Geophysical, Geochemical and Prospecting Report

On the

North Canol Property

Comprised of the

BR1-191 (YE43601-43791), BR193, 195, 197, 199, 201 (YE 43793, 795, 797, 799, 801), BR 203-312 (YE43803-43912), BR317-318 (YE43917-918), BR323-334 (YE43923-934), BR339-340 (YE43939-43940), BR345-348 (YE43945-948), BR351-352 (YE43951, 952), NS1-86 (YE43331-416), NS87-88 (YE39167-168), NS89-102 (YE43419-432), NS103-104 (YE39169-39170), NS107-118 (YE43437-448), NS119-120 (YE39171-172), NS123-134 (YE43453-43464), NS135-136 (YE39173-174), NS139-150 (YE43469-480), NS151-152 (YE39175-176), NS153-166 (YE43483-496), NS167-168 (YE39177-178), NS169-178 (YE43499-508), NS179-180 (YE39179-39180), NS181-190 (YE43511-520), NS191-192 (YE39181-182), NS193-202 (YE43523-532), NS203-204 (YE39183-184), NS205-212 (YE43535-542), NS213-214 (YE39185-186), NS215-217 (YE43545-547), NS218 (YE39187), NS219-226 (YE43549-556), NS227-228 (YE39189-190), NS229 (YE39188), NS230 (YE39193), NS231-242 (YE43561-572), NS243-244 (YE39191-192), NS245 (YE39194), NS247-264 (YE43577-594), NS265-266 (YE39196-197), NS267-340 (YE39207-280)

NTS 105O/01 and 02
Mayo Mining District
Yukon Territory, Canada
63º10’N Lat., 130º25’W Long.

Work Performed: July 11 to August 11, 2011

On behalf of the Registered Owner:

Golden Ridge Resources Ltd.
110 - 2300 Carrington Road
West Kelowna, BC V4T 2N6 Canada

Report prepared by

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Cathro Resources Corp.

March 29, 2012

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2.0 SUMMARY

This report documents a compilation of historic work, along with the results of airborne geophysics, silt sampling and limited prospecting and soil sampling completed in 2011 on the North Canol Property on behalf of Golden Ridge Resources Ltd.

At the time of the work, the North Canol Property comprised 661 Yukon Quartz claims totaling approximately 13,220 hectares. The Property is located in the Macmillan Pass area, Yukon Territory on NTS map sheets 105O/01 and 02, 162 km northeast of the community of Ross River, and 360 km northeast of Whitehorse, the territorial capital. Access is by seasonal road and/or helicopter. The southern and eastern boundaries of the property are bordered by the seasonal, government-maintained Canol Road (Yukon Highway #6).

The North Canol Property is situated within the Macmillan Fold Belt, a well mineralized portion of the Paleozoic Selwyn Basin that hosts several significant deposits and prospects close to the property, including the Tom, Jason, and Nidd sedex Zn-Pb-Ag-barite deposits, the Mactung tungsten deposit, the Brick-Neve sediment-hosted gold prospect, and several small, high-grade barite deposits.

Historic work has identified several mineral occurrences on or very close to the Property including the Bailes, Racicot (Moose), and Gary (Gargantua) barite deposits, the Bremner and Hasten Zn-Pb-Ag-barite prospects, and the Sim W prospect. That work also identified other geophysical and/or geochemical anomalies that may indicate potential for sedex Zn-Pb-Ag-barite, bedded barite, intrusion-related gold, sediment-hosted (Carlin-type) gold or other styles of mineralization on the property. Several prospects and anomalies have been identified for follow-up prospecting and soil sampling.

Historic drilling on the Bremner and Hasten prospects encountered quartz veining, and/or silicification and disseminated pyrite in shale or limestone. This alteration may have potential for sediment-hosted gold, but was previously only sampled for base metals. The Bremner drill core is available in the Bostock Core Library and should be logged and re-sampled for gold and pathfinder elements.

The 2011 Fugro survey provides a series of detailed magnetic and resistivity images that will be very useful in future geological mapping and exploration. Initial interpretation has identified several interesting anomalies and structural breaks, however, additional processing and interpretation is needed.

Silt sampling conducted in 2011 identified several promising anomaly clusters worthy of follow-up, including both Au-As-Mo-W and base-metal targets. Only very limited rock and soil sampling was completed in 2011, and more follow-up work is needed.

3.0 PROPERTY LOCATION AND LAND STATUS

Location

The North Canol Property is located in the Macmillan Pass area, Yukon Territory on NTS map sheets 105O/01 and 02, at a latitude of 63˚10'N and a longitude of 130˚25'W (Figure 1). The Property is located 162 km northeast of the community of Ross River, and 360 km northeast of Whitehorse, the territorial capital.

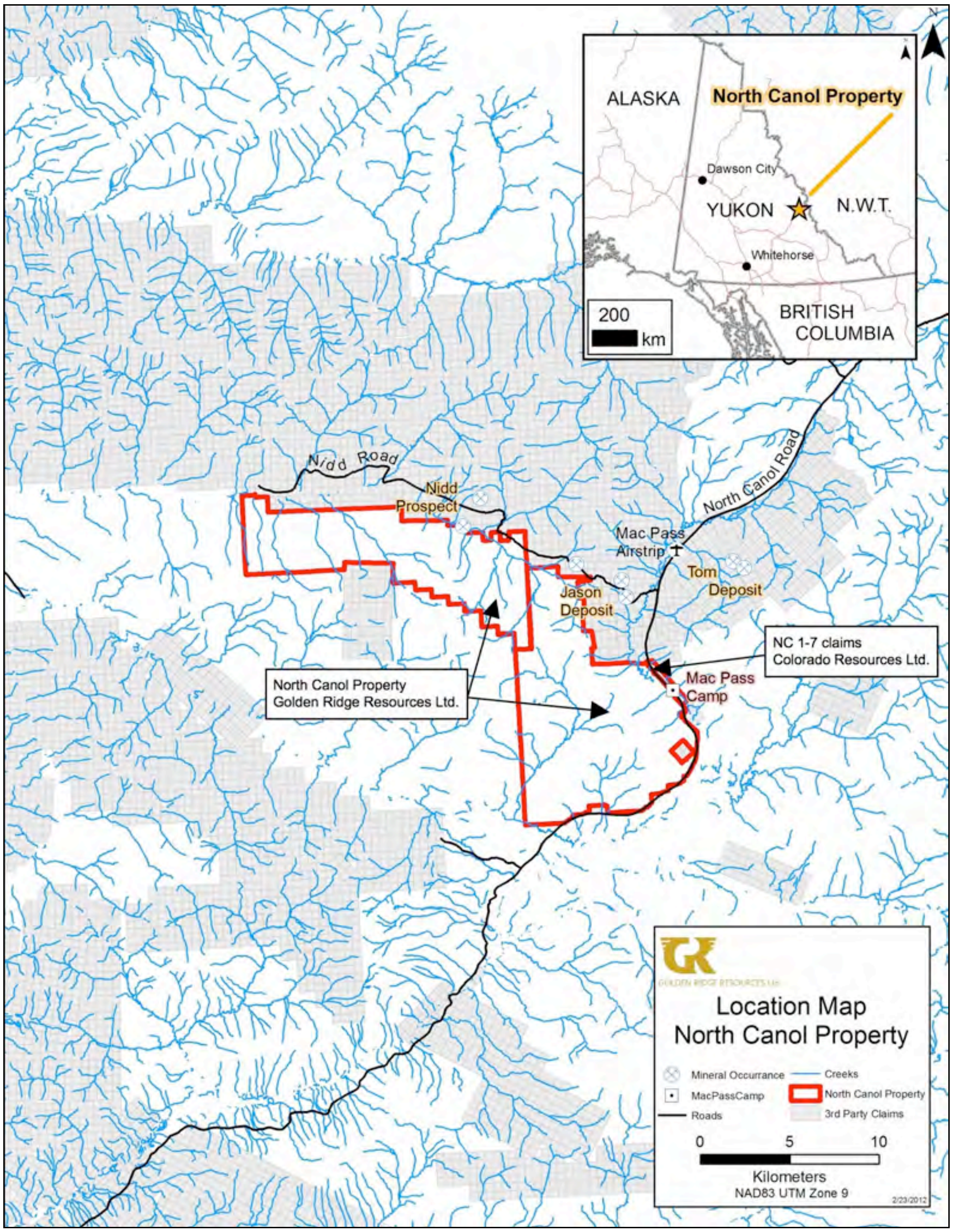

Figure 1. Location map, North Canol Property.

Land Tenure

At the time of the work, the North Canol Property of Golden Ridge Resources Ltd. comprised 661 Yukon Quartz claims totaling approximately 13,220 hectares within the Mayo Mining District (Figure 2). An additional 139 claims (BR 400-545) were staked after the work program. The North Canol claims (NS1-340 and BR1-545 claims) were staked by contractors for Golden Ridge in March, August and September, 2011 using GPS and compass in accordance with the Yukon Quartz Mining Act and are shown on claim sheets 105O/01 and 02, available for viewing in the Mayo Mining Recorder's Offices. Claim boundaries have not been legally surveyed. Some of the North Canol claims are still registered in the names of the contract claim stakers, however, applications to transfer the claims to Golden Ridge have been filed with the Mining Recorder. The claim data is summarized in Table 1 below.

The claims are located within the shared Traditional Territories of two First Nations. The First Nation of Na-Cho Nyak Dun is based in Mayo and has settled its land claims agreement with Canada covering central and northeastern Yukon and portions of N.W.T., including the area of the Property. The Kaska Dena Nation is involved in ongoing negotiations with Canada with regard to its land claim for southeastern Yukon and parts of British Columbia and N.W.T., including the area of the Property. The nearest Interim Protected First Nations Lands are situated 8 km to the northeast. The land in which the mineral claims are situated is Crown Land and fall under the jurisdiction of the Yukon Government.

A mineral claim holder is required to perform assessment work and to document this work to maintain the title as outlined in the regulations of the Yukon Quartz Mining Act. The amount of work required is equivalent to $100.00 of assessment work per Quartz claim unit per year. Alternatively, the claim holder may pay the equivalent amount per unit per year to the Yukon Government as "Cash in Lieu" to maintain title to the claims.

Preliminary exploration activities do not require permitting, but significant drilling, trenching, blasting, cut lines, excavating and establishment of camps may require a Mining Land Use Permit that must be approved under the Yukon Environmental Socioeconomic Assessment Act (YESSA). To the authors' knowledge, the project area is not subject to any environmental liability.

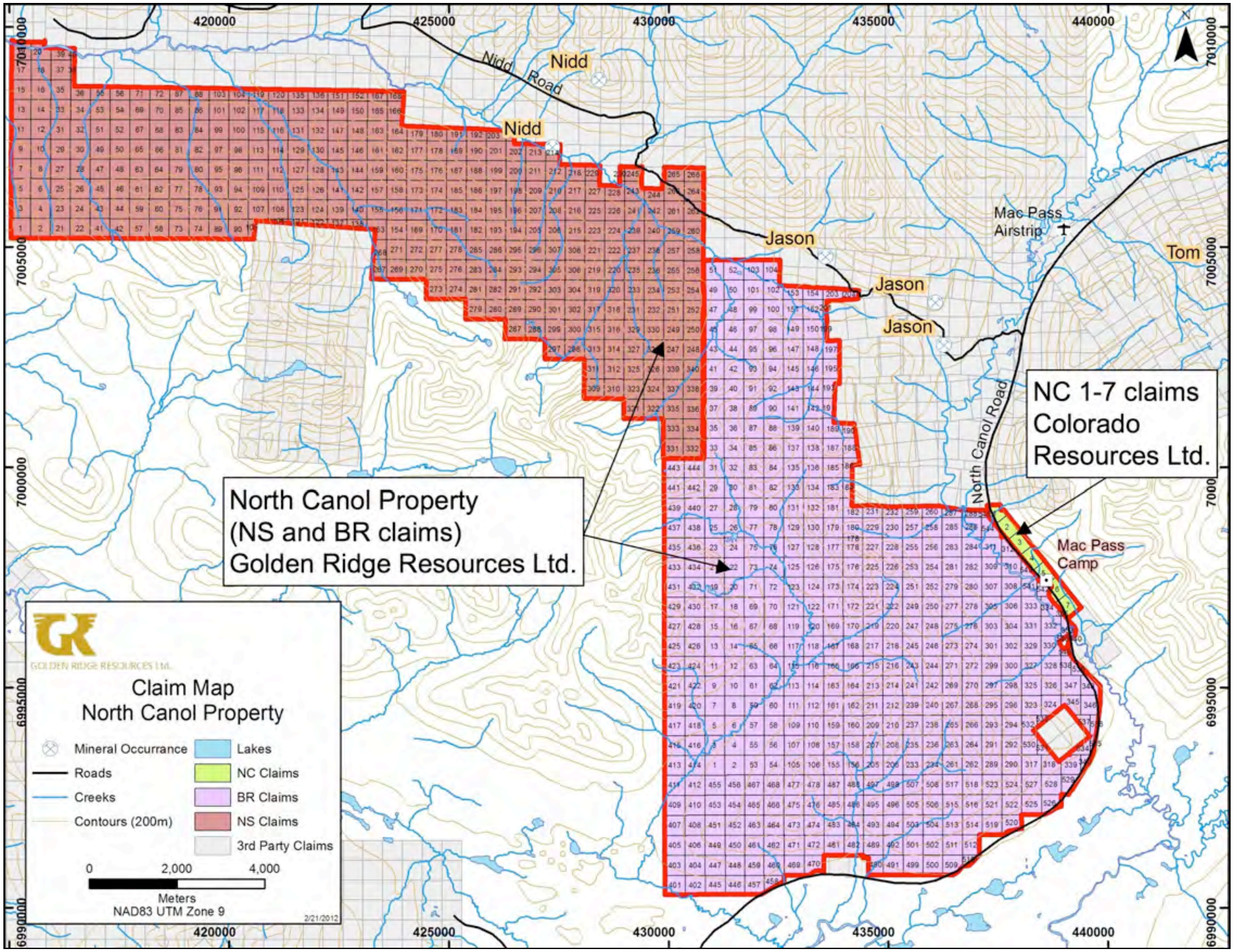

Figure 2. Claim map, North Canol Property.

Table 1. List of Claims, North Canol Property (active status during the work program).

Mining District	Grant #	Type	Claim Name	Claim #	Owner	Recording Date	Staking Date	Expiry Date	Status
Mayo	YE43601	Quartz	BR	1	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43602	Quartz	BR	2	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43603	Quartz	BR	3	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43604	Quartz	BR	4	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43605	Quartz	BR	5	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43606	Quartz	BR	6	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43607	Quartz	BR	7	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43608	Quartz	BR	8	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43609	Quartz	BR	9	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43610	Quartz	BR	10	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43611	Quartz	BR	11	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43612	Quartz	BR	12	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43613	Quartz	BR	13	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43614	Quartz	BR	14	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43615	Quartz	BR	15	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43616	Quartz	BR	16	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43617	Quartz	BR	17	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
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Mayo	YE43623	Quartz	BR	23	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
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Mayo	YE43724	Quartz	BR	124	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43725	Quartz	BR	125	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43726	Quartz	BR	126	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43727	Quartz	BR	127	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43728	Quartz	BR	128	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
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Mayo	YE43730	Quartz	BR	130	Golden Ridge Resources Ltd. - 100%	4/4/11	3/25/11	4/4/12	Active
Mayo	YE43731	Quartz	BR	131	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43732	Quartz	BR	132	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43733	Quartz	BR	133	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43734	Quartz	BR	134	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43735	Quartz	BR	135	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43736	Quartz	BR	136	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43737	Quartz	BR	137	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43738	Quartz	BR	138	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43739	Quartz	BR	139	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43740	Quartz	BR	140	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43741	Quartz	BR	141	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43742	Quartz	BR	142	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43743	Quartz	BR	143	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43744	Quartz	BR	144	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43745	Quartz	BR	145	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43746	Quartz	BR	146	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43747	Quartz	BR	147	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43748	Quartz	BR	148	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43749	Quartz	BR	149	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43750	Quartz	BR	150	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43751	Quartz	BR	151	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43752	Quartz	BR	152	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43753	Quartz	BR	153	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43754	Quartz	BR	154	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43755	Quartz	BR	155	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43756	Quartz	BR	156	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43757	Quartz	BR	157	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43758	Quartz	BR	158	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43759	Quartz	BR	159	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43760	Quartz	BR	160	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43761	Quartz	BR	161	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43762	Quartz	BR	162	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active

Mayo	YE43763	Quartz	BR	163	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43764	Quartz	BR	164	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43765	Quartz	BR	165	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43766	Quartz	BR	166	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43767	Quartz	BR	167	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43768	Quartz	BR	168	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43769	Quartz	BR	169	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43770	Quartz	BR	170	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43771	Quartz	BR	171	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43772	Quartz	BR	172	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43773	Quartz	BR	173	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43774	Quartz	BR	174	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43775	Quartz	BR	175	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43776	Quartz	BR	176	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43777	Quartz	BR	177	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43778	Quartz	BR	178	William Bromell - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43778	Quartz	BR	178	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Application Pending
Mayo	YE43779	Quartz	BR	179	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43780	Quartz	BR	180	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43781	Quartz	BR	181	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43782	Quartz	BR	182	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43783	Quartz	BR	183	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43784	Quartz	BR	184	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43785	Quartz	BR	185	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43786	Quartz	BR	186	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43787	Quartz	BR	187	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43788	Quartz	BR	188	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43789	Quartz	BR	189	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43790	Quartz	BR	190	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43791	Quartz	BR	191	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43793	Quartz	BR	193	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43795	Quartz	BR	195	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43797	Quartz	BR	197	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43799	Quartz	BR	199	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43801	Quartz	BR	201	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43803	Quartz	BR	203	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43804	Quartz	BR	204	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43805	Quartz	BR	205	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43806	Quartz	BR	206	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43807	Quartz	BR	207	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43808	Quartz	BR	208	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43809	Quartz	BR	209	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active

Mayo	YE43810	Quartz	BR	210	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43811	Quartz	BR	211	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43812	Quartz	BR	212	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43813	Quartz	BR	213	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43814	Quartz	BR	214	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43815	Quartz	BR	215	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43816	Quartz	BR	216	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43817	Quartz	BR	217	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43818	Quartz	BR	218	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43819	Quartz	BR	219	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43820	Quartz	BR	220	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43821	Quartz	BR	221	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43822	Quartz	BR	222	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43823	Quartz	BR	223	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43824	Quartz	BR	224	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43825	Quartz	BR	225	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43826	Quartz	BR	226	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43827	Quartz	BR	227	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43828	Quartz	BR	228	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43829	Quartz	BR	229	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43830	Quartz	BR	230	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43831	Quartz	BR	231	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43832	Quartz	BR	232	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43833	Quartz	BR	233	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43834	Quartz	BR	234	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43835	Quartz	BR	235	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43836	Quartz	BR	236	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43837	Quartz	BR	237	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43838	Quartz	BR	238	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43839	Quartz	BR	239	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43840	Quartz	BR	240	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43841	Quartz	BR	241	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43842	Quartz	BR	242	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43843	Quartz	BR	243	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43844	Quartz	BR	244	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43845	Quartz	BR	245	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43846	Quartz	BR	246	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43847	Quartz	BR	247	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43848	Quartz	BR	248	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43849	Quartz	BR	249	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43850	Quartz	BR	250	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43851	Quartz	BR	251	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active

Mayo	YE43852	Quartz	BR	252	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43853	Quartz	BR	253	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43854	Quartz	BR	254	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43855	Quartz	BR	255	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43856	Quartz	BR	256	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43857	Quartz	BR	257	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43858	Quartz	BR	258	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43859	Quartz	BR	259	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43860	Quartz	BR	260	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43861	Quartz	BR	261	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43862	Quartz	BR	262	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43863	Quartz	BR	263	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43864	Quartz	BR	264	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43865	Quartz	BR	265	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43866	Quartz	BR	266	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43867	Quartz	BR	267	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43868	Quartz	BR	268	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43869	Quartz	BR	269	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43870	Quartz	BR	270	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43871	Quartz	BR	271	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43872	Quartz	BR	272	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43873	Quartz	BR	273	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43874	Quartz	BR	274	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43875	Quartz	BR	275	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43876	Quartz	BR	276	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43877	Quartz	BR	277	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43878	Quartz	BR	278	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43879	Quartz	BR	279	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43880	Quartz	BR	280	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43881	Quartz	BR	281	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43882	Quartz	BR	282	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43883	Quartz	BR	283	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43884	Quartz	BR	284	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43885	Quartz	BR	285	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43886	Quartz	BR	286	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43887	Quartz	BR	287	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43888	Quartz	BR	288	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43889	Quartz	BR	289	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43890	Quartz	BR	290	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43891	Quartz	BR	291	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43892	Quartz	BR	292	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43893	Quartz	BR	293	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active

Mayo	YE43894	Quartz	BR	294	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43895	Quartz	BR	295	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43896	Quartz	BR	296	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43897	Quartz	BR	297	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43898	Quartz	BR	298	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43899	Quartz	BR	299	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43900	Quartz	BR	300	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43901	Quartz	BR	301	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43902	Quartz	BR	302	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43903	Quartz	BR	303	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43904	Quartz	BR	304	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43905	Quartz	BR	305	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43906	Quartz	BR	306	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43907	Quartz	BR	307	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43908	Quartz	BR	308	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43909	Quartz	BR	309	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43910	Quartz	BR	310	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43911	Quartz	BR	311	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43912	Quartz	BR	312	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43917	Quartz	BR	317	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43918	Quartz	BR	318	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43923	Quartz	BR	323	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43924	Quartz	BR	324	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43925	Quartz	BR	325	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43926	Quartz	BR	326	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43927	Quartz	BR	327	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43928	Quartz	BR	328	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43929	Quartz	BR	329	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43930	Quartz	BR	330	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43931	Quartz	BR	331	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43932	Quartz	BR	332	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43933	Quartz	BR	333	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43934	Quartz	BR	334	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43939	Quartz	BR	339	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43940	Quartz	BR	340	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43945	Quartz	BR	345	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43946	Quartz	BR	346	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43947	Quartz	BR	347	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43948	Quartz	BR	348	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43951	Quartz	BR	351	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active
Mayo	YE43952	Quartz	BR	352	Golden Ridge Resources Ltd. - 100%	4/4/11	3/26/11	4/4/12	Active

Mayo	YE43331	Quartz	NS	1	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43332	Quartz	NS	2	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43333	Quartz	NS	3	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43334	Quartz	NS	4	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43335	Quartz	NS	5	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43336	Quartz	NS	6	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43337	Quartz	NS	7	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43338	Quartz	NS	8	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43339	Quartz	NS	9	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43340	Quartz	NS	10	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43341	Quartz	NS	11	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43342	Quartz	NS	12	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43343	Quartz	NS	13	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43344	Quartz	NS	14	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43345	Quartz	NS	15	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43346	Quartz	NS	16	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43347	Quartz	NS	17	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43348	Quartz	NS	18	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43349	Quartz	NS	19	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43350	Quartz	NS	20	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43351	Quartz	NS	21	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43352	Quartz	NS	22	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43353	Quartz	NS	23	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43354	Quartz	NS	24	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43355	Quartz	NS	25	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43356	Quartz	NS	26	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43357	Quartz	NS	27	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43358	Quartz	NS	28	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43359	Quartz	NS	29	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43360	Quartz	NS	30	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43361	Quartz	NS	31	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43362	Quartz	NS	32	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43363	Quartz	NS	33	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43364	Quartz	NS	34	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43365	Quartz	NS	35	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43366	Quartz	NS	36	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43367	Quartz	NS	37	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43368	Quartz	NS	38	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE39161	Quartz	NS	39	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39162	Quartz	NS	40	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43371	Quartz	NS	41	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43372	Quartz	NS	42	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active

Mayo	YE43373	Quartz	NS	43	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43374	Quartz	NS	44	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43375	Quartz	NS	45	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43376	Quartz	NS	46	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43377	Quartz	NS	47	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43378	Quartz	NS	48	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43379	Quartz	NS	49	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43380	Quartz	NS	50	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43381	Quartz	NS	51	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43382	Quartz	NS	52	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43383	Quartz	NS	53	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43384	Quartz	NS	54	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE39163	Quartz	NS	55	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39164	Quartz	NS	56	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43387	Quartz	NS	57	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43388	Quartz	NS	58	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43389	Quartz	NS	59	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43390	Quartz	NS	60	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43391	Quartz	NS	61	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43392	Quartz	NS	62	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43393	Quartz	NS	63	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43394	Quartz	NS	64	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43395	Quartz	NS	65	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43396	Quartz	NS	66	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43397	Quartz	NS	67	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43398	Quartz	NS	68	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43399	Quartz	NS	69	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43400	Quartz	NS	70	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE39165	Quartz	NS	71	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39166	Quartz	NS	72	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43403	Quartz	NS	73	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43404	Quartz	NS	74	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43405	Quartz	NS	75	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43406	Quartz	NS	76	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43407	Quartz	NS	77	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43408	Quartz	NS	78	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43409	Quartz	NS	79	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43410	Quartz	NS	80	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43411	Quartz	NS	81	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43412	Quartz	NS	82	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43413	Quartz	NS	83	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43414	Quartz	NS	84	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active

Mayo	YE43415	Quartz	NS	85	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43416	Quartz	NS	86	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE39167	Quartz	NS	87	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39168	Quartz	NS	88	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43419	Quartz	NS	89	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43420	Quartz	NS	90	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43421	Quartz	NS	91	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43422	Quartz	NS	92	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43423	Quartz	NS	93	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43424	Quartz	NS	94	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43425	Quartz	NS	95	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43426	Quartz	NS	96	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43427	Quartz	NS	97	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43428	Quartz	NS	98	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43429	Quartz	NS	99	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43430	Quartz	NS	100	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43431	Quartz	NS	101	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43432	Quartz	NS	102	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE39169	Quartz	NS	103	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39170	Quartz	NS	104	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43437	Quartz	NS	107	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43438	Quartz	NS	108	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43439	Quartz	NS	109	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43440	Quartz	NS	110	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43441	Quartz	NS	111	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43442	Quartz	NS	112	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43443	Quartz	NS	113	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43444	Quartz	NS	114	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43445	Quartz	NS	115	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43446	Quartz	NS	116	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43447	Quartz	NS	117	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43448	Quartz	NS	118	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE39171	Quartz	NS	119	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39172	Quartz	NS	120	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43453	Quartz	NS	123	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43454	Quartz	NS	124	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43455	Quartz	NS	125	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43456	Quartz	NS	126	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43457	Quartz	NS	127	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43458	Quartz	NS	128	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43459	Quartz	NS	129	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43460	Quartz	NS	130	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active

Mayo	YE43461	Quartz	NS	131	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43462	Quartz	NS	132	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43463	Quartz	NS	133	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43464	Quartz	NS	134	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE39173	Quartz	NS	135	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39174	Quartz	NS	136	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43469	Quartz	NS	139	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43470	Quartz	NS	140	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43471	Quartz	NS	141	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43472	Quartz	NS	142	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43473	Quartz	NS	143	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43474	Quartz	NS	144	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43475	Quartz	NS	145	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43476	Quartz	NS	146	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43477	Quartz	NS	147	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43478	Quartz	NS	148	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43479	Quartz	NS	149	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE43480	Quartz	NS	150	Golden Ridge Resources Ltd. - 100%	4/13/11	3/27/11	4/13/12	Active
Mayo	YE39175	Quartz	NS	151	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39176	Quartz	NS	152	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43483	Quartz	NS	153	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43484	Quartz	NS	154	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43485	Quartz	NS	155	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43486	Quartz	NS	156	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43487	Quartz	NS	157	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43488	Quartz	NS	158	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43489	Quartz	NS	159	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43490	Quartz	NS	160	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43491	Quartz	NS	161	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43492	Quartz	NS	162	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43493	Quartz	NS	163	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43494	Quartz	NS	164	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43495	Quartz	NS	165	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE43496	Quartz	NS	166	Golden Ridge Resources Ltd. - 100%	4/13/11	3/28/11	4/13/12	Active
Mayo	YE39177	Quartz	NS	167	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39178	Quartz	NS	168	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43499	Quartz	NS	169	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43500	Quartz	NS	170	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43501	Quartz	NS	171	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43502	Quartz	NS	172	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43503	Quartz	NS	173	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43504	Quartz	NS	174	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active

Mayo	YE43505	Quartz	NS	175	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43506	Quartz	NS	176	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43507	Quartz	NS	177	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43508	Quartz	NS	178	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE39179	Quartz	NS	179	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39180	Quartz	NS	180	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43511	Quartz	NS	181	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43512	Quartz	NS	182	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43513	Quartz	NS	183	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43514	Quartz	NS	184	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43515	Quartz	NS	185	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43516	Quartz	NS	186	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43517	Quartz	NS	187	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43518	Quartz	NS	188	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43519	Quartz	NS	189	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43520	Quartz	NS	190	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE39181	Quartz	NS	191	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39182	Quartz	NS	192	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43523	Quartz	NS	193	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43524	Quartz	NS	194	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43525	Quartz	NS	195	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43526	Quartz	NS	196	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43527	Quartz	NS	197	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43528	Quartz	NS	198	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43529	Quartz	NS	199	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43530	Quartz	NS	200	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43531	Quartz	NS	201	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43532	Quartz	NS	202	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE39183	Quartz	NS	203	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39184	Quartz	NS	204	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43535	Quartz	NS	205	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43536	Quartz	NS	206	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43537	Quartz	NS	207	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43538	Quartz	NS	208	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43539	Quartz	NS	209	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43540	Quartz	NS	210	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43541	Quartz	NS	211	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43542	Quartz	NS	212	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE39185	Quartz	NS	213	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39186	Quartz	NS	214	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43545	Quartz	NS	215	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43546	Quartz	NS	216	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active

Mayo	YE43547	Quartz	NS	217	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE39187	Quartz	NS	218	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43549	Quartz	NS	219	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43550	Quartz	NS	220	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43551	Quartz	NS	221	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43552	Quartz	NS	222	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43553	Quartz	NS	223	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43554	Quartz	NS	224	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43555	Quartz	NS	225	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43556	Quartz	NS	226	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE39189	Quartz	NS	227	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39190	Quartz	NS	228	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39188	Quartz	NS	229	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39193	Quartz	NS	230	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43561	Quartz	NS	231	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43562	Quartz	NS	232	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43563	Quartz	NS	233	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43564	Quartz	NS	234	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43565	Quartz	NS	235	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43566	Quartz	NS	236	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43567	Quartz	NS	237	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43568	Quartz	NS	238	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43569	Quartz	NS	239	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43570	Quartz	NS	240	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43571	Quartz	NS	241	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43572	Quartz	NS	242	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE39191	Quartz	NS	243	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39192	Quartz	NS	244	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39194	Quartz	NS	245	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE43577	Quartz	NS	247	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43578	Quartz	NS	248	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43579	Quartz	NS	249	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43580	Quartz	NS	250	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43581	Quartz	NS	251	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43582	Quartz	NS	252	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43583	Quartz	NS	253	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43584	Quartz	NS	254	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43585	Quartz	NS	255	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43586	Quartz	NS	256	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43587	Quartz	NS	257	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43588	Quartz	NS	258	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43589	Quartz	NS	259	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active

Mayo	YE43590	Quartz	NS	260	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43591	Quartz	NS	261	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43592	Quartz	NS	262	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43593	Quartz	NS	263	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE43594	Quartz	NS	264	Golden Ridge Resources Ltd. - 100%	4/13/11	3/29/11	4/13/12	Active
Mayo	YE39196	Quartz	NS	265	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39197	Quartz	NS	266	Golden Ridge Resources Ltd. - 100%	4/13/11	3/30/11	4/13/12	Active
Mayo	YE39207	Quartz	NS	267	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39208	Quartz	NS	268	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39209	Quartz	NS	269	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39210	Quartz	NS	270	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39211	Quartz	NS	271	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39212	Quartz	NS	272	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39213	Quartz	NS	273	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39214	Quartz	NS	274	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39215	Quartz	NS	275	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39216	Quartz	NS	276	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39217	Quartz	NS	277	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39218	Quartz	NS	278	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39219	Quartz	NS	279	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39220	Quartz	NS	280	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39221	Quartz	NS	281	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39222	Quartz	NS	282	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39223	Quartz	NS	283	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39224	Quartz	NS	284	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39225	Quartz	NS	285	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39226	Quartz	NS	286	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39227	Quartz	NS	287	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39228	Quartz	NS	288	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39229	Quartz	NS	289	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39230	Quartz	NS	290	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39231	Quartz	NS	291	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39232	Quartz	NS	292	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39233	Quartz	NS	293	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39234	Quartz	NS	294	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39235	Quartz	NS	295	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39236	Quartz	NS	296	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39237	Quartz	NS	297	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39238	Quartz	NS	298	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39239	Quartz	NS	299	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39240	Quartz	NS	300	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39241	Quartz	NS	301	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active

Mayo	YE39242	Quartz	NS	302	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39243	Quartz	NS	303	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39244	Quartz	NS	304	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39245	Quartz	NS	305	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39246	Quartz	NS	306	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39247	Quartz	NS	307	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39248	Quartz	NS	308	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39249	Quartz	NS	309	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39250	Quartz	NS	310	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39251	Quartz	NS	311	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39252	Quartz	NS	312	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39253	Quartz	NS	313	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39254	Quartz	NS	314	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39255	Quartz	NS	315	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39256	Quartz	NS	316	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39257	Quartz	NS	317	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39258	Quartz	NS	318	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39259	Quartz	NS	319	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39260	Quartz	NS	320	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39261	Quartz	NS	321	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39262	Quartz	NS	322	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39263	Quartz	NS	323	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39264	Quartz	NS	324	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39265	Quartz	NS	325	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39266	Quartz	NS	326	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39267	Quartz	NS	327	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39268	Quartz	NS	328	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39269	Quartz	NS	329	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39270	Quartz	NS	330	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39271	Quartz	NS	331	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39272	Quartz	NS	332	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39273	Quartz	NS	333	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39274	Quartz	NS	334	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39275	Quartz	NS	335	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39276	Quartz	NS	336	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39277	Quartz	NS	337	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39278	Quartz	NS	338	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39279	Quartz	NS	339	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active
Mayo	YE39280	Quartz	NS	340	Golden Ridge Resources Ltd. - 100%	4/13/11	3/31/11	4/13/12	Active

4.0 ACCESS, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The North Canol Property is accessible by seasonal road and/or helicopter. The southern and eastern property boundaries are bordered by the government-maintained, Canol Road (Yukon Highway #6; Figures 1 and 2), which is generally open from mid-June to late September. Access to the central and northwestern part of the property is by helicopter only. In addition, a rough, four-wheel-drive tote road to the Jason and Nidd zinc-lead deposits comes within one kilometre of the northern boundary of the property, however, a key bridge over the South Macmillan River, connecting the Nidd Road to the Canol Road, was not passable in 2011. Nevertheless, it may be possible to ford the river during low water. The Macmillan Pass gravel airstrip, adequate for small fixed-wing single and twin-engine aircraft, is located 5 km northeast of the property (Figures 1 and 2).

In 2011, access was accomplished using a Long Ranger L3 helicopter supplied by Fireweed Helicopters of Whitehorse, which was based at a trailer and tent camp located on the Canol road near the eastern boundary of the property. The lower reaches of the south part of the property were also accessed on foot from the Canol road.

Lodging, fuel, labour, heavy equipment, mechanical services and limited food and other supplies can be sourced in the village of Ross River (population 313, 2006 census). In addition, Ross River has a nursing station and an airport. The nearest sources of power are the communities of Ross River and Faro, which are connected to the Yukon electrical grid. During the 2011 field season, most of the food and other supplies came from Whitehorse by road or fixed wing aircraft. The driving distance from Whitehorse via Ross River is about 620 km.

The climate in this area is typical of the mountainous regions of northern Canada, with long cold winters and short moderate summers. Winter temperatures can reach to -40˚C or colder, and warm summer days may reach +25˚C. The field season lasts from mid-May to mid-October.

The project area lies within the headwaters of the South Macmillan River in the Selwyn Mountains, and roughly 15 km west of the Yukon – NWT border, which follows the continental divide. Elevations range from 1040 m near the Canol road to 2100 m on the nearby peaks to the northwest. The topography is moderate to steep with broad U-shaped valleys and locally steep peaks and ridges. Tree line varies from 1300 to 1500 m depending on aspect. Vegetation in the lower valleys is locally dense with birch and willow brush and stunted black spruce. Wildlife includes grizzly and black bears, moose, caribou, wolves, and rodents.

The majority of the project area is covered by colluvium. Outcrop is sparse except on the steeper ridges and cliffs. Permafrost is present on the lower north-facing slopes.

5.0 HISTORY

The Canol ("Canadian Oil") road and pipeline were built in 1942-44 under the direction of the U.S. Army Corps of Engineers. The purpose was to deliver oil from fields at Norman Wells N.W.T to Fairbanks, Alaska in support of the war effort against Japan.

The Tom zinc-lead-silver deposit (Figure 2), located adjacent to the Canol road and pipeline, was discovered in 1951 by prospectors working for Hudson Bay Exploration and Development. The majority of the mineral prospects in the Macmillan Pass area were discovered during the exploration boom of 1960s, 1970s and early 1980s, when the area was extensively prospected for lead, zinc, silver, copper, barite and tungsten. This work resulted in the discovery of the important Jason and Nidd zinc-lead silver deposits, the Mactung tungsten deposit, and many of the barite occurrences. Active gold exploration took place in the 1980s and 1990s leading to the discovery of the sediment-hosted Brick-Neve prospect to the west, as well as several intrusion-related vein and stockwork prospects.

The most advanced projects in the area are the Tom and Jason sedex Zn-Pb-Ag deposits (HudBay Minerals Inc.) and the MacTung tungsten deposit (North American Tungsten).

6.0 GEOLOGICAL SETTING

Regional Geology

The first recorded work in the Macmillan Pass region was conducted by E.D. Kindle of the Geological Survey of Canada who carried out a reconnaissance survey of the Canol Road between 1944 and 1945. S.L. Blusson (1974) of the Geological Survey of Canada completed reconnaissance-scale mapping of a large area in the Mackenzie Mountains G. Abbott (1982, 1983, in press) completed comprehensive mapping of the Macmillan Pass fold belt. The regional geology presented here is taken from a summary of Selwyn Basin, compiled by D. Héon (date unknown).

The property is situated within the Macmillan Pass area, which is underlain by marine clastic and lesser carbonate rocks of the Selwyn Basin portion of the Ancestral North American miogeocline (Figure 3). These are overlain by mid-Devonian to Permo-Triassic continental margin and shelf clastics. The miogeoclinal rocks were deformed in Jurassic to Cretaceous time and intruded by Early to mid-Cretaceous granitic plutons.

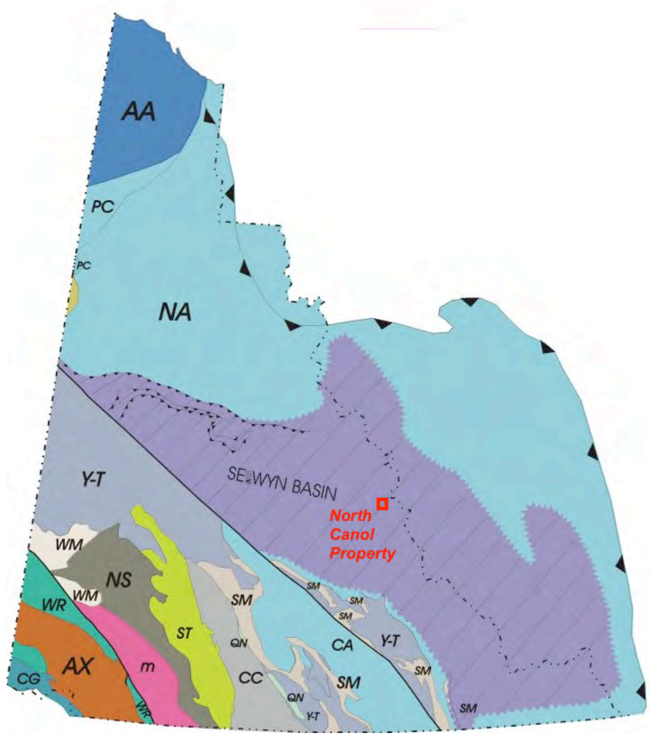

Figure 3. Location of North Canol Property within Selwyn Basin (terrane map from Yukon Geological Survey website, February 6, 2012).

The Selwyn Basin, as defined by Gordey and Anderson (1993) refers to:

a region of deep-water offshelf sedimentation that persisted from late Precambrian to Middle Devonian time. Its basal deposits consist of late Precambrian rift (-) clastics; it is overlain by rift clastics of late Devonian age. On its northeastern side are time-equivalent shallow shelf strata of Mackenzie Platform. Along its southwestern margin there developed in the Siluro-Devonian a carbonate-clastic shelf, the Cassiar Platform… Its southwestern limit is essentially the limit of the miogeocline as presently preserved (.)" in the Yukon.

Héon summarized the basin as follows:

Characterized by the deposition of offshelf deep-water clastics (shale, chert and basinal limestone), Selwyn Basin is bound by the Mackenzie Platform to the northeast, and, at least from late Silurian to early Devonian, by the Cassiar Platform to the southwest. Facies changes between deep-water clastic rocks (shale basin) and shallow-water carbonate rocks (platform) are transitional.

This 'shale-out' marks the shelf edge or hinge line. Passive margin sedimentation was punctuated by periods of extension and tectonic instability. This caused widespread lateral migration of the shelf edge, and resulted in inter-fingering of shelf and offshelf facies (transitional units) as well as internal unconformities and scattered volcanism (Fig. 2). Irregular changes in the position of the facies boundary and local and intermittent extension resulted in the development of secondary rift basins such as the Misty Creek Embayment, the Richardson and Blackstone Troughs, and the Meilleur River Embayment.

From mid-Devonian to Mississippian, passive margin sedimentation in the outer miogeocline and platformal carbonate deposition in the inner miogeocline were interrupted and replaced by regional uplift and erosion followed by subsidence of the continental margin. A sudden influx of marine, turbiditic, chert-rich clastic rocks (Earn Group) spread to the south and east from an uplifted source in northern Yukon, and to the east from uplifted western portions of Selwyn Basin. These clastics rocks blanketed all previous facies, covering Selwyn Basin sediments and onlapping onto the western Mackenzie platform (Fig. 3). Selwyn Basin, as a distinct topographic entity, no longer existed.

Sedimentation was accompanied locally by block faulting and felsic and mafic volcanism, and by widespread Ba and Pb-Zn-Ag-Ba mineralization. This abrupt change in sedimentation pattern has been attributed to a number of factors, including rifting, large-scale strike-slip faulting and the response to the compressive regime and uplift in northern Yukon created by the Ellesmerian orogeny.

From Mississippian to Triassic, marine shelf sedimentation resumed across the miogeocline, and is characterized predominantly by clastic sediments, some carbonates and numerous unconformities. Late Middle Triassic mafic sills intruded shallow marine sediments in the northwestern part of the area. Preservation of rocks spanning this time interval is sporadic.

In Jurassic and Early Cretaceous time, the miogeocline was deformed by northeast-directed compression caused by plate convergence and the accretion of pericratonic terranes onto North America. The rocks of Selwyn Basin are relatively incompetent when compared to the carbonate rocks of the platforms, and responded by thrust faulting and the development of open to tight similar folds.

Widespread Early to mid-Cretaceous granitic magmatism intruded the deformed rocks of the miogeocline. Five main intrusive suites are recognized: the Anvil (112-110 Ma), Tay River (98-96 Ma), Tungsten (97-92 Ma), South Lansing (95-93 Ma) and the Tombstone Suite (94-90 Ma). The McQuesten Suite was later emplaced around 65 Ma (Mortensen, 2000). The Tintina Fault zone, a late Cretaceous to Tertiary dextral strike-slip fault system with an estimated displacement of at least 450 km, and possibly up to 650 km, displaced the western margin of Selwyn Basin into what is now Alaska.

In the Macmillan Pass area, the Macmillan fold belt has a westerly trend and is thought to reflect a deep-seated Devonian fault zone. Folding is tight and a narrow, imbricate fault zone of southerly directed, east west trending thrust faults repeats Lower Cambrian to Devonian stratigraphy. South of the imbricate belt, open to closed folds and steep faults are the dominant structures. Some of the steep faults may have been active in the Devonian, forming grabens, and later exerted control on development of the Mesozoic imbricate belt. Northeast from the imbricate belt, the structural trend bends from northerly to a northwest-southeast orientation. In southwest Macmillan Pass area, the structure is dominated by small- to intermediate-scale chevron folds in thinbedded chert of early Paleozoic age. The chert succession has been shortened and thickened, but not tilted or imbricated. Displacement was accommodated in the bounding incompetent shales.

Regional metamorphism is lower greenschist facies. Slightly higher metamorphic grade is observed in rocks in the Tombstone Strain Zone where sedimentary and igneous rocks are metamorphosed to psammite, phyllite, slate, siliceous phyllite, chlorite-muscovite phyllite, metabasite, orthoquartzite and marble.

Contact metamorphism is evident around Cretaceous plutons. Contact aureoles are up to several kilometres in diameter, producing calc-silicate, pelitic and siliceous hornfels. Porphyroblasts include kyanite, andalusite, plagioclase, garnet, cordierite, sillimanite and chloritoid. Pelitic hornfels zones are often gossanous, as a result of the oxidation of the disseminated sulphides (mainly pyrrhotite) that is present in the hornfels.

Rocks of Selwyn Basin host numerous occurrences related to the Tombstone Plutonic Belt. This includes skarn deposits such as the Mactung Tungsten skarn (the largest tungsten reserve in the western world) and the Marn and Horn copper-gold skarns; distal vein deposits (Keno Hill district), replacement deposits (Brewery Creek, Harlan claims) and intrusive- and hornfels-hosted gold deposits (Dublin Gulch, Scheelite Dome, Clear Creek).

Property Geology

The North Canol Property is underlain by the west-trending Macmillan Fold Belt (MFB), comprised primarily of Paleozoic sedimentary rocks of the Road River Group and Earn Group (Portrait Lake and Itsi Formations), which are intruded by a mid-Cretaceous granitic intrusion along the south and west margins of the North Canol Property. Details of the stratigraphy, structure and mineral deposits are presented in Abbott (1982, 1983, in preparation) and Abbott and Turner (1990), and the following is summarized from those sources. The detailed geology and structural relations in the MFB are shown on Figures 4 and 5 respectively.

Rocks in the MFB range in age from Hadrynian to Triassic, and include a broad range of lithologies including carbonate platform rocks (Mackenzie Platform), shallow and deep water carbonates and clastics (Selwyn Basin), and volcanics. During the Hadrynian to Lower Ordovician, a general east to west shelf-slope transition was present in the area, with platformal carbonates and clastics to the east and deeper water shales, siltstones and limestone to the west. A few small outcrops of Proterozoic to Lower Cambrian ***Vampire Formation*** (shale, siltstone and sandstone) are mapped in the broad valley on the north side of the property, south of the Hess Fault (Figure 4).

The Road River Group was deposited from Ordovician to Early Devonian time, and comprises mudstone, black graphitic shale, chert and silty limestone. The Road River Group has been further subdivided by Abbott (in preparation) into the Early Ordovician to Middle Silurian ***Duo Lakes Formation*** (chert and siliceous shale), the Upper Silurian ***Steel Formation*** (bioturbated shale and mudstone, locally calcareous) and the Upper Silurian to Middle Devonian ***Sapper Formation*** (sility carbonaceous limestone). Small outcrops of these units were mapped in the creek valley on the north side of the property by Abbott (in preparation). In addition, silty limestone of the Sapper Formation was intersected at depth in drill holes at the Bremner prospect (see below).

Middle Devonian tectonism resulted in a deposition of the ***Portrait Lake Formation*** comprising conglomerates, turbidites, sedimentary breccias, sandstone, siltstone, shale, chert and local volcanics. These rocks host the important sedex Zn-Pb-Ag and barite deposits of the MFB. The Portrait Lake Formation has been subdivided into the following units, from oldest to youngest: Lower Devonian ***Macmillan Pass Volanics*** (carbonate-rich mafic volcaniclastic and intrusive sills), The Lower and Middle Devonian ***Niddery Lake Member*** (Dp1 on Figure 4; blue weathering chert and siliceous shale), the Middle Devonian ***Macmillan Pass Member*** (Dp2 on Figure 4; chert pebble conglomerate, sandstone, siltstone and laterally equivalent shale), the Middle(?) and Upper Devonian ***Fuller Lake Member*** (Dp3 on Figure 4; blue weathering siliceous shale and chert). The Upper Devonian ***Itsi Formation***, a thick package (> 1300 m) of resistant, parallel and cross-laminated sandstone, siltstone and shale is partly enclosed by the Fuller Lake Member.

Early Mississippian shale, quartzite, chert and limestone of the ***Tsichu Formation*** cap the sequence in the western part of the property, and were deposited in a more stable shelf-slope to off-shelf marine setting.

Structurally, the MFB has been subdivided into three west-trending domains, the North, Central and South Blocks, on the basis of Paleozoic stratigraphic relations and style of Mesozoic deformation (Figure 5). The North Block is characterized by southeasterly-directed imbricate thrust faults. The Central Block has complex structures including at least three phases of folds and faults, dominated by west-trending upright, tight folds and high angle reverse faults. The South Block has two relatively simple phases of northwest and north trending folds (Abbott and Turner, 1990).

The property lies in the South Block of the MFB (Figure 4, 5), south of the Hess Fault, a major WNW trending feature, which is thought to have been active during deposition of the Devonian sedimentary rocks, and later re-activated during Mesozoic deformation. Abbott and Turner (1990) speculate that the Hess Fault could be either a series of branching reverse faults, or have as much as 25 km of right lateral displacement on it, based on interpreted offset of facies within the Macmillan Pass Member.

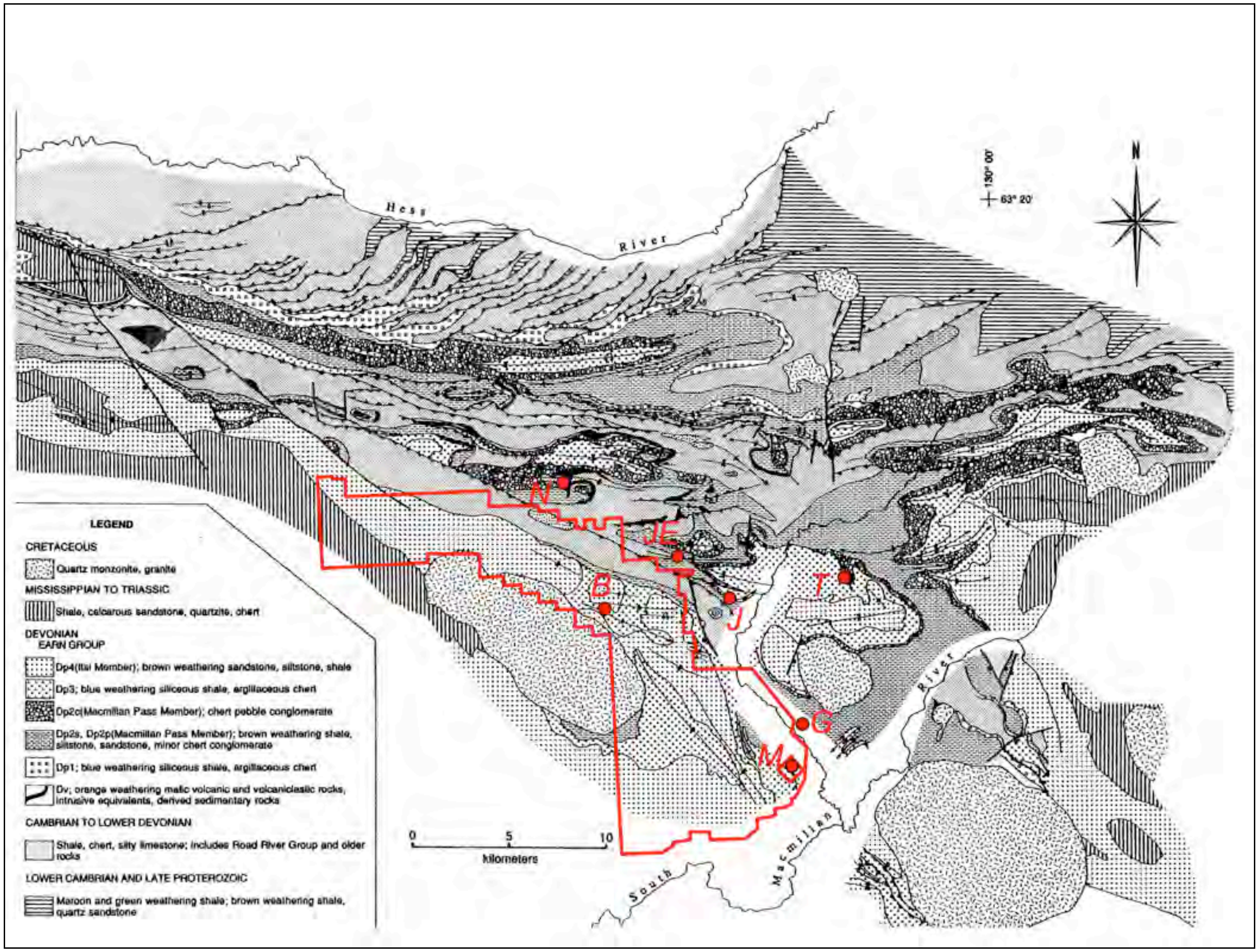

Figure 4. Geology of the Macmillan Fold Belt and North Canol Property (after Abbott and Turner, 1990). Key deposits noted on the map are Tom Zn-Pb-Ag (T), Jason Main and South Zn-Pb-Ag (J), Jason End Zone Zn-Pb-Ag (JE), Nidd Zn-Pb-Ag (N), Bailes barite (Ba), Gary barite (G), and Moose (Racicot) barite (M).

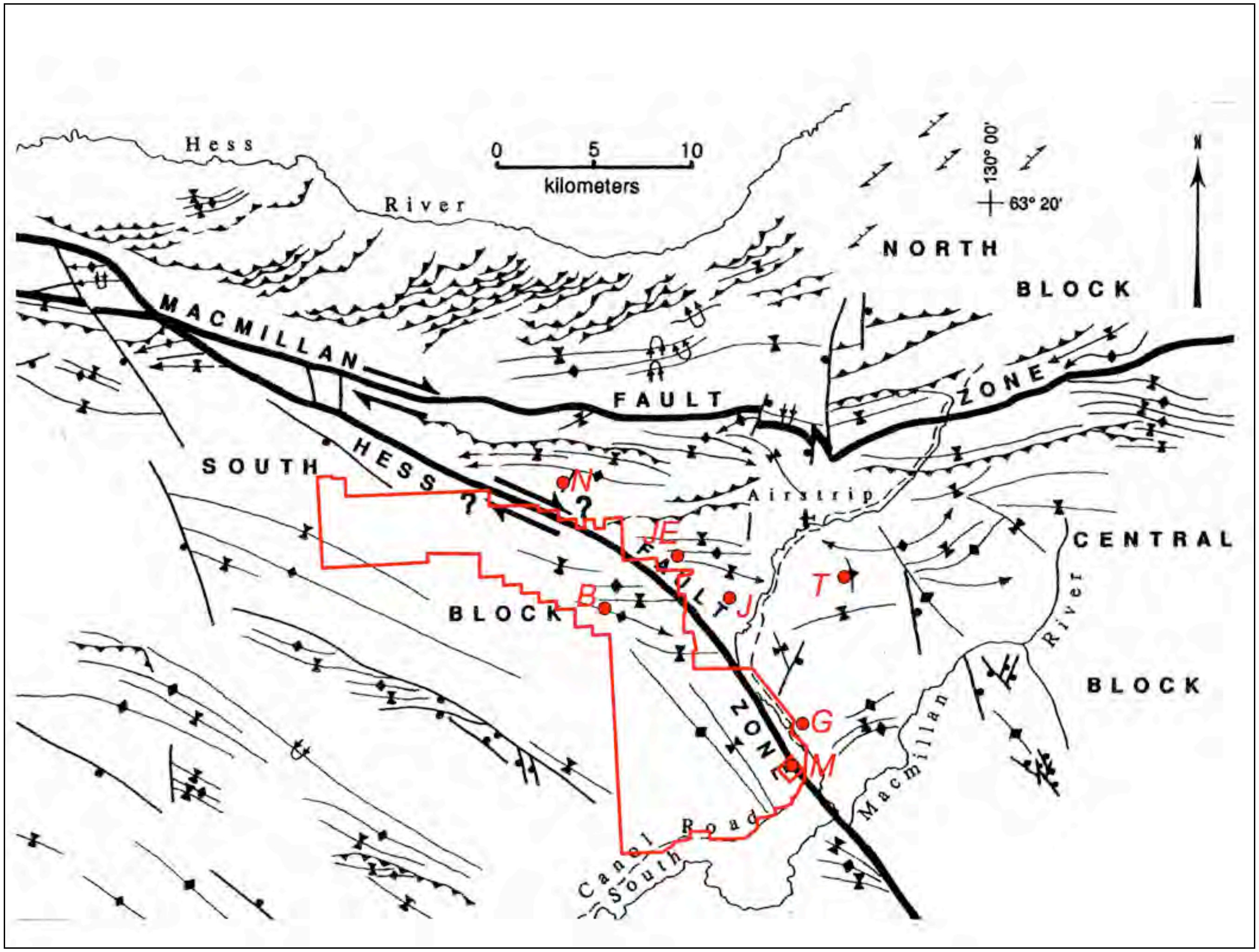

Figure 5. Structural elements of the Macmillan Fold Belt and North Canol Property (after Abbott and Turner, 1990). Key deposits noted on the map are Tom Zn-Pb-Ag (T), Jason Main and South Zn-Pb-Ag (J), Jason End Zone Zn-Pb-Ag (JE), Nidd Zn-Pb-Ag (N), Bailes barite (Ba), Gary barite (G), and Moose (Racicot) barite (M).

7.0 DEPOSIT TYPES

The project area lies within the informally named Macmillan Pass mining district, which includes several significant zinc-lead-silver, barite, tungsten and gold deposits and prospects. The Property is prospective for several types of deposits, the most important of which are as follows.

Sediment-Hosted Gold-Silver Model

Also known as carbonate-hosted or Carlin-type gold deposits, this is one of the most economically important types of gold deposit. The best examples are in Nevada; however, other more proximal examples may include Osiris, Yukon; Brewery Creek, Yukon; and Golden Bear, British Columbia. This style of mineralization has become of particular interest in the north-central Yukon since the discovery of the Osiris gold deposit by Atac Resources Ltd. in 2010. The Brick-Neve gold prospect on Colorado Resources Ltd.'s Oro property, adjoining the North Canol Property to the northwest, is the closest nearby example.

The following deposit description has been summarized from Schroeter and Poulson (1996). Gold occurs as very finely disseminated micron-sized particles with sulphides often in stratabound concordant zones or in discordant breccias within decarbonated calcareous rocks and associated jasperoids. Host rocks are most commonly thin-bedded silty or argillaceous carbonaceous limestone or dolomite, with carbonaceous shale, deposited in a somewhat anoxic shelf-basin transitional setting. Although less productive, non-carbonate siliciclastic and rare metavolcanic rocks are local hosts. Felsic plutons and dikes are also mineralized at some deposits. Sulphide content is usually low (<1%), and geochemical pathfinders include arsenic, antimony, mercury, thallium, and barium and sometimes fluorine, tungsten or molybdenum.

Intrusion Related Gold Model

Also known as "plutonic-related gold-quartz", "gold porphyry", or "Fort Knox-type" gold deposits, these are important bulk-minable gold targets in Yukon and Alaska. Examples include Dublin Gulch and Clear Creek, Yukon, and Fort Knox, Alaska. According to Lefebure and Hart (1995), gold mineralization is hosted by millimetre to metre-wide quartz veins hosted by equigranular to porphyritic granitic intrusions and adjacent hornfelsed country rock. The veins may form parallel or "sheeted" arrays, and less typically, weakly developed stockworks. Sulphide content is generally low (<3%). Native gold occurs associated with minor pyrite, arsenopyrite, pyrrhotite, scheelite and bismuth and telluride minerals. These deposits can be any age, although they are best known in Paleozoic to Mesozoic rocks. Deposits in Alaska and the Yukon are Cretaceous age.

SEDEX Zn-Pb-Ag Model

The Macmillan Pass district is well known for its sedementary-exhaltive (sedex) zinc-lead-silver deposits (Carne and Cathro, 1982), most notably the Jason and Tom deposits, which occur approximately 2 and 8.5 km north, and northeast of the property respectively. These deposits are hosted by Devono-Mississippian carbonaceous and siliciclastic marine strata of the Portrait Lake Formation of the Selwyn Basin (Abbott and Turner, 1990). Sedex deposits are a very important worldwide source of zinc, lead and silver. Past and current producing sedex mines include Sullivan, British Columbia; Red Dog, Alaska; MacArthur River, Australia and others.

The following deposit description has been summarized from MacIntyre (1995). Sedex deposits commonly occur in shale basins in association with syn-depositrional (growth) faults. These deposits are stratabound, tabular to lens shaped, and are typically comprised of many beds of laminae of fine-grained sulphide and/or barite. Key sulphide minerals include sphalerite, galena, pyrite, pyrrhotite and rare chalcopyrite.

Stratiform and Vein Barite Models

Barite occurs as both bedded and vein-type or remobilized occurrences in the Macmillan Pass area, including the Bailes, Moose (Racicot) and Gary bedded barite prospects on or very close to the property. According to Paradis *et al*., (1988) the deposits occur as sedimentary-hosted, stratiform or lens-shaped barite bodies, that may reach over ten metres in thickness and several kilometres in strike length. Barite-rich rocks (baritites) are commonly lateral distal equivalents of shale-hosted lead-zinc (sedex) deposits, however, some barite deposits are not associated with shale-hosted lead-zinc deposits. In other cases, barite can occur with zinc, lead, or copper sulphides, quartz, siderite or fluorite values in re-mobilized, discordant veins or breccias, or mantos (Hora, 1996).

Skarn Tungsten Model

The Mactung skarn deposit occurs 17 km to the north of the property and is one of the largest tungsten resources in the world. It is hosted in by Lower Cambrian limestone adjacent to a Cretaceous stock. The Sim tungsten prospect occurs in the northwest part of the North Canol property, adjacent to a large Cretaceous granitic pluton. According to Ray (1995), most tungsten skarn deposits in BC and associated with Mesozoic (mainly Cretaceous) tonalite, granodiorite, quartz monzonite and granite intrusions. Mineralization is hosted in pure and impure limestones and calcareous to carbonaceous pelites, or within the intrusion itself. Ore minerals include scheelite, molybdenite, chalcopyrite, pyrrhotite, sphalerite, arsenopyrite, pyrite, powellite and other more rare minerals.

8.0 MINERALIZATION

Four known mineral occurrences are present within the boundaries of the North Canol Property: the **Bremner Cu-Pb-Zn** prospect (Minfile 105O, 025), the **Sim W** prospect (105O 043), the **Bailes barite-Zn** prospect (105O 052), and the **Hasten barite-Zn** prospect (Minfile 105O 060). In addition, the **Racicot (or Moose) barite** deposit (Minfile 105O 013) occurs on a small group of four claims held by another party. Those claims are completely surrounded by the North Canol Property (Figures 4, 5, 6).

Several other deposits and prospects are situated very close to the North Canol Property boundary. These include the **Fetch (or Basin) barite-Zn** prospect (Minfile 105O 028) and the **Gary (or Gargantua) barite** deposits (Minfile 105O 027), which occur east of the southern portion of the property.

Three important sedex Zn-Pb-Ag-Ba deposits occur directly to the north and northeast of the property: **Jason** (Minfile 105O 019), **Tom** (Minfile 105O 001) and **Nidd** (Minfile 105O 024). The important **Mactung** deposit, one of the largest tungsten skarn deposits in the world, is located 17 km north of the property.

The known prospects, soil and geophysical anomalies and drill holes on the property are compiled on Figure 6.

The following information on mineral prospects is taken from Yukon Minfile *(Deklerk and Traynor, 2005)*, and various other assessment filings, and government and company reports.

The **Bremner Cu-Pb-Zn prospect** (Minfile 105O 025) is located in the southern portion of the property (Figure 6). The Ess claims were staked in 1977 to cover *"an exposure of disseminated and conformable banded pyrite …in carbonaceous phyllitic shale in the bank of Hess Creek*" (Cathro, 1979). Two short diamond drill holes were *collared in the core of the anticline on the valley floor to test for sedex mineralization at the base of the Earn Group. They cut 61.0 m of Earn Group mudstone before intersecting black limestone of the Road River Formation. The Earn Group mudstone contains abundant thin pyrite laminae, often accompanied by thin quartz veinlets, and occasional layers of fine-grained, bedded pyrite up to 4 inches thick.* The drill logs also note silicification, quartz veining and pyrite within the Road River limestone (i.e. Sapper Formation). *"No other sulphides or barite were intersected"*, and no assays for gold were reported.

The **Hasten barite-Zn prospect** (105O 060) is located on the east side of the property and was explored by Canadian Nickel and Cominco between 1976 and 1983 (Figure 6). One diamond drill hole tested a week lead anomaly near the contact of the Road River Formation and overlying Earn Group and is reported to have intersected weak sphalerite mineralization in a thin grit unit and as interstitial fillings around mudflow clasts. The drill log also suggest that sphalerite is associated with thin calcite and quartz veinlets. Bedded pyrite and limy sections are also described (Murrell, 1983).

The **Bailes barite-Zn prospect** (Minfile 105O 052) occurs in the central part of the North Canol Property (Figure 6) and was explored between 1981-83 by Pan Ocean and Aberford. Bedded barite mineralization occurs in siliceous shales, chert and breccia of

the Earn Group, which Kapusta (1982, 1983, 1984) considered to be at a similar stratigraphic position to the Jason deposits, located approximately 4 km to the northeast.
.
The Bailes barite prospect is reported to be 2 km long and 3 to 10 m thick of laminated or nodular barite with values ranging from 48.02 to 57.01% Ba in Trenches 1 and 2, and with 1.6 to 16.61% Ba, 0.02 to 0.14 oz/ton Ag and <0.01% to 0.05% Zn in Trench 3 (Kapusta, 1983). Local accumulations of disseminated and laminated pyrite are present, and "within the southeastern and northwestern extent of the horizon, accumulations of lead, zinc and silver are found." (Kapusta, 1983). Heavy mineral stream sediment samples in the area of the barite horizon also show anomalous values in Pb, As, and W.

Kapusta (1983) described several other nearby occurences of minor mineralization. In one location, sphalerite is reported in a fracture within pyrrhotite skarn developed in Road River limestone (Unit Sidi – Sapper Formation) with values up to 2.15% Zn and 320 ppm As. A sample of arsenopyrite-bearing quartz in porphyritic dykes to the northwest is also reported to contain 0.5% Pb, 31 ppm Ag and 90 ppb Au. In another place, a quartz-tetrahedrite vein returned 0.16% Cu, 570.84 g/t Ag and 186 ppb Au. Four anomalous base metal soil geochemical trends were outlined, along with six significant coincident VLF-EM anomalies.

The **Sim W prospect** (Minfile 105O 043) was staked in 1981 to cover anomalous lead and zinc values in stream silts, and received limited mapping in 1981-1982. According to Yukon Minfile, minor scheelite mineralization is reported to have been discovered in Mississippian calcareous sandstone and shale of the upper Earn Group, near the margin of a Cretaceous pluton (Figure 6), however, no assessment reports are available.

The **Racicot (or Moose) barite deposit** (Minfile 105O 013) sits on the Rac 1-4 currently held by another party, but which are completely surrounded by the North Canol property (Figures 4, 5, 6).

Two zones of shale-hosted bedded barite, trending northwest and dipping westerly, were exposed on surface by trenching in the mid 1970s, "*one up to 100 feet wide and 750 feet long and the second up to 100 feet wide and 600 feet long. The second zone lies en echelon to and about 300 feet northwest of the first zone. No sulphides have been noted associated with the barite*" (Sinclair *et al.*, 1975). The barite zones "*which are moderately to* steeply dipping*, are estimated by Nuspar to contain roughly three million tons of material uniformly grading 84% barium sulphate and 12 to 14% silica"*. It was further reported that preliminary milling tests suggested that drilling-grade barite could be produced. (Yukon News, December 12, 1974; Sinclair *et al.*, 1975). It should be noted that this is a historic resource figure only, and was not prepared in accordance with NI 43-101.

Work on the adjacent Gary claims identified several barite-, zinc-in-soil, gravity and EM anomalies to the south and north of the Racicot (Moose) barite deposit in 1974-77 (Smith, 1975a, b, c; Rowe, 1977a, b). Two new prospects were discovered to the north, the **Gargantua** and **South Garguanta** (or **Gary**) barite deposits (Minfile #105O 027; Figure 6). Mineralization is reported to consist of shale-hosted bedded barite, ranging from 3 to 18 m in thickness, and "*folded into a series of minor east-west folds, such that the bed is exposed several times along the dip slope. The barite is light grey in colour, finely interlaminated with argillite and apparently devoid of lead and zinc. Estimated tonnage of exposed barite is reported to be three million tons"* (Morin *et al.,* 1978). It is thought to be at a different stratigraphic position than the Racicot (Moose) barite deposits. It should be noted that this is a historic resource figure only, and was not prepared in accordance with NI 43-101.

The **Tom Zn-Pb-Ag-barite deposit** (Minfile 105O 001) is located 7 km northeast of the North Canol property (Figures 4, 5, 6). Sedex-style, shale-hosted sulphide mineralization occurs in three zones; Tom East, Tom West and Tom southwest. According to Yukon Minfile, *"these deposits occur within the Devono-Mississippian Earn Group, at or near the contact between conglomeratic submarine fan deposits (Macmillan pass member) and overlying blue-grey weathering carbonaceous chert mudstone and radiolarian chert"*.

Comprehensive descriptions of the Tom deposits and geology are available in Abbott (1982, 1983a, b), Abbott et al. (1987), Abbott and Turner (1990), Carne (1979), and Goodfellow and Rhodes (1990).

A joint feasibility study on the Tom and Jason properties was completed in 1985. Hudbay Minerals Inc. currently owns the property and has released an estimated NI 43-101 compliant resource of 4.98 million tonnes grading 6.6% Zn, 4.4% Pb and 47.8 g/t Ag in the indicated category, and 13.55 million tonnes grading 6.7% Zn, 3.1% Pb and 31.8 g/t Ag in the inferred category (HudBay Minerals Inc. website, February 2012).

The Jason property directly adjoins the north side of the North Canol Property. It includes the **Jason Zn-Pb-Ag-barite deposits** (Minfile 105O 019), which are located from 700 to 2500 m north of the North Canol Property boundary (Figures 4, 5, 6). Excellent descriptions of the Jason deposit and geology are available in Abbott (1982, 1983a, b), Abbott *et al.* (1987), Abbott and Turner (1990), Bailes *et al*. (1987), Carne (1979), and Turner (1990).

Geological resources have been defined in three zones: Jason South, Main and End Zones. Yukon Minfile summarizes these deposits as follows:

> *The Main zone consists of a single lens of stratiform sulphide, barite and chert up to 20 m thick, interbedded with carbonaceous mudstone and diamictite overlying siltstone at the base of the Tom Member of the Portrait Lake Formation. It has a strike length of approximately 700 m and a downdip extent of 500 m... The South zone consists of at least two stacked stratiform sulphide-barite-chert lenses. The upper lens is 1 200 m long and up to 20 m thick and is interbedded with the same diamictite and mudstone as the Main zone. The lower lens is a 300 x 400 m wedge shaped body up to 40 m thick, which lies 10 m below the upper lens, from which it is separated by siliceous shale and diamictite. The South zone lenses are cut off to the southwest against Road River Group rocks by a northwest-striking fault… The End zone consists of baritic massive sulphide….Local synsedimentary structures comprise hydrothermally altered rounded mudclasts and siderite vein fragments in an altered and sulphide-bearing matrix of clay, quartz, muscovite, siderite and disseminated pyrite, sphalerite, galena, chalcopyrite and pyrrhotite. Near vent sites, wallrocks are strongly silicified, and conglomerate units are cemented by pyrite, ankerite, quartz, galena and sphalerite. The conglomerate units are wedge shaped, thickening toward the hydrothermal vent and are inferred to represent debris derived from a submarine scarp associated with synsedimentary faulting. Geochemical studies have demonstrated a clear zoning of metal ratios and hydrothermal facies both upward and laterally away from the vent. Lead to zinc ratios and thickness of each*

sulphide lens decrease away from the vent. A number of hydrothermal facies have been identified: 1) Proximal (vent) facies…, 2) Quartz-sulphide facies..., 3) Barite-sulphide facies…, and 4) Distal barite-sulphide-chert facies.

A feasibility study was conducted on the Jason and Tom properties by Hudson Bay in 1985. HudBay optioned the property in 2007 and currently reports an NI-43-101 compliant resource for the Jason deposits of 1.45 million tonnes grading 5.3% Zn, 7.4% Pb and 86.7 g/t Ag in the indicated category, and 11 million tonnes grading 6.8% Zn, 4.0% Pb, and 36.4 g/t Ag (HudBay Minerals Inc. website, February 2012).

The **Nidd (or Boundary Creek) deposit** (Minfile 105O 024) sits on claims controlled by Teck Resources Ltd., which adjoin the northern side of the North Canol Property. The Nidd deposit occurs approximately 1600 m north of the North Canol Property boundary (Figures 4, 5, 6). A good description of the deposit is provided by Turner and Rhodes (1990), and Yukon Minfile has summarized the geology as follows:

This large tonnage, low-grade zinc deposit is associated with basaltic volcanism along a late Devonian syndepositional fault which cuts Silurian to Late Devonian sedimentary and pyroclastic volcanic rocks of the upper Road River and lower Earn Groups. The altered, mineralized zone extends over 400 m of stratigraphic thickness, and has a strike length of at least 1500 m in a northeast direction.

Hydrothermal minerals including quartz, iron carbonate, pyrite, sphalerite and minor galena have invaded and strongly replaced the host sedimentary rocks, and at depth, banded sphalerite-carbonate veins and carbonate breccias occur within the fault zone. Mineral zoning has been documented: chalcopyrite occurs only in the fault zone, galena is restricted to the deepest part of the deposit, sphalerite and quartz occur in the deep to intermediate parts and pyrite is the dominant sulphide near the top. The Nidd deposit is inferred to be the same age as the Tom and Jason sedex deposits …at Macmillan Pass but differs from them in that all of the sulphides were deposited below the sea floor.

Drillhole NB89-14 intersected a stockwork of high-grade sphalerite-siderite veins cutting pyroclastic rocks at the base of the Earn Group. These rocks contained an average of 2.0% Zn over 63.7 m. 1990 drillholes encountered only a few short intervals of sphalerite-veined mudstone and appear to lie outside the main hydrothermal system.

The **Mactung project**, owned by North American Tungsten Corporation Ltd., is located 17 km north of the North Canol property. It was discovered in 1962 by Amax Exploration Ltd. and has been explored intermittently by surface surveys, drilling, and underground development until 2006. Atkinson and Baker (1990) is a good summary of the local geology and mineral deposit. Feasibility, engineering and environmental studies have been underway in recent years.

The Mactung deposit (Minfile 105O 002) is a metasomatic skarn formed in Lower Cambrian calcareous sediments adjacent to a Cretaceous stock. Scheelite and rarely wolframite occur in pyroxene-pyrrhotite skarn and occasionally in garnet-pyroxene skarn. Overall mineral resources total 33 million tonnes grading 0.88% WO_3 in the indicated category and 11.9 million tonnes grading 0.78% WO_3 in the inferred category, with a probable underground minable reserve of 8.5 million tonnes grading 1.083% WO_3. A feasibility study, completed in 2009, envisioned a 2000 tonnes-per-day underground mine with an 11-year mine life and a $402 million capital cost (North American Tungsten website, February 2012).

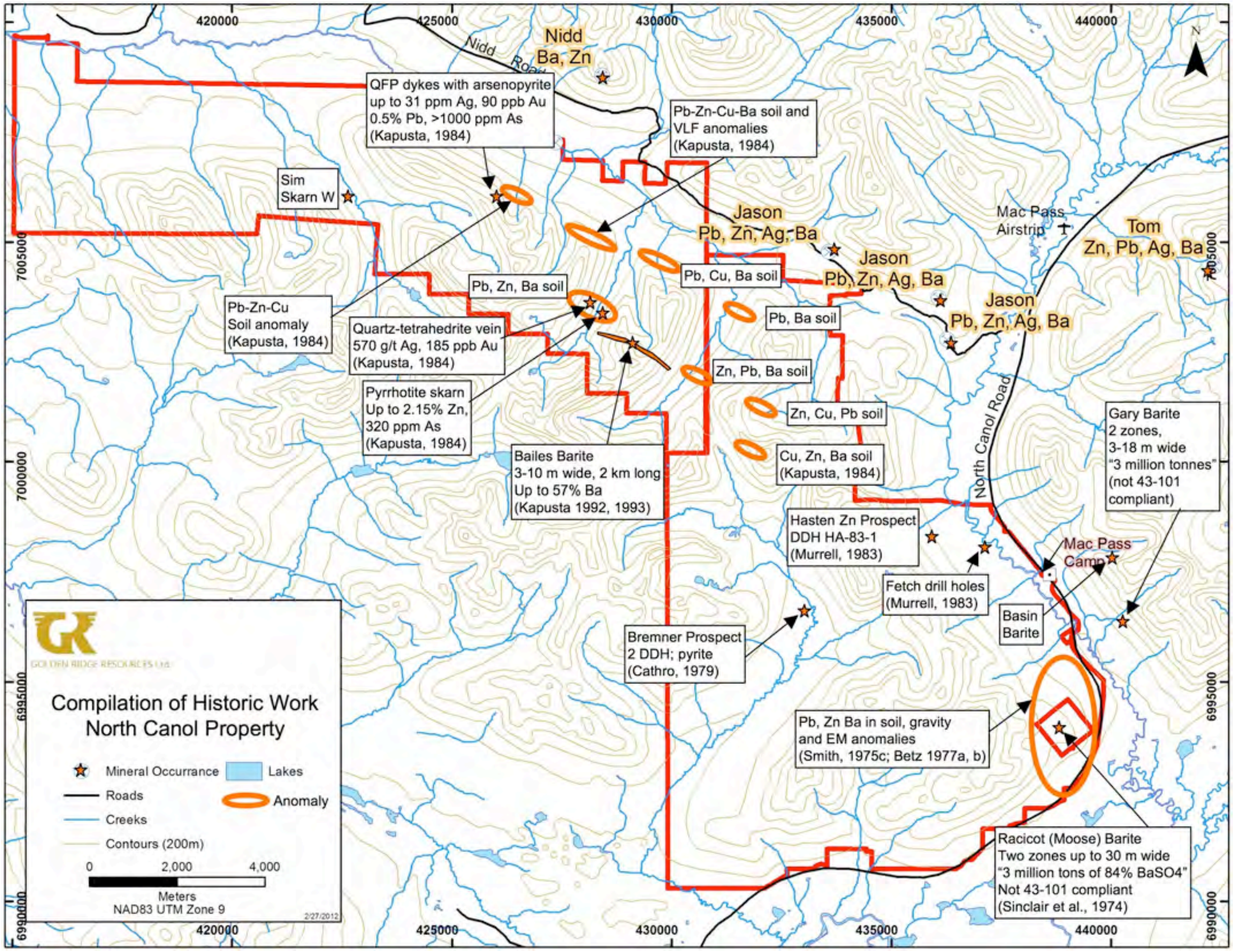

Figure 6. Compilation map showing historic mineral prospects, drill holes, and selected anomalies on the North Canol Property.

9.0 PREVIOUS EXPLORATION

According to assessment records, previous exploration on the North Canol Property mainly took place between 1972 and 1983 and was primarily directed at barite or Zn-Pb-Cu-Ag deposits (with the exception of minor work at the Sim W prospect). The location of occurrences, drill holes, trenches and geophysical and geochemical anomalies are shown on Figure 6.

Recorded mechanized work includes seven diamond drill holes (two on Bremner and five in the Hasten-Fetch area), a bulldozer tote road to the Hasten drill hole, and approximately 425 m of bulldozer trenching on the Racicot (Moose) barite occurrence (which is actually on four claims, surrounded by the North Canol Property, but which are held by another party). Most of the targets have received some combination of geological mapping, geochem surveys, and magnetic, VLF, gravity or Maxmin II EM surveys.

Geochemistry

Several stream sediment, heavy mineral and soil surveys have been done in the past by various parties. Most of the work was limited to analysis for Pb, Zn, Ag, Ba, Cu and in some cases a few other elements. Very little analysis for Au or pathfinders (e.g. As, Sb ,Hg, etc.) was done in the past.

Soil sampling was completed on the Gary claims by the Ogilvie Joint Venture in the vicinity of the Racicot (Moose) barite prospect between 1974 and 1977 (Smith, 1975b, 1976; Rowe, 1977a, 1977b). Several weak Ba and Zn anomalies were outlined. Rock, soil, silt and water sampling for Pb, Zn and Ba were done on the adjacent Moonlight claims by the Itsi Joint Venture in 1977 (Cathro, 1977).

Aberford completed geochemical sampling in 1981-1983 in the vicinity of the Bailes barite prospect (Figure 6). 41 rock samples collected and analyzed for Pb, Zn, Ba, Ag, Au, and Sr, and in some cases Cu, W, and As. Four heavy media stream sediment samples were analyzed for Cu, Pb, Zn, Mo, Ag, Au, As, Sb, W, Ba and Co. 1011 soil samples were analyzed for Pb, Ag (or Cu), Zn, and Ba (Kapusta 1982, 1983, 1984).

Canadian Nickel (1977-78) and later Cominco (1983) completed soil sampling on the Hasten-Fetch-Basin properties in the search for sedex Zn-Pb-Ag deposits (Debicki, 1977a, 1978a, 1978b; Murrell, 1983). Several anomalies were identified, and a low-order lead anomaly on the Hasten claim group was tested by one drill hole (HA-83-1) by Cominco in 1983 (see below).

Geophysics

Small ground geophysical surveys were completed on the current property by previous operators between 1975 and 1983.

In 1975, the Ogilvie Joint Venture conducted a gravity survey on the Gary claims in the vicinity of the Racicot (Moose) barite deposit (Smith, 1975c), outlining two strong gravity anomalies thought to be partly coincident with barite mineralization and a Ba-Zn soil anomaly. In 1977, the joint venture completed 44.4 km of Maxmin II EM surveys on the

Gary claims (Betz, 1977a, b). Several complex conductors were identified. These were interpreted to map NW and NE geological trends.

The Itsi Joint Venture completed several short Maxmin II EM test lines on the Moonlight property in 1977 (Hendrickson, 1977) and on the Ess Property in 1978 (Cathro, 1979). The results were inconclusive.

Canadian Nickel completed 54.3 km of magnetics on the Hasten-Fetch-Basin group in 1977. Results The magnetic results were flat except for a 600 gamma anomaly, interpreted to be associated with pyrrhotite in a contact metamorphic zone adjacent to Cretaceous intrusion in the SW corner of the property (Debicki, 1977b). An Inco Mark IV vertical loop EM survey and a Turam EM were completed in 1978. Several conductors were identified and were interpreted to represent graphitic shale horizons (Debicki, 1978b).

In 1983, Aberford completed 43.9 km of VLF-EM in the vicinity of the Bailes barite prospect on the JK claims (Kapusta, 1984). Eighteen first-order VLF-EM anomalies were outlined, several of which were associated with the known Bailes barite prospect or areas with Zn, Cu, Pb or Ba soil anomalies. Additional intervening VLF lines on 100 foot spacing were recommended for certain trends. In addition, Aberford completed 43.7 km of magnetometer surveying. The magnetic values were fairly consistent over the grid, with “a few magnetic trends ranging between 100 to 400 gammas, and one anomalous zone in excess of 1000 gammas”. The latter is associated with a pyrrhotite skarn section of the Road River Group and has a coincident Zn-Cu-Pb-Ba anomaly, which is downslope of the Bailes barite horizon. Kapusta (1984) concluded “none of the magnetic anomalies outlined during the survey are associated with the more significant geochemical trends or VLF anomalies”.

Trenching

Four trenches were blasted to allow sampling at the Bailes barite prospect in 1982 (Kapusta, 1983). Rock sampling here showed values up to 57% Ba.

As noted above, the Racicot (Moose) barite deposit sits on four claims held by another party that are completely surrounded by the North Canol Property. In 1973-74, Spartan Exploration Limited, Nuspar Resources Ltd. and Yukon Barite Ltd. completed mapping, hand pitting and roughly 425 m of bulldozer trenching in 1973-74 (Sinclair and Gilbert, 1974; Sinclair *et al.*, 1975). Two zones of shale-hosted bedded barite, trending northwest and dipping westerly, were exposed on surface. The barite zones “*which are moderately to* steeply dipping*, are estimated by Nuspar to contain roughly three million tons of material uniformly grading 84% barium sulphate and 12 to 14% silica”*. It was further reported that preliminary milling tests suggested that drilling-grade barite could be produced. (Yukon News, December 12, 1974; Sinclair *et al.*, 1975). It should be noted that this is a historic resource figure only, and was not prepared in accordance with NI 43-101.

Drilling

In the Hasten-Fetch area, Canadian Nickel is reported to have drilled eight diamond drill holes (566 m) in 1978, three of which were lost in overburden. These drill holes were apparently not filed for assessment, although the collars and depths for four of the holes (#54313, 83 feet; #54314, 502 feet; #54317, 390 feet; and #54319, 299 feet) are shown near the Macmillan River on a map in a later Cominco report (Murrell, 1983), and would be on the current North Canol Property. No other information is available for these holes.

In 1983, Cominco built a bulldozer tote road and drilled hole HA83-1 (302 m) on the Hasten prospect in order to test a week lead anomaly near the contact of the Road River Formation and overlying Earn Group. This hole is on the east side of the current North Canol Property (Figure 6). It is reported to have intersected weak sphalerite mineralization in a thin grit unit and as interstitial fillings around mudflow clasts. The drill log also suggest that sphalerite is associated with thin calcite and quartz veinlets. Bedded pyrite and limy sections are also described (Murrell, 1983). No assays for gold were reported, and the location of the core is not known.

On the Bremner prospect, the Itsi Joint Venture drilled two diamond drill holes (324 m) from a single set-up in 1978 (Cathro, 1979). The holes were designed “to test for sedex mineralization at the base of the Earn Group. They cut 61.0 m of Earn Group mudstone before intersecting black limestone of the Road River Formation. The Earn Group mudstone contains abundant thin pyrite laminae, often accompanied by thin quartz veinlets, and occasional layers of fine grained, bedded pyrite up to 4 inches thick”. The drill logs also note silicification, quartz veining and pyrite within the Road River limestone (i.e. Sapper Formation). “No other sulphides or barite were intersected”, and no assays for gold were reported. The core is reported to be in the Bostock Core Library in Whitehorse.

10.0 2011 WORK PROGRAM

Airborne Geophysics

On behalf of Golden Ridge, Fugro Airborne Surveys Corp. undertook a helicopter-borne magnetic and frequency domain electromagnetic geophysical survey over the North Canol Project in July and August 2011, as part of a larger survey commissioned in partnership with Colorado Resources Ltd. on the adjacent Oro property. A total of 746 line-km were flown on the North Canol property. Aeromagnetic, electromagnetic and elevation data was collected along lines flown at an azimuth of 030/210 and spaced at 200 m, with tie lines flown at an azimuth of 120/300 (Project Report of the Airborne Geophysical Survey, Fugro, 2011*)*. Additional details regarding survey operations, equipment, quality control and in field processing, data processing, and survey results are included in the complete Fugro report attached to this report as Appendix 3. Map products for Fugro sheets 4, 5 and 6 relate to the North Canol portion of the overall survey and are also included in this Appendix. The report summary has been reproduced here:

> *This report describes the logistics, data acquisition, processing and presentation of results of a DIGHEM airborne geophysical survey carried out for Colorado Resources Ltd. over the Mac Pass Claim Group and the Ben Claim areas located in the eastern Yukon. The survey was flown from July 11th to August 4th, 2011. Total coverage of the survey blocks amounted to 3064.0 line-km.*
>
> *The purpose of this airborne survey was to map the magnetic and conductive properties of the survey areas, and use these properties to detect possible zones of mineralization. This was accomplished by using a DIGHEM multi-coil, multi-frequency electromagnetic system, supplemented by a high sensitivity cesium magnetometer. A GPS electronic navigation system ensured accurate positioning of the geophysical data with respect to the base maps.*
>
> *The survey data were processed and compiled in the Fugro Airborne Surveys Toronto office. Map products and digital data were provided in accordance with the scales and formats specified in the Survey Agreement.*
>
> *Discrete EM anomalies have been interpreted from the electromagnetic data. They have been interpreted to fall within one of two general categories. The first type consists of discrete, well-defined anomalies, which are usually attributed to conductive sulphides or graphite. The second class of anomalies comprises moderately broad responses, which exhibit the characteristics of a half space. Some of these anomalies may reflect conductive rock units or zones of deep weathering.*
>
> *The survey properties contain many anomalous features, some of which may be considered as exploration targets. Several anomalous zones appear to warrant further investigation using appropriate surface exploration techniques. Areas of interest may be assigned priorities on the basis of supporting geophysical, geochemical and/or geological information. After initial investigations have been carried out, it may be necessary to re-evaluate the remaining anomalies based on information acquired from the follow-up program.*
>
> *It is recommended that the survey results be reviewed in detail, in conjunction with all available geophysical, geological and geochemical information. Image*

processing of existing geophysical data should be considered, in order to extract the maximum amount of information from the survey results.

Images of the key geophysical parameters from the Fugro survey have been overlain on a base map showing simple topographic and claim information using ARC-GIS. The resulting images are included below as: Residual Total Magnetic Field (Figure 7), Magnetic Vertical Gradient (Figure 8), Apparent Resistivity 900 Hz (Figure 9), Apparent Resistivity 7200 Hz (Figure 10), Apparent Resistivity 56,000 Hz and Interpretation (Figure 11).

The Fugro report contains very limited interpretation of the map products covering the North Canol portion of the survey. An extract of the report, covering the North Canol portion only, is provided here:

> *The southern portion* (i.e. the North Canol Property – author's note) *of the survey block displays much higher magnetic gradients and contains magnetic features, M6 through M21, which display increased magnetic intensities. One of the strongest magnetic features is M6, situated at the southeastern limit of sheet 4. M6 appears to be separated from smaller zones M7 through M10 by a prominent structural feature, which extends northwest/southeast along its eastern edge. M6 displays some association with R7, a conductive ring-like zone, which reflects possible bedrock conductivity.*
>
> *Much of the southern region of the survey block is dominated by conductive zone R8. It displays similar characteristics to R1* (not on the North Canol property – author's note)*, as it seems to reflect multiple, closely spaced conductive sources, but conductivities within this zone are much lower than those in R1 on all frequencies. Calculated resistivities of less than one ohm-metre are evident throughout much of the zone on the 900 Hz resistivity parameter.*
>
> *Extensive conductive zones such as R1 and R8 often reflect formational conductors that may be of minor interest as direct exploration targets. However, attention may be focused on areas where these zones appear to be faulted or folded or where anomaly characteristics differ along strike. Such structural breaks are considered to be of particular interest as they may have influenced mineral deposition within the survey area.*

The NW trending magnetic highs on Figure 7 and 8 are thought to be related to pyrrhotite-bearing hornfels in shales on the margin of the large Cretaceous granitic pluton (Figure 4). These highs wrap around and form a "donut" shaped anomaly around the margin of the intrusion, not unlike other Cretaceous intrusions in Yukon.

Small spot and linear magnetic highs are also evident to the north and east of the main magnetic highs described above. These may represent small intrusive plugs, dikes or magnetite- or pyrrhotite-bearing skarns. Field follow-up is warranted.

The resistivity maps (Figures 9-11) show strong topographic effects. Many of the hilltops show up as resistivity highs, and valleys as resistivity lows. Nevertheless, other linear low resistivity features are present and probably represent formational conductors (e.g. graphitic shale).

Several prominent structural breaks are evident on the geophysical images. Most importantly, a NE trending breaks (A) and a NW trending break (B) are visible on all magnetic and resistivity images (Features A and B on Figures 7 to 12). Many other breaks are also shown on Figure 12 (Fugro Geophysical Interpretation). The NE trending geophysical break (A) is transverse to the NW trending strike of the sedimentary units, mapped folds, and the Hess Fault, and is not shown on available geological maps. It appears to be important transverse structure and may represent a previously unrecognized growth fault not unlike those faults controlling mineralization at the Tom, Jason and Nidd sedex deposits to the north.

Prospecting and Rock Sampling

On July 20 and 21, 2011, personnel of Golden Ridge conducted two days of prospecting on the North Canol property. Colour anomalies and areas of previous work visible from the air were briefly visited. Both selective and representative grab samples of outcrop and float were sampled from four different areas informally named AT, 3T's, 757 As, and White (Figure 26).

Grab samples consist of 2 or 3 fist size rock pieces indicative of a certain lithology or mineralization type. Sample sites were marked in the field with spray paint or numbered flagging tape. Samples were put into correspondingly labelled plastic bags with matching bar-coded assay tags inserted and shipped to the laboratory for analyses.

Rock samples were shipped from site via airplane or truck to ACME Analytical Laboratory Ltd.'s preparation lab in Whitehorse for sample preparation then shipped on by the laboratory to ACME's Vancouver facility for analyses. All sample preparation was done at the laboratory by their staff. In the laboratory, samples were crushed and pulverized to minus 200 mesh, and analyzed by ICP-MS for 36 elements following an aqua regia digestion (Group 1DX package). The rocks were also analyzed for Au by a 30 g fire assay with ICP-ES finish (Group 3B). Sample descriptions and analytical certificates are included in Appendix 1 and 2 respectively.

The "757 As" target (Figure 26) was chosen for follow-up prospecting because of an anomalous Regional Geochemical Survey sample (#105O901547) which returned 420 ppm arsenic by neutron activation (Yukon Geochemical Database). The creek in this area cuts across the contact between Cretaceous quartz monzonite and siltstone of the Earn Group, and is stained bright red with iron oxides. Stream sediments collected in this area as part of the current program were also anomalous in As, Au, Cu, Mo, and W (see "Cluster A" below). Eight grab samples of float were collected in this area. Rare quartz veins to 20 cm wide cut the rocks, and contain trace to 2% pyrite and arsenopyrite, and minor scorodite, malachite and hematite. Four rock samples were highly anomalous in arsenic ranging from 4864 to >10,000 ppm As, with low values for other elements including Au (maximum 8 ppb by fire assay).

The "AT" and "3Ts" targets (Figure 26) occur in the southeast part of the property. Rusty weathering quartz veins to 10 cm wide cut shale and siltstone of the Earn Group. A mafic sill is also present. Barite is present locally in the quartz. A total of 11 grab samples were collected from float and outcrop in this area, primarily of quartz vein material. Several samples at "AT" target are anomalous in Ba (1785 to >10,000 ppm) and sample 1095409 is anomalous in several elements including Cu (552 ppm), Ag (24 ppm), As (180 ppm), Sb (321 ppm) and Ba (>10,000 ppm). The geochemical signature is consistent with an epigenetic quartz-barite-Cu-Pb-Zn-Ag vein style of mineralization. Sample #1095416 was taken from the mafic sill at "3Ts" target and returned 1579 ppm Zn, 262 ppm Ni and 3016 ppm Ba.

At the White area (Figure 26), brecciated, rusty quartz veins up to 50 cm wide cut altered sedimentary rocks and contain minor mariposite and pyrite. Metal values are uniformly low, with the best value of only 12 ppb Au (by fire assay) returned from a grab sample of a 30 cm wide pyritic quartz vein.

No sampling was completed at the Hasten Ba-Zn-Pb prospect, Bremner Cu-Zn-Pb prospect, Sim W prospect, Bailes barite vein prospect, or Racicot Ba-Zn-Pb deposit, the latter of which is on a small block of four claims owned by another party.

Stream Sediment Sampling

A total of 97 stream sediment samples were collected by a team of Golden Ridge geologists and prospectors on July 24th and August 11th, 2011. The samples were collected from active flowing streams, which were generally 1 to 3 m wide. Silt samples of stream fines were collected from most of the drainages on the property by manually scooping fine material into labeled cloth stream sediment bags. In areas of talus, coarse particles were screened out of the silt samples at site, in order to ensure sufficient fine material was collected. Sample sites were labelled with fluorescent flagging with the station number recorded on it. The silt bags were tagged with bar-coded sample tags, one section of which was stapled to the outside of the bag and a second section inserted into the bag.

At camp, silt samples were dried and sieved to -20 mesh. The -20 mesh fraction was analysed on site utilizing a Niton desk mounted XRF unit for rapid identification of semi-quantitative pathfinder element values (e.g. As, Pb, Zn, Cu). All soil samples were shipped to ACME Laboratory Ltd.'s preparation facility in Whitehorse where the samples were dried and sieved to -80 mesh. The prepared samples were then shipped by ACME to their Vancouver laboratory for analyses. A 15 g subsample was digested in aqua regia and analysed for 36 elements (including gold) by the ICP-MS method.

Sample locations are shown on Figure 13 and maps with graduated symbol plots for elements of potential interest (Ag, As, Au, Ba, Cd, Co, Cu, Mo, Pb, Sb, W, Zn) are included as Figures 14 to 25 respectively. The highest few values for each element are labeled in ppb for Au and ppm for other elements.

Soil Sampling

A total of 10 soil samples were collected by Golden Ridge personnel on August 1, 2011 from the AT area and an unnamed area off the property. Soil samples were collected at random locations with a mattock or shovel, from the 'B' soil horizon or talus.

Soil sample sites were labelled with fluorescent flagging with the station number recorded on it. Soil was placed in correspondingly labelled Kraft soil bags, while silt samples were placed in cloth silt bags. The soil and silt bags were tagged with bar-coded sample tags, one section of which was stapled to the outside of the bag and a second section inserted into the bag.

At camp, soil samples were dried and sieved to -20 mesh. The -20 mesh fraction was analysed on site utilizing a Niton desk mounted XRF unit for rapid identification of semi-quantitative pathfinder element values (e.g. As, Pb, Zn, Cu). All soil samples were shipped to ACME Laboratory Ltd.'s preparation facility in Whitehorse Where the samples were dried and sieved to -230 mesh. The prepared samples were then shipped by

ACME to their Vancouver laboratory for analyses. A 15 g subsample was digested in aqua regia and analysed for 36 elements (including gold) by the ICP-MS method.

In the AT area (Figure 26), six samples (1094508 to 13) were collected from gossanous soil and quartz veined shale talus. Although the number of samples is too small for statistical analysis, elements of possible interest include Ag (to 11 ppm), Cu (to 294 ppm), Pb (20 to 81 ppm), and Sb (12 to 367 ppm).

In the unnamed area off the property, four soil samples (1094514 to 7) contain up to 220 ppm As and 31 ppm Au. This area is adjacent to the margin of the Cretaceous pluton and may have potential for intrusion-related gold mineralization. It corresponds to Silt anomaly Cluster F described above.

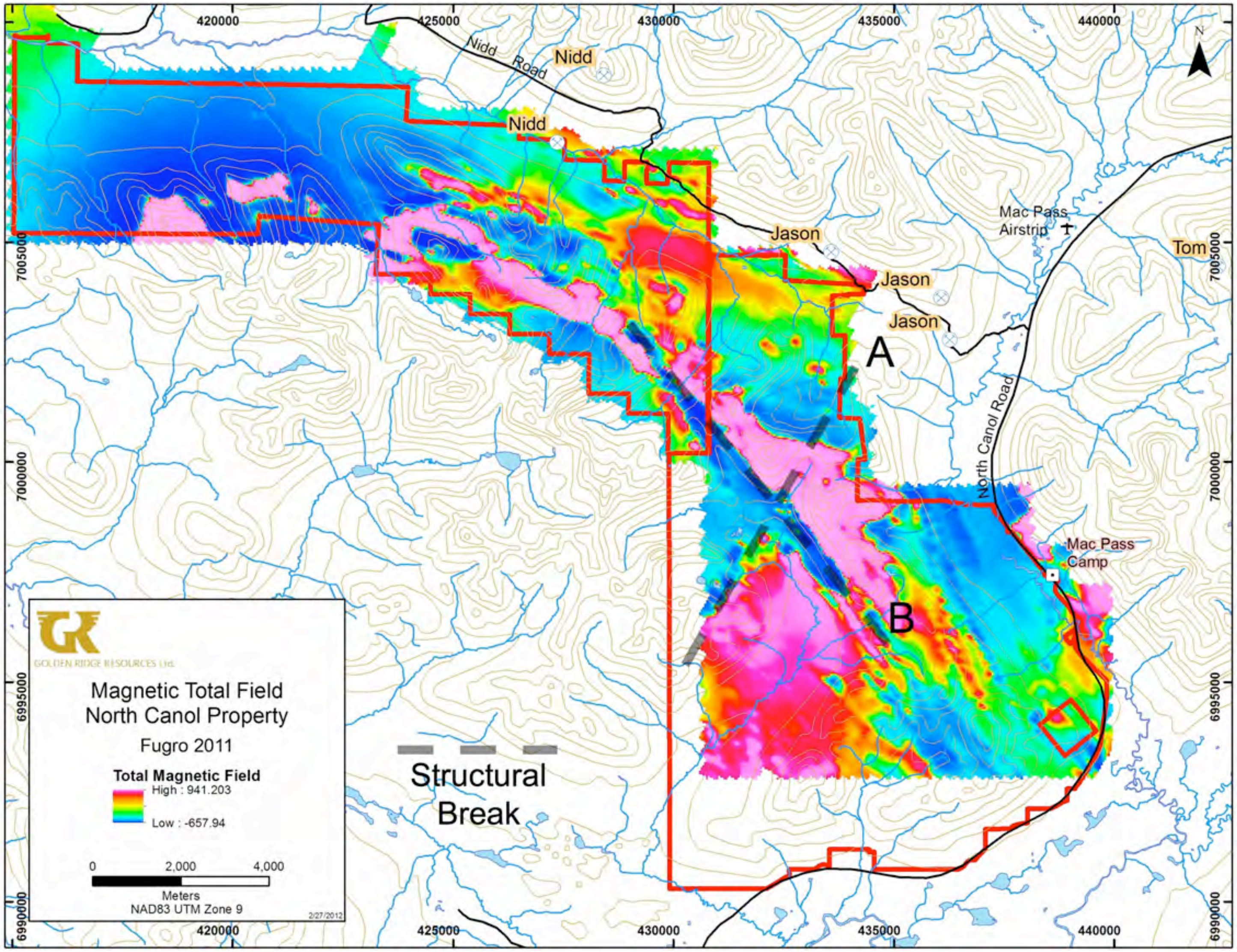

Figure 7. Magnetic Total Field, Fugro Airborne Survey, North Canol Property.

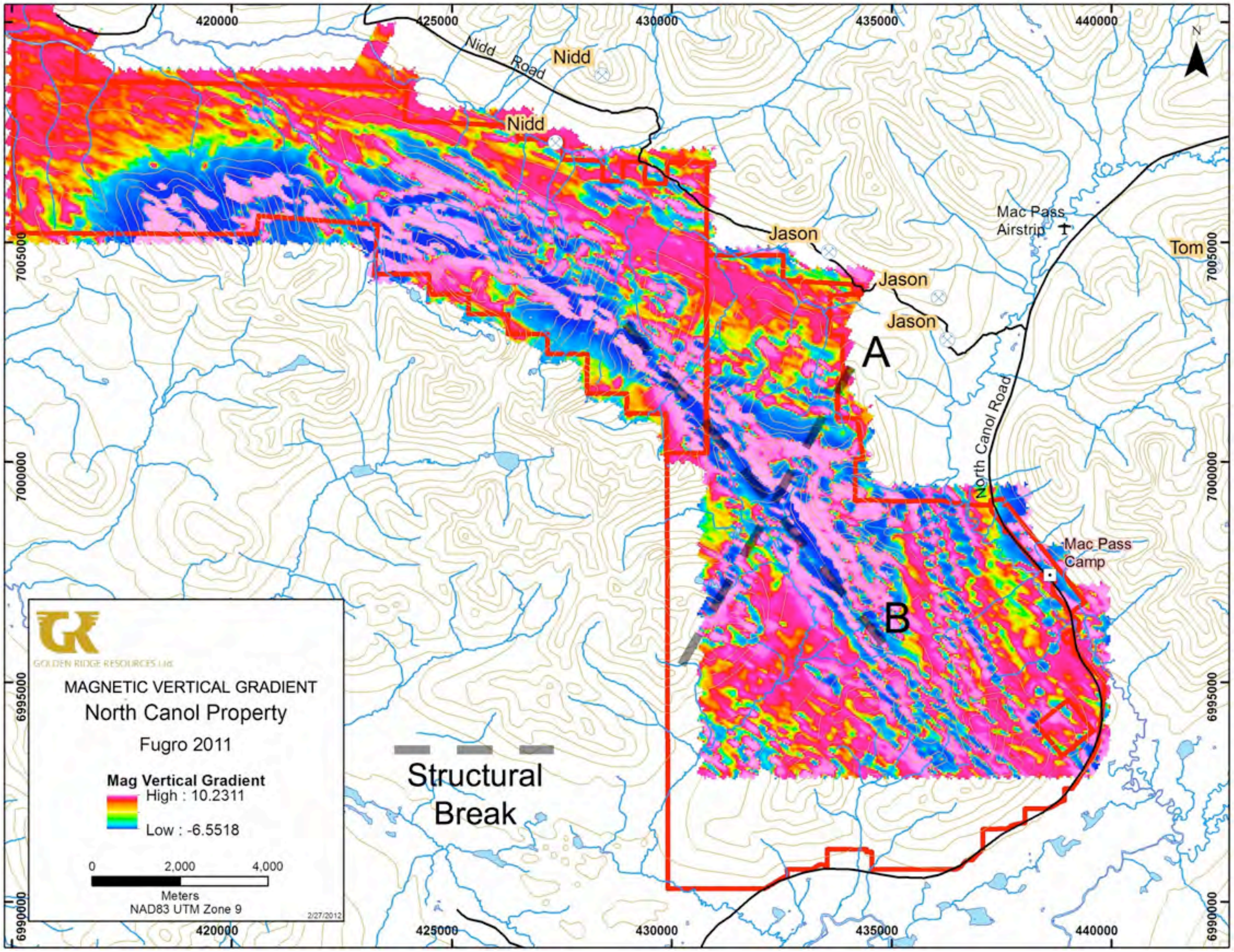

Figure 8. Magnetic Vertical Gradient, Fugro Airborne Survey, North Canol Property.

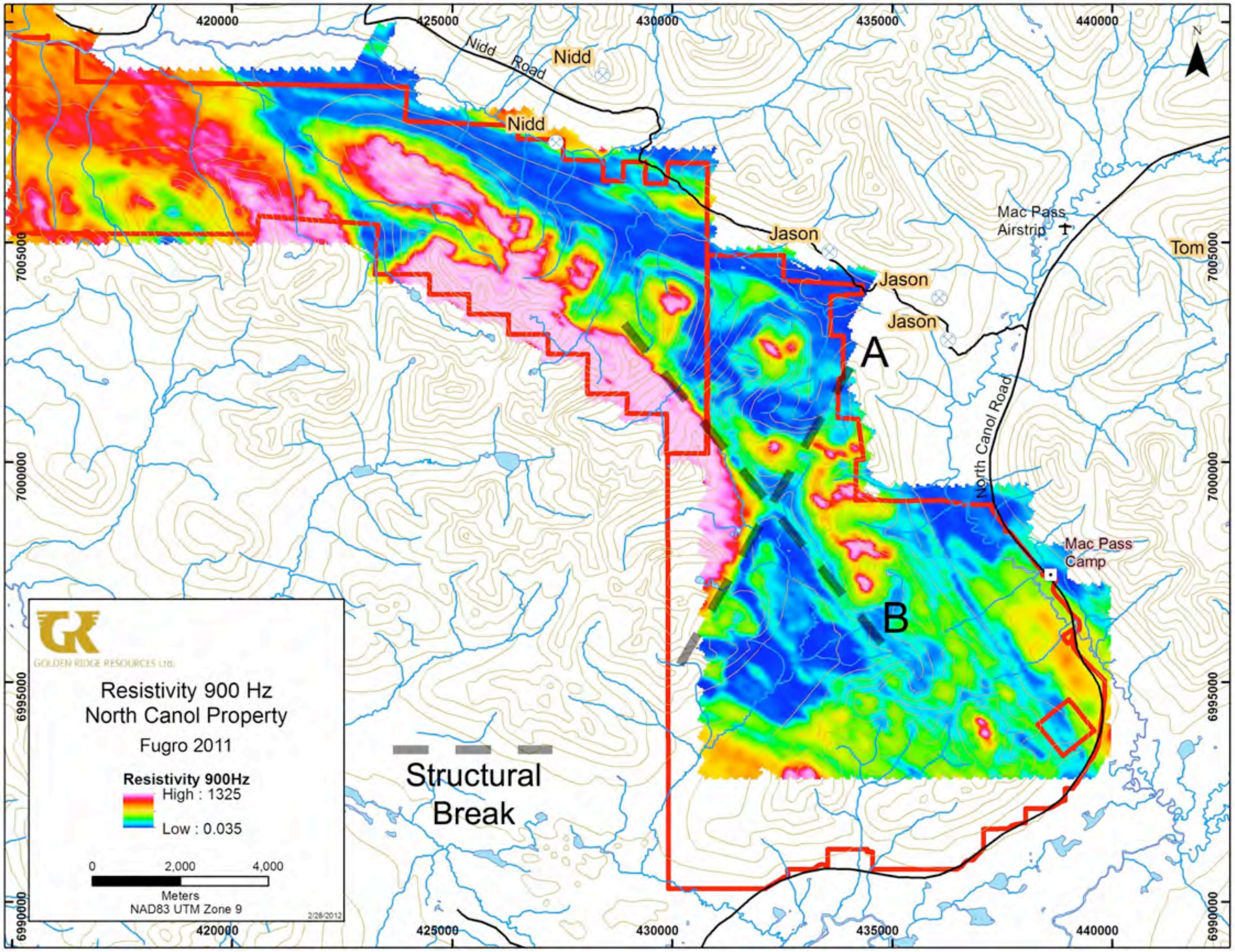

Figure 9. Resistivity 900 Hz, Fugro Airborne Survey, North Canol Property.

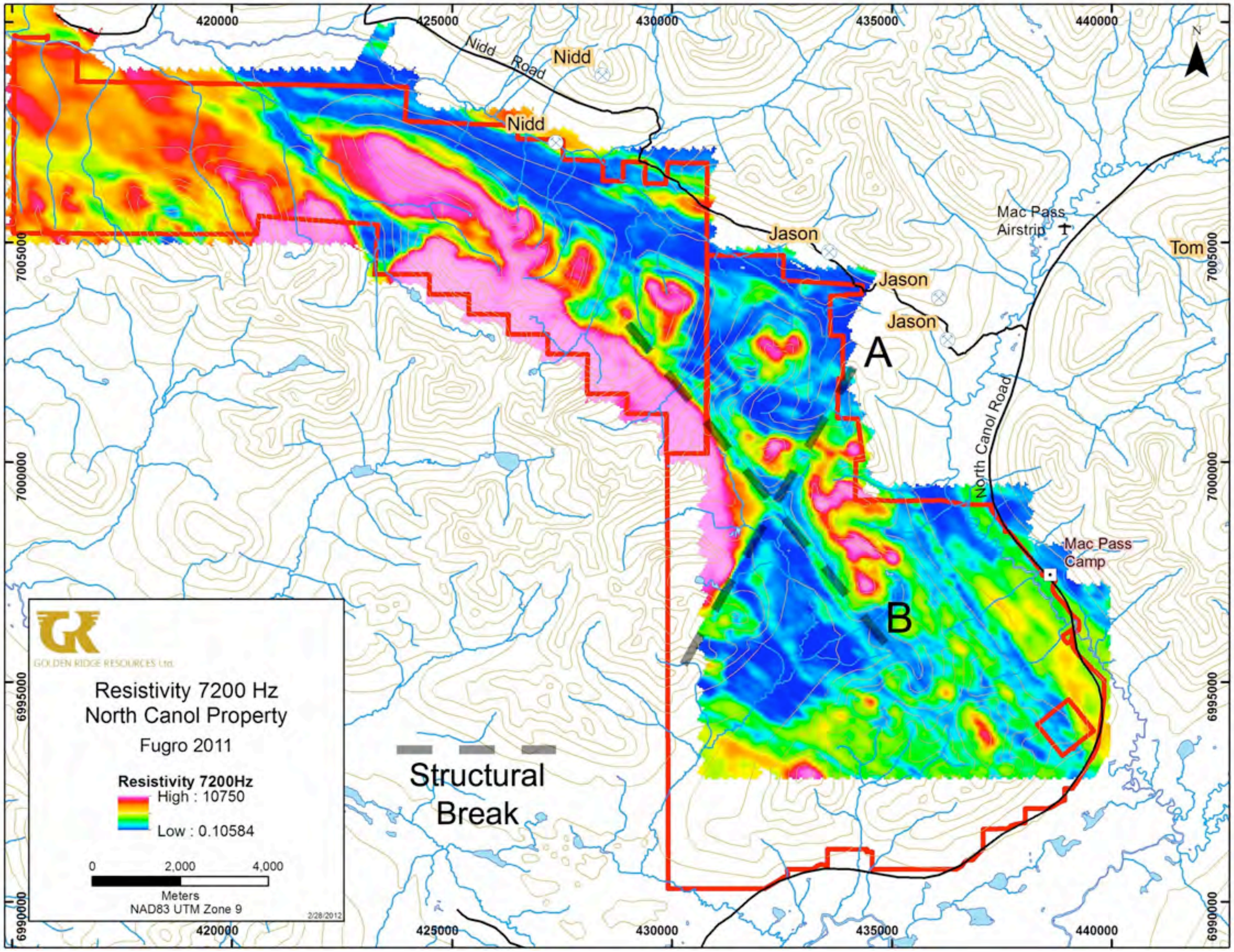

Figure 10. Resistivity 7200 Hz, Fugro Airborne Survey, North Canol Property.

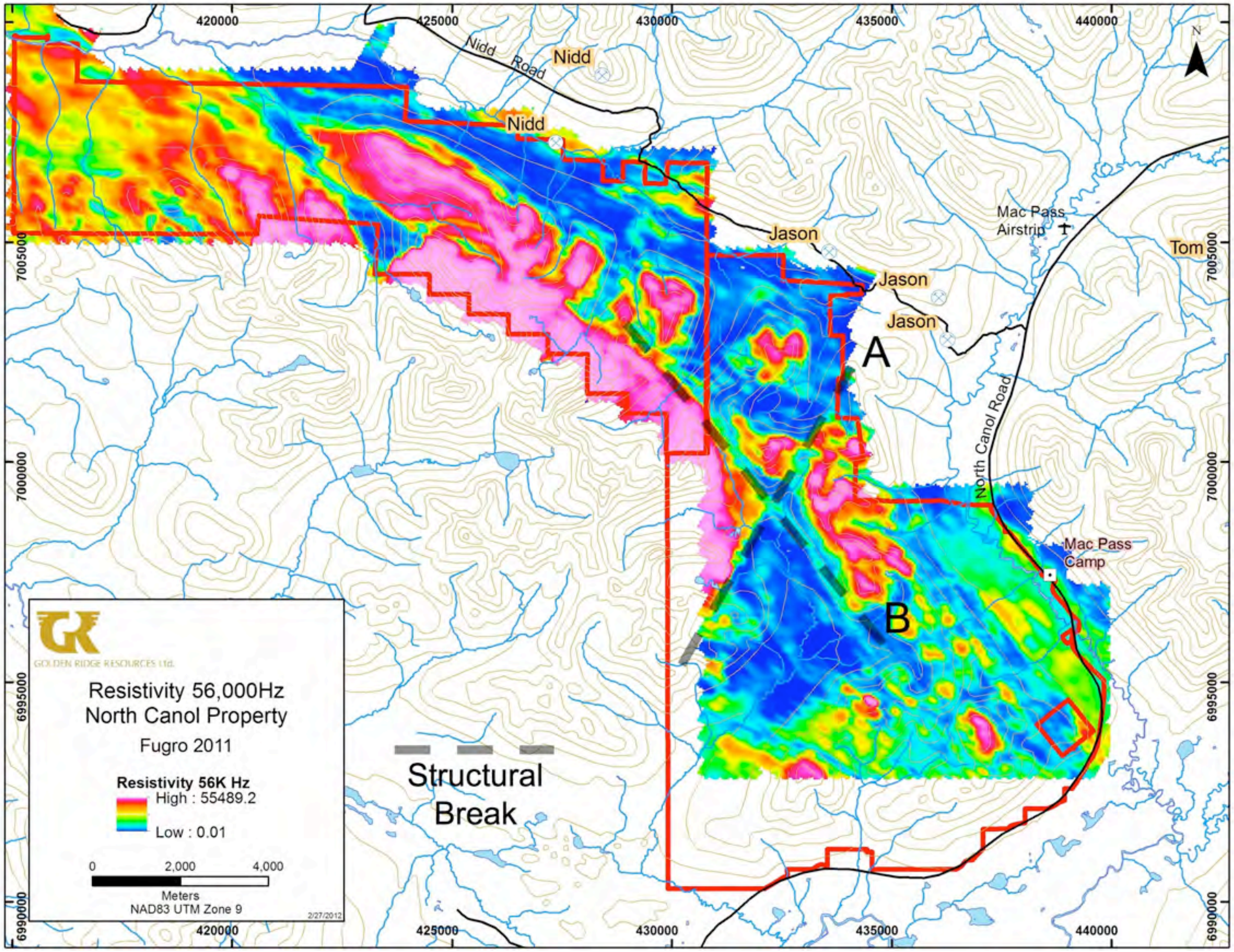

Figure 11. Resistivity 56,000 Hz, Fugro Airborne Survey, North Canol Property.

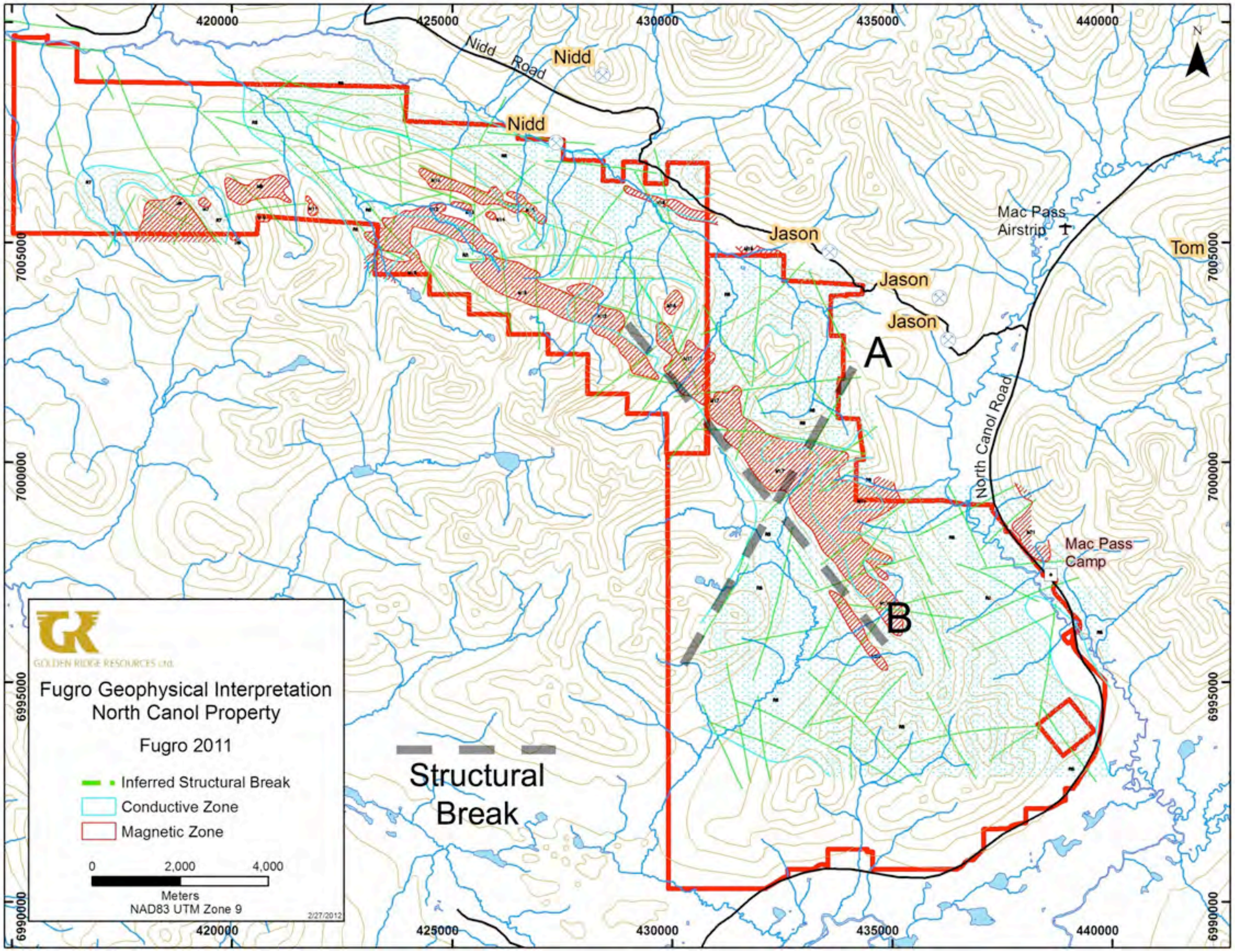

Figure 12. Fugro Geophysical Interpretation, Fugro Airborne Survey, North Canol Property.

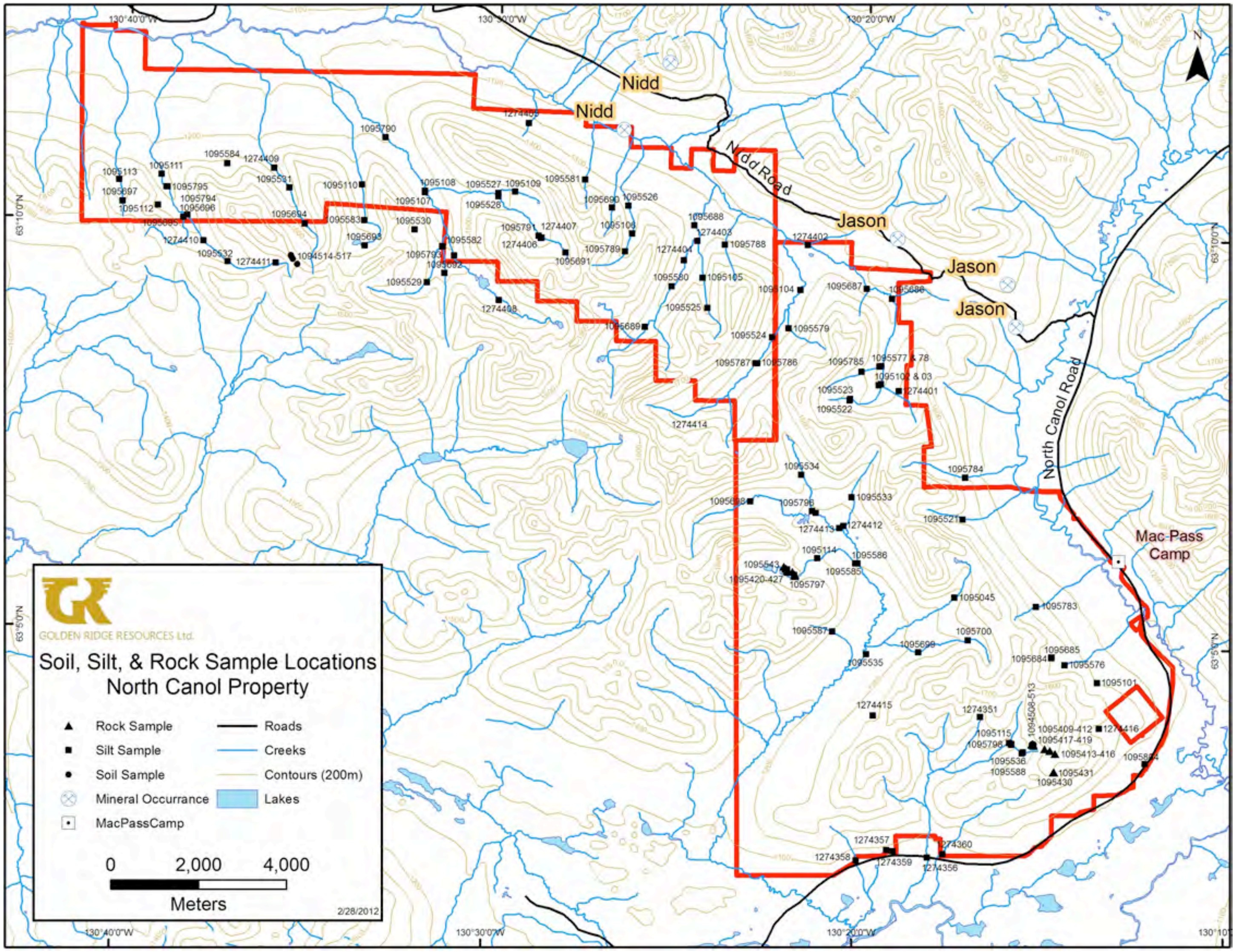

Figure 13. Soil, Silt and Rock Sample Locations, North Canol Property.

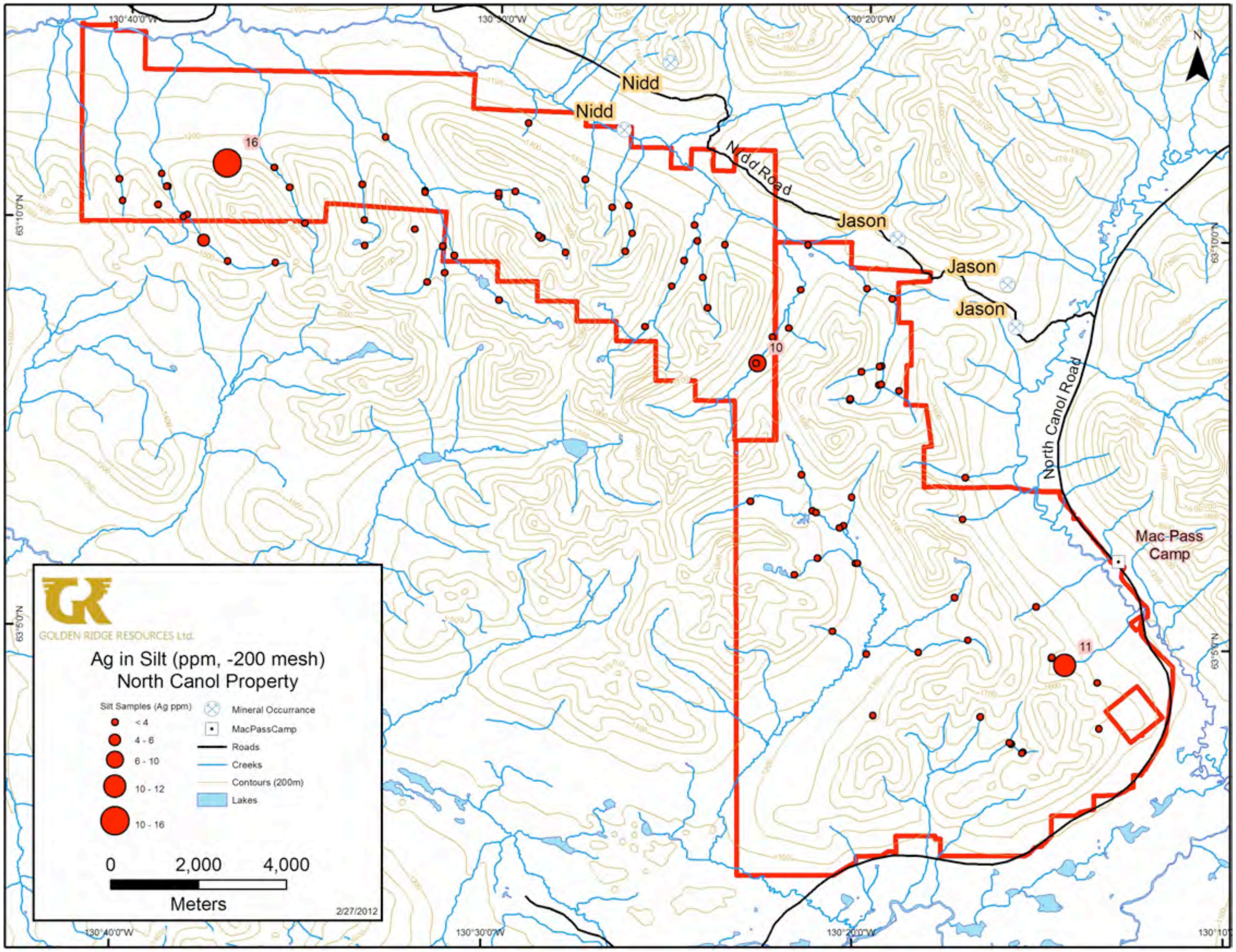

Figure 14. Ag in Silt, North Canol Property.

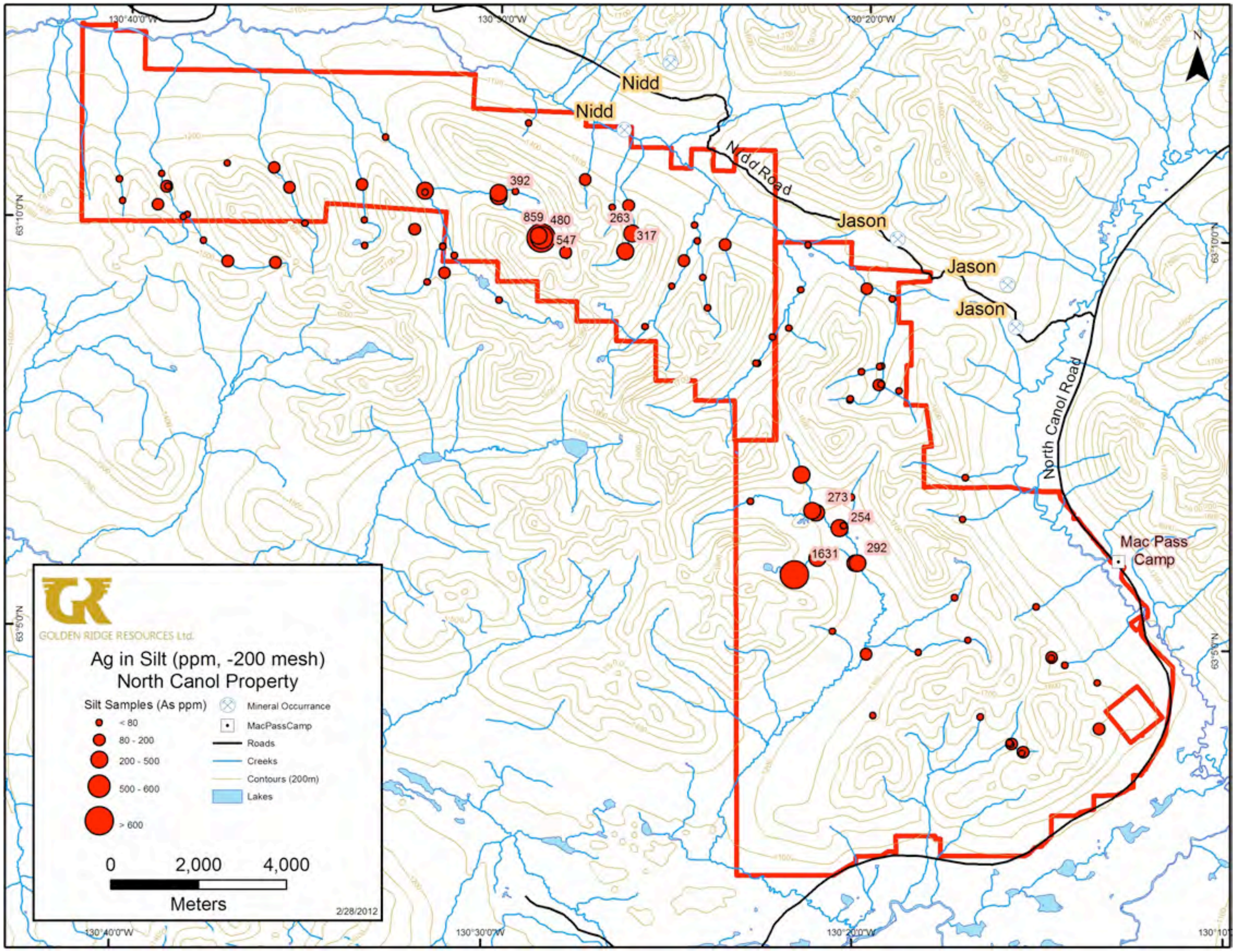

Figure 15. As in Silt, North Canol Property.

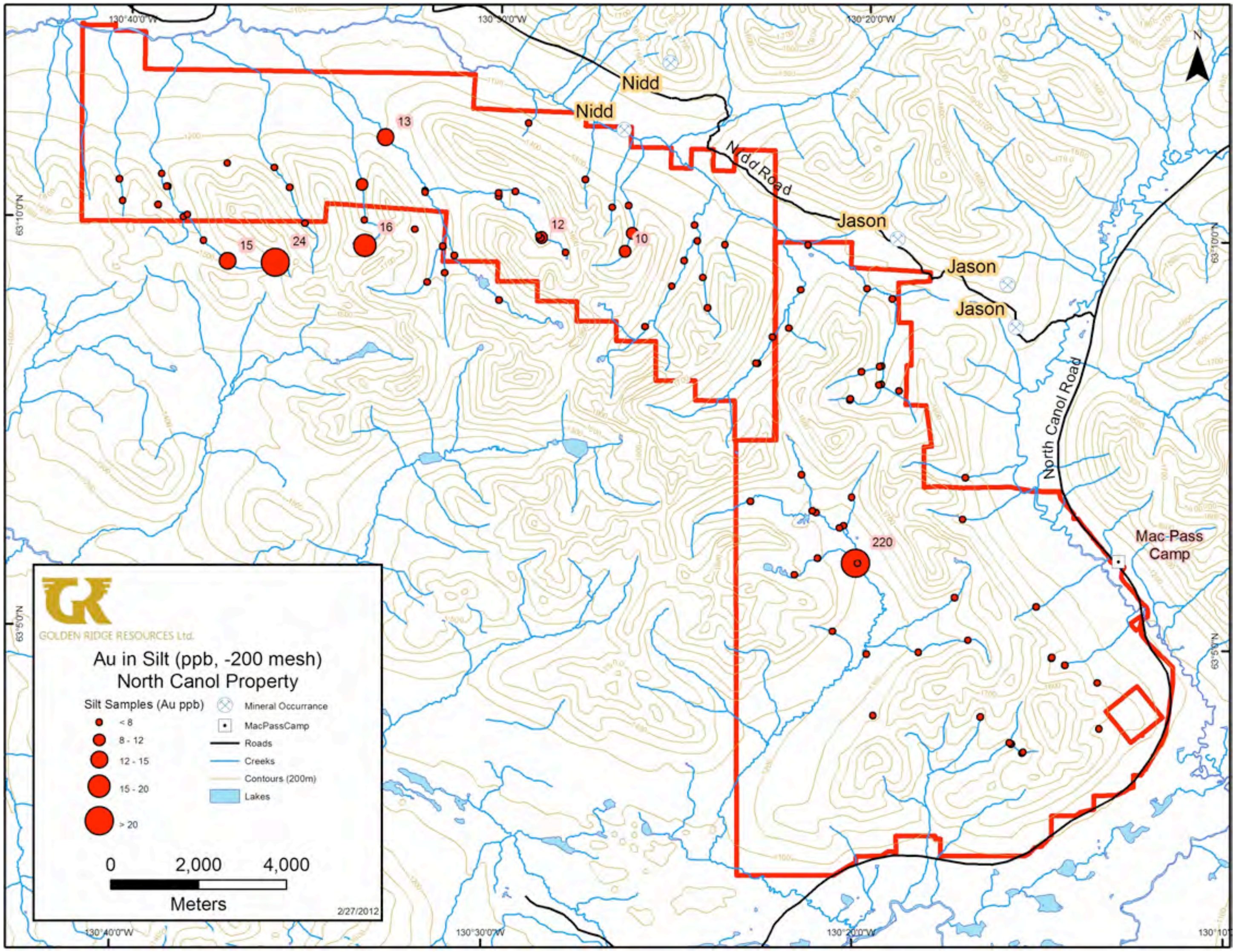

Figure 16. Au in Silt, North Canol Property.

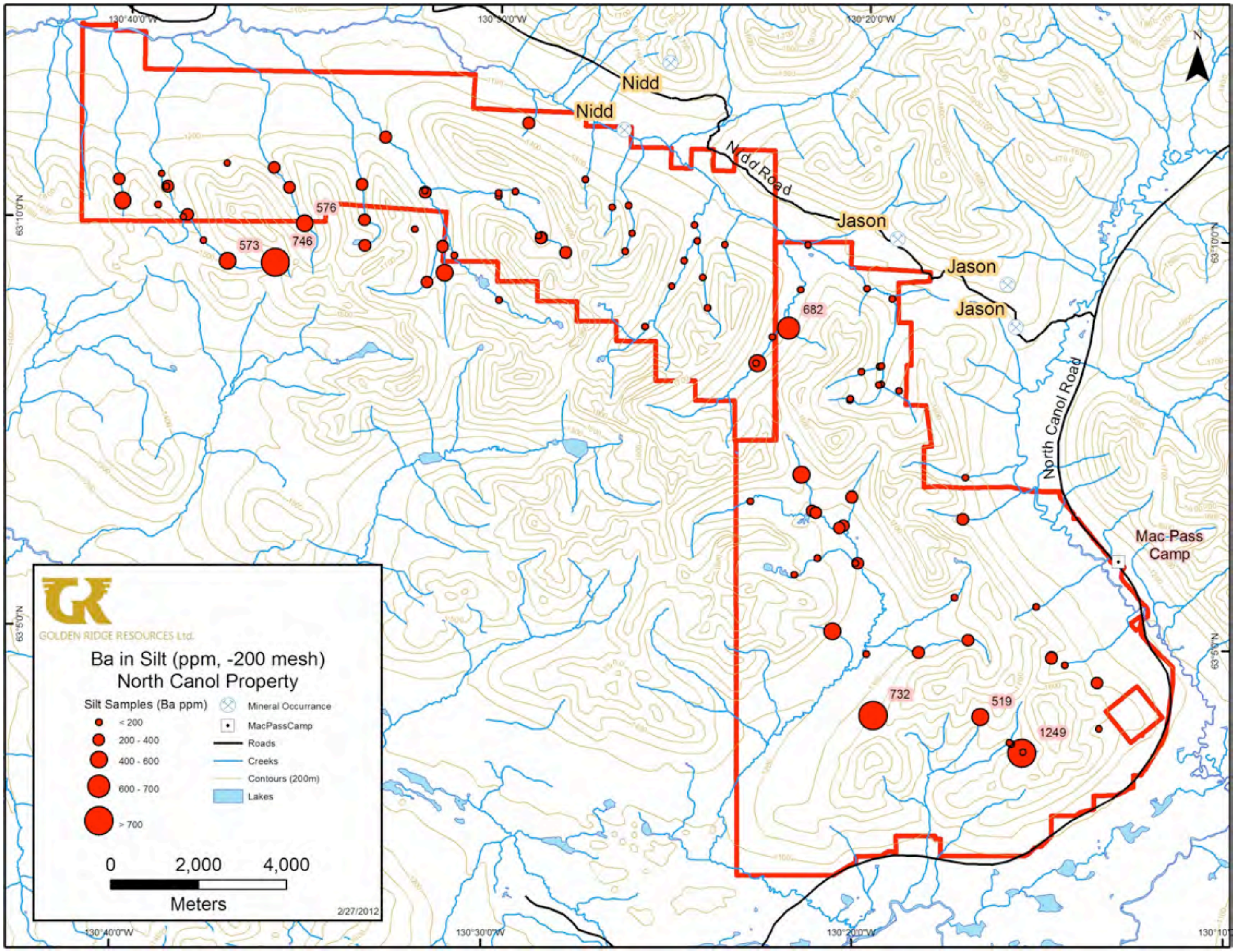

Figure 17. Ba in Silt, North Canol Property.

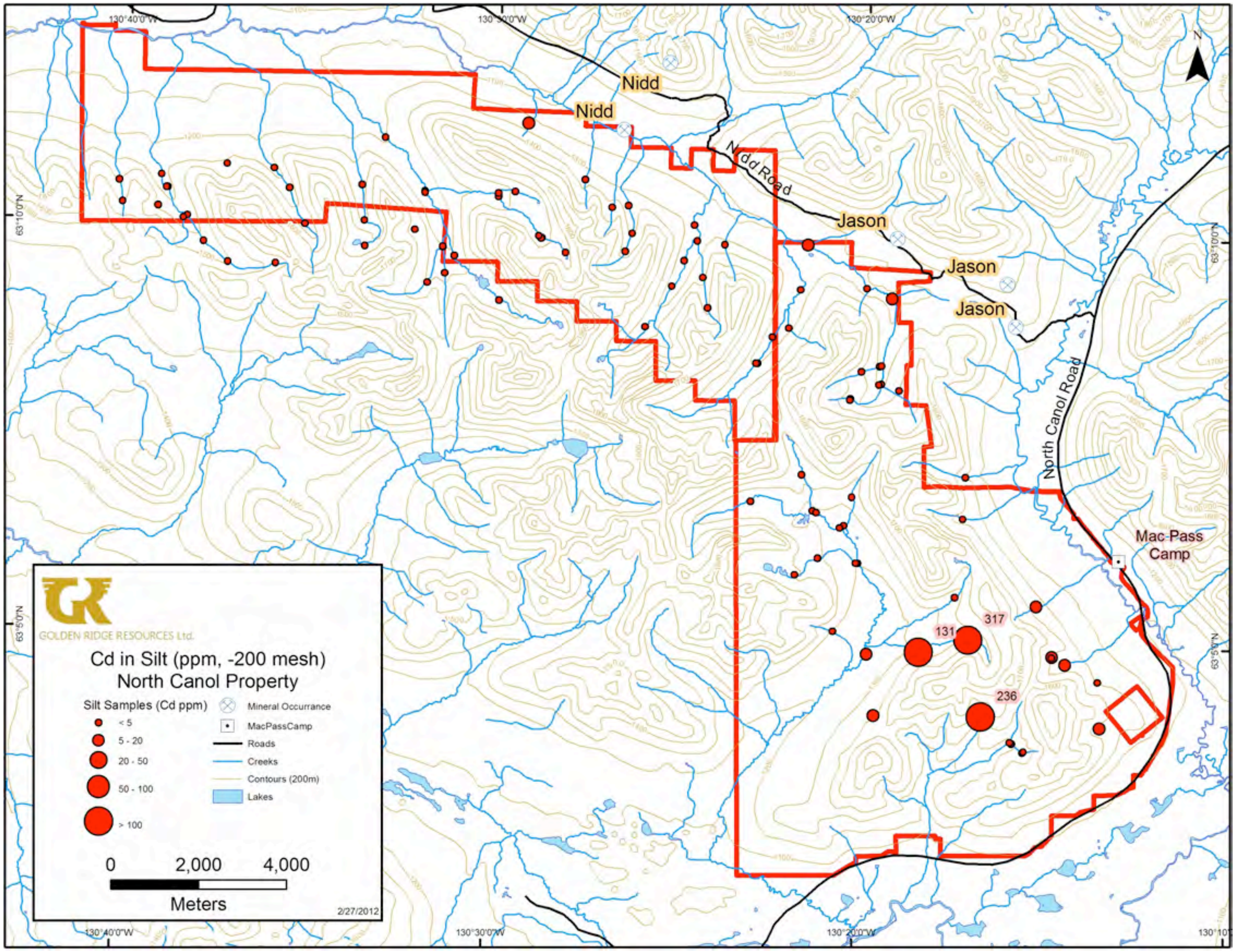

Figure 18. Cd in Silt, North Canol Property.

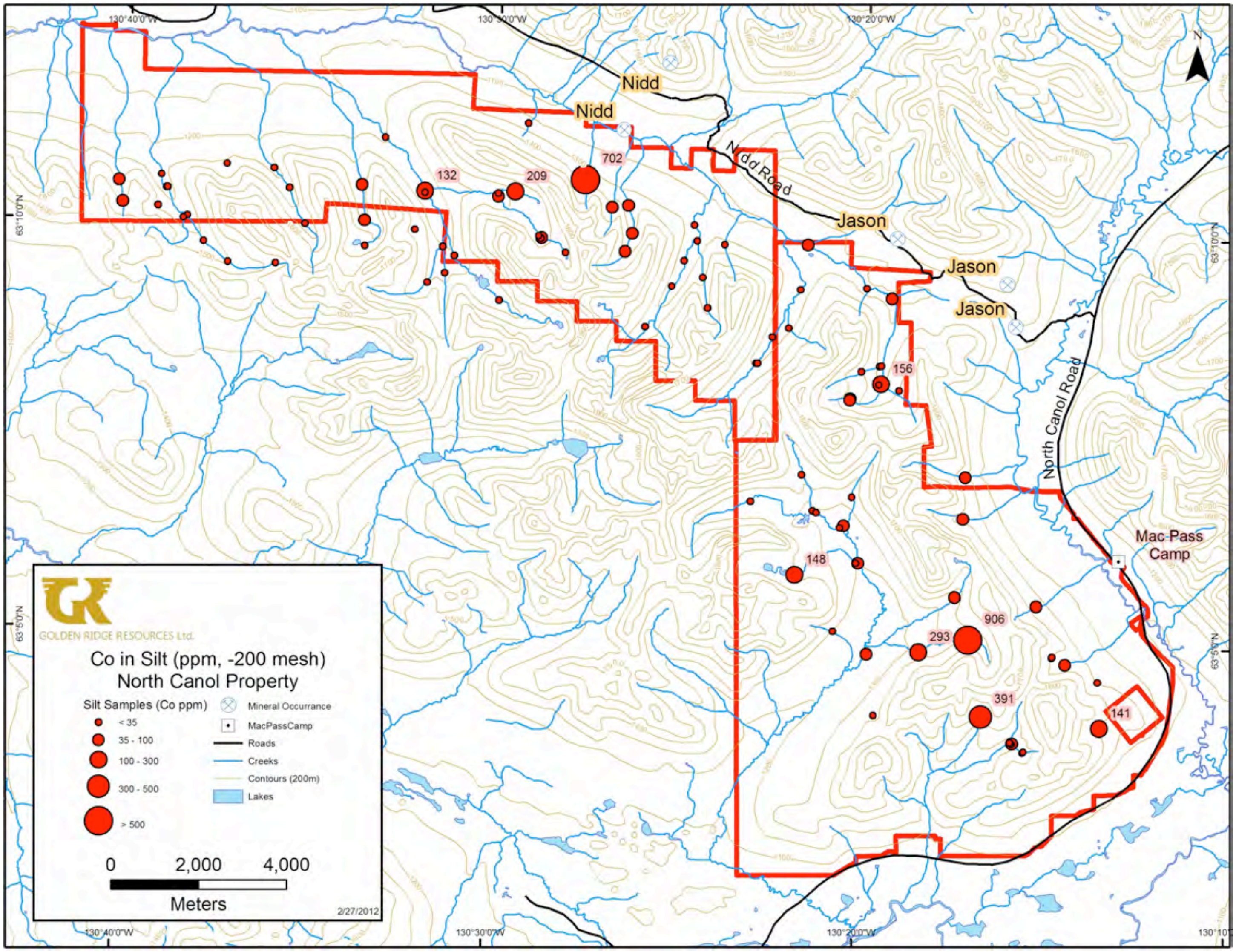

Figure 19. Co in Silt, North Canol Property.

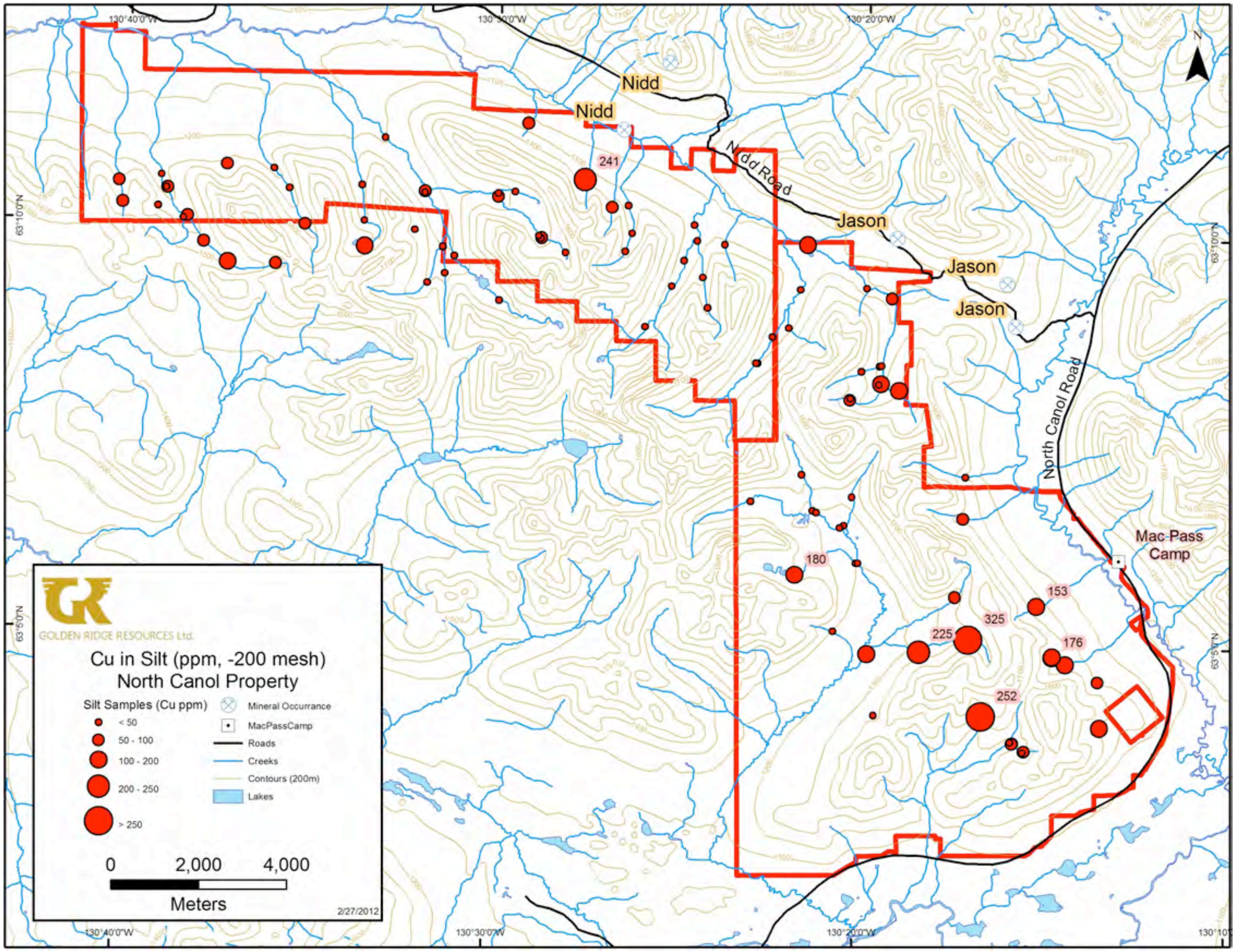

Figure 20. Cu in Silt, North Canol Property.

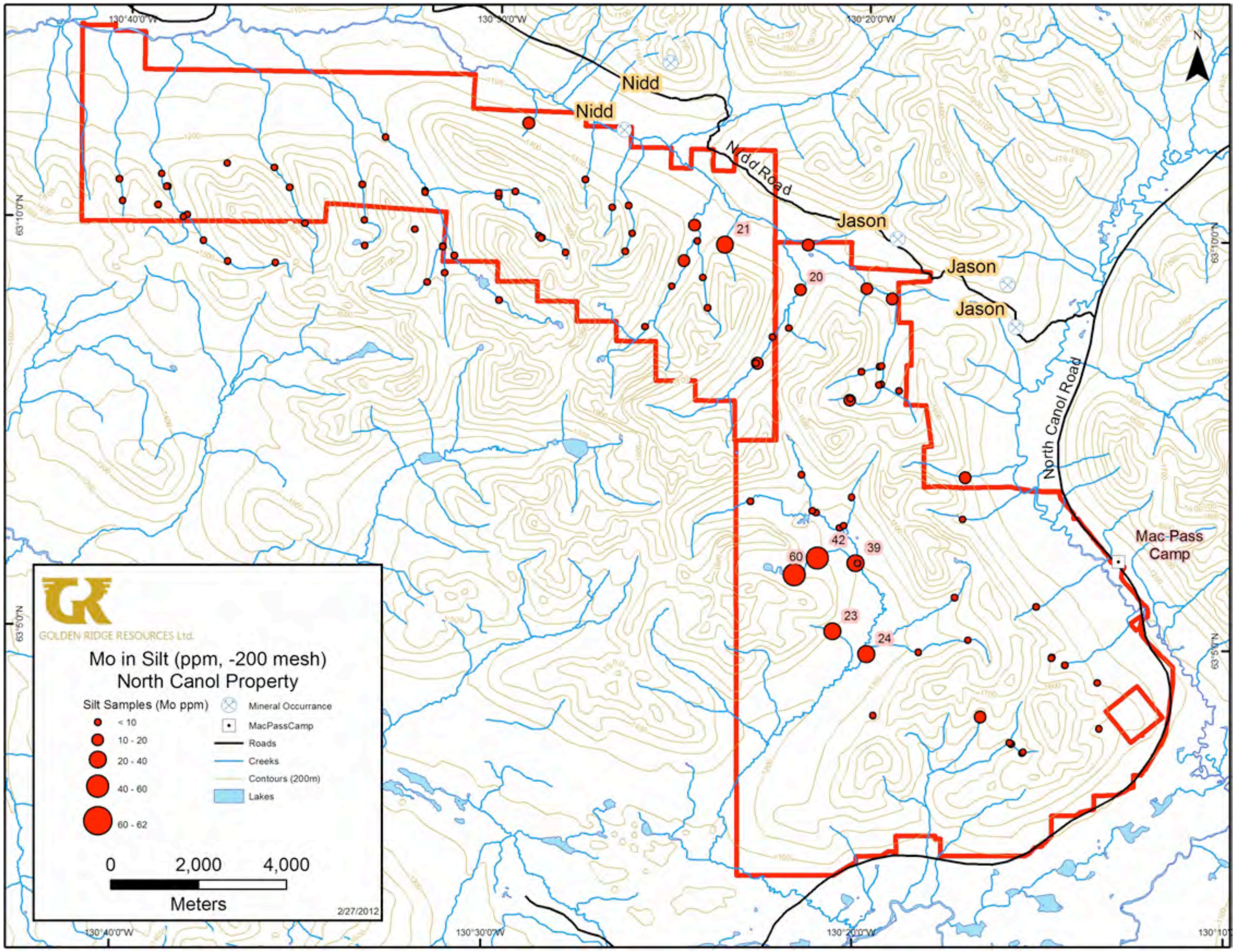

Figure 21. Mo in Silt, North Canol Property.

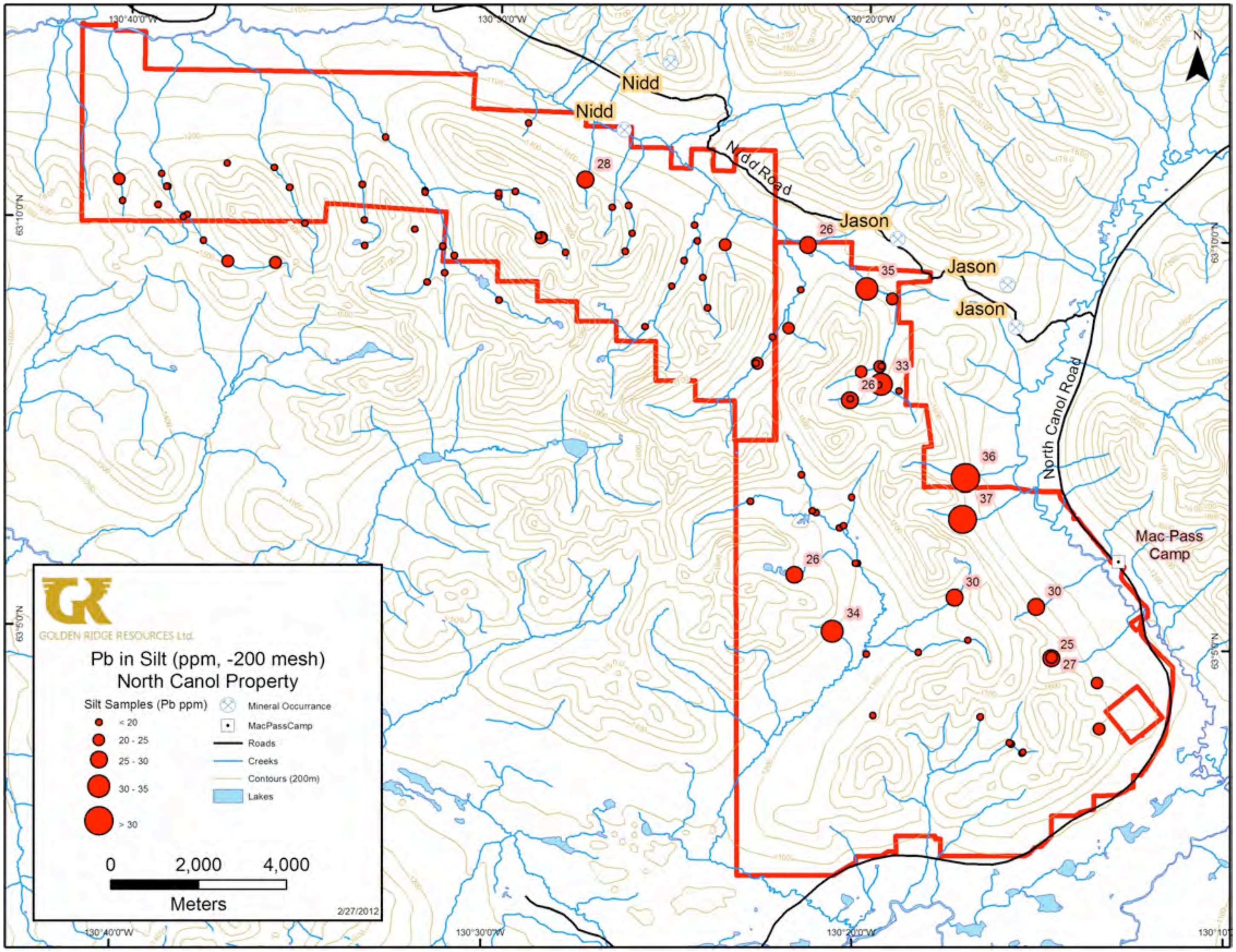

Figure 22. Pb in Silt, North Canol Property.

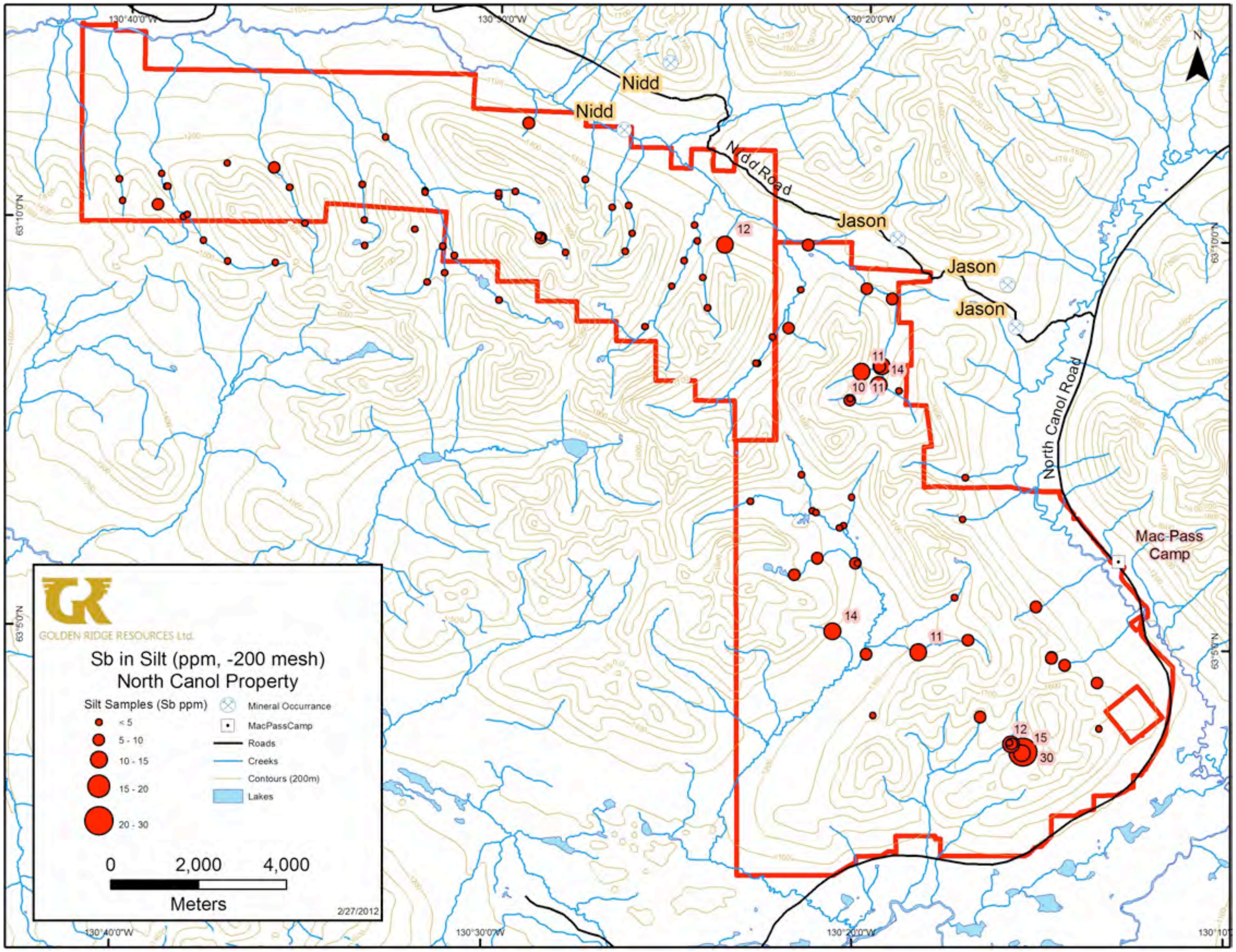

Figure 23. Sb in Silt, North Canol Property.

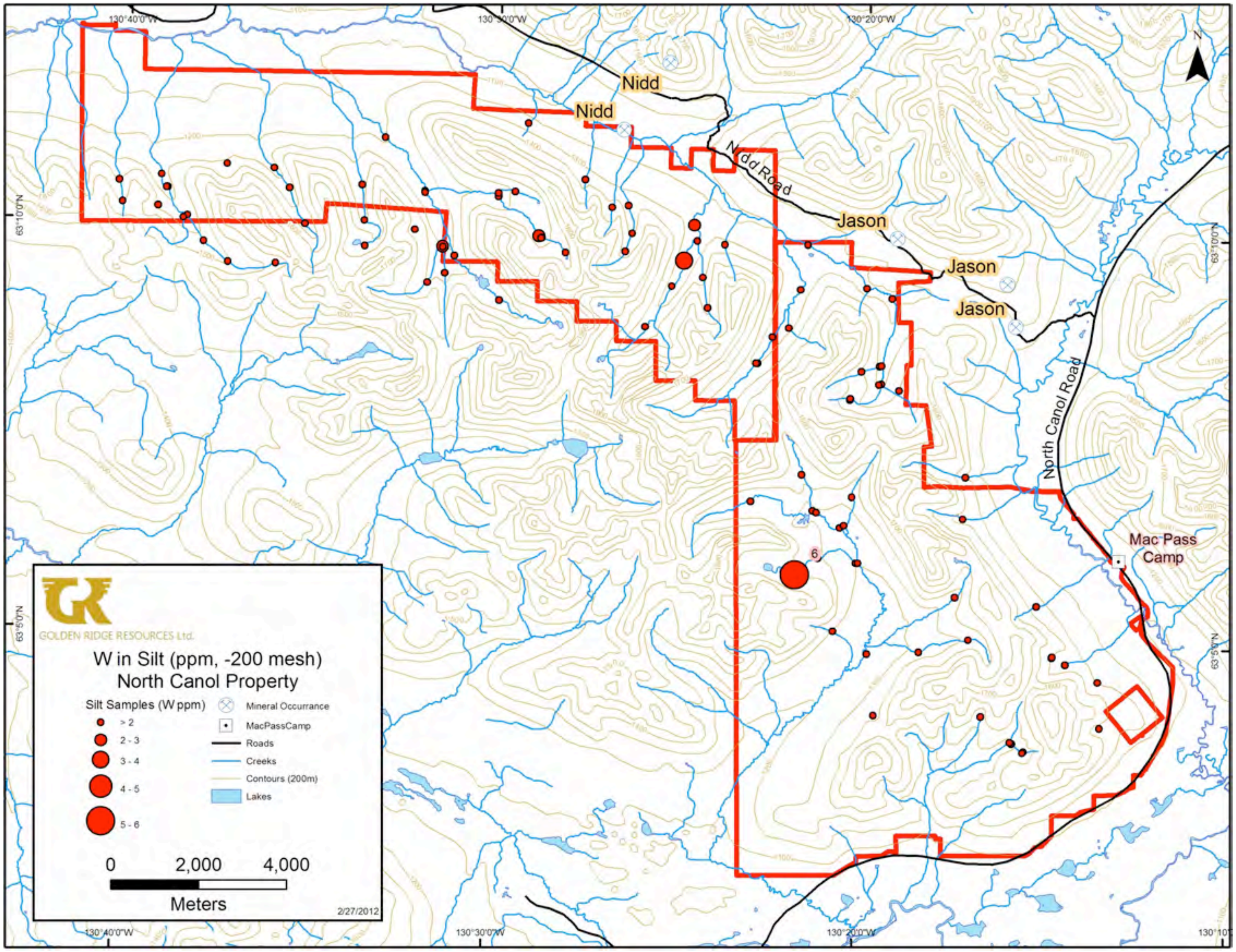

Figure 24. W in Silt, North Canol Property.

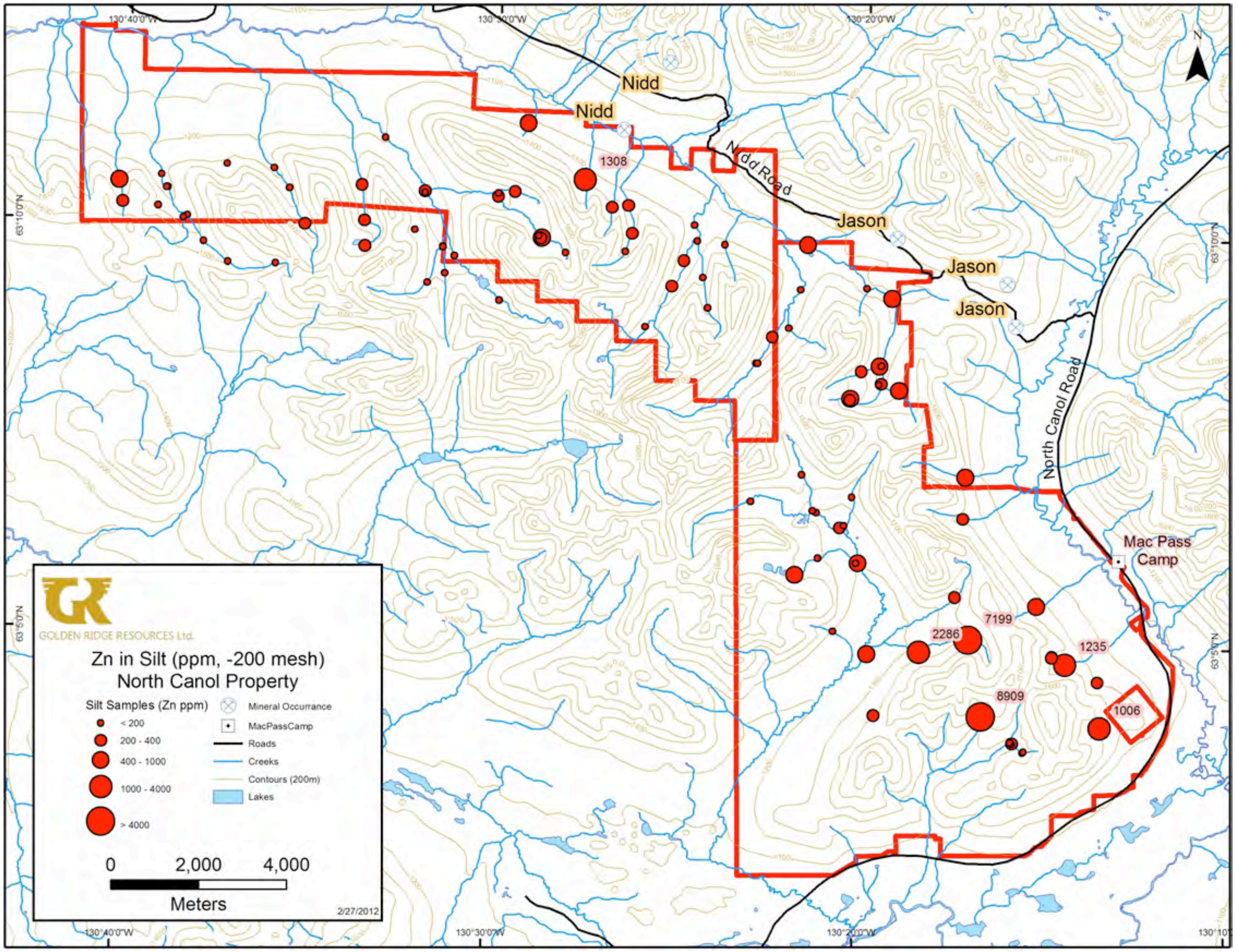

Figure 25. Zn in Silt, North Canol Property.

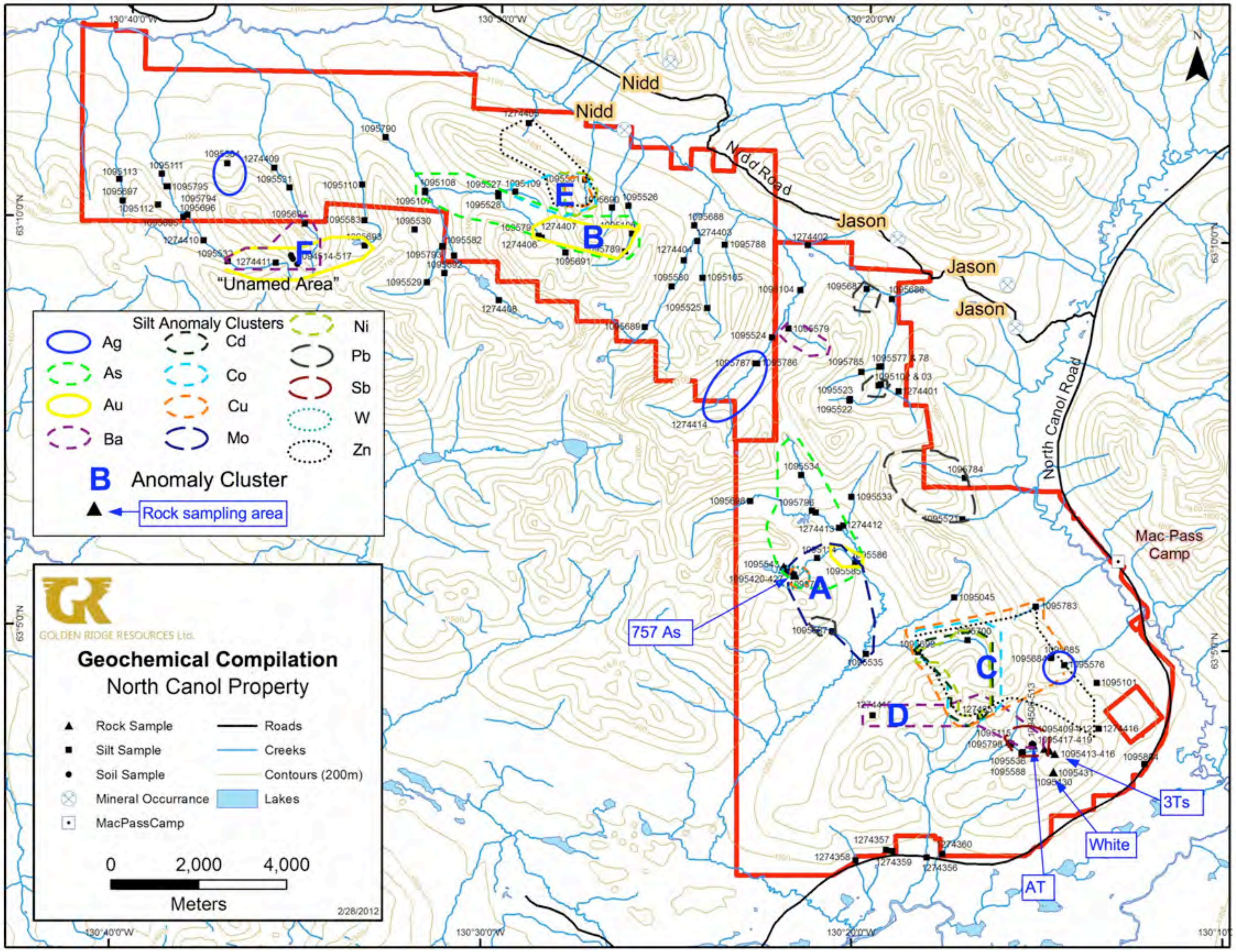

Figure 26. Geochemical Compilation, 2011 Silt Samples, North Canol Property

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

Silt samples of stream fines were collected from most of the drainages on the property by manually scooping fine material into labeled cloth stream sediment bags. In areas of talus, coarse particles were screened out of the silt samples at site, in order to ensure sufficient fine material was collected. Sample sites were labelled with fluorescent flagging with the station number recorded on it. The silt bags were tagged with bar-coded sample tags, one section of which was stapled to the outside of the bag and a second section inserted into the bag.

Soil sample sites were labelled with fluorescent flagging with the station number recorded on it. Soil was placed in correspondingly labelled Kraft soil bags, while silt samples were placed in cloth silt bags. The soil and silt bags were tagged with bar-coded sample tags, one section of which was stapled to the outside of the bag and a second section inserted into the bag.

At camp, silt and soil samples were dried and sieved to -20 mesh. The -20 mesh fraction was analysed on site utilizing a Niton desk mounted XRF unit for rapid identification of semi-quantitative pathfinder element values (e.g. As, Pb, Zn, Cu).

Grab rock samples consist of 2 or 3 fist size rock pieces indicative of a certain lithology or mineralization type. Sample sites were marked in the field with spray paint or numbered flagging tape. Samples were put into correspondingly labelled plastic bags with matching bar-coded assay tags inserted and shipped to the laboratory for analyses.

Rock, soil and silt samples were shipped from site via airplane or truck to ACME Analytical Laboratory Ltd.'s preparation lab in Whitehorse for sample preparation then shipped on by the laboratory to ACME's Vancouver facility for analyses. All sample preparation was done at the laboratory by their staff. In the laboratory, rok samples were crushed and pulverized to minus 200 mesh, and analyzed by ICP-MS for 36 elements following an aqua regia digestion (Group 1DX package). The rocks were also analyzed for Au by a 30 g fire assay with ICP-ES finish (Group 3B). Sample descriptions and analytical certificates are included in Appendix 1 and 2 respectively.

For silts and soils, samples were dried and seived to -80 by ACME, and a 15 g subsample was digested in aqua regia and analysed for 36 elements (including gold) by the ICP-MS method.

12.0 INTERPRETATION AND CONCLUSIONS

The North Canol property lies within the Macmillan Fold Belt and is underlain by Paleozoic clastic and carbonate rocks intruded by Cretaceous granitic rocks. The property is considered to be prospective for a variety of mineral deposits including sedex Zn-Pb-Cu-Ag barite, bedded and vein-type barite, intrusion-related gold, sediment-hosted (Carlin-type) gold, and tungsten skarn.

Several promising exploration targets have been identified from review of historical information and geophysical and geochemical data collected in 2011.

Four known mineral occurrences are present within the boundaries of the North Canol Property: the Bremner Cu-Pb-Zn prospect (Minfile 105O 025), the Sim W prospect (105O 043), the Bailes barite-Zn prospect (105O 052), and the Hasten barite-Zn prospect (Minfile 105O 060). In addition, the Racicot (or Moose) barite deposit (Minfile 105O 013) occurs on a small group of four claims held by another party. Those claims are completely surrounded by the North Canol Property (Figures 4, 5, 6).

Several other deposits and prospects are situated very close to the North Canol Property boundary. These include the Fetch (or Basin) barite-Zn prospect (Minfile 105O 028) and the Gary (or Gargantua) barite deposits (Minfile 105O 027), which occur east of the southern portion of the property.

Three important sedex Zn-Pb-Ag-Ba deposits occur directly to the north and northeast of the property: Jason (Minfile 105O 019), Tom (Minfile 105O 001) and Nidd (Minfile 105O 024). The important Mactung deposit, one of the largest tungsten skarn deposits in the world, is located 17 km north of the property.

The known prospects, soil anomalies and drill holes on the property are compiled on Figure 6.

These prospects were partially explored in the 1970s and 1980s mainly for base metals. Only 7 historic drill holes have been identified on the property, and of these just three have available drill logs and sporadic analyses for Pb, Zn, Ag filed in assessment reports.

At the Bremner prospect, two drill holes were drilled to test a sedex Zn-Pb-Ag target. The logs describe extensive silicification, quartz veining and pyrite mineralization, mainly hosted by silty limestone of the Road River Group (Sapper Formation). This alteration and mineralization has characteristics of sediment-hosted (Carlin-type) gold mineralization, however, no analyses for Au or pathfinders were completed. The core is reported to be present in the Bostock Core Library in Whitehorse and should be re-logged and selectively sampled for Au.

Similarly, the core from the Hasten hole HA-83-01 has reports of minor zinc mineralization along with thin quartz and calcite veinlets in shale. It may be located at the Cominco (now Teck) camp on the Nidd property and should be logged and sampled selectively for gold and pathfinders.

Several minor showings of precious- or base-metal mineralization were described from work by Aberford near the Bailes barite prospect (Kapusta, 1982, 1983, 1984). In particular, the following prospects and anomalies are shown on Figure 6 should be compiled in a GIS system, re-located in the field and evaluated by prospecting and contour soil sampling:

a) Quartz feldspar porphyry dykes with anomalous Au, Ag, As, Pb
b) Quartz-tetrahedrite veins with up to 570 ppm Ag and 185 ppb Au
c) Pyrrhotite skarn with up to 2.15% Zn and 370 ppm As
d) Several Pb-Zn-Cu-Ba anomalies with coincident VLF conductors west, north and east of the Bailes barite horizon.

The Zn-Ba in soil, Maxmin and gravity anomalies identified by the work of the Ogilvie Joint Venture should also be compiled on a GIS system and followed up by prospecting and contour soil sampling.

Airborne Geophysics

In the 2011 Fugro airborne geophysical survey, a total of 746 line-km were flown on the North Canol property. Frequency domain electromagnetic, magnetic and elevation data was collected along lines flown at an azimuth of 030/210 and spaced at 200 m, with tie lines flown at an azimuth of 120/300.

Several NW trending magnetic highs are thought to be related to pyrrhotite-bearing hornfels in shales on the margin of the large Cretaceous granitic pluton (Figure 4). These highs wrap around and form a “donut” shaped anomaly around the margin of the intrusion, not unlike other Cretaceous intrusions in Yukon.

Small spot and linear magnetic highs are also evident to the north and east of the main magnetic highs described above. These may represent small intrusive plugs, dikes or magnetite- or pyrrhotite-bearing skarns. Field follow-up is warranted.

The resistivity maps (Figures 9-11) show strong topographic effects. Many of the hilltops show up as resistivity highs, and valleys as resistivity lows. Nevertheless, other linear low resistivity features are present and probably represent formational conductors (e.g. graphitic shale).

Several prominent structural breaks are evident on the geophysical images. Most importantly, a NE trending breaks (A) and a NW trending break (B) are visible on all magnetic and resistivity images (Features A and B on Figures 7 to 12). Many other breaks are also shown on Figure 12 (Fugro Geophysical Interpretation). The NE trending geophysical break (A) is transverse to the NW trending strike of the sedimentary units, mapped folds, and the Hess Fault, and is not shown on available regional geological maps. It appears to be important transverse structure and may represent a previously unrecognized growth fault not unlike those faults controlling mineralization at the Tom, Jason and Nidd sedex deposits to the north.

The geophysical images should be carefully reviewed by a geologist familiar with the regional geology of the area, to identify contacts, structures, magnetic anomalies and conductive zones, which could be associated with mineralization.

Silt Geochemistry

A total of 103 silt samples were collected in 2011, and identified clusters of anomalous values or spot highs for several elements, as summarized on Figure 26. Six clusters, A through F, are of particular interest and should be followed up by prospecting and/or soil geochemistry. They are described as follows:

In Cluster A, several streams are anomalous in As (254 to 1631 ppm) and Mo (23 to 60 ppm) with spot highs for Au (220 ppb), Cu (180 ppm) and W (6 ppm). This cluster corresponds to the 757 As target described above, and is permissive for intrusion-related gold mineralization.

In the Cluster B area, several streams are anomalous in As (263 to 859 ppm) and weakly anomalous for Au (10 and 12 ppb). This cluster occurs on the north flank of the Cretaceous granitic intrusion, in a similar setting to the "757 As" target described above, and is also permissive for intrusion-related gold mineralization.

In Cluster C, several streams are anomalous for Cd (131 to 317 ppm), Co (293 to 906 ppm), Cu (153 to 325 ppm), Ni (355 to 887 ppm), and Zn (1006 to 8909 ppm). One site is also anomalous for Ag (11 ppm). Cluster C occurs mainly north of the AT and 3Ts prospects described below, and northwest of the Racicot (Moose) barite deposit. The metal association for Cluster C is permissive for sedex Zn-Pb-Ag deposits and/or epigenetic barite-Cu-Pb-Zn-Ag veins. This metal assemblage may also be in part reflective of adsorption of metal ions onto iron or manganese in soils, and should be evaluated with care.

Cluster D, directly to the south of and partially overlapping with Cluster C, is anomalous in Ba (519 to 1249 ppm) and Sb (12 to 30 ppm). Cluster D in part drains the AT and 3Ts prospects described above, which have anomalous values of Ba, Cu, Ag, As, Sb, Ni and Ba in quartz vein and/or mafic dyke rock.

Cluster E is located to the north of Cluster B on the north side of the property, One sample site is anomalous in Co (702 ppm), Cu (241 ppm), Ni (414 ppm), Pb (28 ppm) and Zn (1308 ppm), and several surrounding creeks have lower but still anomalous values for some of the same elements. This area is mapped as Proterozoic Vampire Formation or Road River Formation (Figure 4), and near the trace of the Hess Fault. This metal association is permissive for sedex or vein-type Zn-Pb-Ag mineralization, but may also reflect adsorption of metal ions onto iron or manganese in soils, a process described above.

Cluster F is weakly anomalous in Au (15-24 ppm) and Ba (to 746 ppm). It is located on the flank of the granitic intrusion and may reflect undiscovered intrusion-related mineralization. It is coincident with weakly anomalous As and Au in soils in an unnamed area off the property (see below). This anomaly should be prospected in the field and considered for possible staking.

Several other areas on the property have individual sites or clusters of sites that are anomalous for one or more elements, and should be reviewed in conjunction with other data and considered for field follow-up.

Rock and Soil Geochemistry

Only two days of soil and rock sampling was completed in 2011, resulting in the collection of 23 rock samples and 19 soil samples. Nevertheless, a few interesting results were returned, as follows:

The "757 As" target (Figure 26) is located at the contact between Cretaceous quartz monzonite and siltstone of the Earn Group. The creek here is stained bright red with iron oxides. Stream sediments collected in this area as part of the current program were anomalous in As, Au, Cu, Mo, and W (Cluster A above). Eight grab samples of float were collected in this area. Rare quartz veins to 20 cm wide cut the rocks, and contain trace to 2% pyrite and arsenopyrite, and minor scorodite, malachite and hematite. Four rock samples were highly anomalous in arsenic ranging from 4864 to >10,000 ppm As, with low values for other elements including Au (maximum 8 ppb by fire assay). Although Au values are low, the area has good values for pathfinder elements in stream silts over a broad area, and one silt has 220 ppb Au, the highest in the survey. This area has no recorded historic work and received only cursory prospecting in 2011. Additional prospecting for intrusion-related gold mineralization is warranted.

The "AT" and "3Ts" targets (Figure 26) occur in the southeast part of the property and is partly coincident with silt anomaly Clusters C and D described above. Quartz and quartz-barite mineralization has been identified with weak metal values in rocks and soils, including Ba (1785 to >10,000 ppm), Cu (552 ppm), Ag (24 ppm), As (180 ppm), Ni (262 ppm), Sb (321 ppm), and Zn (1579 ppm). The geochemical signature and setting is consistent with an epigenetic quartz-barite-Cu-Pb-Zn-Ag vein or sedex style of mineralization. Additional contour soil sampling is recommended.

At the White area (Figure 26), brecciated, rusty quartz veins up to 50 cm wide cut altered sedimentary rocks and contain minor mariposite and pyrite. Metal values are uniformly low, with the best value of only 12 ppb Au (by fire assay) returned from a grab sample of a 30 cm wide pyritic quartz vein. A few contour soil lines are recommended.

In the unnamed area off the property, four soil samples (1094514 to 7) contain up to 220 ppm As and 31 ppm Au. This area is adjacent to the margin of the Cretaceous pluton and may have potential for intrusion-related gold mineralization. It corresponds to silt anomaly Cluster F described above. Follow up prospecting is warranted.

No sampling was completed at the Hasten Ba-Zn-Pb prospect, Bremner Cu-Zn-Pb prospect, Sim W prospect, Bailes barite vein prospect, or Racicot Ba-Zn-Pb deposit, the latter of which is on a small block of four claims owned by another party.

13.0 SUMMARY AND RECOMMENDATIONS

The North Canol Property is situated within the Macmillan Fold Belt, a well mineralized portion of the Paleozoic Selwyn Basin that hosts several significant deposits and prospects close to the property, including the Tom, Jason, and Nidd sedex Zn-Pb-Ag-barite deposits, the Mactung tungsten deposit, the Brick-Neve sediment-hosted gold prospect, and several small, high-grade barite deposits.

Historic work has identified several mineral occurrences on or very close to the Property including the Bailes, Racicot (Moose), and Gary (Gargantua) barite deposits, the Bremner and Hasten Zn-Pb-Ag-barite prospects, and the Sim W prospect. That work also identified other geophysical and/or geochemical anomalies that may indicate potential for sedex Zn-Pb-Ag-barite, bedded barite, intrusion-related gold, sediment-hosted (Carlin-type) gold or other styles of mineralization on the property. Several prospects and anomalies have been identified for follow-up prospecting and soil sampling.

Historic drilling on the Bremner and Hasten prospects encountered quartz veining, and/or silicification and disseminated pyrite in shale of the Earn Group and/or silty limestone (Sapper Formation). This alteration and mineralization may have potential for sediment-hosted gold, but was previously only sampled for base metals. The Bremner drill core is available in the Bostock Core Library and should be logged and re-sampled for gold and pathfinder elements. The Hasten drill core may be located at the Cominco Nidd site, and it should be logged and sampled also, if it can be found.

The 2011 Fugro survey provides a very detailed series of magnetic and resistivity images that will be very useful in future geological mapping and exploration. Initial interpretation has identified several interesting anomalies and structural breaks, however, additional processing and interpretation is needed.

Silt sampling (103 samples) conducted in 2011 has identified several promising anomaly clusters (A-F) worthy of follow-up, including both Au-As-Mo-W and base-metal targets. Only very limited rock and soil sampling was completed in 2011, and more follow-up work is needed.

Recommendations for future work include:

PHASE 1

1. Compile all historic soil, stream sediment, rock sample data and VLF-EM anomalies using a GIS system, and compare patterns with the new stream sediment and Fugro airborne EM results.

2. Re-process the Fugro geophysical data and prepare shaded images for magnetic total field, vertical gradient, tilt derivative and all resistivity layers. Have a geologist familiar with the area complete a thorough interpretation of the geology based on the pre-processed images to identify magnetic breaks, offsets, and anomalies that may be associated with mineralization.

3. Re-log and sample the historic drill core from the Bremner prospect, which is available at the Bostock core library in Whitehorse, for gold and pathfinder elements. Do the same with Hasten drill core if it can be located.

4. Follow-up the anomalous 2011 Au, As and base-metal stream sediment values with prospecting traverses and small soil grids, particularly for anomalous Clusters A-F.

5. Complete reconnaissance prospecting and contour soil sampling in the vicinity of the structural breaks A and B identified from the Fugro airborne survey (Figures 7 to 12), plus any new features identified by re-processing and interpretation of this data. Structural breaks A and B occur in areas with little past exploration. The NE trending break A is transverse to the structural grain, and is not recognized as a fault in the regional geological mapping in the area. It may represent an unmapped growth fault that could be associated with sedex mineralization.

PHASE 2

1. Contingent on the success of Phase 1, follow-up anomalies and targets identified in Phase 1 with detailed soil sampling, ground geophysics, prospecting and trenching and/or diamond drilling.

PROPOSED BUDGET

PHASE 1

GIS Compilation of historic geophysical and geochem data	$10,000
Reprocessing and Interpretation of Fugro data	10,000
Re-sampling and assaying of Bremner and Hasten drill core for Au	10,000
Prospecting and soils (60 man-days, 100 rock samples, 1600 soils)	75,000
Camp costs ($400 per man-day)	25,000
Helicopter (40 hours)	40,000
Planning, supervision, reports	20,000
Contingency	10,000
Total	$200,000

PHASE 2 (Contingent on success of Phase 1)

Soil sampling, ground geophysics, trenching and/or drilling of anomalies identified in Phase 1 (incl. camp and helicopter) $500,000

14.0 EXPENDITURES

The following is a statement of expenditures for work completed on the North Canol Property. It covers only those 661 claims that were in good standing during the period of the work program documented in this report.

Group 1 = NS Claims (333 claims)

FUGRO EM SURVEY	380 line-km @ $196.94/km	$ 74,838.77
PROSPECTING AND SILT SAMPLING PROGRAM		
GEOLOGIST:	2 days @ $750	1,500.00
PROSPECTORS:	4 days @ $500	2,000.00
SAMPLERS:	4 days @ $450	1,800.00
ANALYSES:	40 SOIL/SILT SAMPLES @ $21.08	843.20
HELICOPTER:	4 HOURS @ $1250	5,000.00
FUEL:		739.00
FOOD+ACCOM.:	10 mandays @ $400	4,000.00
SUPPLIES, FREIGHT, TRAVEL AND MISCELLANEOUS:		1,000.00
REPORT PREPARATION:		5,000.00
TOTAL COSTS:		**$ 96,720.98**

Group 2 = BR Claims (328 claims)

FUGRO EM SURVEY	361 line-km @ $196.94/km	$ 71,096.84
PROSPECTING AND SILT SAMPLING PROGRAM		
GEOLOGIST:	2 days @ $750	1,500.00
PROSPECTORS:	4 days @ $500	2,000.00
SAMPLERS:	4 days @ $450	1,800.00
ANALYSES:	19 ROCK SAMPLES @ $30.05	570.95
	46 SOIL/SILT SAMPLES @ $21.08	969.28
HELICOPTER:	4 HOURS @ $1250	5,000.00
FUEL:		739.00
FOOD+ACCOM.:	10 mandays @ $400	4,000.00
SUPPLIES, FREIGHT, TRAVEL AND MISCELLANEOUS:		1,000.00
REPORT PREPARATION:		5,000.00
TOTAL COSTS:		**$ 93,676.07**

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16.0 QUALIFICATIONS

I, Michael S. Cathro, of 2560 Telford Place, Kamloops, British Columbia, hereby certify that:

I have been a registered professional geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) since 1992 (Reg.# 19093).

I am a graduate of Queens University, Kingston, Ontario with a B.Sc (Honours) in Geological Sciences (1984), and a graduate of the Colorado School of Mines, Golden, Colorado with a M.Sc. in Geology (1992). My Master's thesis topic was the Geology and Mineral Deposits of the Ketza River District, Yukon Territory.

I am presently employed as a consulting geologist, President of Cathro Resources Corp., Kamloops, BC, and Vice-President of Virginia Energy Resources Inc.

I have been working as a professional geologist in mineral exploration, exploration management, geological research, and administration of mine and exploration permitting and compliance on a semi-continuous basis since 1984.

My career has given me experience in precious and base metal, industrial minerals, uranium, coal, tantalum-niobium, and rare earth element exploration primarily in British Columbia, Yukon, Western USA, Australia and the southwest Pacific. In addition, during the summers between 1980 and 1983, I worked as a field assistant on metals exploration projects in Yukon and northern British Columbia.

I have published numerous research papers and made presentations on the geology of porphyry copper-gold-molybdenum, epithermal gold, and intrusion-related gold deposits, and exploration topics, primarily in British Columbia.

Michael S. Cathro, M.Sc., P.Geo.
March 29, 2012

Appendix 1
Sample Descriptions

North Canol Rock Samples

Sample	Easting	Northing	Rock Type	Mineralization	Alteration	Veins	Description	Style	Source	Class	Comments	Certificate
1095409	436654	6993277							Outcrop		AT rock sample July 23rd 2011	WHI11000898
1095410	436643	6993272							Outcrop		AT rock sample July 23rd 2011	WHI11000898
1095411	436636	6993269							Outcrop		AT rock sample July 23rd 2011	WHI11000898
1095412	436632	6993281							Outcrop		AT rock sample July 23rd 2011	WHI11000898
1095413	437155	6993063	Qtz Vein in Shale/Ss		Rusty weathering	Qtz vein talus	Composite of white to rusty weathering quartz vein talus up to 5 cm in area of small chip shale-silt	Grab	Float	High Grade	3T's area	WHI11001263
1095414	437031	6993124	Qtz Vein	Limonite	Rusty weathering	Quartz	Rusty, +/- drusy quartz with limonite fractures from few cm to 15 by 20 cm talus	Grab	Float	High Grade	3T's area	WHI11001263
1095415	437031	6993124	Qtz Vein			Quartz	White quartz vein talus up to 7cm wide, possible trend 060	Grab	Float	High Grade	3T's area	WHI11001263

1095416	436916	6993167	Basaltic Mafic Sill		Rusty		Rusty, blocky weathering, soft basaltic mafic sill, noncalcareous ; 3TB wpt is outcrop of flat mafic	Grab	Outcrop	Representative	3T's area	WHI11001263
1095417	436633	6993279	Qtz Veins in Shale		Rusty	Qtz Veins	Rusty weathering quartz veins (crosscutting or along foliation) in shale, up to 7cm wide, some drusy	Grab	Outcrop	Representative	3T's area	WHI11001263
1095418	436639	6993269	Qtz-Barite Veins		Rusty	Qtz-Barite Veins	Composite of rusty qtz-barite? veins throughout 15m wide rusty zone; some garlic smell - arsenopy?	Grab	Outcrop	Representative	3T's area	WHI11001263
1095419	436666	6993247	Qtz Veins		Rusty	Quartz	Chips across 30cm wide and 20cm wide rusty vein boulders near 1094525 soil	Chip	Subcrop	Representative	3T's area	WHI11001263
1095420	431239	6997115	Qtz Veins in Siltstone	Scorodite	Rusty	Quartz	6 cm wide quartz vein blocks (from cirque wall?), cutting siltsone,+/- rusty with scorodite	Grab	Float	High Grade	757 As area	WHI11001263
1095421	431245	6997137	Shale	Pyrite, Scorodite, trace Malachite			Black shales with pyrite, scorodite and very trace malachite	Grab	Float	Representative	757 As area	WHI11001263

1095422	431182	6997205	Qtz Vein	Limonite		Qtz Vein	White qtz vein boulders to 0.7x0.5m, rusty lim fract, hosted in SS, poss trend 070, foliation 040/45	Grab	Float	Representative	757 As area	WHI11001263
1095423	431087	6997209	Qtz Vein	Arsenopyrite	Sericite	Qtz Vein	5cm QV blocks in cirque with 2% aspy in qtz and finer aspy in adjacent yel ser alt qtz monz host	Grab	Float	Representative	757 As area	WHI11001263
1095424	431084	6997234	Qtz Monzonit e	Arsenopyrite		Qtz Vein Breccia	15cm block of f.g. qtz monz with aspy, cut by qtz brx vein with qtz matrix & siltst frags with aspy	Grab	Float	High Grade	757 As area	WHI11001263
1095425	430987	6997323	Qtz vein breccia	Arsenopyrite		Qtz Vein Breccia	20cm block of brecciated qtz vein with aspy in qtz monz host, in area of qtz -monz outcrop in cirque	Grab	Float	High Grade	757 As area	WHI11001263
1095426	431040	6997281	Qtz breccia vein	Trace Py		Qtz breccia vein	10cm quartz breccia vein with siltsone clasts in white quartz matrix, trace pyrite, trend 180/60	Grab	Float	High Grade	757 As area	WHI11001263
1095427	431068	6997247	Qtz vein	Hematite	Rusty, hematite altered	20cm wide Qtz vein	20cm white quartz vein, rusty weathering, ribboned with seds, hematite altered, some siltsone clast	Grab	Float	High Grade	757 As area	WHI11001263

1095428	437119	6992643	Qtz vein		Rusty	20cm wide Qtz vein	Weak rusty white quartz vein talus with lots up to 50cm, cutting seds near basalt sill	Grab	Float	High Grade	White area	WHI11001263
1095429	437119	6992643	Brecciated quartz vein		Rusty	Qtz boulders to 50cm	Intensely rusty brecciated quartz as boulders up to 50 cm, near basalt sill	Grab	Float	High Grade	White area	WHI11001263
1095430	437123	6992638	Quartz vein	Minor mariposite	Sericite altered seds	Qtz veins	Quartz veins cutting pyritic sericite altered seds, minor mariposite	Grab	Outcrop	High Grade	White area	WHI11001263
1095431	437126	6992637	Quartz vein	Pyrite	Sericite altered seds	Qtz veins	30cm pyritic quartz vein in sericite altered sedimentary rock	Grab	Outcrop	High Grade	White area	WHI11001263

North Canol Soil Samples

Sample	Easting	Northing	Depth_cm	Horizon	Color	Comments	Type	Certificate
1094520	436916	6993167	15	C	Yellow	Yellow C talus fine in area of rusy mafic sill, blocky SS and chert pebble congl, near 1095416 AT	Soil	WHI11001209
1094521	436917	6993172	15	C	Red Brown	Rusty brown C talus, 5m above 1095416, AT - 3Ts Zone	Soil	WHI11001209
1094522	436635	6993275	15	C	Red Brown	Rusty orange to red C horizon soil, bit clayey, at top of ridge, in centre of zone near 1094511 soil	Soil	WHI11001209
1094523	436642	6993239	15	C	Black	C horizon talus fines in black graphitic shale - 3 T's Zone	Soil	WHI11001209
1094524	436651	6993245	15	C	Black	Black to weak rusty C horizon in black graphitic shale, clayey, at contact with rusty 3T's Zone	Soil	WHI11001209
1094525	436666	6993244	15	C	Red Brown	Red-brown, rusty C horizon soil in area of rusty subcrop	Soil	WHI11001209
1094526	436678	6993243	15	C	Red Brown	Red-brown, clayey C horizon soil with grey clayey material beneath	Soil	WHI11001209
1094527	436683	6993243	15	C	Orange Brown	Orange-brown soil, possibly as scree over more black shaley soil	Soil	WHI11001209
1094528	436692	6993245	15	C	Black	Black, moderately graphitic, shaley, clayey, C horizon in area of qtz vein float in scree - 3Ts Zone	Soil	WHI11001209
1094508	436667	6993281	0	B		Above gossan, grey, black shales, some qtz viening	Soil	WHI11000979
1094509	436654	6993277	0	B		Above gossan, dark black shales, minor qtz viening	Soil	WHI11000979
1094510	436643	6993272	0	B		start of gossan, brownish qtz veined gossanous preces.	Soil	WHI11000979
1094511	436636	6993269	0	B		nice red brown gossan. heart of zone.	Soil	WHI11000979
1094512	436632	6993281	0	B		20m West of 571, even better red brown soil.	Soil	WHI11000979
1094513	436625	6993265	0	B		blackish graphitic sheared shale.	Soil	WHI11000979
1094514	419790	7004409	0	B		ridge	Soil	WHI11000979
1094515	419810	7004371	0	B		ridge	Soil	WHI11000979
1094516	419833	7004330	0	B		ridge	Soil	WHI11000979
1094517	419931	7004209	0	B		ridge	Soil	WHI11000979

North Canol Silt Samples

Sample	Easting	Northing	Stream Depth (cm)	Stream Width (m)	Flow	Color	Comments	Certificate
1095543	431067	6997264	0	0			Fine silt/soil at edge of small lake, above lake.	WHI11001209
1095045	434864	6996627	0	0				WHI11000980
1095521	435050	6998400	15	1	Fast	Dark Brown	Stream basin in meadow - location estimated from GPS track	WHI11000980
1095522	432490	7001104	1	1	Fast	Dark Brown	Bowl meadow with 2 streams	WHI11000980
1095523	432497	7001136	10	1	Slow	Dark Brown	Meadow surrounded by bowl	WHI11000980
1095524	430728	7002541	10	2	Fast	Red Brown	Middle of stream	WHI11000980
1095525	429252	7003207	25	2	Med		Below scree outcrop	WHI11000980
1095526	427460	7005536	15	1	Fast	Med Brown	steam in veagatated meadow	WHI11000980
1095527	424505	7005754	20	1	Fast	Red Brown	meadow surrounded by ridge	WHI11000980
1095528	424508	7005826	10	2	Slow	Med Brown	Slow moving stream	WHI11000980
1095529	422882	7003799	10	1	Fast	Med Brown	main stream	WHI11000980
1095530	422601	7004995	5	1	Slow	Dark Brown	Braided stream in meadow	WHI11000980
1095531	419752	7005954	5	2	Fast	Red Brown	Below outcrop	WHI11000980
1095532	418351	7004279	20	2	Fast	Med Brown	Boulder and shale bed	WHI11000980
1095533	432529	6998913	20	2	Fast	Grey	Rocky ftream	WHI11000980
1095534	431386	6999407	10	1	Fast	Red Brown	broad veagatated valley with sree and talus mountains and granite boulders in streambed	WHI11000980
1095535	432865	6995336	5	2	Med	Dark Brown	Gravel bar	WHI11000980
1095536	436402	6993074	5	1	Fast	Dark Brown	just before two creeks meet	WHI11000980
1095101	438114	6994678	15	2	Med	Med Brown		WHI11000980
1095102	433152	7001447	20	2	Med	Med Brown		WHI11000980
1095103	433197	7001471	15	3	Med	Dark Brown		WHI11000980
1095104	431371	7003618	70	3	Med	Orange Brown		WHI11000980
1095105	429143	7003895	30	2	Fast	Orange Brown		WHI11000980
1095106	427543	7004901	15	2	Med	Med Brown		WHI11000980
1095107	422838	7005846	30	3	Med	Med Brown	sparkling	WHI11000980
1095108	422837	7005875	20	2	Med	Dark Brown	sparkling	WHI11000980
1095109	424889	7005864	15	1	Med	Dark Brown		WHI11000980
1095110	421409	7006023	20	3	Med	Med Brown		WHI11000980
1095111	416848	7006270	20	3	Med	Red Brown		WHI11000980
1095112	416763	7005564	10	1	Fast	Dark Brown		WHI11000980
1095113	415887	7006148	10	1	Med	Dark Brown		WHI11000980
1095114	431755	6997520	20	2	Med	Orange Brown		WHI11000980
1095115	436115	6993318	15	2	Med	Yellow Brown		WHI11000980
1095783	436725	6996414	20	1	Med	Med Brown		WHI11000980

1095784	435114	6999343	50	2	Med	Med Brown		WHI11000980
1095785	432755	7001753	10	0	Med	Med Brown		WHI11000980
1095786	430391	7001946	20	1	Med	Med Brown		WHI11000980
1095787	430351	7001946	65	4	Fast	Light Brown		WHI11000980
1095788	429656	7004647	20	2	Med	Red Brown		WHI11000980
1095789	427385	7004495	10	1	Med	Med Brown		WHI11000980
1095790	421939	7007098	45	6	Med	Med Brown		WHI11000980
1095791	425419	7004857	15	2	Med	Med Brown		WHI11000980
1095792	423239	7004617	50	2	Fast	Med Brown		WHI11000980
1095793	423231	7004607	60	2		Med Brown		WHI11000980
1095794	416964	7005977	20	1	Med	Red Brown		WHI11000980
1095795	416987	7005978	30	2	Med	Med Brown		WHI11000980
1095796	431722	6998555	30	4	Med	Med Brown		WHI11000980
1095797	431228	6997142	25	0	Med	Red Brown		WHI11000980
1095798	436156	6993276	10	1	Med	Med Brown		WHI11000980
1095799	436160	6993291	10	1	Med	Med Brown		WHI11000980
1095684	437072	6995245	15	2	Slow	Med Brown	coarse sifted	WHI11000980
1095685	437077	6995262	15	2	Med	Light Brown	coarse sifted	WHI11000980
1095686	433451	7003413	30	3	Med	Black	coarse sifted	WHI11000980
1095687	432876	7003640	10	1	Med	Red Brown	coarse sifted	WHI11000980
1095688	428957	7005092	50	4	Med	Red Brown	coarse sifted	WHI11000980
1095689	427836	7002775	35	5	Med	Light Brown	coarse sifted	WHI11000980
1095690	427086	7005493	20	3	Med	Med Brown	coarse sifted	WHI11000980
1095691	426030	7004471	35	2	Slow	Light Brown	coarse sifted	WHI11000980
1095692	423274	7004007	25	3	Med	Light Brown	coarse sifted	WHI11000980
1095693	421468	7004631	25	2	Slow	Light Brown	coarse sifted	WHI11000980
1095694	420103	7005135	25	3	Fast	Light Brown	coarse sifted	WHI11000980
1095695	417344	7005283	25	3	Med	Red Brown	coarse sifted	WHI11000980
1095696	417438	7005336	25	3	Med	Red Brown	coarse sifted	WHI11000980
1095697	415959	7005658	20	2	Med	Red Brown	coarse sifted	WHI11000980
1095698	430228	6998816	35	4	Slow	Light Brown	coarse sifted	WHI11000980
1095699	434044	6995377	40	3	Med	Dark Brown	coarse sifted	WHI11000980
1095700	435170	6995653	25	2	Fast	Dark Brown	coarse sifted	WHI11000980
1274351	435448	6993905	25	2	Fast	Red Brown	coarse sifted	WHI11000980
1095576	437375	6995087	25	2	Med	Light Brown		WHI11000980
1095577	433162	7001875	20	1	Slow	Med Brown		WHI11000980
1095578	433206	7001878	20	3	Med	Orange		WHI11000980
1095579	431103	7002748	10	1	Med	Dark Brown		WHI11000980
1095580	428439	7003699	35	3	Fast	Orange Brown		WHI11000980
1095581	426478	7006134	10	3	Med	Med Brown		WHI11000980
1095582	423499	7004406	10	1	Slow	Light Brown		WHI11000980
1095583	421457	7005206	25	2	Med	Grey White		WHI11000980
1095584	418344	7006503	10	2	Med	Orange Brown		WHI11000980

1095585	432666	6997401	35	3	Fast	Grey		WHI11000980
1095586	432615	6997407	20	2	Fast	Orange Brown		WHI11000980
1095587	432092	6995854	10	1	Fast	Grey		WHI11000980
1095588	436423	6993106	10	1	Med	Orange Brown		WHI11000980
1274401	433609	7001312	25	2	Med	Dark Brown		WHI11000980
1274402	431539	7004639	30	5	Med	Black		WHI11000980
1274403	429029	7004733	15	4	Slow	Red Brown		WHI11000980
1274404	428721	7004290	35	4	Fast	Red Brown		WHI11000980
1274405	425195	7007416	10	3	Med	Black		WHI11000980
1274406	425472	7004801	10	2	Med	Dark Brown		WHI11000980
1274407	425490	7004811	10	2	Med	Dark Brown	very shiney bits	WHI11000980
1274408	424515	7003389	45	6	Slow	Grey		WHI11000980
1274409	419406	7006401	15	3	Med	Red		WHI11000980
1274410	417797	7004755	15	4	Med	Red Brown		WHI11000980
1274411	419438	7004245	10	2	Slow	Red Brown		WHI11000980
1274412	432348	6998256	15	2	Slow	Black		WHI11000980
1274413	432255	6998207	20	5	Med	Dark Brown		WHI11000980
1274414	431632	6998593	25	2	Med	Dark Brown		WHI11000980
1274415	433015	6993944	10	1	Slow	Black		WHI11000980
1274416	438150	6993633	15	1	Med	Black		WHI11000980
1095804	439196	6992831	30	3	Fast	Dark Brown		WHI11001873
1274356	434244	6990710	30	5	Fast	Dark Brown		WHI11001873
1274357	433315	6990873	15	2	Med	Med Brown		WHI11001873
1274358	432624	6990639	15	2	Med	Med Brown	metalic flakes ?	WHI11001873
1274359	433462	6990853	10	1	Slow	Med Brown	slow flowing drainage	WHI11001873
1274360	434599	6990781	30	2	Med	Med Brown	slow flowing drainage	WHI11001873

Appendix 2
Assay Certificates

AcmeLabs Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada

www.acmelab.com

Client: **Golden Ridge Resources Ltd**
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Submitted By:	Linda Dandy
Receiving Lab:	Canada-Whitehorse
Received:	August 08, 2011
Report Date:	September 14, 2011
Page:	1 of 2

CERTIFICATE OF ANALYSIS WHI11000898.2

CLIENT JOB INFORMATION

Project:	Nidd South Property
Shipment ID:	#1
P.O. Number	
Number of Samples:	4

SAMPLE DISPOSAL

DISP-PLP	Dispose of Pulp After 90 days
DISP-RJT	Dispose of Reject After 90 days

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-500	4	Crush, split and pulverize 500 g rock to 200 mesh			VAN
3B	4	Fire assay fusion Au by ICP-ES	30	Completed	VAN
1DX	4	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN
8X	2	X-Ray fluorescence / Fusion		Completed	VAN

ADDITIONAL COMMENTS

Version 2 : 8X-Ba included.

Invoice To: Golden Ridge Resources Ltd
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6
Canada

CC: Dugald Dunlop
Adam Travis

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada
Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Golden Ridge Resources Ltd**
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Project: Nidd South Property
Report Date: September 14, 2011

CERTIFICATE OF ANALYSIS WHI11000898.2

	Method	WGHT	3B	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01
1095409	Rock	2.19	<2	0.6	551.9	6.3	107	24.1	13.5	1.4	49	1.80	179.5	<0.5	1.4	23	2.4	320.6	<0.1	24	0.09
1095410	Rock	2.03	<2	0.3	13.6	17.1	16	0.9	5.3	0.2	56	0.83	20.5	1.5	0.6	9	0.2	9.9	<0.1	9	<0.01
1095411	Rock	2.50	<2	3.4	48.8	10.6	166	0.4	63.5	32.0	1255	5.54	4.3	<0.5	11.6	481	0.6	3.0	<0.1	111	2.29
1095412	Rock	1.50	<2	0.6	1.7	8.9	17	0.1	0.7	<0.1	15	0.18	1.6	1.6	0.1	74	0.2	0.6	<0.1	14	0.02

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Client: **Golden Ridge Resources Ltd**
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Project: Nidd South Property
Report Date: September 14, 2011

CERTIFICATE OF ANALYSIS WHI11000898.2

	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	8X
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Tl	S	Sc	Se	Ga	Te	Ba
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	0.1	0.5	1	0.2	0.01
1095409	Rock	0.058	4	10	<0.01	>10000	0.007	<20	1.91	<0.001	0.14	<0.1	4.54	0.4	<0.05	1.0	8.5	5	<0.2	6.40
1095410	Rock	0.009	1	7	<0.01	>10000	0.002	<20	0.73	0.003	0.07	<0.1	0.10	0.3	<0.05	0.8	1.0	2	<0.2	2.21
1095411	Rock	0.308	65	9	1.78	1726	0.597	<20	4.10	1.223	0.69	0.2	0.03	0.6	0.08	1.7	0.5	10	<0.2	N.A.
1095412	Rock	0.010	<1	2	<0.01	3240	0.002	<20	0.04	0.004	<0.01	0.2	0.04	<0.1	<0.05	0.3	<0.5	<1	<0.2	N.A.

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Report Date: September 14, 2011

QUALITY CONTROL REPORT WHI11000898.2

	Method	WGHT	3B	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01
Pulp Duplicates																					
1095409	Rock	2.19	<2	0.6	551.9	6.3	107	24.1	13.5	1.4	49	1.80	179.5	<0.5	1.4	23	2.4	320.6	<0.1	24	0.09
REP 1095409	QC																				
1095411	Rock	2.50	<2	3.4	48.8	10.6	166	0.4	63.5	32.0	1255	5.54	4.3	<0.5	11.6	481	0.6	3.0	<0.1	111	2.29
REP 1095411	QC		<2																		
Reference Materials																					
STD DS8	Standard			13.2	107.3	126.4	314	1.8	38.5	7.5	629	2.49	24.7	103.1	6.5	62	2.3	3.3	5.6	42	0.73
STD MICA-MG(D)	Standard																				
STD OREAS45CA	Standard			0.9	468.2	21.9	62	0.3	247.5	87.9	936	14.89	3.5	35.5	7.3	14	0.1	0.1	0.2	213	0.43
STD OXC88	Standard		189																		
STD OXH82	Standard		1287																		
STD SO-18	Standard																				
STD SY-4(D)	Standard																				
STD OXC88 Expected			203																		
STD OXH82 Expected			1278																		
STD DS8 Expected				13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	4.8	6.67	41.1	0.7
STD OREAS45CA Expected				1	494	20	60	0.275	240	92	943	15.69	3.8	43	7	15	0.1	0.13	0.19	215	0.4265
STD SY-4(D) Expected																					
STD SO-18 Expected																					
STD MICA-MG(D) Expected																					
BLK	Blank		<2																		
BLK	Blank		<2																		
BLK	Blank			<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01
BLK	Blank																				
Prep Wash																					
G1	Prep Blank		3	0.2	3.2	35.2	48	0.1	2.9	3.9	575	2.08	<0.5	1.0	6.1	59	<0.1	<0.1	<0.1	36	0.48

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QUALITY CONTROL REPORT WHI11000898.2

	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	8X
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Tl	S	Sc	Se	Ga	Te	Ba
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	0.1	0.5	1	0.2	0.01
Pulp Duplicates																				
1095409	Rock	0.058	4	10	<0.01	>10000	0.007	<20	1.91	<0.001	0.14	<0.1	4.54	0.4	<0.05	1.0	8.5	5	<0.2	6.40
REP 1095409	QC																			6.26
1095411	Rock	0.308	65	9	1.78	1726	0.597	<20	4.10	1.223	0.69	0.2	0.03	0.6	0.08	1.7	0.5	10	<0.2	N.A.
REP 1095411	QC																			
Reference Materials																				
STD DS8	Standard	0.079	14	118	0.63	291	0.107	<20	0.92	0.087	0.42	2.8	0.15	5.1	0.16	2.2	5.0	4	4.8	
STD MICA-MG(D)	Standard																			0.41
STD OREAS45CA	Standard	0.040	16	738	0.14	171	0.126	<20	3.52	0.008	0.07	<0.1	0.02	<0.1	<0.05	36.2	<0.5	18	<0.2	
STD OXC88	Standard																			
STD OXH82	Standard																			
STD SO-18	Standard																			0.06
STD SY-4(D)	Standard																			0.05
STD OXC88 Expected																				
STD OXH82 Expected																				
STD DS8 Expected		0.08	14.6	115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	5.4	0.1679	2.3	5.23	4.7	5	
STD OREAS45CA Expected		0.0385	15.9	709	0.1358	164	0.128		3.592	0.0075	0.0717		0.03	0.07	0.021	39.7	0.5	18.4		
STD SY-4(D) Expected																				0.034
STD SO-18 Expected																				0.0515
STD MICA-MG(D) Expected																				0.4
BLK	Blank																			
BLK	Blank																			
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.05	<0.1	<0.5	<1	<0.2	
BLK	Blank																			<0.01
Prep Wash																				
G1	Prep Blank	0.076	13	6	0.52	171	0.116	<20	0.92	0.079	0.47	<0.1	<0.01	0.3	<0.05	2.0	<0.5	5	<0.2	N.A.

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Submitted By:	Larry Nagy
Receiving Lab:	Canada-Whitehorse
Received:	August 22, 2011
Report Date:	October 07, 2011
Page:	1 of 2

CERTIFICATE OF ANALYSIS WHI11001263.1

CLIENT JOB INFORMATION

Project:	North Canol
Shipment ID:	
P.O. Number	
Number of Samples:	19

SAMPLE DISPOSAL

STOR-PLP	Store After 90 days Invoice for Storage
STOR-RJT	Store After 90 days Invoice for Storage

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	19	Crush, split and pulverize 250 g rock to 200 mesh			WHI
3B	19	Fire assay fusion Au by ICP-ES	30	Completed	VAN
1DX	19	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Golden Ridge Resources Ltd
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6
Canada

CC: Adam Travis
M. Cathro
J.P

BRITISH COLUMBIA CERTIFIED ASSAYER
RAYMOND CHAN
CHIEF ASSAYER

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Project: North Canol
Report Date: October 07, 2011

CERTIFICATE OF ANALYSIS WHI11001263.1

	Method	WGHT	3B	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01
1095413	Rock	1.15	<2	0.4	6.4	4.5	9	<0.1	3.4	0.7	49	0.76	2.3	<0.5	0.7	9	<0.1	0.1	<0.1	3	0.01
1095414	Rock	2.04	<2	0.5	13.8	0.7	32	<0.1	4.1	1.1	72	0.77	25.6	<0.5	0.5	19	2.2	1.5	<0.1	4	0.18
1095415	Rock	1.41	<2	1.1	1.1	1.5	6	<0.1	1.0	0.3	32	0.45	4.7	1.1	0.2	4	<0.1	1.3	<0.1	3	<0.01
1095416	Rock	1.56	<2	3.2	116.9	8.0	1579	0.4	262.0	39.5	538	11.46	7.6	<0.5	10.6	75	10.4	2.4	<0.1	210	0.54
1095417	Rock	1.80	<2	0.7	6.2	1.2	30	0.4	4.2	1.0	47	0.63	13.7	<0.5	0.5	7	0.1	1.2	<0.1	6	<0.01
1095418	Rock	2.64	<2	0.1	5.0	0.6	5	0.7	1.8	0.3	30	0.43	11.1	<0.5	0.2	3	<0.1	18.7	<0.1	4	<0.01
1095419	Rock	1.69	<2	0.2	38.1	0.5	7	6.6	0.9	0.2	26	0.43	48.7	<0.5	0.2	2	0.3	143.1	0.1	<2	<0.01
1095420	Rock	0.97	<2	0.3	2.8	0.9	3	0.1	1.6	0.3	37	0.60	103.1	<0.5	0.5	3	<0.1	0.7	<0.1	4	0.06
1095421	Rock	0.77	8	4.3	99.0	28.4	39	4.8	75.9	8.0	74	3.29	23.4	0.6	3.6	28	0.8	4.7	0.3	36	1.05
1095422	Rock	1.49	<2	0.2	2.0	0.1	<1	<0.1	0.6	0.1	28	0.31	1.9	<0.5	0.4	<1	<0.1	0.4	<0.1	<2	<0.01
1095423	Rock	1.66	<2	0.6	3.4	18.4	16	0.7	3.1	4.3	209	2.29	>10000	<0.5	3.9	2	<0.1	1.9	1.2	3	0.12
1095424	Rock	1.93	<2	0.5	7.5	33.2	47	4.6	3.4	4.9	88	2.90	9988	1.4	8.6	5	<0.1	2.7	2.3	8	0.02
1095425	Rock	2.06	<2	1.6	2.1	95.4	7	3.8	2.6	2.6	161	1.12	4699	<0.5	0.8	3	0.1	25.5	6.4	3	0.02
1095426	Rock	1.52	8	2.2	11.1	118.2	8	3.6	3.1	0.6	41	1.63	4864	9.3	1.7	12	<0.1	16.7	0.4	6	<0.01
1095427	Rock	1.47	<2	13.9	12.6	1.0	2	<0.1	12.1	2.3	81	0.94	144.7	<0.5	0.9	1	<0.1	0.4	<0.1	<2	<0.01
1095428	Rock	1.59	<2	0.4	24.2	1.2	29	<0.1	2.3	0.4	32	2.85	193.2	<0.5	1.1	30	<0.1	3.8	<0.1	6	<0.01
1095429	Rock	1.65	<2	0.2	4.7	0.4	10	<0.1	1.6	0.4	58	0.60	20.0	<0.5	0.2	3	<0.1	1.2	<0.1	<2	0.01
1095430	Rock	1.66	7	1.4	18.6	6.5	47	0.2	12.7	13.3	536	3.67	221.1	7.2	11.4	168	2.8	1.8	<0.1	8	1.64
1095431	Rock	0.91	12	0.5	11.5	4.4	23	0.1	3.1	2.3	55	2.33	214.4	11.1	7.5	16	<0.1	1.2	<0.1	5	0.03

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Project: North Canol
Report Date: October 07, 2011

CERTIFICATE OF ANALYSIS WHI11001263.1

	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Tl	S	Sc	Se	Ga	Te
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	0.1	0.5	1	0.2
1095413	Rock	0.011	2	4	0.05	23	<0.001	<20	0.20	0.004	0.02	<0.1	<0.01	<0.1	<0.05	0.2	<0.5	<1	<0.2
1095414	Rock	0.021	<1	3	0.07	15	<0.001	<20	0.10	0.002	<0.01	<0.1	0.01	<0.1	<0.05	0.6	<0.5	<1	<0.2
1095415	Rock	0.003	<1	2	<0.01	25	<0.001	<20	0.04	0.001	0.02	<0.1	<0.01	<0.1	<0.05	<0.1	<0.5	<1	<0.2
1095416	Rock	0.356	57	173	1.47	3016	0.318	<20	7.41	0.009	0.43	<0.1	<0.01	0.1	<0.05	16.9	1.2	16	<0.2
1095417	Rock	0.011	2	2	<0.01	83	<0.001	<20	0.08	0.002	0.02	<0.1	<0.01	<0.1	<0.05	0.1	4.1	<1	<0.2
1095418	Rock	0.002	<1	2	<0.01	2023	0.002	<20	0.11	<0.001	0.01	<0.1	0.12	<0.1	<0.05	0.1	<0.5	<1	<0.2
1095419	Rock	0.002	<1	1	<0.01	1785	<0.001	<20	0.05	0.001	0.01	<0.1	1.19	<0.1	<0.05	0.2	1.0	<1	<0.2
1095420	Rock	0.053	2	2	<0.01	28	<0.001	<20	0.02	0.003	<0.01	0.1	<0.01	<0.1	<0.05	<0.1	1.4	<1	<0.2
1095421	Rock	0.467	16	14	0.14	122	0.003	<20	0.60	0.013	0.15	0.1	<0.01	0.1	2.60	0.8	29.0	2	0.3
1095422	Rock	0.001	4	1	<0.01	4	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.05	<0.1	<0.5	<1	<0.2
1095423	Rock	0.021	7	2	0.04	40	0.001	<20	0.26	0.005	0.19	0.5	<0.01	0.2	0.41	1.2	1.2	<1	<0.2
1095424	Rock	0.047	24	3	0.05	120	0.001	<20	0.44	0.005	0.32	1.8	<0.01	0.3	0.54	2.3	1.2	1	<0.2
1095425	Rock	0.002	2	2	0.02	35	0.002	<20	0.13	0.003	0.06	0.8	<0.01	0.1	0.19	1.2	<0.5	<1	<0.2
1095426	Rock	0.013	5	3	0.01	106	0.001	<20	0.16	0.005	0.09	0.8	<0.01	0.2	0.21	0.5	5.0	<1	<0.2
1095427	Rock	0.006	2	1	<0.01	30	<0.001	<20	0.04	0.002	0.01	0.4	<0.01	<0.1	<0.05	0.2	<0.5	<1	<0.2
1095428	Rock	0.071	2	7	<0.01	43	<0.001	<20	0.08	0.002	0.02	<0.1	<0.01	<0.1	0.07	0.6	1.5	<1	<0.2
1095429	Rock	0.005	<1	<1	<0.01	40	<0.001	<20	0.04	0.001	0.01	<0.1	<0.01	<0.1	<0.05	0.2	0.5	<1	<0.2
1095430	Rock	0.189	18	7	0.67	85	0.002	<20	0.50	0.005	0.27	<0.1	0.01	0.3	2.12	3.7	4.4	1	<0.2
1095431	Rock	0.072	14	4	0.02	392	<0.001	<20	0.22	0.003	0.12	<0.1	<0.01	0.2	0.27	1.4	6.2	<1	<0.2

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Project: North Canol
Report Date: October 07, 2011

QUALITY CONTROL REPORT WHI11001263.1

	Method	WGHT	3B	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01
Reference Materials																					
STD DS8	Standard			13.5	107.7	118.6	288	1.9	38.7	7.6	594	2.48	24.2	85.9	5.8	60	2.1	4.2	5.8	43	0.69
STD DS8	Standard			11.1	105.2	120.1	292	1.7	36.8	7.0	575	2.36	23.0	95.3	6.5	60	2.3	4.4	6.1	38	0.66
STD OREAS45CA	Standard			1.0	529.7	21.3	65	0.3	265.0	94.2	936	16.94	3.7	42.5	7.0	16	<0.1	<0.1	0.2	219	0.44
STD OREAS45CA	Standard			0.9	492.0	20.7	59	0.3	230.1	88.3	935	15.35	3.8	39.7	7.2	15	0.1	0.1	0.2	218	0.42
STD OXC88	Standard		208																		
STD OXH82	Standard		1156																		
STD OXH82	Standard		1328																		
STD OXC88 Expected			203																		
STD OXH82 Expected			1278																		
STD DS8 Expected				13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	4.8	6.67	41.1	0.7
STD OREAS45CA Expected				1	494	20	60	0.275	240	92	943	15.69	3.8	43	7	15	0.1	0.13	0.19	215	0.4265
BLK	Blank		<2																		
BLK	Blank		<2																		
BLK	Blank		<2																		
BLK	Blank		<2																		
BLK	Blank			<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01
BLK	Blank			<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01
Prep Wash																					
G1	Prep Blank		<2	<0.1	2.3	3.1	43	<0.1	2.4	3.7	556	1.90	<0.5	<0.5	5.4	59	<0.1	<0.1	<0.1	36	0.50
G1	Prep Blank		<2	0.1	2.1	2.9	48	<0.1	2.6	4.2	578	2.00	0.6	<0.5	5.8	61	<0.1	<0.1	<0.1	39	0.49

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Client: **Golden Ridge Resources Ltd**
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Project: North Canol
Report Date: October 07, 2011

QUALITY CONTROL REPORT WHI11001263.1

	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Tl	S	Sc	Se	Ga	Te
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	MDL	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	0.1	0.5	1	0.2
Reference Materials																			
STD DS8	Standard	0.070	13	112	0.59	272	0.108	<20	0.90	0.083	0.40	2.6	0.19	5.2	0.17	1.9	5.0	4	4.9
STD DS8	Standard	0.075	13	105	0.58	272	0.097	<20	0.86	0.079	0.39	3.2	0.19	5.1	0.15	1.7	5.6	4	5.0
STD OREAS45CA	Standard	0.038	16	725	0.14	164	0.135	<20	3.87	0.009	0.07	<0.1	0.03	<0.1	<0.05	37.9	<0.5	20	<0.2
STD OREAS45CA	Standard	0.040	16	658	0.13	166	0.119	<20	3.60	0.008	0.07	<0.1	0.02	<0.1	<0.05	35.2	0.9	18	<0.2
STD OXC88	Standard																		
STD OXH82	Standard																		
STD OXH82	Standard																		
STD OXC88 Expected																			
STD OXH82 Expected																			
STD DS8 Expected		0.08	14.6	115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	5.4	0.1679	2.3	5.23	4.7	5
STD OREAS45CA Expected		0.0385	15.9	709	0.1358	164	0.128		3.592	0.0075	0.0717		0.03	0.07	0.021	39.7	0.5	18.4	
BLK	Blank																		
BLK	Blank																		
BLK	Blank																		
BLK	Blank																		
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.05	<0.1	<0.5	<1	<0.2
BLK	Blank	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.05	<0.1	<0.5	<1	<0.2
Prep Wash																			
G1	Prep Blank	0.072	13	4	0.46	138	0.118	<20	0.92	0.085	0.44	<0.1	<0.01	0.3	<0.05	2.0	<0.5	5	<0.2
G1	Prep Blank	0.073	13	4	0.49	157	0.129	<20	0.91	0.086	0.46	0.4	0.01	0.3	<0.05	2.0	<0.5	5	<0.2

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Client: **Golden Ridge Resources Ltd**
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Submitted By:	J.Lindsay
Receiving Lab:	Canada-Whitehorse
Received:	August 22, 2011
Report Date:	October 26, 2011
Page:	1 of 2

CERTIFICATE OF ANALYSIS WHI11001209.1

CLIENT JOB INFORMATION

Project:	North Canol
Shipment ID:	
P.O. Number	
Number of Samples:	10

SAMPLE DISPOSAL

STOR-PLP	Store After 90 days Invoice for Storage
STOR-RJT-SOIL	Store Soil Reject - RJSV Charges Apply

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	10	Dry at 60C			WHI
SS80	10	Dry at 60C sieve 100g to -80 mesh			WHI
RJSV	10	Saving all or part of Soil Reject			WHI
1DX2	10	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Golden Ridge Resources Ltd
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6
Canada

CC: Adam Travis
M. Cathro
J.P
Larry Nagy

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Client: **Golden Ridge Resources Ltd**
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Project: North Canol
Report Date: October 26, 2011

CERTIFICATE OF ANALYSIS WHI11001209.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
1094520	Soil	6.0	68.8	25.4	309	1.5	18.9	6.1	106	4.80	36.2	10.2	7.9	95	4.6	12.5	0.1	222	0.25	0.181	49
1094521	Soil	1.6	108.4	18.0	1009	0.6	37.2	18.4	291	12.55	26.9	2.2	10.3	374	14.9	5.3	0.1	107	0.25	0.477	92
1094522	Soil	2.4	84.8	21.0	18	5.3	5.3	0.4	12	8.62	242.4	<0.5	10.2	16	<0.1	438.9	0.4	21	<0.01	0.084	13
1094523	Soil	2.5	54.3	55.2	70	1.3	10.3	5.0	1074	4.85	70.5	<0.5	9.3	69	0.3	108.6	0.6	12	<0.01	0.049	21
1094524	Soil	5.5	23.8	39.6	24	2.3	4.7	0.9	26	2.00	70.2	1.5	6.5	22	<0.1	139.1	0.5	12	<0.01	0.038	24
1094525	Soil	1.1	46.8	12.6	72	0.8	5.1	3.7	42	8.43	48.4	0.8	4.3	21	<0.1	20.7	0.3	<2	<0.01	0.075	8
1094526	Soil	2.6	25.9	16.5	51	1.1	1.9	0.8	9	7.44	95.9	0.6	8.7	15	<0.1	50.0	0.4	3	<0.01	0.057	11
1094527	Soil	2.5	20.8	18.3	29	1.4	2.5	0.8	12	5.19	94.8	0.5	9.4	45	<0.1	70.1	0.4	3	<0.01	0.065	16
1094528	Soil	6.3	19.4	34.0	75	1.3	7.4	2.3	40	2.48	151.4	3.2	3.9	32	<0.1	38.6	0.4	11	<0.01	0.056	27
1095543	Silt	30.2	281.1	26.2	692	1.3	330.6	264.4	4862	5.36	1195	3.9	8.5	23	3.0	3.8	1.5	44	0.24	0.095	39

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West Kelowna BC V2T 2N6 Canada

Project: North Canol
Report Date: October 26, 2011

CERTIFICATE OF ANALYSIS WHI11001209.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1094520	Soil	50	0.37	827	0.014	1	2.49	0.009	0.22	<0.1	0.02	9.4	0.5	0.14	5	5.2	<0.2
1094521	Soil	67	0.63	2370	0.050	<1	3.70	0.024	0.52	<0.1	0.03	15.1	0.3	<0.05	7	4.4	<0.2
1094522	Soil	9	0.05	363	0.002	<1	0.82	0.005	0.18	0.2	2.24	5.7	0.9	0.23	8	16.3	<0.2
1094523	Soil	5	0.03	808	0.003	<1	0.39	0.004	0.11	0.1	0.14	1.8	0.9	0.15	2	9.2	<0.2
1094524	Soil	4	0.05	513	0.008	2	0.48	0.005	0.14	0.2	0.75	1.2	0.9	0.23	2	9.8	<0.2
1094525	Soil	3	<0.01	219	0.002	3	0.43	0.010	0.40	0.1	0.22	3.9	1.0	0.68	3	13.6	<0.2
1094526	Soil	3	0.02	255	0.002	2	0.32	0.004	0.16	0.1	0.30	2.4	0.9	0.22	3	12.5	<0.2
1094527	Soil	3	0.02	234	0.002	1	0.24	0.004	0.17	0.1	0.29	1.6	0.9	0.23	2	8.9	<0.2
1094528	Soil	7	0.04	472	0.005	<1	0.32	0.002	0.07	0.2	0.07	0.7	0.3	<0.05	1	7.6	<0.2
1095543	Silt	24	0.38	239	0.024	2	3.21	0.016	0.15	7.3	0.09	6.2	4.6	<0.05	6	2.6	<0.2

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Client: **Golden Ridge Resources Ltd**
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Project: North Canol
Report Date: October 26, 2011

QUALITY CONTROL REPORT WHI11001209.1

Method		1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
MDL		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
Pulp Duplicates																					
1094528	Soil	6.3	19.4	34.0	75	1.3	7.4	2.3	40	2.48	151.4	3.2	3.9	32	<0.1	38.6	0.4	11	<0.01	0.056	27
REP 1094528	QC	6.5	19.8	34.6	74	1.4	7.5	2.3	41	2.50	154.2	3.1	4.3	32	<0.1	39.2	0.5	11	<0.01	0.060	29
Reference Materials																					
STD DS8	Standard	13.3	109.0	123.3	312	1.8	39.0	7.3	603	2.49	23.4	110.5	6.6	64	2.1	5.2	6.0	40	0.68	0.076	16
STD DS8	Standard	13.9	110.5	132.5	329	1.9	38.8	7.6	631	2.55	26.1	113.3	7.5	76	2.5	6.6	7.2	43	0.71	0.079	17
STD DS8 Expected		13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7	0.08	14.6
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1

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Client: **Golden Ridge Resources Ltd**
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Project: North Canol
Report Date: October 26, 2011

QUALITY CONTROL REPORT WHI11001209.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																	
1094528	Soil	7	0.04	472	0.005	<1	0.32	0.002	0.07	0.2	0.07	0.7	0.3	<0.05	1	7.6	<0.2
REP 1094528	QC	6	0.04	494	0.005	9	0.34	0.003	0.07	0.2	0.07	0.8	0.3	<0.05	2	7.9	<0.2
Reference Materials																	
STD DS8	Standard	118	0.60	267	0.119	2	0.94	0.096	0.40	2.8	0.19	2.5	5.3	0.14	5	5.0	4.8
STD DS8	Standard	119	0.62	298	0.119	2	0.97	0.105	0.44	3.2	0.20	2.5	5.6	0.16	5	5.3	4.8
STD DS8 Expected		115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	2.3	5.4	0.1679	4.7	5.23	5
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2

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Client: **Golden Ridge Resources Ltd**
110-2300 Carrington Road West Kelowna
British Columbia V2T 2N6 Canada

Submitted By:	Linda Dandy
Receiving Lab:	Canada-Whitehorse
Received:	August 01, 2011
Report Date:	August 24, 2011
Page:	1 of 2

CERTIFICATE OF ANALYSIS WHI11000979.1

CLIENT JOB INFORMATION

Project:	Nidd South Property
Shipment ID:	#1
P.O. Number	
Number of Samples:	10

SAMPLE DISPOSAL

DISP-PLP	Dispose of Pulp After 90 days
DISP-RJT-SOIL	Immediate Disposal of Soil Reject

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
S230	10	Sieve to 230 mesh			WHI
1DX2	10	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Golden Ridge Resources Ltd
110-2300 Carrington Road West Kelowna
British Columbia V2T 2N6
Canada

CC: Dugald Dunlop
Adam Travis

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Client: **Golden Ridge Resources Ltd**
110-2300 Carrington Road West Kelowna
British Columbia V2T 2N6 Canada

Project: Nidd South Property
Report Date: August 24, 2011

CERTIFICATE OF ANALYSIS WHI11000979.1

	Method	WGHT	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
1094508	Soil		4.1	97.5	27.9	201	0.2	52.1	16.0	204	9.03	366.9	1.5	14.8	27	0.4	11.8	1.4	36	<0.01	0.178
1094509	Soil		8.9	30.1	58.1	97	1.9	16.0	3.7	90	6.28	271.1	0.8	11.4	146	0.2	43.5	0.5	62	0.03	0.170
1094510	Soil		4.6	102.4	19.5	43	5.7	12.8	1.8	45	5.67	219.8	1.2	6.9	14	<0.1	352.5	0.4	28	0.01	0.048
1094511	Soil		3.3	293.7	28.6	113	10.8	20.7	5.4	575	14.83	291.2	2.0	9.6	41	0.4	366.8	0.5	35	0.02	0.139
1094512	Soil		4.7	86.4	27.6	26	3.7	12.1	1.0	32	8.75	226.8	0.6	10.6	19	0.1	227.8	0.5	33	<0.01	0.095
1094513	Soil		2.6	7.1	81.1	14	0.9	1.8	0.4	12	1.77	33.2	<0.5	11.7	28	<0.1	52.9	0.9	6	<0.01	0.027
1094514	Soil		2.4	82.2	44.3	146	0.6	48.0	20.1	704	8.88	75.1	14.5	4.8	49	0.2	5.3	0.5	56	0.44	0.132
1094515	Soil		2.7	108.5	32.6	181	0.7	60.4	14.7	250	9.29	219.9	13.9	4.9	112	0.1	9.2	0.6	47	0.96	0.173
1094516	Soil		1.8	87.3	32.1	103	0.4	16.0	2.2	254	10.99	97.0	31.0	4.7	18	<0.1	3.6	0.4	50	0.07	0.086
1094517	Soil		1.9	77.9	27.4	197	0.8	47.8	9.7	341	15.36	95.7	24.1	3.7	38	<0.1	2.2	0.4	57	0.04	0.154

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www.acmelab.com

Client: **Golden Ridge Resources Ltd**
110-2300 Carrington Road West Kelowna
British Columbia V2T 2N6 Canada

Project: Nidd South Property
Report Date: August 24, 2011

CERTIFICATE OF ANALYSIS WHI11000979.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1094508	Soil	30	19	0.03	238	0.002	<1	0.76	0.003	0.07	<0.1	0.07	6.3	0.3	<0.05	2	3.8	0.2
1094509	Soil	37	25	0.19	153	0.072	2	1.20	0.052	0.40	0.1	0.27	2.7	1.2	0.85	5	10.4	<0.2
1094510	Soil	11	12	0.11	507	0.013	<1	1.32	0.008	0.17	0.2	2.47	3.7	1.0	0.16	6	16.3	<0.2
1094511	Soil	13	10	0.05	306	0.005	2	1.29	0.009	0.26	0.4	2.85	6.7	2.0	0.40	6	29.2	<0.2
1094512	Soil	15	11	0.11	158	0.012	<1	1.09	0.010	0.27	0.2	0.61	5.2	2.0	0.39	6	16.4	<0.2
1094513	Soil	32	3	0.01	1156	0.002	1	0.19	0.002	0.08	<0.1	0.10	0.9	0.5	<0.05	<1	13.7	<0.2
1094514	Soil	15	26	0.56	2061	0.032	<1	2.72	0.015	0.16	0.1	0.04	3.4	0.3	0.06	12	2.5	<0.2
1094515	Soil	12	22	0.59	1750	0.011	<1	3.62	0.038	0.23	<0.1	0.06	2.1	0.3	0.20	8	4.9	0.2
1094516	Soil	12	25	0.49	906	0.021	<1	2.19	0.007	0.09	<0.1	0.02	2.7	0.2	<0.05	10	2.9	0.2
1094517	Soil	11	23	0.54	720	0.034	<1	3.38	0.012	0.18	0.1	0.04	3.8	0.2	0.11	10	4.0	<0.2

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110-2300 Carrington Road West Kelowna
British Columbia V2T 2N6 Canada

Project: Nidd South Property
Report Date: August 24, 2011

QUALITY CONTROL REPORT WHI11000979.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
Reference Materials																					
STD DS8	Standard	15.0	123.5	137.4	341	2.0	37.2	8.7	676	2.72	27.7	127.1	7.9	77	2.5	6.6	7.5	48	0.77	0.076	16
STD DS8 Expected		13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7	0.08	14.6
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1

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QUALITY CONTROL REPORT WHI11000979.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Reference Materials																	
STD DS8	Standard	132	0.63	287	0.132	2	0.91	0.088	0.47	3.3	0.22	2.5	5.6	0.14	5	5.2	5.1
STD DS8 Expected		115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	2.3	5.4	0.1679	4.7	5.23	5
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2

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Client: **Golden Ridge Resources Ltd**
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Submitted By:	Linda Dandy
Receiving Lab:	Canada-Whitehorse
Received:	August 01, 2011
Report Date:	September 16, 2011
Page:	1 of 5

CERTIFICATE OF ANALYSIS WHI11000980.1

CLIENT JOB INFORMATION

Project:	Nidd South Property
Shipment ID:	#1
P.O. Number	
Number of Samples:	97

SAMPLE DISPOSAL

DISP-PLP	Dispose of Pulp After 90 days
DISP-RJT-SOIL	Immediate Disposal of Soil Reject

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	97	Dry at 60C			WHI
SS80	97	Dry at 60C sieve 100g to -80 mesh			WHI
RJSV	97	Saving all or part of Soil Reject			WHI
1DX2	97	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Golden Ridge Resources Ltd
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6
Canada

CC: Dugald Dunlop
Adam Travis

BRITISH COLUMBIA CERTIFIED ASSAYER
CLARENCE LEONG
GENERAL MANAGER

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Project: Nidd South Property
Report Date: September 16, 2011

CERTIFICATE OF ANALYSIS WHI11000980.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
1095045	Silt	6.5	54.6	29.5	250	0.4	70.3	39.1	927	4.47	40.3	2.9	4.5	12	0.5	2.3	0.4	29	0.04	0.099	9
1095101	Silt	8.1	57.8	24.0	346	1.2	69.3	14.9	562	3.80	46.2	2.8	2.2	30	4.4	7.3	0.2	29	0.10	0.162	13
1095102	Silt	7.5	31.4	15.8	90	3.2	11.5	6.9	162	24.75	92.2	3.1	3.6	4	0.2	14.3	0.2	181	0.02	0.243	2
1095103	Silt	8.2	125.9	32.7	325	2.3	130.8	156.0	5296	5.40	40.9	2.7	4.3	10	1.0	4.2	0.3	23	0.04	0.126	6
1095108	Silt	3.0	83.0	13.7	344	0.1	90.6	132.3	1750	3.02	200.6	1.7	6.3	35	0.9	2.9	0.5	31	0.27	0.048	34
1095109	Silt	2.2	41.6	10.7	298	<0.1	131.7	209.4	1501	3.04	49.8	<0.5	2.2	33	0.4	1.2	0.2	32	0.23	0.073	48
1095111	Silt	1.3	46.7	11.2	54	2.1	11.9	2.7	78	21.31	35.0	3.3	2.8	15	<0.1	1.4	0.2	28	0.02	0.082	3
1095112	Silt	1.2	43.7	15.1	88	0.7	16.4	4.9	124	16.14	99.1	4.3	1.1	24	<0.1	6.0	0.2	23	0.02	0.070	2
1095113	Silt	1.3	82.8	20.6	555	0.7	162.6	65.5	2551	5.44	33.5	4.8	2.1	37	0.7	3.0	0.2	22	0.05	0.088	3
1095114	Silt	42.1	47.5	5.7	73	0.7	14.7	17.2	155	30.88	233.9	0.8	12.5	4	0.2	7.5	0.1	415	0.03	0.481	5
1095115	Silt	2.5	20.0	1.7	81	0.2	4.1	4.6	149	36.52	4.2	<0.5	0.7	3	0.2	3.6	<0.1	<2	0.01	0.040	<1
1095110	Silt	0.9	37.4	9.8	361	<0.1	127.5	91.6	1077	2.11	146.2	9.3	10.1	102	0.8	1.1	1.0	41	0.75	0.043	27
1095104	Silt	20.4	11.4	10.0	46	0.4	4.9	3.6	249	8.44	38.3	<0.5	9.8	12	0.1	1.1	1.6	89	0.15	0.107	10
1095105	Silt	3.7	50.2	9.6	59	0.7	5.0	1.2	37	24.15	54.4	2.1	3.2	6	<0.1	2.9	0.1	31	<0.01	0.073	4
1095106	Silt	2.1	50.3	14.3	228	0.1	68.5	38.3	1016	3.73	263.2	9.0	7.8	73	0.2	2.2	0.7	45	0.42	0.061	19
1095107	Silt	0.3	19.3	7.8	57	<0.1	12.3	7.8	217	1.75	48.0	2.2	13.2	116	0.3	0.7	2.7	32	0.84	0.033	25
1095521	Silt	3.5	56.7	37.0	284	0.6	92.7	41.7	416	3.21	25.5	1.6	2.8	41	1.0	4.4	0.3	27	0.44	0.109	13
1095522	Silt	12.7	98.5	26.3	216	2.7	53.9	48.6	1344	6.55	40.0	4.0	2.7	9	0.3	10.1	0.3	35	0.06	0.117	18
1095523	Silt	6.7	29.1	15.0	780	1.6	77.4	50.4	1608	4.88	18.4	1.9	1.9	5	5.3	4.9	0.2	25	0.08	0.065	12
1095524	Silt	10.3	38.1	12.0	206	0.2	9.9	5.8	337	4.65	33.9	<0.5	12.8	16	0.3	0.8	2.6	55	0.22	0.094	18
1095525	Silt	4.9	38.9	13.1	74	1.2	6.6	1.3	28	23.45	73.4	4.1	3.6	9	0.1	3.7	0.1	61	0.02	0.095	5
1095526	Silt	2.1	38.5	13.9	207	0.2	84.2	45.1	691	3.41	190.3	5.4	6.6	72	0.5	2.0	0.5	42	0.36	0.058	18
1095527	Silt	2.7	50.5	15.0	332	0.2	100.4	46.8	1262	4.11	392.0	4.5	7.5	55	1.6	4.0	0.4	41	0.38	0.061	25
1095528	Silt	2.5	44.5	10.6	176	0.3	58.5	33.8	420	2.41	204.6	2.9	2.6	41	0.7	3.0	0.3	30	0.51	0.069	46
1095529	Silt	0.2	37.4	10.7	34	<0.1	8.1	8.3	239	2.21	77.6	4.3	9.3	117	<0.1	1.0	7.9	40	0.79	0.038	18
1095530	Silt	0.5	35.0	7.5	39	0.8	7.4	5.7	191	1.61	83.2	1.1	3.5	61	<0.1	0.6	0.8	52	0.75	0.044	22
1095531	Silt	2.2	34.6	19.2	70	0.5	17.9	5.5	195	7.05	111.0	3.4	6.4	50	0.1	4.7	0.4	44	0.29	0.095	12
1095532	Silt	3.5	102.0	23.7	83	2.8	22.0	3.3	110	8.91	88.5	15.1	3.9	48	<0.1	3.0	0.6	50	0.12	0.116	9
1095533	Silt	2.0	24.2	11.3	124	<0.1	36.5	16.7	314	3.14	16.1	1.0	4.8	16	0.3	1.3	0.1	27	0.07	0.055	13
1095534	Silt	1.5	18.6	13.0	121	0.2	18.8	14.0	393	2.50	201.1	0.9	7.6	49	0.4	0.7	1.1	51	0.38	0.063	21

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Project: Nidd South Property
Report Date: September 16, 2011

CERTIFICATE OF ANALYSIS WHI11000980.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1095045	Silt	24	0.41	77	0.005	1	3.10	0.003	0.05	<0.1	0.09	1.3	<0.1	0.40	3	2.2	<0.2
1095101	Silt	17	0.16	295	0.002	1	1.21	0.003	0.06	<0.1	0.09	0.9	0.2	0.13	2	7.0	<0.2
1095102	Silt	24	0.06	27	0.002	<1	0.44	0.001	0.02	<0.1	0.06	1.2	<0.1	2.77	1	9.9	<0.2
1095103	Silt	20	0.24	59	0.005	1	3.44	0.004	0.04	<0.1	0.11	1.1	0.2	0.41	3	3.4	<0.2
1095108	Silt	18	0.42	115	0.055	1	4.46	0.033	0.17	0.5	0.03	1.4	0.2	0.37	5	1.7	<0.2
1095109	Silt	26	0.40	97	0.030	<1	2.09	0.007	0.12	0.1	0.03	1.1	0.2	0.06	4	1.6	<0.2
1095111	Silt	19	0.15	49	0.003	<1	0.71	0.003	0.04	<0.1	0.04	1.4	<0.1	2.33	2	3.3	<0.2
1095112	Silt	9	0.04	90	<0.001	2	0.28	0.003	0.05	<0.1	0.07	1.6	<0.1	1.35	1	1.5	<0.2
1095113	Silt	14	0.08	300	<0.001	1	2.43	0.005	0.06	<0.1	0.13	4.0	<0.1	0.35	2	1.6	<0.2
1095114	Silt	45	0.06	27	0.009	<1	0.66	0.002	0.03	1.4	0.02	5.5	0.2	2.46	2	2.7	<0.2
1095115	Silt	3	0.02	25	0.001	<1	0.11	<0.001	<0.01	<0.1	<0.01	0.2	<0.1	4.23	<1	6.1	<0.2
1095110	Silt	20	0.64	254	0.090	<1	2.77	0.060	0.32	0.4	0.01	1.8	0.3	<0.05	6	<0.5	<0.2
1095104	Silt	10	0.21	58	0.036	<1	0.96	0.007	0.19	1.3	<0.01	1.8	0.4	0.59	4	1.6	<0.2
1095105	Silt	13	0.09	78	0.006	<1	0.40	0.002	0.03	0.1	0.03	0.8	0.3	1.83	2	4.6	<0.2
1095106	Silt	24	0.67	188	0.055	<1	2.67	0.034	0.25	0.9	0.02	2.2	0.3	<0.05	6	0.8	<0.2
1095107	Silt	19	0.59	236	0.078	<1	2.04	0.032	0.36	0.9	<0.01	2.3	0.4	<0.05	6	<0.5	<0.2
1095521	Silt	23	0.40	360	0.004	1	1.23	0.007	0.08	<0.1	0.11	1.1	0.1	0.08	3	1.8	<0.2
1095522	Silt	16	0.28	104	0.006	<1	1.41	0.003	0.04	0.1	0.13	1.0	0.3	0.14	2	10.3	<0.2
1095523	Silt	11	0.18	83	0.007	<1	1.92	0.003	0.03	0.1	0.08	0.5	0.6	<0.05	3	8.2	<0.2
1095524	Silt	9	0.29	101	0.048	<1	1.43	0.011	0.25	1.7	0.02	2.1	0.4	0.16	5	1.2	<0.2
1095525	Silt	12	0.09	151	0.007	<1	0.61	0.004	0.03	0.2	0.05	1.2	0.3	1.46	3	6.5	<0.2
1095526	Silt	26	0.61	185	0.054	<1	2.37	0.023	0.21	0.7	0.01	1.9	0.3	<0.05	6	0.9	<0.2
1095527	Silt	20	0.53	164	0.065	<1	2.38	0.035	0.19	0.8	0.02	1.9	0.3	<0.05	6	1.6	<0.2
1095528	Silt	16	0.41	116	0.050	2	3.05	0.022	0.15	0.6	0.06	1.2	0.2	0.17	4	5.3	<0.2
1095529	Silt	26	0.80	203	0.109	<1	2.87	0.030	0.47	1.2	<0.01	3.4	0.5	<0.05	9	<0.5	<0.2
1095530	Silt	18	0.48	161	0.054	<1	2.13	0.045	0.21	0.7	0.02	1.1	0.2	0.05	7	0.9	<0.2
1095531	Silt	23	0.51	396	0.044	<1	1.80	0.023	0.19	0.2	0.02	2.1	0.3	0.38	6	2.0	<0.2
1095532	Silt	40	0.44	573	0.026	<1	2.21	0.016	0.11	0.2	0.07	1.9	0.2	0.25	7	8.9	<0.2
1095533	Silt	25	0.55	282	0.024	<1	1.49	0.004	0.07	0.1	<0.01	0.9	0.2	<0.05	4	0.6	<0.2
1095534	Silt	24	0.74	486	0.143	2	2.41	0.059	0.29	2.2	0.03	1.9	0.5	<0.05	7	1.3	<0.2

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	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
1095535	Silt	23.9	117.7	19.9	680	1.4	109.6	46.0	1407	4.10	96.0	1.6	4.8	16	7.0	6.8	0.3	54	0.14	0.136	15
1095536	Silt	4.5	46.3	19.1	189	0.8	34.7	14.2	283	4.03	70.0	1.8	1.4	20	0.9	15.3	0.2	25	0.03	0.075	18
1095537	Silt	61.6	228.2	25.8	3782	3.9	420.2	7.3	219	2.37	50.0	3.7	0.8	149	28.0	26.3	0.2	593	1.47	0.327	20
1095576	Silt	6.6	123.8	16.5	1235	10.9	73.3	36.5	1582	5.24	31.4	1.0	2.7	26	12.7	7.9	0.1	16	0.14	0.217	6
1095684	Silt	5.7	176.2	26.8	255	2.1	42.5	10.4	270	2.26	54.4	4.6	3.2	20	2.5	5.6	0.2	35	0.12	0.396	10
1095685	Silt	7.1	119.7	24.5	349	1.8	59.5	7.3	307	2.69	86.6	4.4	1.5	25	5.6	6.5	0.2	33	0.14	0.456	11
1095686	Silt	18.5	99.2	24.1	840	1.3	155.4	64.8	1796	5.80	53.1	1.0	4.7	54	6.6	9.2	0.2	51	1.87	0.337	11
1095687	Silt	12.8	27.1	35.1	49	2.6	10.6	2.6	46	23.51	110.7	3.0	7.0	15	<0.1	6.7	0.2	308	0.02	0.524	2
1095688	Silt	13.2	18.7	8.8	114	0.2	14.6	10.6	256	7.16	79.5	1.5	9.4	22	0.6	2.2	0.4	39	0.22	0.079	16
1095689	Silt	1.3	4.2	13.7	46	<0.1	8.0	6.3	323	2.14	29.2	2.3	13.2	64	0.1	0.6	0.5	37	0.63	0.059	24
1095690	Silt	1.7	59.0	17.1	236	0.1	84.2	62.2	1060	4.49	78.2	1.3	5.4	69	0.5	1.8	0.2	46	0.24	0.088	24
1095691	Silt	0.6	15.8	14.2	63	0.1	15.7	12.5	320	2.57	196.8	7.4	11.0	106	0.2	1.6	1.2	46	0.79	0.061	26
1095700	Silt	7.8	325.1	20.1	7199	1.1	731.2	905.8	>10000	4.56	36.7	2.9	2.8	19	316.5	6.2	0.2	20	0.10	0.123	11
1095783	Silt	7.0	152.9	29.8	514	1.5	76.9	63.5	2779	2.92	76.0	2.5	3.9	24	8.6	9.3	0.2	32	0.11	0.143	9
1095784	Silt	11.9	50.1	36.0	426	0.5	109.0	50.0	874	3.13	32.4	2.2	2.0	30	1.3	3.2	0.2	44	0.21	0.123	15
1095785	Silt	9.8	38.8	21.4	331	1.7	35.0	15.0	311	3.15	37.4	4.4	1.8	12	1.8	11.3	0.2	45	0.07	0.192	11
1095786	Silt	13.0	25.5	24.3	46	9.6	7.7	1.9	75	5.87	46.4	5.9	3.3	17	0.2	5.2	0.2	88	0.06	0.242	13
1095787	Silt	1.8	2.1	10.1	59	<0.1	3.9	4.1	290	1.97	22.8	0.7	9.9	15	0.2	0.4	2.2	20	0.22	0.070	15
1095788	Silt	20.9	30.8	22.4	63	1.2	14.9	4.8	80	14.93	199.8	3.2	4.0	21	<0.1	12.2	0.2	390	0.03	1.341	9
1095789	Silt	2.1	47.1	14.6	177	0.2	47.0	36.1	912	4.09	317.2	9.7	7.7	69	0.2	2.5	0.7	48	0.40	0.072	19
1095790	Silt	0.7	23.1	9.1	166	<0.1	35.5	22.8	367	2.09	71.7	12.8	13.6	134	0.5	0.9	2.5	33	0.74	0.051	31
1095791	Silt	1.7	26.0	14.8	83	0.2	19.6	13.5	387	2.95	479.8	4.6	13.3	53	0.4	3.9	0.5	45	0.71	0.085	29
1095792	Silt	0.5	19.6	8.4	79	<0.1	26.7	15.2	256	1.94	64.8	1.7	17.7	89	0.1	0.7	5.2	32	0.70	0.053	29
1095793	Silt	0.1	24.3	9.2	28	<0.1	5.8	6.9	188	1.66	45.2	2.6	24.6	102	<0.1	0.9	3.6	29	0.99	0.059	41
1095794	Silt	0.9	32.8	12.5	74	1.0	13.9	4.7	103	23.54	120.0	4.8	1.0	21	<0.1	5.3	0.1	27	0.02	0.083	1
1095795	Silt	2.2	74.9	19.2	93	2.0	19.6	3.7	96	13.48	64.6	6.0	5.3	28	<0.1	2.4	0.3	34	0.03	0.126	8
1095796	Silt	5.8	16.6	15.6	186	0.2	22.7	29.1	1119	2.89	272.7	3.6	6.9	27	0.6	0.9	1.0	35	0.27	0.065	22
1095797	Silt	59.8	179.9	25.5	804	1.7	208.1	148.0	3807	17.15	1631	6.9	8.5	8	2.6	8.1	0.8	37	0.06	0.106	22
1095798	Silt	3.7	60.1	13.9	172	0.9	27.4	10.8	236	15.62	73.7	0.8	4.7	14	0.6	12.0	0.2	17	0.02	0.090	6
1095799	Silt	7.0	84.5	20.1	332	1.7	82.1	77.4	1626	5.87	167.2	4.8	4.2	26	4.8	9.2	0.2	27	0.04	0.196	8

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Project: Nidd South Property
Report Date: September 16, 2011

CERTIFICATE OF ANALYSIS WHI11000980.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1095535	Silt	16	0.16	160	0.015	<1	2.92	0.007	0.07	0.8	0.12	2.2	1.1	0.13	2	5.5	<0.2
1095536	Silt	14	0.20	1249	0.007	<1	1.07	0.003	0.04	<0.1	0.09	0.8	0.2	0.06	3	4.4	<0.2
1095537	Silt	91	0.44	841	0.003	9	0.62	0.005	0.15	0.3	1.37	3.0	2.5	0.29	2	27.5	0.3
1095576	Silt	18	0.07	89	0.004	<1	9.24	0.003	0.04	<0.1	0.08	1.5	0.2	1.93	1	6.1	<0.2
1095684	Silt	20	0.18	214	0.005	2	3.31	0.003	0.10	0.1	0.13	1.0	0.3	0.20	2	4.8	<0.2
1095685	Silt	21	0.13	243	0.004	2	2.55	0.003	0.09	0.1	0.12	0.5	0.3	<0.05	2	6.1	<0.2
1095686	Silt	13	0.71	75	0.003	1	1.78	0.002	0.03	<0.1	0.20	2.6	0.3	0.46	<1	6.3	<0.2
1095687	Silt	25	0.06	50	0.004	1	0.27	0.001	0.04	<0.1	0.07	1.1	0.2	1.99	2	14.6	<0.2
1095688	Silt	16	0.31	152	0.057	1	1.55	0.013	0.16	2.8	0.02	2.4	0.4	0.24	4	1.8	<0.2
1095689	Silt	19	0.52	177	0.109	<1	1.86	0.044	0.32	1.5	0.02	3.6	0.4	<0.05	6	<0.5	<0.2
1095690	Silt	34	0.76	127	0.042	1	2.77	0.009	0.24	0.2	0.01	3.0	0.3	<0.05	6	1.3	<0.2
1095691	Silt	25	0.80	237	0.102	<1	2.54	0.035	0.36	1.0	<0.01	3.8	0.4	<0.05	7	<0.5	<0.2
1095700	Silt	12	0.13	355	0.005	1	5.56	0.003	0.05	0.1	0.06	1.9	0.8	0.46	3	4.1	<0.2
1095783	Silt	13	0.14	178	0.009	1	3.12	0.003	0.08	0.1	0.10	2.0	0.3	0.46	2	5.9	<0.2
1095784	Silt	18	0.27	108	0.004	1	1.37	0.006	0.06	<0.1	0.10	1.3	0.2	<0.05	2	1.3	<0.2
1095785	Silt	12	0.12	154	0.004	1	1.38	0.004	0.06	0.2	0.16	0.9	0.3	0.09	2	7.4	<0.2
1095786	Silt	18	0.17	462	0.021	<1	0.69	0.003	0.11	0.9	0.07	2.5	0.5	0.32	3	9.3	<0.2
1095787	Silt	6	0.24	109	0.053	<1	0.90	0.008	0.24	1.0	<0.01	2.7	0.3	<0.05	4	<0.5	<0.2
1095788	Silt	33	0.13	86	0.011	<1	0.56	0.002	0.06	0.1	0.08	1.4	0.2	0.52	1	4.5	<0.2
1095789	Silt	26	0.71	197	0.065	<1	2.50	0.026	0.29	0.8	0.02	3.6	0.4	<0.05	6	0.7	<0.2
1095790	Silt	21	0.64	302	0.084	<1	2.16	0.029	0.32	1.4	0.01	3.5	0.3	<0.05	6	0.6	<0.2
1095791	Silt	22	0.71	176	0.114	2	2.32	0.070	0.28	2.6	0.02	3.3	0.3	<0.05	7	1.0	<0.2
1095792	Silt	23	0.64	357	0.082	<1	1.92	0.020	0.35	2.6	<0.01	4.0	0.4	<0.05	6	<0.5	<0.2
1095793	Silt	22	0.65	264	0.093	<1	2.05	0.028	0.44	2.0	0.01	4.1	0.4	<0.05	6	<0.5	<0.2
1095794	Silt	8	0.04	67	<0.001	1	0.24	0.003	0.05	<0.1	0.09	2.1	<0.1	1.82	<1	1.0	0.3
1095795	Silt	31	0.25	210	0.006	<1	1.21	0.004	0.06	<0.1	0.06	2.9	0.1	0.55	3	4.4	<0.2
1095796	Silt	15	0.39	262	0.068	1	1.99	0.028	0.22	2.4	0.05	2.7	0.9	<0.05	5	0.5	<0.2
1095797	Silt	15	0.13	85	0.020	1	3.40	0.008	0.06	5.5	0.05	5.4	2.9	0.21	3	6.1	<0.2
1095798	Silt	16	0.19	138	0.006	<1	0.61	0.002	0.03	<0.1	0.07	2.3	0.2	0.86	2	6.4	<0.2
1095799	Silt	16	0.26	198	0.016	<1	3.12	0.002	0.06	0.1	0.07	2.6	0.4	0.66	2	3.1	<0.2

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110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Project: Nidd South Property
Report Date: September 16, 2011

CERTIFICATE OF ANALYSIS WHI11000980.1

Analyte		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
Method		1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
MDL		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
1274401	Silt	2.8	106.3	13.1	600	0.2	172.1	23.5	864	9.62	25.6	2.1	4.2	10	1.3	0.9	<0.1	19	0.11	0.110	6
1274402	Silt	19.3	116.3	25.5	928	0.8	164.2	45.7	1115	3.78	36.0	1.8	4.1	43	8.4	6.9	0.2	70	1.85	0.227	14
1274403	Silt	9.0	17.9	17.6	38	0.5	4.8	1.1	35	20.03	49.5	2.6	3.9	9	<0.1	3.9	0.1	52	0.01	0.092	8
1274404	Silt	18.3	9.7	8.9	231	<0.1	14.7	7.9	241	8.02	83.9	0.5	9.1	31	0.7	1.8	0.6	48	0.32	0.079	18
1274405	Silt	14.3	83.4	16.6	775	1.1	152.2	13.6	237	2.72	19.7	2.6	4.7	54	5.5	7.5	0.2	61	1.31	0.148	9
1274406	Silt	1.4	26.6	20.8	240	0.3	45.8	17.4	502	2.98	859.4	5.7	8.4	59	2.3	6.0	0.9	51	0.73	0.074	27
1274407	Silt	3.4	61.7	22.9	452	0.4	163.5	75.5	4114	5.20	547.3	11.7	9.1	80	2.7	4.0	1.0	54	0.59	0.092	32
1274408	Silt	0.2	2.1	6.2	37	<0.1	4.4	5.1	251	1.35	10.0	1.8	19.0	31	<0.1	0.2	0.5	27	0.49	0.057	39
1274409	Silt	2.3	41.9	20.0	75	0.7	15.8	4.7	153	10.09	196.0	8.3	5.1	27	0.1	6.6	0.4	38	0.17	0.118	12
1274410	Silt	1.9	87.0	12.9	66	6.0	11.5	2.1	49	25.44	54.8	8.2	5.1	21	<0.1	1.3	0.3	28	0.03	0.070	4
1274411	Silt	2.3	93.8	22.3	93	2.6	23.8	4.9	153	6.86	120.0	24.3	4.4	36	<0.1	2.7	1.2	53	0.18	0.143	13
1274412	Silt	4.4	27.1	12.4	145	0.5	28.7	39.1	861	2.62	38.3	2.7	1.5	13	2.1	1.4	0.2	27	0.12	0.078	21
1274413	Silt	6.0	19.1	16.0	284	0.2	36.9	31.6	908	3.10	253.5	2.5	8.0	27	1.1	1.4	1.0	35	0.28	0.069	23
1274414	Silt	1.7	22.8	13.6	181	0.2	23.5	29.1	652	2.56	207.5	<0.5	8.1	40	0.8	0.7	0.8	46	0.32	0.066	20
1274415	Silt	4.0	31.5	20.2	379	0.5	75.0	11.8	255	3.08	30.1	1.8	1.4	23	6.3	3.6	0.3	33	0.27	0.084	14
1274416	Silt	8.5	147.6	21.4	1006	0.7	264.5	141.0	4876	5.24	98.7	1.5	4.4	26	17.9	4.8	0.2	28	0.18	0.215	11
1274351	Silt	10.5	252.3	15.4	8909	0.7	887.0	390.5	>10000	11.34	40.4	2.2	2.7	34	236.0	9.3	0.2	21	0.31	0.266	10
1095577	Silt	8.7	45.6	23.9	416	1.3	86.7	32.4	1055	3.41	34.8	1.8	4.2	18	1.0	8.5	0.3	37	0.08	0.142	33
1095578	Silt	6.7	43.5	17.4	137	4.1	25.6	13.0	362	30.64	74.3	2.7	3.9	7	0.7	11.1	0.1	140	0.04	0.252	3
1095579	Silt	6.8	50.0	24.1	120	1.6	30.6	6.0	157	5.64	55.4	2.1	9.1	16	0.1	5.5	0.3	50	0.03	0.109	18
1095580	Silt	6.4	10.6	11.0	386	<0.1	21.5	14.2	395	3.65	79.5	<0.5	10.9	42	1.5	1.1	0.7	50	0.41	0.059	26
1095581	Silt	9.3	241.2	28.2	1308	1.3	413.8	702.0	4415	4.26	83.3	3.9	3.2	89	5.4	4.2	0.3	35	0.48	0.209	64
1095582	Silt	0.5	9.5	7.7	30	0.1	7.9	4.6	170	1.20	53.7	0.9	9.7	24	<0.1	0.3	0.3	27	0.31	0.044	32
1095583	Silt	0.6	48.3	11.1	354	0.2	86.3	65.3	961	2.58	45.5	2.6	13.6	170	1.4	1.1	2.8	54	1.32	0.061	33
1095584	Silt	1.5	85.2	16.3	58	16.3	10.3	2.2	49	19.96	73.1	5.3	5.5	18	<0.1	4.2	0.3	20	0.03	0.143	7
1095585	Silt	5.3	24.2	15.1	504	0.4	61.9	45.6	1186	3.74	241.5	0.8	7.7	23	2.7	1.7	0.8	36	0.24	0.076	23
1095586	Silt	38.9	41.2	9.9	50	1.0	5.9	1.4	40	32.66	292.2	220.1	11.9	3	0.3	7.3	0.2	343	0.03	0.400	4
1095587	Silt	22.9	30.7	34.3	73	2.2	7.3	2.0	66	7.76	54.8	0.7	7.6	23	0.2	14.4	0.3	68	0.01	0.101	16
1095588	Silt	3.7	65.6	11.8	76	0.8	8.0	2.3	45	19.57	102.8	0.8	4.2	16	0.2	30.3	0.2	13	0.01	0.094	7
1095692	Silt	0.8	23.6	10.0	101	<0.1	38.5	23.3	357	2.39	84.3	0.9	18.8	114	0.2	0.7	4.6	37	0.79	0.058	30

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	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1274401	Silt	25	0.07	32	0.022	1	1.02	0.011	0.02	<0.1	0.02	1.5	<0.1	<0.05	2	2.5	<0.2
1274402	Silt	11	0.77	125	0.003	<1	0.67	0.002	0.04	<0.1	0.12	1.8	0.4	0.17	<1	2.5	<0.2
1274403	Silt	13	0.11	79	0.008	<1	0.44	0.002	0.07	0.2	0.07	1.1	0.5	1.76	2	4.5	0.2
1274404	Silt	24	0.48	144	0.085	<1	2.50	0.020	0.27	4.1	0.03	3.5	0.4	0.39	6	0.7	<0.2
1274405	Silt	20	0.70	205	0.014	4	0.65	0.003	0.15	0.1	0.23	2.6	0.6	<0.05	1	4.7	<0.2
1274406	Silt	23	0.77	206	0.125	2	2.70	0.039	0.29	0.9	0.04	3.6	0.4	<0.05	8	0.7	<0.2
1274407	Silt	27	0.75	249	0.074	1	3.07	0.025	0.32	0.8	0.04	4.4	0.5	<0.05	7	2.7	<0.2
1274408	Silt	14	0.49	104	0.124	1	1.32	0.027	0.43	1.4	<0.01	3.8	0.4	<0.05	5	<0.5	<0.2
1274409	Silt	23	0.41	230	0.027	<1	1.36	0.012	0.14	0.1	0.03	2.7	0.3	0.57	4	1.2	<0.2
1274410	Silt	41	0.19	80	0.010	<1	1.12	0.004	0.05	<0.1	0.04	2.8	0.1	1.48	3	5.5	<0.2
1274411	Silt	25	0.46	746	0.030	<1	2.41	0.013	0.17	0.2	0.05	3.4	0.2	0.07	8	2.9	0.2
1274412	Silt	15	0.23	332	0.029	<1	2.28	0.008	0.08	0.5	0.05	1.4	0.6	<0.05	4	5.1	<0.2
1274413	Silt	16	0.37	242	0.071	2	2.10	0.026	0.22	2.2	0.04	2.5	1.0	<0.05	5	1.6	<0.2
1274414	Silt	23	0.63	394	0.122	2	2.28	0.044	0.30	2.1	0.02	2.7	0.6	<0.05	6	1.2	<0.2
1274415	Silt	21	0.36	732	0.008	<1	1.24	0.007	0.06	0.2	0.04	1.4	0.1	<0.05	3	2.4	<0.2
1274416	Silt	26	0.25	182	0.008	2	3.77	0.005	0.06	0.1	0.05	2.9	0.3	0.28	2	3.7	<0.2
1274351	Silt	13	0.10	519	0.005	2	1.35	0.003	0.04	<0.1	0.04	1.2	0.3	0.07	1	6.0	<0.2
1095577	Silt	18	0.24	151	0.004	2	4.18	0.004	0.06	0.1	0.10	1.3	0.3	0.30	2	5.3	<0.2
1095578	Silt	30	0.09	43	0.004	<1	0.79	0.002	0.02	<0.1	0.07	1.8	<0.1	1.80	1	7.0	<0.2
1095579	Silt	30	0.37	682	0.044	1	1.66	0.005	0.17	0.5	0.08	3.7	0.4	0.18	5	3.7	<0.2
1095580	Silt	25	0.72	184	0.132	<1	2.70	0.025	0.39	2.3	0.02	4.7	0.6	0.08	8	<0.5	<0.2
1095581	Silt	25	0.30	157	0.016	2	2.49	0.012	0.10	0.2	0.08	2.2	0.5	0.11	3	3.7	<0.2
1095582	Silt	15	0.37	106	0.088	1	1.73	0.047	0.21	1.1	0.02	2.1	0.3	<0.05	5	<0.5	<0.2
1095583	Silt	36	0.97	357	0.127	<1	3.27	0.058	0.57	0.3	0.02	3.7	0.5	<0.05	8	<0.5	<0.2
1095584	Silt	24	0.12	129	0.008	<1	0.60	0.009	0.05	0.2	0.13	6.7	0.1	1.24	2	3.6	<0.2
1095585	Silt	21	0.38	282	0.056	1	2.38	0.020	0.18	1.8	0.04	2.7	1.2	0.06	5	2.3	<0.2
1095586	Silt	52	0.06	33	0.017	<1	0.72	0.003	0.04	2.2	0.05	14.6	0.3	1.59	3	5.0	<0.2
1095587	Silt	17	0.14	424	0.043	<1	0.62	0.003	0.15	1.1	0.17	1.8	1.0	0.44	4	17.8	<0.2
1095588	Silt	9	0.05	81	0.006	1	0.27	0.002	0.05	<0.1	0.09	1.3	0.3	1.22	1	8.9	<0.2
1095692	Silt	27	0.71	463	0.084	<1	2.22	0.025	0.38	1.1	<0.01	4.5	0.5	0.05	7	<0.5	<0.2

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110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Project: Nidd South Property
Report Date: September 16, 2011

CERTIFICATE OF ANALYSIS WHI11000980.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
1095693	Silt	0.9	123.7	12.1	277	0.3	37.5	21.9	265	2.47	75.6	15.8	19.4	164	0.5	1.4	10.4	43	0.95	0.071	39
1095694	Silt	1.3	53.1	17.0	276	0.5	39.5	18.5	337	3.12	67.8	6.7	10.7	125	0.6	2.3	0.6	60	0.71	0.091	20
1095695	Silt	2.1	49.8	12.8	75	2.3	16.2	4.2	97	23.92	65.2	8.2	4.8	23	<0.1	4.1	0.3	26	0.04	0.106	4
1095696	Silt	2.0	89.3	19.0	101	2.4	19.9	3.6	88	16.61	67.0	3.2	6.8	30	<0.1	2.3	0.3	39	0.03	0.099	10
1095697	Silt	1.0	75.9	17.8	353	0.6	55.3	46.4	1107	8.26	31.0	5.6	1.8	25	0.2	2.2	0.2	20	0.04	0.064	3
1095698	Silt	1.8	2.9	14.9	40	<0.1	2.9	3.4	358	1.82	21.6	<0.5	10.4	25	0.1	0.7	0.6	15	0.30	0.070	28
1095699	Silt	7.5	225.4	18.1	2286	2.0	355.3	292.7	>10000	3.49	33.5	0.8	3.3	35	131.2	11.4	0.3	29	0.16	0.210	12

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CERTIFICATE OF ANALYSIS WHI11000980.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1095693	Silt	26	0.75	295	0.041	<1	2.89	0.034	0.38	0.4	<0.01	3.8	0.4	<0.05	7	<0.5	<0.2
1095694	Silt	27	0.85	576	0.098	<1	3.15	0.045	0.39	0.3	0.02	4.1	0.5	0.09	8	1.2	<0.2
1095695	Silt	22	0.15	42	0.004	<1	0.90	0.004	0.04	<0.1	0.08	3.7	<0.1	1.67	3	4.5	<0.2
1095696	Silt	38	0.30	230	0.009	<1	1.46	0.005	0.07	0.1	0.04	3.1	0.1	0.71	4	5.9	<0.2
1095697	Silt	9	0.07	416	<0.001	2	1.55	0.004	0.05	<0.1	0.06	6.7	<0.1	0.37	1	1.4	<0.2
1095698	Silt	4	0.19	80	0.030	<1	1.09	0.008	0.16	0.6	0.01	2.4	0.3	<0.05	5	<0.5	<0.2
1095699	Silt	11	0.08	292	0.004	2	2.83	0.003	0.06	<0.1	0.12	2.4	0.5	0.29	2	8.6	<0.2

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QUALITY CONTROL REPORT WHI11000980.1

Method		1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
MDL		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
Pulp Duplicates																					
1095103	Silt	8.2	125.9	32.7	325	2.3	130.8	156.0	5296	5.40	40.9	2.7	4.3	10	1.0	4.2	0.3	23	0.04	0.126	6
REP 1095103	QC	8.1	130.1	32.5	331	2.3	125.9	154.1	5640	5.62	40.1	2.7	4.4	9	1.0	4.2	0.3	24	0.04	0.123	6
1095522	Silt	12.7	98.5	26.3	216	2.7	53.9	48.6	1344	6.55	40.0	4.0	2.7	9	0.3	10.1	0.3	35	0.06	0.117	18
REP 1095522	QC	12.5	92.8	24.2	211	2.6	49.5	44.9	1260	6.38	38.3	3.2	2.5	9	0.3	10.0	0.3	37	0.05	0.114	18
1095531	Silt	2.2	34.6	19.2	70	0.5	17.9	5.5	195	7.05	111.0	3.4	6.4	50	0.1	4.7	0.4	44	0.29	0.095	12
REP 1095531	QC	2.1	32.2	18.6	71	0.5	16.6	5.5	182	6.72	105.3	4.0	6.2	46	0.1	4.6	0.4	42	0.29	0.089	11
1095785	Silt	9.8	38.8	21.4	331	1.7	35.0	15.0	311	3.15	37.4	4.4	1.8	12	1.8	11.3	0.2	45	0.07	0.192	11
REP 1095785	QC	10.9	41.5	23.2	362	1.8	37.5	16.5	386	3.50	39.6	5.1	2.1	13	1.7	11.9	0.3	44	0.07	0.206	11
1095799	Silt	7.0	84.5	20.1	332	1.7	82.1	77.4	1626	5.87	167.2	4.8	4.2	26	4.8	9.2	0.2	27	0.04	0.196	8
REP 1095799	QC	6.9	86.1	19.8	337	1.7	81.0	76.4	1599	5.66	169.4	3.9	4.2	26	5.0	9.2	0.2	26	0.04	0.198	8
1274413	Silt	6.0	19.1	16.0	284	0.2	36.9	31.6	908	3.10	253.5	2.5	8.0	27	1.1	1.4	1.0	35	0.28	0.069	23
REP 1274413	QC	6.1	18.9	16.3	296	0.2	37.2	32.9	949	3.22	259.9	0.6	8.9	27	1.2	1.4	1.0	36	0.29	0.070	23
Reference Materials																					
STD DS8	Standard	13.2	109.5	127.9	319	1.9	38.2	7.7	625	2.50	25.5	126.0	6.4	64	2.2	5.0	6.3	41	0.67	0.082	15
STD DS8	Standard	12.5	95.9	114.7	279	1.7	36.7	6.6	573	2.30	22.8	102.6	6.1	60	1.9	4.4	5.7	39	0.64	0.071	12
STD DS8	Standard	11.1	101.4	121.0	298	1.7	34.5	7.1	563	2.36	24.3	117.0	6.1	56	2.3	4.5	6.0	39	0.63	0.076	12
STD DS8	Standard	11.9	91.0	107.7	289	1.6	37.2	6.4	582	2.32	20.4	102.1	5.2	59	1.9	4.3	5.2	36	0.64	0.065	12
STD DS8 Expected		13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7	0.08	14.6
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	0.02	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1

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110 - 2300 Carrington Road
West Kelowna BC V2T 2N6 Canada

Project: Nidd South Property
Report Date: September 16, 2011

QUALITY CONTROL REPORT WHI11000980.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																	
1095103	Silt	20	0.24	59	0.005	1	3.44	0.004	0.04	<0.1	0.11	1.1	0.2	0.41	3	3.4	<0.2
REP 1095103	QC	20	0.25	56	0.004	<1	3.46	0.004	0.04	<0.1	0.12	1.0	0.2	0.46	3	3.4	<0.2
1095522	Silt	16	0.28	104	0.006	<1	1.41	0.003	0.04	0.1	0.13	1.0	0.3	0.14	2	10.3	<0.2
REP 1095522	QC	16	0.26	99	0.006	<1	1.38	0.003	0.04	0.1	0.10	1.0	0.3	0.12	3	10.5	<0.2
1095531	Silt	23	0.51	396	0.044	<1	1.80	0.023	0.19	0.2	0.02	2.1	0.3	0.38	6	2.0	<0.2
REP 1095531	QC	22	0.51	406	0.042	<1	1.81	0.022	0.19	0.2	0.01	2.0	0.3	0.35	6	1.9	<0.2
1095785	Silt	12	0.12	154	0.004	1	1.38	0.004	0.06	0.2	0.16	0.9	0.3	0.09	2	7.4	<0.2
REP 1095785	QC	12	0.13	158	0.004	<1	1.46	0.004	0.05	0.2	0.15	0.9	0.3	0.09	2	7.7	<0.2
1095799	Silt	16	0.26	198	0.016	<1	3.12	0.002	0.06	0.1	0.07	2.6	0.4	0.66	2	3.1	<0.2
REP 1095799	QC	16	0.26	187	0.016	<1	3.17	0.002	0.06	0.1	0.07	2.8	0.4	0.67	2	3.8	<0.2
1274413	Silt	16	0.37	242	0.071	2	2.10	0.026	0.22	2.2	0.04	2.5	1.0	<0.05	5	1.6	<0.2
REP 1274413	QC	16	0.40	251	0.071	2	2.25	0.028	0.23	2.2	0.04	2.7	1.1	<0.05	5	1.1	<0.2
Reference Materials																	
STD DS8	Standard	118	0.63	279	0.109	2	0.91	0.081	0.40	2.8	0.20	1.9	5.7	0.16	5	6.0	5.2
STD DS8	Standard	109	0.57	241	0.105	3	0.88	0.078	0.39	2.7	0.20	1.3	5.0	0.17	4	4.6	4.4
STD DS8	Standard	105	0.55	255	0.102	3	0.84	0.078	0.38	2.9	0.21	2.0	5.3	0.13	4	4.6	4.7
STD DS8	Standard	118	0.59	227	0.091	2	0.83	0.083	0.38	2.7	0.20	1.4	5.3	0.14	4	5.0	4.8
STD DS8 Expected		115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	2.3	5.4	0.1679	4.7	5.23	5
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2

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Submitted By:	Linda Dandy
Receiving Lab:	Canada-Whitehorse
Received:	November 04, 2011
Report Date:	November 09, 2011
Page:	1 of 2

CERTIFICATE OF ANALYSIS WHI11001873.1

CLIENT JOB INFORMATION

Project:	North Canol
Shipment ID:	#25
P.O. Number	
Number of Samples:	6

SAMPLE DISPOSAL

STOR-PLP	Store After 90 days Invoice for Storage
STOR-RJT-SOIL	Store Soil Reject - RJSV Charges Apply

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SS80	6	Dry at 60C sieve 100g to -80 mesh			WHI
RJSV	6	Saving all or part of Soil Reject			WHI
1DX2	6	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Golden Ridge Resources Ltd
110 - 2300 Carrington Road
West Kelowna BC V2T 2N6
Canada

CC: Dugald Dunlop
Adam Travis

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

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Project: North Canol
Report Date: November 09, 2011

CERTIFICATE OF ANALYSIS WHI11001873.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
1274356	Silt	4.0	69.0	18.4	381	0.4	65.9	85.1	2220	6.47	40.5	1.3	4.5	18	4.8	6.0	0.2	26	0.05	0.076	11
1274357	Silt	1.2	23.9	13.3	217	0.1	55.6	11.3	194	3.27	15.9	0.7	2.8	43	0.5	3.1	0.2	30	0.28	0.052	11
1274358	Silt	3.3	31.9	17.0	387	0.2	96.3	28.1	519	3.39	30.1	<0.5	2.9	42	1.6	4.0	0.2	32	0.17	0.066	11
1274359	Silt	0.8	20.7	10.7	178	0.1	48.9	10.0	225	2.91	10.3	<0.5	1.8	44	0.6	1.7	0.2	29	0.38	0.054	6
1274360	Silt	3.0	27.6	17.2	304	0.3	56.4	11.2	260	2.86	40.1	3.2	3.3	29	1.9	4.6	0.2	29	0.21	0.071	18
1095804	Silt	4.2	36.7	19.6	497	0.4	84.7	10.2	249	2.62	36.8	<0.5	3.0	42	5.6	4.3	0.2	31	0.28	0.127	16

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Project: North Canol
Report Date: November 09, 2011

CERTIFICATE OF ANALYSIS WHI11001873.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1274356	Silt	19	0.32	356	0.005	1	1.70	0.003	0.04	0.1	0.05	3.2	0.1	0.25	3	3.3	<0.2
1274357	Silt	22	0.50	211	0.006	3	1.22	0.008	0.05	0.1	0.04	2.5	<0.1	<0.05	4	1.0	<0.2
1274358	Silt	16	0.35	500	0.007	<1	1.08	0.006	0.05	<0.1	0.06	2.9	0.1	<0.05	3	1.5	<0.2
1274359	Silt	22	0.59	127	0.004	1	1.36	0.008	0.06	<0.1	0.06	2.6	<0.1	<0.05	4	0.9	<0.2
1274360	Silt	17	0.36	279	0.008	<1	1.00	0.004	0.05	0.3	0.04	1.6	0.1	<0.05	3	1.4	<0.2
1095804	Silt	15	0.22	2282	0.007	3	0.87	0.004	0.08	0.2	0.09	1.4	0.1	<0.05	2	2.4	<0.2

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Report Date: November 09, 2011

QUALITY CONTROL REPORT WHI11001873.1

	Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
Reference Materials																					
STD DS8	Standard	12.2	106.1	118.8	291	1.7	36.7	7.2	583	2.37	24.4	101.7	6.6	70	2.4	5.6	6.3	40	0.66	0.078	15
STD DS8 Expected		13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7	0.08	14.6
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1

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QUALITY CONTROL REPORT WHI11001873.1

Method		1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Reference Materials																	
STD DS8	Standard	111	0.57	267	0.118	3	0.93	0.117	0.42	3.0	0.19	2.9	5.2	0.11	5	4.3	4.5
STD DS8 Expected		115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	2.3	5.4	0.1679	4.7	5.23	5
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2

Appendix 3
Fugro Report

Report #11046

PROJECT REPORT OF THE AIRBORNE GEOPHYSICAL SURVEY

COLORADO RESOURCES LTD.

MAC PASS CLAIM GROUP
BEN CLAIM

EASTERN YUKON

DIGHEM SURVEY

NTS: 105O/1, 2, 3, 6, 7; 105P/4

Fugro Airborne Surveys Corp.
Mississauga, Ontario
November 30th, 2011

Fugro Airborne Surveys, 2505 Meadowvale Boulevard, Mississauga, Ontario, Canada, L5N 5S2
Phone: 1 905 812 0212, Fax: 1 905 812 1504

SUMMARY

This report describes the logistics, data acquisition, processing and presentation of results of a DIGHEM airborne geophysical survey carried out for Colorado Resources Ltd. over the Mac Pass Claim Group and the Ben Claim areas located in the eastern Yukon. The survey was flown from July 11th to August 4th, 2011. Total coverage of the survey blocks amounted to 3064.0 line-km.

The purpose of this airborne survey was to map the magnetic and conductive properties of the survey areas, and use these properties to detect possible zones of mineralization. This was accomplished by using a DIGHEM multi-coil, multi-frequency electromagnetic system, supplemented by a high sensitivity cesium magnetometer. A GPS electronic navigation system ensured accurate positioning of the geophysical data with respect to the base maps.

The survey data were processed and compiled in the Fugro Airborne Surveys Toronto office. Map products and digital data were provided in accordance with the scales and formats specified in the Survey Agreement.

The total field magnetic and apparent resistivity data sets have successfully mapped the magnetic and conductive characteristics of the lithologies in the survey areas.

Discrete EM anomalies have been interpreted from the electromagnetic data. They have been interpreted to fall within one of two general categories. The first type consists of discrete, well-defined anomalies, which are usually attributed to conductive sulphides or graphite. The second class of anomalies comprises moderately broad responses, which exhibit the characteristics of a half space. Some of these anomalies may reflect conductive rock units or zones of deep weathering.

The survey properties contain many anomalous features, some of which may be considered as exploration targets. Several anomalous zones appear to warrant further investigation using appropriate surface exploration techniques. Areas of interest may be assigned priorities on the basis of supporting geophysical, geochemical and/or geological information. After initial investigations have been carried out, it may be necessary to re-evaluate the remaining anomalies based on information acquired from the follow-up program.

It is recommended that the survey results be reviewed in detail, in conjunction with all available geophysical, geological and geochemical information. Image processing of existing geophysical data should be considered, in order to extract the maximum amount of information from the survey results.

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1. INTRODUCTION

A DIGHEM electromagnetic/resistivity/magnetic survey was flown for Colorado Resources Ltd. The survey was flown from July 11th to August 4th, 2011 over the Mac Pass Claim Group and the Ben Claim areas, located in the eastern Yukon. The survey areas are located on NTS map sheets 105 O/1, 2, 3, 6, 7 and 105 P/4 (Figure 2-1).

Survey coverage consisted of approximately 3064.0 line-km including 283.8 line-km of tie lines. Flight lines were flown with a line separation of 200 metres for both areas. Tie lines were flown perpendicular to the flight direction, with a line spacing of 2000 metres, also for both areas. The flight direction and breakdown of kilometres flown per block are given below in table 1-1.

Table 1-1 Survey Coverage

Block	Flight line direction	Tie line direction	Traverse Line (km)	Tie Line (km)	Total
Mac Pass Claim Group	30°/210°	120°/300°	2695.6	272.4	2968.0
Ben Claim	27°/207°	117°/297°	84.6	11.4	96.0
TOTAL			2780.2	283.8	3064.0

The survey employed the DIGHEM electromagnetic system. Ancillary equipment consisted of a high sensitivity cesium magnetometer, radar and laser altimeters, video camera, digital data recorder, and an electronic navigation system. The instrumentation was installed in an AS-350-B2 turbine helicopter (Registration C-GJIX) that was provided by Questral Helicopters Ltd. The helicopter flew with a nominal EM sensor height of approximately 35 metres.

Figure 1-1: Fugro Airborne Surveys DIGHEM EM Bird

2. SURVEY OPERATIONS

The survey areas are located on NTS map sheets 105 O/1, 2, 3, 6, 7 and 105 P/4 (Figure 2-1).

Table 2-1 lists the corner coordinates of the survey area in NAD83, UTM Zone 9N, central meridian 129°W.

Table 2-1 The Area Corners

Block	Corners	X-UTM (E)	Y-UTM (N)
11046-1	1	387150	7022700
Mac Pass	2	388150	7024432
Claim Group	3	388914	7023991
	4	389193	7024337
	5	390193	7026069
	6	391186	7025496
	7	391650	7026300
	8	391928	7026300
	9	392509	7027022
	10	392847	7026750
	11	403350	7026750
	12	403350	7026300
	13	406050	7026300
	14	406050	7025850
	15	407850	7025850
	16	407850	7025400
	17	410550	7025400
	18	410550	7024950
	19	414150	7024950
	20	414150	7016400
	21	415050	7016400
	22	415050	7015950
	23	415950	7015950
	24	415950	7015500
	25	416850	7015500
	26	416850	7015050
	27	418650	7015050
	28	418650	7014600
	29	419550	7014600
	30	419550	7013700
	31	417699	7013700

Block	Corners	X-UTM (E)	Y-UTM (N)
	32	415950	7010671
	33	415950	7009650
	34	416850	7009650
	35	416850	7008750
	36	422583	7008751
	37	423189	7009800
	38	423652	7009790
	39	423639	7009333
	40	423303	7008750
	41	424050	7008750
	42	424050	7007850
	43	426750	7007850
	44	426750	7007400
	45	427650	7007400
	46	427650	7006950
	47	430800	7006950
	48	430800	7004700
	49	432600	7004700
	50	432600	7004250
	51	434400	7004250
	52	434400	7003800
	53	433950	7003021
	54	433950	7001100
	55	434400	7001100
	56	434400	6999300
	57	438000	6999300
	58	438000	6997950
	59	438900	6997950
	60	438900	6997050
	61	439800	6997050
	62	439800	6993000
	63	430800	6993000
	64	430800	7000200
	65	429900	7000200
	66	429900	7001100
	67	429000	7001100
	68	429000	7001550
	69	428100	7001550
	70	428100	7002450

Block	Corners	X-UTM (E)	Y-UTM (N)
	71	427200	7002450
	72	427200	7002900
	73	426300	7002900
	74	426300	7003350
	75	425400	7003350
	76	425400	7003800
	77	424500	7003800
	78	424500	7004250
	79	423150	7004250
	80	423150	7005150
	81	415050	7005150
	82	415050	7010100
	83	411450	7010100
	84	411450	7010550
	85	405150	7010550
	86	405150	7011000
	87	399750	7011000
	88	399750	7011900
	89	397950	7011900
	90	397950	7014150
	91	392550	7014150
	92	392550	7017300
	93	391650	7017300
	94	391650	7018200
	95	390750	7018200
	96	390750	7018650
	97	389850	7018650
	98	389850	7019550
	99	388950	7019550
	100	388950	7020000
	101	388050	7020000
	102	388050	7020450
	103	387150	7020450
11046-2	1	447936	7000006
Ben Claim	2	451144	6998372
	3	449101	6994362
	4	445893	6995996

The survey specifications are given below in table 2-2.

Table 2-2 Survey Specifications

Parameter	Specifications
Sample interval (EM and magnetics)	10 Hz, 3.3 m @ 120 km/h
Aircraft mean terrain clearance	60 m
EM sensor mean terrain clearance	35 m
Mag sensor mean terrain clearance	35 m
Navigation (guidance)	±5 m, Real-time GPS
Post-survey flight path	±1 m, Differential GPS

The base of operations for the survey was established in Macmillan Pass for the duration of the survey flying.

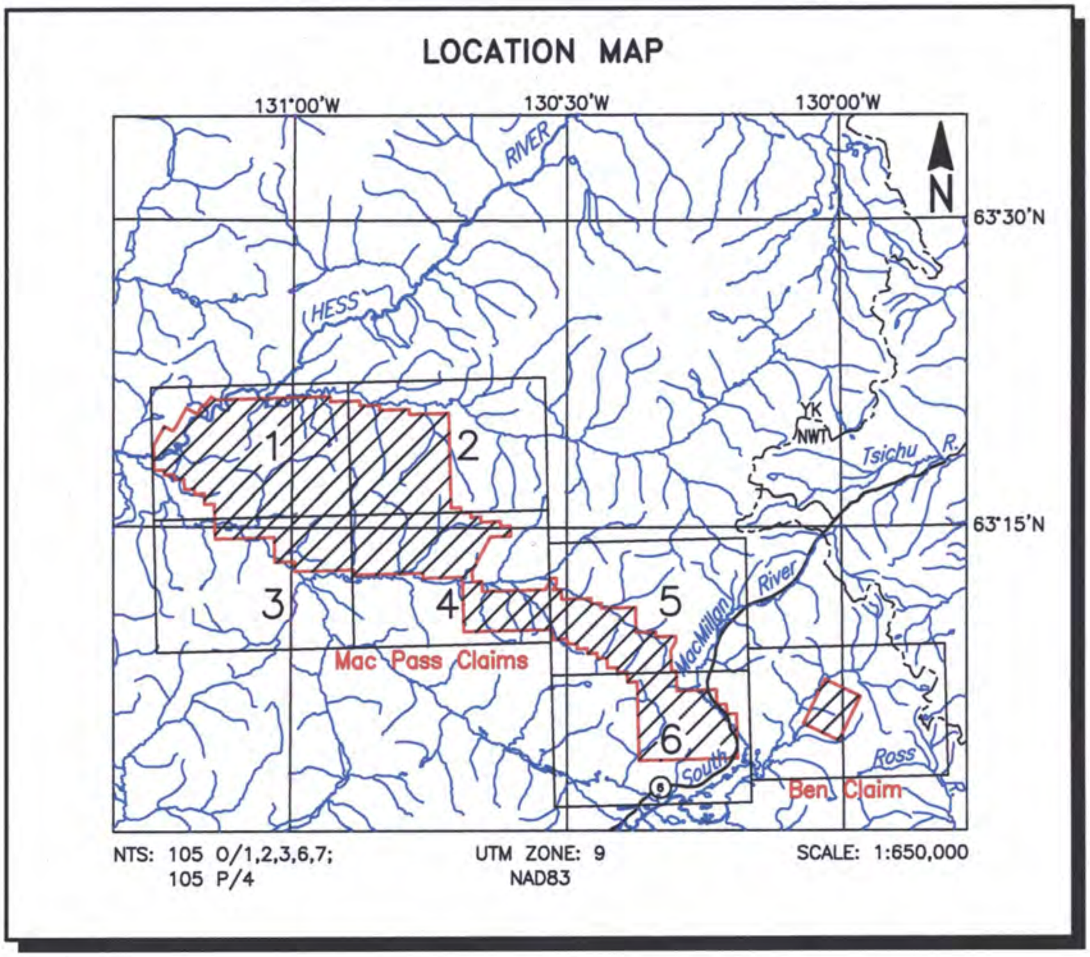


Figure 2-1
Location Map and Sheet Layout
Mac Pass Claim Group and Ben Claim Areas
Eastern Yukon
Job # 11046

3. SURVEY EQUIPMENT

This section provides a brief description of the geophysical instruments used to acquire the survey data and the calibration procedures employed. The geophysical equipment was installed in an AS-350-B2 turbine helicopter. This aircraft provided a safe and efficient platform for surveys of this type.

Electromagnetic System

Model: DIGHEM

Type: Towed bird, symmetric dipole configuration operated at a nominal survey altitude of 35 metres. Coil separation is 8 metres for 900 Hz, 1000 Hz, 5500 Hz and 7200 Hz, and 6.3 metres for the 56,000 Hz coil-pair.

Coil orientations, frequencies and dipole moments

Atm^2	orientation		nominal	actual
211	coaxial	/	1000 Hz	1117 Hz
211	coplanar	/	900 Hz	832 Hz
67	coaxial	/	5500 Hz	5909 Hz
56	coplanar	/	7200 Hz	7490 Hz
15	coplanar	/	56 000 Hz	56 270 Hz

Channels recorded: 5 in-phase channels
5 quadrature channels
2 monitor channels

Sensitivity:

0.12 ppm at	1000 Hz Cx
0.12 ppm at	900 Hz Cp
0.24 ppm at	5500 Hz Cx
0.24 ppm at	7200 Hz Cp
0.44 ppm at	56 000 Hz Cp

Sample rate: 10 per second, equivalent to 1 sample every 3.3 m, at a survey speed of 120 km/h.

The electromagnetic system utilizes a multi-coil coaxial/coplanar technique to energize conductors in different directions. The coaxial coils are vertical with their axes in the flight direction. The coplanar coils are horizontal. The secondary fields are sensed simultaneously by means of receiver coils that are maximum coupled to their respective transmitter coils. The system yields an in-phase and a quadrature channel from each transmitter-receiver coil-pair.

In-Flight EM System Calibration

Calibration of the system during the survey uses the Fugro AutoCal automatic, internal calibration process. At the beginning and end of each flight, and at intervals during the flight, the system is flown up to high altitude to remove it from any “ground effect” (response from the earth). Any remaining signal from the receiver coils (base level) is measured as the zero level, and is removed from the data collected until the time of the next calibration. Following the zero level setting, internal calibration coils, for which the response phase and amplitude have been determined at the factory, are automatically triggered – one for each frequency. The on-time of the coils is sufficient to determine an accurate response through any ambient noise. The receiver response to each calibration coil “event” is compared to the expected response (from the factory calibration) for both phase angle and amplitude, and any phase and gain corrections are automatically applied to bring the data to the correct value.

In addition, the outputs of the transmitter coils are continuously monitored during the survey, and the gains are adjusted to correct for any change in transmitter output.

Because the internal calibration coils are calibrated at the factory (on a resistive half-space) ground calibrations using external calibration coils on-site are not necessary for system calibration. A check calibration may be carried out on-site to ensure all systems are working correctly. All system calibrations will be carried out in the air, at sufficient altitude that there will be no measurable response from the ground.

The internal calibration coils are rigidly positioned and mounted in the system relative to the transmitter and receiver coils. In addition, when the internal calibration coils are calibrated at the factory, a rigid jig is employed to ensure accurate response from the external coils.

Using real time Fast Fourier Transforms and the calibration procedures outlined above, the data are processed in real time, from measured total field at a high sampling rate, to in-phase and quadrature values at 10 samples per second.

Airborne Magnetometer

Model:	Fugro D1344 processor with Scintrex CS3 sensor
Type:	Optically pumped cesium vapour
Sensitivity:	0.01 nT
Sample rate:	10 per second

The magnetometer sensor is housed in the EM bird, 25 m below the helicopter.

Magnetic Base Station

Model:	CF1 base station with timing provided by integrated GPS	
Sensor type:	Scintrex CS2	
Counter specifications:	Accuracy:	±0.25 nT
	Resolution:	0.01 nT
	Sample rate	1 Hz
GPS specifications:	Model:	Marconi Allstar
	Type:	Code and carrier tracking of L1 band, 12-channel, C/A code at 1575.42 MHz
	Sensitivity:	-90 dBm, 1.0 second update
	Accuracy:	Manufacturer's stated accuracy for differential corrected GPS is 2 metres

Environmental
Monitor specifications: Temperature:

- Accuracy: ±1.5°C max
- Resolution: 0.0305°C
- Sample rate: 1 Hz
- Range: -40°C to +75°C

Barometric pressure:

- Model: Motorola MPXA4115A
- Accuracy: ±3.0° kPa max (-20°C to 105°C temp. ranges)
- Resolution: 0.013 kPa
- Sample rate: 1 Hz
- Range: 55 kPa to 108 kPa

Backup

Model:	GEM Systems GSM-19
Type:	Digital recording proton precession
Sensitivity:	0.10 nT
Sample rate:	3 second intervals

A digital recorder is operated in conjunction with the base station magnetometer to record the diurnal variations of the earth's magnetic field. The clock of the base station is synchronized with that of the airborne system, using GPS time, to permit subsequent removal of diurnal drift. The CF1 was the primary magnetic base station. The location of the primary base station is given below in table 3-1.

Table 3-1 Magnetic Base Station Location

Status	Location Name	WGS84 Latitude	WGS84 Longitude	Date Set Up
Primary	Mac Pass	N63 05 58.99974	W130 12 46.51958	13-Jul-11

Navigation (Global Positioning System)

Airborne Receiver

Model: Novatel OEM4/V
Type: Code and carrier tracking of L1-C/A code at 1575.42 MHz and L2-P code at 1227.0 MHz. 24-channel
Sample rate: 0.5 second update
Accuracy: Better than 1 metre in differential mode
Antenna: mounted on the tail of the aircraft

Primary Base Station for Post-Survey Differential Correction

Model: Novatel OEM4/V
Type: Code and carrier tracking of L1-C/A code at 1575.42 MHz and L2-P code at 1227.0 MHz, 24-channel
Sample rate: 0.5 second update
Accuracy: Manufacturer's stated accuracy for differential corrected GPS is better than 1 metre

Secondary GPS Base Station

Model: Marconi Allstar OEM, CMT-1200, part of CF1 base station
Type: Code and carrier tracking of L1 band, 12-channel, C/A code at 1575.42 MHz
Sensitivity: -90 dBm, 1.0 second update
Accuracy: Manufacturer's stated accuracy for differential corrected GPS is 2 metres

The Novatel OEM4 is a line of sight, satellite navigation system that utilizes time-coded signals from at least four of forty-eight available satellites. Both Russian GLONASS and American NAVSTAR satellite constellations are used to calculate the position and to provide real time guidance to the helicopter. A Novatel OEM4 GPS unit was also used as the primary base station. A Marconi Allstar GPS unit, part of the CF-1, was used as the secondary base station. The mobile and base station raw XYZ data were recorded, thereby permitting post-survey differential corrections for theoretical accuracies of better than 1 metre. Each base station receiver is able to calculate its own latitude and longitude. The locations of the base stations are given below in table 3-2.

Table 3-2 GPS Base Station Locations

Status	Location Name	WGS84 Latitude	WGS84 Longitude	Orthometric Height (m)	Date Set Up
Primary	Mac Pass	63 05 59.22527	130 12 46.44419	1138.510	13-Jul-11
Secondary	Mac Pass	63 05 58.99974	130 12 46.51958	1134.655	13-Jul-11

The GPS records data relative to the WGS84 ellipsoid, which is the basis of the revised North American Datum (NAD83). Conversion software is used to transform the WGS84 coordinates to the UTM system displayed on the maps.

Radar Altimeter

Manufacturer:	Honeywell/Sperry
Model:	RT300/AT220
Type:	Short pulse modulation, 4.3 GHz
Sensitivity:	0.3 m
Sample rate:	2 per second

The radar altimeter measures the vertical distance between the helicopter and the ground.

Laser Altimeter

Manufacturer:	Optech
Model:	ADMGPA100
Type:	Fixed pulse repetition rate of 2 kHz
Sensitivity:	±5 cm from 10ºC to 30ºC ±10 cm from -20ºC to +50ºC
Sample rate:	2 per second

The laser altimeter is housed in the EM bird, and measures the distance from the EM bird to ground, except in areas of dense tree cover.

Barometric Pressure and Temperature Sensors

Model:	DIGHEM D1300	
Type:	Motorola MPX4115AP analog pressure sensor AD592AN high-impedance remote temperature sensors	
Sensitivity:	Pressure:	150 mV/kPa
	Temperature:	100 mV/°C or 10 mV/°C (selectable)
Sample rate:	10 per second	

The D1300 circuit is used in conjunction with one barometric sensor and up to three temperature sensors. Two sensors (baro and temp) are installed in the EM console in the aircraft, to monitor pressure (1KPA) and internal operating temperatures (2TDC).

Digital Data Acquisition System

Manufacturer:	Fugro
Model:	HELIDAS
Recorder:	Compact Flash Card

The stored data are downloaded to the field workstation PC at the survey base, for verification, backup and preparation of in-field products.

Video Flight Path Recording System

Type:	Panasonic WVCD/32 Colour camera
Recorder:	Axis 241S video server and tablet computer

Fiducial numbers are recorded continuously and are displayed on the margin of each image. This procedure ensures accurate correlation of data with respect to visible features on the ground.

4. QUALITY CONTROL AND IN-FIELD PROCESSING

Digital data for each flight were transferred to the field workstation, in order to verify data quality and completeness. A database was created and updated using Geosoft Oasis Montaj and proprietary Fugro Atlas software. This allowed the field personnel to calculate, display and verify both the positional (flight path) and geophysical data on a screen or printer. The initial database was examined as a preliminary assessment of the data acquired for each flight.

In-field processing of Fugro survey data consists of differential corrections to the airborne GPS data, verification of EM calibrations, drift correction of the raw airborne EM data, spike rejection and filtering of all geophysical and ancillary data, verification of the digital flight path recordings, calculation of preliminary resistivity data, diurnal correction, and preliminary levelling of magnetic data.

All data, including base station records, were checked on a daily basis to ensure compliance with the survey contract specifications. Reflights were required if any of the following specifications were not met.

Navigation

A specialized GPS system provided in-flight navigation control. The system determined the absolute position of the helicopter by monitoring the range information of twelve channels (satellites). Novatel's OEM4/V receiver was used for this application. The OEM4/V receiver is WAAS-enabled (Wide Area Augmentation System) providing better real-time positioning.

A Novatel OEM4 GPS base station was used that recorded pseudo-range, carrier phase, ephemeris, and timing information for up to 12 NAVSTAR GPS satellites at a one second interval. Recording was via flash disk.

Flight Path

The flight lines did not deviate from the intended flight path by more than 25% of the planned flight path over a distance of more than 1 kilometre. Flight specifications were based on GPS positional data recorded at the helicopter.

Clearance

Survey elevations did not deviate by more than +/- 20% over a distance of 2 kilometres from the contracted elevation.

Survey elevation is defined as the measurement of the helicopter radar altimeter to the tallest obstacle in the helicopter path. An obstacle is any structure or object which will impede the path of the helicopter to the ground and is not limited to and includes tree canopy, towers and power lines.

Survey Elevations may vary based on the pilot's judgment of safe flying conditions around man-made structures or in rugged terrain.

Flying Speed

Nominal aircraft indicated airspeed was between 55 to 80 knots, the nominal aircraft ground speed was approximately 3 to 5 metres per sample at 10 Hz sampling.

Airborne High Sensitivity Magnetometer

The non-normalized 4th difference will not exceed 1.6 nT over a continuous distance of 1 kilometre excluding areas where this specification is exceeded due to natural anomalies.

Magnetic Base Station

The ground magnetometers are generally placed within 50 kilometres of the centre of the survey area and in regions of low magnetic gradient. They were sited away from moving steel objects, vehicles or power transmission lines.

For acceptance of the magnetic data, non-linear variations in the magnetic diurnal should not exceed 10 nT per minute.

Electromagnetic Data

Reflights will result when peak to peak noise envelopes of the EM channels exceeds the specified tolerance continuously over a horizontal distance of 2,000 metres under normal survey conditions. The approximate tolerances by frequency and coil orientation are given below in table 4-1.

Table 4-1 The EM System Noise Specifications

Nominal Frequency (Hz)	Coil Orientation	Peak-to-Peak Noise Envelope (ppm)
1000	coaxial	5
900	coplanar	10
5500	coaxial	10
7200	coplanar	20
56,000	coplanar	40

Spherics

If the frequency of spherics events affected the quality of the electromagnetic data as it was being processed by the acquisition system in real time, survey flying was suspended. Flying was not performed when spherics became sufficiently intense and frequent that digital data processing techniques could not recover useful data.

The Dighem EM system includes two spheric/powerline channels for noise monitoring. Most spheric activity is susceptible to reduction by post-survey filtering to less than 2.0 ppm.

Spheric pulses may occur having strong peaks but narrow widths. The EM data are considered acceptable when their occurrence is less than 10 spheric events exceeding the stated noise specification for a given frequency per 100 samples continuously over a distance of 2,000 meters.

5. DATA PROCESSING

Appendix C depicts the data processing flow for the electromagnetic and magnetic datasets.

Flight Path Recovery

The raw range data from at least four satellites are simultaneously recorded by both the base and mobile GPS units. The geographic positions of both units, relative to the model ellipsoid, are calculated from this information. Differential corrections, which are obtained from the base station, are applied to the mobile unit data to provide a post-flight track of the aircraft, accurate to within 1 metre. Speed checks of the flight path are also carried out to determine if there are any spikes or gaps in the data.

The corrected WGS84 latitude/longitude coordinates are transformed to the UTM coordinate system used on the final maps. Images or plots are then created to provide a visual check of the flight path.

Electromagnetic Data

EM data are processed at the recorded sample rate of 10 samples/second. Spheric rejection median and Hanning filters are then applied to reduce noise to acceptable levels.

The EM data are examined to allow the interpreter to select the most appropriate EM anomaly picking controls for a given survey area. The EM picking parameters depend on several factors but are primarily based on the dynamic range of the resistivities within the survey area, and the types and expected geophysical responses of the targets being sought.

Anomalous electromagnetic responses are selected and analysed by computer to provide preliminary electromagnetic anomaly picks. The automatic selection algorithm is intentionally oversensitive to assure that no meaningful responses are missed. Using the preliminary picks in conjunction with the profile data, the interpreter then classifies the anomalies according to their source and eliminates those that are not substantiated by the data. The final interpreted EM anomalies include bedrock, surficial and cultural conductors and are defined based on typical HEM anomaly shapes, which are defined in Appendix B, figure B-1. The types of conductors interpreted from the EM data are given below in table 5-1.

Table 5-1 EM Anomaly Interpretation

Interpretation Symbol	Conductor Model
D	Narrow bedrock conductor (“vertical or dipping thin dyke”)
B	Bedrock conductor
S	Conductive cover (“horizontal thin sheet”)
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover (“half space”)
E	Edge of broad conductor (“edge of a half space”)
“?”	Indicates some degree of uncertainty as to which is the most appropriate EM source model, but does not question the validity of the EM anomaly

The anomalies shown on the electromagnetic anomaly map are based on a near-vertical, half plane model. This model best reflects "discrete" bedrock conductors. Wide bedrock conductors or flat-lying conductive units, whether from surficial or bedrock sources, may give rise to very broad anomalous responses on the EM profiles. These may not appear on the electromagnetic anomaly map if they have a regional character rather than a locally anomalous character.

These broad conductors, which more closely approximate a half-space model, will be maximum coupled to the horizontal (coplanar) coil-pair and should be more evident on the resistivity parameter. Resistivity maps, therefore, may be more valuable than the electromagnetic anomaly maps, in areas where broad or flat-lying conductors are considered to be of importance.

Excellent resolution and discrimination of conductors was accomplished by using a fast sampling rate of 0.1 sec and by employing a “common” frequency (5500/7200 Hz) on two orthogonal coil-pairs (coaxial and coplanar). The resulting difference channel parameters often permit differentiation of bedrock and surficial conductors, even though they may exhibit similar conductance values. For any Fugro multi-component helicopter frequency domain EM system (HFEM), the difference channel is a calculated product to assist interpretation of discrete conductor targets. There is one each for the in-phase and quadrature components of the EM channels, called DIFI and DIFQ.

The difference channel is a parameter used to quantify the difference between the coaxial and coplanar response, to help distinguish which conductivity changes are caused by flat-lying conductors (like swamps) or changes in the layered earth (with a 1:4 ratio between CX and CP), and which anomalies are caused by discrete conductive bodies (ideally with a 1:1 CX to CP ratio). The difference between the CP and CX for both in-phase and quadrature EM data is calculated everywhere, weighted to adjust the response for the geometric difference as well as differences in coil separation. For a flat-lying or halfspace (thick, flat-lying) conductor, the difference channel (DIFI or DIFQ) will be near zero, as it will over background areas (a layered earth). For a discrete conductor like a vertical thin dike, the difference channel will have a positive value. In practice the value will be somewhat variable, dependent on the shape and thickness of the conductor and the conductivity of the host rock. Because it is a difference, not a ratio, the amplitude of the difference channel over a discrete conductor will depend on the strength of the anomaly, but it will remain near zero for the flat-lying targets.

Anomalies that occur near the ends of the survey lines (i.e., outside the survey area) should be viewed with caution. Some of the weaker anomalies could be due to aerodynamic noise, i.e., bird bending, which is created by abnormal stresses to which the bird is subjected during the climb and turn of the aircraft between lines. Such aerodynamic noise is usually manifested by an anomaly on the coaxial in-phase channel only, although severe stresses can affect the coplanar in-phase channels as well.

The EM anomalies resulting from this survey appear to fall within one of two general categories. The first type consists of discrete, well-defined anomalies that yield marked inflections on the difference channels. These anomalies are usually attributed to conductive sulphides or graphite and are generally given a "B" (bedrock), "D" (vertical or dipping thin dyke) or "T" (vertical or dipping thick dyke) interpretive symbol, all denoting a bedrock source. EM anomalies that do not display the classic anomaly shape of the “thin dyke” model, but are considered to reflect sources at depth are generally given a “B” interpretation. The “T” anomaly is a very specific anomaly type, and is generally not used unless the specific criteria defined in figure B-1 of appendix B are met. No “T” anomalies were identified within this survey area.

The second class of anomalies comprises moderately broad responses that exhibit the characteristics of a half-space and do not yield well-defined inflections on the difference channels. Anomalies in this category are usually given an "S" or "H" interpretive symbol. The lack of a difference channel response usually implies a broad or flat-lying conductive source such as overburden. Some of these anomalies could reflect conductive rock units, zones of deep weathering, or the weathered tops of kimberlite pipes, all of which can yield “non-discrete” signatures.

The effects of conductive overburden are evident over portions of the survey area. Although the difference channels (DIFI and DIFQ) are extremely valuable in detecting bedrock conductors that are partially masked by conductive overburden, sharp undulations in the bedrock/overburden interface can yield anomalies in the difference channels which may be interpreted as possible bedrock conductors. Such anomalies usually fall into the "S?" or "B?" classification but may also be given an "E" interpretive symbol, denoting a resistivity contrast at the edge of a conductive unit.

The "?" symbol does not question the validity of an anomaly, but instead indicates some degree of uncertainty as to which is the most appropriate EM source model. This ambiguity results from the combination of effects from two or more conductive sources, such as overburden and bedrock, gradational changes, or moderately shallow dips. The presence of a conductive upper layer has a tendency to mask or alter the characteristics of bedrock conductors, making interpretation difficult. This problem is further exacerbated in the presence of magnetite.

In areas where EM responses are evident primarily on the quadrature components, zones of poor conductivity are indicated. Where these responses are coincident with magnetic anomalies, it is possible that the in-phase component amplitudes have been suppressed by the effects of magnetite. Poorly-conductive magnetic features can give rise to resistivity anomalies that are only slightly below or slightly above background. If it is expected that poorly-conductive economic mineralization could be associated with magnetite-rich units, most of these weakly anomalous features will be of interest. In areas where magnetite causes the in-phase components to become negative, the apparent conductance and depth of EM anomalies will be unreliable. Magnetite effects usually give rise to overstated (higher) resistivity values and understated (shallow) depth calculations.

It is impractical to assess the relative merits of EM anomalies on the basis of conductance. It is recommended that an attempt be made to compile a suite of geophysical "signatures" over any known areas of interest. Anomaly characteristics are clearly defined in the profile data of the EM channels.

Apparent Resistivity

The apparent resistivities in ohm-m are generated from the in-phase and quadrature EM components for all of the coplanar frequencies, using a pseudo-layer half-space model. The inputs to the resistivity algorithm are the in-phase and quadrature amplitudes of the secondary field. The algorithm calculates the apparent resistivity in ohm-m, and the apparent height of the bird above the conductive source. Any difference between the apparent height and the true height, as measured by the radar altimeter, is called the pseudo-layer and reflects the difference between the real geology and a homogeneous halfspace. This difference is often attributed to the presence of a highly resistive upper layer. Any errors in the altimeter reading, caused by heavy tree cover, are included in the pseudo-layer and do not affect the resistivity calculation. The apparent depth estimates, however, will reflect the altimeter errors. Apparent resistivities calculated in this manner may differ from those calculated using other models.

In areas where the effects of magnetic permeability or dielectric permittivity have suppressed the in-phase responses, the calculated resistivities will be erroneously high. Various algorithms and inversion techniques can be used to partially correct for the effects of permeability and permittivity. No corrections for permeability and permittivity were made to the data for this survey.

The apparent resistivity parameters portray all of the information for a given frequency over the entire survey area. This full coverage contrasts with the electromagnetic anomalies, which provide information only over interpreted conductors. The large dynamic range afforded by the multiple frequencies makes the apparent resistivity parameter an excellent mapping tool.

The preliminary apparent resistivity images are carefully inspected to identify any lines or line segments that might require base level adjustments. Subtle changes between in-flight calibrations of the system can result in line-to-line differences that are more recognizable in resistive (low signal amplitude) areas. If required, manual level adjustments are carried out to eliminate or minimize resistivity differences that can be attributed, in part, to changes in operating temperatures. These levelling adjustments are usually very subtle, and do not result in the degradation of discrete anomalies.

After the manual levelling process is complete, revised resistivity grids are created. The resulting grids can be subjected to a microlevelling technique in order to smooth the data for contouring. The coplanar resistivity parameter has a broad 'footprint' that requires very little filtering.

Apparent resistivity maps, which display the conductive properties of the survey area, were produced from the 900 Hz, 7200 Hz and 56 000 Hz coplanar data. Maximum resistivity values are calculated for each frequency. These cutoffs eliminate the erratic higher resistivities that would result from unstable ratios of very small EM amplitudes.

Residual Magnetic Field

A Fugro CF-1 cesium vapour magnetometer was operated at the survey base to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to permit subsequent removal of diurnal drift.

A fourth difference editing routine was applied to the magnetic data to remove any spikes.

The aeromagnetic data were corrected for measured system lag, and then adjusted for regional variations (or IGRF gradient, 2010, updated to the date of data acquisition and adjusted for altimeter variations). The data were then corrected for diurnal variations by subtraction of the digitally recorded base station magnetic data. The results were then levelled using tie and traverse line intercepts. Manual adjustments were applied to any lines that required levelling, as indicated by shadowed images of the gridded magnetic data. The manually levelled data were then subjected to a microlevelling filter. The gridded data show the magnetic properties of the rock units underlying the survey areas.

If a specific magnetic intensity can be assigned to the rock type that is believed to host the target mineralization, it may be possible to select areas of higher priority on the basis of the total field magnetic data. This is based on the assumption that the magnetite content of the host rocks will give rise to a limited range of contour values that will permit differentiation of various lithological units. Structural complexities are evident on the images as variations in magnetic intensity, irregular patterns, and as offsets or changes in strike direction.

The magnetic results, in conjunction with the other geophysical parameters, have provided valuable information that can be used to effectively map the geology and structure in the survey areas.

Calculated Vertical Magnetic Gradient (First Vertical Derivative)

The diurnally-corrected, IGRF-corrected magnetic data were subjected to a processing algorithm that enhances the response of magnetic bodies in the upper 500 metres and attenuates the response of deeper bodies. The resulting vertical gradient grid provides better definition and resolution of near-surface magnetic units. It also identifies weak magnetic features that may not be quite as evident in the total field data. Regional magnetic variations and changes in lithology, however, may be better defined on the total magnetic field parameter.

Digital Elevation

The laser altimeter values (ALTLAS_BIRD – EM bird to ground clearance) are subtracted from the differentially corrected and de-spiked GPS-Z values to produce profiles of the height above the ellipsoid along the survey lines. These values are gridded to produce contour maps showing approximate elevations within the survey area. The calculated digital terrain data are then tie-line levelled and adjusted to mean sea level. Any remaining subtle line-to-line discrepancies are manually removed. After the manual corrections are applied, the digital terrain data are filtered with a microlevelling algorithm.

The accuracy of the elevation calculation is directly dependent on the accuracy of the two input parameters, ALTLAS_BIRD and GPS-Z. The ALTLAS_BIRD value may be erroneous in areas of heavy tree cover, where the altimeter reflects the distance to the tree canopy rather than the ground. The GPS-Z value is primarily dependent on the number of available satellites. Although post-processing of GPS data will yield X and Y accuracies in the order of 1-2 metres, the accuracy of the Z value is usually much less, sometimes in the ±10 metre range. Further inaccuracies may be introduced during the interpolation and gridding process.

Because of the inherent inaccuracies of this method, no guarantee is made or implied that the information displayed is a true representation of the height above sea level. Although this product may be of some use as a general reference, <u>THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.</u>

Contour, Colour and Shadow Map Displays

The magnetic and resistivity data are interpolated onto a regular grid using a modified Akima spline technique. The resulting grid is suitable for image processing and generation of contour maps. The grid cell size is 20% of the line interval.

Colour maps are produced by interpolating the grid down to the pixel size. The parameter is then incremented with respect to specific amplitude ranges to provide colour "contour" maps.

6. PRODUCTS

This section lists the final maps and products that have been provided under the terms of the survey agreement. Other products can be prepared from the existing dataset, if requested. These include magnetic enhancements or derivatives, percent magnetite, resistivities corrected for magnetic permeability and/or dielectric permittivity, digital terrain, resistivity-depth sections, inversions, and overburden thickness. Most parameters can be displayed as contours, profiles, or in colour.

Base Maps

Base maps of the survey areas were produced by scanning published topographic maps to a bitmap (.bmp) format. This process provides a relatively accurate, distortion-free base that facilitates correlation of the navigation data to the map coordinate system. The topographic files were combined with geophysical data for plotting some of the final maps. All maps were created using the following parameters:

<u>Projection Description</u>:

Datum:	NAD83
Ellipsoid:	GRS80
Projection:	UTM (Zone: 9N)
Central Meridian:	129°W
False Northing:	0
False Easting:	500000
Scale Factor:	0.9996
WGS84 to Local Conversion:	Molodensky
Datum Shifts:	DX: 0 DY: 0 DZ: 0

Maps depicting the survey results have been provided at a scale of 1:20 000 as listed in Table 6-1. Each Parameter is plotted on 6 map sheets for the Mac Pass Claim Group area, and a single map sheet for the Ben Claim area. The final digital archives are provided on DVD. Both line data and grid archives are provided in Geosoft format.

Table 6-1 Survey Products

Final Map Product	No. of Colour Map Sets
EM Anomalies with interpretation	2
Residual Magnetic Intensity	2
Calculated Vertical Magnetic Gradient	2
Apparent Resistivity 900 Hz	2
Apparent Resistivity 7200 Hz	2
Apparent Resistivity 56 000 Hz	2

Additional Products

Digital Archive (see Archive Description)	1 DVD
Survey Report	PDF format on archive DVD, 2 paper copies
Flight Path Video	all flights in .BIN/.BDX format on DVD with viewer
Final colour maps	all products, in Geosoft map format

7. SURVEY RESULTS

Tables 7-1 and 7-2 summarize the discrete EM anomaly responses interpreted from the survey data with respect to conductance grade and interpretation for the survey areas. The anomalies are listed in .PDF format and archived in XYZ format on the final archive DVD.

Interpretation maps at a scale of 1:20 000, which include the EM anomalies, accompany this report. Prominent magnetic and conductive zones have been outlined in red or blue, respectively. Linear features that have been interpreted from either the magnetic or resistivity data, and which may reflect possible structural breaks within the survey area, are shown with a dashed green line.

Mac Pass Claim Group

The western portion of the Mac Pass Claim Group survey area is dominated by a highly conductive zone, R1. It seems to reflect a broad conductive unit, which is made up of multiple, closely spaced, thin conductive trends. The conductivity associated with R1 seems to reflect sources at depth, as the low frequency resistivities are generally lower than those calculated from the high frequency. The changes in the calculated resistivities one frequency to another, gives an approximation of the subsurface. Conductivity depth sections, such as differential resistivity sections as shown below, may be useful in defining the characteristics of complex conductive units such as R1. Two cross sections of R1, based on the differential resistivity calculation are shown below for lines 10130 and 10500. Differences in depth to conductor, and change in conductivity with depth are readily apparent.

Line 10500 displays resistivities that are much closer in value over the three coplanar frequencies, suggesting that all frequencies are seeing the same highly conductive, thick conductive unit. Line 10130, displays much higher resistivities on the high frequency, suggesting the source of the conductivity has a deeper source, identified on the low, 900 Hz frequency.

TABLE 7-1 EM ANOMALY STATISTICS
Mac Pass Claim Group
Eastern Yukon
Job # 11046-1

CONDUCTOR GRADE	CONDUCTANCE RANGE SIEMENS (MHOS)	NUMBER OF RESPONSES
7	>100	124
6	50 - 100	164
5	20 - 50	441
4	10 - 20	683
3	5 - 10	1057
2	1 - 5	6529
1	<1	2246
*	INDETERMINATE	257
TOTAL		11501

CONDUCTOR MODEL	MOST LIKELY SOURCE	NUMBER OF RESPONSES
D	DISCRETE BEDROCK CONDUCTOR (THIN DYKE MODEL)	1392
B	BEDROCK CONDUCTOR	6460
S	CONDUCTIVE COVER	3524
E	EDGE OF WIDE CONDUCTOR	10
H	ROCK UNIT OR THICK COVER	115
TOTAL		11501

TABLE 7-2 EM ANOMALY STATISTICS
Ben Claim
Eastern Yukon
Job # 11046-2

CONDUCTOR GRADE	CONDUCTANCE RANGE SIEMENS (MHOS)	NUMBER OF RESPONSES
7	>100	10
6	50 - 100	16
5	20 - 50	35
4	10 - 20	42
3	5 - 10	55
2	1 - 5	166
1	<1	129
*	INDETERMINATE	12
TOTAL		465

CONDUCTOR MODEL	MOST LIKELY SOURCE	NUMBER OF RESPONSES
D	DISCRETE BEDROCK CONDUCTOR (THIN DYKE MODEL)	41
B	BEDROCK CONDUCTOR	390
S	CONDUCTIVE COVER	34
TOTAL		465

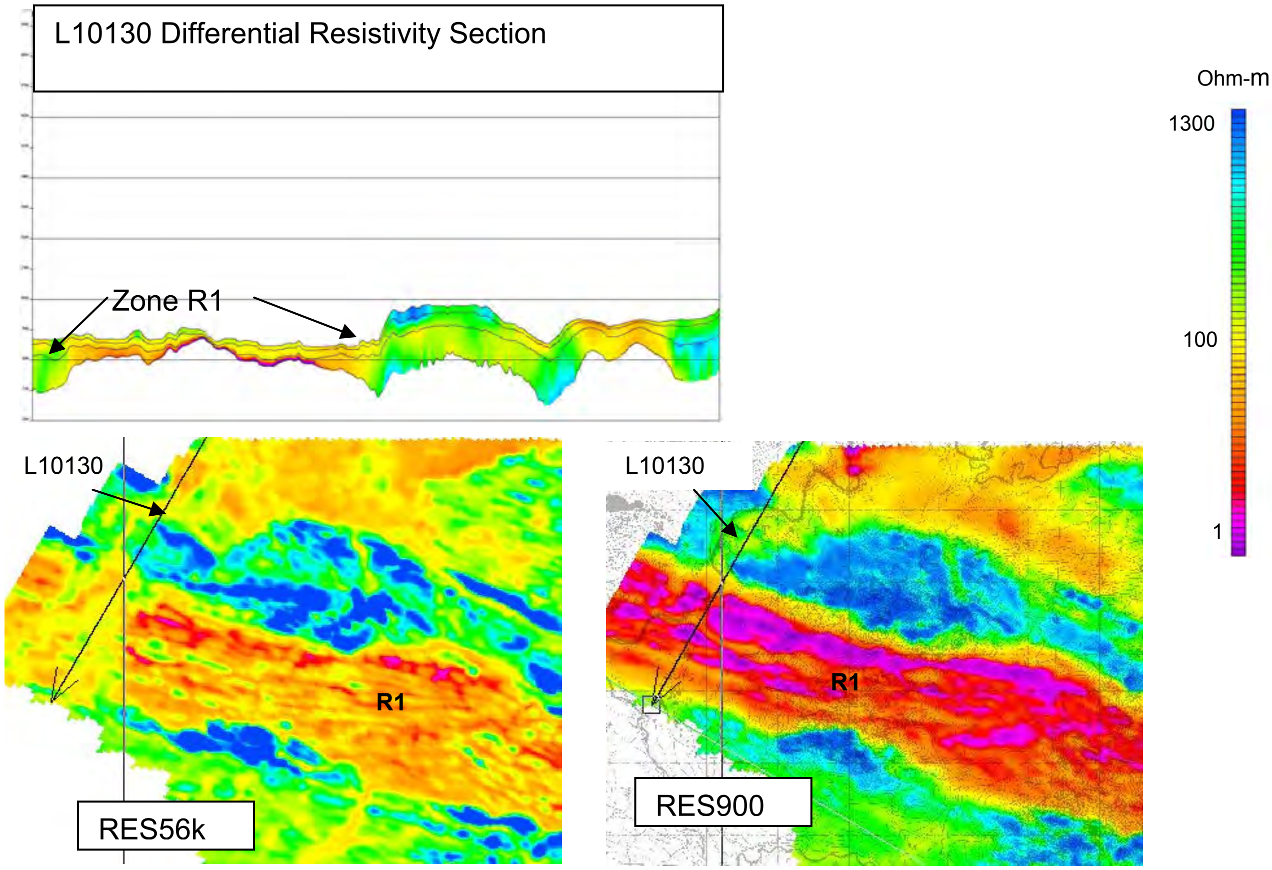


Figure 7-1 Line 10130

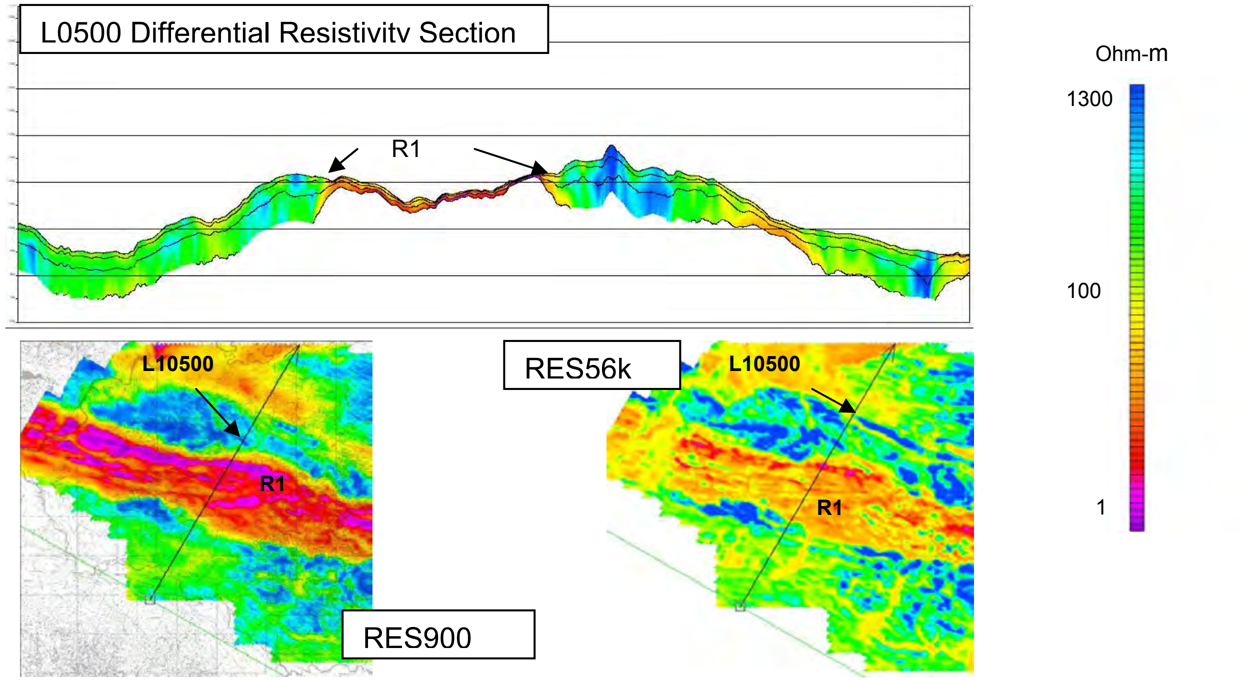


Figure 7-2 Line 10500

R1 displays some correlation with the magnetic data, as many of the possible breaks identified on the magnetic parameters are also on the resistivity parameters. Several moderately magnetic units, M1, M2 and M3, are situated near the edges of conductive zone R1 on sheet 1. All are situated in areas of complexity in the magnetic data, as many prominent breaks are evident in the vicinity of all three magnetic zones. M1 is situated at the northern limit of R1. It is interesting as it seems to be part of an oval shaped magnetic feature defined on the calculated first vertical magnetic derivative map, the outline of which is shown below in Figure 7-3.

M5, which is situated on sheet 2, differs from M1, M2 and M3 as it is situated within R1 rather than near the edge of the zone. It is coincident with a resistive zone within R1 which is associated with a topographic high.

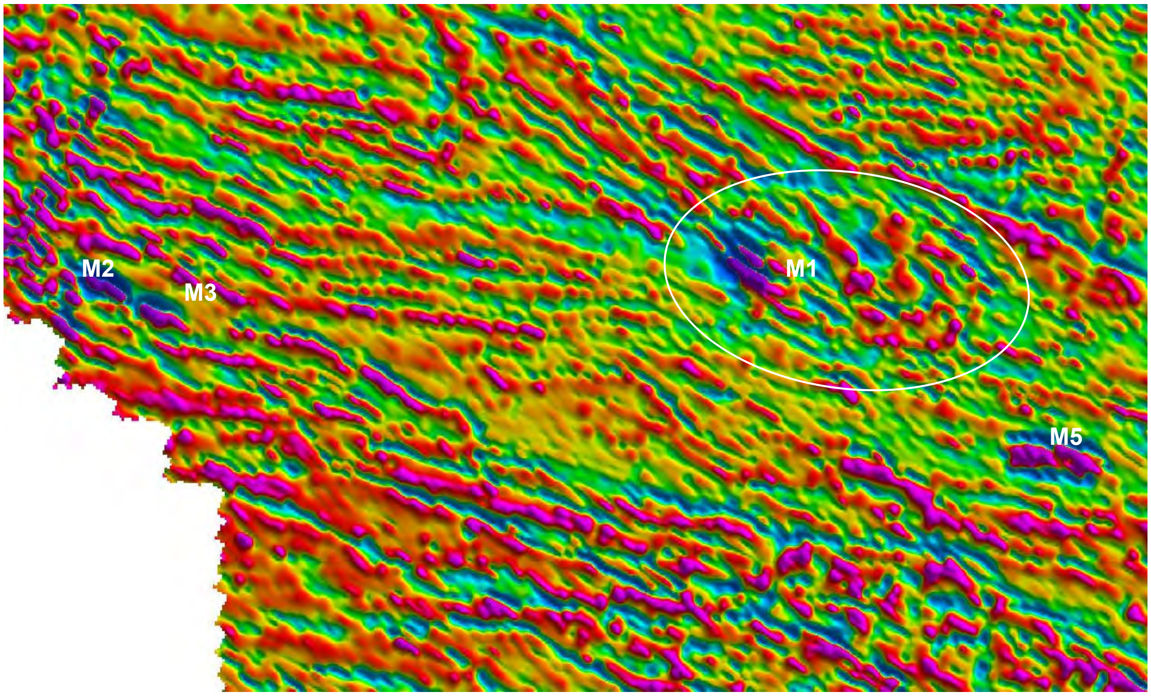


Figure 7-3 Shadowed Calculated First Vertical Derivative

Several less extensive conductive zones R2 and R3 are also situated on sheet 1, and reflect conductive sources at depth. Neither displays any direct correlation with the magnetic data, as they are situated within the relatively non-magnetic northwest area of the survey block. R4, which is situated to the north of R1, situated over sheets 1 and 2, also reflects possible bedrock conductivity. Its southern limit is coincident with a prominent northwest/southeast trending break in the magnetic data.

M4 is a complex magnetic zone situated near the northern edge of sheet 2. The magnetic features within this zone are generally associated with topographic highs. Many possible structural features, inferred from the magnetic data, intersect this zone. The strongest magnetic feature within M4 is situated at the northern edge of the zone, immediately to the west of a prominent north-northwest/south-southeast trending magnetic break. Conductive zone R5 is situated along this break, and may reflect weakly conductive features at depth.

The character of the magnetic data changes drastically between the northern and southern regions of the survey block. The northern region generally consists of low gradient magnetic features, with a dynamic range of less than 100 nT. The southern portion of the survey block displays much higher magnetic gradients and contains magnetic features, M6 through M21, which display increased magnetic intensities. One of the strongest magnetic features is M6, situated at the southeastern limit of sheet 4. M6 appears to be separated from smaller zones M7 through M10 by a prominent structural feature, which extends northwest/southeast along its eastern edge. M6 displays some association with R7, a conductive ring-like zone, which reflects possible bedrock conductivity.

Much of the southern region of the survey block is dominated by conductive zone R8. It displays similar characteristics to R1, as it seems to reflect multiple, closely spaced conductive sources, but conductivities within this zone are much lower than those in R1 on all frequencies. Calculated resistivities of less than one ohm-metre are evident throughout much of the zone on the 900 Hz resistivity parameter.

Extensive conductive zones such as R1 and R8 often reflect formational conductors that may be of minor interest as direct exploration targets. However, attention may be focused on areas where these zones appear to be faulted or folded or where anomaly characteristics differ along strike. Such structural breaks are considered to be of particular interest as they may have influenced mineral deposition within the survey area.

Ben Claim

Three conductive zones, R1 through R3, are evident within this small block situated to the east of sheet 6 of the Mac Pass Group Claims area. R1 is the most extensive zone, and reflects multiple closely spaced conductive sources. The 900 Hz parameter displays the lowest resistivities, suggesting the source of the conductivity is at depth. Several moderately magnetic features, M1 through M4, are associated with the central region of R1, although the strongest conductivities within R1 are located around the edge of the zone and are generally non-magnetic. Magnetic zones M1 through M4 appear to be intersected by or separated from each other by several possible structural features.

Conductive zone R3 reflects multiple possible bedrock sources situated in the southern corner of the survey area. This east/west trending feature is situated along an inferred structural feature that intersects magnetic zone M6.

8. CONCLUSIONS AND RECOMMENDATIONS

This report provides a very brief description of the survey results and describes the equipment, data processing procedures and logistics of the survey.

The survey has been successful in mapping the magnetic and conductive properties of the survey areas. The survey was also successful in locating anomalous zones that may warrant additional work. The various maps included with this report display the magnetic and conductive properties of the survey areas. It is recommended that a complete assessment and detailed evaluation of the survey results be carried out, in conjunction with all available geophysical, geological and geochemical information.

The interpreted bedrock conductors and anomalous targets defined by the survey should be subjected to further investigation, using appropriate surface exploration techniques. Anomalies that are currently considered to be of moderately low priority may require upgrading if follow-up results are favourable.

It is also recommended that image processing of existing geophysical data be considered, in order to extract the maximum amount of information from the survey results. Current software and imaging techniques often provide valuable information on structure and lithology, which may not be clearly evident on the contour and colour maps. These techniques can yield images that define subtle, but significant, structural details.

Respectfully submitted,

FUGRO AIRBORNE SURVEYS CORP.

APPENDIX A
LIST OF PERSONNEL

The following personnel were involved in the acquisition, processing, interpretation and presentation of data, relating to a DIGHEM airborne geophysical survey carried out for Colorado Resources Ltd. over the Mac Pass Claim Group and the Ben Claim areas, Eastern Yukon.

Graham Konieczny	Manager, Data Processing and Interpretation
Terry Lacey	Geophysical Operator
Amanda Heydorn	Geophysical Data Processor - Field
Sara Underhay	Geophysical Data Processor - Field
Richardo White	Geophysical Data Processor
Guy Lajoie	Pilot (Questral Helicopters Ltd.)
Mark Lapointe	Pilot
Ruth Pritchard	Interpretation
Lyn Vanderstarren	Drafting Supervisor

The survey consisted of approximately 3064.0 line-km flown from July 11th to August 4th, 2011.

All personnel were employees of Fugro Airborne Surveys, except where indicated.

APPENDIX B

BACKGROUND INFORMATION

APPENDIX B
BACKGROUND INFORMATION

Electromagnetics

Fugro electromagnetic responses fall into two general classes, discrete and broad. The discrete class consists of sharp, well-defined anomalies from discrete conductors such as sulphide lenses and steeply dipping sheets of graphite and sulphides. The broad class consists of wide anomalies from conductors having a large horizontal surface such as flatly dipping graphite or sulphide sheets, saline water-saturated sedimentary formations, conductive overburden and rock, kimberlite pipes and geothermal zones. A vertical conductive slab with a width of 200 m would straddle these two classes.

The vertical sheet (half plane) is the most common model used for the analysis of discrete conductors. All anomalies plotted on the geophysical maps are analyzed according to this model. The following section entitled **Discrete Conductor Analysis** describes this model in detail, including the effect of using it on anomalies caused by broad conductors such as conductive overburden.

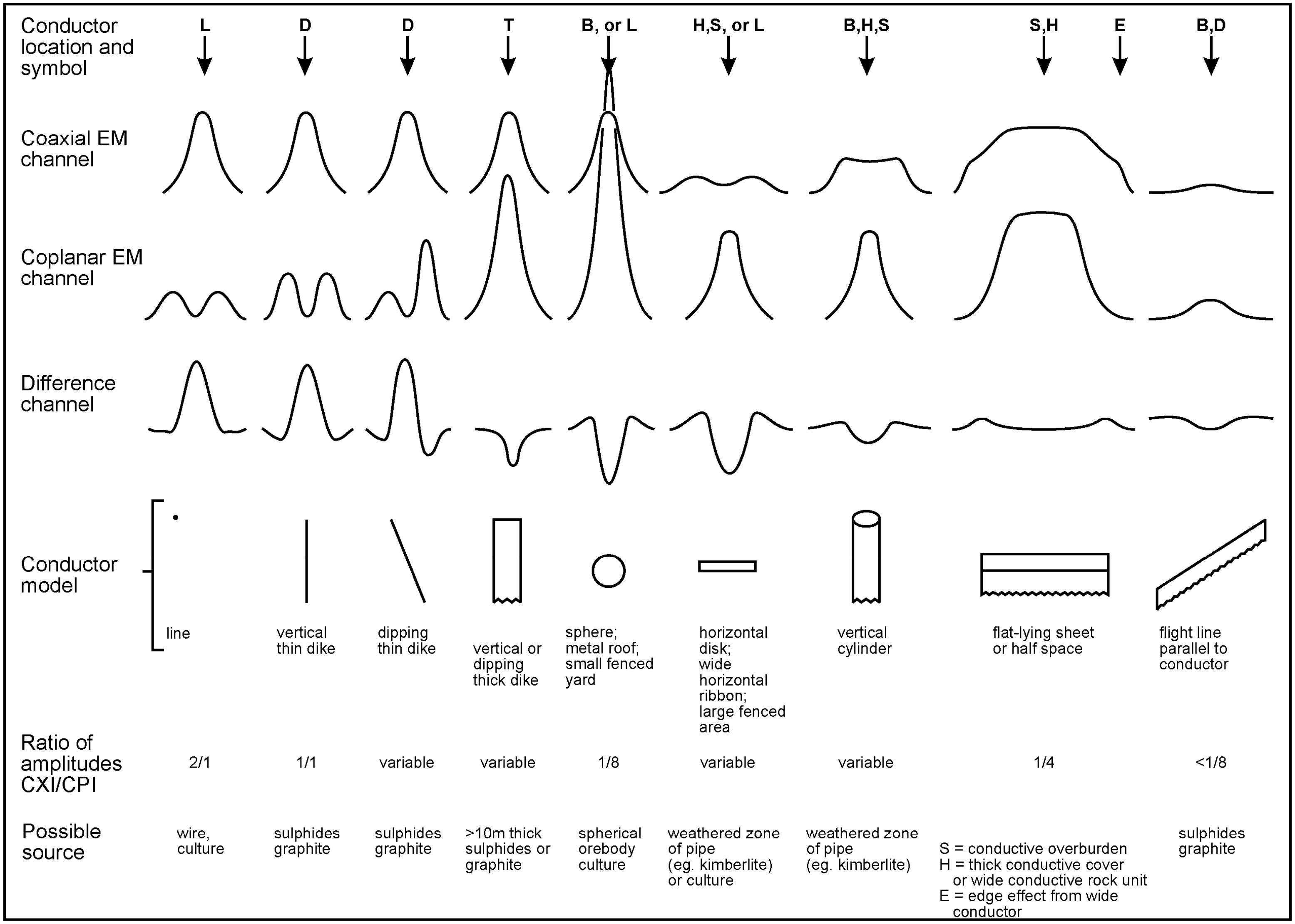
The conductive earth (half-space) model is suitable for broad conductors. Resistivity contour maps result from the use of this model. A later section entitled **Resistivity Mapping** describes the method further, including the effect of using it on anomalies caused by discrete conductors such as sulphide bodies.

Geometric Interpretation

The geophysical interpreter attempts to determine the geometric shape and dip of the conductor. Figure B-1 shows typical HEM anomaly shapes which are used to guide the geometric interpretation.

Discrete Conductor Analysis

The EM anomalies appearing on the electromagnetic map are analyzed by computer to give the conductance (i.e., conductivity-thickness product) in siemens (mhos) of a vertical sheet model. This is done regardless of the interpreted geometric shape of the conductor. This is not an unreasonable procedure, because the computed conductance increases as the electrical quality of the conductor increases, regardless of its true shape. DIGHEM anomalies are divided into seven grades of conductance, as shown in Table B-1. The conductance in siemens (mhos) is the reciprocal of resistance in ohms.



Typical HEM anomaly shapes

Figure B-1

The conductance value is a geological parameter because it is a characteristic of the conductor alone. It generally is independent of frequency, flying height or depth of burial, apart from the averaging over a greater portion of the conductor as height increases. Small anomalies from deeply buried strong conductors are not confused with small anomalies from shallow weak conductors because the former will have larger conductance values.

Table B-1. EM Anomaly Grades

Anomaly Grade	Siemens
7	> 100
6	50 – 100
5	20 – 50
4	10 – 20
3	5 – 10
2	1 – 5
1	< 1

Conductive overburden generally produces broad EM responses which may not be shown as anomalies on the geophysical maps. However, patchy conductive overburden in otherwise resistive areas can yield discrete anomalies with a conductance grade (cf. Table B-1) of 1, 2 or even 3 for conducting clays which have resistivities as low as 50 ohm-m. In areas where ground resistivities are below 10 ohm-m, anomalies caused by weathering variations and similar causes can have any conductance grade. The anomaly shapes from the multiple coils often allow such conductors to be recognized, and these are indicated by the letters S, H, and sometimes E on the geophysical maps (see EM legend on maps).

For bedrock conductors, the higher anomaly grades indicate increasingly higher conductances. Examples: the New Insco copper discovery (Noranda, Canada) yielded a grade 5 anomaly, as did the neighbouring copper-zinc Magusi River ore body; Mattabi (copper-zinc, Sturgeon Lake, Canada) and Whistle (nickel, Sudbury, Canada) gave grade 6; and the Montcalm nickel-copper discovery (Timmins, Canada) yielded a grade 7 anomaly. Graphite and sulphides can span all grades but, in any particular survey area, field work may show that the different grades indicate different types of conductors.

Strong conductors (i.e., grades 6 and 7) are characteristic of massive sulphides or graphite. Moderate conductors (grades 4 and 5) typically reflect graphite or sulphides of a less massive character, while weak bedrock conductors (grades 1 to 3) can signify poorly connected graphite or heavily disseminated sulphides. Grades 1 and 2 conductors may not respond to ground EM equipment using frequencies less than 2000 Hz.

The presence of sphalerite or gangue can result in ore deposits having weak to moderate conductances. As an example, the three million ton lead-zinc deposit of Restigouche Mining Corporation near Bathurst, Canada, yielded a well-defined grade 2 conductor. The 10 percent by volume of sphalerite occurs as a coating around the fine grained massive pyrite, thereby inhibiting electrical conduction. Faults, fractures and shear zones may produce anomalies that typically have low conductances (e.g., grades 1 to 3). Conductive rock formations can yield anomalies of any conductance grade. The conductive materials in such rock formations can be salt water, weathered products such as clays, original depositional clays, and carbonaceous material.

For each interpreted electromagnetic anomaly on the geophysical maps, a letter identifier and an interpretive symbol are plotted beside the EM grade symbol. The conductance grade and depth estimate illustrates which of these possibilities fits the recorded data best.

The conductance measurement is considered more reliable than the depth estimate. There are a number of factors that can produce an error in the depth estimate, including the averaging of topographic variations by the altimeter, overlying conductive overburden, and the location and attitude of the conductor relative to the flight line. Conductor location and attitude can provide an erroneous depth estimate because the stronger part of the conductor may be deeper or to one side of the flight line, or because it has a shallow dip. A heavy tree cover can also produce errors in depth estimates. This is because the depth estimate is computed as the distance of bird from conductor, minus the altimeter reading. The altimeter can lock onto the top of a dense forest canopy. This situation yields an erroneously large depth estimate but does not affect the conductance estimate.

Dip symbols are used to indicate the direction of dip of conductors. These symbols are used only when the anomaly shapes are unambiguous, which usually requires a fairly resistive environment.

A further interpretation is presented on the EM map by means of the line-to-line correlation of bedrock anomalies, which is based on a comparison of anomaly shapes on adjacent lines. This provides conductor axes that may define the geological structure over portions of the survey area. The absence of conductor axes in an area implies that anomalies could not be correlated from line to line with reasonable confidence.

The electromagnetic anomalies are designed to provide a correct impression of conductor quality by means of the conductance grade symbols. The symbols can stand alone with geology when planning a follow-up program. The actual conductance values are available in the EM anomaly archive for those who wish quantitative data. The map provides an interpretation of conductors in terms of length, strike and dip, geometric shape, conductance, depth, and thickness. The accuracy is comparable to an interpretation from a high quality ground EM survey having the same line spacing.

The EM anomaly archive provides a tabulation of anomalies in ppm, conductance, and depth for the vertical dyke model for bedrock anomalies (i.e. B D and T anomaly types), and for a horizontal sheet model for broad anomalies (i.e. S, H and E). No conductance or depth estimates are shown for weak anomalous responses that are not of sufficient amplitude to yield reliable calculations.

Since discrete bodies normally are the targets of EM surveys, local base (or zero) levels are used to compute local anomaly amplitudes. This contrasts with the use of true zero levels which are used to compute true EM amplitudes. Local anomaly amplitudes are shown in the EM anomaly list and these are used to compute the parameters of conductance and depth.

Questionable Anomalies

The EM maps may contain anomalous responses that are displayed as asterisks (*). These responses denote weak anomalies of indeterminate conductance, which may reflect one of the following: a weak conductor near the surface, a strong conductor at depth (e.g., 100 to 120 m below surface) or to one side of the flight line, or aerodynamic noise. Those responses that have the appearance of valid bedrock anomalies on the flight profiles are indicated by appropriate interpretive symbols (see EM legend on maps). The others probably do not warrant further investigation unless their locations are of considerable geological interest.

The Thickness Parameter

A comparison of coaxial and coplanar shapes can provide an indication of the thickness of a steeply dipping conductor. The amplitude of the coplanar anomaly (e.g., CPI channel) increases relative to the coaxial anomaly (e.g., CXI) as the apparent thickness increases, i.e., the thickness in the horizontal plane. (The thickness is equal to the conductor width if the conductor dips at 90 degrees and strikes at right angles to the flight line.) This report refers to a conductor as thin when the thickness is likely to be less than 3 m, and thick when in excess of 10 m. Thick conductors are indicated on the EM map by parentheses "( )". For base metal exploration in steeply dipping geology, thick conductors can be high priority targets because many massive sulphide ore bodies are thick. The system cannot sense the thickness when the strike of the conductor is subparallel to the flight line, when the conductor has a shallow dip, when the anomaly amplitudes are small, or when the resistivity of the environment is below 100 ohm-m.

Resistivity Mapping

Resistivity mapping is useful in areas where broad or flat lying conductive units are of interest. One example of this is the clay alteration which is associated with Carlin-type deposits in the south west United States. The resistivity parameter was able to identify the clay alteration zone over the Cove deposit. The alteration zone appeared as a strong resistivity low on the 900 Hz resistivity parameter. The 7,200 Hz and 56,000 Hz resistivities showed more detail in the covering sediments, and delineated a range front fault. This is typical in many areas of the south west United States, where conductive near surface sediments, which may sometimes be alkalic, attenuate the higher frequencies.

Resistivity mapping has proven successful for locating diatremes in diamond exploration. Weathering products from relatively soft kimberlite pipes produce a resistivity contrast with the unaltered host rock. In many cases weathered kimberlite pipes were associated with thick conductive layers that contrasted with overlying or adjacent relatively thin layers of lake bottom sediments or overburden.

Areas of widespread conductivity are commonly encountered during surveys. These conductive zones may reflect alteration zones, shallow-dipping sulphide or graphite-rich units, saline ground water, or conductive overburden. In such areas, EM amplitude changes can be generated by decreases of only 5 m in survey altitude, as well as by increases in conductivity. The typical flight record in conductive areas is characterized by in-phase and quadrature channels that are continuously active. Local EM peaks reflect either increases in conductivity of the earth or decreases in survey altitude. For such conductive areas, apparent resistivity profiles and contour maps are necessary for the correct interpretation of the airborne data. The advantage of the resistivity parameter is that anomalies caused by altitude changes are virtually eliminated, so the resistivity data reflect only those anomalies caused by conductivity changes. The resistivity analysis also helps the interpreter to differentiate between conductive bedrock and conductive overburden. For example, discrete conductors will generally appear as narrow lows on the contour map and broad conductors (e.g., overburden) will appear as wide lows.

The apparent resistivity is calculated using the pseudo-layer (or buried) half-space model defined by Fraser (1978)[1]. This model consists of a resistive layer overlying a conductive half-space. The depth channels give the apparent depth below surface of the conductive material. The apparent depth is simply the apparent thickness of the overlying resistive layer. The apparent depth (or thickness) parameter will be positive when the upper layer is more resistive than the underlying material, in which case the apparent depth may be quite close to the true depth.

The apparent depth will be negative when the upper layer is more conductive than the underlying material, and will be zero when a homogeneous half-space exists. The apparent depth parameter must be interpreted cautiously because it will contain any errors that might exist in the measured altitude of the EM bird (e.g., as caused by a dense tree cover). The inputs to the resistivity algorithm are the in-phase and quadrature components of the coplanar coil-pair. The outputs are the apparent resistivity of the conductive half-space (the source) and the sensor-source distance. The flying height is not an input variable, and the output resistivity and sensor-source distance are independent of the flying height when the conductivity of the measured material is sufficient to yield significant in-phase as well as quadrature responses. The apparent depth, discussed above, is simply the sensor-source distance minus the measured altitude or flying height. Consequently, errors in the measured altitude will affect the apparent depth parameter but not the apparent resistivity parameter.

The apparent depth parameter is a useful indicator of simple layering in areas lacking a heavy tree cover. Depth information has been used for permafrost mapping, where positive apparent depths were used as a measure of permafrost thickness. However, little quantitative use has been made of negative apparent depths because the absolute value of

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[1] Resistivity mapping with an airborne multicoil electromagnetic system: Geophysics, v. 43, p.144-172

the negative depth is not a measure of the thickness of the conductive upper layer and, therefore, is not meaningful physically. Qualitatively, a negative apparent depth estimate usually shows that the EM anomaly is caused by conductive overburden. Consequently, the apparent depth channel can be of significant help in distinguishing between overburden and bedrock conductors.

Interpretation in Conductive Environments

Environments having low background resistivities (e.g., below 30 ohm-m for a 900 Hz system) yield very large responses from the conductive ground. This usually prohibits the recognition of discrete bedrock conductors. However, Fugro data processing techniques produce three parameters that contribute significantly to the recognition of bedrock conductors in conductive environments. These are the in-phase and quadrature difference channels (DIFI and DIFQ, which are available only on systems with “common” frequencies on orthogonal coil pairs), and the resistivity and depth channels (RES and DEP) for each coplanar frequency.

The EM difference channels (DIFI and DIFQ) eliminate most of the responses from conductive ground, leaving responses from bedrock conductors, cultural features (e.g., telephone lines, fences, etc.) and edge effects. Edge effects often occur near the perimeter of broad conductive zones. This can be a source of geologic noise. While edge effects yield anomalies on the EM difference channels, they do not produce resistivity anomalies. Consequently, the resistivity channel aids in eliminating anomalies due to edge effects. On the other hand, resistivity anomalies will coincide with the most highly conductive sections of conductive ground, and this is another source of geologic noise. The recognition of a bedrock conductor in a conductive environment therefore is based on the anomalous responses of the two difference channels (DIFI and DIFQ) and the resistivity channels (RES). The most favourable situation is where anomalies coincide on all channels.

The DEP channels, which give the apparent depth to the conductive material, also help to determine whether a conductive response arises from surficial material or from a conductive zone in the bedrock. When these channels ride above the zero level on the depth profiles (i.e., depth is negative), it implies that the EM and resistivity profiles are responding primarily to a conductive upper layer, i.e., conductive overburden. If the DEP channels are below the zero level, it indicates that a resistive upper layer exists, and this usually implies the existence of a bedrock conductor. If the low frequency DEP channel is below the zero level and the high frequency DEP is above, this suggests that a bedrock conductor occurs beneath conductive cover.

Reduction of Geologic Noise

Geologic noise refers to unwanted geophysical responses. For purposes of airborne EM surveying, geologic noise refers to EM responses caused by conductive overburden and magnetic permeability. It was mentioned previously that the EM difference channels (i.e., channel DIFI for in-phase and DIFQ for quadrature) tend to eliminate the response of conductive overburden.

Magnetite produces a form of geological noise on the in-phase channels. Rocks containing less than 1% magnetite can yield negative in-phase anomalies caused by magnetic permeability. When magnetite is widely distributed throughout a survey area, the in-phase EM channels may continuously rise and fall, reflecting variations in the magnetite percentage, flying height, and overburden thickness. This can lead to difficulties in recognizing deeply buried bedrock conductors, particularly if conductive overburden also exists. However, the response of broadly distributed magnetite generally vanishes on the in-phase difference channel DIFI. This feature can be a significant aid in the recognition of conductors that occur in rocks containing accessory magnetite.

EM Magnetite Mapping

The information content of HEM data consists of a combination of conductive eddy current responses and magnetic permeability responses. The secondary field resulting from conductive eddy current flow is frequency-dependent and consists of both in-phase and quadrature components, which are positive in sign. On the other hand, the secondary field resulting from magnetic permeability is independent of frequency and consists of only an in-phase component which is negative in sign. When magnetic permeability manifests itself by decreasing the measured amount of positive in-phase, its presence may be difficult to recognize. However, when it manifests itself by yielding a negative in-phase anomaly (e.g., in the absence of eddy current flow), its presence is assured. In this latter case, the negative component can be used to estimate the percent magnetite content.

A magnetite mapping technique, based on the low frequency coplanar data, can be complementary to magnetometer mapping in certain cases. Compared to magnetometry, it is far less sensitive but is more able to resolve closely spaced magnetite zones, as well as providing an estimate of the amount of magnetite in the rock. The method is sensitive to 1/4% magnetite by weight when the EM sensor is at a height of 30 m above a magnetitic half-space. It can individually resolve steep dipping narrow magnetite-rich bands which are separated by 60 m. Unlike magnetometry, the EM magnetite method is unaffected by remanent magnetism or magnetic latitude.

The EM magnetite mapping technique provides estimates of magnetite content which are usually correct within a factor of 2 when the magnetite is fairly uniformly distributed. EM magnetite maps can be generated when magnetic permeability is evident as negative in-phase responses on the data profiles.

Like magnetometry, the EM magnetite method maps only bedrock features, provided that the overburden is characterized by a general lack of magnetite. This contrasts with resistivity mapping which portrays the combined effect of bedrock and overburden.

The Susceptibility Effect

When the host rock is conductive, the positive conductivity response will usually dominate the secondary field, and the susceptibility effect[2] will appear as a reduction in the in-phase, rather than as a negative value. The in-phase response will be lower than would be predicted by a model using zero susceptibility. At higher frequencies the in-phase conductivity response also gets larger, so a negative magnetite effect observed on the low frequency might not be observable on the higher frequencies, over the same body. The susceptibility effect is most obvious over discrete magnetite-rich zones, but also occurs over uniform geology such as a homogeneous half-space.

High magnetic susceptibility will affect the calculated apparent resistivity, if only conductivity is considered. Standard apparent resistivity algorithms use a homogeneous half-space model, with zero susceptibility. For these algorithms, the reduced in-phase response will, in most cases, make the apparent resistivity higher than it should be. It is important to note that there is nothing wrong with the data, nor is there anything wrong with the processing algorithms. The apparent difference results from the fact that the simple geological model used in processing does not match the complex geology.

Measuring and Correcting the Magnetite Effect

Theoretically, it is possible to calculate (forward model) the combined effect of electrical conductivity and magnetic susceptibility on an EM response in all environments. The difficulty lies, however, in separating out the susceptibility effect from other geological effects when deriving resistivity and susceptibility from EM data.

Over a homogeneous half-space, there is a precise relationship between in-phase, quadrature, and altitude. These are often resolved as phase angle, amplitude, and altitude. Within a reasonable range, any two of these three parameters can be used to calculate the half space resistivity. If the rock has a positive magnetic susceptibility, the in-phase component will be reduced and this departure can be recognized by comparison to the other parameters.

The algorithm used to calculate apparent susceptibility and apparent resistivity from HEM data, uses a homogeneous half-space geological model. Non half-space geology, such as horizontal layers or dipping sources, can also distort the perfect half-space relationship of the three data parameters. While it may be possible to use more complex models to calculate both rock parameters, this procedure becomes very complex and time-consuming. For basic HEM data processing, it is most practical to stick to the simplest geological model.

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[2] Magnetic susceptibility and permeability are two measures of the same physical property. Permeability is generally given as relative permeability, μ_r, which is the permeability of the substance divided by the permeability of free space ($4\ \pi \times 10^{-7}$). Magnetic susceptibility k is related to permeability by $k=\mu^r-1$. Susceptibility is a unitless measurement, and is usually reported in units of 10^{-6}. The typical range of susceptibilities is –1 for quartz, 130 for pyrite, and up to 5×10^5 for magnetite, in 10^{-6} units (Telford et al, 1986).

Magnetite reversals (reversed in-phase anomalies) have been used for many years to calculate an “FeO” or magnetite response from HEM data (Fraser, 1981). However, this technique could only be applied to data where the in-phase was observed to be negative, which happens when susceptibility is high and conductivity is low.

Applying Susceptibility Corrections

Resistivity calculations done with susceptibility correction may change the apparent resistivity. High-susceptibility conductors, that were previously masked by the susceptibility effect in standard resistivity algorithms, may become evident. In this case the susceptibility corrected apparent resistivity is a better measure of the actual resistivity of the earth. However, other geological variations, such as a deep resistive layer, can also reduce the in-phase by the same amount. In this case, susceptibility correction would not be the best method. Different geological models can apply in different areas of the same data set. The effects of susceptibility, and other effects that can create a similar response, must be considered when selecting the resistivity algorithm.

Susceptibility from EM vs. Magnetic Field Data

The response of the EM system to magnetite may not match that from a magnetometer survey. First, HEM-derived susceptibility is a rock property measurement, like resistivity. Magnetic data show the total magnetic field, a measure of the potential field, not the rock property. Secondly, the shape of an anomaly depends on the shape and direction of the source magnetic field. The electromagnetic field of HEM is much different in shape from the earth’s magnetic field. Total field magnetic anomalies are different at different magnetic latitudes; HEM susceptibility anomalies have the same shape regardless of their location on the earth.

In far northern latitudes, where the magnetic field is nearly vertical, the total magnetic field measurement over a thin vertical dike is very similar in shape to the anomaly from the HEM-derived susceptibility (a sharp peak over the body). The same vertical dike at the magnetic equator would yield a negative magnetic anomaly, but the HEM susceptibility anomaly would show a positive susceptibility peak.

Effects of Permeability and Dielectric Permittivity

Resistivity algorithms that assume free-space magnetic permeability and dielectric permittivity do not yield reliable values in highly magnetic or highly resistive areas. Both magnetic polarization and displacement currents cause a decrease in the in-phase component, often resulting in negative values that yield erroneously high apparent resistivities. The effects of magnetite occur at all frequencies, but are most evident at the lowest frequency. Conversely, the negative effects of dielectric permittivity are most evident at the higher frequencies, in resistive areas.

The table below shows the effects of varying permittivity over a resistive (10,000 ohm-m) half space, at frequencies of 56,000 Hz (DIGHEM^{V}) and 102,000 Hz (RESOLVE).

Apparent Resistivity Calculations
Effects of Permittivity on In-phase/Quadrature/Resistivity

Freq (Hz)	Coil	Sep (m)	Thres (ppm)	Alt (m)	In Phase	Quad Phase	App Res	App Depth (m)	Permittivity
56,000	CP	6.3	0.1	30	7.3	35.3	10118	-1.0	1 Air
56,000	CP	6.3	0.1	30	3.6	36.6	19838	-13.2	5 Quartz
56,000	CP	6.3	0.1	30	-1.1	38.3	81832	-25.7	10 Epidote
56,000	CP	6.3	0.1	30	-10.4	42.3	76620	-25.8	20 Granite
56,000	CP	6.3	0.1	30	-19.7	46.9	71550	-26.0	30 Diabase
56,000	CP	6.3	0.1	30	-28.7	52.0	66787	-26.1	40 Gabbro
102,000	CP	7.86	0.1	30	32.5	117.2	9409	-0.3	1 Air
102,000	CP	7.86	0.1	30	11.7	127.2	25956	-16.8	5 Quartz
102,000	CP	7.86	0.1	30	-14.0	141.6	97064	-26.5	10 Epidote
102,000	CP	7.86	0.1	30	-62.9	176.0	83995	-26.8	20 Granite
102,000	CP	7.86	0.1	30	-107.5	215.8	73320	-27.0	30 Diabase
102,000	CP	7.86	0.1	30	-147.1	259.2	64875	-27.2	40 Gabbro

Methods have been developed (Huang and Fraser, 2000, 2001) to correct apparent resistivities for the effects of permittivity and permeability. The corrected resistivities yield more credible values than if the effects of permittivity and permeability are disregarded.

Recognition of Culture

Cultural responses include all EM anomalies caused by man-made metallic objects. Such anomalies may be caused by inductive coupling or current gathering. The concern of the interpreter is to recognize when an EM response is due to culture. Points of consideration used by the interpreter, when coaxial and coplanar coil-pairs are operated at a common frequency, are as follows:

1. Channels CXPL and CPPL monitor 60 Hz radiation. An anomaly on these channels shows that the conductor is radiating power. Such an indication is normally a guarantee that the conductor is cultural. However, care must be taken to ensure that the conductor is not a geologic body that strikes across a power line, carrying leakage currents.

2. A flight that crosses a "line" (e.g., fence, telephone line, etc.) yields a centre-peaked coaxial anomaly and an m-shaped coplanar anomaly.[3] When the flight crosses the

[3] See Figure B-1 presented earlier.

cultural line at a high angle of intersection, the amplitude ratio of coaxial/coplanar response is 2. Such an EM anomaly can only be caused by a line. The geologic body that yields anomalies most closely resembling a line is the vertically dipping thin dike. Such a body, however, yields an amplitude ratio of 1 rather than 2. Consequently, an m-shaped coplanar anomaly with a CXI/CPI amplitude ratio of 2 is virtually a guarantee that the source is a cultural line.

3. A flight that crosses a sphere or horizontal disk yields centre-peaked coaxial and coplanar anomalies with a CXI/CPI amplitude ratio (i.e., coaxial/coplanar) of 1/8. In the absence of geologic bodies of this geometry, the most likely conductor is a metal roof or small fenced yard.[4] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

4. A flight that crosses a horizontal rectangular body or wide ribbon yields an m-shaped coaxial anomaly and a centre-peaked coplanar anomaly. In the absence of geologic bodies of this geometry, the most likely conductor is a large fenced area.[5] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

5. EM anomalies that coincide with culture, as seen on the camera film or video display, are usually caused by culture. However, care is taken with such coincidences because a geologic conductor could occur beneath a fence, for example. In this example, the fence would be expected to yield an m-shaped coplanar anomaly as in case #2 above. If, instead, a centre-peaked coplanar anomaly occurred, there would be concern that a thick geologic conductor coincided with the cultural line.

6. The above description of anomaly shapes is valid when the culture is not conductively coupled to the environment. In this case, the anomalies arise from inductive coupling to the EM transmitter. However, when the environment is quite conductive (e.g., less than 100 ohm-m at 900 Hz), the cultural conductor may be conductively coupled to the environment. In this latter case, the anomaly shapes tend to be governed by current gathering. Current gathering can completely distort the anomaly shapes, thereby complicating the identification of cultural anomalies. In such circumstances, the interpreter can only rely on the radiation channels and on the camera film or video records.

Magnetic Responses

The measured total magnetic field provides information on the magnetic properties of the earth materials in the survey area. The information can be used to locate magnetic bodies of direct interest for exploration, and for structural and lithological mapping.

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[4] It is a characteristic of EM that geometrically similar anomalies are obtained from: (1) a planar conductor, and (2) a wire which forms a loop having dimensions identical to the perimeter of the equivalent planar conductor.

The total magnetic field response reflects the abundance of magnetic material in the source. Magnetite is the most common magnetic mineral. Other minerals such as ilmenite, pyrrhotite, franklinite, chromite, hematite, arsenopyrite, limonite and pyrite are also magnetic, but to a lesser extent than magnetite on average.

In some geological environments, an EM anomaly with magnetic correlation has a greater likelihood of being produced by sulphides than one which is non-magnetic. However, sulphide ore bodies may be non-magnetic (e.g., the Kidd Creek deposit near Timmins, Canada) as well as magnetic (e.g., the Mattabi deposit near Sturgeon Lake, Canada).

Iron ore deposits will be anomalously magnetic in comparison to surrounding rock due to the concentration of iron minerals such as magnetite, ilmenite and hematite.

Changes in magnetic susceptibility often allow rock units to be differentiated based on the total field magnetic response. Geophysical classifications may differ from geological classifications if various magnetite levels exist within one general geological classification. Geometric considerations of the source such as shape, dip and depth, inclination of the earth's field and remanent magnetization will complicate such an analysis.

In general, mafic lithologies contain more magnetite and are therefore more magnetic than many sediments which tend to be weakly magnetic. Metamorphism and alteration can also increase or decrease the magnetization of a rock unit.
Textural differences on a total field magnetic contour, colour or shadow map due to the frequency of activity of the magnetic parameter resulting from inhomogeneities in the distribution of magnetite within the rock, may define certain lithologies. For example, near surface volcanics may display highly complex contour patterns with little line-to-line correlation.

Rock units may be differentiated based on the plan shapes of their total field magnetic responses. Mafic intrusive plugs can appear as isolated "bulls-eye" anomalies. Granitic intrusives appear as sub-circular zones, and may have contrasting rings due to contact metamorphism. Generally, granitic terrain will lack a pronounced strike direction, although granite gneiss may display strike.

Linear north-south units are theoretically not well-defined on total field magnetic maps in equatorial regions due to the low inclination of the earth's magnetic field. However, most stratigraphic units will have variations in composition along strike that will cause the units to appear as a series of alternating magnetic highs and lows.

Faults and shear zones may be characterized by alteration that causes destruction of magnetite (e.g., weathering) that produces a contrast with surrounding rock. Structural breaks may be filled by magnetite-rich, fracture filling material as is the case with diabase dikes, or by non-magnetic felsic material.

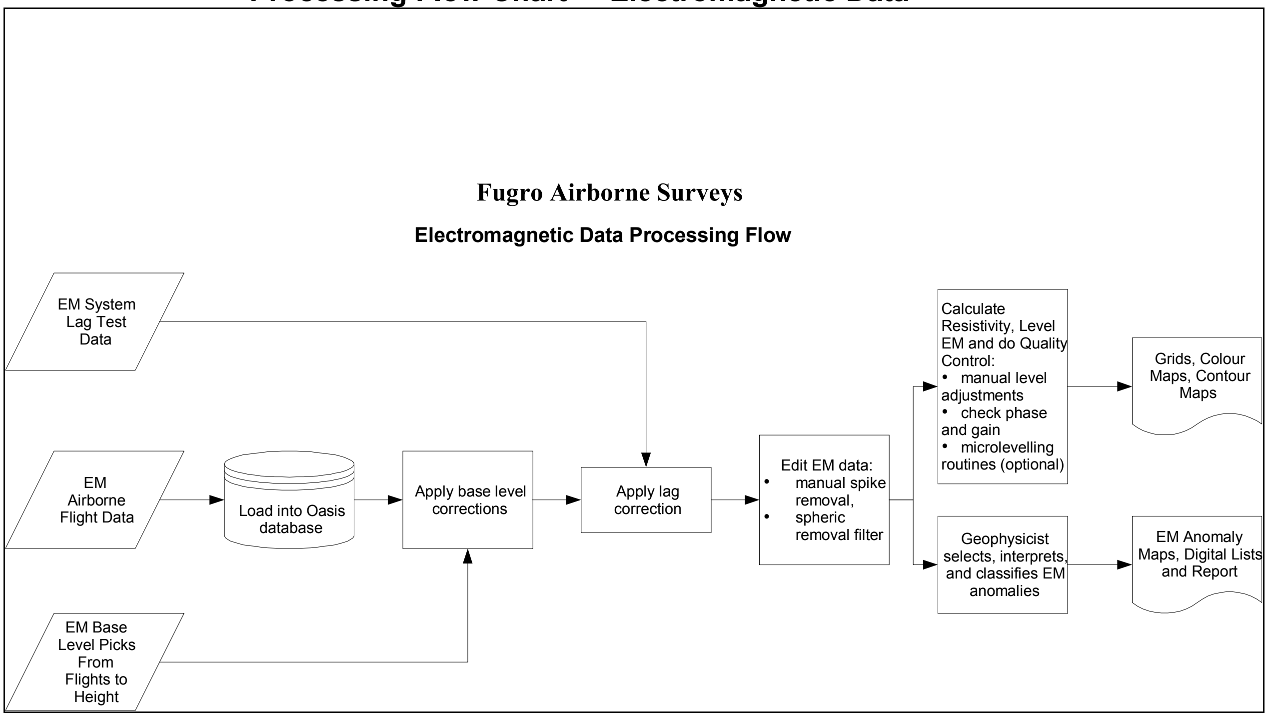
Faulting can also be identified by patterns in the magnetic total field contours or colours. Faults and dikes tend to appear as lineaments and often have strike lengths of several kilometres. Offsets in narrow, magnetic, stratigraphic trends also delineate structure. Sharp contrasts in magnetic lithologies may arise due to large displacements along strike-slip or dip-slip faults.

APPENDIX C

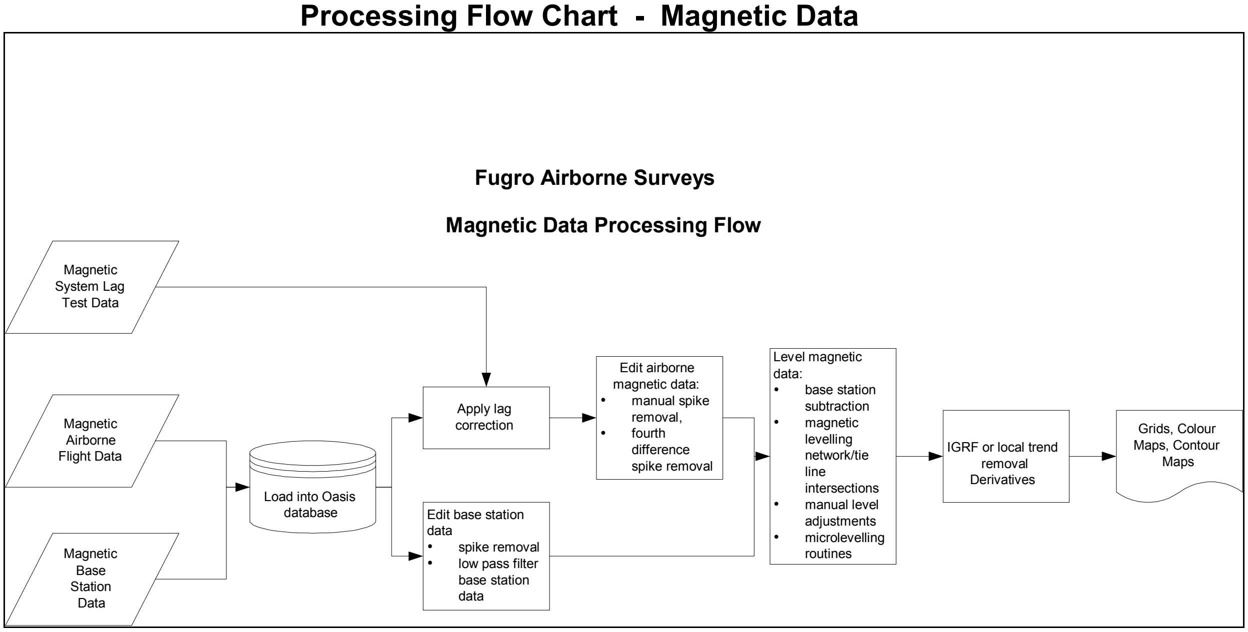
DATA PROCESSING

APPENDIX C

Processing Flow Chart - Electromagnetic Data



Processing Flow Chart - Magnetic Data



APPENDIX D

GLOSSARY

APPENDIX D
GLOSSARY OF AIRBORNE GEOPHYSICAL TERMS

Note: The definitions given in this glossary refer to the common terminology as used in airborne geophysics.

altitude attenuation: the absorption of gamma rays by the atmosphere between the earth and the detector. The number of gamma rays detected by a system decreases as the altitude increases.

apparent- : the ***physical parameters*** of the earth measured by a geophysical system are normally expressed as apparent, as in "apparent ***resistivity*"**. This means that the measurement is limited by assumptions made about the geology in calculating the response measured by the geophysical system. Apparent resistivity calculated with ***HEM***, for example, generally assumes that the earth is a ***homogeneous half-space*** – not layered.

amplitude: The strength of the total electromagnetic field. In ***frequency domain*** it is most often the sum of the squares of ***in-phase*** and ***quadrature*** components. In multi-component electromagnetic surveys it is generally the sum of the squares of all three directional components.

analytic signal: The total amplitude of all the directions of magnetic ***gradient***. Calculated as the sum of the squares.

anisotropy: Having different ***physical parameters*** in different directions. This can be caused by layering or fabric in the geology. Note that a unit can be anisotropic, but still **homogeneous**.

anomaly: A localized change in the geophysical data characteristic of a discrete source, such as a conductive or magnetic body. Something locally different from the **background**.

B-field: In time-domain **electromagnetic** surveys, the magnetic field component of the (electromagnetic) **field**. This can be measured directly, although more commonly it is calculated by integrating the time rate of change of the magnetic field **dB/dt**, as measured with a receiver coil.

background: The "normal" response in the geophysical data – that response observed over most of the survey area. **Anomalies** are usually measured relative to the background. In airborne gamma-ray spectrometric surveys the term defines the **cosmic**, radon, and aircraft responses in the absence of a signal from the ground.

base-level: The measured values in a geophysical system in the absence of any outside signal. All geophysical data are measured relative to the system base level.

base frequency: The frequency of the pulse repetition for a ***time-domain electromagnetic*** system. Measured between subsequent positive pulses.

bird: A common name for the pod towed beneath or behind an aircraft, carrying the geophysical sensor array.

calibration coil: A wire coil of known size and dipole moment, which is used to generate a field of known ***amplitude*** and ***phase*** in the receiver, for system calibration. Calibration coils can be external, or internal to the system. Internal coils may be called Q-coils.

coaxial coils: **[CX]** Coaxial coils are in the vertical plane, with their axes horizontal and collinear in the flight direction. These are most sensitive to vertical conductive objects in the ground, such as thin, steeply dipping conductors perpendicular to the flight direction. Coaxial coils generally give the sharpest anomalies over localized conductors. (See also ***coplanar coils***)

coil: A multi-turn wire loop used to transmit or detect electromagnetic fields. Time varying ***electromagnetic*** fields through a coil induce a voltage proportional to the strength of the field and the rate of change over time.

compensation: Correction of airborne geophysical data for the changing effect of the aircraft. This process is generally used to correct data in ***fixed-wing time-domain electromagnetic*** surveys (where the transmitter is on the aircraft and the receiver is moving), and magnetic surveys (where the sensor is on the aircraft, turning in the earth's magnetic field.

component: In ***frequency domain electromagnetic*** surveys this is one of the two **phase** measurements – ***in-phase or quadrature***. In "multi-component" electromagnetic surveys it is also used to define the measurement in one geometric direction (vertical, horizontal in-line and horizontal transverse – the Z, X and Y components).

Compton scattering: gamma ray photons will bounce off the nuclei of atoms they pass through (earth and atmosphere), reducing their energy and then being detected by ***radiometric*** sensors at lower energy levels. See also ***stripping***.

conductance: See ***conductivity thickness***

conductivity: [**σ**] The facility with which the earth or a geological formation conducts electricity. Conductivity is usually measured in milli-Siemens per metre (mS/m). It is the reciprocal of ***resistivity***.

conductivity-depth imaging: see ***conductivity-depth transform***.

conductivity-depth transform: A process for converting electromagnetic measurements to an approximation of the conductivity distribution vertically in the earth, assuming a ***layered earth***. (Macnae and Lamontagne, 1987; Wolfgram and Karlik, 1995)

conductivity thickness: [**σt**] The product of the ***conductivity***, and thickness of a large, tabular body. (It is also called the "conductivity-thickness product") In electromagnetic geophysics, the response of a thin plate-like conductor is proportional to the conductivity multiplied by thickness. For example a 10 metre thickness of 20 Siemens/m mineralization will be equivalent to 5 metres of 40 S/m; both have 200 S conductivity thickness. Sometimes referred to as conductance.

conductor: Used to describe anything in the ground more conductive than the surrounding geology. Conductors are most often clays or graphite, or hopefully some type of mineralization, but may also be man-made objects, such as fences or pipelines.

coplanar coils: **[CP]** The coplanar coils lie in the horizontal plane with their axes vertical, and parallel. These coils are most sensitive to massive conductive bodies, horizontal layers, and the ***halfspace***.

cosmic ray: High energy sub-atomic particles from outer space that collide with the earth's atmosphere to produce a shower of gamma rays (and other particles) at high energies.

counts (per second): The number of ***gamma-rays*** detected by a gamma-ray ***spectrometer*****.** The rate depends on the geology, but also on the size and sensitivity of the detector.

culture: A term commonly used to denote any man-made object that creates a geophysical anomaly. Includes, but not limited to, power lines, pipelines, fences, and buildings.

current gathering: The tendency of electrical currents in the ground to channel into a conductive formation. This is particularly noticeable at higher frequencies or early time channels when the formation is long and parallel to the direction of current flow. This tends to enhance anomalies relative to inductive currents (see also ***induction***). Also known as current channelling.

current channelling: See current gathering.

daughter products: The radioactive natural sources of gamma-rays decay from the original element (commonly potassium, uranium, and thorium) to one or more lower-energy elements. Some of these lower energy elements are also radioactive and decay further. ***Gamma-ray spectrometry*** surveys may measure the gamma rays given off by the original element or by the decay of the daughter products.

dB/dt: As the ***secondary electromagnetic field*** changes with time, the magnetic field [**B**] component induces a voltage in the receiving ***coil***, which is proportional to the rate of change of the magnetic field over time.

decay: In ***time-domain electromagnetic*** theory, the weakening over time of the ***eddy currents*** in the ground, and hence the ***secondary field*** after the ***primary field*** electromagnetic pulse is turned off. In ***gamma-ray spectrometry***, the radioactive breakdown of an element, generally potassium, uranium, thorium, or one of their ***daughter*** products.

decay series: In ***gamma-ray spectrometry***, a series of progressively lower energy ***daughter products*** produced by the radioactive breakdown of uranium or thorium.

decay constant: see time constant.

depth of exploration: The maximum depth at which the geophysical system can detect the target. The depth of exploration depends very strongly on the type and size of the target, the contrast of the target with the surrounding geology, the homogeneity of the surrounding geology, and the type of geophysical system. One measure of the maximum depth of exploration for an electromagnetic system is the depth at which it can detect the strongest conductive target – generally a highly conductive horizontal layer.

differential resistivity: A process of transforming ***apparent resistivity*** to an approximation of layer resistivity at each depth. The method uses multi-frequency HEM data and approximates the effect of shallow layer ***conductance*** determined from higher frequencies to estimate the deeper conductivities (Huang and Fraser, 1996)

dipole moment: [NIA] For a transmitter, the product of the area of a ***coil***, the number of turns of wire, and the current flowing in the coil. At a distance significantly larger than the size of the coil, the magnetic field from a coil will be the same if the dipole moment product is the same. For a receiver coil, this is the product of the area and the number of turns. The sensitivity to a magnetic field (assuming the source is far away) will be the same if the dipole moment is the same.

diurnal: The daily variation in a natural field, normally used to describe the natural fluctuations (over hours and days) of the earth's magnetic field.

dielectric permittivity: **[ε]** The capacity of a material to store electrical charge, this is most often measured as the relative permittivity [ε_r], or ratio of the material dielectric to that of free space. The effect of high permittivity may be seen in HEM data at high frequencies over highly resistive geology as a reduced or negative ***in-phase***, and higher ***quadrature*** data.

drift: Long-time variations in the base-level or calibration of an instrument.

eddy currents: The electrical currents induced in the ground, or other conductors, by a time-varying ***electromagnetic field*** (usually the ***primary field***). Eddy currents are also induced in the aircraft's metal frame and skin; a source of ***noise*** in EM surveys.

electromagnetic: **[EM]** Comprised of a time-varying electrical and magnetic field. Radio waves are common electromagnetic fields. In geophysics, an electromagnetic system is one which transmits a time-varying ***primary field*** to induce ***eddy currents*** in the ground, and then measures the ***secondary field*** emitted by those eddy currents.

energy window: A broad spectrum of ***gamma-ray*** energies measured by a spectrometric survey. The energy of each gamma-ray is measured and divided up into numerous discrete energy levels, called windows.

equivalent (thorium or uranium): The amount of radioelement calculated to be present, based on the gamma-rays measured from a **daughter** element. This assumes that the ***decay series*** is in equilibrium – progressing normally.

fiducial, or fid: Timing mark on a survey record. Originally these were timing marks on a profile or film; now the term is generally used to describe 1-second interval timing records in digital data, and on maps or profiles.

fixed-wing: Aircraft with wings, as opposed to “rotary wing” helicopters.

footprint: This is a measure of the area of sensitivity under the aircraft of an airborne geophysical system. The footprint of an ***electromagnetic*** system is dependent on the altitude of the system, the orientation of the transmitter and receiver and the separation between the receiver and transmitter, and the conductivity of the ground. The footprint of a ***gamma-ray spectrometer*** depends mostly on the altitude. For all geophysical systems, the footprint also depends on the strength of the contrasting ***anomaly***.

frequency domain: An ***electromagnetic*** system which transmits a ***primary field*** that oscillates smoothly over time (sinusoidal), inducing a similarly varying electrical current in the ground. These systems generally measure the changes in the ***amplitude*** and ***phase*** of the ***secondary field*** from the ground at different frequencies by measuring the **in-phase** and **quadrature** phase components. See also ***time-domain***.

full-stream data: Data collected and recorded continuously at the highest possible sampling rate. Normal data are stacked (see ***stacking***) over some time interval before recording.

gamma-ray: A very high-energy photon, emitted from the nucleus of an atom as it undergoes a change in energy levels.

gamma-ray spectrometry: Measurement of the number and energy of natural (and sometimes man-made) gamma-rays across a range of photon energies.

gradient: In magnetic surveys, the gradient is the change of the magnetic field over a distance, either vertically or horizontally in either of two directions. Gradient data is often measured, or calculated from the total magnetic field data because it changes more quickly over distance than the ***total magnetic field***, and so may provide a more precise measure of the location of a source. See also ***analytic signal***.

ground effect: The response from the earth. A common calibration procedure in many geophysical surveys is to fly to altitude high enough to be beyond any measurable response from the ground, and there establish ***base levels*** or ***backgrounds***.

half-space: A mathematical model used to describe the earth – as infinite in width, length, and depth below the surface. The most common halfspace models are ***homogeneous*** and ***layered earth***.

heading error: A slight change in the magnetic field measured when flying in opposite directions.

HEM: Helicopter ElectroMagnetic, This designation is most commonly used to helicopter-borne, ***frequency-domain*** electromagnetic systems. At present, the transmitter and receivers are normally mounted in a ***bird*** carried on a sling line beneath the helicopter.

herringbone pattern: a pattern created in geophysical data by an asymmetric system, where the **anomaly** may be extended to either side of the source, in the direction of flight. Appears like fish bones, or like the teeth of a comb, extending either side of centre, each tooth an alternate flight line.

homogeneous: This is a geological unit that has the same ***physical parameters*** throughout its volume. This unit will create the same response to an HEM system anywhere, and the HEM system will measure the same apparent ***resistivity*** anywhere. The response may change with system direction (see ***anisotropy***).

in-phase: the component of the measured ***secondary field*** that has the same phase as the transmitter and the ***primary field***. The in-phase component is stronger than the ***quadrature*** phase over relatively higher ***conductivity***.

induction: Any time-varying electromagnetic field will induce (cause) electrical currents to flow in any object with non-zero ***conductivity***. (see ***eddy currents***)

infinite: In geophysical terms, an "infinite' dimension is one much greater than the ***footprint*** of the system, so that the system does not detect changes at the edges of the object.

International Geomagnetic Reference Field: **[IGRF]** An approximation of the smooth magnetic field of the earth, in the absence of variations due to local geology. Once the IGRF is subtracted from the measured magnetic total field data, any remaining variations are assumed to be due to local geology. The IGRF also predicts the slow changes of the field up to five years in the future.

inversion, or **inverse modeling**: A process of converting geophysical data to an earth model, which compares theoretical models of the response of the earth to the data measured, and refines the model until the response closely fits the measured data (Huang and Palacky, 1991)

layered earth: A common geophysical model which assumes that the earth is horizontally layered – the ***physical parameters*** are constant to ***infinite*** distance horizontally, but change vertically.

magnetic permeability: **[μ]** This is defined as the ratio of magnetic induction to the inducing magnetic field. The relative magnetic permeability [μ_r] is often quoted, which is the ratio of the rock permeability to the permeability of free space. In geology and geophysics, the ***magnetic susceptibility*** is more commonly used to describe rocks.

magnetic susceptibility: **[k]** A measure of the degree to which a body is magnetized. In SI units this is related to relative ***magnetic permeability*** by $k=\mu_r-1$, and is a dimensionless unit. For most geological material, susceptibility is influenced primarily by the percentage of magnetite. It is most often quoted in units of 10^{-6}. In HEM data this is most often apparent as a negative ***in-phase*** component over high susceptibility, high ***resistivity*** geology such as diabase dikes.

noise: That part of a geophysical measurement that the user does not want. Typically this includes electronic interference from the system, the atmosphere (***sferics***), and man-made sources. This can be a subjective judgment, as it may include the response from geology other than the target of interest. Commonly the term is used to refer to high frequency (short period) interference. See also ***drift***.

Occam's inversion: an ***inversion*** process that matches the measured ***electromagnetic*** data to a theoretical model of many, thin layers with constant thickness and varying resistivity (Constable et al, 1987).

off-time: In a ***time-domain electromagnetic*** survey, the time after the end of the ***primary field pulse***, and before the start of the next pulse.

on-time: In a ***time-domain electromagnetic*** survey, the time during the ***primary field pulse***.

phase: The angular difference in time between a measured sinusoidal electromagnetic field and a reference – normally the primary field. The phase is calculated from $\tan^{-1}$(***in-phase / quadrature***).

physical parameters: These are the characteristics of a geological unit. For electromagnetic surveys, the important parameters for electromagnetic surveys are ***conductivity**, **magnetic permeability*** (or ***susceptibility***) and ***dielectric permittivity***; for magnetic surveys the parameter is magnetic susceptibility, and for gamma ray spectrometric surveys it is the concentration of the major radioactive elements: potassium, uranium, and thorium.

permittivity: see ***dielectric permittivity***.

permeability: see ***magnetic permeability***.

primary field: the EM field emitted by a transmitter. This field induces ***eddy currents*** in (energizes) the conductors in the ground, which then create their own ***secondary* fields**.

pulse: In time-domain EM surveys, the short period of intense ***primary*** field transmission. Most measurements (the ***off-time***) are measured after the pulse.

quadrature: that component of the measured ***secondary field*** that is phase-shifted 90° from the ***primary field***. The quadrature component tends to be stronger than the ***in-phase*** over relatively weaker ***conductivity***.

Q-coils: see ***calibration coil***.

radiometric: Commonly used to refer to ***gamma ray*** spectrometry.

radon: A radioactive daughter product of uranium and thorium, radon is a gas which can leak into the atmosphere, adding to the non-geological background of a gamma-ray spectrometric survey.

resistivity: **[ρ]** The strength with which the earth or a geological formation resists the flow of electricity, typically the flow induced by the ***primary field*** of the electromagnetic transmitter. Normally expressed in ohm-metres, it is the reciprocal of ***conductivity***.

resistivity-depth transforms: similar to ***conductivity depth transforms***, but the calculated ***conductivity*** has been converted to ***resistivity***.

resistivity section: an approximate vertical section of the resistivity of the layers in the earth. The resistivities can be derived from the ***apparent resistivity***, the ***differential resistivities***, ***resistivity-depth transforms***, or ***inversions***.

secondary field: The field created by conductors in the ground, as a result of electrical currents induced by the ***primary field*** from the ***electromagnetic*** transmitter. Airborne ***electromagnetic*** systems are designed to create, and measure a secondary field.

Sengpiel section: a ***resistivity section*** derived using the ***apparent resistivity*** and an approximation of the depth of maximum sensitivity for each frequency.

sferic: Lightning, or the ***electromagnetic*** signal from lightning, it is an abbreviation of "atmospheric discharge". These appear to magnetic and electromagnetic sensors as sharp "spikes" in the data. Under some conditions lightning storms can be detected from hundreds of kilometres away. (see ***noise***)

signal: That component of a measurement that the user wants to see – the response from the targets, from the earth, etc. (See also ***noise***)

skin depth: A measure of the depth of penetration of an electromagnetic field into a material. It is defined as the depth at which the primary field decreases to 1/e of the field at the surface. It is calculated by approximately 503 x √(resistivity/frequency). Note that depth of penetration is greater at higher ***resistivity*** and/or lower ***frequency.***

spectrometry: Measurement across a range of energies, where ***amplitude*** and energy are defined for each measurement. In gamma-ray spectrometry, the number of gamma rays are measured for each energy ***window***, to define the ***spectrum***.

spectrum: In ***gamma ray spectrometry***, the continuous range of energy over which gamma rays are measured. In ***time-domain electromagnetic*** surveys, the spectrum is the energy of the **pulse** distributed across an equivalent, continuous range of frequencies.

spheric: see ***sferic***.

stacking: Summing repeat measurements over time to enhance the repeating ***signal***, and minimize the random ***noise***.

stripping: Estimation and correction for the gamma ray photons of higher and lower energy that are observed in a particular ***energy window***. See also ***Compton scattering***.

susceptibility: See ***magnetic susceptibility***.

tau: [τ] Often used as a name for the ***time constant***.

TDEM: ***time domain electromagnetic***.

thin sheet: A standard model for electromagnetic geophysical theory. It is usually defined as thin, flat-lying, and ***infinite*** in both horizontal directions. (see also ***vertical plate***)

tie-line: A survey line flown across most of the ***traverse lines***, generally perpendicular to them, to assist in measuring ***drift*** and ***diurnal*** variation. In the short time required to fly a tie-line it is assumed that the drift and/or diurnal will be minimal, or at least changing at a constant rate.

time constant: The time required for an ***electromagnetic*** field to decay to a value of 1/e of the original value. In ***time-domain*** electromagnetic data, the time constant is proportional to the size and ***conductance*** of a tabular conductive body. Also called the decay constant.

Time channel: In ***time-domain electromagnetic*** surveys the decaying ***secondary field*** is measured over a period of time, and the divided up into a series of consecutive discrete measurements over that time.

time-domain: ***Electromagnetic*** system which transmits a pulsed, or stepped ***electromagnetic*** field. These systems induce an electrical current (***eddy current***) in the ground that persists after the ***primary field*** is turned off, and measure the change over time of the ***secondary field*** created as the currents ***decay***. See also ***frequency-domain***.

total energy envelope: The sum of the squares of the three ***components*** of the ***time-domain electromagnetic secondary field***. Equivalent to the ***amplitude*** of the secondary field.

transient: Time-varying. Usually used to describe a very short period pulse of ***electromagnetic*** field.

traverse line: A normal geophysical survey line. Normally parallel traverse lines are flown across the property in spacing of 50 m to 500 m, and generally perpendicular to the target geology.

vertical plate: A standard model for electromagnetic geophysical theory. It is usually defined as thin, and ***infinite*** in horizontal dimension and depth extent. (see also ***thin shee***t)

waveform: The shape of the ***electromagnetic pulse*** from a ***time-domain*** electromagnetic transmitter.

window: A discrete portion of a ***gamma-ray spectrum*** or ***time-domain electromagnetic decay***. The continuous energy spectrum or ***full-stream*** data are grouped into windows to reduce the number of samples, and reduce ***noise***.

Version 1.1, March 10, 2003
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Common Symbols and Acronyms

k	Magnetic susceptibility
ε	Dielectric permittivity
μ, μ_r	Magnetic permeability, apparent permeability
ρ, ρ_a	Resistivity, apparent resistivity
σ,σ_a	Conductivity, apparent conductivity
σt	Conductivity thickness
τ	Tau, or time constant
Ω.m	Ohm-metres, units of resistivity
AGS	Airborne gamma ray spectrometry.
CDT	Conductivity-depth transform, conductivity-depth imaging (Macnae and Lamontagne, 1987; Wolfgram and Karlik, 1995)
CPI, CPQ	Coplanar in-phase, quadrature
CPS	Counts per second
CTP	Conductivity thickness product
CXI, CXQ	Coaxial, in-phase, quadrature
fT	femtoteslas, normal unit for measurement of B-Field
EM	Electromagnetic
keV	kilo electron volts – a measure of gamma-ray energy
MeV	mega electron volts – a measure of gamma-ray energy 1MeV = 1000keV
NIA	dipole moment: turns x current x Area
nT	nano-Tesla, a measure of the strength of a magnetic field
ppm	parts per million – a measure of secondary field or noise relative to the primary.
pT/s	picoTeslas per second: Units of decay of secondary field, dB/dt
S	Siemens – a unit of conductance
x:	the horizontal component of an EM field parallel to the direction of flight.
y:	the horizontal component of an EM field perpendicular to the direction of flight.
z:	the vertical component of an EM field.

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APPENDIX E

ARCHIVE DESCRIPTION

- Appendix E.1 -

Fugro Archive Summary

Reference: CDVD00878
# of DVD's: 1
Archive Date: December 01, 2011

This archive contains FINAL data and grids of an airborne DighemV electromagnetic and magnetic geophysical survey over the MacPass and Ben Claims, Yukon, conducted by FUGRO AIRBORNE SURVEYS CORP. on behalf of Colorado Resources Ltd., flown from July 11 to August 3, 2011.

Job # 11046

******* Disc 1 of 1 *******

\GRIDS Grids in Geosoft format (with associated GI files)

Ben_CVG.GRD	- Calculated Vertical Magnetic Gradient nT/m
Ben_MAG.GRD	- Residual Magnetic Intensity nT
Ben_RES900.GRD	- Apparent Resistivity 900 Hz ohm•m
Ben_RES7200.GRD	- Apparent Resistivity 7200 Hz ohm•m
Ben_RES56K.GRD	- Apparent Resistivity 56k Hz ohm•m
MacPass_CVG.GRD	- Calculated Vertical Magnetic Gradient nT/m
MacPass_MAG.GRD	- Residual Magnetic Intensity nT
MacPass_RES900.GRD	- Apparent Resistivity 900 Hz ohm•m
MacPass_RES7200.GRD	- Apparent Resistivity 7200 Hz ohm•m
MacPass_RES56K.GRD	- Apparent Resistivity 56k Hz ohm•m

\LINEDATA

Ben.GDB	- Data archive in Geosoft GDB format
Ben.XYZ	- Data archive in Geosoft ASCII format
AEM_Ben.XYZ	- Anomaly archive in ASCII format
MacPass.GDB	- Data archive in Geosoft GDB format
MacPass.XYZ	- Data archive in Geosoft ASCII format
AEM_Pass.XYZ	- Anomaly archive in ASCII format

\MAPS\GEOSOFT Final colour maps in Geosoft format (* represents sheet 1, 2, 3, 4, or 6)

Ben_AEM.MAP	- Electromagnetic Anomalies sheet
Ben_CVG.MAP	- Calculated Vertical Magnetic Gradient nT/m sheet
Ben_MAG.MAP	- Residual Magnetic Intensity nT sheet
Ben_RES900.MAP	- Apparent Resistivity 900 Hz ohm•m sheet
Ben_RES7200.MAP	- Apparent Resistivity 7200 Hz ohm•m sheet
Ben_RES56K.MAP	- Apparent Resistivity 56 KHz ohm•m sheet
MacPass_AEM-*.MAP	- Electromagnetic Anomalies sheet

MacPass_CVG-*.MAP	- Calculated Vertical Magnetic Gradient nT/m sheet
MacPass_MAG-*.MAP	- Residual Magnetic Intensity nT sheet
MacPass_RES900-*.MAP	- Apparent Resistivity 900 Hz ohm•m sheet
MacPass_RES7200-*.MAP	- Apparent Resistivity 7200 Hz ohm•m sheet
MacPass_RES56K-*.MAP	- Apparent Resistivity 56 KHz ohm•m sheet

\MAPS\PDF Final colour maps in PDF format (* represents sheet 1, 2, 3, 4, or 6)

Ben_AEM.MAP	- Electromagnetic Anomalies sheet
Ben_CVG.MAP	- Calculated Vertical Magnetic Gradient nT/m sheet
Ben_MAG.MAP	- Residual Magnetic Intensity nT sheet
Ben_RES900.MAP	- Apparent Resistivity 900 Hz ohm•m sheet
Ben_RES7200.MAP	- Apparent Resistivity 7200 Hz ohm•m sheet
Ben_RES56K.MAP	- Apparent Resistivity 56 KHz ohm•m sheet

MacPass_AEM-*.MAP	- Electromagnetic Anomalies sheet
MacPass_CVG-*.MAP	- Calculated Vertical Magnetic Gradient nT/m sheet
MacPass_MAG-*.MAP	- Residual Magnetic Intensity nT sheet
MacPass_RES900-*.MAP	- Apparent Resistivity 900 Hz ohm•m sheet
MacPass_RES7200-*.MAP	- Apparent Resistivity 7200 Hz ohm•m sheet
MacPass_RES56K-*.MAP	- Apparent Resistivity 56 KHz ohm•m sheet

\REPORT

R11046.PDF	- Interpretation Report
Anomalies_11046a_MacPass.PDF	- Anomaly Table, Mac Pass Claim Group area
Anomalies_11046b_Ben.PDF	- Anomaly Table, Ben Claims Area

\VECTORS Final vectors files in DXF format (* represents sheet 1, 2, 3, 4, or 6)

FP_Ben.DXF	- Flightpath
AEM_Ben.DXF	- Anomaly Picks
Interp_Ben.DXF	- Interpretation

FP_MacPass-*.DXF	- Flighpath
AEM_MacPass-*.DXF	- Anomaly Picks
Interp_MacPass-*.DXF	- Interpretation

****

GEOSOFT GDB and XYZ ARCHIVE SUMMARY

#	CHANNEL NAME	TIME	UNITS	DESCRIPTION
1	x	0.1	m	easting NAD 83 (UTM Zone 9)
2	y	0.1	m	northing NAD 83 (UTM Zone 9)
3	fid	0.1		fiducial increment
4	longitude	0.1	degrees	longitude WGS 84
5	latitude	0.1	degrees	latitude WGS 84
6	flight	0.1		flight number

7	date	0.1		flight date (yyyy/mm/dd)
8	altrad_bird	0.1	m	calculated bird height above surface from radar altimeter
9	altlas_bird	0.1	m	measured bird height above surface from laser altimeter
10	gpsz	0.1	m	bird height above spheroid
11	dtm	0.1	m	digital terrain model (above WGS 84 datum)
12	diurnal_filt	1.0	nT	measured diurnal ground magnetic intensity
13	diurnal_cor	0.1	nT	diurnal correction - base removed
14	mag_raw	0.1	nT	total magnetic field - spike rejected
15	mag_lag	0.1	nT	total magnetic field - corrected for lag
16	mag_diu	0.1	nT	total magnetic field - diurnal variation removed
17	igrf	0.1	nT	international geomagnetic reference field
18	mag_rmi	0.1	nT	residual magnetic intensity - final
19	cpi900_filt	0.1	ppm	coplanar inphase 900 Hz - unlevelled
20	cpq900_filt	0.1	ppm	coplanar quadrature 900 Hz - unlevelled
21	cxi1000_filt	0.1	ppm	coaxial inphase 1000 Hz - unlevelled
22	cxq1000_filt	0.1	ppm	coaxial quadrature 1000 Hz - unlevelled
23	cxi5500_filt	0.1	ppm	coaxial inphase 5500 Hz - unlevelled
24	cxq5500_filt	0.1	ppm	coaxial quadrature 5500 Hz -unlevelled
25	cpi7200_filt	0.1	ppm	coplanar inphase 7200 Hz - unlevelled
26	cpq7200_filt	0.1	ppm	coplanar quadrature 7200 Hz -unlevelled
27	cpi56k_filt	0.1	ppm	coplanar inphase 56 kHz - unlevelled
28	cpq56k_filt	0.1	ppm	coplanar quadrature 56 kHz - unlevelled
29	cpi900	0.1	ppm	coplanar inphase 900 Hz
30	cpq900	0.1	ppm	coplanar quadrature 900 Hz
31	cxi1000	0.1	ppm	coaxial inphase 1000 Hz
32	cxq1000	0.1	ppm	coaxial quadrature 1000 Hz
33	cxi5500	0.1	ppm	coaxial inphase 5500 Hz
34	cxq5500	0.1	ppm	coaxial quadrature 5500 Hz
35	cpi7200	0.1	ppm	coplanar inphase 7200 Hz
36	cpq7200	0.1	ppm	coplanar quadrature 7200 Hz
37	cpi56k	0.1	ppm	coplanar inphase 56 kHz
38	cpq56k	0.1	ppm	coplanar quadrature 56 kHz
39	res900	0.1	ohm·m	apparent resistivity - 900 Hz
40	res7200	0.1	ohm·m	apparent resistivity - 7200 Hz
41	res56k	0.1	ohm·m	apparent resistivity - 56 kHz
42	dep900	0.1	m	apparent depth - 900 Hz
43	dep7200	0.1	m	apparent depth - 7200 Hz
44	dep56k	0.1	m	apparent depth - 56 kHz
45	difi	0.1		difference channel based on cxi5500/cpi7200
46	difq	0.1		difference channel based on cxq5500/cpq7200
47	cppl	0.1		coplanar powerline monitor
48	cxsp	0.1		coaxial spherics monitor
49	cpsp	0.1		coplanar spherics monitor

FUGRO ANOMALY SUMMARY

#	CHANNEL NAME	TIME	UNITS	DESCRIPTION

- Appendix E.4 -

1	Easting	0.10	m	easting NAD83 (Zone 9N)
2	Northing	0.10	m	northing NAD83 (Zone 9N)
3	FID	1.00		Synchronization Counter
4	FLT	0.10		Flight
5	MHOS	0.10	siemens	Conductance (see report for model used)
6	DEPTH	0.10	m	Depth (see report for model used)
7	MAG	0.10	nT	Mag Correlation, local amplitude
8	CXI1	0.10	ppm	Inphase Coaxial 5500 Hz, local amplitude
9	CXQ1	0.10	ppm	Quadrature Coaxial 5500 Hz, local amplitude
10	CPI1	0.10	ppm	Inphase Coplanar 7200 Hz, absolute amplitude
11	CPQ1	0.10	ppm	Quadrature Coplanar 7200 Hz, absolute amplitude
12	CPI2	0.10	ppm	Inphase Coplanar 56000 Hz, absolute amplitude
13	CPQ2	0.10	ppm	Quadrature Coplanar 56000 Hz, absolute amplitude
14	LET	0.10		Anomaly Identifier
15	SYM	0.10		Anomaly Interpretation Symbol
16	GRD	0.10		Anomaly Grade

The coordinate system for all grids and the data archive is projected as follows

Datum	NAD83
Spheroid	GRS80
Central meridian	129 West (Zone 9N)
False easting	500000
False northing	0
Scale factor	0.9996
Northern parallel	N/A
Base parallel	N/A
WGS84 to local conversion method	Molodensky
Delta X shift	0
Delta Y shift	0
Delta Z shift	0

If you have any problems with this archive please contact

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