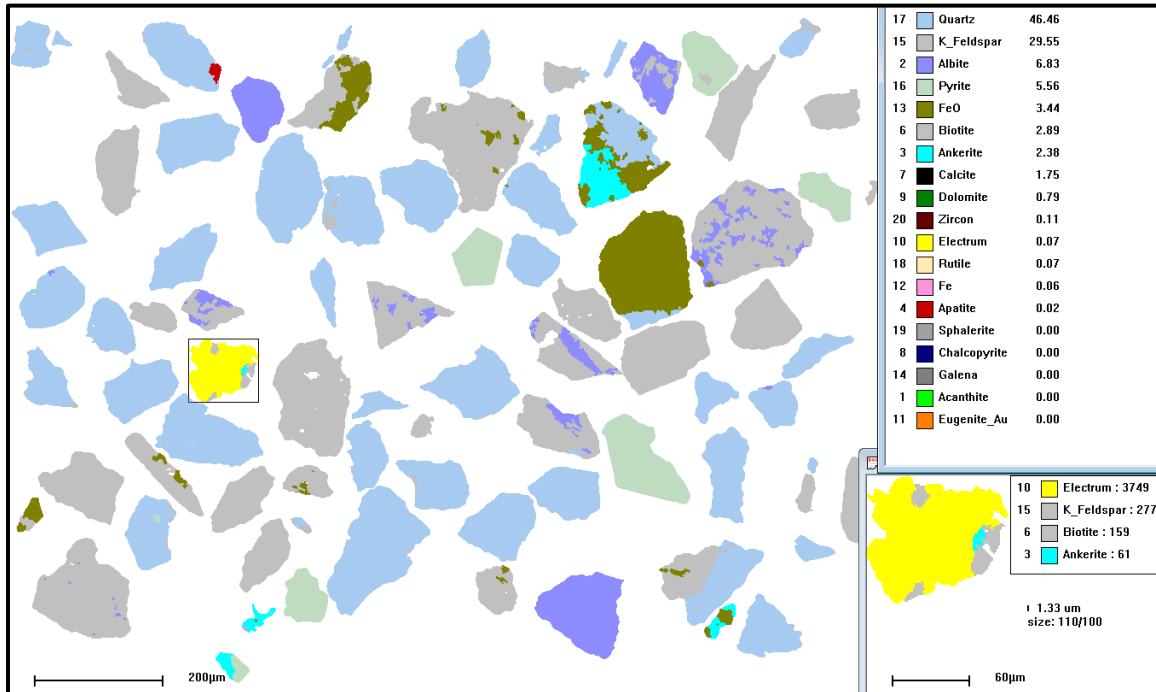


Figure 22. Classified MLA image from sample K945728 (140 X 200 mesh). Particle inset shows surface area in pixels and concentration palette shows area in percentage.

The corresponding back-scattered electron (BSE) image is shown below in Figure 23. The “bright” electrum particle is circled.



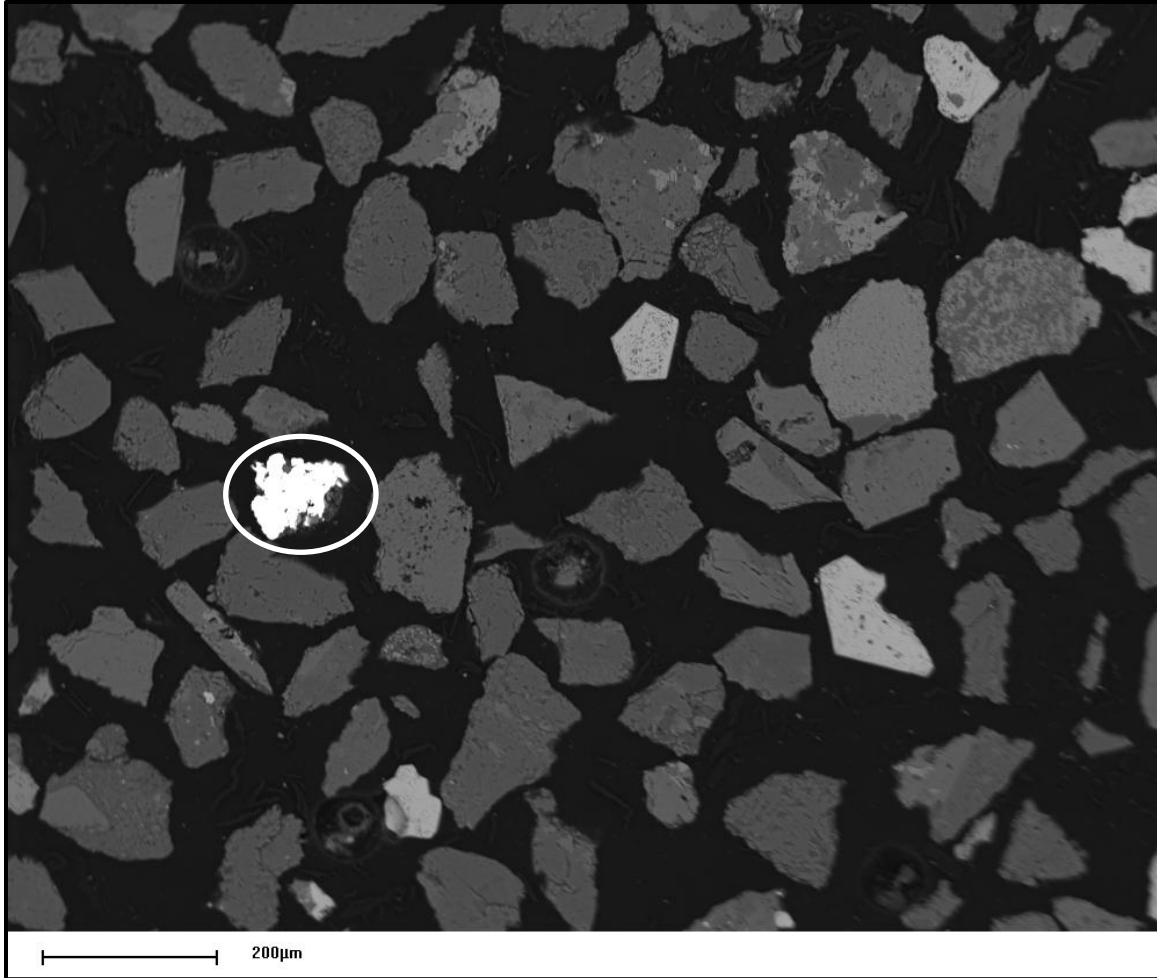


Figure 23. BSE image from sample K945728 (140 X 200 mesh).

Figure 24 shows an MLA image from the HLS sink fraction (140 X 200 mesh). Pyrite was the primary mineral in the sink fraction. The inset contains a large particle consisting mostly of electrum particle (~150 µm) with potassium feldspar and biotite. The corresponding BSE image is shown in Figure 25.

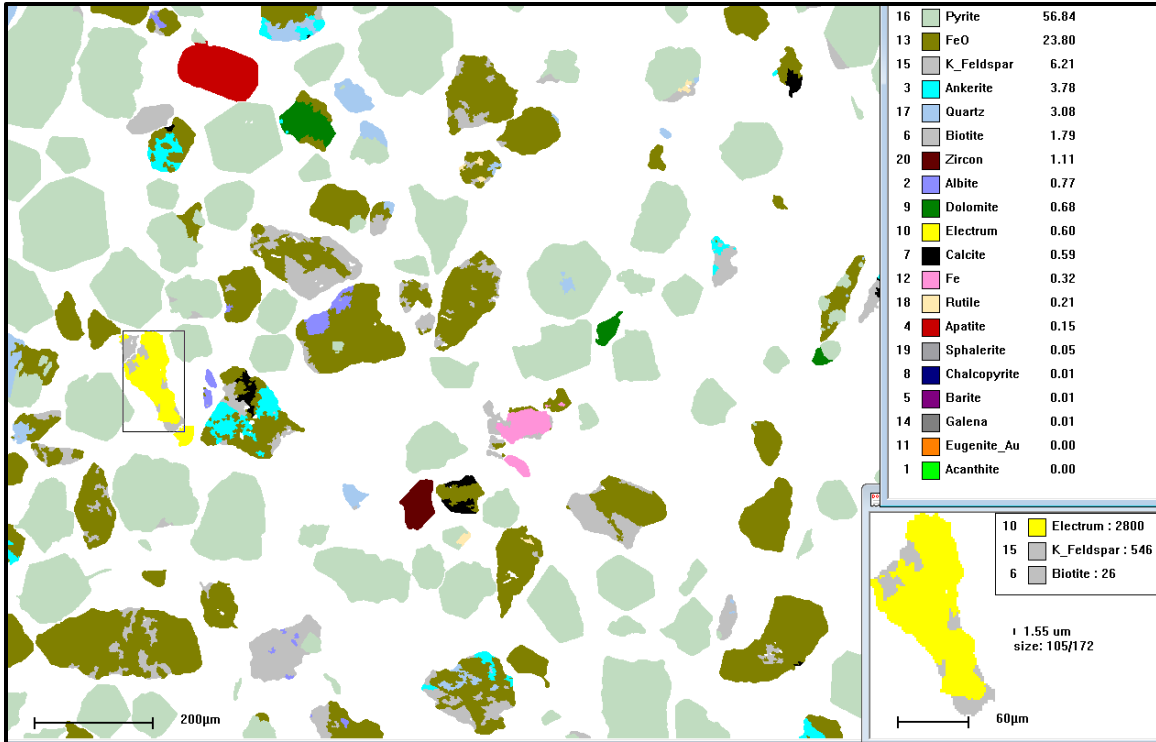


Figure 24. Classified MLA image from HLS sink fraction of sample K945728 (140 X 200 mesh). Particle inset shows surface area in pixels and concentration palette shows area in percentage.

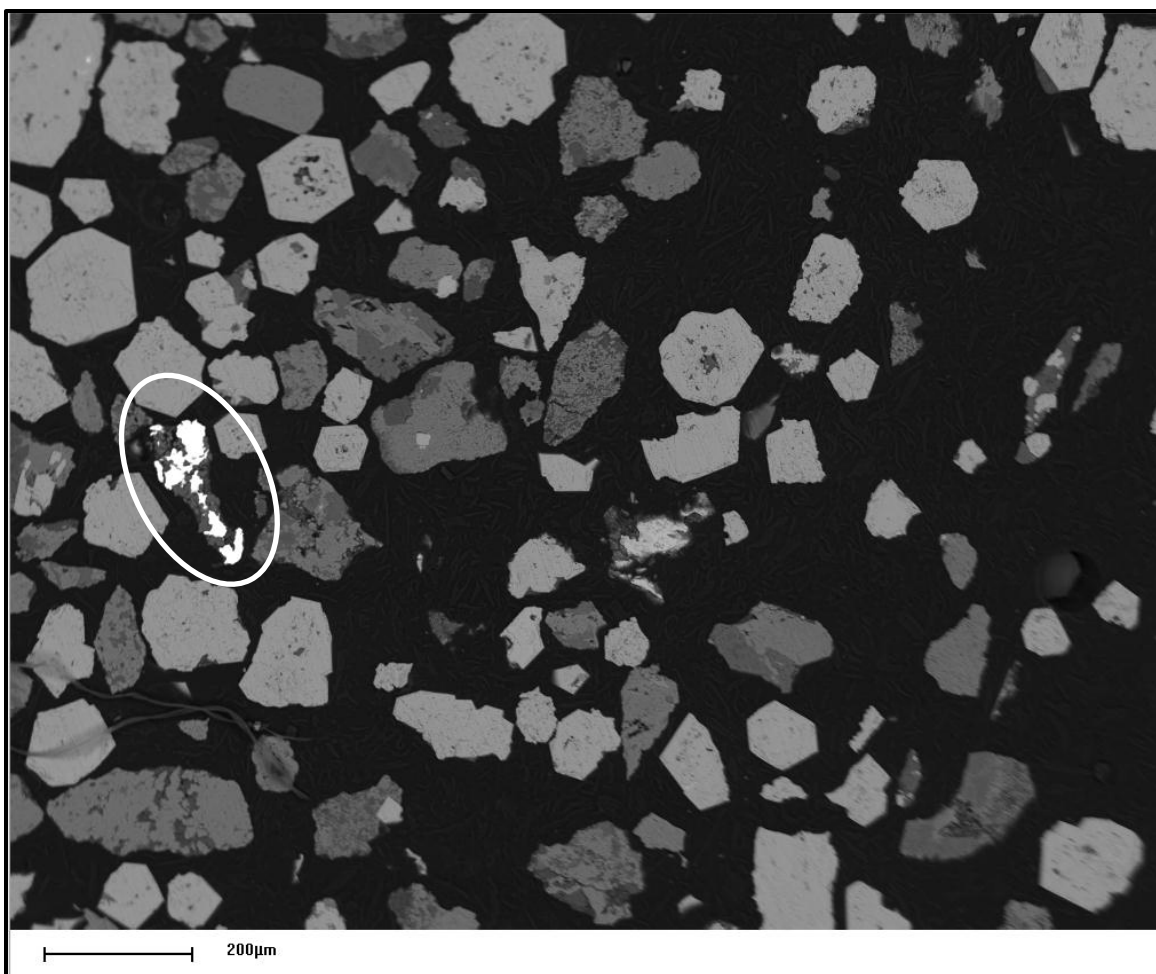


Figure 25. BSE image from HLS sink fraction from sample K945728 (140 X 200 mesh).

The mineral content for the original sample and sink fraction is compared in Table 12. Sulfides, oxides and electrum were effectively separated as seen by the relative increase in content from the original sample and sink fraction.

Table 12. Comparison of original sample and sink fraction by mineral groups for sample K945728 (140 X 200 mesh) in weight % (MLA XBSE).

Mineral	Original	Sink
Silicates	78.6	7.77
Oxides	6.36	26.5
Carbonates	4.91	3.15
Sulfides	9.66	60.2
Iron	0.15	0.50
Eugenite_Au	P	0.002
Sulfates, phosphates, etc.	0.026	0.11
Electrum	0.33	1.75

---

Acanthite

P

P

---

P – mineral present, but found at less than 0.0001%

ND – mineral not detected

The particle density distribution in Figure 26 verified that the dense minerals were preferentially partitioned in the sink fraction and the less dense minerals were present mostly in the original sample.

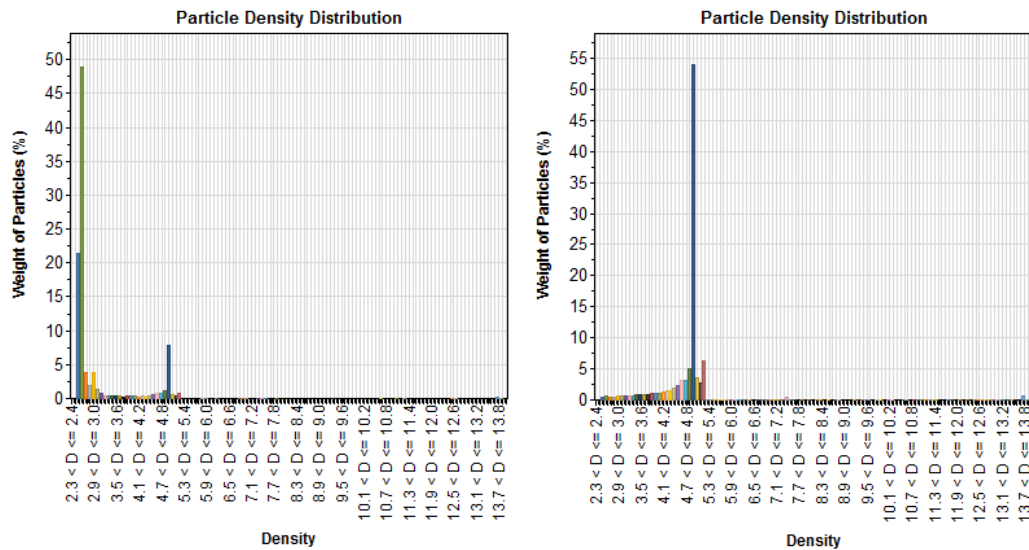


Figure 26. The particle density distributions for the original sample (left) and for the sink fraction (right) from sample K945728.

### K945728 – Particle Micrographs

The large electrum particle (~100 μm) contains a quartz inclusion and potassium feldspar on the edges (Figure 27). The electrum was found to be about 60-65% Au.

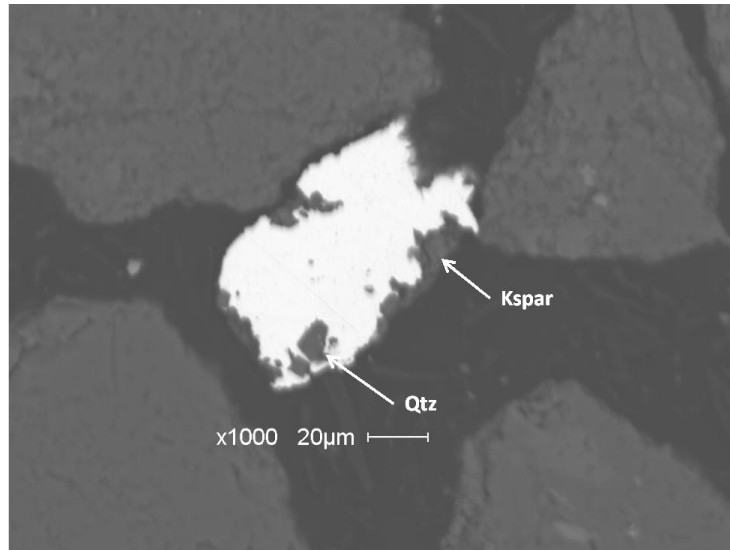


Figure 27. Electrum particle with quartz inclusion and potassium feldspar around edges (140 X 200 mesh).

Figure 28 shows a particle that contains irregular electrum (63-66% Au) inclusions of about 40-60 µm, locked and partially locked in potassium feldspar.

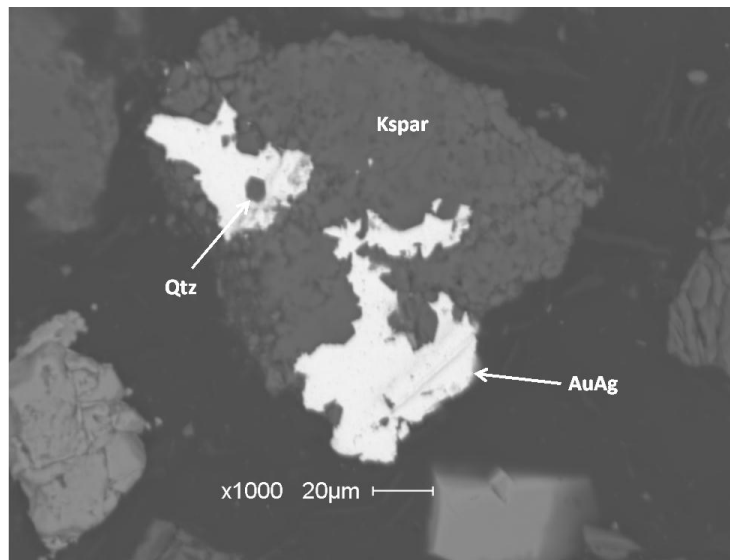
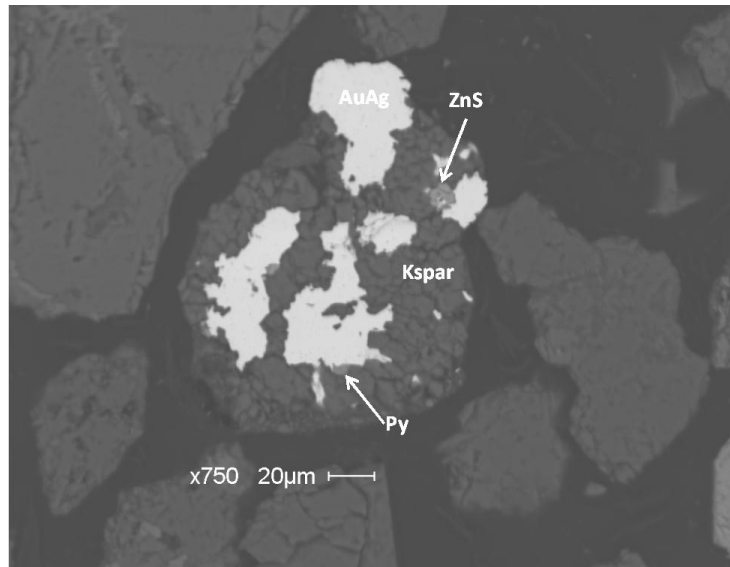


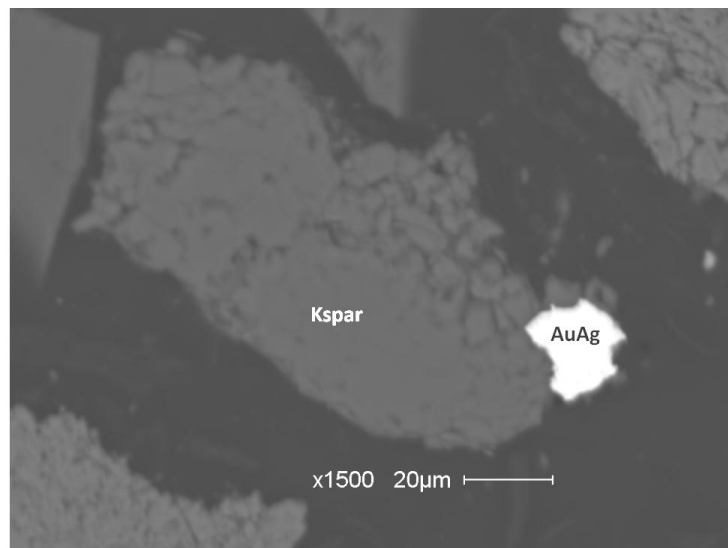
Figure 28. Electrum grains in potassium feldspar sample K945728 (140 X 200 mesh).

Multiple electrum inclusions (60-62% Au) ranging from 20-50 µm in potassium feldspar are shown in Figure 29. Sphalerite and pyrite were associated with the electrum.



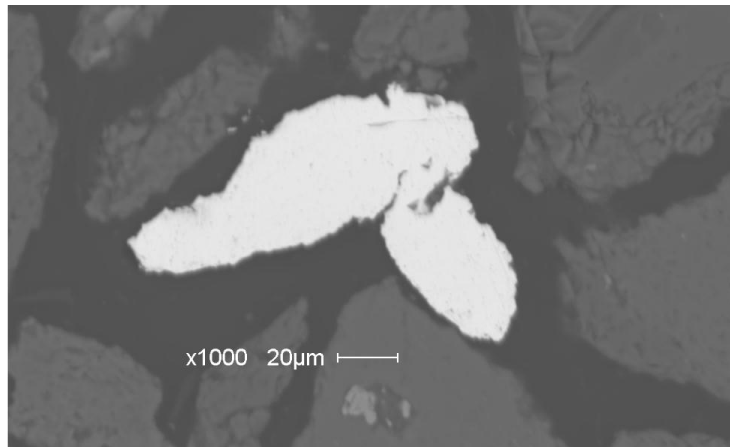
**Figure 29. Electrum grains in potassium feldspar with sphalerite and pyrite associations from sample K945728 (140 X 200 mesh).**

Figure 30 shows another example of electrum in potassium feldspar. The 20 µm electrum grain was about 60% Au.



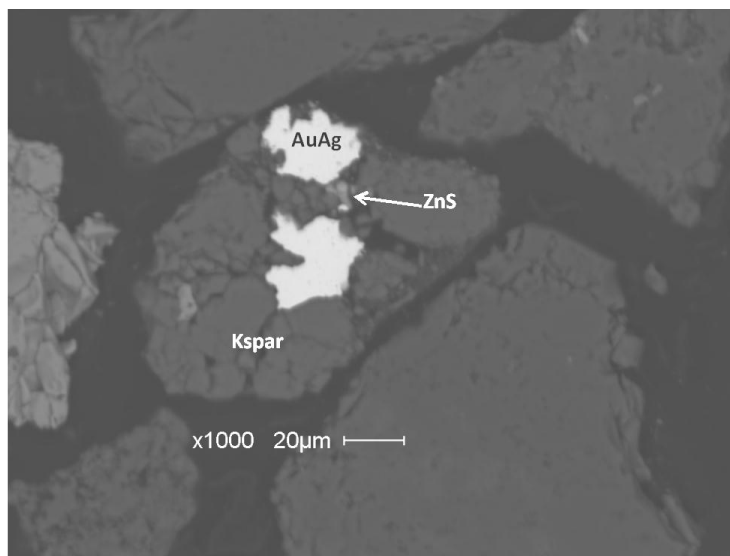
**Figure 30. Electrum on the edge of a potassium feldspar particle from sample K945728 (140 X 200 mesh).**

A large liberated electrum particle of 57-60% Au is shown Figure 31.



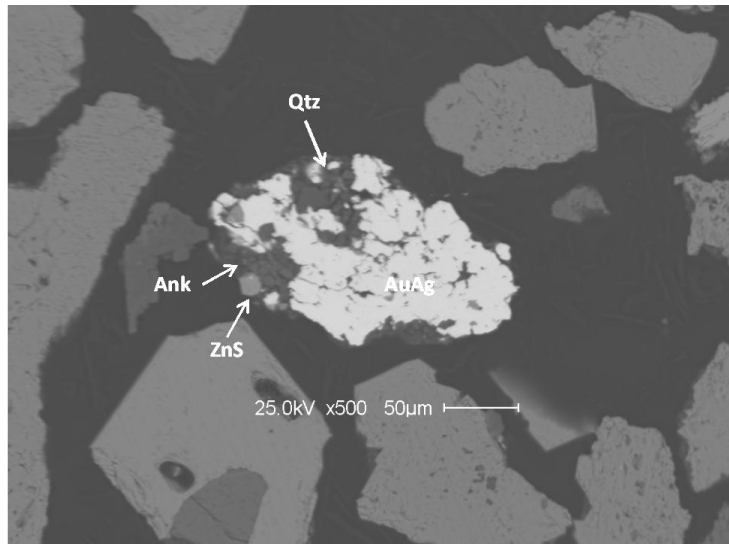
**Figure 31. Liberated electrum particle from sample K945728 (140 X 200 mesh).**

Irregular medium-sized electrum grains (64% Au) in potassium feldspar are shown in Figure 32. The electrum was associated with a small grain of sphalerite.



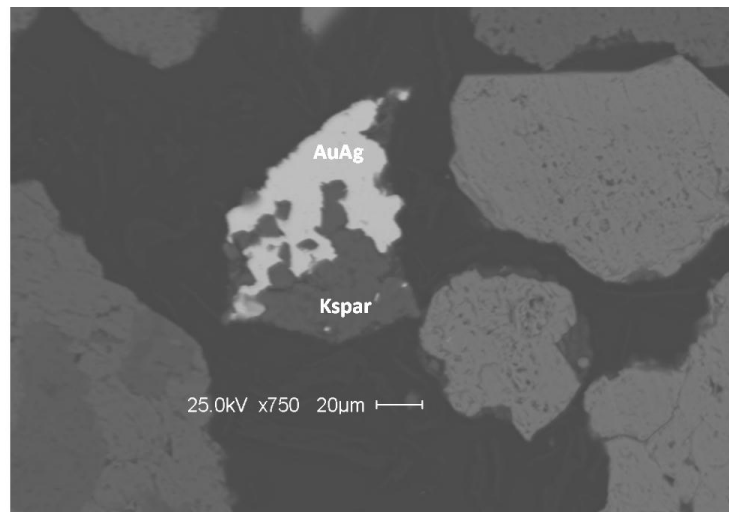
**Figure 32. Electrum in potassium feldspar associated with sphalerite from sample K945728.**

A large electrum particle (~150 µm) from the HLS sink fraction is shown in Figure 33. The electrum was about 60% Au with quartz and ankerite in some of the pockets on the particle edge.



**Figure 33. Electrum particle from HLS sink fraction of sample K945728.**

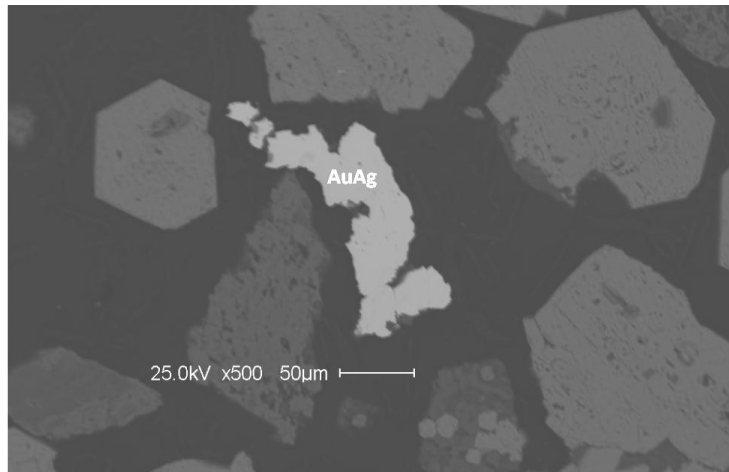
An irregular electrum grain of 60-63% Au and 50-60 µm was associated with potassium feldspar.



**Figure 34. Electrum with potassium feldspar from sample K945728 (140 X 200 mesh).**

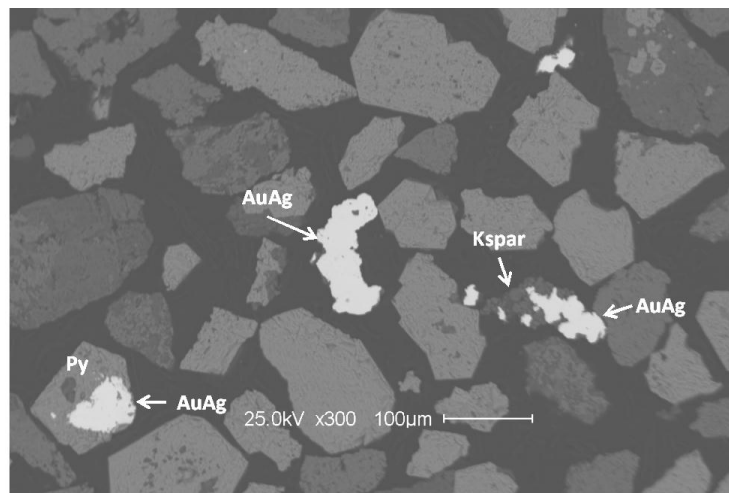
An irregular elongate (50 X 150 µm) liberated electrum grain of 60-63% Au from the HLS sink fraction is shown in Figure 35. Several euhedral, pseudo-hexagonal, pyrite grains are present in the image.





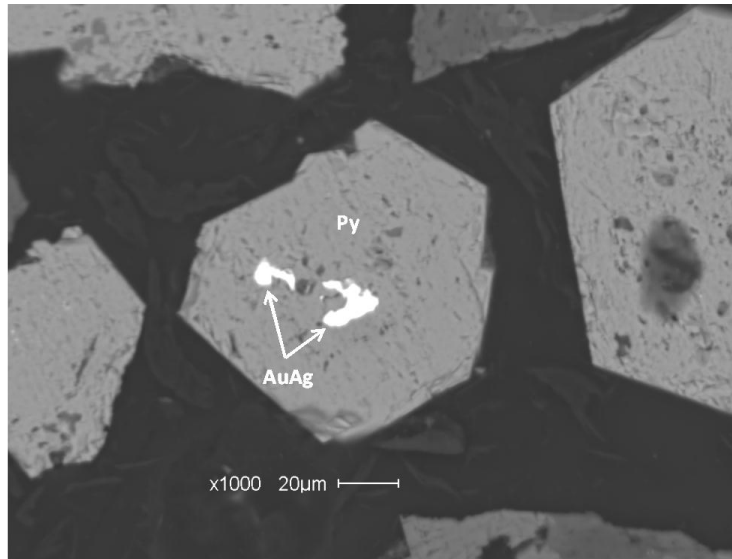
**Figure 35. Liberated electrum grain from the HLS sink fraction from sample K945728 (140 X 200 mesh).**

Many electrum grains/particles are shown in Figure 36. The electrum grains were relatively large (75-150 µm). The liberated electrum particles and potassium feldspar-associated grains were about 60% Au while the electrum grain in pyrite was 68% Au.



**Figure 36. Electrum grains/particles from HLS sink fraction from sample K945728.**

A euhedral pyrite grain containing small blebs of electrum (10-20 µm) is shown in Figure 37. The electrum was found to be about 67% Au.



**Figure 37. Electrum blebs in euhedral pyrite from the HLS sink fraction from sample K945728 (140 X 200 mesh).**

### **K946108 - Golden Predator**

The MLA image from sample K946108 sample (140 X 200 mesh) is shown in Figure 38. The silicates were 75% of the sample and the highlighted particle contained small blebs 10-20  $\mu\text{m}$  of “locked” electrum.

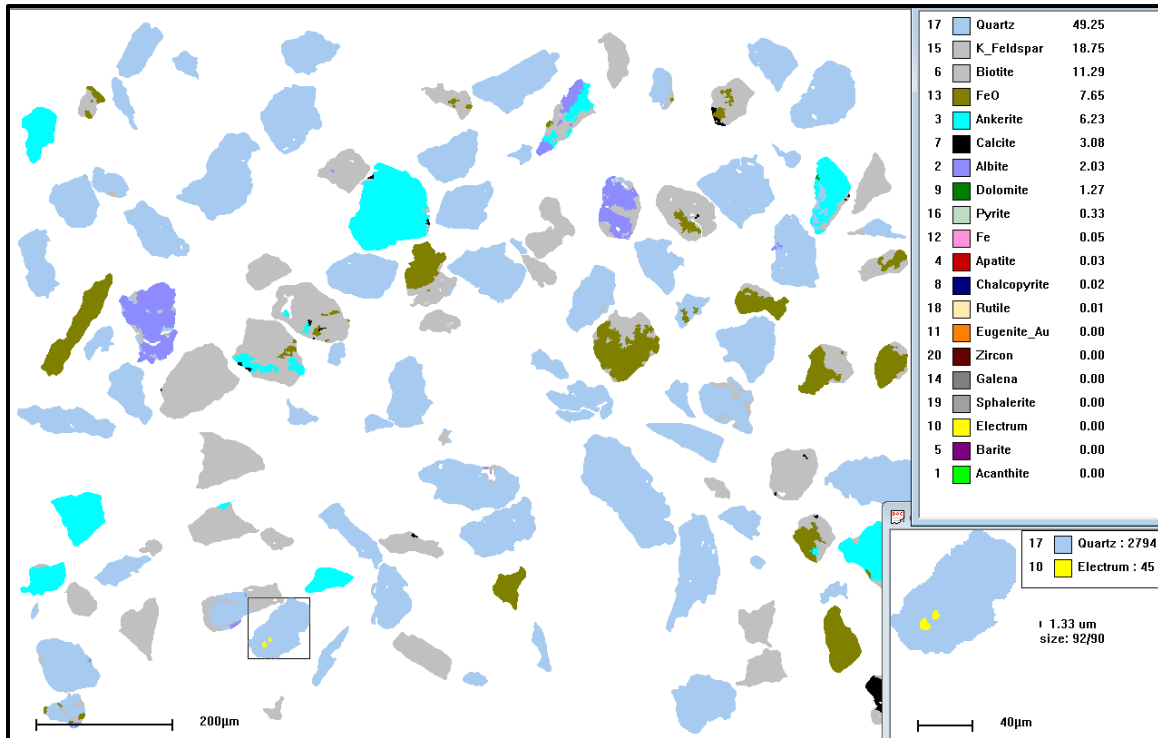
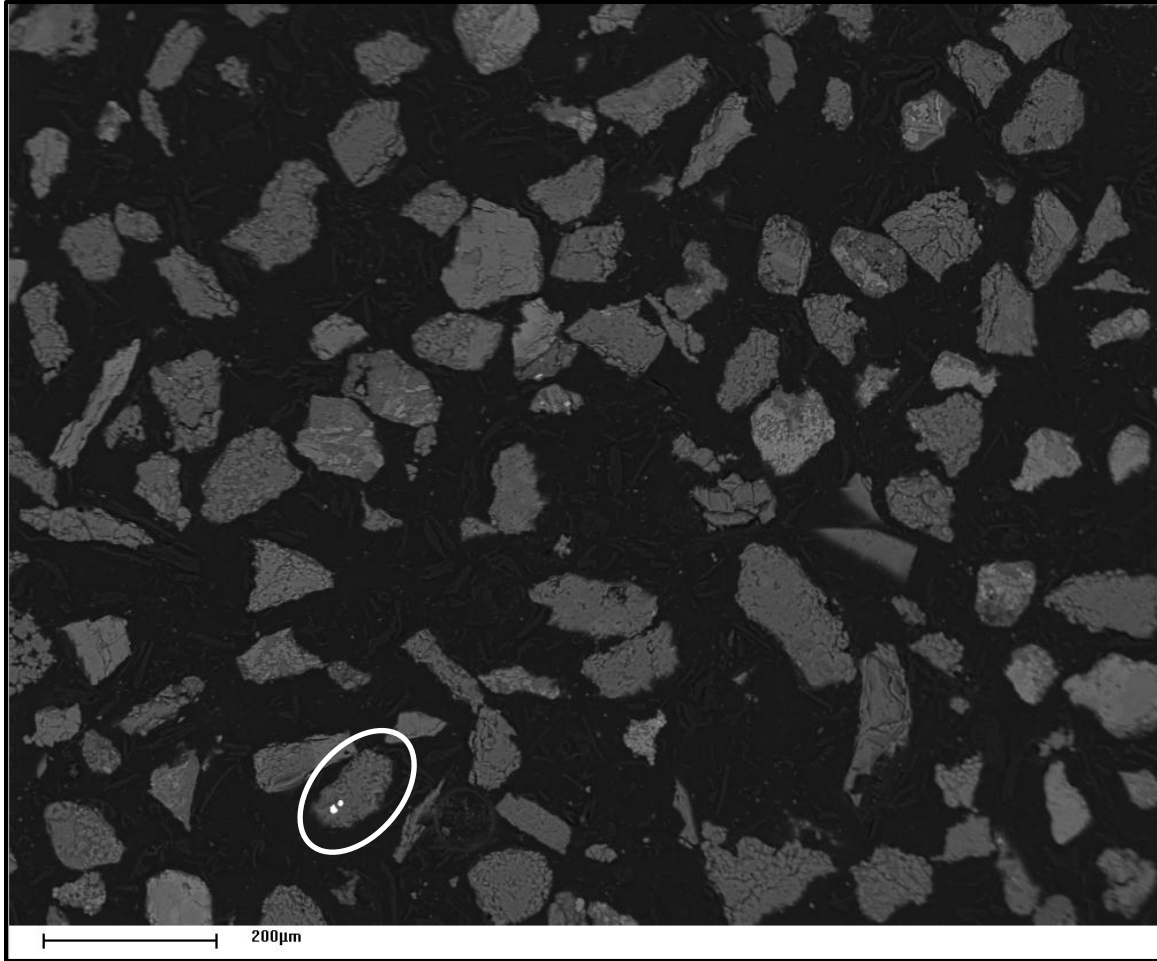


Figure 38. Classified MLA image from sample K946108 (140 X 200 mesh). Particle inset shows surface area in pixels and concentration palette shows area in percentage.

The electrum-containing quartz particle is circled in the BSE image in Figure 39.



**Figure 39. BSE image from sample K946108 (140 X 200 mesh).**

The MLA image in Figure 40 is from the HLS sink fraction from sample K946108. The carbonate particle in the inset contains multiple electrum inclusions of 10-15 µm. Pyrite was associated with one of the electrum grains.

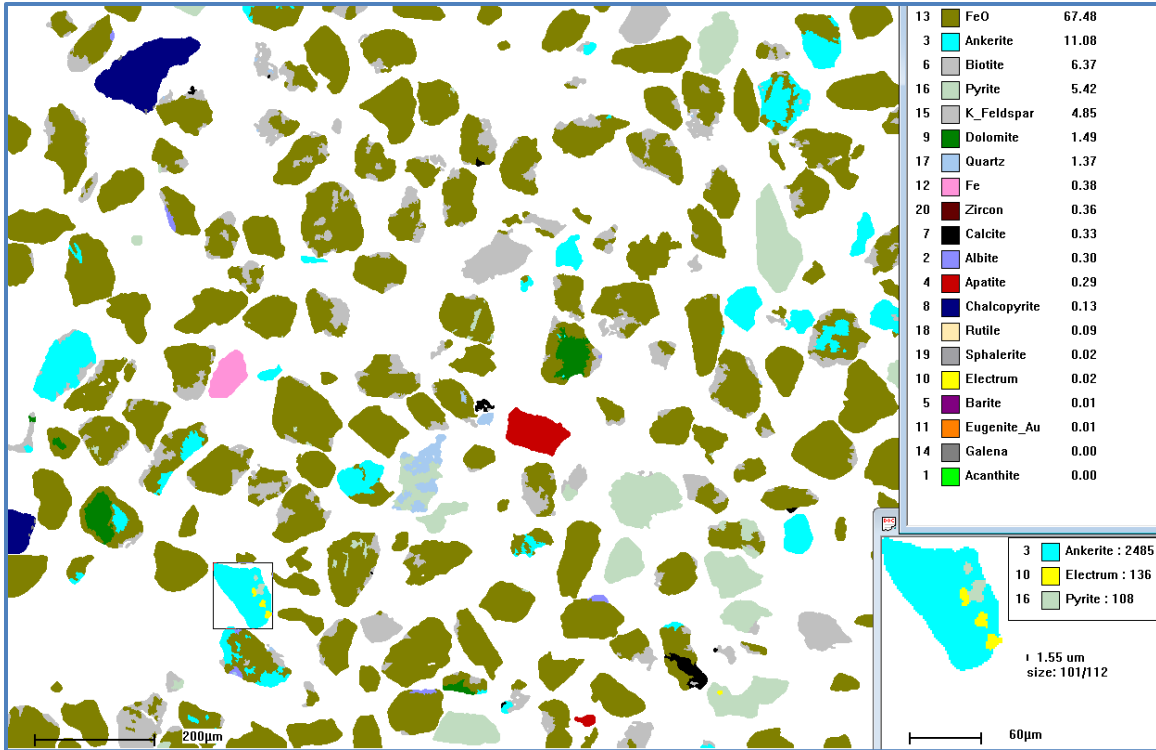


Figure 40. Classified MLA image from the HLS sink fraction of sample K946108 (140 X 200 mesh). Particle inset shows surface area in pixels and concentration palette shows area in percentage.

The ankerite particle that contained the electrum grains is circled in the BSE image in Figure 41. The electrum grains are white with the slightly darker phase being pyrite and the darkest phase was ankerite in the BSE image.

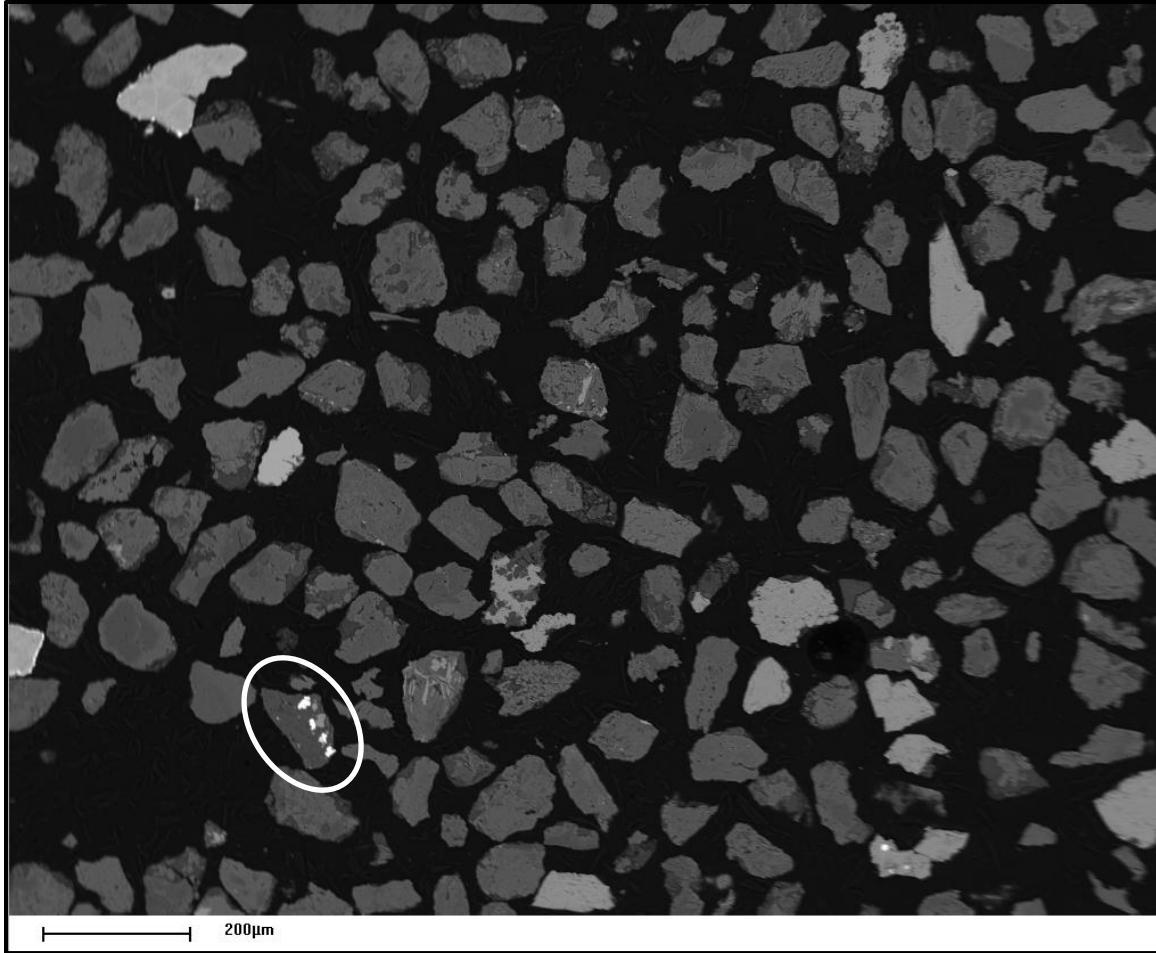


Figure 41. BSE image from HLS sink fraction sample K946108 (140 X 200 mesh).

The mineral content for the original sample and sink fractions is compared in Table 13. Oxides, sulfides and electrum were separated effectively as indicated by the relative increase in content between the original sample and sink fraction.

Table 13. Comparison of original and sink fraction by mineral groups for sample K946108 (140 X 200 mesh) in weight % (MLA XBSE).

Mineral	Original	Sink
Silicates	74.9	8.17
Oxides	13.8	76.6
Carbonates	10.5	8.32
Sulfides	0.60	6.01
Iron	0.12	0.62
Eugenite_Au	0.011	0.014
Sulfates, phosphates, etc.	0.030	0.21
Electrum	0.002	0.052

Acanthite	P	0.002
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P – mineral present, but found at less than 0.0001%

ND – mineral not detected

The dense minerals were preferentially partitioned in the sink fraction, as the less dense minerals were absent from the sink fraction as seen in the particle density distribution in Figure 42.

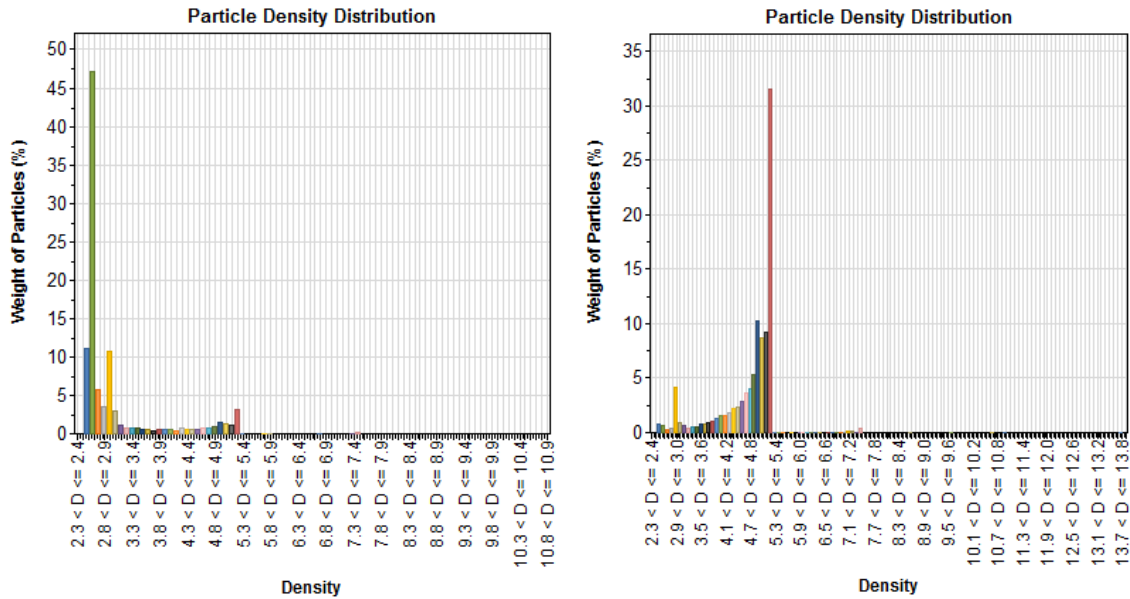
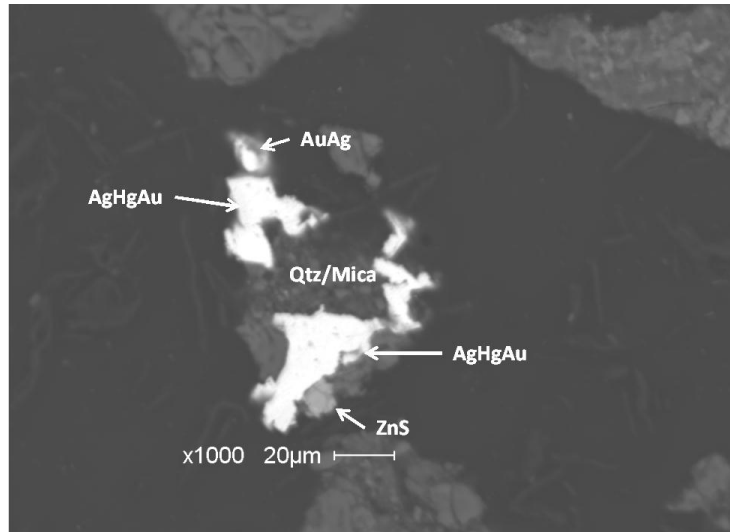


Figure 42. The particle density distributions for the original sample (left) and for the sink fraction (right) from sample K946108.

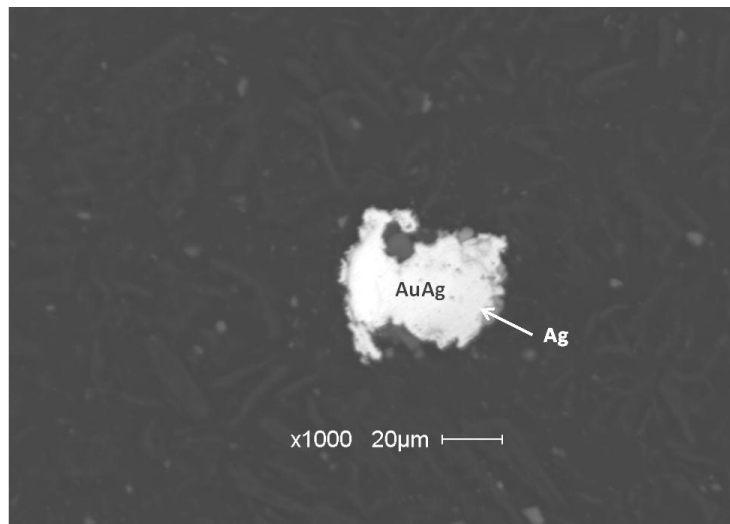
### **K946108 - Particle Micrographs**

The medium sized AgAuHg inclusions shown in Figure 43 contained 16-26% Au and 4-8% Hg, with the balance being silver. The small electrum inclusion at the top of the particle was only 40% Au. A small sphalerite grain was associated with the AgAuHg phase toward the bottom of the particle.



**Figure 43. AgAuHg in quartz/mica from sample K946108 (140 X 200 mesh) sample.**

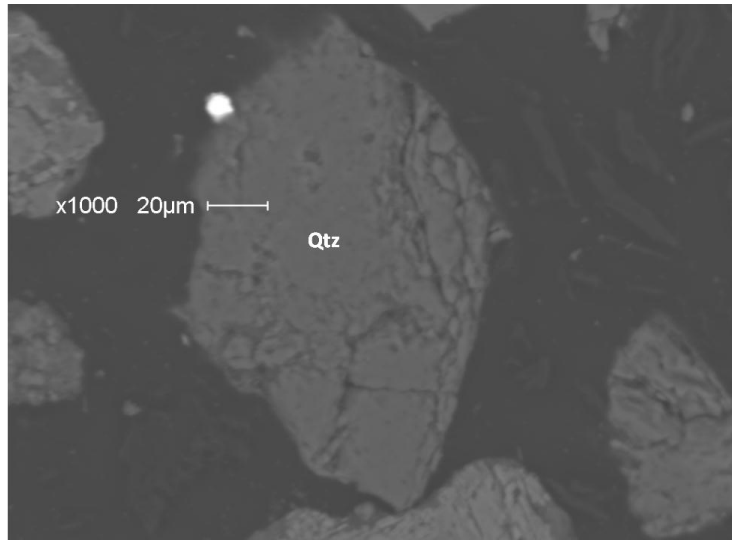
The medium sized (~50 µm), well-liberated gold/silver particle grades from 100% silver at the right to containing 40% Au at the left end of the particle in Figure 44 according to EDX analysis. No mercury was detected in this particle.



**Figure 44. Gold/silver particle from the HLS sink fraction of sample K946108 (140 X 200 mesh).**

A small electrum grain of 5-10 µm attached to the edge of a quartz particle shown in Figure 45 was 50% Au and 50% Ag.





**Figure 45. Electrum grain on the edge of a quartz particle from sample K946108 (140 X 200 mesh).**