MINE DEVELOPMENT ASSOCIATES
MINE ENGINEERING SERVICES

Report Date: July 26, 2018
Effective Date: June 14, 2018

Technical Report on the Unga Project
Southwest Alaska, USA

Submitted to:

REDSTAR GOLD CORP.
409 Granville Street, Suite 1500
Vancouver, BC Canada, V6C 1T2

Qualified Persons:
Michael M. Gustin, C.P.G.
Steven I. Weiss, C.P.G.

775-856-5700
210 S Rock Blvd
Reno, NV 89502
www.mda.com

CONTENTS

775-856-5700

210 South Rock Blvd.
Reno, Nevada 89502
FAX: 775-856-6053

TABLES

FIGURES

APPENDICES

1.0 SUMMARY (ITEM 1)

Mine Development Associates ("MDA") has prepared this technical report on the Unga project in southwestern Alaska, U.S.A., at the request of Redstar Gold Corporation ("Redstar"), a Canadian company listed on the TSX Venture Exchange (TSX-V: RGC) and also over-the-counter (OTC: RGCTF). Redstar controls 100% of the Unga project, which includes the Shumagin gold-silver deposit, the Centennial gold deposit, and a number of other gold occurrences and prospects.

This report has been prepared in accordance with the disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101 ("NI 43-101"), Companion Policy 43-101CP, and Form 43-101F1. The purpose of this report is to provide a technical summary of the Unga project in accordance with the requirements of NI 43-101. The Effective Date of this report is June 14, 2018.

1.1 Property Description and Ownership

The Unga gold-silver project covers 250 square kilometers of neighboring Unga and Popof Islands, near the Alaska Peninsula and approximately 900 kilometers southwest of Anchorage, Alaska. The property consists largely of two tracts of subsurface mineral tenure, one on Popof Island and the other on adjacent Unga Island, 100% controlled by Redstar under an exploration agreement and Mining Lease option with the Aleut Corporation ("AC"), an Alaska Native Regional Corporation. These two tracts surround six State of Alaska mining claims at the Shumagin deposit and 16 patented U.S. federal mining claims at the Apollo-Sitka prospect, all owned 100% by Redstar. The six State and 16 patented federal mining claims were acquired from the NGAS Production Company ("NGAS"), an indirect subsidiary of Magnum Hunter Resources, through a series of cash and share payments completed in December 2013. The six Shumagin claims are subject to payments of $2,000 per month to the estate of Azel L. Crandall until October 2020, and are also subject to a 3.0% net income royalty ("NIR") held by the State of Alaska on mineral production.

Redstar's surface tenure for the Unga tract is held under agreements with the native Unga Corporation. The Popof Island tract is located in T56W, R73W, Sections 20-29 and 32-36, Seward Baseline and Meridian. Redstar represents they are in negotiations with the native Shumagin Corporation to enter into a surface use agreement with the same obligations as those under the agreement with the Unga Corporation. The mineral rights to these two tracts are 100% controlled by Redstar under the exploration and Mining Lease option with the AC, under which Redstar may enter into a Mining Lease with the AC at any time prior to December 31, 2019. Upon entering into the Mining Lease, the Company will make annual advance royalty payments escalating from $25,000 in the first year, to

$400,000 on the 16th anniversary and subsequent years. In the event that Redstar delivers a feasibility study, Redstar will issue 500,000 common shares to the AC, subject to the approval of the TSX Venture Exchange. Upon commencement of commercial production, Redstar will pay to the AC a sliding scale net smelter returns (“NSR”) royalty of 2.0% to 5.0%, depending on the price of gold, and a 2.5% NSR royalty for all commodities except gold and other precious metals.

The authors are not aware of any environmental liabilities within the Unga property that is the subject of this report, aside from the reclamation of drill pads and access roads constructed by Redstar. As of the Effective Date of this report, there are no unreclaimed surface disturbances.

1.2 Mining and Exploration History, and Historical Resource Estimates

Gold was discovered on the southeast side of Unga Island in 1891. The Apollo gold mine reportedly operated between the late 1880s and the early 1920s and produced about 100,000 to 130,000 ounces of gold; the nearby Sitka mine operated between 1900 and 1922, but gold production was limited to a few thousand ounces. Both mines produced gold from the upper, oxidized portions of sulfide-rich lodes. Production ceased upon depletion of the oxidized ore. Adits and drifts at the Shumagin, East Chance, and California prospects date to this period. Gold production from Popof Island was from a beach placer deposit located near the present site of the Sand Point airport runway, in the northwestern portion of the island.

The modern era of exploration began after the passage of the Alaska Native Claims Settlement Act of 1971 (“ANCSA”). From 1974 through 1991, Quintana Minerals Corp. (“Quintana”), the Duval Corp. (“Duval”), Resource Associates of Alaska (“RAA”), UNC Teton Exploration Drilling Inc. (“UNC Teton”), Battle Mountain Gold Corporation (“BMGC”), and Ballatar Explorations Ltd. (“Ballatar”) explored Unga Island and parts of Popof Island. This period of exploration resulted in the discovery of more than 20 gold and/or base-metal showings, as well as a copper-gold occurrence. A small number of core holes were drilled at each of the Zachary Bay, Aquila, Pook, Pray’s Vein, Orange Mountain, Junior, and Norm’s Vein prospects.

Simultaneously, exploration work was conducted by Alaska Apollo Gold Mines Ltd. (“AAGM”) from 1983 through 1989 at the Apollo mine and Sitka mine, and at the Shumagin prospect. Both the Apollo-Sitka and Shumagin prospects were drilled as part of this work, in part through a joint venture with Ballatar, and the drilling began to define an epithermal gold-silver ± lead ± zinc vein deposit at Shumagin.

On Popof Island, BMGC initiated exploration at the Centennial gold prospect in 1987, and drilled a total of 59 core holes in 1988 and 1989, as well as a few holes at the nearby Red Cove and Propalof prospects. In 1990, BMGC also drilled a single core hole that intersected the Shumagin vein zone down-dip from the AAGM and Ballatar intercepts; this hole remains important to this day.

From 1987 through 1996, AAGM commissioned preliminary feasibility studies of the Shumagin deposit by Kilborn Engineering (B.C.) Ltd. and resource estimates by E.O. Strandberg Jr., of Fairbanks, Alaska. In August of 1993, Daugherty Petroleum acquired all of the assets of AAGM. Daugherty Petroleum changed its name in 1998 to Daugherty Resources, Inc., which at some point became known as the NGAS Production Company, an indirect subsidiary of Magnum Hunter Resources.

Full Metal Minerals ("FMM") began exploring the surrounding Unga and Popof tracts under an agreement with the AC in 2005. Metallica Resources Inc. and FMM formed a joint venture in 2005 and carried out surface work, geophysics, and a satellite remote-sensing study of alteration.

Redstar commenced the acquisition of the Shumagin and Apollo-Sitka claims from NGAS in 2011 through a series of transactions that were completed in December 2013. Redstar entered into an agreement with FMM in 2011 to acquire a 60% interest in the Unga and Popof tracts. Redstar's position was increased to a 100% interest and their acquisition of the Unga and Popof tracts was completed in early 2014.

1.2.1 Historical Resource Estimates

The following historical estimates of the Shumagin, Centennial, and Sitka deposits pre-date, and are not in accordance with, NI 43-101 guidelines, and they are not considered reliable. The authors have not done sufficient work to classify these historical estimates as current mineral resources or mineral reserves. These historical estimates are relevant only for historical interest, and the authors have not done sufficient work to classify these historical estimates as current mineral resources or mineral reserves. Redstar is not treating these historical estimates as current mineral resources or mineral reserves, and these historical estimates should not be relied upon.

The most recent historical estimate of mineral resources for the Shumagin deposit was commissioned by AAGM in 1995. A "diluted resource" of 280,335 tons (254,314 tonnes) grading 0.80 oz Au/ton (27.4 g Au/t) and 3.65 oz Ag/ton (125 g Ag/t) was estimated by Strandberg (1995), for about 224,000 ounces of gold and 1,025,000 ounces of silver. This estimate pre-dates and is not in accordance with NI 43-101. It was reviewed and evaluated by SRK Consulting (US) ("SRK") in 2000. SRK re-classified the estimated resources as "inferred resources."

In 1989, BMGC used a polygonal method to calculate *in-situ* "geologic inferred resources" for the Centennial deposit that totaled about 4.78 million tons (4.34 million tonnes) with an average grade of 0.042 oz Au/ton (1.44 g Au/t), for a total of about 200,000 ounces of gold. An additional 2.06 million tons (1.87 million tonnes) with an average grade of 0.040 oz Au/ton (1.37 g Au/t), for about 82,000 ounces, were classified as "speculative Au resource possibilities".

In 1993, AAGM calculated an "ore reserve" on a longitudinal section through the Sitka mine, relying heavily on a 1922 report by the mine manager at that time. This estimate included a total of 39,100 tons (35,500 tonnes) with average grades of 0.086 oz Au/ton (2.95 g Au/t), 1.55 oz Ag/ton (53.1 g Ag/t), 6.83% Pb, 2.66% Zn and 0.99% Cu, divided between "Proven" and "Probable" blocks.

1.3 Geology, Mineralization, and Drilling Results

1.3.1 Geological Setting

Unga Island and Popof Island are located between the Aleutian trench and the active Aleutian volcanic arc on the Alaska Peninsula. Volcanism on the Alaska Peninsula, Unga Island, and Popof Island began shortly after about 43 Ma. Mapping of Unga Island, and Popof Island by the United States Geological Survey indicates four sequences of sedimentary and calc-alkaline volcanic rocks are present, from oldest to youngest: the Eocene and Oligocene Stepovak Formation, the Eocene and Oligocene Popof volcanic rocks, the Unga Formation conglomeratic rocks of Oligocene and Miocene ages, and early to mid-Miocene volcanic rocks.

Several N50°E to N60°E faults and fault zones completely transect Unga Island. Numerous N10°W to N10°E faults are also present, but they are much less through-going. The most prominent of the major northeast-trending structures are the Shumagin and Apollo-Sitka fault zones, which completely transect the southeast part of the island. Each of these forms a structural corridor 0.5 to 1.0 kilometers in width and approximately nine to 10 kilometers in length, respectively. These two structural corridors contain extensive areas of hydrothermally altered rocks and several exposures of epithermal quartz-carbonate veins, vein-breccias, and vein stockworks, and are known as the Shumagin and Apollo-Sitka "trends". A similar structural architecture is thought to be present in the northwest portion of Popof Island.

1.3.2 Mineralization and Drilling Results

More than 25 showings of epithermal precious- and base-metal mineralization, porphyry copper-gold mineralization, and extensive areas of hydrothermally altered rocks have been identified on Unga Island, particularly along the Shumagin and Apollo-Sitka trends. At least six precious-metal showings have been identified on Popof Island, including the Centennial gold deposit. The majority of exploration conducted to date has been focused on three areas: the Shumagin trend, the Apollo-Sitka trend, and at the Centennial deposit. Mineralization occurs as volcanic-hosted, low- to intermediate-sulfidation, epithermal, quartz-carbonate-adularia veins with locally high-grade gold-silver and variable lead, zinc, and copper, such as the Shumagin, Apollo-Sitka, and Aquila prospects; porphyry copper-gold at the Zachary Bay prospect; and largely disseminated volcanic-hosted gold at the Centennial deposit.

1.3.2.1 Shumagin Vein Zone

The Shumagin vein zone consists of multiple, subparallel to anastomosing veins, stockwork, and vein-cemented breccia filled with quartz, pyrite, and calcite ± adularia ± rhodocrosite ± green clay ± sphalerite ± galena and lesser chalcopyrite. The vein zone has an over-all strike of N60°E to N70ºE, true widths of as much as 30 or more meters, and dips mainly to the southeast at ~70-80º. Since drilling began in 1983, a total of 15,247 meters have been drilled in 88 diamond-core holes. Drill holes have penetrated the Shumagin vein system for approximately 1.75 kilometers along strike and as much as ~250 meters vertically below the surface trace. Drilling shows the vein system was emplaced along a fault contact between basaltic andesite and basalt in the footwall to the north, and mainly dacitic quartz- and biotite-phyric lithic tuff to the south, all of which are units within the Popof volcanic rocks. Drilling also shows that one or more tabular bodies of phreato-magmatic breccia are present within the Shumagin fault and the vein system.

Gold, silver, and base-metal mineralization is not evenly distributed within the Shumagin vein system, as is commonly the case in epithermal vein deposits world-wide. In some cases, grades in the range of 10 to 20 g Au/t and greater have drilled widths of up to a few meters and are situated within broader intervals of lower-grade mineralization. In historical drill holes, much higher grades have been encountered over intervals usually less than one meter, such as 192.6 g Au/t and 5,403 g Ag/t from 77.3 to 77.9 meters in hole DDH35, and 365 g Au/t and 190.6 g Ag/t from 153.6 to 154.8 meters in hole DDH46. Redstar's highest-grade intervals included 738 g Au/t and 408 g Ag/t over 0.5 meters in hole

11SH010, and 202 g Au/t with 82 g Ag/t over 1.9 meters in hole 15SH011. True widths are believed to be about 70% to 80% of the drill intervals. High-grade gold and silver intervals generally have an erratic distribution over short distances within the vein zone and are largely restricted to widths of about a meter or less. Significant zinc, lead, and lesser amounts of copper may accompany high gold grades, but are not always present, and in some intervals such concentrations of base metals are found without significant gold.

Redstar's drilling from 2011 through 2017 tripled the strike length of the Shumagin vein system, confirmed the presence of high-grade gold-silver mineralization down dip from historical drilling, and demonstrated wider zones of gold-silver mineralization exist around the central high-grade veins. The mineralization remains open at depth and along strike.

1.3.2.2 Apollo and Sitka Vein Zones

Steeply-dipping, intermediate-sulfidation epithermal quartz-carbonate ± adularia veins are exposed discontinuously along northeast- and northwest-trending faults cutting andesite at the historic Apollo and Sitka mines. Historic production was from veins and vein-breccia that are reported to contain significant free gold, chalcopyrite, sphalerite, galena, pyrite, and native copper, but production was limited to the upper, oxidized portions. The vertical range of presently known gold mineralization is about 425 meters from the surface. Below the oxidation boundary, historic records reported in $/ton indicate grades of 3.4 g Au/t to 8.2 g Au/t (0.1 to 0.24 oz Au/ton) were present in vein zones up to 7 meters in width. The veins have coarser-grained and comb-textured quartz, as well as locally higher contents of copper, lead, and zinc, than the Shumagin vein system, suggesting a possibly deeper level of erosion.

A total of 4,913 meters have been drilled in 21 core holes along the Apollo, and Sitka veins. The drilling shows that the vein system continues below the historic workings and contains intervals with up to about 25% combined lead, zinc, and copper. The best gold interval was from 14.0 to 14.9 meters in hole AS20, which assayed 1.7 g Au/t. Silver values of 17 g Ag/t to 93 g Ag/t were found in five holes over intervals of 0.3 to 1.2 meters, accompanied by copper, lead, and zinc in the range of 0.3 to 23.6%. The true widths of mineralization are estimated at approximately 70 to 80% of the drill intervals. Drilling has not closed off the vein system at depth or laterally, but drilled gold grades decrease below the historic workings.

1.3.2.3 Centennial Gold Deposit

Disseminated and minor stockwork gold mineralization, with a broad north-northwest trend and extents of about 1,200 meters in length by 600 meters in width, was delineated by BMGC with trenches and drilling. Host rocks are mostly basaltic andesites, andesitic volcaniclastic rocks, conglomerates, finely-laminated tuffaceous sediments, and minor white felsic lithic tuff toward the base of the drilled section. The mineralization is coincident with propylitic and silicic-potassic (adularia) alteration. Silica-pyrite veinlets are present in some mineralized intervals, but many well mineralized (>1 g Au/t) intervals lack veins, and pyrite veinlets locally occur in unmineralized sections. The bulk of the mineralization is disseminated and possibly stratiform to somewhat discordant across various gently-dipping lithologies. The highest grade-times-thickness gold values trend north from the north-trending Emery vein at the sea cliffs south of the deposit, perhaps reflecting a vein stockwork and steep fracture system along which hydrothermal fluids ascended before migrating laterally to form disseminated mineralization. The mineralization is largely within 50 meters of the surface, but is believed to be mostly unoxidized.

A total of 5,739 meters were drilled by BMGC in 60 core holes. Mineralized material is typically in the 0.5 to 2.0 g Au/t range over as much as 60 meters in apparent thickness. Silver contents are lower than at Shumagin and Apollo-Sitka, with Ag/Au ratios typically <1. The relation between the true thickness of mineralization and drill interval lengths is not presently understood, except in the apparently stratiform, gently dipping portions where it is close to 1:1. Some higher-grade intervals may have steep dips that have not been delineated due to the spacing, direction, and dips of the BMGC drill holes. The northeastern part of the deposit is not completely closed off by drilling.

1.3.2.4 Other Unga Island Prospects

The Zachary Bay copper-gold prospect, which lies north of the Shumagin and Apollo-Sitka trends, is one of the most notable but little-explored gold showings of the Unga project. Hole Z1, one of the four holes drilled by Duval-Quintana in 1975, penetrated an intermediate-composition, possibly composite intrusion with clear porphyry-style biotite-magnetite potassic alteration and chalcopyrite disseminated and in veinlets. This hole intersected disseminated copper-gold mineralization over 107 meters with an average grade of 0.11% Cu and 0.280 g Au/t. The potassic alteration, visible chalcopyrite, and the assays from hole Z1 are highly significant for a potential porphyry copper-gold deposit. There has been no follow-up exploration of this important target.

West of the Shumagin vein system, the Shumagin trend includes the Pray's Vein, Bloomer Ridge, Orange Mountain, Pook, and Aquila prospects. With the exception of Orange Mountain, all of these prospects have alteration and anomalous surface rock and soil geochemistry indicative of low- or intermediate-sulfidation epithermal gold mineralization, mainly in the form of narrow veins and vein stockwork. The Aquila prospect 6 kilometers southwest of the Shumagin area, which has been the site of the most extensive exploration by previous operators, is centered on an anastomosing array of narrow epithermal quartz veins. In 1980-1981, 12 widely dispersed shallow core holes were drilled at Aquila. An estimated true width of 0.43 meters of 109.7 g Au/t (1.4 feet of 3.2 oz Au/ton) in hole AQAME-2-80 and 5.2 meters of 5.55 g Au/t in hole AQAME-1-80 were the best results from this drilling. At Bloomer Ridge, 900 meters south of the Shumagin vein system, anomalous gold in surface rock samples is associated with a swarm of narrow epithermal quartz veins and stockwork; this vein zone has not been drilled.

The Orange Mountain prospect is a topographically elevated, central portion of the Shumagin trend with aerially extensive quartz-alunite-clay alteration peripheral to residual quartz bodies of magmatic-hydrothermal origin. Three shallow historical drill holes intersected abundant pyrite and up to 0.35 g Au/t and elevated concentrations of mercury. Too little drilling has been done to adequately test this large area for gold-silver mineralization of the high-sulfidation type.

Epithermal gold mineralization has been identified in quartz-adularia ± carbonate veins and vein-breccias at the Empire Ridge, California, and Heather prospects in the Apollo-Sitka trend west of the Apollo mine. During the 1980s, three shallow holes were drilled at Empire Ridge, one of which penetrated a zone identical to the Apollo mineralization with 7.8% combined lead, zinc, and copper and 21 g Ag/t, but no significant gold. Along strike to the west, four holes were drilled at the California prospect near the 1922 California adit. The California drilling penetrated anomalous gold to 1.7 g Au/t over 0.9 meters (core length), but did not replicate or extend down dip the high-grade gold reported for historical samples from the California adit.

Other low- to intermediate-sulfidation epithermal veins and small, little-defined gold showings are present at the Norm's Vein, Junior, Chance Vein and Beach Vein prospects.

1.3.2.5 Other Popof Island Prospects

Five areas of hydrothermal alteration, epithermal veins, and gold ± silver ± copper-lead-zinc mineralization have been recognized east of the Centennial deposit at the Propalof zone, Suzy and Rhodo veins, the SoWhat veins, the Red Cove alteration zone, and the Digit veins. These are early-stage prospects with very limited or no drilling. The veins and stockworks in some cases are exposed in sea cliffs, such as the Suzy, Rhodo, and SoWhat veins that were the sites of historic exploration adits. Historical underground sampling has shown gold grades in the 10 g Au/t to 20 g Au/t range are present over widths of 0.5 to 2.5 meters, but the veins have not been traced laterally over significant distances due to cover by soil and thick vegetation.

The Red Cove area is an extensive zone of advanced-argillic alteration with native sulfur, gypsum veinlets, anhydrite, vuggy residual quartz, disseminated pyrite, and rare cinnabar that is interpreted as the upper lithocap of a high-sulfidation system. Five widely spaced core holes for a total of 852 meters were drilled in 1988 and 1989. These holes encountered pyrite-gypsum veins, but the maximum gold assay was 0.166 g Au/t over 4.6 meters.

1.4 Mineral Processing and Metallurgical Testing

1.4.1 Shumagin

ALS Metallurgy completed the most recent metallurgical test work on samples from the Shumagin deposit in 2017. Three flow sheet options were explored on a single composite: (1) flotation of a bulk sulfide concentrate followed by cyanidation of the concentrate; (2) gravity concentration followed by cyanidation of the gravity tailings; and (3) whole-ore leach of the entire feed. The whole-ore cyanide leaching resulted in 84% to 86% gold extraction and 67% to 72% silver extraction over 48 hours. When preceded by a Knelson gravity concentration step, the overall leach extraction and gravity recovery for gold and silver measured about 85% and 71%, respectively. The gravity concentration step recovered about 16% of the gold and 15% of the silver. With flotation followed by cyanidation of the flotation concentrate, gold and silver extractions were recorded at 76% and 63%, respectively. About 18% of both the gold and silver reported to the flotation tailings, and about 6% of the feed gold and 19% of the feed silver remained in the cyanidation tailings. The representativity of the tested composite sample is not known.

1.4.2 Centennial

In 1989, BMGC performed preliminary cyanide-leach and gravity concentration tests, with flotation of the gravity tails, on sawed core and assay coarse rejects from the Centennial deposit. Prior to this test work, BMGC had concluded that significant free gold is present, with a mean particle size of about 22 microns. Bottle-roll cyanide-leach tests were done with 17 samples from six Centennial drill holes. The state of oxidation, sulfide mineral contents, and representativity of the samples used are not known. The samples were crushed to -2 millimeters and leached for 48 hours. Gold extractions ranged from 37% to 100%, with an average of 75% extraction; the average head grade for the 17 samples was 0.034 oz Au/ton (1.17 g Au/t). Gravity concentration followed by flotation of the gravity tails resulted in an average combined gold extraction of 92%.

1.5 Conclusions and Recommendations

The authors believe the Unga property is a project of merit that warrants considerable exploration investment. The project includes numerous prospects that have undergone various stages of exploration, and essentially all of them warrant some level of additional work. The mineralized areas include intermediate-sulfidation vein-type targets (Shumagin trend; Apollo-Sitka trend) and possibly low-sulfidation targets (Centennial?), each of which appear to be related to discrete magmatic-hydrothermal centers that also represent targets (Zachary Bay; Orange Mountain). The Unga project appears to offer the full vertical and lateral spectrum of high-sulfidation to intermediate-sulfidation and possibly low-sulfidation targets, in addition to the intrusion-related targets such as Zachary Bay.

Shumagin and Zachary Bay warrant additional drilling, although further surface work at Zachary should be completed prior to drilling. At Shumagin, the central portion of the vein zone defined to date remains open at depth and represents an attractive drill target. The mineralization at Centennial is not well understood, and therefore trenching and other surface work is recommended before further drilling is undertaken. The orientation of the Apollo-Sitka vein zone needs to be confirmed, as do the locations of the historical drill holes. This work will help determine if further drilling is warranted in the area of historical mining.

A comprehensive review of all other Unga project prospects is recommended, including office and field reviews, following the construction of a project-wide digital database. The goal of these reviews would be to prioritize the prospect areas and define the work needed to advance them.

A modest $2.1 million program is presented in Table 1.1 to initiate the work recommended above.

Table 1.1 Cost Estimate for the Recommended Program

Phase I Exploration Item	Estimated $ Cost	
Project Database Compilation, Validation, Maintenance	$	65,000
Field Review, Mapping Sampling	$	100,000
Surface Geochemical Sampling, Assays	$	100,000
Geophysics - Zachary Bay	$	100,000
Camps, Logistics	$	250,000
Helicopter	$	300,000
Drilling at Shumagin, Zachary Bay, Centennial	$	1,025,000
Drill Assays	$	85,000
Travel	$	75,000
Total	$	$2,100,000

2.0 INTRODUCTION AND TERMS OF REFERENCE (ITEM 2)

Mine Development Associates ("MDA") has prepared this technical report on the Unga project, located in southwestern Alaska, U.S.A., at the request of Redstar Gold Corporation ("Redstar"), a Canadian company listed on the TSX Venture Exchange (TSX-V: RGC) and also over-the-counter (OTC: RGCTF). Redstar controls 100% of the Unga project, including the Shumagin gold-silver deposit where Redstar has focused most of its exploration activities since 2011.

This report has been prepared in accordance with the disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101 ("NI 43-101"), Companion Policy 43-101CP, and Form 43-101F.

2.1 Project Scope and Terms of Reference

The purpose of this report is to provide a technical summary of the Unga project, including the Shumagin gold-silver deposit, in accordance with the requirements of NI 43-101. This report was prepared under the supervision of Michael M. Gustin, C.P.G. and Senior Geologist for MDA, and Steven I. Weiss, C.P.G. and Senior Associate Geologist for MDA. Mr. Gustin and Mr. Weiss are Qualified Persons under NI 43-101 and have no affiliation with Redstar except that of independent consultant/client relationships.

The scope of this study included a review of pertinent technical reports and data provided to MDA by Redstar relative to the general setting, geology, project history, exploration activities and results, methodology, quality assurance, interpretations, drilling programs, and metallurgy. Mr. Gustin and Mr. Weiss have relied almost entirely on data and information derived from work done by Redstar and its predecessor operators of the Unga project. The authors have reviewed much of the available data, conducted a site visit, and have made judgments about the general reliability of the underlying data. Where deemed either inadequate or unreliable, the data were either eliminated from use or procedures were modified to account for any lack of confidence in that specific information. MDA has made such independent investigations as deemed necessary in the professional judgment of the authors to be able to reasonably present the conclusions discussed herein.

Mr. Gustin spent one afternoon and two full days at the project site on August 3, 4 and 5, 2016, accompanied and assisted by Mr. Jesse Grady, Redstar's Vice-President for Exploration at the time. Inclement weather restricted visiting Unga Island to a portion of one day, which was spent at the Shumagin prospect. Numerous mineralized and altered exposures of the vein zone along the Shumagin fault were reviewed, as were outcrops of the major footwall and hanging wall rock units, and a number of historical and Redstar drill pads were visited. The remainder of the visit was spent on Popof Island reviewing drill core and details of the geology, mineralization, and exploration completed to date for many of the prospects along the Shumagin and Apollo-Sitka trends. Mr. Gustin believes his site visit remains current because the drilling completed after the site visit did not materially change the volume or grade of the Shumagin deposit. Mr. Weiss has not visited the project site.

Following the site visit, Redstar completed the 2016 and 2017 drilling programs under Mr. Grady's supervision, which were focused on the Shumagin prospect. During this time period, Mr. Grady regularly discussed results and interpretations with Mr. Gustin, and sent updated maps, cross sections, and select core photos for review.

The Effective Date of this technical report is June 14, 2018.

2.2 Frequently Used Acronyms, Abbreviations, Definitions, and Units of Measure

In this report, measurements are generally reported in metric units. Where information was originally reported in Imperial units, MDA has made the conversions as shown below. In some cases, original Imperial units are reported for historical assays or metallurgical test results if conversion to metric units and rounding would result in changes to the original precision.

Currency, units of measure, and conversion factors used in this report include:

Linear Measure

1 centimeter	= 0.3937 inch	
1 meter	= 3.2808 feet	= 1.0936 yard
1 kilometer	= 0.6214 mile	

Area Measure

1 hectare	= 2.471 acres	= 0.0039 square mile

Capacity Measure (liquid)

1 liter	= 0.2642 US gallons

Weight

1 tonne	= 1.1023 short tons	= 2,205 pounds
1 kilogram	= 2.205 pounds	

Currency: Unless otherwise indicated, all references to dollars ($) in this report refer to currency of the United States.

Frequently used acronyms and abbreviations

AA	atomic absorption spectrometry
Ag	silver
Au	gold
cm	centimeters
core	diamond core-drilling method
ºC	degrees centigrade
°F	degrees Fahrenheit
ft	foot or feet
g/t	grams per tonne
ha	hectares
Hz	hertz
ICP	inductively coupled plasma analytical method
in	inch or inches
kg	kilograms
km	kilometers
l	liter
lbs	pounds
µm	micron
m	meters
Ma	million years old
mi	mile or miles
mm	millimeters
NSR	net smelter return
oz	ounce
opt	ounce per short ton
ppm	parts per million
ppb	parts per billion
QA/QC	quality assurance and quality control
RC	reverse-circulation drilling method
RQD	rock-quality designation
t	metric tonne or tonnes

3.0 RELIANCE ON OTHER EXPERTS (ITEM 3)

Mr. Gustin and Mr. Weiss are not experts in legal matters, such as the assessment of the validity of mining claims, mineral rights, and property agreements in the United States or elsewhere. The authors did not conduct any investigations of the environmental, political or tax issues associated with the Unga project and are not experts with respect to these matters. The authors have therefore relied fully upon information and opinions on these matters provided by Redstar.

The authors have fully relied on Redstar to provide complete information concerning the pertinent legal status of Redstar and its affiliates, as well as current legal title, material terms of all agreements, and material environmental and permitting information that pertains to the Unga project.

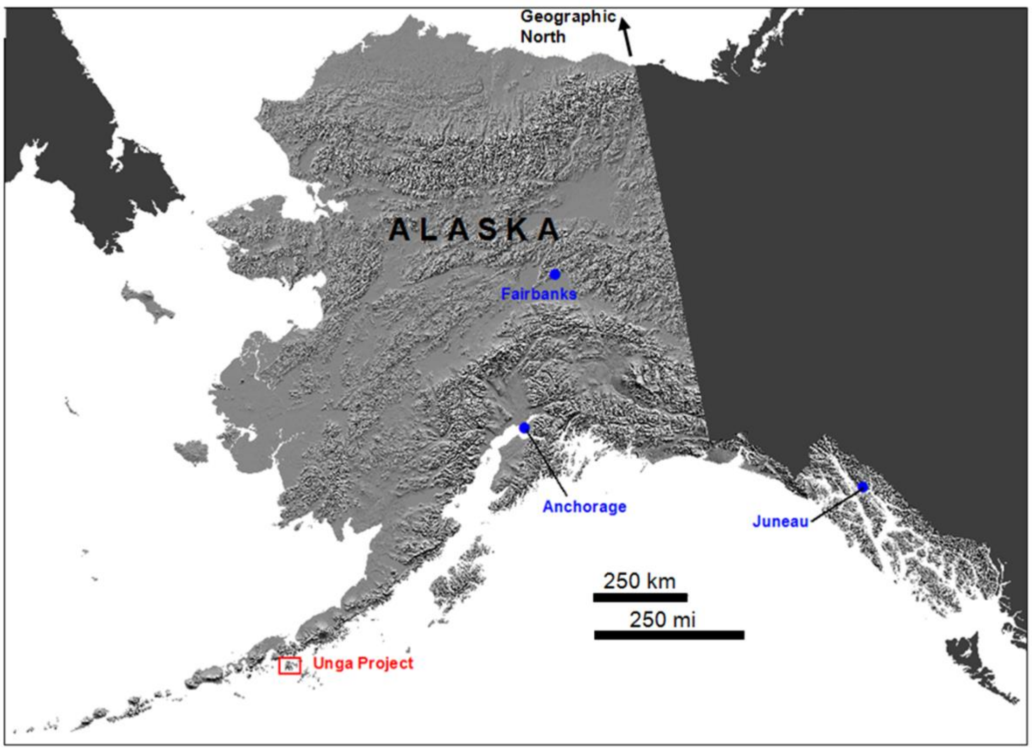
4.0 PROPERTY DESCRIPTION AND LOCATION (ITEM 4)

Section 4 in its entirety is based on information provided by Redstar, and the authors offer no professional opinions regarding the provided information. Mr. Gustin and Mr. Weiss do not know of any significant factors and risks that may affect access, title, or the right or ability to perform work on the property beyond what is described in this report.

4.1 Location

The Unga gold-silver project covers 250 square kilometers of neighboring Unga and Popof Islands, approximately 900 kilometers southwest of Anchorage, Alaska (Figure 4.1). The approximate geographic center of the property is located at latitude 55°13.50′N; longitude 160°36.0′W.

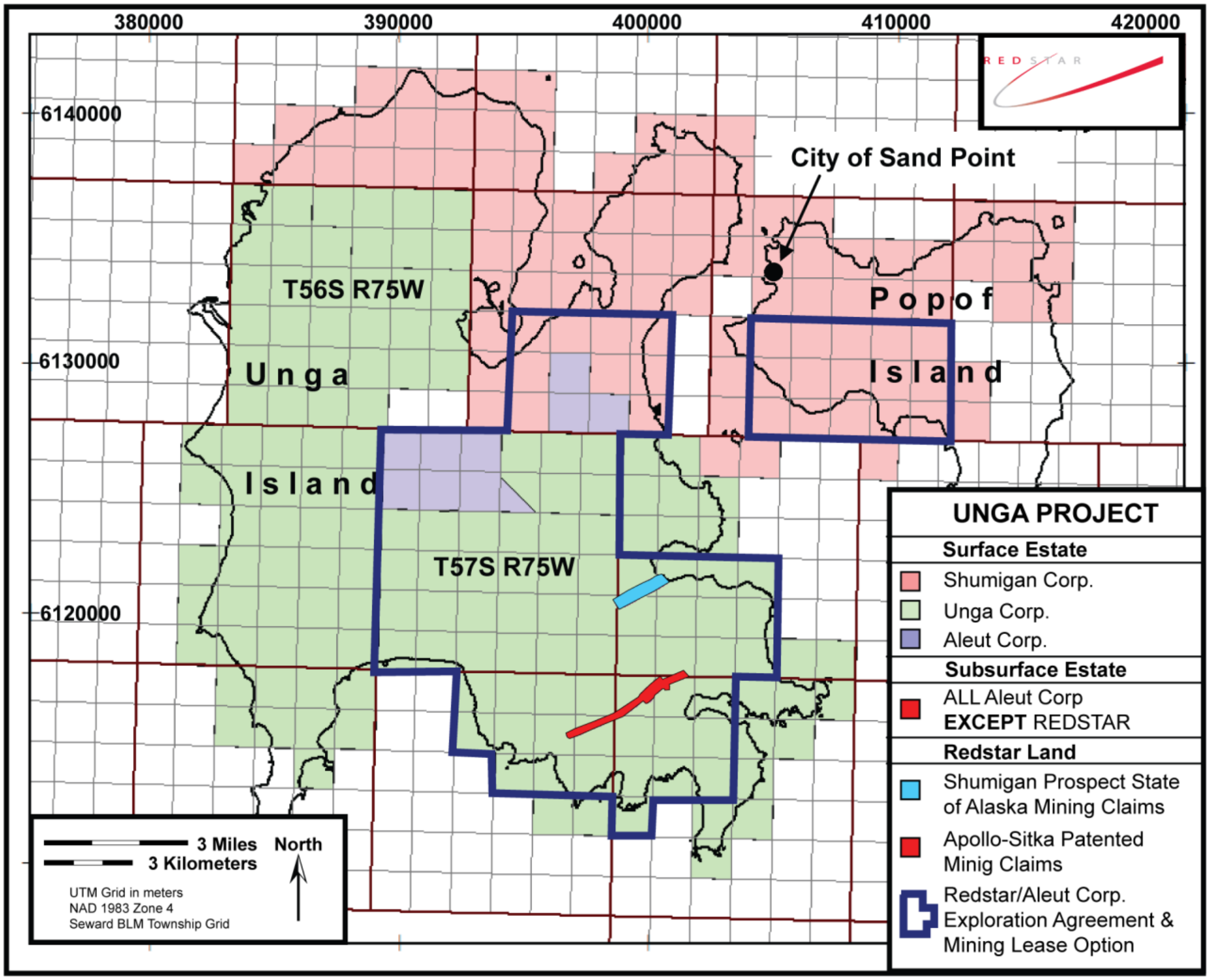
Figure 4.1 Location of the Unga Project, Alaska



4.2 Land Area

The Unga property includes two principal tracts of subsurface mineral tenure, one on Popof Island and the other on adjacent Unga Island (Figure 4.2), 100% controlled by Redstar under an exploration agreement and Mining Lease option with the Aleut Corporation ("AC"), an Alaska Native Regional Corporation. These two tracts total approximately 250 square kilometers and surround six State of Alaska mining claims (the "Shumagin claims") and 16 patented U.S. federal mining claims (the "Apollo-Sitka claims") owned 100% by Redstar (Figure 4.2).

Figure 4.2 Unga Project Property Map
(from Redstar Gold, 2018)



The Popof Island tract is located in T56W, R73W, Sections 20-29 and 32-36, Seward Baseline and Meridian. See Appendix A for data on conveyance of these sections by the U.S. Bureau of Land Management ("BLM") to the AC (subsurface estate) and to the Shumagin Corporation (surface estate), an Alaska Native Regional Corporation.

The Unga Island tract is located in T56S, R74W, Sections 20-23 and 26-35; T57S, R75W, Sections 1-36; T57S, R74W, Sections 19-22 and 27-34; and T58S, R74W, Sections 4-9 and 16-19; all Seward Baseline and Meridian. See Appendix A for data on conveyance of these sections by the BLM to the AC (subsurface estate), the Shumagin Corporation (surface estate), and the Unga Corporation (surface estate), an Alaska Native Regional Corporation.

For the six State mining claims, Alaska mining laws and regulations provide an exclusive right to the locator to develop a discovery, and security of tenure, subject to annual rental payments and performance of annual labor requirements. Redstar represents that annual State mining claim rental fees have been paid, and performance of annual labor requirements for the six Shumagin claims have been met, through noon on September 1st, 2018. The State of Alaska retains a 3.0% Net Income Royalty ("NIR") on all minerals produced from the six Shumagin claims.

There are no annual property taxes for the 16 patented Apollo-Sitka mining claims.

4.3 Agreements and Encumbrances for Mineral Tenure

Annual land holding costs and royalty obligations for the Unga property total approximately $75,020 per year, as summarized in Table 4.1, and outlined below.

Table 4.1 Summary of Annual Land Holding Costs and Royalty Obligations

Entity	Item	Cost	Royalty
Shumagin Claims - State of Alaska	Rental Fees	$ 1,020	3.0% NIR
Azel L. Crandall Estate to October, 2020	Contract of Sale	$2,000/mo	
Apollo-Sitka Patents - Taxes		nil	nil
Aleut Corp.	Option - Subsurface		5.0% NSR
Aleut Corp.	Materials	$ 20,000	
Shumagin Corp. (Popof tract)	Surface Use		
Unga Corp. (Unga tract)	Surface Use	$ 30,000	
Total Annual Cost		**$75,020**	

Redstar's acquisition of the six Shumagin claims and the 16 Apollo-Sitka claims commenced in May 2011. The 22 claims were acquired from the NGAS Production Company ("NGAS"), an indirect subsidiary of Magnum Hunter Resources, through a series of cash and share payments completed in December 2013, with Redstar owning 100% of the Shumagin and Apollo-Sitka claims subject to a 3% NIR royalty on the Shumagin claims (Table 4.1).

The Shumagin claims are also subject to a contract of sale between the estate of Azel L. Crandall and Alaska Apollo Gold Mines Ltd., which was signed on July 8th 1986. The consideration agreed to at the time was $854,817.60 for the purchase by Alaska Apollo Gold Mines Ltd. The original schedule of payments was as follows:

1. Not later than March 31, 1987 US$50,000 (Paid)
2. Not later than March 31, 1988 US$24,000 (Paid)
3. Not later than March 31, 1989 US$24,000 (Paid)
4. Not later than March 31, 1990 US$24,000 (Paid)
5. Monthly payments starting May 1, 1990 US$2,000 (Paid to date of this report)

Redstar represents there remains US$54,818 to be paid in monthly payments of $2,000 and the commitment will be satisfied by the end of October 2020 (Table 4.1). The contract of sale provides that if there is mineral production from the Shumagin claims prior to complete payment of the sales price, the claims will be subject to a Net Smelter Returns ("NSR") royalty of 4.0%, which will be payable monthly; any such payments shall be used to reduce the amounts owing to the Crandall Estate.

In June 2011, Redstar announced an agreement to acquire of the Popof and Unga tracts from Full Metal Minerals Ltd ("FMM"). 100% of the mineral rights to both tracts were held by FMM under a lease agreement with the AC. Redstar's agreement with FMM gave Redstar the right to earn a 60% interest in the property by completing $5 million in exploration expenditures by August 1, 2015, making cash payments of $300,000 by August 1, 2014, and issuing 1.0 million shares by August 1, 2014. Redstar had the option of earning an additional 25% interest by producing a bankable feasibility study and issuing an additional 1.0 million shares to Full Metal. The agreement obligated Redstar to issue an additional 1.0 million shares on the commencement of commercial production. In December 2011, Redstar announced that it had the option of earning an additional 15% interest from FMM by producing a bankable feasibility study and issuing an additional 1.0 million shares to FMM.

In February 2014, Redstar announced it had signed a Letter of Intent to acquire a 100% undivided interest in the Unga and Popof tracts from FMM. Under the terms of the letter agreement, Redstar agreed to issue 34,000,000 shares and pay $125,000 cash to FMM, subject to Exchange approval and the completion of a definitive agreement with FMM. In the same announcement, Redstar also explained that FMM had an exploration agreement with option to lease with the AC under an Amended and Restated Exploration Agreement with Option to Lease Originally Effective as of January 5, 2007, and, as Amended and Restated Effective as of June 30, 2010, between the AC and FMM (the "Amended Agreement").

In November, 2014, Redstar announced it had assumed the obligations of FMM to the AC under the Amended Agreement, via an Assignment Agreement entered into by Redstar, FMM and the AC. Pursuant to the rights and interests held by FMM, and as modified and assigned to Redstar, Redstar agreed to pay to the AC an initial option payment in the amount of $135,000, and later option payments totaling $175,000 over three years, as well as annual Materials Payments in the amount of $20,000. Additionally, Redstar agreed to incur annual exploration expenditures totaling $3,400,000 over four years, which have been fulfilled .

The agreement above provides that Redstar may enter into a Mining Lease with the AC at any time prior to December 31, 2019. Upon entering into the Mining Lease, the Company will make annual advance royalty payments escalating from $25,000 in the first year, to $400,000 on the 16th anniversary and subsequent years. In the event that Redstar delivers a feasibility study, Redstar will issue to the AC 500,000 common shares, subject to the approval of the TSX Venture Exchange. Upon commencement of commercial production, Redstar will pay to the AC a sliding scale NSR royalty of 2.0% to 5.0%, depending on the price of gold, and a 2.5% NSR royalty for all commodities except gold and other precious metals.

4.4 Surface Tenure Agreements and Encumbrances

Redstar's surface tenure for the Unga tract is held under agreements with the Unga Corporation. In 2014, Redstar entered into a surface use agreement with the Unga Corporation that granted Redstar overland access use and surface disturbances such as trenching and drilling. Redstar is obligated to make annual payments of $30,000 to the Unga Corporation for surface access rights.

For the Popof tract, Redstar represents they are in negotiations with the Shumagin Corporation to enter into a surface use agreement with the same obligations as those under the agreement with the Unga Corporation.

4.5 Environmental Liabilities

The authors are not aware of any environmental liabilities within the Popof and Unga tracts, or within the mining claims that are the subject of this report, aside from the reclamation of drill pads and access roads constructed by Redstar.

4.6 Environmental Permitting

The State of Alaska requires a reclamation bond for surface disturbances created by exploration and mining activities that exceed 2.02 hectares on State lands and private property. Permitting of surface exploration activities is managed under the Alaska Department of Natural Resources ("DNR") Application for Permits to Mine in Alaska ("APMA").

In 2012, it was reported that Redstar had received permits for exploration as follows (Stevens, 2012):

- State of Alaska Multi-Agency Permit Application (APMA) for Hardrock Exploration #A113081;
- State of Alaska Fish Habitat Permit FH 11-II-0144 re: water withdrawal from unnamed streams and lakes;
- State of Alaska Temporary Water Use Authorization for APMA A113081; and
- Department of Army US Army Engineer District Regulatory Division POA-2011-523 –work covered by nationwide permit.

These permits have been most recently updated in 2015 and are in place for five years. MDA does not know if these permits are sufficient to perform the recommended work program proposed in Section 26.0. As of the Effective Date of this report, the unreclaimed surface disturbance totals attributable to Redstar are nil.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY (ITEM 5)

The information summarized in this section is derived from publicly available sources, as cited. The authors have reviewed this information and believe this summary is materially accurate.

5.1 Access to Property

Access to both Unga Island and Popof Island are via the town of Sand Point, a small commercial fishing port located on Popof Island. Sand Point has most of the facilities and services required for exploration programs. The Sand Point airport has an all-weather paved runway and a large paved apron and aircraft parking area, all located 21 feet above sea level. There are daily commercial flights to and from Anchorage, Alaska, and regular air freight and coastal barge service. There are service boats available, such as small landing craft and barges, to haul freight to bays or beaches on Unga Island.

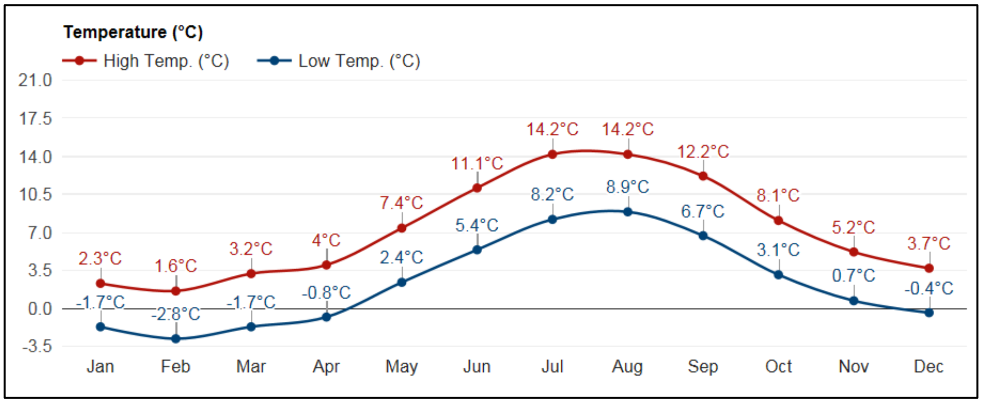
A helicopter can fly from Sand Point to anywhere on Unga Island, weather permitting. The over-water stretch varies from less than 1.6 kilometers to about 8.0 kilometers, so a helicopter with pop-out floats is commonly used. Charter barge service to Baralof Bay allows drill rigs and other heavy equipment to be slung by helicopter from the barge to the Shumagin and Apollo-Sitka claims, or trucked from the beach to either prospect under the Unga Corporation surface use agreement.

Access to the Centennial prospect on Popof Island is by road from Sand Point.

5.2 Climate

Sand Point has a temperate, maritime climate characterized by cool summers and rainy winters. Cloud cover and strong winds are common during winter months. Average daily high and low temperatures are summarized in Figure 5.1. Precipitation averages 83.8 centimeters annually, which includes water from an average of 132 centimeters of snow. The operating season for exploration is longer than much of the rest of Alaska, depending on the tasks to be done and the mode of transportation for field work. Exploration programs using helicopter transportation must plan for days when poor weather precludes flying. It is expected that mining can be conducted year round.

Figure 5.1 Sand Point, Alaska Average Temperatures
(from Weather Atlas: https://www.weather-us.com/en/alaska-usa/sand-point-climate?c,mm,mb,km



5.3 Physiography and Vegetation

Popof Island is largely rolling terrain with a few higher hills. Elevations range from sea level to approximately 470 meters. Unga Island has more relief, with the highest point being about 620 meters, but the more prospective areas have rolling terrain at lower elevations. On both islands the dominant vegetation is alder brush, with open spaces covered with grasses.

5.4 Local Resources and Infrastructure

Engineering, mechanical, light vehicle, banking, and heavy equipment services are available in Anchorage, Alaska, as well as labor for construction and mining industries. The town of Sand Point on Popof Island, with a population of about 1,000 year-round inhabitants in 2010, has facilities and services for room and board, fuels, groceries and supplies, vehicles, cellular phone service, docks for loading and unloading barges and ships, a Post Office and courier services, passenger and air freight service, barge service, etc. During the commercial fishing season, the population grows to several thousand. Sand Point is the hub of a small road system on Popof Island, which links it to the airport, the harbor area, housing, the commercial district, and to the area hosting the Centennial prospect. There is public electrical power 3.2 km from the Centennial prospect.

Unga Island does not have any public infrastructure such as roads, power, housing, etc. The northeast portion of the island has cellular phone service. There is marine access to the area for barges and landing craft. Redstar has established a Weatherport and Conex camp on Unga Island to support its exploration work.

The properties that are the subject of this report are large enough to provide sufficient surface area to install all facilities necessary for a large mining operation on either island. Adequate and appropriate terrain is present for potential tailings storage areas, potential waste disposal areas, heap leach pad areas, and potential processing plant sites. Water resources are abundant and auxiliary wind-generated electricity is very feasible.

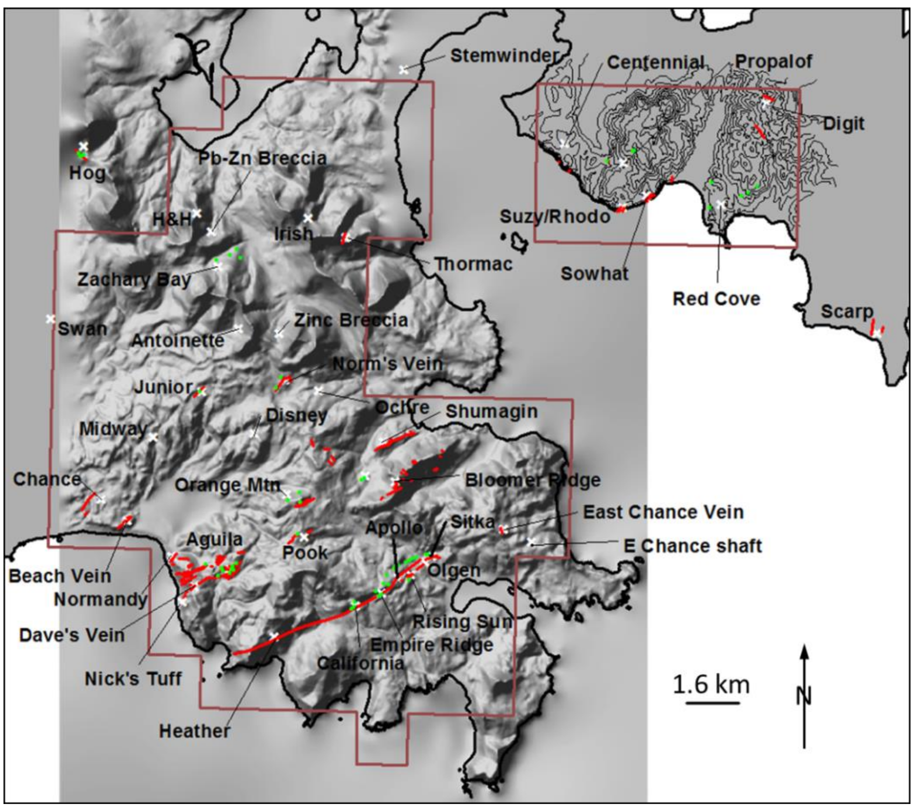
6.0 HISTORY (ITEM 6)

The information summarized in this section has been extracted and modified to a significant extent from Stevens (2012) and unpublished company files, as well as other sources as cited. The authors have reviewed this information and believe this summary is materially accurate.

6.1 Exploration History

Gold was discovered on Unga Island in 1891 in a series of faults and veins that can be traced across the southeast side of Unga Island for about 8.0 kilometers. The Apollo gold mine (Figure 6.1) reportedly operated between the late 1880s and the early 1920s, and produced about 130,000 ounces of gold (Stevens, 2012). The Sitka mine operated between 1900 and 1922, but gold production was limited. Both mines produced gold from the upper, oxidized portions of sulfide-rich lodes. Production ceased upon depletion of the oxidized ore. The Apollo and Sitka mines attracted prospectors to the area, which resulted in numerous lode discoveries on Unga Island and several lode gold discoveries on Popof Island. Adits and drifts at the Shumagin and California prospects date to this period. Gold production from Popof Island was from a beach placer deposit located about where the south end of the present Sand Point airport runway is located, in the northwestern portion of the island. Several gold-bearing veins are exposed in rock cliffs south of the placer.

Figure 6.1 Prospect Map for the Unga Project
(from Redstar, 2012)



Note: red lines are veins shown schematically. Aquila is mis-labeled as Aguila.

In June of 1964, Bob Reeve, an Alaskan icon and owner of Reeve Aleutian Airways, funded a 30-day, four-person exploration program led by Leo Mark Anthony, a renowned Alaska prospector, and included Donald Stevens. Prospecting and geochemical soil surveys were conducted on areas in and around the Apollo mine, the Sitka prospect, and elsewhere. Similar work was also done on Popof Island in the area of the Centennial prospect (Figure 6.1). This work was all conducted on lands comprising the current Unga project. Trails cut by buffalo through the thick alder made it easier to cover ground on Popof Island.

The modern era of exploration began after the passage of the Alaska Native Claims Settlement Act of 1971 ("ANCSA"), as amended. For-profit native corporations sought offers from exploration and mining companies to explore the mineral potential of large land areas set aside from which native corporations could select lands. These exploration programs enabled the native corporations to select those lands with the highest mineral potential.

The surface estates of Popof Island and Unga Island were selected by the Shumagin Corporation and Unga Corporation under their rights granted by ANCSA. These two corporations are village corporations within the Aleut Region. The AC, a regional corporation, owns the rights to the subsurface estate beneath the village corporation selections as dictated in ANCSA and explained in Section 4.2. In 1974, the AC entered into a joint venture agreement with Quintana Minerals Corp. ("Quintana") and Duval Corp. ("Duval") for reconnaissance exploration of Unga Island. This led to the discovery of a large color anomaly near Zachary Bay (Figure 6.1), which was found to host copper-gold occurrences and called the Zachary Bay prospect. In 1975, the program consisted of a magnetic survey and detailed geologic mapping, followed by a four-hole diamond-core drilling program at the Zachary Bay prospect, which totaled 303 meters. The results did not meet the joint venture's expectations and no further work was done there.

In 1979, Resource Associates of Alaska ("RAA") began systematic exploration of lands withdrawn for possible selection and eventual ownership by the AC. This work was funded for 1979 and 1980 by Houston Oil and Minerals Corporation ("HOM") and included Unga and Popof Islands. In 1981, RAA conducted field work for UNC Teton Exploration Drilling, Inc. ("UNC-Teton") and the AC. In 1982 and 1983, UNC-Teton, in a joint venture with RAA, led the exploration work. This multi-year program led to the discovery and exploration of several gold occurrences and prospects, including Aquila, Orange Mountain, Norm's Vein, and Pray's Vein, all of which are shown in Figure 6.1, except for Pray's Vein. These prospects were all explored by geologic mapping, surface geochemical sampling, and a few diamond-core drill holes.

In 1987 through 1991, Battle Mountain Exploration Company, a division of Battle Mountain Gold ("BMGC"), conducted exploration work on Unga and Popof Islands. In 1987, the Centennial prospect was investigated in detail by BMGC, attracted by gold showings that had been recognized about 80 years earlier. In 1988, BMGC drilled 484 overburden auger holes and 41 core holes at Centennial, followed by core drilling in 1989, for a total of 59 core holes. BMGC also identified the Propalof and Red Cove prospects (Figure 6.1), confirmed the epithermal nature of these prospects, and conducted detailed exploration that included drilling.

On Unga Island, BMGC explored the Orange Mountain, Norm's Vein, Heather, Bloomer Ridge, Pray's Vein, Pook, and the East Chance prospects (Figure 6.1). Simultaneously, exploration work was conducted by Alaska Apollo Gold Mines Ltd. ("AAGM") from 1983 through 1989 on the Apollo mine and Sitka mine prospect, and at the Shumagin prospect. Both the Apollo-Sitka and Shumagin prospects were drilled as part of this work. These two prospects are held by 15 patented federal mining claims, one patented federal mill site, and six State of Alaska mining claims that are in-holdings within the Native lands. From 1983 through 1990, AAGM, Ballatar Explorations Ltd. ("Ballatar"), and BMGC drilled the Shumagin prospect and in 1990, BGMC conducted an airborne magnetic survey. Ballatar's drilling was part of a joint venture that Ballatar entered into with AAGM in 1989.

From 1987 through 1996, AAGM commissioned preliminary feasibility studies by Kilborn Engineering (B.C.) Ltd., and resource estimates by E.O. Strandberg Jr., of Fairbanks, Alaska. In August of 1993, Daugherty Petroleum acquired all of the assets of AAGM. Daugherty Petroleum changed its name in 1998 to Daugherty Resources, Inc., which at some point became known as the NGAS Production Company, an indirect subsidiary of Magnum Hunter Resources of Houston, Texas.

MDA has no information on work done, if any, on the patented and State of Alaska claims at the Shumagin and Apollo-Sitka prospects from 1997 through 2010, except for a ground magnetometer survey over the Shumagin vein system commissioned by Daugherty Resources (Magnum Hunter) in 2009. This work was completed by Alaska Earth Sciences Inc. and consisted of five lines across the vein system. A distinct magnetic low was found to correspond with the position of the Shumagin vein system.

Redstar commenced the acquisition of the Shumagin and Apollo-Sitka claims from NGAS in 2011 through a series of transactions that were completed in December 2013. Full Metal Minerals ("FMM") began exploring the surrounding Unga and Popof tracts and other properties in the Port Moller region under an agreement with the AC in 2005 after entering into an option agreement with Alaska Earth Resources Inc. ("AERI") in July of 2004. Metallica Resources Inc. ("Metallica") and FMM formed a joint venture in 2005, whereby Metallica had an option to earn an interest in FMM's Port Moller properties by investing in exploration and development over a five-year option term. Surface mapping, sampling and induced potential ("IP") geophysics were initiated by the FMM-Metallic joint venture in 2005 on Unga and Popof islands. This included a short-wave infrared-reflectance ("SWIR") study of alteration minerals in historical drill samples and other specimens from Popof Island, and a LANDSAT Thematic Mapper, satellite remote-sensing study of alteration in 2005. Twenty-five samples were examined for fluid inclusion petrography by Jim Reynolds of Fluid Inc. An historical magnetic-VLF-EM survey of the southern part of Unga Island and the western side of Popof Island, originally acquired for BMGC, was re-processed and total-intensity gridded maps and analytical-signal maps of the area were produced. This survey had nominal 152-meter (500-foot) line spacing and recorded magnetics, VLF, and three frequencies of electromagnetic data at 56,000 Hz, 7,000 Hz, and 900 Hz. The joint venture also conducted an IP and ground magnetics survey at the Pook prospect in 2005.

MDA is unaware of work done, if any, during 2006 through 2010 within the Popof and Unga tracts. In 2011, Redstar entered an agreement with FMM to acquire a 60% interest in the Unga and Popof tracts. Redstar's position was increased to a 100% interest and their acquisition of the Unga and Popof tracts was completed in 2014.

6.2 Historical Mineral Resource Estimates

Several historical estimates of mineral resources were completed for prospects within the Unga project area, and these estimates are presented herein as an item of historical interest only. These historical estimates pre-date the implementation of NI 43-101. The classification terminology is presented as described in the original references, but it is not known if they conform to the meanings ascribed to the Measured, Indicated, and Inferred mineral resource classifications, or Proven and Probable reserve classifications, by the Canadian Institute of Mining, Metallurgy and Petroleum (the CIM Definition Standards). The authors have not done sufficient work to classify these historical estimates as current mineral resources or mineral reserves, and Redstar is not treating these historical estimates as current mineral resources or mineral reserves. Accordingly, these estimates should not be relied upon. There are no current mineral resources within the Unga project as of the date of this report.

Shumagin Gold-Silver Deposit, Unga Island

During the 1980s to mid-1990s, AAGM commissioned a number of resource estimates for the Shumagin deposit, all of which were completed prior to the implementation of the standards required by NI 43-101. These are summarized below only for historical completeness and do not constitute current estimates of mineral resources.

Based on nine core holes drilled in 1983, Pilcher (1983) estimated "ore reserves" for two zones within the Shumagin gold-silver prospect (Figure 6.1) that together contained "*282,000 tons* [256,000 tonnes] *grading 0.427 OPT Au* [14.6 g Au/t] *and 1.16 OPT Ag* [39.8 g Ag/t]. *The above tonnages and grades are uncut and undiluted. The average true thickness of both zones is 7.87 feet* [2.4 meters]." This estimate is not considered reliable by the authors and the authors have not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves. The classification used is different from the CIM Definitions Standards and is not in accordance with NI 43-101. Redstar is not treating this historical estimate as current mineral resources or mineral reserves, and it should not be relied upon.

Assays from trenches, core holes, percussion (air-track) holes and underground workings were used by Schippers (1985) to calculate "possible reserves" based on an assumed tonnage factor of 12.5 ft^3/ton and a true width of 1.5 to 5.5 meters (5.0 to 18.0 feet). A total of 532,100 tons (482,700 tonnes) with average grades of 0.316 oz Au/ton (10.6 g Au/t) and 1.55 oz Ag/ton (53.1 g Ag/t) were estimated to be present from the surface to a depth of 137 meters. This estimate is relevant only for historical interest and the authors have not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves. The classifications used are different from the CIM Definitions Standards and are not in accordance with NI 43-101. Redstar is not treating this historical estimate as current mineral resources or mineral reserves, and it should not be relied upon.

In 1988, Alaska Apollo Gold Mines calculated an "estimated reserve" at Shumagin of 245,106 tonnes with an average grade of 16.8 g Au/t (0.49 oz Au/ton) and 68 g Ag/t (1.98 oz Ag/ton) (Mining Journal, 1987; cited in White and Queen, 1989). This estimate is relevant only for historical interest and the authors have not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves. The classification used is different from the CIM Definitions Standards and is not in accordance with NI 43-101. Redstar is not treating this historical estimate as current mineral resources or mineral reserves, and it should not be relied upon.

According to Galey (2005), in 1990 BMGC estimated a resource of 352,000 tons (319,000 tonnes) within 183 meters of the surface at a grade of 0.299 oz Au/ton (10.3 g Au/t), for a total of 105,000 ounces of gold, based on 43 core holes drilled from 1983 through 1990. This resource comprised a single shoot 122 meters long, 1.5 to 9.1 meters wide, with a 45° plunge. This estimate is relevant only for historical interest and the authors have not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves. Redstar is not treating this historical estimate as current mineral resources or mineral reserves, and it should not be relied upon.

Another resource estimate of the Shumagin mineralization was prepared in 1995. A diluted resource of 280,335 tons (254,314 tonnes) grading 0.80 oz Au/ton (27 g Au/t) and 3.65 oz Ag/ton (125 g Ag/t) was estimated by Strandberg (1995). This estimate was reviewed and evaluated by SRK Consulting (US) ("SRK") in 2000. SRK re-classified the estimated resources as inferred resources. This estimate is relevant only for historical interest and the authors have not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves. Redstar is not treating this historical estimate as current mineral resources or mineral reserves, and it should not be relied upon.

Apollo Consolidated Mine, Unga Island

For the historic Apollo gold-silver mine, located southeast of the Shumagin prospect (Figure 6.1), Drobeck (2005) stated: "*I have found no reliable resource estimate for the Apollo portion of the district. Several workers have cited an old "reserve" estimate made by Brown in 1935. This estimated 380,000 short tons* [345,000 tonnes] *grading 0.3 opt Au* [10.3 g Au/t] *based on projecting known ore shoots from existing levels toward the surface – but simply assumed the grade based on historical experience, not on data. He estimated another 111,000 short tons* [101,000 tonnes] *of "complex sulfide" ore, but I have not seen the stated grade of this mineralization. SRK evaluated this estimate and concluded it indicated exploration potential, but was not in fact a viable resource.*" This estimate is not considered reliable, is relevant only for historical interest, and the authors have not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves. Redstar is not treating this historical estimate as current mineral resources or mineral reserves, and it should not be relied upon.

Sitka Mine, Unga Island

In 1993, Alaska Apollo Gold Mines calculated an "ore reserve" on a longitudinal section through the Sitka mine (Bowdidge, 1993), relying heavily on information from a 1922 report by the mine manager at that time (Brown, 1922, updated in 1935). This estimate included a total of 39,100 tons [35,500 tonnes] with average grades of 0.086 oz Au/ton (2.95 g Au/t), 1.55 oz Ag/ton (53.1 g Ag/t), 6.83% Pb, 2.66% Zn and 0.99% Cu, divided between "Proven" and "Probable" blocks. This estimate is relevant only for historical interest, but is not considered reliable and the authors have not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves. Redstar is not treating this historical estimate as current mineral resources or mineral reserves, and it should not be relied upon.

Centennial Gold Deposit, Popof Island

At the Centennial gold prospect (Figure 6.1), BMGC used a polygonal method in plan view to estimate an *in-situ* mineral resource in 1989 (Ellis and Harris, 1989). Using a tonnage factor of 12.5 ft^3/ton, BMGC calculated "first pass geologic estimates" classified as "*geologic inferred resources" that totaled about 4.78 million tons* [4.34 million tonnes] *with an average grade of 0.042 oz Au/ton* [1.44 g Au/t], *for a total of about 200,000 ounces of gold (Ellis and Harris, 1989). An additional 2.06 million tons* [1.87 million tonnes] *with an average grade of 0.040 oz Au/ton* [1.37 oz Au/t], *for about 82,000 ounces, were classified as "speculative Au resource possibilities*." This estimate is relevant only for historical interest, is not considered reliable, and the authors have not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves. Redstar is not treating this historical estimate as current mineral resources or mineral reserves, and it should not be relied upon.

6.3 Historical Production

The only historical, non-placer mineral production known from the project area took place from veins at the Apollo and adjacent Sitka mines, in the southeastern portion of Unga Island (Figure 6.1), between the late 1880s and early 1920s. MDA is unaware of primary sources of information about this production. Burtherus et al. (1979) mentioned the Apollo Consolidated mine "*where a reported two million tons* [1.8 million tonnes] *of ore yielded an average of 0.4 oz/t Au* [13.7 g Au/t]. *The mine operated from 1891 to 1904 with a 60-stamp mill. Additional milling of mined ore was done in 1908.*" Reporting on Alaska's mineral industry, Bundtzen et al. (1987) attributed 107,900 oz of gold production to the Apollo-Sitka mine from 1892 to 1912 at an average grade of 0.22 oz Au/ton (7.5 g Au/t). Van Wyck et al. (2005) stated: "*The Apollo mine operated at various times from 1886 to 1914 with approximately 112,000 ounces of free-milling gold extracted from 500,000 tons* [453,000 tonnes] *of ore. Underground development at the Apollo Mine exceeds 4,000 feet of tunnels over a vertical range of 1,400 feet.*" According to Drobeck (2005), the Apollo mine "*...is believed to have produced on the order of 96,000 to 112,000 oz at an average grade between 0.22 and 0.40 opt Au (7.5 and 13.7 ppm Au). The gold grade of this vein decreases rapidly below the existing stopes to the range of 0.10 opt Au (3.4 ppm Au), but the base metal values increase. Mining in the late 1800's to early 1900's extracted ore from only the upper portion of the vein where the ore was described as "free-milling". Below sea level the mineralization is described as "Complex Ore" which had a mixture of base metals with by-product gold values."* More recently, Stevens (2012) reported "*The Apollo Mine operated between 1892 and 1922 and produced about 130,000 ounces of gold.*"

7.0 GEOLOGIC SETTING AND MINERALIZATION (ITEM 7)

The information presented in this section of the report is derived from multiple sources, as cited. The authors have reviewed this information and believe this summary accurately represents the Unga project geology as it is presently understood.

7.1 Regional Geologic Setting

Unga Island and Popof Island are adjacent to the southeast side of the Alaska Peninsula (Figure 7.1), inboard from the convergent boundary between the Pacific and North American lithospheric plates. The islands are located 40 to 120 kilometers toward the Aleutian trench from the active Aleutian volcanic arc on the Alaska Peninsula, and are considered part of the Aleutian forearc (e.g., Riehle et al., 1999).

As shown by Wilson et al. (1995) and summarized by Van Wyck et al. (2005), the nearby Alaska Peninsula is primarily underlain by arc-related volcanic and plutonic rocks, and shallow marine and continental sedimentary rocks that range in age from late Paleozoic to Holocene in age (Figure 7.1). Southeast of the Alaska Peninsula, upper Cretaceous turbidities of the Shumagin Formation, which are part of the Chugach terrane, are exposed in the outer Shumagin Islands. The Chugach terrane is separated from the Alaska Peninsula terrane by the Border Ranges fault ("BRF"; Figure 7.1). Northwestern convergence and active plate subduction have occurred along the Aleutian trench since about 43 Ma. Volcanism on the Alaska Peninsula, Unga Island, and Popof Island began shortly thereafter.

7.2 Unga Island and Popof Island Geology

The earliest geologic map of Unga Island is that of Atwood (1911). Mapping by industry geologists and U.S. Geological Survey ("USGS") geologists during the late 1970s through the mid-1990s, together with potassium argon age-dating by the USGS, culminated in the geologic description of the islands by Riehle et al. (1999), which included the geologic map of Unga Island and the northwest part of Popof Island by Riehle et al. (1998). Broadly, four sequences of sedimentary and calc-alkaline volcanic rocks were recognized, from oldest to youngest: the Eocene and Oligocene Stepovak Formation, the Eocene and Oligocene Popof volcanic rocks, the Unga Formation conglomeratic rocks of Oligocene and Miocene ages, and early to mid-Miocene volcanic rocks. Figure 7.2 shows the USGS geology taken from Riehle et al. (1998). A 1986 map by BMGC had significant differences in unit assignment and relative stratigraphic positions. The BMGC and earlier RAA geologic maps and reports included an elliptical caldera located in the northern portion of the present property, and the caldera interpretation was repeated by some subsequent workers (e.g., Bowdidge, 1993; Vann and Crowl, 2000). The main evidence for this caldera was an apparently elliptical, eight by 13 kilometer area of volcanic domes, lava flows and tuffs, and an inferred pattern of bounding faults and fractures. No voluminous out-flow facies ash-flow tuff, or other large-volume eruptive products were identified and related to caldera subsidence, and little evidence for such a depression was specified. This proposed caldera was not recognized in the later mapping of Unga Island by the USGS as portrayed by Riehle et al. (1998).

Figure 7.1 Regional Geologic Setting
(from Van Wyck et al., 2005)

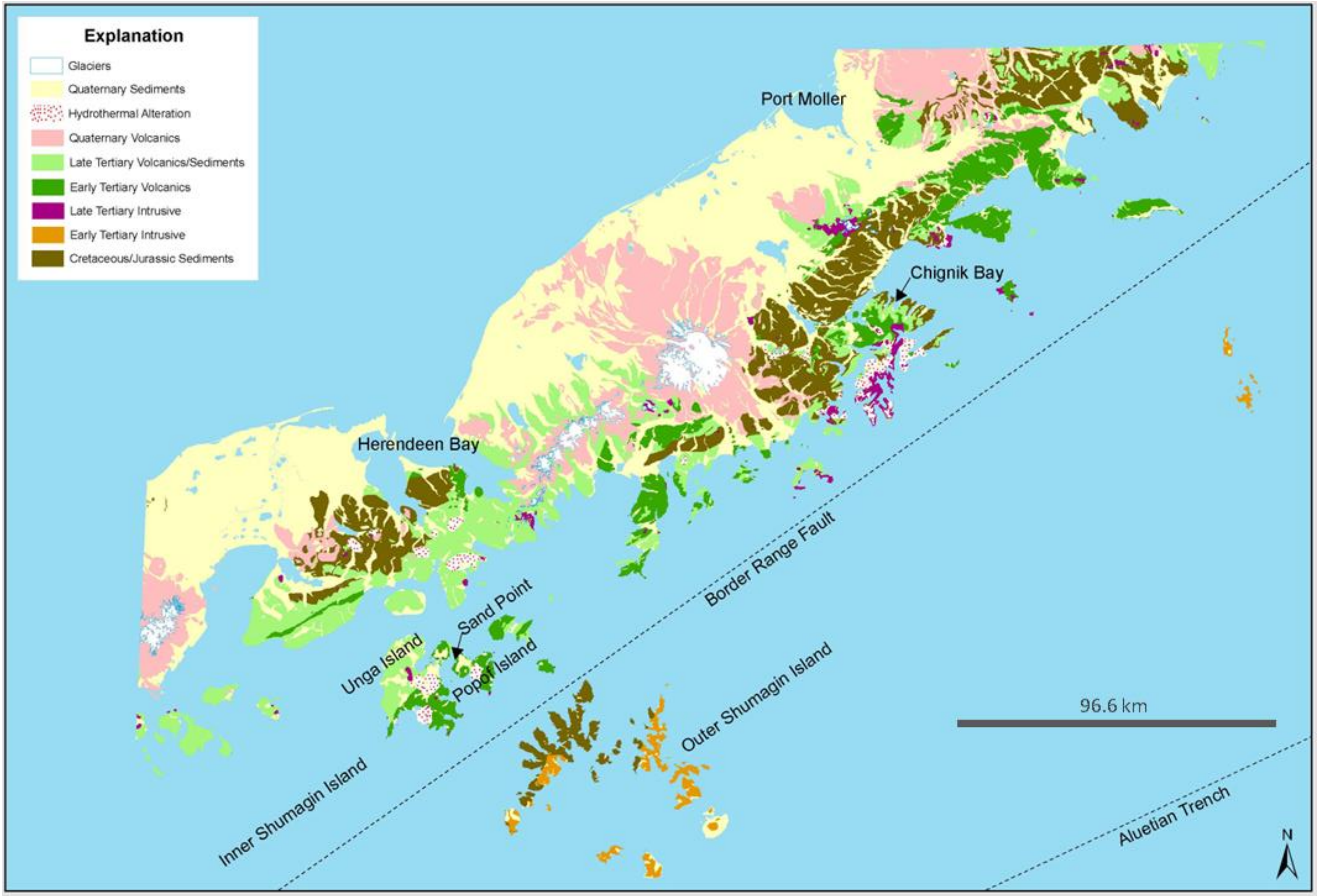
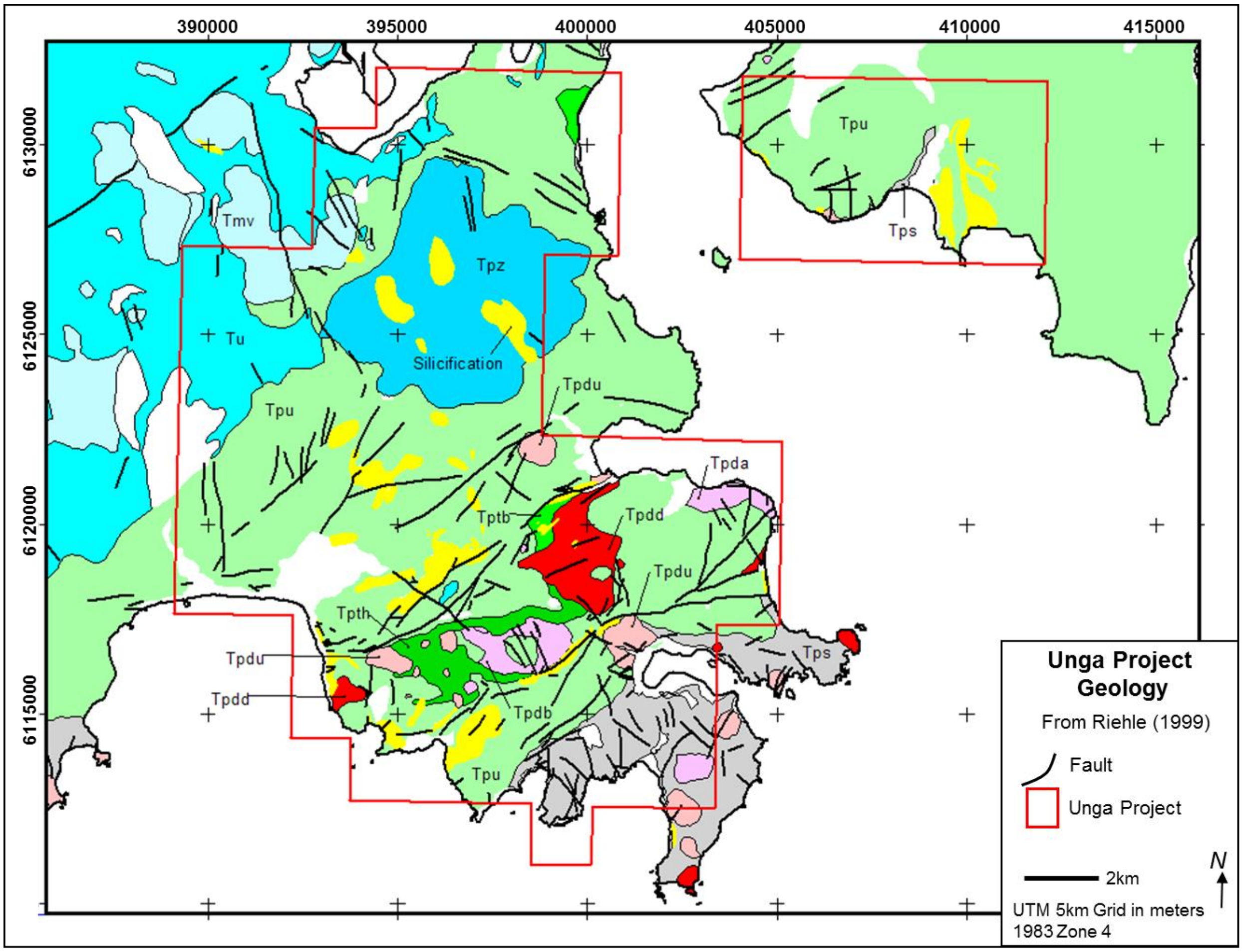


Figure 7.2 Geologic Map of Unga Island and the Northwest Part of Popof Island
(from Riehle et al., 1999)



Tpu –Eocene to Oligocene Popof Volcanic Rocks, undifferentiated, mostly andesitic flows; Tps – Popof Volcanic Rocks, volcaniclastic sedimentary rocks; Tpth – Popof Volcanic Rocks hornblende tuff; Tptb – Popof Volcanic Rocks, biotite tuff; Tpdd – Popof Volcanic Rocks, dacite dome; Tpda – Popof Volcanic Rocks, andesitic dome; Tpdb – Popof Volcanic Rocks, basaltic dome; Tpdu – Popof Volcanic Rocks, domes undifferentiated; Tmz – Lavas of Zachary Bay, andesitic, Miocene?; Tmv – Miocene volcanic rocks; Tu – Unga Fm sedimentary and volcaniclastic rocks of Miocene age; Yellow shows areas of silicification and strongly-argillized to strongly-silicified rocks, includes data from Riehle et al. (1999) and unpublished Redstar files.

Stratigraphic and map units of Unga and Popof islands shown in Figure 7.2 were described by Riehle et al. (1999) from youngest to oldest as follows:

"Qs ***Unconsolidated deposits (Holocene)***--*Chiefly sand and gravel on beaches and in alluvium, poorly sorted colluvium, and organic-rich swamp deposits. Local cobble- to boulder-sized talus deposits are not separately mapped. Locally, may include deposits of Qm.*

Qls ***Landslide deposits (Holocene and Pleistocene)***--*Mainly large masses of rock that compose rotational block slides. Locally includes colluvium, glacial deposits, or talus not mapped separately.*

Qm ***Glacial deposits (Pleistocene)***--*Poorly sorted deposits of silt, sand, cobbles, and boulders; identified as glacial in origin based on presence of striated or faceted boulders and the occurrence of striated bedrock at the site of the deposit and elsewhere on Unga Island. Irregular shape of mapped deposits suggests the deposits are ground moraine. A mapped occurrence of bedded sand and gravel up to tens of meters above sea level on the southern coast of Unga Island may be glacio-fluvial deposits. Unmapped glacial deposits may occur locally overlying any of the different types of bedrock.*

Tmb ***Basalt flows (Miocene)***--*Vesicular, porphyritic lava flows of basaltic composition that cap mesas. Locally scoriaceous. Typically oxidized to reddish brown, elsewhere medium to dark gray. Two to 10 percent phenocrysts of altered olivine set in a fine-grained groundmass of plagioclase and opaque material.*

Tmv ***Volcanic rocks, undifferentiated (Miocene)***--*Domes and associated tuff and carapace breccia, and lava flows. Mainly dacitic and andesitic in composition. Incipiently altered and mineralized, nearly aphyric quartz-bearing felsite 3 km SSW of the head of Zachary Bay may have initially had a rhyolitic composition. Level of dome emplacement inferred to range from shallow intrusive (within 200 m of ground surface) to extrusive, based on interfingering of carapace breccia with adjacent marine sedimentary rocks. Domes have 25-40% plagioclase, orthopyroxene, and hornblende (dacite) or clinopyroxene (andesite) phenocrysts in a groundmass that ranges from fine-grained holocrystalline to intersertal. Domes range from fresh, to incipiently replaced by calcite, chlorite, and mica or prehnite(?), to completely replaced by quartz and zeolite. Lava flows are porphyritic, having 20-30% plagioclase and two pyroxenes in a microcrystalline to intersertal groundmass.*

Tu ***Unga Formation (Miocene and Oligocene)***--*Conglomerate and interbedded sandstone, siltstone, tuff, and diamicton (lahar deposits?), dominantly volcanic clasts. Planar bedded to locally cross-bedded. Bivalves, gastropods, and worm(?) tubes indicate shallow marine in basal part; petrified tree trunks indicate nonmarine deposits in upper part, on northernmost Unga Island. Unit was first described by Dall (1882) who used the term "Unga Conglomerate" for exposures on northern Unga Island. Atwood (1911) renamed the unit "Unga Formation"; Burk (1965) assigned the Unga Conglomerate Member to the Bear Lake Formation. Detterman and others (1996, p. 51) returned the unit to formational status because "...volcanic detritus constitutes only a small part of the Bear Lake Formation..." Detterman and others (1996) consider the Unga Formation to range from late Oligocene to middle Miocene in age, based on plant fossils and pollen.*

Tpz ***Lavas of Zachary Bay (Tertiary)***--*Crystal-rich, porphyritic lava flows mainly of high-silica andesitic composition. From 25% to 40% phenocrysts of plagioclase, two pyroxenes, and trace amounts of hornblende and Fe-Ti oxide. Locally intruded by hornblende-bearing dikes and sills (not mapped separately). Incipient but pervasive replacement by chlorite, calcite, and epidote* *(indicative of propylitic alteration) or by quartz and zeolites; locally, more intense alteration probably reflects proximity to sources of hydrothermal fluids such as the unmapped hypabyssal intrusive rocks. Color anomalies (gossans) occur throughout the unit.*

Tpdu ***Domes, undifferentiated (Oligocene)****--Lava masses that are identified as domes based on steeply cross-cutting relations with adjacent rocks; outcrop pattern; large vertical extent; or presence of intrusive breccia at margins. Map units include aprons of noncompacted pumiceous tuff inferred to have formed in minor explosive eruptions during dome emplacement. Such carapace tuffs indicate that the domes are at least in part extrusive. Sparsely to moderately porphyritic vitrophyre, commonly devitrified.*

Tpdb ***Basaltic andesite domes (Oligocene)****--Phenocrysts of plagioclase, clinopyroxene, and olivine range from 5% to 15%. The basaltic andesite dome at Apollo Mountain has local veinlets and amygdules of zeolite and chert(?).*

Tpda ***Andesitic domes (Oligocene)****--Phenocrysts of plagioclase, hornblende, orthopyroxene, and quartz range from 10% to 25%. The quartz grains may be inclusions (xenocrysts).*

Tpdd ***Dacitic domes (Oligocene)****--Phenocrysts of plagioclase, hornblende, orthopyroxene, and quartz range from 10% to 20%.*

Tpdr ***Rhyolitic domes (Oligocene)****--Phenocrysts of quartz, plagioclase, hornblende, and biotite range from 10% to 20%. Typically altered and cut by veins of quartz, calcite, and zeolite.*

Tpth ***Hornblende tuff (Oligocene)****--Dacitic ash-flow tuff. Fine pumice lapilli and trace amounts of lithic inclusions in a vitric ash matrix. Densely compacted and strongly foliated in the vicinity of Apollo Mountain, noncompacted to partly compacted elsewhere. Such lateral variation in the degree of compaction may indicate either a source at Apollo Mountain, or that the dense compaction is due to heating and secondary deformation by dome intrusion. Phenocrysts range from 5% to 30% and consist of plagioclase, quartz, orthopyroxene, and hornblende. A single chemical analysis indicates a low-silica dacitic composition but variable phenocryst contents suggest the bulk composition may vary slightly as well. Locally altered or silicified, especially south and west of Apollo Mountain.*

Tptb ***Biotite tuff (Oligocene)****--Noncompacted, dacitic ash-flow tuff. Quartz, plagioclase, orthopyroxene, and biotite phenocrysts range from 5% to 20%. A single chemical analysis indicates a dacitic composition. The occurrence on Popof Strait, on northeastern Unga Island, is a bedded, pumice-clast conglomerate having abundant glass shards in a fine-grained matrix that was deposited on an erosional surface of 6-8 m relief cut in marine sandstone of the Stepovak Formation. The occurrence on the west shore of Zachary Bay is reported to be 31.3 Ma by Marincovich and Wiggins (1990), who considered the deposit and an overlying marine siltstone to be the lowermost part of the overlying Unga Formation.*

Tps ***Volcaniclastic rocks (late Eocene to Oligocene)****--Volcanic breccia and marine sandstone and siltstone, interbedded with ash-flow tuffs or submarine lava flows. Some of the clastic rocks were deformed prior to lithification by intrusion of adjacent lava masses. The volcaniclastic rocks range widely in grain size and include breccias having blocks of porphyro-aphanitic andesitic lava up to 6-8 m across. The coarse facies were deposited in proximity to submarine lava flows or domes. Unit is, in part, a peperite--mixtures of sedimentary and magmatic masses formed while each was plastic. A chemically analyzed, andesitic ash-flow tuff is included in this unit. The distinction between units Tps and Ts is the occurrence of volcanic materials--ash-flow tuff, coarse volcanic breccia, and peperite--in unit Tps.*

Tpu ***Popof volcanic rocks, undifferentiated (late Eocene to Oligocene)***--*Mainly lava flows and flow breccias of andesitic composition and locally interbedded volcaniclastic rocks, but includes some lava flows of basaltic andesite composition. The unit on northwestern Popof Island is dominantly lava flows of basaltic andesite composition. Lava flows have from 15% to 30% phenocrysts of plagioclase and two pyroxenes in a hyalopilitic to trachytic groundmass. Poorly exposed lavas of dacitic or low-silica rhyolitic composition are probably small domes of unit Tpdd or Tpdr, which are not mapped separately. Incipient but widespread replacement of mafic minerals by chlorite, epidote, and calcite indicates pervasive propylitic alteration. Mafic phenocrysts are locally replaced by a deeply pleochroic brown mineral having parallel extinction that may be biotite, which suggests potassic alteration. Includes local areas not mapped separately of more intense alteration, oxidation of pyrite (gossans), or replacement by silica (silicification).*

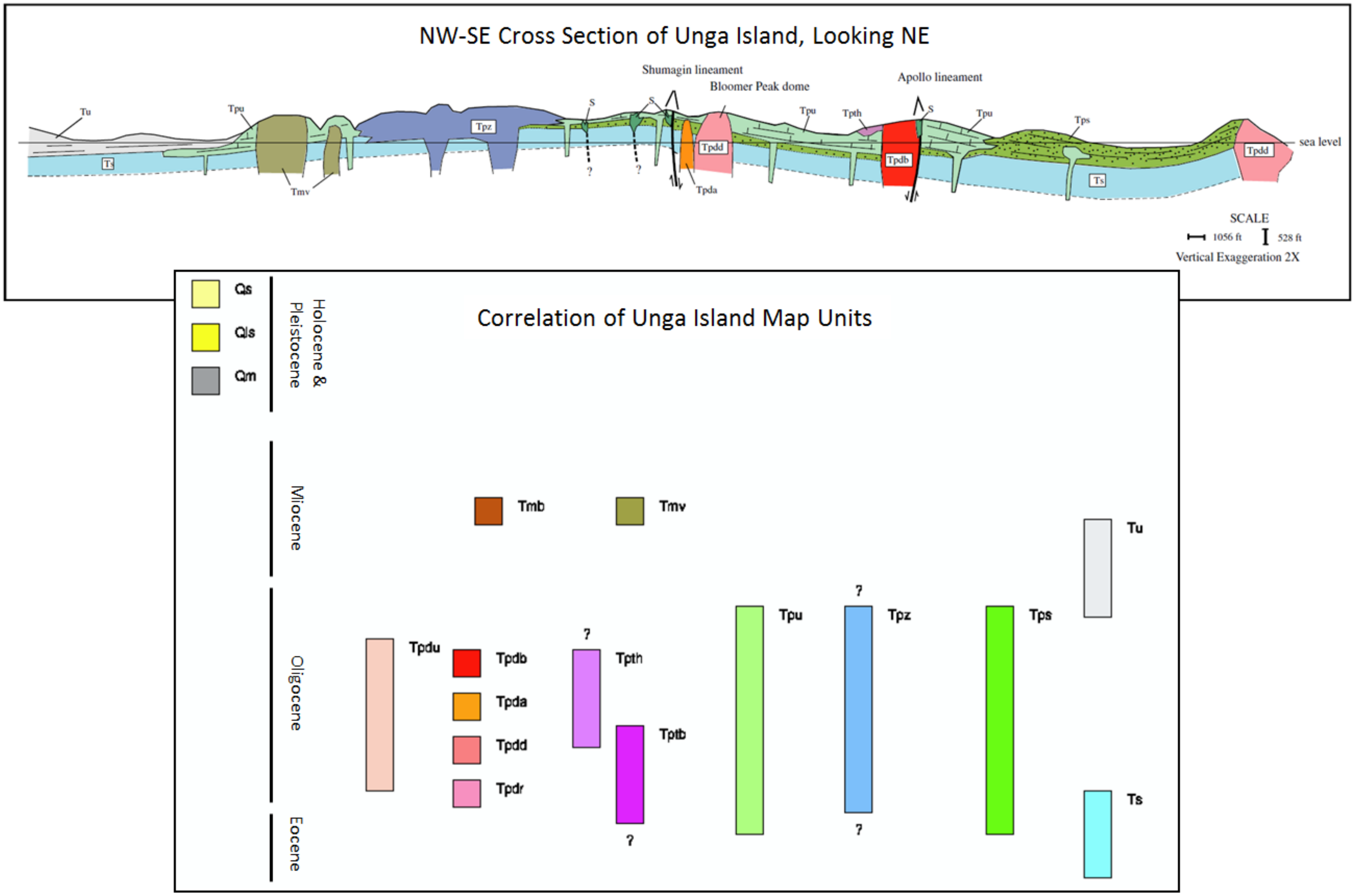
Ts ***Stepovak Formation (late Eocene and early Oligocene)***--*Fine-grained marine conglomerate, sandstone, and siltstone. Beds exposed on northern Unga and Popof Islands are rich in pelecypod and gastropod shells and worm(?) tubes, indicating an inner neritic environment and late Eocene age (R.C. Allison, written commun., 1980). The overall age range of the formation throughout its occurrence on the southern Alaska Peninsula and inner Shumagin Islands is late Eocene and early Oligocene (Detterman and others, 1996). The unit grades laterally and upwards into the volcaniclastic rocks of unit Tps and the Popov volcanic rocks. Originally named by Burk (1965) for exposures on the adjacent mainland, the unit is informally subdivided into a lower siltstone and upper sandstone by Detterman and others (1996). The lower member includes laminated siltstone of a deep-water turbidites, whereas the upper unit is mainly volcaniclastics, which are inferred to have had contemporaneous sources in the Meshik Volcanics. Rhythmically bedded mudstone and siltstone exposed in a sea cliff on the eastern headland of Delarof Harbor may be the top of the lower member, or it may be a local basin fill. Exposures elsewhere on northern Unga and Popof Islands, however, are clearly the upper sandstone member."*

Stratigraphic units Tpz through Tpu constitute map units of the "Popof volcanic rocks" of Riehle et al. (1998, 1999). The Popof volcanic rocks are age-equivalent to rocks on the nearby Alaska Peninsula, where they were named the Meshik Formation by Knappen (1929) and are now formally named the Meshik Volcanics (Detterman et al., 1996). The Popof volcanic rocks on Popof and Unga islands have been subdivided by Riehle et al. (1998, 1999) into several map units shown in Figure 7.2. Popof volcanism began with the eruption of submarine lava flows in latest Eocene or earliest Oligocene time. The oldest dated lava flow from Unga Island is 37 Ma (unit Tpu) and there are four other ages of unit Tpu between 34 and 37 Ma (Riehle et al., 1998).

The intertidal to shallow marine, sandstone and siltstone of the Stepovak Formation (map unit Ts; Figure 7.2) are interpreted by Riehle et al. (1998; 1999) to be the oldest rocks exposed on Unga Island and northwestern Popof Island. Most exposures of the Stepovak Formation on northern Unga and Popof islands consist of the upper, volcaniclastic sandstone member (Riehle, 1999).

Potassium-argon age dates and petrographic details used to interpret and describe the Popof volcanic rocks were given by Riehle et al. (1999). A diagram showing the age relations of the map units shown in Figure 7.2 and a regional, N25°W cross section taken from Riehle et al. (1999) are shown in Figure 7.3.

Figure 7.3 Regional Cross Section and Correlation of Map Units
(modified from Riehle et al., 1999)



Van Wyck et al. (2005) apparently viewed the Riehle et al. (1998) map with reservations and stated:

"*There is, at present, no definitive interpretation of Unga Island stratigraphy....Regional stratigraphy; (Finzel and others, 2005) shows the Stepovak and Meshik as broadly age equivalent and it seems risky to assume all contacts of the Popof volcanics with sediments are necessarily the same age-equivalent. Furthermore the immature shallow marine sandstones of the Stepovak Formation look similar to basal volcaniclastic sections of the Popof volcanics.*

The base of the Popof volcanics is defined by a distinctive white biotite tuff unit (Tptb) overlying the Stepovak Formation, observed in beach exposures on northwest Unga Island. This same unit has been identified in drill core from the mineralized hanging wall of the Shumagin prospect and as outcropping on the west side of Zachary Bay. Difficulties arise when K-Ar biotite dates are compared between the two exposures of biotite tuff. One date is 31.3 ± 0.3 from southeast Unga Island and the other is 33.7 ± 1.3 Ma (Reihle and others, 1999) from northeast Unga Island. Furthermore, Marincovich and Wiggins (1990) consider their tuff as marking the base of the Unga Conglomerate, which all workers consider to post-date the Popof volcanics. BMG geologists considered the biotite tuff to mark the base of the Popof volcanics which sit unconformably on the Stepovak Formation (Ellis and others 1987-1991)....

An additional complication with the existing geochronology data is a K-Ar date from adularia at the Apollo mine at 34 ± 0.5 Ma (Reihle and others, 1999). While the uncertainties in measurement for older tuff age and the timing of mineralization overlap, the younger tuff age is statistically distinct from the timing of mineralization. This assumes that mineralization at Apollo and Shumagin are related, but it introduces an uncertainty of whether there are several biotite tuff horizons, or whether there are several ages of mineralization."

An attempt to simplify the stratigraphy was made by the Full Metals Minerals-Metallica Resources joint venture in 2005. Van Wyck et al. (2005) concluded that:

"*The lack of outcrop exposure, coupled with variation in dip direction and the presence of fault offsets in many areas of Unga and Popov Islands present challenges in interpretation of the stratigraphic sequence. These are the stratigraphic simplifications:*

1. *The base of the Popof volcanics is a felsic tuffaceous unit (Tpt1). On Unga Island it is the Orange Mountain tuff and on Popof it includes felsic epiclastic and crystal tuff units. The base is exposed at approximately sea level at places on Unga and Popof and is seen in drill core at Centennial also close to sea level. At Shumagin it is encountered at an elevation of approximately 250 m below sea level. The thickness of the basal tuff ranges from 100 to 300 m, based on drill data at the Centennial and Shumagin prospects. This is a very porous and permeable unit that is highly susceptible to altering and mineralizing fluids.*

2. *Overlying the basal tuff package on both Popof and Unga Islands, is a sequence of flows with mafic to intermediate composition (Tpv1). On Popof Island, these units are mapped as basalt and on Unga as andesites. This unit tends to cap less resistive felsic tuffs. Conformable contacts were mapped in outcrop both south and west of Orange Mountain towards the Pook and Aguilla prospects. Alteration is not well developed in this unit, due*

to the lower permeability and less reactive nature of the andesite hosts. The best constraint on the approximate thickness of this unit is shown in section A-A' in the Aguilla prospect area, where the base and top of the unit is exposed. In this area, the thickness is approximately 300 m. With the exception of brecciated margins of flows and intrusive margins this unit is relatively impermeable and exhibits brittle fracturing.

3. *Tpt2 are tuffs exposed at the base of Apollo Mountain and likely extends west to the coast. It is inferred to overlie the basalts and andesites of Tpv1. The same tuff unit is seen south of the California prospect on the south side of Apollo Mine, where it contains a distinctive blue clay alteration mineral (probably a smectite). The thickness is well constrained to be range between 0 and 150 meters and the unit thins to the east. It is a porous and permeable unit that is commonly altered and mineralized.*

4. *Tpv2 overlies Tpv2 as a series of capping flows/intrusive on top of Apollo Mountain, equivalent to basalt and andesite domes mapped by the U.S.G.S. and dated at 30.9 Ma. With the exception of brecciated margins of flows and intrusive margins, this unit is relatively impermeable and exhibits brittle fracturing.*

5. *A third tuff unit (Tpt3) exposed in the western Heather area on Unga is younger than theTpt2 but its age relative to Tpv2 is not known. The thickness of this tuff unit is at least 250 m thick. This is a very porous and permeable unit that is highly susceptible to altering and mineralizing fluids."*

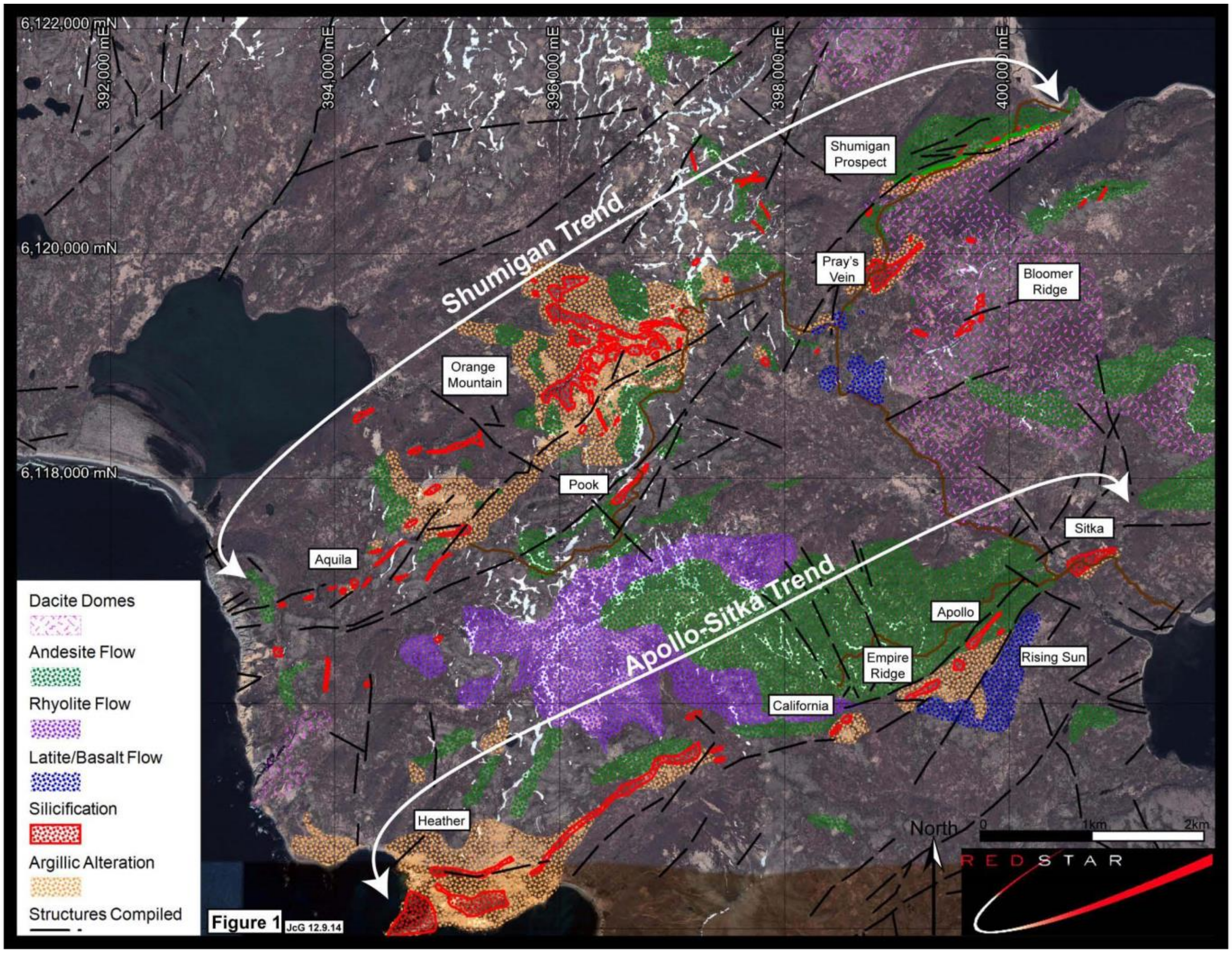
7.3 Structural Architecture of Unga and Popof Islands

The most visible components of the structural architecture of Unga Island are several N50°E to N60°E faults and fault zones that completely transect the island (Figure 7.2; Riehle et al., 1998). These faults are parallel to the regional Border Range fault, sub-parallel to the Aleutian Trench (Figure 7.1), and likely the result of modest transpressional deformation inboard from the trench. Numerous N10°W to N10°E faults are also present, but they are much less through-going (Figure 7.2; Riehle et al., 1998). In addition to the faults, the rocks of Unga Island have been slightly folded, with a broad low-amplitude syncline and anticline parallel to the more through-going northeast-southwest faults (Figure 7.2) and (Figure 7.3).

On Unga Island, the most prominent of the major northeast-trending structures are the Shumagin and Apollo-Sitka fault zones, which completely transect the southeast part of the island. Each of these form a structural corridor 0.5 to 1.0 kilometers in width and approximately nine to 10 kilometers in length, respectively. These two structural corridors contain appreciable areas of hydrothermally altered rocks and several exposures of epithermal quartz-carbonate veins, vein-breccia, and vein stockworks, and are known as the Shumagin and Apollo-Sitka "trends" (Figure 7.4).

Between these two fault systems, the Popof volcanic rocks include a northeast-trending series of volcanic domes that range in texture and composition from basaltic andesite to dacite and rhyolite. Another series of smaller domes form a northeast trending belt across the very southeastern part of Unga Island.

Figure 7.4 Map of the Shumagin and Apollo – Sitka Trends, SE Unga Island
(from Redstar files, 2018)



Note: silicified areas shown by red pattern at Pray's Vein, Orange Mountain and portions of the Apollo – Sitka trend represent areas of residual quartz (acid-leach) alteration.

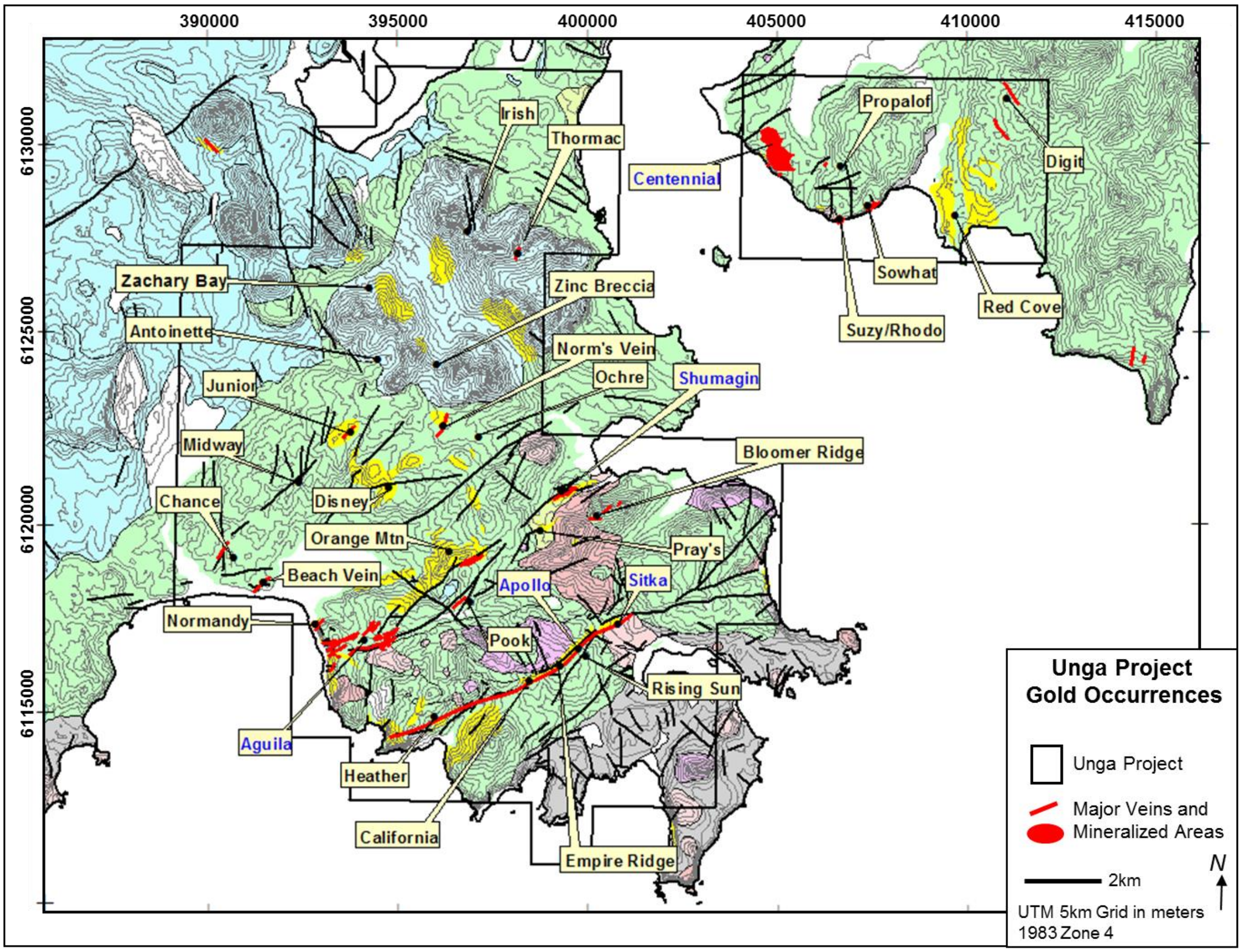
Faults of similar, mainly N50°-60°E orientations and a northeast-trending syncline have been mapped in the northwest portion of Popof Island (Riehle et al., 1998), suggesting a similar structural architecture.

7.4 Mineralization at Unga Island

Descriptions of the prospects and mineralization in the following sub-sections of this report have been drawn from historical reports as cited, and from Redstar's internal reports and public disclosures. The authors have reviewed these sources of information and believe they accurately represent the Unga project mineralization as presently understood. In particular, much of the following is drawn from Margolis (2014), a detailed and insightful, three-year compilation and review of historical reports, maps, surface geochemical data, and drilling assays and drill logs, by Jacob Margolis, Ph.D., a former Redstar geologist who worked on the project during 2011 through 2014.

More than 25 showings of epithermal precious- and base-metal mineralization, porphyry copper-gold mineralization, and extensive areas of hydrothermally altered rocks have been identified on Unga Island (Figure 7.5), particularly along the Shumagin and Apollo-Sitka trends (Figure 7.4). At least six such showings, including the Centennial gold deposit, have been identified on Popof Island (Figure 7.5). Of the above, the majority of exploration conducted to date has been focused on three areas: the Shumagin and Apollo-Sitka trends on Unga Island, and at the Centennial deposit on Popof Island.

Figure 7.5 Mineralized Showings and Prospects, Unga and Popof Islands
(from Redstar files, 2018)



Note: Geologic units shown with same colors as in Figure 7.2. Yellow shows areas of silicification and strongly argillized to strongly silicified rocks; red lines schematically indicate quartz ± carbonate veins and stockworks; red area at Centennial is mineralized area of stockwork and small veins; includes data from Riehle et al. (1999) and unpublished Redstar files. Vein shown from Heather to Sitka prospects is schematic, not demonstrated to be continuous.

Margolis (2014) stated:

> *"Mineralization occurs as volcanic-hosted, intermediate-sulfidation, epithermal, quartz-carbonate-adularia veins with locally high-grade gold-silver and variable Pb, Zn, Cu, Mn (e.g., Shumagin, Apollo-Sitka, Aquila); porphyry Cu-Au (Zachary Bay prospect); disseminated, volcanic-hosted gold mineralization containing local high-grade zones (Centennial); and advanced-argillic alteration (Red Cove), which is poorly mineralized at exposed levels.*
>
> *Mineralization along the Shumagin vein stockwork is known for at least 1.2km and is part of a district-scale mineralized fault system, the Shumagin trend, which includes other high-grade gold vein systems (e.g., Aquila) along its 9km strike length that lie on the Unga-Popof Property. The Apollo-Sitka vein system lies along the ~7km Apollo tend, with approximately 5km of the trend covered by patented claims of the Shumagin property. The remaining portions of the trend lie on the Unga-Popof Property (e.g., Heather). Mineralization at the Apollo mine has been dated at 34 Ma (K-Ar, adularia), indicating that mineralization along the Apollo trend, and most likely the Shumagin trend, was contemporaneous with Popof volcanism. A similar age of 34.5 Ma was obtained from andesite on the south side of the Centennial deposit, indicating again, that mineralization is hosted in and probably temporally linked to Popof volcanism."*

7.4.1 Shumagin Trend Mineralization

The Shumagin trend can be described as a northeast-southwest elongated structural corridor with an array of epithermal veins and hydrothermally altered rocks centered on, and extending laterally from, a large, topographically elevated area of residual quartz and advanced-argillic alteration at Orange Mountain (Figure 7.4). As indicated by surface samples and drilling, a number of the individual veins contain elevated to potentially commercial grades of gold ± silver ± zinc and/or lead, and lesser copper. Vein textures and mineralogy, as well as minor- and trace-element geochemistry, indicate the Shumagin trend mineralization is of the low- to intermediate-sulfidation types of epithermal mineralization. The principal mineralized occurrences or prospects recognized to date along the Shumagin trend include the Shumagin vein zone, Pray's Vein, Bloomer Ridge, Orange Mountain, and the Aquila veins.

7.4.1.1 Shumagin Vein Zone

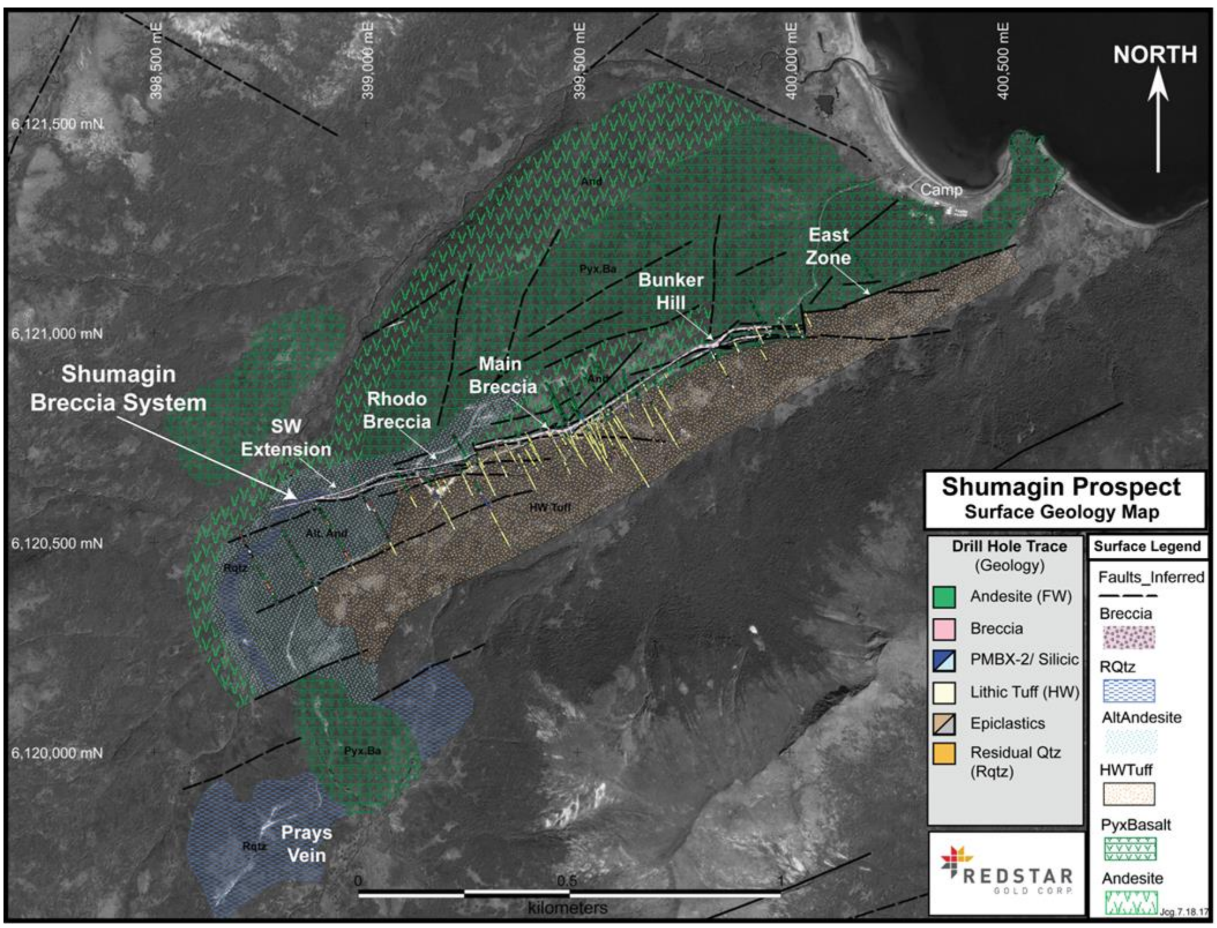
The Shumagin vein zone consists of multiple, sub-parallel to anastomosing veins, stockwork and vein-cemented breccia. Veins and breccia are filled with quartz and calcite ± adularia ± rhodocrosite ± green clay. The vein zone has an over-all strike of N60°E to N70ºE and dips mainly to the southeast at ~70-80º. Individual veins and vein-breccias have true widths of up to a few meters, but with adjacent and/or intervening stockwork the vein system has drill-indicated widths of as much as 30 or more meters.

Drill holes have penetrated the Shumagin vein system for approximately 1.75 kilometers along strike from the Southwest Extension through the East Zone (Figure 7.6) and as much as ~350 meters vertically below the surface trace. It was emplaced along a fault contact between basaltic andesite and basalt in the footwall to the north, and mainly dacitic quartz- and biotite-phyric lithic tuff to the south, all of which are units within the Popof volcanic rocks. Marine tuffaceous volcaniclastic beds and laminated shale/mudstone beds that are locally carbonaceous are interbedded with the hanging-wall dacite, indicating the lithic tuff is not entirely pyroclastic in origin. Subsidiary veins are known at least 40 meters into the footwall andesite, such as the "Lucky Friday Vein", which dips steeply northwest.

Drilling also shows that one or more tabular bodies of breccia of phreatomagmatic origin were emplaced within the Shumagin fault and the vein system, coeval with development of the veins and stockwork. Drill results are summarized in Section 10.2.4 and Section 10.3.

Queen (1988) and White and Queen (1989) distinguished eight veins or vein stages, based on textures and mineralogy, but the lateral extent of these veins or stages is not known, because the lateral extent of the vein system has been greatly increased with later drilling. Vein textures range from strongly brecciated to finely laminated crustiform veins, with breccia-veins containing variably altered clasts of andesite or dacite (Margolis, 2014). Sulfide content within veins is largely low. There are no obvious bladed relict calcite textures indicative of boiling (Margolis, 2014), but a reconnaissance fluid-inclusion study done for Metallica indicated boiling fluids in the 250-270°C range (Drobeck, 2005). A petrographic study of selected vein samples from the 1983 AAGM drilling found that fine-grained adularia is commonly intergrown with quartz (Margolis, 2014).

Figure 7.6 Geologic Map of the Shumagin Prospect
(from Redstar, 2017)



Note: four holes drilled in 2017 at the East Zone, that penetrated the Shumagin vein system, are not shown.

According to Hedenquist (2016), in the footwall adjacent to the contact between the basaltic andesite and the dacitic tuff, there are pyrite-marcasite quartz veins with fine banding and gold grades up to 2 - 4 g Au/t, characterized by low Ag:Au ratios and relatively high arsenic and antimony. This vein stage is inferred by Redstar to be relatively early, because fragments of this vein type are found in the brecciated vein system that constitutes the main mineralization stage. The main or principal stage is restricted to the contact between the footwall and hanging wall of what has been termed the Shumagin fault and is closely associated with the location of the units of phreatomagmatic breccia (Hedenquist, 2016). This main stage consists of up to 7- to 10-meter thicknesses of brecciated vein material, with local high grades of gold, variable to high Ag:Au ratios, and up to ~1 weight percent each of lead, zinc and copper in galena, sphalerite, and chalcopyrite. Arsenic and antimony concentrations are relatively low compared to the early stage (Hedenquist, 2016); sulfosalt minerals have not been recognized, silver is believed to reside in electrum, and sphalerite, galena, and chalcopyrite contain the base metals, where present. High gold grades are related to free gold (electrum), locally dendritic, associated with colloform bands of quartz in brecciated intervals, but not all intervals with visible gold are of high grade. The brecciation was multi-episodic and cut through earlier stages of cockade- and crustiform-banded quartz-adularia-rhodocrosite-clay veins, stockwork, and vein-breccias (Hedenquist, 2016). Pervasive silicification and anomalous quartz-sericite-pyrite veins form a halo to the vein system, occurring up to 10 meters into the hanging wall.

Gold, silver, and base-metal mineralization is not evenly distributed within the vein system, as is commonly the case in epithermal vein deposits world-wide. Cross sections illustrating the better gold grades and their relations to the internal components of the Shumagin vein system are shown in Figure 7.7 Figure 7.8, and Figure 7.9; a map showing the locations of the cross sections is shown in Figure 7.10. Summaries of the Shumagin mineralized drill-hole intervals are presented in Table 10.4, Table 10.5, Table 10.6, and Table 10.7. In some cases, grades in the range of 10 to 20 g Au/t and greater may have drilled widths of up to a few meters and are situated within broader intervals of lower-grade mineralization. Significant zinc, lead, and lesser amounts of copper may accompany high gold grades, but are not always present, and in some intervals such concentrations of base metals are found with gold grades of less than 0.1 g Au/t. In other intervals, high gold grades are restricted to widths of a meter or less. This seems to be particularly the case in the northeastern part of the vein system, such as at Bunker Hill (Figure 7.9), where there are two discreet splays and high grades are restricted to the northwestern splay. The lateral distribution of gold mineralization as presently known from drilling is shown in Figure 7.11.

Figure 7.7 Shumagin 2015 Cross Sections

(from Redstar, 2017. Assay intervals are core lengths, which Redstar estimates at 70% to 80% of true widths.)

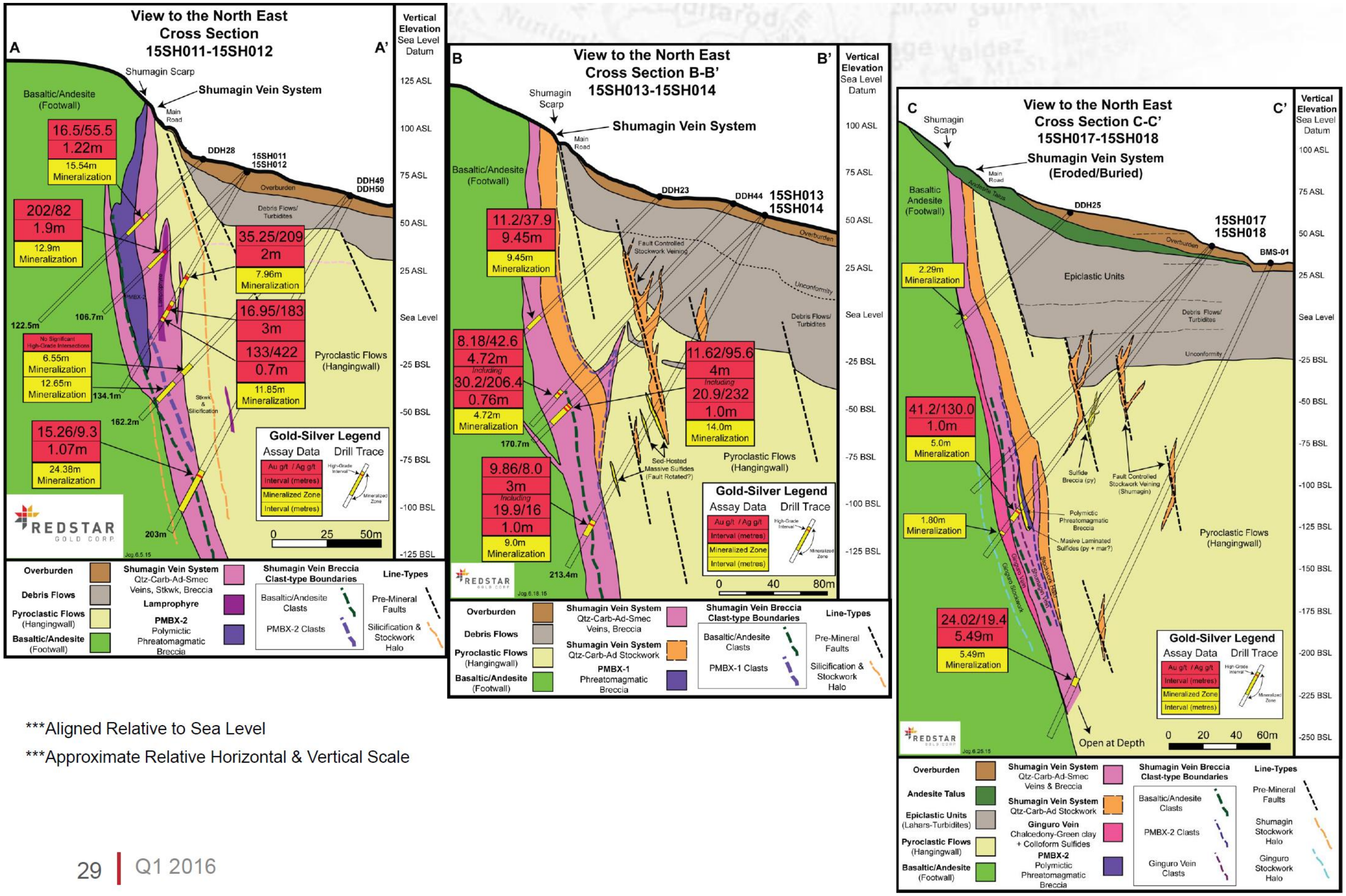


Figure 7.8 Shumagin 2016 Cross Sections 2300E and 2700E

(from Redstar, 2017. Assay intervals are core lengths which Redstar estimates at 70% to 80% of true widths.)

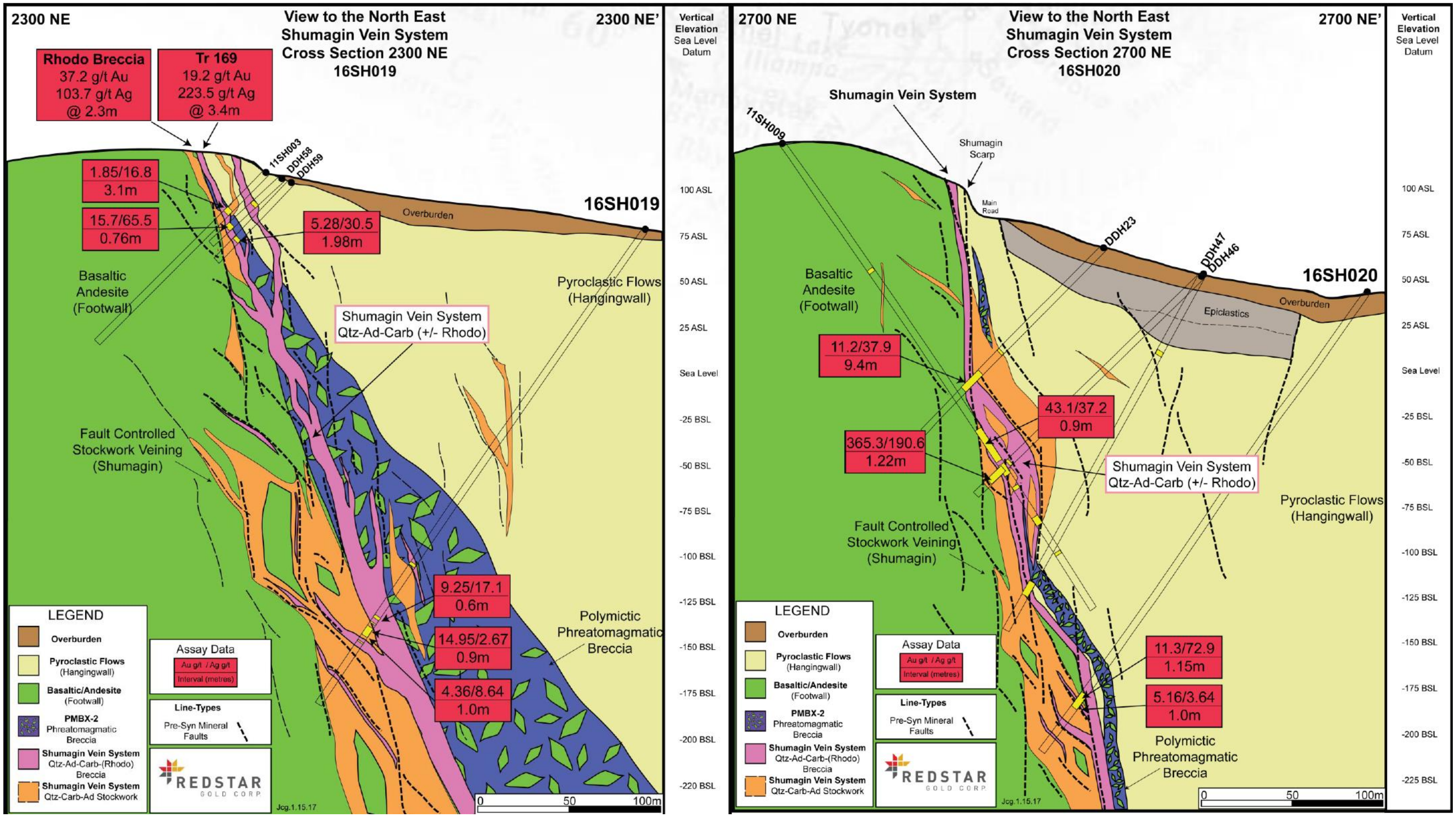


Figure 7.9 Shumagin 2016 Cross Section 3100E

(from Redstar, 2017. Assay intervals are core lengths, which Redstar estimates at 70% to 80% of true widths.)

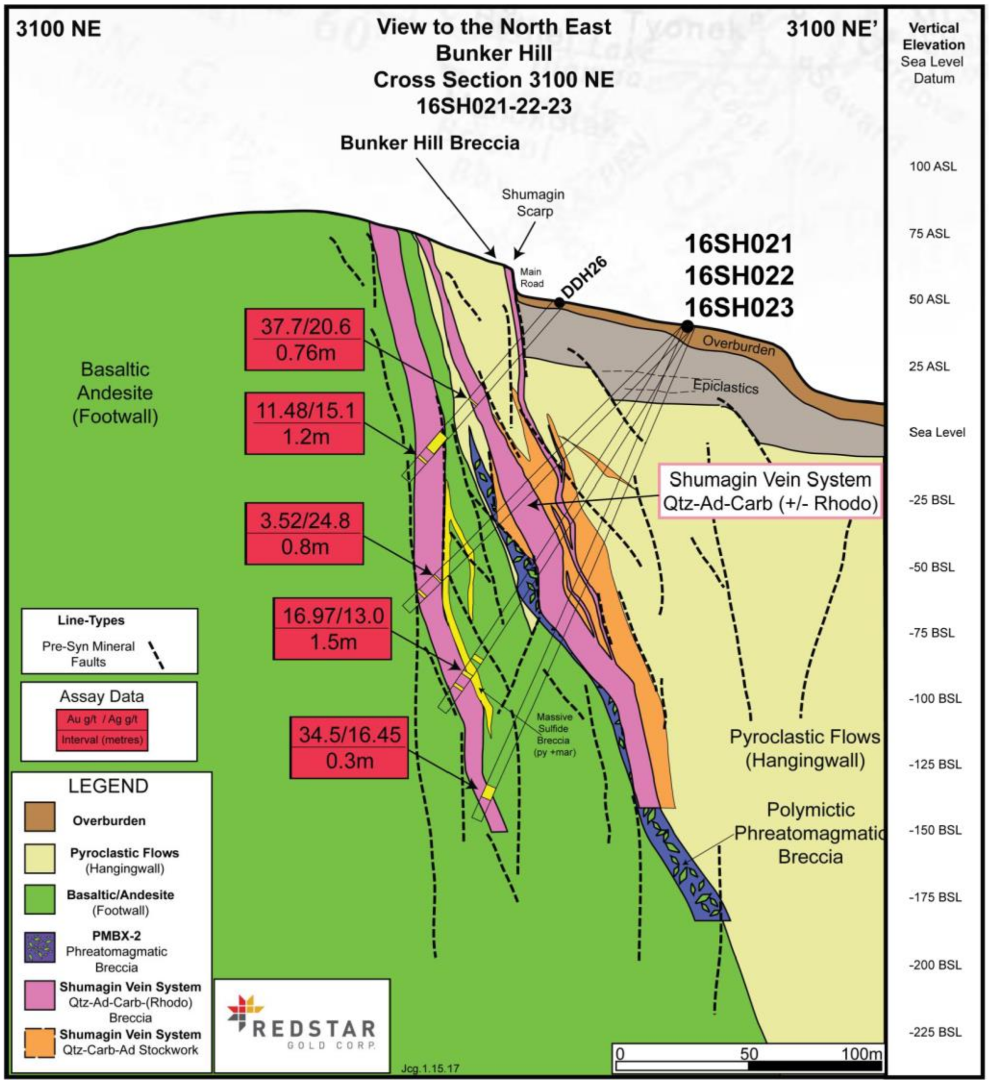


Figure 7.10 Shumagin Cross Section Location Map
(from Redstar, 2017)

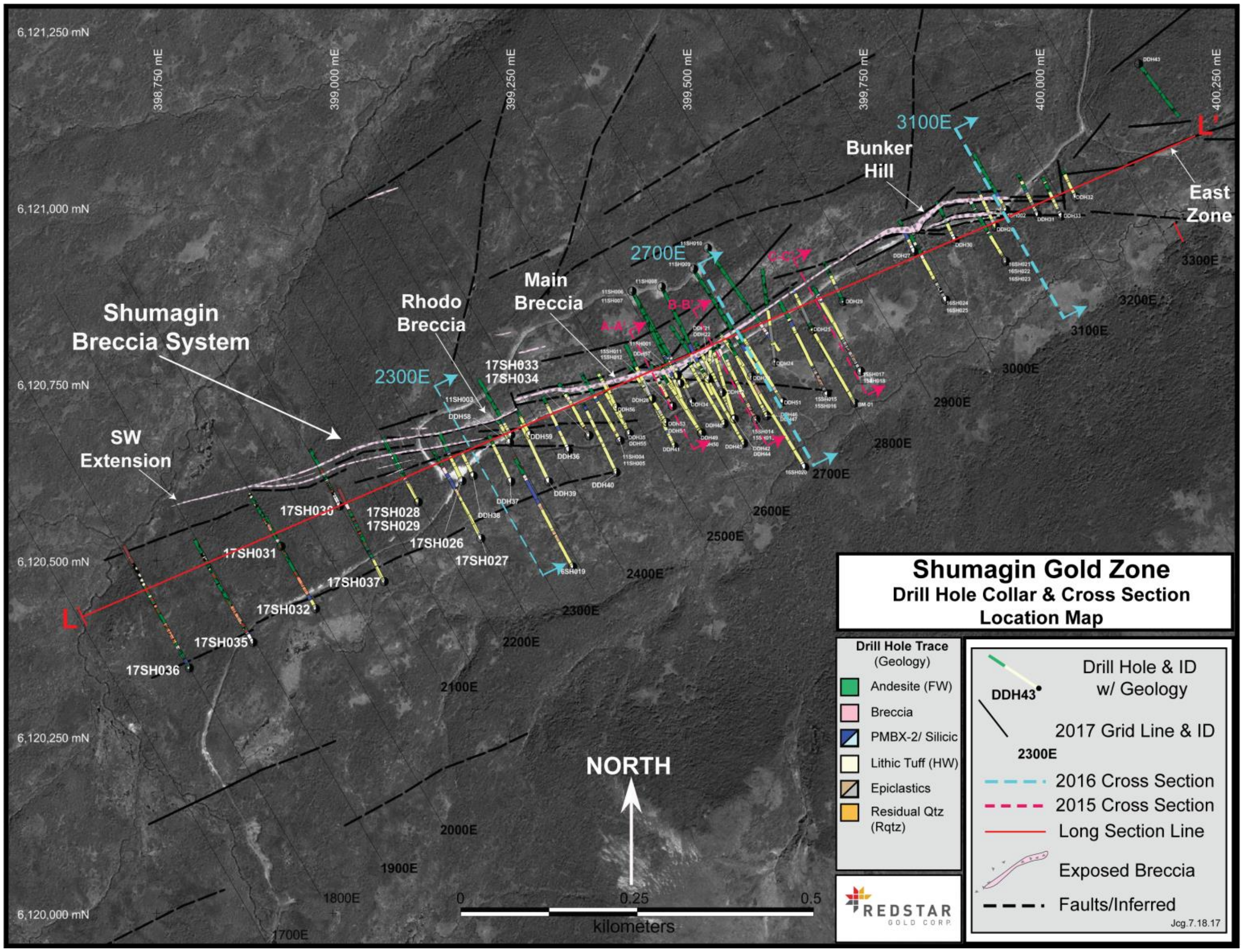
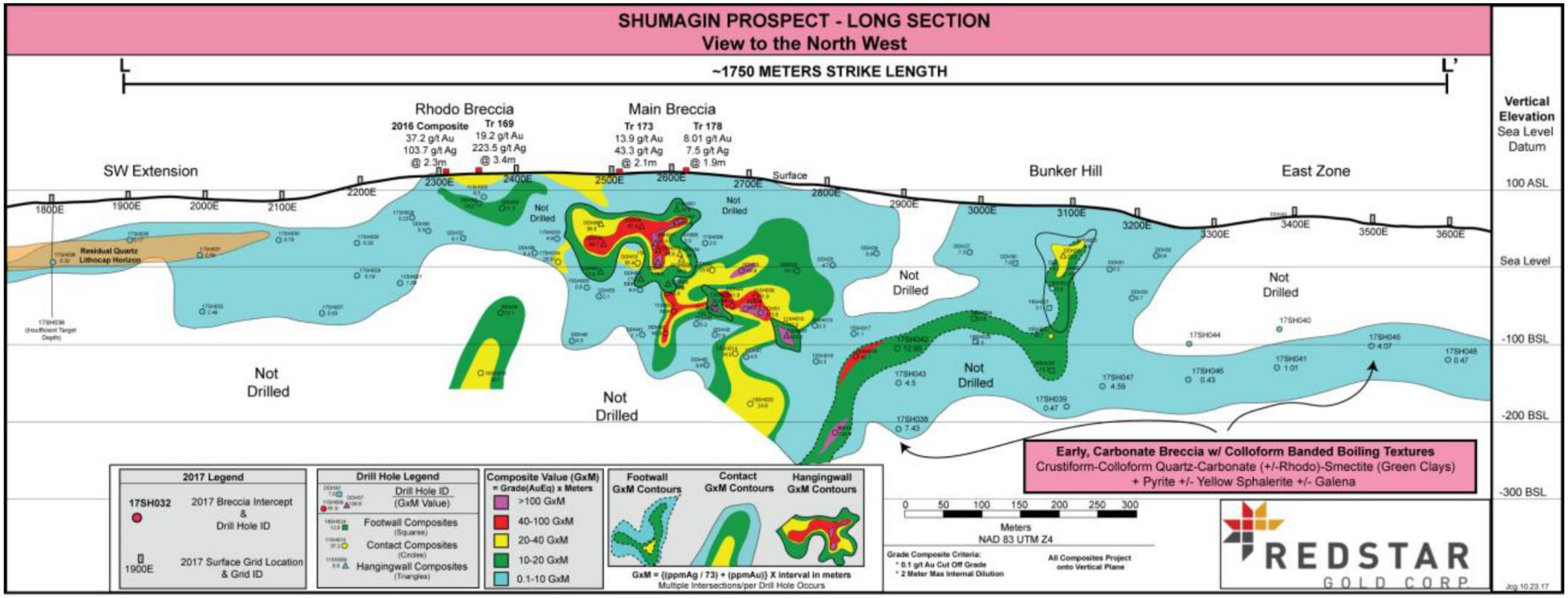


Figure 7.11 Longitudinal Section of the Shumagin Vein System, 2017

(from Redstar, 2018. Assay intervals are core lengths, which Redstar estimates at 70% to 80% of true widths.)



7.4.1.2 Pray's Vein Prospect

The Pray's Vein prospect is an area of strong, pervasive silicification trending parallel to the Shumagin vein system and possibly defining the south margin of the Shumagin trend (Figure 7.4). Margolis (2014) stated

> "[Surface] *sampling by RAA yielded gold to 11.8 ppm within quartz-barite veinlets; page 54 of the 1980 report notes this is a 6-foot sample. The name stems from geologist J. Pray, who apparently sampled the high grade.... Skeleton core…shows a very strongly silicified rock somewhat similar to that at Orange Mountain, with abundant very fine-grained disseminated pyrite, local drusy-quartz lined vugs, and multi-stage silica-pyrite veinlets.... The* [Pray's Vein] *area is within a strong magnetic low that broadly continues through the Shumagin area to the NE."*

The silicification is now interpreted as the residual-quartz type formed by condensation of magmatic gasses below the water table, as at Orange Mountain (Hedenquist, 2017). Weak gold and silver mineralization to a maximum of 0.315 g Au/t and 2.4 g Ag/t over 1.5 meters were encountered in limited drilling, but it is not known if this is within the late quartz-barite veinlets, or in the residual quartz rock. Drilling results for the Pray's Vein prospect are summarized in Section 10.2.1.

7.4.1.3 Bloomer Ridge

Bloomer Ridge is about 900 meters southeast of the Shumagin vein system (Figure 7.4). Rock-chip samples collected by RAA show anomalous gold in numerous, apparently narrow quartz veins and vein stockworks that strike both northeast (060°) and northwest (320°) (Margolis, 2014). Cockscomb quartz veins are hosted in a felsic unit that may be a tuff or volcanic intrusive unit, with andesite hosting some veins at the northeast end of the ridge. One of the larger northeast-striking veins was termed the Jyro vein, with a width of up to 3.6 meters. Mercury and arsenic are elevated, and base metals and silver are low. Bloomer Ridge has not been drilled.

7.4.1.4 Orange Mountain

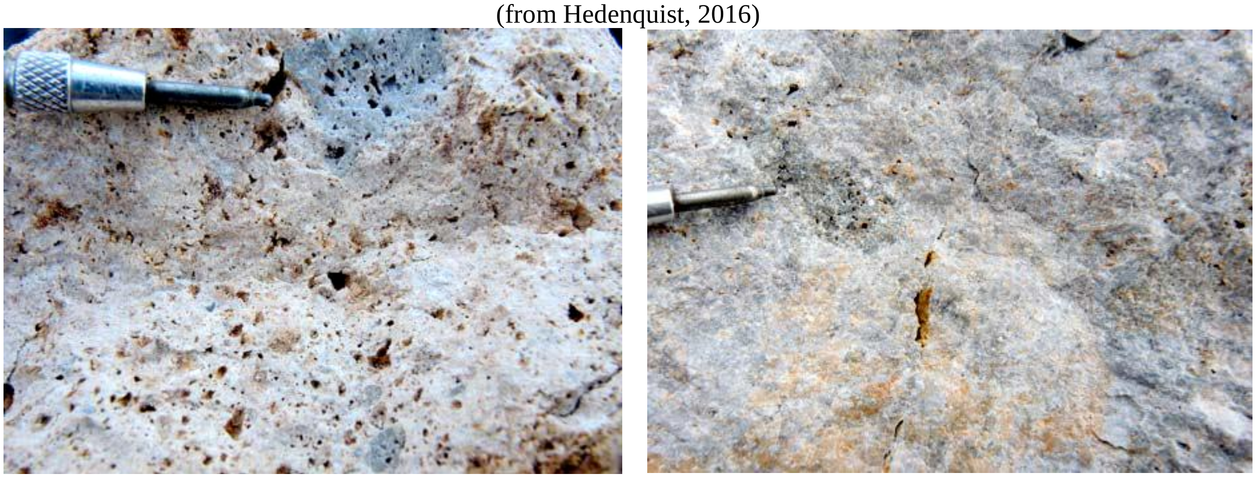
Orange Mountain is a topographically elevated, central portion of the Shumagin trend with aerially extensive quartz-alunite-clay alteration peripheral to residual quartz bodies of magmatic-hydrothermal origin (Hedenquist, 2016; 2017) that were previously referred to solely as zones of silicification (e.g., Peterson et al., 1982; Riehle, 1999). According to Hedenquist (2016):

> "*The main body of Orange Mountain...consists of residual quartz.... The original lithology here is difficult to discern, given the strong silicic alteration (silicification) of the rock after the leaching event that produced the residual quartz. Locally there are textures that indicate brecciation...prior to the strong silicification. Subsequently the silicic alteration was cut by veins of massive cryptocrystalline quartz... with open-space fill of barite in places. To the west and NW of the principal silicic body there are relatively thin lithocap horizons... with vuggy texture...; these horizons appear to be lithic tuff, although the texture may also in places be due to post-silicic brecciation and silicification.... These tuff horizons dip to the SW to WSW on the west side of Orange Mountain. To the east and SE of the main silicic body, the lithology appears to dip to the SE, beneath reportedly fresh basaltic andesite....*

In summary, residual quartz ... alteration of tuffaceous horizons at Orange Mountain occurs over a central area of ~1 x 1 km, with more extensive silicic ribs plus quartz-alunite and alunite-clay alteration to the WSW (Fig. 7a). The hypogene advanced argillic alteration is characteristic of magmatic vapor condensates related to a shallow intrusion. A syn-hydrothermal polymict fragmental unit with juvenile clasts <1 km from the main silicic body indicates syn-hydrothermal magmatism and eruption, with a crater-lake setting indicated by the laminated water-lain sediments. Following this alteration, including in distal locations, there were cross-cutting quartz veins in this area at the surface, as well as to the NE and SW along structural trends toward the Shumagin and Aquila vein systems."

Examples of residual quartz are shown in Figure 7.12, with typical vuggy texture (left) and nearly filled in with later quartz (right).

Figure 7.12 Photographs of Residual Quartz, Orange Mountain
(from Hedenquist, 2016)



Abundant pyrite (up to 25% or more) was found in historical drill holes at Orange Mountain. Anomalous gold to about 0.35 g Au/t was intersected, with mercury elevated to >5 g Hg/t, but low arsenic silver, copper, lead, and zinc (see Section 10.2.1).

7.4.1.5 Pook Prospect

The Pook prospect is located about 0.5 kilometers south of Orange Mountain (Figure 7.4). A northeast striking, auriferous quartz-calcite vein ranging in width from three to 20 meters has been traced along strike for about 600 meters along the contact between a basalt flow and pyroclastic rocks with an andesite flow (Galey, 2005). The vein is crushed and sheared, showing multiple periods of fault movement. Galey (2005) stated:

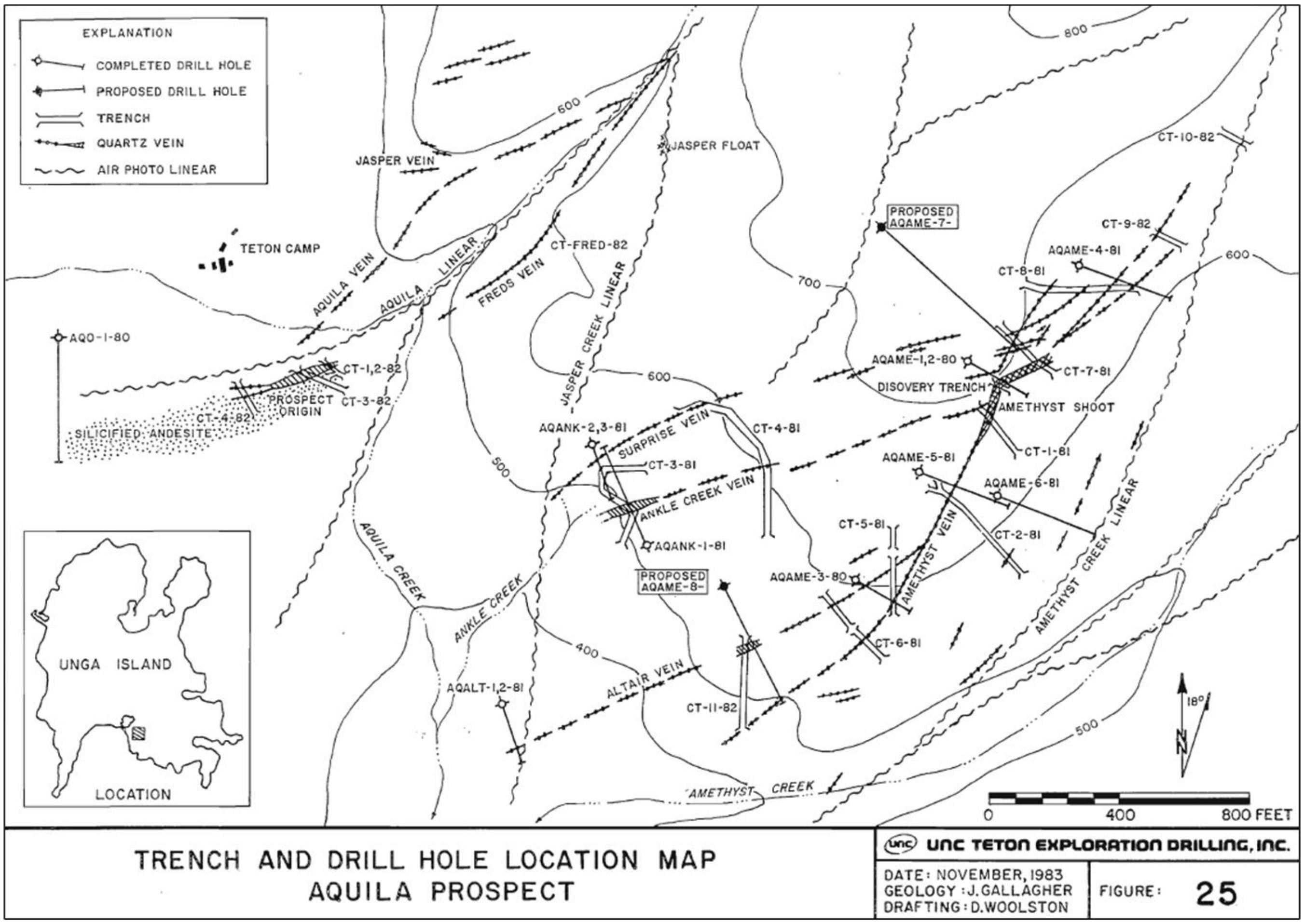
"RAA/Teton Exploration surface sample assays indicate anomalous gold values throughout the area with the best surface values up to 0.098opt Au and 1.47opt Ag. Surface samples over the area collected by BMGC indicated that 80% of the samples contain gold values ranging from 26ppb to 100ppb. One sample contained 0.3 opt Au. The drill hole missed the intended target but, intersected a deep zone of detectible gold with values ranging from 0.005 to 0.02 opt Au over a 33 ft interval."

Drilling results are summarized in Section 10.2.1. Margolis (2014) considered the Pook vein to possibly be the northeastern continuation of the Aquila vein array, which is located about two kilometers to the southwest.

7.4.1.6 Aquila Prospect

The Aquila area lies southwest of Orange Mountain (Figure 7.4), and includes NE-trending veins at both Aquila and at Amethyst (Figure 7.13), both of which have been tested by a total of about a dozen shallow drill holes in the 1980s (see Section 10.2.1 for results). The structural trend continues to the southwest, including the Origin vein on strike from Aquila, and extends to the coast line, a distance of over one kilometer. Gold-silver mineralization occurs in veins, which consist of crustiform-banded quartz and quartz-cemented breccia with amethyst locally in vein centers, at grades of up to ~100 g Au/t over 0.5 meters (see Section 10.2.1). The quartz veins are hosted by andesite and underlying tuffs, range up to about four meters in width, and form stockwork vein zones that are up to 15 meters wide. However, individual veins are apparently very narrow in many areas (<35 centimeters). Veins of pink stilbite to five centimeters in width are common. Margolis (2014) reported *"Silver contents are low (<10:1 Ag:Au); the 3.31 opt Au sample at the base of AQAME-2-80 contains 3.2 opt Ag. Base metals are generally low, although there are galena-sphalerite-chalcopyrite veinlets noted in the drill logs."*

Figure 7.13 Map of the Aquila Prospect 1983
(from Peterson et al., 1983a)



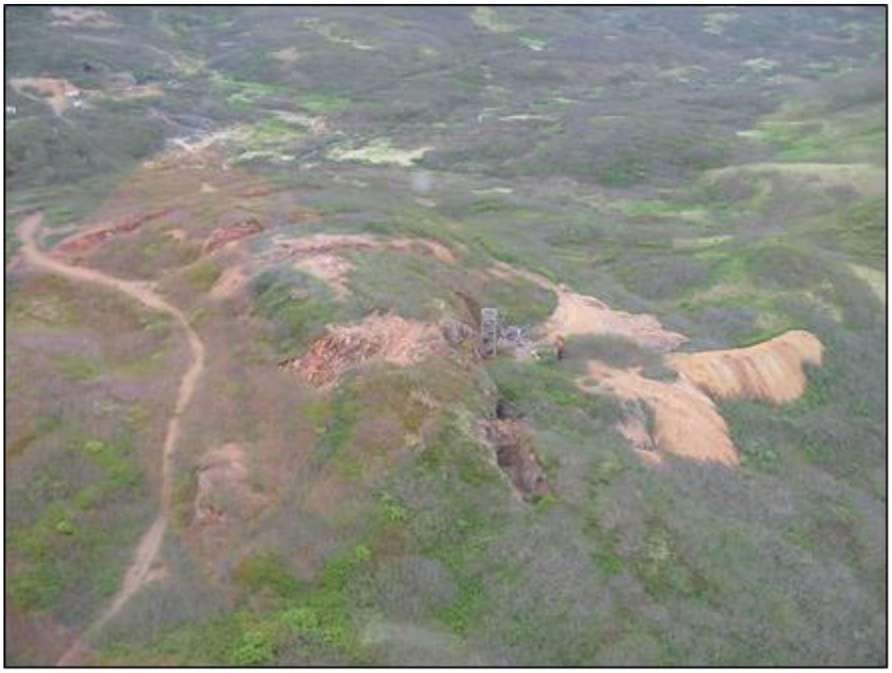
7.4.2 Apollo – Sitka Trend

The Apollo-Sitka trend is a northeast-southwest elongate structural corridor that transects the southern portion of Unga Island about three kilometers south of, and parallel to, the Shumagin trend (Figure 7.4). Epithermal quartz-carbonate ± adularia veins are exposed discontinuously along northeast- and northwest-trending faults at the historic Sitka and Apollo mines, and the Empire Ridge and California prospects, as well as the Heather prospect near the southwest coast of the island.

7.4.2.1 Sitka Vein Zone

The Sitka gold vein system is the most northeastern area of epithermal gold, silver, lead, zinc, and copper mineralization within the Apollo-Sitka trend, and it was the site of historical mining between the 1880s and about 1922. Historical work at Sitka included underground development to 76 meters below surface on three levels (Figure 7.14). Three core holes were drilled by AAGM at the Sitka mine in 1983 as summarized in Section 10.2.2.

Figure 7.14 Sitka Mine, Looking West, Main Shaft Headframe Now Collapsed
(from Margolis, 2014)



Descriptions of the mineralization at the Sitka mine are somewhat variable and it is uncertain whether one is more correct than the other. Redstar has reported that mineralization occurs in an east-northeast-trending quartz-vein stockwork zone containing pyrite, galena, sphalerite, and lesser quantities of chalcopyrite hosted within andesite of the Popof volcanic rocks. Exposures include the east-west shaft-zone workings (open stope for about 70 meters and that extends underground) and a series of four north-south trenches on the south side of the shaft, which expose an extensive quartz-vein stockwork zone extending at least 50 meters south of the shaft. The main shaft workings at surface are reportedly along an east-west vein zone that is steeply dipping, but the quartz veins in the trenches dip consistently south and strike more northeasterly (Margolis, 2014). Coarse cockscomb quartz occurs in the sulfidic, banded vein through which the shaft passes; adularia is locally present in vugs.

An earlier description by Van Wyck et. al. (2005) stated that mineralization at the Sitka mine is located at the intersection of northeast- and northwest-striking quartz-sulfide veins and:

> *"The Sitka deposit is composed of west-northwest trending auriferous quartz–sulfide veins in propylitically altered Tertiary andesite units which cut across the dominant N 40° E Apollo Trend. The west-northwest trending vein/shear zone dips steeply south while the northeast trending veins dip 40° to 50° to the east. The open stope trending away from the shaft reflects a more east-west orientation. In the first trench to the north of the shaft, the dominant N. 40° E. vein trend is cut by a series of N 30° W trending quartz sulfide veins with visible galena, sphalerite, pyrite and rare chalcopyrite. Vein material exposed in the vicinity of the old shaft and on dumps indicates combquartz* [sic] *with fine and medium-grained galena, sphalerite, pyrite and rare chalcopyrite at*

the base of the quartz. From the Sitka to the northeast, veins in the Apollo Trend horsetail or splay into individual veins rather than continue in one dominant structure. The west-northwest Sitka shear post-dates the Apollo trend and may have been down-dropped relative to the volcanic units to the northeast".

7.4.2.2 Apollo Vein Zone

The Popof volcanic units within the Apollo and adjacent Empire Ridge area consist of a northwest-dipping sequence of feldspar ± pyroxene-phyric basaltic andesite flows and flow breccias, with lesser dacitic lithic and air-fall tuffs, interbedded with volcaniclastic and/or fluvio-lacustrine argillite, sandstone, conglomerate and lahars. Veins at the historical Apollo mine are hosted by andesite about one kilometer southwest of the Sitka mine and strike N20°E to N40°E. There are conflicting interpretations of the dip direction of the vein system. Galey (2005) reported the veins dip steeply southeast, and they were described as being vuggy and containing coarse-grained euhedral quartz crystals. According to Galey (2005):

"Gold mineralization is hosted in three, sub-parallel veins, 60 feet apart. The three veins mined were the "East", the "Center" and the "Feeder" veins. The East vein was accessed from the upper drift where an ore shoot measuring 880 feet long, 8 to 40 feet wide (thick) and extending from 30 feet below the level of the upper drift to the surface, was mined. The vein was cut off by a west, 50° dipping fault. The "Center" vein was intersected 1,800 feet from the portal of the lower drift. An ore shoot measuring 800 feet long, 8 to 16 feet wide and 500 feet high was mined. Ore minerals include free gold, chalcopyrite, sphalerite, galena, pyrite, and native copper. Gangue minerals include calcite, chlorite and rare adularia. The oxide-sulfide boundary was encountered 200 feet below the lower drift level and undulated near sea level except at the Sitka where some "free milling" gold is indicated north of the shaft."

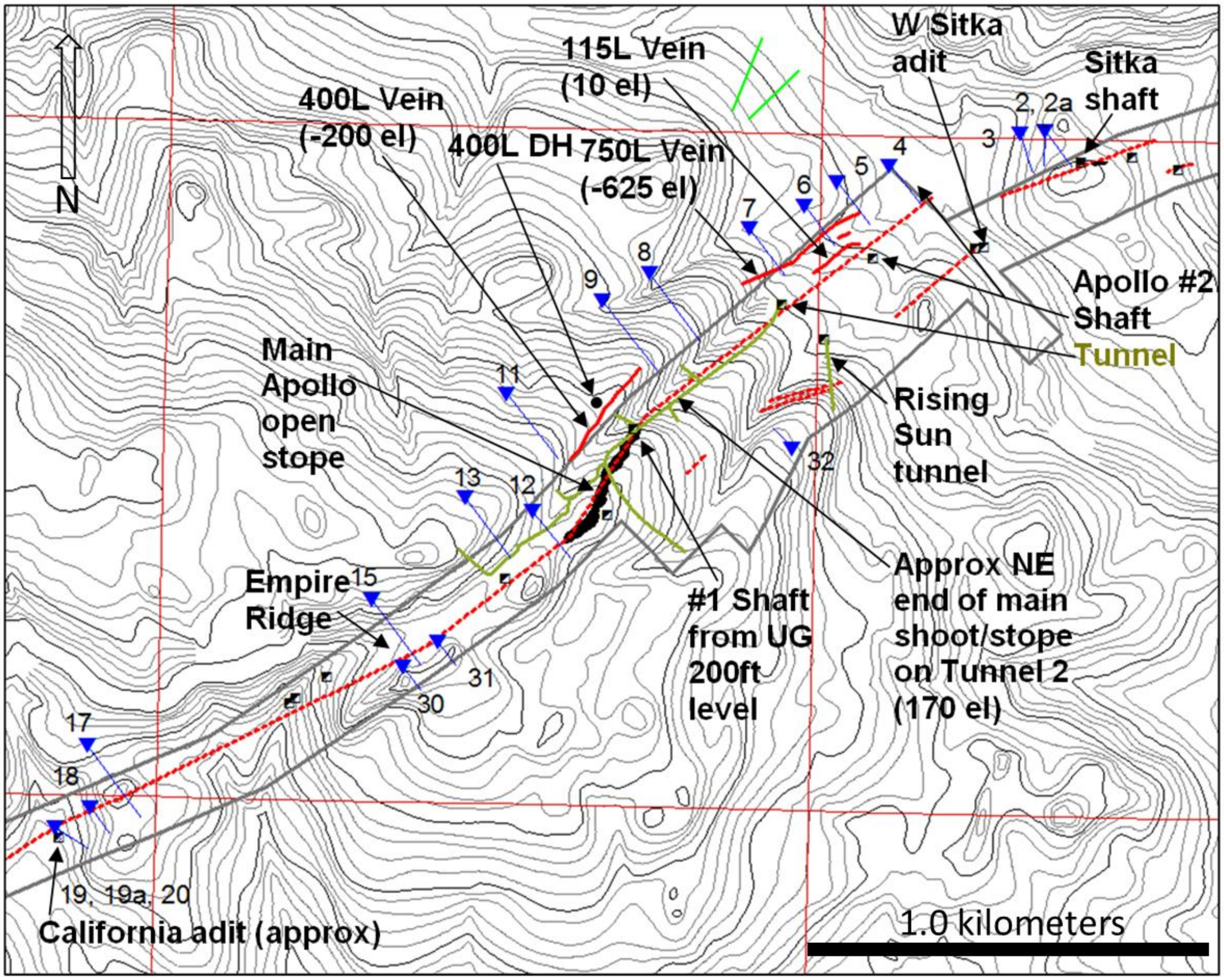
The vertical range of presently known gold mineralization is about 425 meters from the surface at the main Apollo open stope to the lowest mineralization in Shaft #2 (Margolis, 2014; Figure 7.15). According to Margolis (2014), the vein system dips steeply *northwest* at about 70° and the "east", "center" and "feeder" veins may be more or less a continuous vein stockwork zone with minor fault offsets and pinching/swelling. Historical production stopped at the base of the oxidized zone, approximately at sea level, although sulfide mineralization in the vein system continued to the deepest level of the workings.

There are some indications that gold grades decrease rapidly below the level of oxidation, which is approximately at sea level (Drobeck, 2005; Margolis, 2014), and it has been noted that historical reports indicated gold is associated with galena in unoxidized material at the Apollo mine, which is in contrast to the Shumagin mineralization (Margolis, 2014). Drobeck (2005) interpreted the oxide-sulfide boundary at sea level to mark a vertical transition in metal zoning to base-metal rich, gold-poor mineralization below. However, Margolis (2014) reported *"Below the boundary, which is described as gradational, grades in the historic records reported in $/ton indicate consistent 0.1 to 0.24 opt Au in vein zones up to 24 feet wide (Fig. 15a).".*

The figure ("Fig 15a") mentioned by Margolis (2014) is shown below in Figure 7.16.

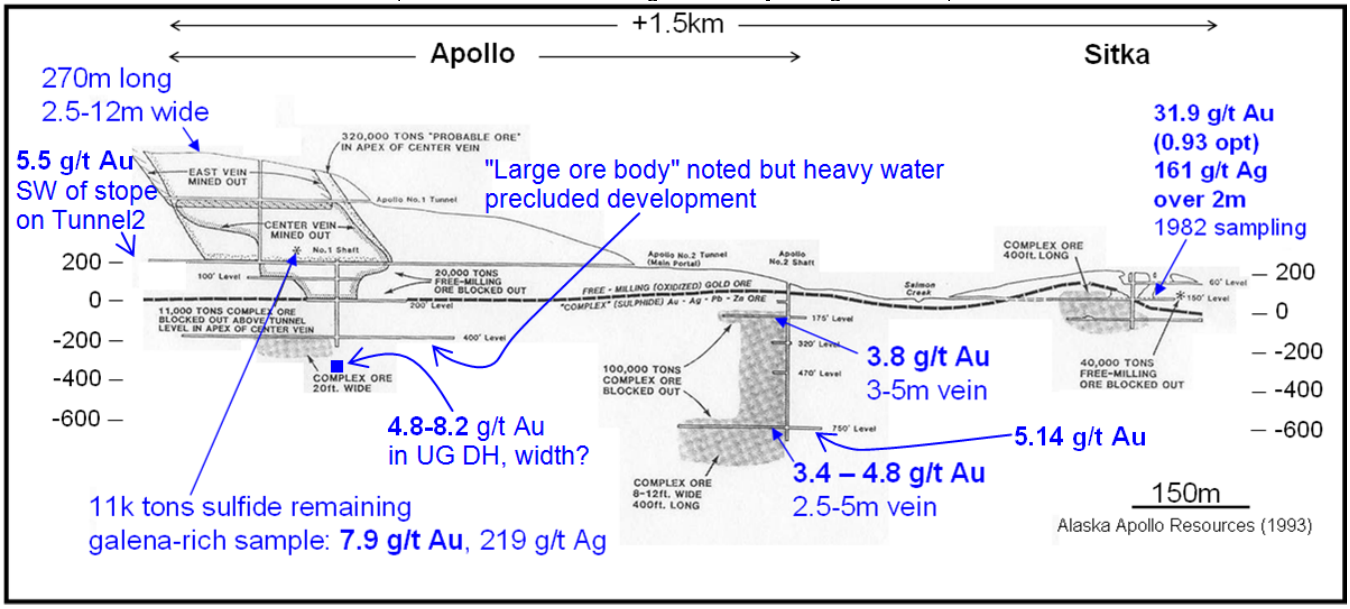
AAGM drilled 10 core holes at the Apollo mine area in 1983. The results of this drilling are summarized in Section 10.2.2.

Figure 7.15 Map of the Apollo – Sitka, Rising Sun and Empire Ridge Area
(from Margolis, 2014)



Note: heavy red solid and dashed lines show veins; light green lines show projections of underground development; bright green lines are veins shown by Riehle et al. (1999); blue inverted triangles and blue lines show historical AAGM drill collars and hole traces; red thin lines are land section lines; grey lines show outlines of patented claims; 20-foot topographic contours. "L" refers to mine level; "el" refers to elevation relative to sea level.

Figure 7.16 Modified 1993 Longitudinal Section, Apollo – Sitka Mine Area
(modified from Bowdidge, 1993, by Margolis, 2014)



7.4.2.3 Empire Ridge Prospect

Empire Ridge is a narrow, northeast-trending ridge of silicified rocks extending southwest about 700 meters from the southwest end of the Apollo open stope (Margolis, 2014; Figure 7.15). A narrow (~175 m) horizon of lithic tuffs and lacustrine sediments exposed at Empire Ridge widens to the southwest and is exposed for ~5.0 kilometers to the southwest, toward the coast at Heather. This volcanic unit has been altered to ribs and lithocaps of residual vuggy silica, haloed by patches of advanced argillic alteration identical to hypogene alteration observed at the Orange Mountain zone. Redstar has reported that bodies of residual silica at Empire Ridge are cut by quartz-limonite breccias and quartz-adularia ± carbonate breccias that are structurally, texturally and geochemically similar to vein breccias at the Apollo mine area.

Copies of assay laboratory certificates indicate AAGM excavated and sampled two trenches. Trench ERT1 was 24 meters long and had gold to 0.30 g Au/t over 1.5 meters, and trench ERT2 was 31 meters long with gold to 0.18 g Au/t over 3.05 meters. Drobeck (2005) reported one sample of gossan that assayed 0.573 g Au/t with very high mercury (10 g Hg/t) and arsenic (1,632 g As/t). RAA collected six samples in 1979, with maximum gold values of 2.0 g Au/t from gossan float, arsenic to 1,000 g As/t, and mercury to 49 g Hg/t.

AAGM drilled three core holes at Empire Ridge in 1983. Apparently only one of the three holes (hole AS15) intersected significant mineralization, as summarized in Section 10.2.2.

7.4.2.4 Rising Sun Prospect

The Rising Sun prospect, located east of the Apollo mine, has been described by Redstar as a splay off of the main Apollo structure approximately 300 meters east of the Apollo open stope and consists of an approximate 25-meter wide outcrop of multi-generational veins, vein breccias, and stockwork identical in geology and sub-parallel to the Apollo vein system. Narrow 1.5-meter to 6.2-meter-wide crustiform to cockade textured vein breccias are bordered by selvages of silicified, quartz-sericite-pyrite altered rocks within propylitic altered basalt, andesite, and hyaloclastite flows.

Two core holes were drilled by Redstar in 2017 at Rising Sun, both of which penetrated modestly mineralized veins and vein breccia. The drilling results are summarized in Section 10.3.5.

7.4.2.5 California Prospect

The California prospect, located about 1.2 kilometers southwest of the Apollo open cut (Figure 7.4; Figure 7.15), is centered on a lenticular topographic high that includes a 35-meter wide zone of silicified and brecciated, iron-oxide stained rock. Little descriptive information is available, but historical records indicate that prior to 1922 a 61-meter tunnel was driven on a vein. Vein material on the dump includes abundant comb-textured quartz that has filled open spaces in brecciated and silicified andesite and tuff. Galey (2005) reported that historical assays from the first 15 meters along the vein indicate gold grades range from 9.43 to 154 g Au/t. In 1983, AAGM drilled four core holes which were very incompletely sampled and assayed, and the results of samples that were analyzed did not replicate the earlier underground sample grades. Two of the holes returned gold grades as high as 1.7 g Au/t (see Section 10.2.2).

7.4.2.6 Heather Prospect

The Heather prospect is located within a large area of hydrothermal alteration at the west end of the Apollo-Sitka trend, about three kilometers southwest of the California prospect (Figure 7.4). The prospect includes a swarm or network of quartz veins less than 35 centimeters in width that can be traced along strike for more than 750 meters. A zone 15- to 45-meters wide, composed of silicified and brecciated tuff, can be traced for another 1,500 meters. Fractured wall-rocks within this altered zone are cemented with fine-grained silica, and open spaces are filled with comb quartz (Galey, 2005). Rock-chip and grab samples collected by BMGC and FMM contained up to 0.41 g Au/t, silver up to 100 g Ag/t, and elevated arsenic and mercury (Galey 2005). There has been no drilling at the Heather prospect.

7.4.3 Other Shumagin Island Prospects

7.4.3.1 Zachary Bay

The Zachary Bay prospect is located about seven kilometers northwest of the Shumagin area (Figure 7.5). Redstar geologists have recognized and described porphyry-style copper-gold mineralization based on examinations of archived drill core from the Duval-Quintana drilling in 1975, assay data from Duval-Quintana, and later core sampling by RAA. Margolis (2014) stated:

"Hole Z1, intersected disseminated Cu-Au mineralization in intrusive rocks over its entire length, with 351.5 feet (107m) grading 0.11 % Cu and 0.280 g/t gold (the upper 31.5 feet of the hole was in overburden). These assays are from RAA's 1981 resampling and relogging of the holes. Samples of the core in storage at the Alaska Geologic Materials Center in Eagle River show clear potassic alteration (hydrothermal biotite and magnetite) and disseminated and veinlet chalcopyrite within a dioritic(?) intrusive phase with pink potassium-feldspar phenocrysts (Fig. 4a). There is a strong correlation between Cu and Au in Z1, and Ag-As-Pb-Zn are very low, also indicative of a porphyry Cu-Au system. The other 3 holes are 1400 to 2400 feet east of Z1 and very shallow tests. Copper is anomalous in these holes, reaching a high of 1000 ppm, but there is no significant gold. Although there is little Cu in hole 2, there is definite disseminated chalcopyrite with pyrite in the skeleton core (e.g., samples 130, 135 and 150) as well as possible hydrothermal biotite in magnetic dark green fine-grained andesite. Hole 3 intersected a more felsic quartz-phyric intrusive phase than hole 1, possibly indicating a multi-phase intrusive system. Hole 3, which contains elevated Cu to 1000 ppm, also contains local zones of diffuse hydrothermal magnetite veins (e.g., 125 feet), and disseminated pyrite is common. Hole 4 is in an unusual soft, pale pinkish gray rock with moderate disseminated pyrite throughout that could be altered andesite (no? igneous quartz). Again, copper values are elevated."

The Duval-Quintana black-line magnetic contour map from their 1975 ground magnetic survey shows a strong, 500-meter long, magnetic high elongated in a north-northwest direction, with a width of about 200 meters (Margolis, 2014). Hole Z1 is within this high, but the other holes are located to the east. Margolis (2014) concluded it is possible that hole Z1 represents the uppermost parts of a potassic porphyry system, but that the geology is not well understood, and he suspected that the magnetic anomaly would be larger if the terrain were flat. Drilling results are summarized in Section 10.2.1.

7.4.3.2 Norm's Vein Prospect

Norm's Vein is a N30°E-trending quartz-vein stockwork zone exposed on a low northwest-trending ridge about 4.8 kilometers northwest of the Shumagin area. Geologic mapping and sampling by RAA/Teton between 1979 and 1983, and by BMGC in 1990, indicate a general N30°E trending zone of quartz-barite veins in silicified rhyolite tuff and andesite that is 550 meters long, and as much as 180 meters wide. The veins dip steeply northwest, but the southeast-directed drill holes (see below) intersected veins commonly parallel to the core axis (Margolis, 2014). The felsic unit is locally very pyritic, with an area at the "NW end" containing up to 50% pyrite. Individual veins were described as up to "several feet wide". Hand samples at the Eagle River sample library examined by Redstar show a chalcedonic quartz-vein stockwork with brecciation, within a limonitic silicified volcanic rock (Margolis, 2014). The quartz veins locally contain barite, sphalerite, galena, chalcopyrite and stibnite, so base-metal contents are locally high, but not consistent. Gold at surface is weakly anomalous, with RAA rock chip samples containing up to 0.585 g Au/t (Margolis, 2014). Two core holes were drilled by RAA-UNC-Teton in 1983 and the results are summarized in Section 10.2.1.

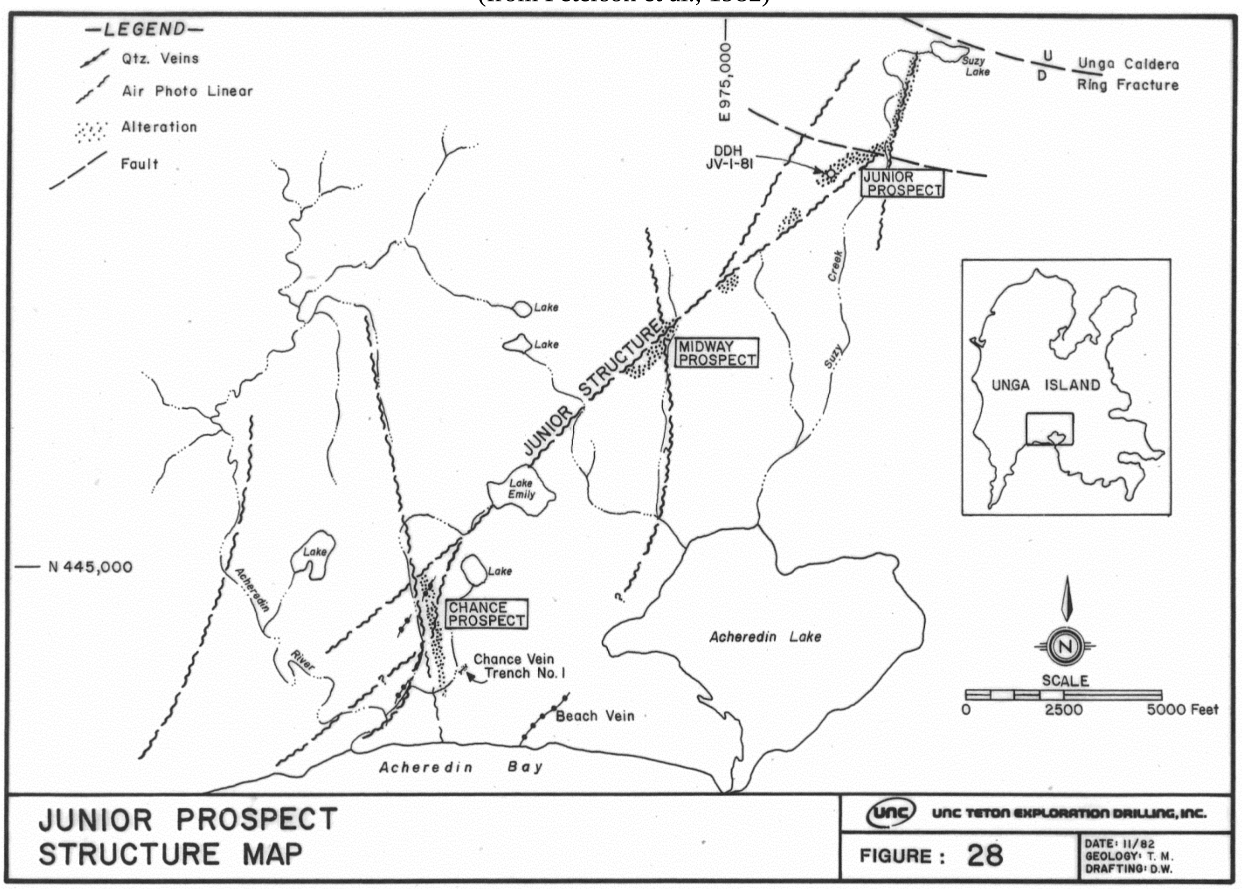
Two widely-spaced occurrences of realgar in altered tuff, sampled by RAA in the 1980s, have been reported by Margolis (2014) from a northwest-trending alteration zone that extends from Norm's Vein toward the Zachary Bay prospect. Realgar is not common in volcanic-hosted epithermal deposits, but could be related to the porphyry copper-gold occurrence at the Zachary Bay prospect.

7.4.3.3 Junior Prospect

The Junior prospect is located nearly four kilometers northwest of Orange Mountain (Figure 7.5 and Figure 7.17). It has been described as a N30°E-trending quartz-zeolite-pyrite-chlorite-calcite vein zone within andesite, and chalcedonic quartz and jasper veins and replacement zones are also noted (Margolis, 2014). The zone of veins is about 370 meters long and 75 meters wide (Trujillo et al., 1981), but Peterson et al. (1982) reported a strike length of about 1.2 kilometers. A sample of chalcedonic vein float contained 2.2 g Au/t, with low base metals.

A core hole drilled by RAA-UNC-Teton in 1981 contained anomalous gold and elevated mercury and arsenic in grey andesite with disseminated and veinlet pyrite, and quartz-zeolite-calcite veinlets. Drilling results are summarized in Section 10.2.1.

Figure 7.17 1982 Map of the Junior, Midway, Chance, and Beach Vein Area, Unga Island
(from Peterson et al., 1982)



7.4.3.4 Chance Vein and Midway Prospects

The Chance vein and Midway prospects are located about 4.5 kilometers northwest of the Aquila area in the western part of the property (Figure 7.5; Figure 7.17). RAA identified quartz veins and silicified, limonitic andesite in float. An RAA trench reportedly exposed a zone of "massive silica and highly silicified andesite" 10 meters in width, with 0.94 g Au/t over 1.2 meters within 2.4 meters that averaged 0.775 g Au/t, associated with quartz, pyrite, marcasite, sphalerite, and chalcopyrite (Margolis, 2014).

There is scarce information on the Midway prospect (Figure 7.17), other than it is described as an area of northeast-trending, pyritic and chalcedonic silicification with zeolite veins along the "Junior trend" (Margolis, 2014).

7.4.3.5 Beach Vein

The northeast-trending Beach vein was explored by RAA with 10 short trenches, and it is well exposed at the sea cliffs about 2.5 kilometers northwest of the Aquila area (Figure 7.5 and Figure 7.17). In the sea-cliff exposure, the vein is 1.2- to 1.8-meters wide with a series of 0.75- to 35-centimeter wide sub-parallel veins that form a zone about 18-meters wide (Drobeck, 2005; Galey, 2005). The core of the vein zone is composed of brecciated andesite fragments cemented with drusy quartz and comb-textured quartz with minor amounts of galena, sphalerite, and pyrite. To the north, the vein was traced for about 550 meters within andesite and is reportedly up to three meters in width. The exposure at the beach contains elevated base metals, but low gold, and the highest gold sample was 4.94 g Au/t over 0.6 meters in trench BV-4, with elevated copper, lead, and zinc (Margolis, 2014).

7.5 Mineralization at Popof Island

7.5.1 Centennial Gold Deposit

The Centennial gold deposit (Figure 7.5) is an area of widespread disseminated and stockwork gold mineralization with a broad north-northwest trend and extents of at least 1,200 meters in length and about 600 meters in width. Mineralization is largely within 50 meters of the surface. Only six of the 59 holes drilled at Centennial exceed 150 meters in depth, and all are less than 200 meters in depth. Results of drilling in 1988-1989 by BMGC are summarized in Section 10.2.3.

Mineralized material is typically in the 0.5 to 2.0 g Au/t range, with locally higher grades (+3.0 g Au/t), such as 18.1 g Au/t over 3.05 meters in BMGC's Trench 5. The mineralization is coincident with propylitic and silicic-potassic (adularia) alteration (Margolis, 2014). Host rocks are mostly basaltic andesites, andesitic volcaniclastic rocks, conglomerates, finely-laminated tuffaceous sediments, and minor white felsic lithic tuff toward the base of the drilled section. The deeper drill holes intersected felsic tuffs and a basement sandstone section beneath the mafic to intermediate-composition volcanic units. Northerly-trending mafic(?) dikes were mapped by BMGC in some of the trenches and are locally mineralized, and a northerly-trending basaltic plug is thought to underlie the southern part of the drilled area.

The degree and depth of oxidation were not described by BMGC (see Ellis, 1987; Ellis and Jacob, 1988) or Margolis (2014). The authors note that pyritic rocks have been described from surface and trench exposures, as well as in drill core. Margolis (2014) reported the dominant alteration assemblage is quartz, chlorite, sericite, epidote, potassium feldspar, pyrite, and carbonate. Rhodochrosite(?) is locally present in crustiform-banded veins. Although there is typically a low percentage of fine-grained disseminated pyrite in mineralized areas, some mineralized areas contain notably abundant, sooty, fine-grained pyrite. Larger vugs and vuggy veinlets are lined with fine adularia crystals as well as quartz, epidote, and pyrite. BMGC recognized that elevated gold is typically associated with silica and potassium enrichment (Ellis and Harris, 1989).

Silica-pyrite veinlets are present in some mineralized intervals, but archived drill core demonstrates many well mineralized (>1 g Au/t) sections lack veins, and pyrite veinlets locally occur in unmineralized sections. Although narrow centimeter-scale veins are present, and may be mineralized, the bulk of the mineralization is disseminated and possibly stratiform to discordant across various gently-dipping lithologies, but with a subhorizontal form. BMGC and later Margolis (2014) noted that the highest grade times thickness gold values follow a northerly trend extending north from the north-trending Emery vein at the sea cliffs, through the Main Zone of the deposit. The Emery vein is not high grade where exposed, but is probably part of a vein stockwork, and BMGC interpreted this as the steep fracture system along which hydrothermal fluids ascended before migrating laterally to form disseminated mineralization.

Silver contents are lower than at Shumagin and Apollo-Sitka, with Ag/Au ratios typically <1. Ellis and Harris (1989) concluded:

> "*Mineralization was probably introduced along high angle fracture controlled channel ways such as the Emery quartz/carbonate vein system from which it spread out along permeable zones. The gold was subsequently precipitated as free gold apparently not in direct association with pyrite. The mineralization appears to have a consistent lower limit that ranges from 250' to 400' above the basement complex, except in a very few deeper anomalous veined zones and locally with carbonized plant trash."*

7.5.2 Other Popof Island Prospects

Five areas of hydrothermal alteration, epithermal veins, and gold ± silver ± copper-lead-zinc mineralization have been recognized east of the Centennial deposit on Popof Island (Figure 7.5). These are the Propalof zone, Suzy and Rhodo veins, the SoWhat veins, the Red Cove alteration zone, and the Digit veins.

7.5.2.1 Propalof Prospect Mineralization

The Propalof mineralization east of Centennial (Figure 7.5) is within an area of silicification and quartz veins hosted by andesite or basalt and an underlying felsic tuff sequence, and it is described as having a N75°E trend for about 365 meters by about 90 meters in width. Most of the area is covered by soil and brush. Auger sampling of soil and underlying weathered rock led to drilling, where gold was encountered in part within a stockwork quartz-vein zone at concentrations of as much as 1.2 g Au/t (Ellis and Apel, 1989). Gold is associated with elevated arsenic and mercury, but very low silver, copper, lead, and zinc, in weakly propylitized basalt or basaltic andesite that is non-magnetic and cut by irregular, ≤2-centimeter, botryoidal, crustiform, blueish-white opaline silica and quartz ± adularia veins with minor pyrite along their edges. The host unit is magnetic and only very weakly propylitized outside of the mineralized zone. Other zones contain vuggy silica-pyrite veins. Lithologies also include well-bedded, locally quartz-phyric, tuffs and volcaniclastic rocks. Results of drilling in 1989 by BMGC are summarized in Section 10.2.1.

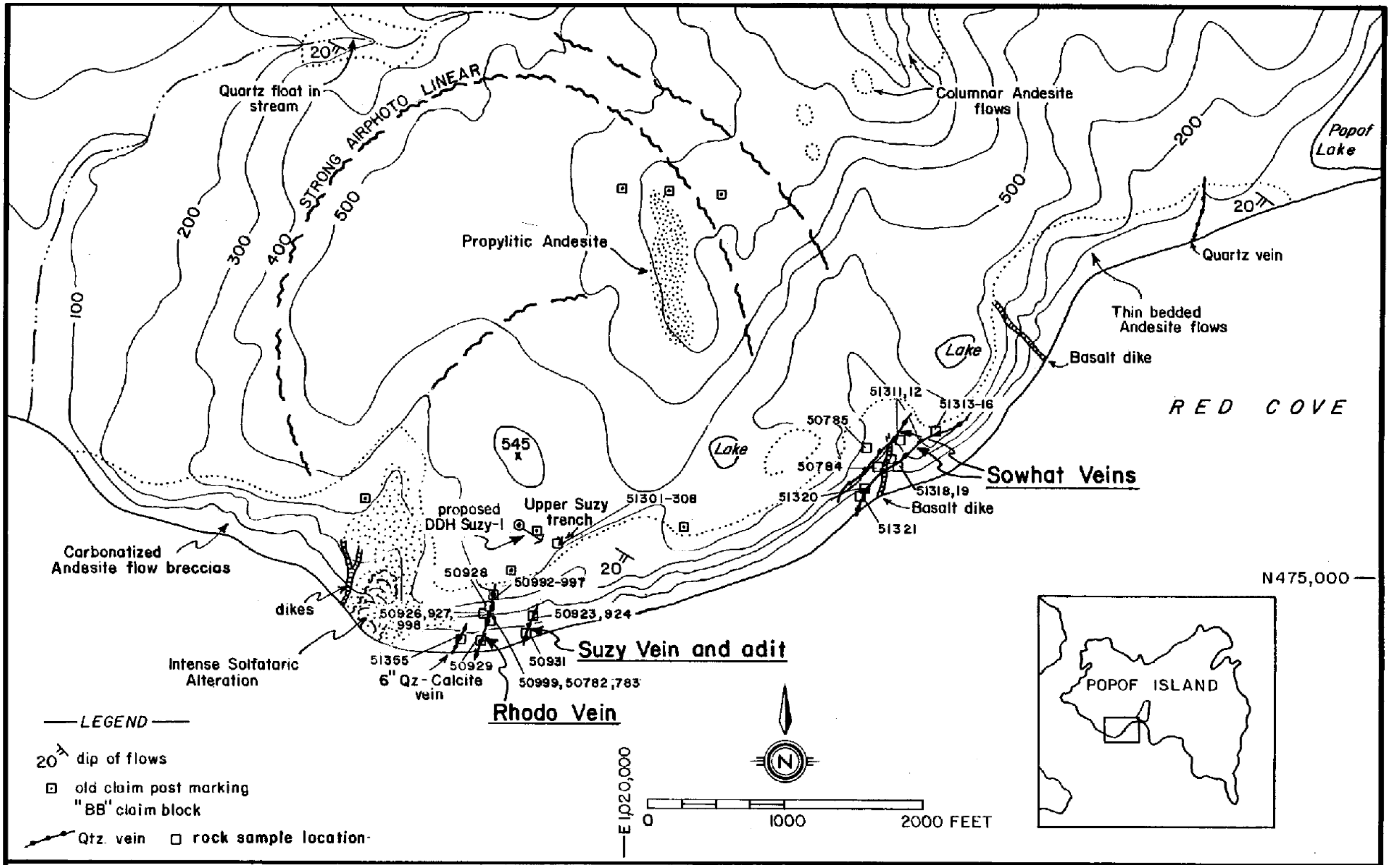
7.5.2.2 Suzy, Rhodo, and SoWhat Veins

South of Propalof, the north-northeast striking Suzy and Rhodo veins (Figure 7.5; Figure 7.18) are exposed in sea cliffs. In the historical, 1929 Suzy adit, which is about 36 meters in length, the Suzy vein width varies between 1.5 and 2.7 meters according to RAA sample maps and text, and it was described as "reticulated" and having "pods of coarse sphalerite, galena, pyrite and chalcopyrite up to several feet thick" (Peterson et al., 1982). Underground channel samples taken by RAA across the vein, which have not been verified by the authors, include 21.4 g Au/t over 0.6 meters within an interval of 6.34 g Au/t over 2.4 meters and, about 10 meters along strike, 16.11 g Au/t over 0.6 meters (Margolis, 2014). A 2.3-meter sample collected by the U.S. Bureau of Mines at the location of the RAA 16.11 g Au/t sample assayed 4.11 g Au/t (from Webber et. al., 1946, cited by Margolis, 2014). The main vein and peripheral stockworks contain variable, but locally abundant, galena, sphalerite, and chalcopyrite. Wall rocks are pyritic and silicified(?) andesite that contain zeolite-calcite veins, as well as base-metal sulfides in narrow quartz stringers. The Suzy vein disappears to the north under brush and lack of exposure, but a hand trench at the top of the cliffs uncovered a 2.4 meter vein that contained no gold (Margolis, 2014).

Not much is known of the Rhodo vein (Figure 7.18). Peterson et al. (1982) reported "*the Rhodo vein is very high in rhodonite, calcite, and very pale honey-colored sphalerite....*"

About 900 meters east of the Suzy vein, the northeast-striking SoWhat veins (Figure 7.18) are exposed in the sea cliffs. At least two veins, typically 0.3 to 1.5 meters in width and separated by about 30 meters, have been traced for about 300 meters along strike (Margolis, 2014). Gold values are lower than at Suzy and base-metal contents are high. Historical surface samples suggest that elevated gold and base metals may extend to the northeast about 1.4 kilometers through an area along the west side of the lake that BMGC called the 4000 Zone.

Figure 7.18 Map of the Suzy, Rhodo and SoWhat Veins, Popof Island
(from Peterson et. al., 1982)



7.5.2.3 Red Cove Alteration Area

The Red Cove area on Popof Island has been interpreted by Drobeck (2005) and Margolis (2014) as an extensive, but largely barren lithocap of advanced-argillic alteration that includes native sulfur, gypsum veinlets, anhydrite, vuggy residual quartz, argillic alteration, disseminated pyrite and rare cinnabar. Core holes in the area encountered pyrite-gypsum veins. A short-wave infrared spectroscopy study of archived drill core by Thompson (2005) identified alunite, pyrophyllite and dickite, as well as abundant gypsum and kaolinite. Drobeck (2005) reported:

> *"The most prominent styles of alteration are pervasive pyrite+alunite>quartz and kaolinite>alunite>quartz, almost always developed within porous felsic tuffs. Basalt flows and dikes within the system are mostly unaltered, suggesting they are post-alteration (although some BMGC field evidence suggested they were pre-alteration, but simply not receptive). We found similar basalts along the bay of Simeon Bight, further to the south, which were strongly pyritized, but without visible primary clay alteration nor silicification."*

Skeleton core of the five BMGC holes indicate that all penetrated strong silicification and argillic alteration (pyrophyllite-kaolinite), with local vuggy silica and abundant very fine-grained disseminated pyrite, which commonly occurs as diffuse stringers or with silica veinlets (Margolis, 2014). No definitively mineralized material has been described. According to Margolis (2014), gold is only weakly anomalous in rock samples (maximum of 0.366 g Au/t), and soil and auger samples also show local, weakly-anomalous gold (<0.100 g Au/t). Mercury and arsenic are reportedly elevated, with mercury as high as 5.0 to 6.0 g Hg/t, and arsenic reaching about 750 g As/t (Margolis, 2014). Drill-hole assays are discussed in Section 10.2.1.

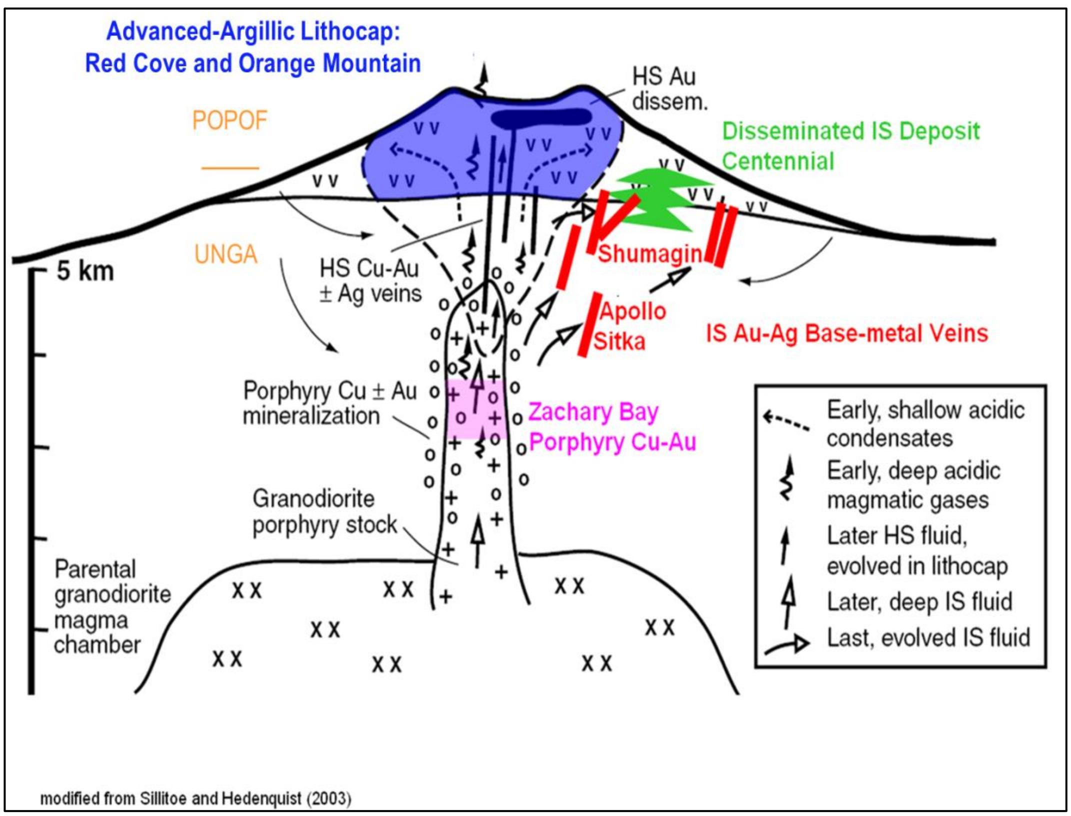
7.5.2.4 Digit Veins

Two isolated exposures of comb-textured quartz veins were recognized and sampled by RAA north of the Red Cove alteration zone. Trujillo et. al. (1981) reported surface samples assayed as much as 0.55 g Au/t and 4.4 g Ag/t. MDA has no other information on the Digit mineralization.

8.0 DEPOSIT TYPES (ITEM 8)

With three exceptions, nearly all of the prospects and gold ± silver, ± lead-zinc-copper deposits within the Unga project have geological, textural, and mineralogical characteristics typical of the low- and intermediate-sulfidation classes of volcanic-rock hosted, epithermal deposits. These vary from fault-controlled fissure veins, vein-breccias, sheeted veins, and stockworks, such as at the Shumagin deposit and the Apollo-Sitka mines, to disseminated and stockwork(?) gold mineralization at the Centennial deposit. Their relation to the broadly accepted conceptual model for volcanic-rock hosted epithermal deposits world-wide is shown in Figure 8.1. Two of the exceptions are Orange Mountain and Red Cove, which have alteration mineral assemblages and textures indicative of the upper parts of high-sulfidation magmatic-hydrothermal systems. The third exception is the Zachary Bay copper-gold showing. Although this prospect is not well defined by mapping or drilling, hydrothermal alteration minerals and textures in historical core, together with assay data, fit well with a porphyry copper-gold style of mineralization (Figure 8.1). The conceptual deposit model of Sillitoe and Hedenquist (2003) modified below is approximate, and the authors suspect that the Zachary Bay porphyry intrusion may have been emplaced at a higher level than shown. Similarly, the Apollo-Sitka veins may have formed at shallower depths as well. These epithermal and porphyry models have been applied by Redstar to advance exploration at the Unga project.

Figure 8.1 Conceptual Deposit Model for the Unga Project, Alaska
(modified from 2012 presentation by J. Margolis in Redstar files)



9.0 EXPLORATION (ITEM 9)

9.1 Redstar 2011

Redstar commenced exploration of the Unga project in 2011 with work focused on the gold-silver vein system at the Shumagin prospect (Figure 7.4), in the southeast part of Unga Island. This involved a compilation of historical drilling and surface geological and geochemical data, aimed at understanding the historical estimated resources, and was followed by drilling 10 core holes in an effort to expand the historical resources. Redstar's drilling in 2011, along with historical drilling data, demonstrated the continuity of the vein system over at least 800 meters of strike and the existence of higher-grade gold-silver mineralization down dip, as well as the presence of wide zones of lower-grade gold-silver mineralization around the core veins. Mineralization was confirmed to occur as a network of multiple, closely-spaced, steeply-dipping veins and breccias, within a northeast-trending fault zone in strongly-altered volcanic rocks. Specific results from the 2011 drilling are discussed in Section 10.3.1.

Also in 2011, Redstar conducted surface sampling of other areas, including the historic Sitka mine (Figure 7.4) and the Zachary Bay prospect several kilometers to the northwest of the Shumagin vein system. The highest-grade surface sample results were reported by Redstar at the Sitka mine, with channel samples that included 13.2 g Au/t and 398 g Ag/t over 2.0 meters. A select sample of a vein within that zone assayed 94.7 g Au/t and 1,840 g Ag/t (Redstar news releases, January 18, 2012 and February 19, 2014; https://www.sedar.com).

9.2 Redstar 2014

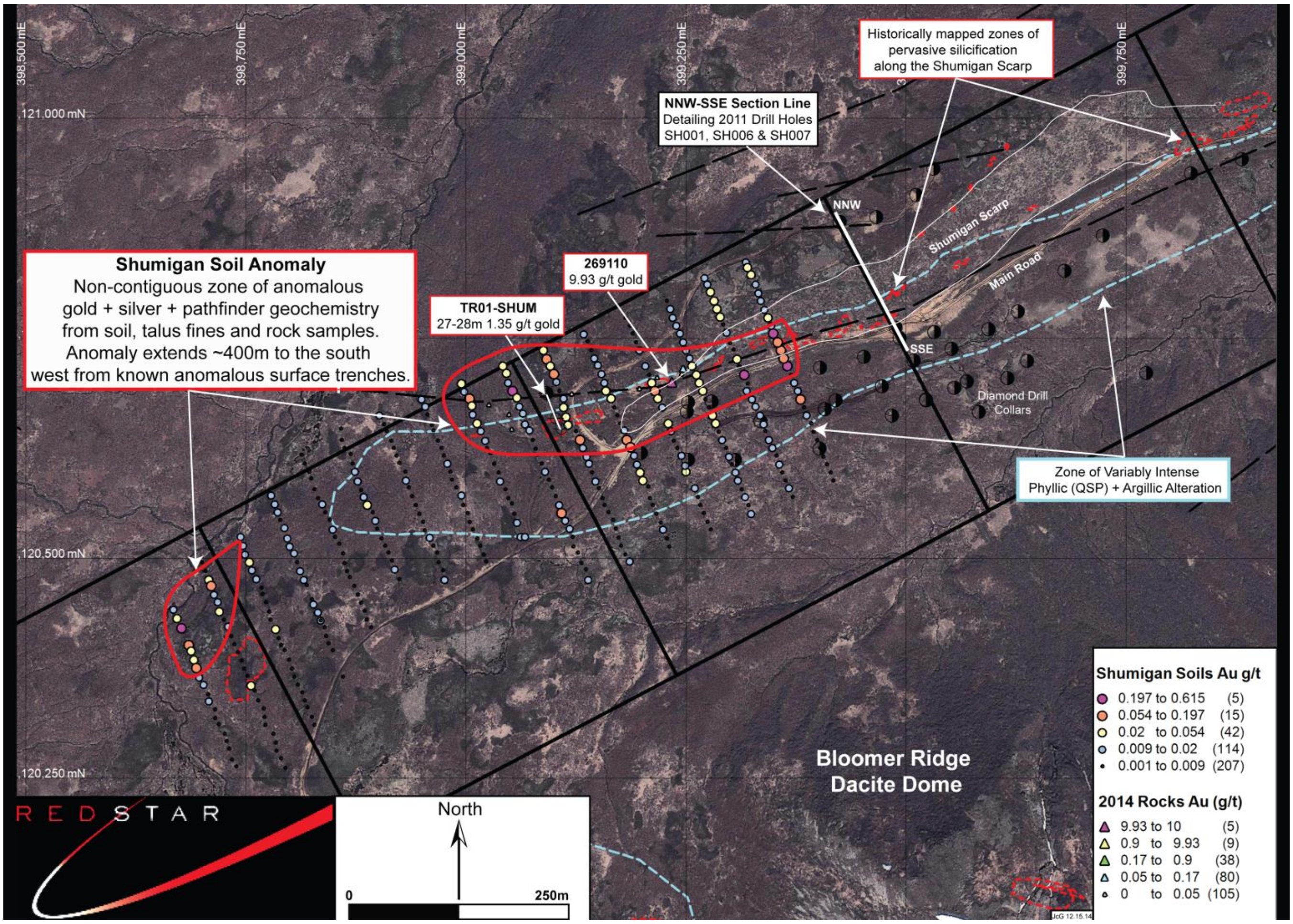
Redstar resumed work on the property during the summer of 2014. The field surface program involved three areas: the Apollo-Sitka trend, the Shumagin prospect, and the Aquila prospect. Detailed survey work, geochemical sampling, re-mapping of historical trenches, and the re-logging of over 600 meters of historical drill core were accomplished. The geochemical sampling was conducted by Redstar geologists and personnel from Northern Associates Inc. ("NAI"), of Fairbanks, Alaska, and Yukuskokon Professional Services ("YPS"), of Wasilla, Alaska.

9.2.1 Shumagin 2014

A detailed differential global positioning system ("GPS") survey was performed to accurately locate all existing surface features including drill roads, trenches, and historical drill collars. Redstar personnel salvaged and re-logged approximately 610 meters of drill core from the BMGC and AAGM drilling in the 1980s. A total of 43 "continuous-chip" trench samples and 12 rock samples were collected and analyzed. In addition, 383 samples soil samples were collected on a grid area of approximately 750 meters x 200 meters located to the southwest of the Shumagin prospect.

The soil samples showed a gold and silver geochemical signature of 0.020 to 0.050 g Au/t (up to 0.615 g Au/t) and >0.5 g Ag/t (up to 6.8 g Ag/t) that extended to the southwest approximately 400 meters (Figure 9.1). The 2014 rock-chip samples taken from quartz vein breccias and stockwork that occur in surface outcrops assayed up to 9.93 g Au/t and 74.4 g Ag/t. Redstar interpreted the 2014 soil, talus fines, and surface rock sample geochemistry to suggest a combination of hydrothermal and magmatic-related geochemical signatures.

Figure 9.1 2014 Soil and Rock-Chip Gold Results, Shumagin Prospect
(from Redstar, 2014)

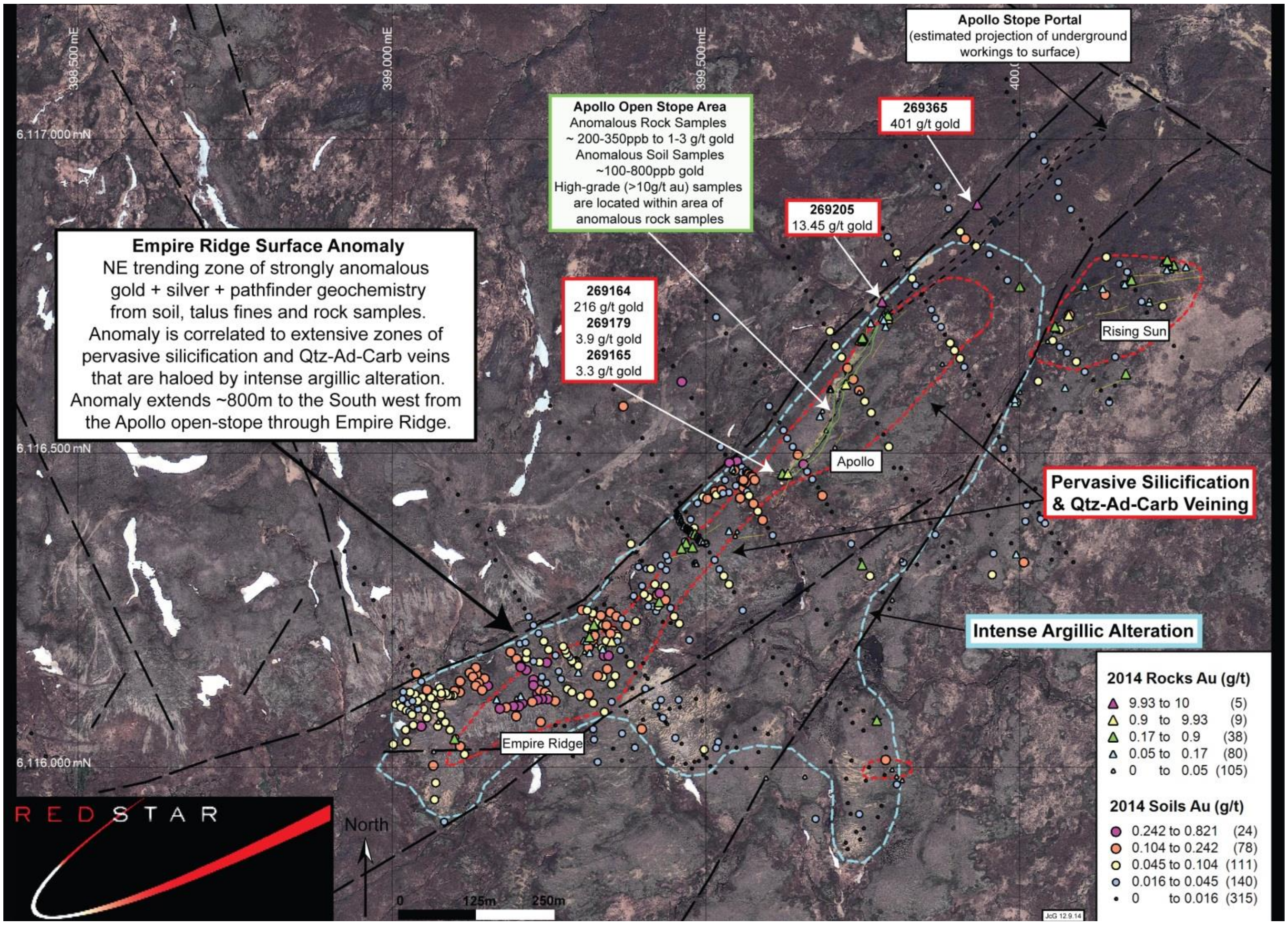


Based on an in-depth review of Shumagin data, including historical drill core, Redstar geologists concluded that at depth, hanging-wall dacite gradually changes into a 5-meter to 40+ meter-wide zone of steeply-standing, multi-phase breccia bodies that are localized along the Shumagin scarp. The Shumagin scarp was interpreted to mark a pre-existing structure along which phreatomagmatic and hydrothermal breccias were emplaced, as well as a buttress to reworked volcanic rocks, mudstone, shale, carbonaceous beds and volcanic tuffs and flows, that were deposited on the southeast side within a valley separating the Shumagin scarp from Bloomer Ridge. It was observed that matrix material within the breccia phases varies from hydrothermal to intrusive (phreatomagmatic), but most matrix phases contain euhedral biotite and fine-grained black-gray hydrothermal quartz ± adularia.

9.2.2 Apollo – Sitka 2014

A total of 225 rock samples, 224 trench samples, and 669 soil and talus-fines samples were collected and analyzed from the Apollo-Sitka area in 2014, and historical trenches were re-mapped. The results showed a continuous gold and silver geochemical soil anomaly of >0.1 g Au/t and >1.3 g Ag/t, covering the Sitka and Apollo mine areas and extending for approximately 1,300 meters to the southwest from the Apollo open stope, through Empire Ridge. Figure 9.2 shows the gold in soil, talus fines and rock samples.

Figure 9.2 Gold in Soil, Talus Fines and Rock Samples, Apollo - Empire Ridge Area
(from Redstar, 2014)



The anomalous gold + silver geochemical signature was correlated to zones of silicification and quartz-adularia ± carbonate veins within an envelope of intense argillic alteration. The silicification and argillic alteration were recognized to continue intermittently for approximately 4,500 m to the southwest, from Empire Ridge to the west coast of Unga Island (Figure 7.4).

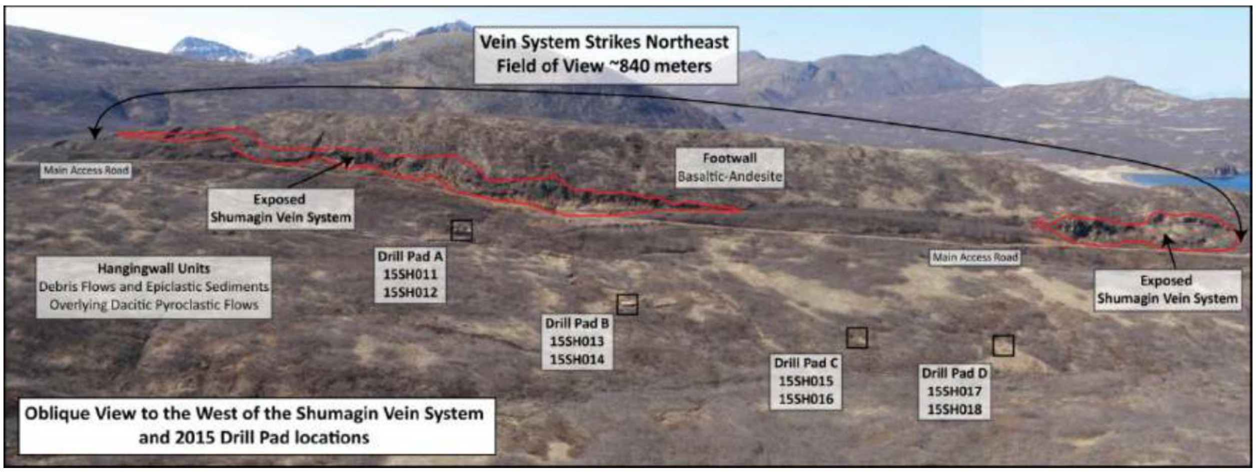
9.2.3 Aquila 2014

At Aquila, reconnaissance soil lines totaling 155 soil and talus-fines samples were collected along a widely spaced grid covering 1,700 m of strike length, where zones of argillic alteration define the Shumagin trend.

9.3 Redstar 2015

During 2015, Redstar drilled a total of 1,498 meters in eight core holes at the Shumagin prospect (see Section 10.3.2 for details). An aerial view of the 2015 drill collars relative to the Shumagin vein system is shown in Figure 9.3. All of the holes penetrated cockade- and colloform-textured quartz-adularia-carbonate veins and breccia with disseminated sulfides of the Shumagin vein system at depths expected by Redstar. Significant gold-silver intervals are summarized in Section 10.3.2.

Figure 9.3 Aerial view of the Shumagin Prospect and 2015 Drilling Locations
(from Redstar, 2015)



9.4 Redstar 2016

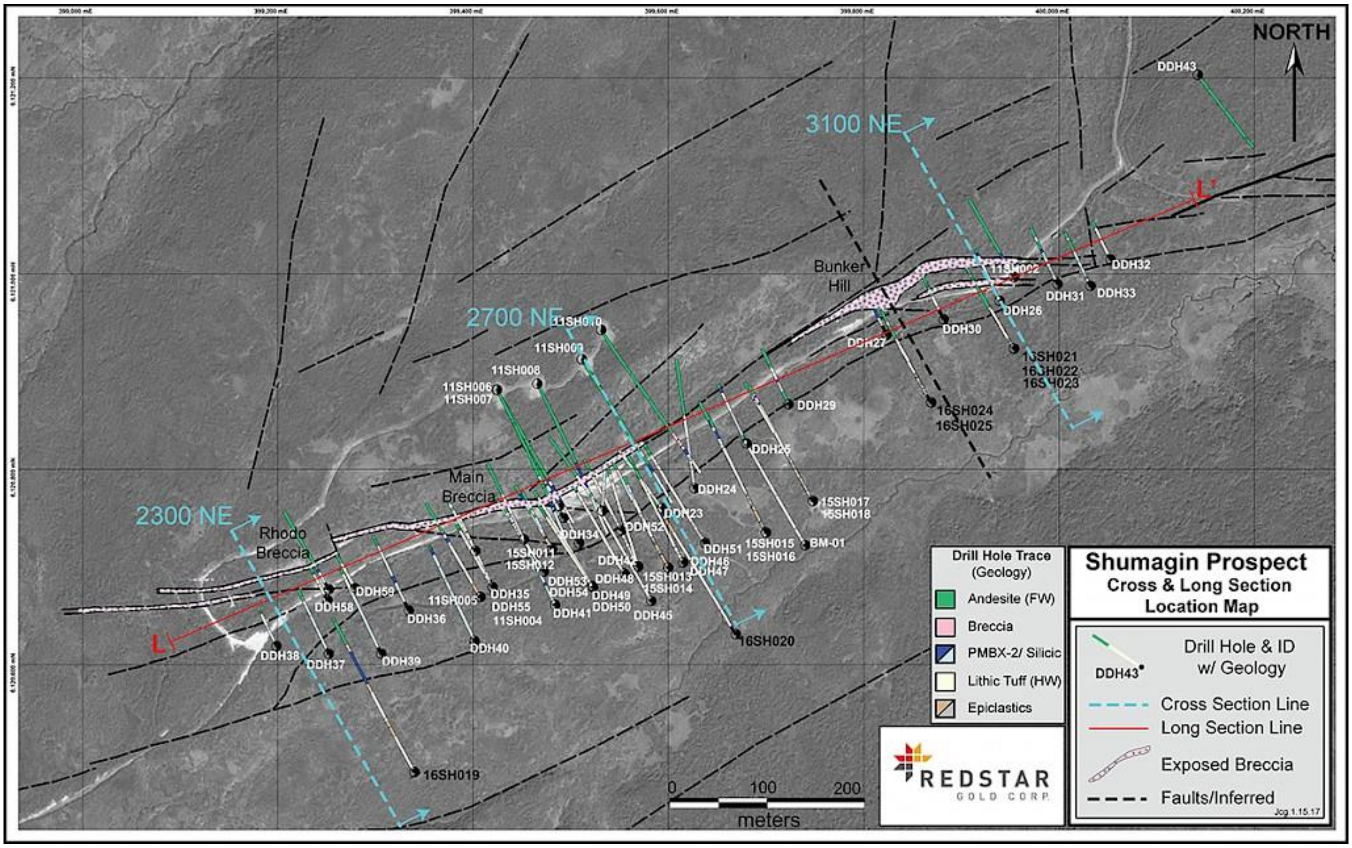
The focus of the 2016 exploration work was to 1) expand known mineralization previously drilled at the Shumagin prospect and along Empire Ridge, the southwestern extension of the historic Apollo-Sitka mine, and 2) complete surface sampling and mapping along the ~9 kilometer Shumagin trend, including Orange Mountain to the southwest of the Shumagin prospect. As part of this work, Dr. Jeffrey Hedenquist, an independent expert on epithermal gold systems, undertook a six-day field review of the Shumagin and Apollo-Sitka trends.

9.4.1 Shumagin and Orange Mountain 2016

During 2016, Redstar geologists and personnel from NAI and YPS conducted geological mapping and collected 325 rock samples and 272 soil and talus-fines samples from Orange Mountain, from mineralized structures located between Orange Mountain and Shumagin, and from exposures of multi-phase breccias and additional structures at the Shumagin prospect. Forty-four rock-chip samples were taken along steep exposures covering ~325 meters of strike along the "Main Breccia" at Shumagin (Figure 9.4). These returned variably anomalous gold values ranging from less than 1 g Au/t to 54.4 g Au/t, and silver from less than 1 g Ag/t to 137 g Ag/t. These included a weighted average of 37.26 g Au/t and 103.7 g Ag/t over a true width of 2.3 meters of weathered quartz-adularia-rhodochrosite breccia. Fifteen rock-chip samples were also taken along exposed breccias at Bunker Hill (Figure 9.4) along ~10-meter- to 20-meter-wide, east-west-trending exposures of oxidized and manganese oxide-stained quartz-adularia breccias. These samples returned anomalous values of gold (up to 0.453 g Au/t) and silver (up to 26.4 g Ag/t) and were enriched in tellurium (up to 20.4 g Te/t) and manganese (up to 0.82%).

A total of 1,505 meters were drilled by Redstar in seven core holes at Shumagin in 2016. As shown in Figure 9.4, five were drilled in the Bunker Hill portion, one hole was drilled in the Main Breccia, and one hole was drilled at the "Rhodo Breccia". Details and significant intervals are summarized in 10.3.3.

Figure 9.4 Map of the Shumagin Prospect with Drill-hole Traces Through 2016
(from Redstar, 2016)



At Orange Mountain and vicinity, Redstar completed detailed geological mapping, and rock-chip and talus-fines sampling that included a total of 183 rock-chip samples, 95 talus-fines samples, and ~200 soil samples on a grid along a ~4.5 kilometer-long segment of the Shumagin trend, centered along Orange Mountain and extending from the Aquila prospect to Shumagin. Inspection of the Orange Mountain area by Dr. Hedenquist, together with the geologic mapping and surface sampling, lead to the interpretation that Orange Mountain is a large high-level hydrothermal "lithocap" with advanced argillic alteration that is central to and genetically related to the adjacent vein systems at Shumagin and Aquila. Composite rock-chip samples from oxidized fault breccias near the crest of Orange Mountain were found to be anomalous in gold (0.025 to 0.278 g Au/t) and are highly anomalous in arsenic, antimony, mercury, silver, and lead. Composite rock-chip samples taken from outcrops of the vuggy sulfide-bearing residual-silica bodies were typically barren, with scattered results of less than <0.025 g Au/t. Silver, arsenic, antimony, mercury, lead, zinc, and copper were weakly elevated. Erosion of the numerous oxidized quartz-limonite and polymictic breccias along the crest of Orange Mountain has produced a widespread gold anomaly of ~0.040 to 0.193 g Au/t in talus-fines samples.

In the Red Mountain area located between Orange Mountain and the Shumagin prospect, Redstar conducted geological mapping and collected ~200 soil samples from a 600 meter by 150 meter grid. Rock-chip and soil samples taken from areas of advanced argillic alteration northeast of Orange Mountain were found to contain elevated gold, silver, arsenic, antimony, mercury, and lead relative to soil samples taken from areas overlying basalt flows further along strike to the northeast.

9.4.2 Aquila 2016

Rock-chip sampling by Redstar in 2016 in the "Aquila Moat" area southwest of Orange Mountain, returned values up to 0.050 g Au/t, 427 g As/t, and 0.41% Ba from polymictic fragmental units that contain rounded clasts of vuggy residual silica, lacustrine sedimentary fragments, and clay-altered clasts that were likely of juvenile magmatic origin. These fragmental rocks were interpreted by Redstar to be syn-hydrothermal in origin and deposited in a phreatomagmatic eruption crater that was water-filled at times.

9.4.3 Empire Ridge (Apollo – Sitka Trend) 2016

Detailed geological mapping by Redstar geologists and consultants was completed during the summer of 2016. This mapping, in combination with an evaluation of historic mine maps, drill results, and the 2014 surface geochemical data, allowed Redstar to better outline the structural nature of the historically-mined vein system at the Apollo mine.

9.5 Redstar 2017

Redstar's 2017 exploration work was focused on the Shumagin trend. Ground magnetic and IP surveys were completed, soil and rock sampling was conducted, and a campaign of core drilling was completed.

9.5.1 Shumagin Geophysical and Geochemical Exploration 2017

At the Shumagin prospect, Redstar commissioned a ground magnetic survey on northwest-southeast lines that totaled 15.5 line-kilometers and extended for about 0.5 kilometers southwest of the Rhodo Breccia. The ground magnetic survey was conducted by RDF Consulting Ltd. ("RDF"), of Larder Lake, Ontario. Magnetic data were collected along 21 lines spaced 50 to 100 meters apart using a high resolution GEM GSMP-35 potassium magnetometer equipped with an integrated precision GPS unit. All data were corrected for the diurnal variation in the earth's magnetic field utilizing a GEM GSM-19 Overhauser magnetometer set to a three-second sampling rate. Ground magnetic results and an interpretation by Redstar are shown in Figure 9.5.

Nearly all of the area of the 2017 ground magnetic survey was also covered by an 8.75 line-kilometer IP and resistivity survey carried out by RDF. IP-resistivity data were collected utilizing a pole-dipole array on 11 of the ground magnetic grid lines. A Scintrex IPR-12 time-domain digital receiver and GDD5000 square-wave transmitter were used with a two second on/off time, six dipoles (n=6), and an "a"-spacing of 25 meters. This setup allowed for a maximum penetration depth of about 75 meters. The 2017 IP and resistivity results are shown with Redstar's interpretation in Figure 9.6.

Figure 9.5 2017 Ground Magnetic Survey of the Shumagin Prospect and Vicinity
(from Redstar, 2017; north is up)

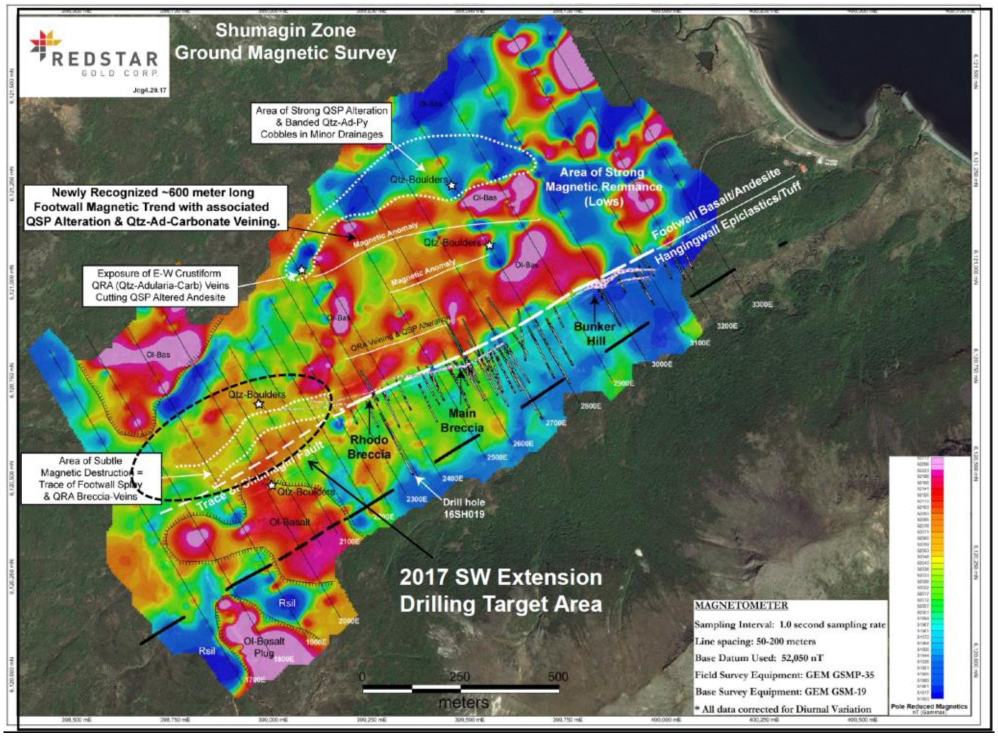
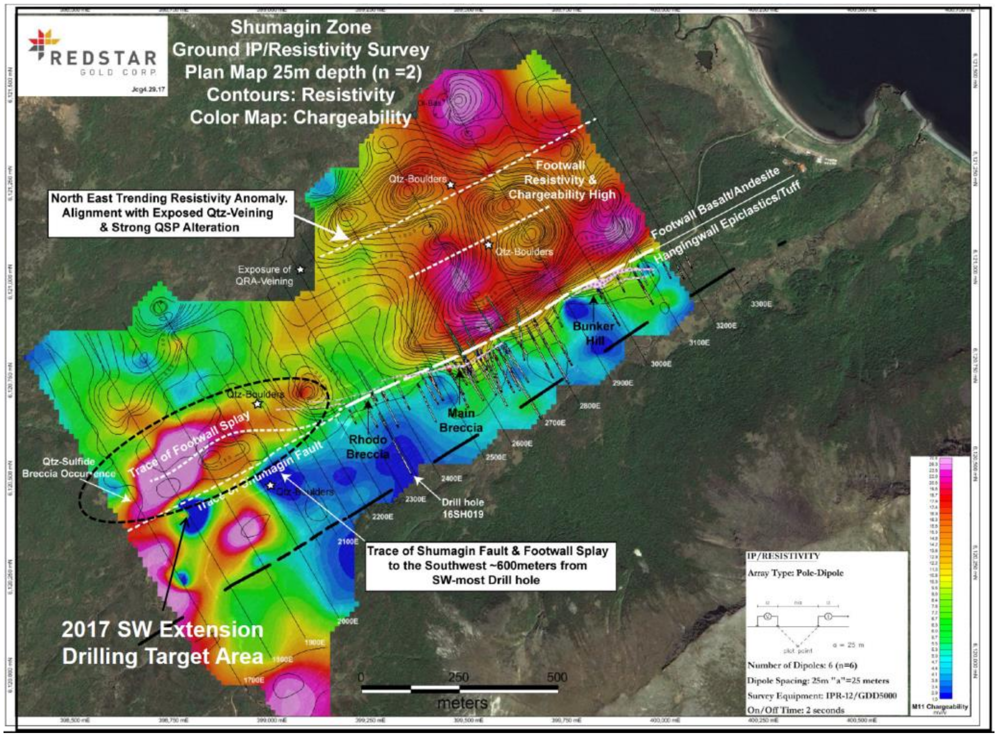


Figure 9.6 2017 IP-Resistivity Survey of the Shumagin Prospect and Vicinity
(from Redstar, 2017; north is up)



Both the ground magnetic and IP-resistivity data were processed by RDF using GeoSoft Oasis Montaj software. Subsequent to the data collection and preliminary processing, 2D and 3D inversion modeling was performed by RDF on the magnetic and IP data. The 3D modeling was performed using the GeoSoft Voxi inversion software and then exported as 3D DXF files and brought into FracSys and Adobe Illustrator for final output.

Shumagin – Red Creek – Saddle Area 2017 Soil Sampling

During 2017, Redstar and personnel from NAI and YPS collected approximately 600 soil and talus-fines samples taken on a grid that covered the area between the southwest edge of the 2014 Shumagin soil grid and the northeast edge of the 2016 soil grid northeast of Orange Mountain. The 2017 samples were collected at 25-meter spacing on the northwest-southeast ground-magnetics lines that were 50- to 100-meters apart. The results were merged with the 2014 and 2016 soil data and are shown in Figure 9.7 and Figure 9.8. Redstar used the soil data to define new anomalies and interpret extensions of fault zones that could be mineralized at depth. These are shown as Red Creek, Saddle Creek, and Northern Footwall anomalies in Figure 9.8, which also contain northeast-trending zones with elevated copper, lead, mercury, and zinc (Figure 9.7).

Figure 9.7 Merged 2017 Shumagin Soil Geochemistry Maps I
(from Redstar, 2018; north is up; IS = intermediate sulfidation; AA = advanced argillic)

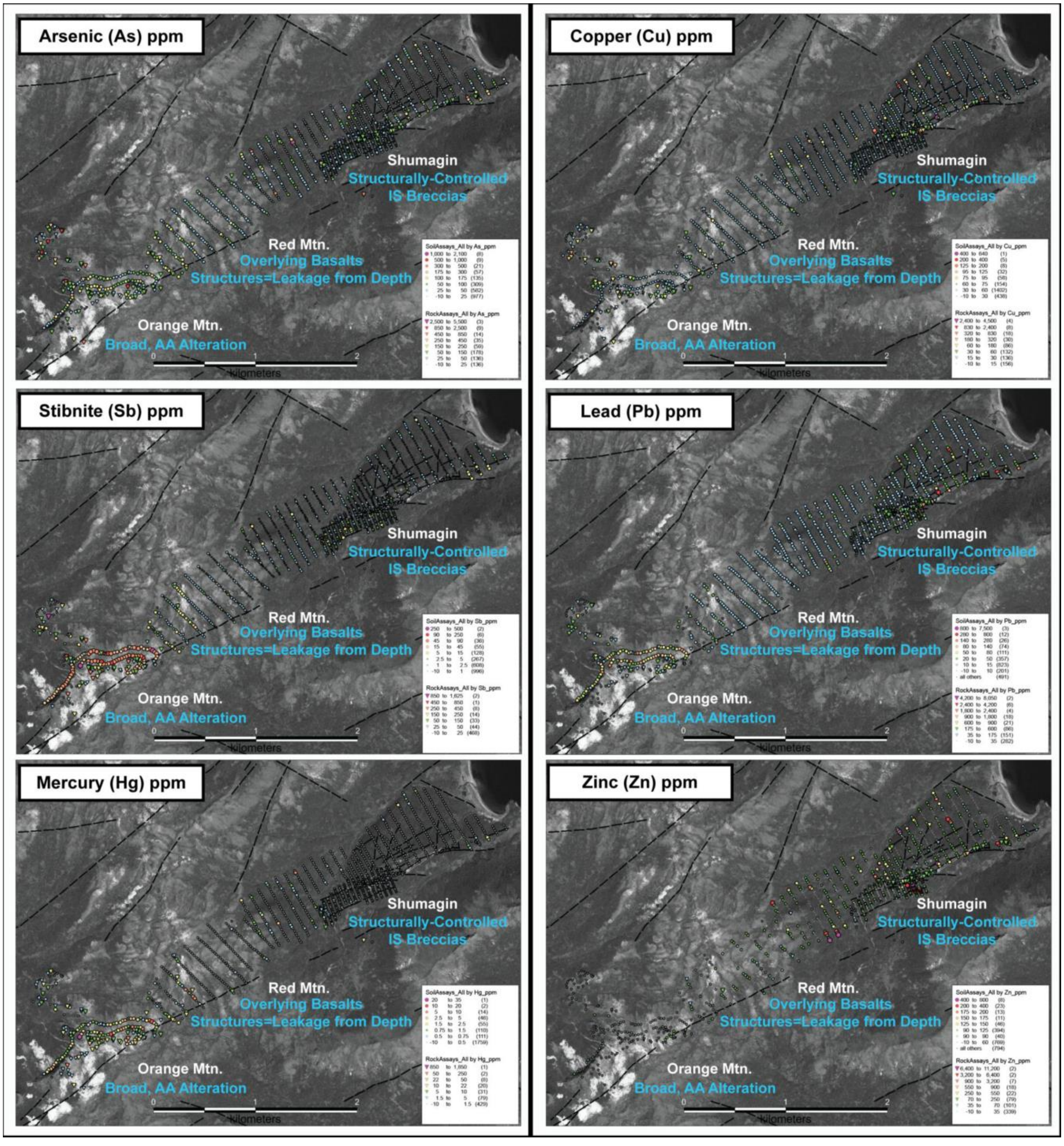
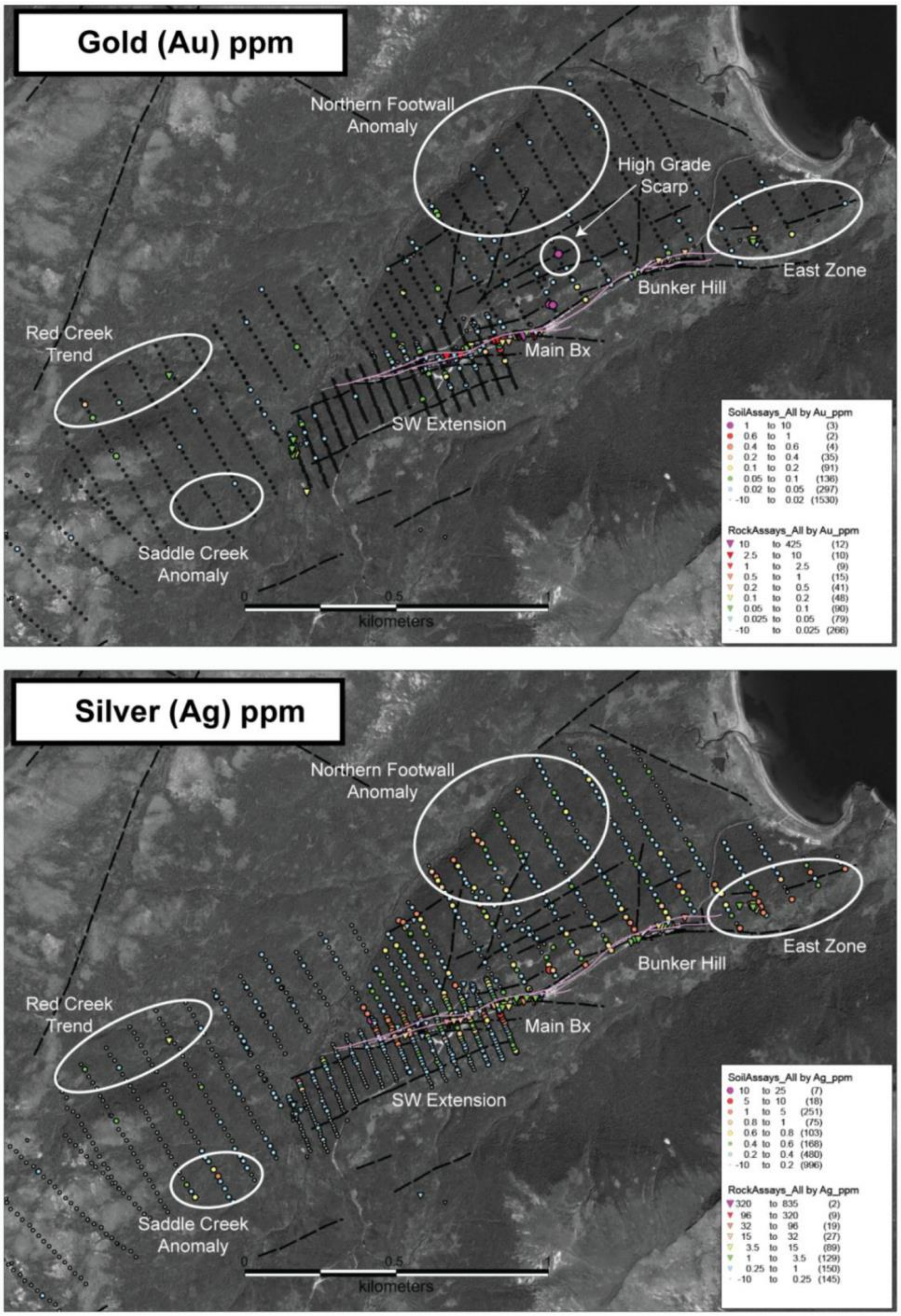


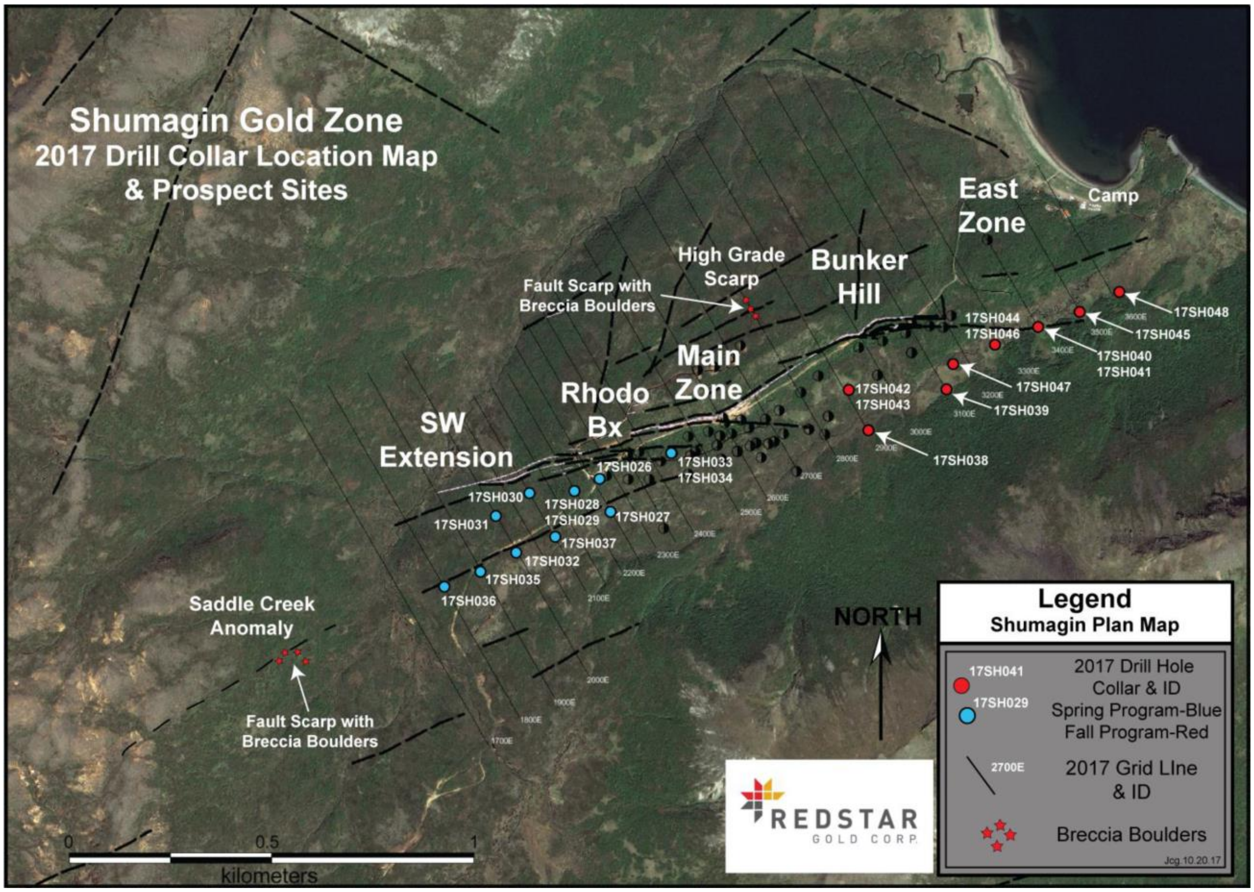
Figure 9.8 Merged 2017 Shumagin Soil Geochemistry Maps II
(from Redstar, 2018; north is up)



9.5.2 2017 Shumagin Core Drilling

Redstar drilled a total of 4,695 meters in 23 core holes in two stages at the Shumagin prospect in 2017. Drill collar locations for the 2017 drilling are shown in Figure 9.9. Details and significant intervals from the 2017 Shumagin drilling are summarized in Section 10.3.4.

Figure 9.9 2017 Shumagin Drill-Hole Locations
(from Redstar, 2018; north is up)



9.5.3 2016 - 2018 Short-Wave Infrared Reflectance Study, Shumagin Drill Samples

During 2016, Redstar initiated a short-wave infrared-reflectance ("SWIR") study of Shumagin drill core and coarse-reject samples by Kim Heberlein of Mapleridge, British Columbia. The study was continued in early 2018. Altogether, approximately 1,700 chips of drill core and rejects from 2011 through 2017 drilling were analyzed to gain information on mineral assemblages present in the various geological units, breccias, faults, and gold-bearing zones penetrated by the drilling. The majority of the samples were analyzed by Ms. Heberlein at the project site with a portable ASD TerraSpec™ Halo spectrometer. A portion of the work was done using a desk-top ASD TerraSpec 4 spectrometer at the University of British Columbia in Vancouver. In general, reflectance spectra were collected at 5-meter intervals down the lengths of the drill holes. Additional spectra were collected to investigate mineralogical questions at specific points in the drill core. The study also included analyses of soil samples.

The SWIR data were processed to correct for differences between the two spectrometers and then a combination of TSG™ and SPECMIN™ software and visual inspection of the reflectance spectra were used by Ms. Heberlein to determine the SWIR-readable mineral species in each sample. Redstar concluded that complex, but mappable, mineralogical patterns are present, and that these patterns relate to the evolution and distribution of hydrothermal fluids that interacted with the host rocks. In particular, paragenetically early colloform carbonate-sulfide breccias contain lower temperature, low-aluminum phengitic illite-smectite and higher chlorite contents, compared to later, Shumagin-style breccias. These later breccias contain higher temperature, phengitic illite-smectite with paragonitic illite halos and higher white-mica contents. Redstar noted that the highest gold and silver grades (>10 g Au/t) are associated with cooler-temperature, less crystalline white mica, Fe-Mg chlorite, and montmorillonite.

9.5.4 Orange Mountain 2017

A ground magnetic survey of 54.4 line-kilometers was conducted by RDF at Orange Mountain during 2017. The lines were oriented N30°W and run using the same equipment and methods as those used for the 2017 Shumagin survey. Redstar concluded that the magnetic survey at Orange Mountain was not useful for detecting and defining faults that could be mineralized.

9.5.5 Rising Sun (Apollo – Sitka Trend) 2017 Drilling

During 2017, Redstar drilled two shallow core holes at the Rising Sun portion of the Apollo-Sitka prospect, for a total of 234 meters. Details are summarized in Section 10.3.5.

9.6 Sampling Methods and Sample Quality 2011 - 2017

The authors have not reviewed the sampling methods, quality, and representativity of most of the surface sampling by Redstar at the Unga property because the authors were not able to witness any of the sampling, and the drilling that has been completed at most target areas is more relevant than the surface results to the conclusions summarized in this report. Also, the surface sampling results include numerous unmineralized samples that have not been discussed in the preceding sections of this report.

Mr. Gustin did inspect surface channel-sample sites along the outcropping vein-zone mineralization at Shumagin and found the sampling to have been properly marked in the field and taken representatively (continuous channeling at roughly constant depths and widths; channels taken perpendicular to mineralized orientations). Drilling is described in Section 10.0 and the evaluation of drilling samples is discussed in Section 11 and Section 12.

It is the authors' opinion that the surface samples collected by Redstar are adequate for designing further geochemical sampling, and for use in generating and evaluating potential targets for follow-up exploratory drilling.

10.0 DRILLING (ITEM 10)

This section is based on historical reports and information provided by Redstar as cited below. The authors have reviewed the reports and information and believe this summary accurately represents drilling carried out in the Unga project area.

10.1 Summary

Drilling at the Unga project has taken place from 1975 through 2017 and has been conducted by five historical operators and Redstar. As summarized in Table 10.1, a total of 30,344 meters have been drilled in 205 holes. All of the drilling has been done using diamond coring with wireline methods. Of the total, 72% of the holes and 69% of the meters were drilled at the Shumagin and Centennial deposits. Except for two holes drilled in the Apollo-Sitka area, Redstar's drilling (Table 10.1) has been limited to the Shumagin deposit, accounting for 54% of the holes and 64% of the meters drilled at Shumagin.

Figure 10.1 shows the locations of drilling throughout the Unga project, on both Popof and Unga Islands. More detailed maps showing the locations of drill holes in the Aquila, Apollo-Sitka, Centennial, and Shumagin areas are shown in Figure 10.2, Figure 10.3, Figure 10.4, and Figure 10.4, respectively.

10.2 Historical Drilling

This section summarizes drilling carried out within the Unga project area by operators prior to the acquisition of the property by Redstar. Collar data for all of the historical drilling is summarized in Appendix B.

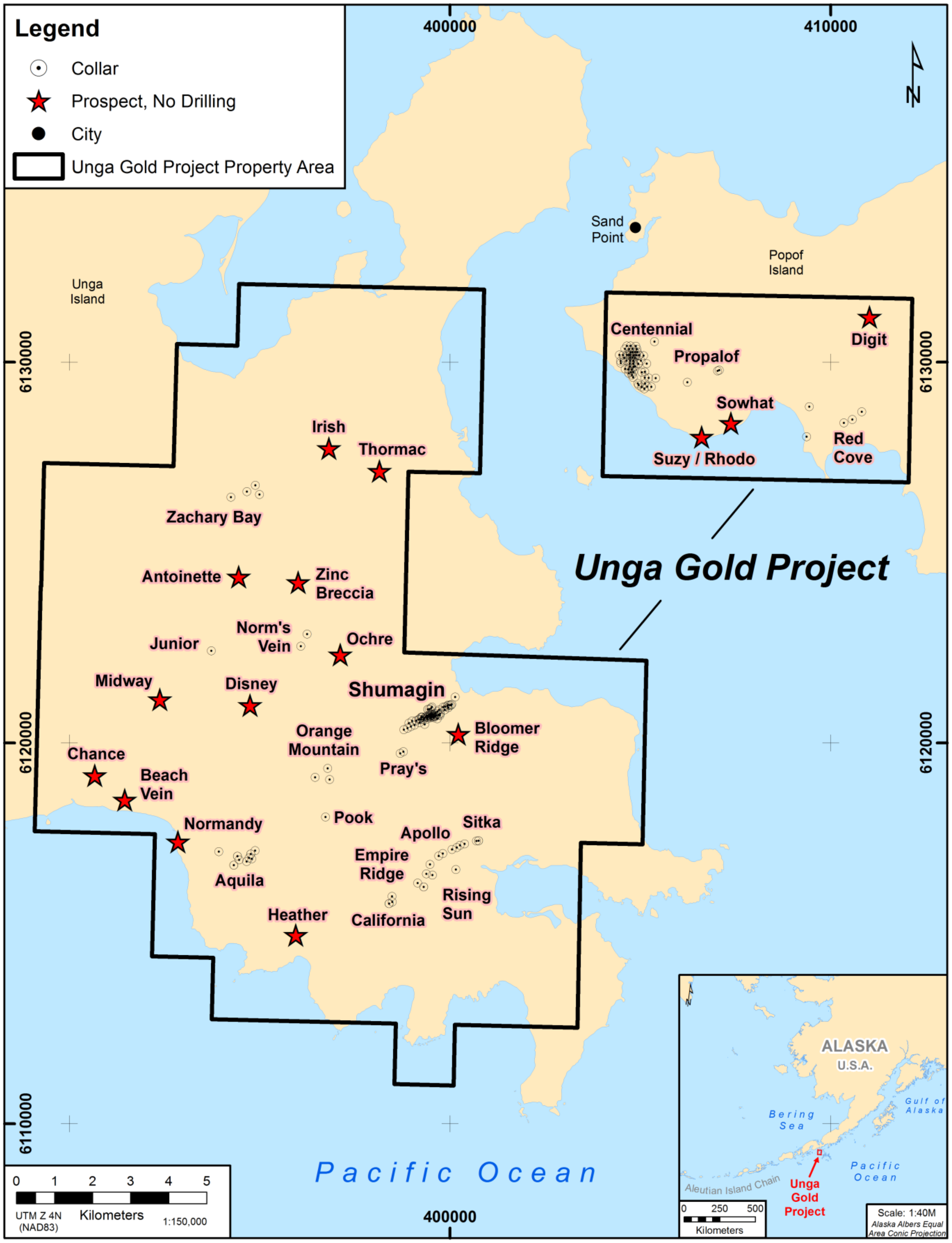
10.2.1 Peripheral Prospects 1975 - 1989

Zachary Bay 1975: The earliest drilling within the property was carried out by the Duval-Quintana joint venture in 1975 at the Zachary Bay prospect (Figure 6.1 and Figure 10.1). Four vertical core holes were drilled for a total of 291 meters. Canadian Longyear was the drilling contractor and a "BBS-1" (Boyles Brothers S-1?) core drill with helicopter support was used to recover AQ-size core. The best interval was found in hole DDH Z-1, which contained 100.3 meters mineralized with disseminated and veinlet chalcopyrite, and an average of 0.13% copper (Dirks and Richards, 1976). Two other holes contained as much as 3.05 meters at 0.102% copper, and the fourth hole was barren. In 1981, all of the Zachary Bay drill core was salvaged by RAA, re-logged, split and re-assayed on 3.05 meter intervals. All holes penetrated intrusive and/or extrusive rocks of intermediate composition with varying degrees of propylitic alteration (Trujillo et al., 1981). Based on the 1981 sampling and assays, hole DDH Z-1 was reported to average 0.110% copper and 0.28 g Au/t from the collar to the end of hole at 116.7 meters (Trujillo et al., 1981). A gold assay of 1.010 oz/ton at 140-150 feet in DDH Z-1, reported in Dirks and Richards (1976), was found to be a typographical error by Trujillo et al. (1981), based on RAA's assay of 0.01 oz Au/ton for the same interval. In 2011 or 2012, Redstar geologists re-examined the drill core and observed distinctive porphyry-style copper mineralization and potassic alteration in core from hole Z-1, including secondary biotite and magnetite.

Table 10.1 Unga Project Drilling Summary

Year	Company	Area	Core Holes	Core (m)
		Peripheral Prospects		
1975	Duval - Quintana	Zachary Bay	4	291.0
1980 - 1981	RAA-UNC-Teton	Aquila	12	1,356.7
1981	RAA-UNC-Teton	Junior, Pook, Pray's vein	3	285.3
1983	RAA-UNC-Teton	Norm's vein	2	236.5
1983	RAA-UNC-Teton	Orange Mountain	3	747.7
1983	RAA-UNC-Teton	Pray's vein	2	103.3
1988	BMGC	Red Cove	1	207.3
1989	BMGC	Propalof	3	369.1
1989	BMGC	Red Cove	4	614.2
		Peripheral Prospects Totals	***34***	***4,211***
1988 - 1989	BMGC	***Centennial***	***60***	***5,739***
		Apollo - Sitka		
1983	AAGM	Apollo - Sitka	21	4,913
2017	Redstar	Apollo - Sitka	2	234
		Apollo - Sitka Totals	***23***	***5,147***
		Shumagin		
1983 - 1987	AAGM	Shumagin	23	2,825.2
1989	Ballatar	Shumagin	16	2,338.4
1990	BMGC	Shumagin	1	311.5
2011	Redstar	Shumagin	10	2,074.5
2015	Redstar	Shumagin	8	1,497.6
2016	Redstar	Shumagin	7	1,505.0
2017	Redstar	Shumagin	23	4,694.8
		Shumagin Totals	***88***	***15,247***
		All Areas	**205**	**30,344**

Figure 10.1 Summary Location Map for Unga Project Drilling



Aquila 1980 – 1981

A total of 12 core holes were drilled with helicopter support in various parts of the Aquila prospect, located approximately 6 kilometers southwest of the Shumagin area (Figure 6.1; Figure 7.4; Figure 7.13 and Figure 9.1), by the joint venture of RAA and UNC-Teton ("RAA-UNC-Teton") in 1980 and 1981. The drilling totaled 1,356.7 meters (Table 10.1). In 1980, three holes were drilled in the "Amethyst" zone and one hole was drilled in the "Origin" zone (Figure 7.13). The 1980 drilling was conducted by Wink Brothers Drilling of Juneau, Alaska, using a Super-Hydrawink drill to recover NQ-diameter core. A Longyear 38 drill was used to drill nine NQ-diameter core holes in 1981, but the authors have no information on the drilling contractor. Three of the 1981 holes were drilled on the Amethyst vein, three were drilled on the Altair vein, and three holes were drilled on the Ankle Creek vein (Figure 7.13). All of the Aquila area holes were angled from -45° to -73° in dip. Reports by Andersen et al. (1980) and Trujillo et al. (1981) indicate that core recovery was poor in certain fault and fracture zones, and especially poor (<10%) in some gold-bearing intervals drilled in 1980.

The highest-grade interval at the Aquila prospect was an estimated true width of 0.43 meters of 109.7 g Au/t (1.4 feet of 3.2 oz Au/ton) in hole AQAME-2-80 from 48.3 to 48.8 meters (see Trujillo et al., 1981). The next highest-grade interval was in hole AQAME-1-80, with 5.2 meters of 5.55 g Au/t from 38.7 to 43.9 meters (Stevens, 2012; based on Trujillo et al., 1981). Several holes penetrated intervals of low-grade gold-silver mineralization.

Detailed descriptions of the down-hole geology and mineralization were given in the 1981 RAA project report (Trujillo et al., 1981). The 1980-1981 drilling and trenching tested a strike length of only about 425 meters of the quartz veins, within a total Aquila vein system strike length of about 4.8 kilometers, and most of the holes were designed to test the veins at only 30.5 to 61 meters below the surface. RAA recognized that the best results (the "Amethyst shoot") occurred at the intersection of the Amethyst and Ankle Creek veins, concluded that there was potential for the discovery of a commercial gold-silver deposit, and recommended that significant follow-up drilling and bull-dozer trenching be done.

Pook Prospect 1981

The Pook vein prospect, located on the Shumagin trend south of Orange Mountain and between the Aquila and Shumagin areas (Figure 6.1, Figure 9.1, and Figure 10.1), was drilled by the RAA-UNC-Teton joint venture in 1981. A single angled core hole with a total depth of 111.3 meters (Pook-1) was drilled using a helicopter-supported Longyear 38 core drill. NQ-size core was recovered, but MDA has no information on the drilling contractor.

Descriptions of the geology and mineralization at Pook were summarized in the RAA report by Trujillo et al. (1981). The 1981 drill hole showed the Pook vein zone dips steeply south, or is subvertical, and has been strongly sheared and brecciated by post-mineral fault displacement. Although core recovery was poor, the vein was found to consist of multiple individual quartz veins, or vein groups, as much as 2.1 meters in width. The best intervals consisted of 0.69 g Au/t from 80.8 to 83.2 meters, and 0.41 g Au/t from 83.8 to 85.3 meters. A silver grade of about 1.54 g Ag/t was reported for these intervals by Trujillo et al. (1981), who stated:

"This anomalous zone is not spread evenly along the full width of the wide vein zone, but rather is located near the footwall."

It is not clear if the reported vein and assay widths were true widths, or core lengths.

Junior Prospect 1981

A single angled core hole (JV-1-81) was drilled to a depth of 159.1 meters at the Junior prospect (Figure 6.1; Figure 7.17 and Figure 10.1), about 4.5 kilometers northwest of Orange Mountain, by the RAA-UNC-Teton joint venture in 1981. MDA assumes the hole was drilled with a helicopter-supported Longyear 38 core drill, as used elsewhere on Unga Island by the joint venture in 1981. Trujillo et al. (1981) reported:

"Drilling revealed a zone of locally silica flooded pyritic andesite with a core thickness of at least 200 feet. The zone contains numerous quartz-pyrite-zeolite veins and stringers, locally in stockwork proportions. Geochemical data from drill core shows only weakly detectable gold to 0.03 ppm and silver from weakly detectable to 2.7 ppm. ...Although results for gold and silver are not very encouraging, the Junior system on geological and mineralogical grounds has the potential to contain significant gold mineralization at depth."

Pray's Vein 1981 and 1983

The Pray's Vein prospect is located on the southern margin of the Shumagin trend between Orange Mountain and the Shumagin area (Figure 6.1 and Figure 10.1). An attempt was made by the RAA-UNC-Teton joint venture in 1981 to drill an inclined core hole in a siliceous hill, but the hole was stopped at a depth of 14.9 meters due to slow penetration through a zone of what Trujillo et al. (1981) interpreted as hot-spring silica replacement. It is assumed the hole was drilled with a helicopter-supported Longyear 38 core drill, as used elsewhere on Unga Island by the joint venture in 1981.

The joint venture drilled a second inclined core hole in 1983 to a depth of 88.4 meters. Although records are incomplete, Boyles Brothers Drilling was the contractor for the 1983 drilling, which was done with a helicopter-supported Boyles 25 core rig. HC and NC core was recovered using wireline methods.

The best interval of the two holes was 1.5 meters at 0.315 g/ Au/t and 2.4 g Ag/t in hole PV-2-83, beginning at 25.9 meters down the hole (Petersen et al., 1983a, 1983b). The relationship of interval length to true thickness of the mineralization is not known. No veins of significant width were penetrated, although both holes encountered silicified rocks with fractures filled with chalcedony and barite (Peterson et al., 1983a).

Norm's Vein 1983

The RAA-UNC-Teton joint venture drilled two southeast-directed core holes at the Norm's Vein prospect in 1983, approximately 4.0 kilometers northwest of the Shumagin deposit (Figure 6.1 and Figure 10.1). Boyles Brothers Drilling was the contractor. The holes were drilled with a helicopter-supported Boyles 25 core rig. HC and NC core was recovered using wireline methods.

Both holes penetrated a vein at approximately 50 to 60 meters down-dip from surface exposures of the vein (Peterson et al., 1983a). In the first hole, the vein interval returned 1.4 meters true width with an average of 0.37 g Au/t and 11 g Ag/t, beginning at 63.4 meters down the hole, accompanied by small amounts of sphalerite, galena, chalcopyrite and barite (Peterson et al., 1983b; corrected to drill log entries). In the second hole, silicified andesite tuff adjacent to the hanging wall margin of the vein assayed 0.31 g Au/t and 27.8 g Ag/t over 3.05 meters. The vein contained visible sphalerite, galena, chalcopyrite, pyrite and barite, but assayed only 0.155 g Au/t and 31.0 g Ag/t over 3.05 meters (Peterson et al., 1983b). The best gold assay from the second hole was from a silicified zone a few meters into the hanging wall of the vein, with 1.41 g Au/t and 4.5 g Ag/t over 0.6 meters, beginning at 62.8 meters down the hole. It is not clear if the reported vein and assay widths were true widths or core lengths.

Orange Mountain 1983

In 1983 the RAA-UNC-Teton joint venture drilled three core holes along the crest of Orange Mountain for a total of about 748 meters. Boyles Brothers Drilling was the contractor. The holes were drilled with a helicopter-supported Boyles 25 core rig. NC and BC diameter core was recovered using wireline methods.

Anomalous gold was intersected in holes OM-2-83 and OM-3-83. In hole OM-2-83, "gossanous" silica breccia from 238.7 meters to 240.2 meters averaged 0.405 g Au/t, with mercury elevated to >5 g Hg/t, low arsenic and low silver, copper, lead, and zinc (Peterson et al., 1983a; 1983b; corrected to drill log entries). Hole OM-3-83 intersected 0.34 g Au/t over 1.7 meters, accompanied by elevated mercury and arsenic (Peterson et al., 1983a; 1983b; corrected to drill log entries). There were four other narrow anomalous zones in the hole, with a high of 0.355 g Au/t over 1.5 meters. Hole OM-1-83 had no significant gold, but elevated mercury was present to 75 meters.

Red Cove 1988 – 1989 (Popof Island):

Five widely-spaced core holes were drilled at the Red Cove prospect by BMGC in 1988 and 1989 for a total of 852 meters (Ellis and Apel, 1989). Drill logs indicate that N- and B-diameter core was recovered, but MDA has no information on the drilling contractor or type of drill.

All five holes penetrated advanced argillic alteration assemblages, including vuggy residual quartz, and abundant pyrite. According to Margolis (2014):

> "*...Inland hole RC-3 was the only hole to intersect anomalous gold, with 15 feet of 166 ppb and 20 feet of 162 ppb. RC-3 contains strong Hg-As with the gold zones; Hg reaches 4.3 ppm Hg and As reaches 900 ppm. There is no increase in gold with depth. Trace elements available for the 5 holes indicate widespread anomalous Hg (to >5 ppm) and As (to >2000 ppm), locally elevated Pb-Zn, very low Ag and Mo and locally elevated Sb (hole 2). Cu is weakly but consistently anomalous in hole 2, averaging 104 ppm; there is no significant Mo. For holes 2 through 5, for which we have full trace elements, the strongest correlation with Au is Cu followed by Ag, Sb and Pb. Although overall trace-element values are low, this Cu-Au correlation is certainly permissive of a connection to an underlying porphyry system. Orange Mountain drillholes are similar geochemically to Red Cove in that there is elevated Hg-As and weak gold, but Red Cove contains the locally elevated Cu-Pb-Zn, which do not occur at Orange Mountain.*"

Propalof 1989 (Popof Island):

BMGC drilled three shallow core holes for a total of 369 meters at the Propalof prospect in 1989. Drill logs indicate that NX-diameter core was recovered, but MDA has no information on the drilling contractor or type of drill.

Two of the shallow holes intersected anomalous gold. Hole Prop-1 had anomalous gold from 40.2 to 73.5 meters, associated with elevated As and Hg, but very low Ag, Cu, Pb, and Zn. The best interval assayed 1.2 g Au/t over 3.4 meters in propylitized basalt that is cut by irregular ≤2-centimeter wide opaline silica-pyrite veins. Other zones contained vuggy silica-pyrite veins. Hole Prop-3 had weak anomalous gold with a maximum of 1.2 g Au/t over 0.9 meters in basalt/andesite with a 2-centimeter quartz-adularia vein with minor pyrite along the edges.

10.2.2 Apollo – Sitka 1983

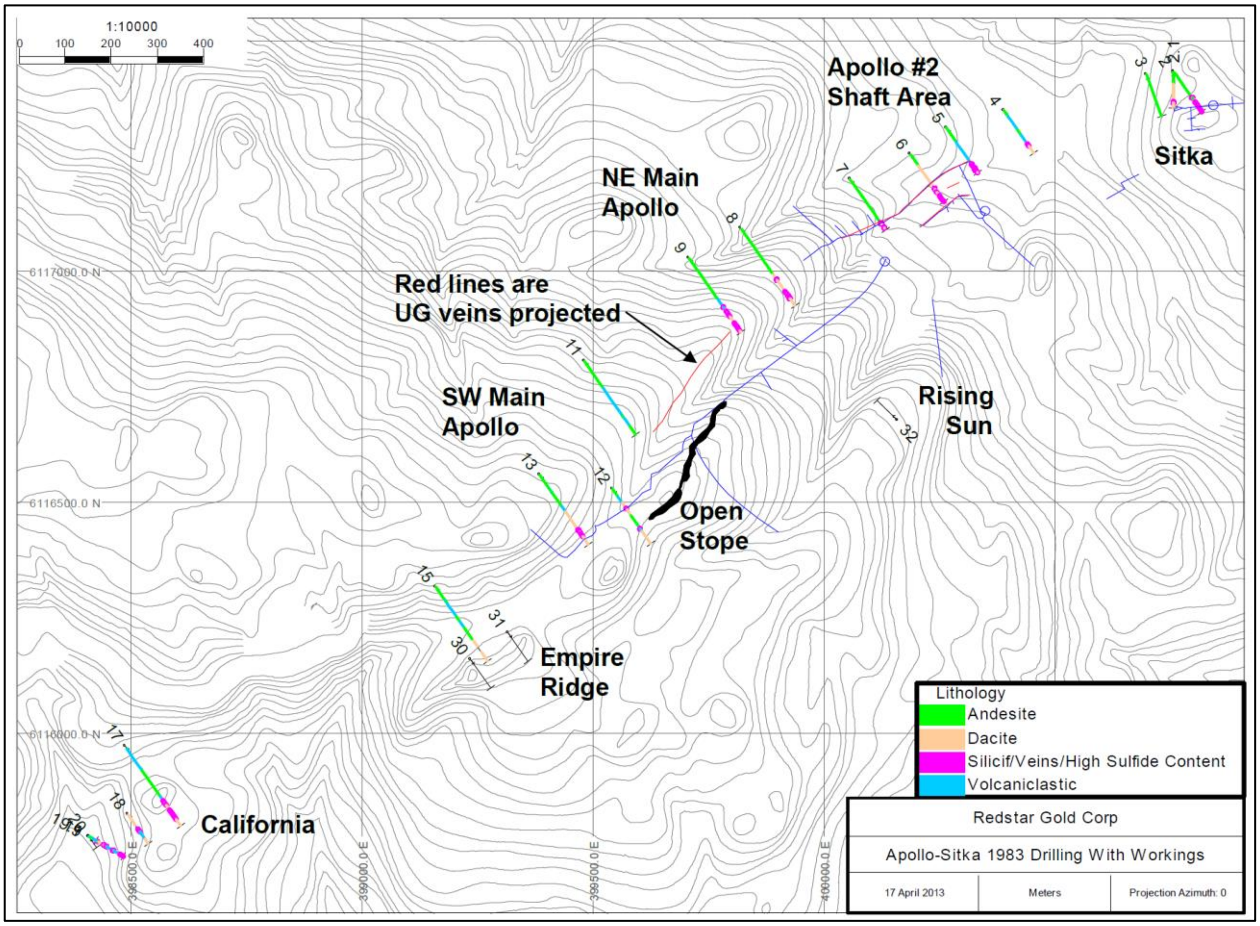
Redstar's data files indicate that AAGM drilled a total of 4,913 meters in 21 inclined core holes spread out over a lateral distance of approximately 3.2 kilometers in the Apollo-Sitka trend in 1983. This differs slightly from the total of 20 holes reported by Bowdidge (1993). Apollo and Sitka area hole locations are shown in Figure 10.2. MDA has no information on the drilling contractor, the type of core drill, the size(s) of core recovered, and the methods and procedures used for this drilling.

At the Apollo and Sitka mines, AAGM's drilling attempted to identify mineralization down-dip from the historic underground workings. Based on assay records, it appears that five of the holes were not sampled and assayed. Sixteen holes were only partially assayed, with sampling apparently focused on larger veins containing sulfides.

The best gold interval was from 14.0 to 14.9 meters in hole AS20, which assayed 1.7 g Au/t. Silver values of 17 to 93 g Ag/t were found in five holes over intervals of 0.3 to 1.2 meters, accompanied by copper, lead, and zinc in the range of 0.3 to 23.6%. The intervals stated above are drill intervals. True widths are estimated to be approximately 70 to 80% of the drill intervals. Intervals relevant for further exploration of the Apollo-Sitka trend are listed in Table 10.2.

Figure 10.2 Historical Drill-Hole Map for the Apollo – Sitka Area

(from Redstar, 2013)



Note: hole numbers shown at collars; 500 meter grid for scale; north is up.

Table 10.2 Apollo – Sitka Area Historical Drill Intervals of Interest
(nd = no data; lead, zinc and copper listed only where their sum is ≥0.25%)

DH ID	From (m)	To (m)	Int (m)	Au g/t	Ag g/t	Pb %	Zn %	Cu %
AS02	131.4	133.2	1.8	0.010	7.31	0.95	1.93	0.39
AS02A	104.9	108.8	4.0	0.018	31.21	12.53	1.83	0.56
AS04	197.8	198.1	0.3	0.010	n.a.	0.44	0.63	n.a.
AS06	226.5	230.7	4.3	0.034	n.a.	0.34	0.16	n.a.
AS07	232.4	233.2	0.8	0.010	n.a.	0.26	0.11	0.24
and	234.7	238.4	3.7	0.010	n.a.	0.28	0.49	0.14
and	257.0	261.8	4.9	0.012	2.89	1.25	1.20	0.13
including	257.6	257.9	0.3	0.100	46.97	17.60	14.00	0.74
AS08	274.6	275.2	0.6	0.034	n.a.	0.96	0.86	n.a.
and	356.3	357.5	1.2	0.069	13.03	n.a.	n.a.	n.a.
and	358.8	360.7	2.0	0.034	0.99	0.28	0.13	0.07
and	362.0	362.4	0.5	0.240	45.94	0.30	0.30	0.05
and	363.6	364.9	1.2	0.034	n.a.	0.08	0.14	n.a.
and	367.3	372.2	4.9	0.051	n.a.	0.30	0.41	0.06
and	373.1	375.8	2.7	0.019	n.a.	0.16	0.28	n.a.
AS09	262.0	262.3	0.3	0.034	10.29	0.70	1.36	0.84
and	364.7	367.9	3.2	0.034	n.a.	0.28	0.19	0.08
and	368.2	376.7	8.5	0.047	n.a.	0.26	0.19	0.07
and	382.5	383.7	1.2	0.034	n.a.	0.16	0.18	n.a.
and	386.2	389.8	3.7	0.069	n.a.	0.19	0.23	n.a.
AS12	84.1	85.3	1.2	0.343	92.57	0.40	0.32	n.a.
and	85.7	86.9	1.2	0.137	40.46	0.22	0.14	n.a.
AS15	324.0	324.6	0.6	0.034	20.57	4.00	3.10	0.70
and	330.1	331.6	1.5	0.034	n.a.	0.10	0.30	n.a.
and	332.8	333.8	0.9	0.034	n.a.	n.a.	0.44	n.a.
AS19	34.8	35.7	0.9	0.230	n.a.	n.a.	n.a.	n.a.
AS20	11.3	14.9	3.7	0.555	n.a.	n.a.	n.a.	n.a.
including	14.0	14.9	0.9	1.700	n.a.	n.a.	n.a.	n.a.
and	25.9	27.4	1.5	0.380	n.a.	n.a.	n.a.	n.a.
and	32.0	33.8	1.8	0.120	n.a.	n.a.	n.a.	n.a.
and	42.4	43.9	1.5	0.240	n.a.	n.a.	n.a.	n.a.

Note: Relation of reported intervals to true thickness not known = no assays. Some gold assays were originally reported to AAGM in ounces per ton and were later converted to grams per tonne. It is unclear if gold assays of 0.034 g/t were originally reported as 0.001 oz Au/ton, or <0.001 oz Au/ton.

10.2.3 Centennial 1988 – 1989

In 1988 and 1989, BMGC conducted diamond-core drilling at the Centennial prospect on Popof Island (Table 10.1). Figure 10.3 shows the location of the drill holes. A total of 5,739 meters were drilled in 60 core holes. Approximately 58% of the holes were drilled with vertical to -80° dips; the balance of the holes were drilled at shallower angles. NQ-size core was recovered during the 1988 drilling and HQ core was recovered during the 1989 drilling, but MDA is unaware of the type of drills used, or the contractor(s) that conducted the drilling.

BMGC used the drilling assays and assays from trenches to calculate an historical resource estimate for gold at the Centennial prospect (Ellis and Harris, 1989; see Section 6.2). A summary of important drill intercepts is presented in Table 10.3. Silver values are not shown in Table 10.3 because although anomalous, they are too low to be of economic significance. The median silver value is 1.8 g Ag/t for drill samples with gold assays ≥ 1.0 g Au/t, and only 0.75 g Ag/t for samples with ≥ 0.20 g Au/t. The authors do not know the relationship between reported drill intervals and the true thickness of mineralization.

Figure 10.3 Map of Historical Centennial Drill Holes
(from Stevens, 2012)

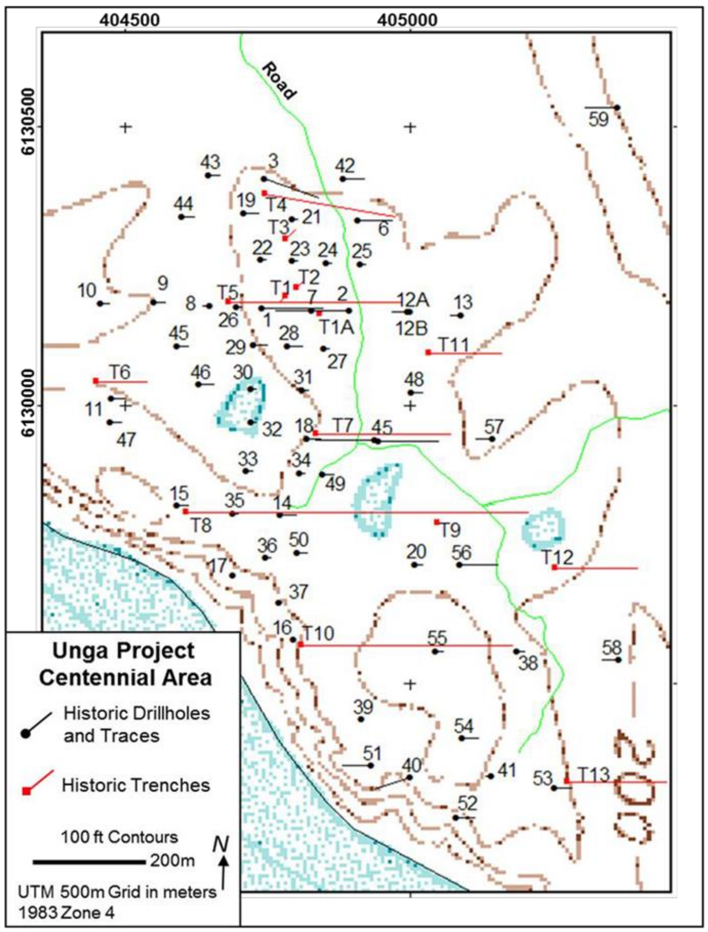


Table 10.3 Summary of Significant Drill Intercepts, Centennial Prospect

DH ID	From (m)	To (m)	Int (m)	Au g/t	DH ID	From (m)	To (m)	Int (m)	Au g/t
CENT-1	0.0	61.3	61.3	1.08	CENT-18	22.4	35.4	13.0	0.52
including	36.6	48.2	11.6	2.48	and	134.6	139.0	4.4	0.51
CENT-2	1.5	16.8	15.2	1.97	CENT-19	17.4	30.2	12.8	0.73
including	10.7	16.8	6.1	4.15	CENT-20	3.4	14.0	10.7	1.53
and	29.6	38.1	8.5	0.97	and	44.5	56.7	12.2	0.46
CENT-3	9.1	18.3	9.1	0.79	CENT-22	0.0	17.1	17.1	0.57
CENT-4	74.4	91.4	17.1	0.59	CENT-23	0.0	7.0	7.0	1.49
CENT-5	34.7	44.2	9.4	0.59	and	17.4	26.2	8.8	0.53
and	56.4	65.5	9.1	0.40	and	29.6	40.1	10.5	0.45
CENT-6	0.0	6.1	6.1	0.46	CENT-24	29.3	34.9	5.6	1.00
and	20.4	37.2	16.8	0.83	CENT-26	0.0	4.9	4.9	0.76
and	68.6	73.2	4.6	5.13	and	12.5	27.6	15.1	0.57
and	81.7	93.0	11.3	0.50	CENT-28	13.7	23.2	9.4	1.08
CENT-7	0.0	32.6	32.6	0.52	CENT-29	0.0	25.9	25.9	0.52
including	27.7	29.4	1.7	3.58	CENT-30	1.8	22.3	20.4	1.23
and	36.0	47.2	11.3	0.71	including	1.8	10.4	8.5	2.30
and	52.0	64.6	12.6	0.30	CENT-34	0.0	53.9	53.9	0.62
and	160.6	166.4	5.8	0.88	including	26.2	32.0	5.8	1.92
CENT-8	18.6	24.7	6.1	1.06	CENT-36	27.7	56.7	29.0	0.58
CENT-14	6.1	23.2	17.1	0.80	CENT-37	18.6	30.8	12.2	0.82
including	17.1	23.2	6.1	1.68	including	27.7	30.8	3.0	2.69
and	29.3	36.6	7.3	0.41	CENT-41	12.5	18.6	6.1	2.17
and	51.5	61.7	10.2	0.40	CENT-48	6.7	16.2	9.4	0.38
CENT-16	0.0	12.2	12.2	1.12	CENT-49	3.0	22.9	19.8	0.61
CENT-17	0.0	9.4	9.4	0.70	CENT-51	31.5	54.3	22.7	0.61

Note: Relation of reported intervals to true thickness is not known.

10.2.4 Shumagin 1983 - 1990

Alaska Apollo Gold Mines: The first holes at the Shumagin vein prospect were drilled by AAGM in 1983. During 1983 and 1987, AAGM drilled a total of 2,825 meters in 23 core holes at the Shumagin prospect (Table 10.1) as shown in Figure 10.4. All of the drill holes were inclined. MDA has no information on the drilling contractor, the type of core drill utilized, and the methods and procedures used for this drilling. During the 1987 phase of drilling, all core was NX diameter except for the bottom 41 meters of DDH42, which was reduced to BX diameter.

According to Schippers (1985), in 1985 AAGM also drilled 44 shallow air-track percussion holes at Shumagin for a total of 557 meters. A Joy ECM-350 air-track drill was used, but MDA has no information on the diameter and type of bits used, the drilling contractor, or the methods and procedures used for drilling and sampling. MDA is also unaware of any documentation of assays from the 1985 air-track holes.

All but one of the AAGM core holes penetrated the composite Shumagin vein and breccia, which occupy the Shumagin fault, down-dip from mineralized surface outcrops. In addition to major vein and breccia intercepts, some highly mineralized and others barren or nearly barren, the 1983 drilling began to elucidate the stratigraphy of the hanging wall sequence southeast of the Shumagin fault. The third hole (DDH23) can be considered a discovery hole with 19.54 g Au/t and 64.8 g Ag/t over 5.2 meters, including 61.7 g Au/t and 192 g Ag/t over 1.5 meters from 95.7 to 97.2 meters down hole. The highest grade interval was in in hole DDH35 with 192.62 g Au/t and 5,403 g Ag/t from 77.3 to 77.9 meters down hole. Significant drilling intercepts and intervals of interest for further exploration are listed in Table 10.4.

Figure 10.4 Map of Historical Shumagin Drilling 1983 - 1990

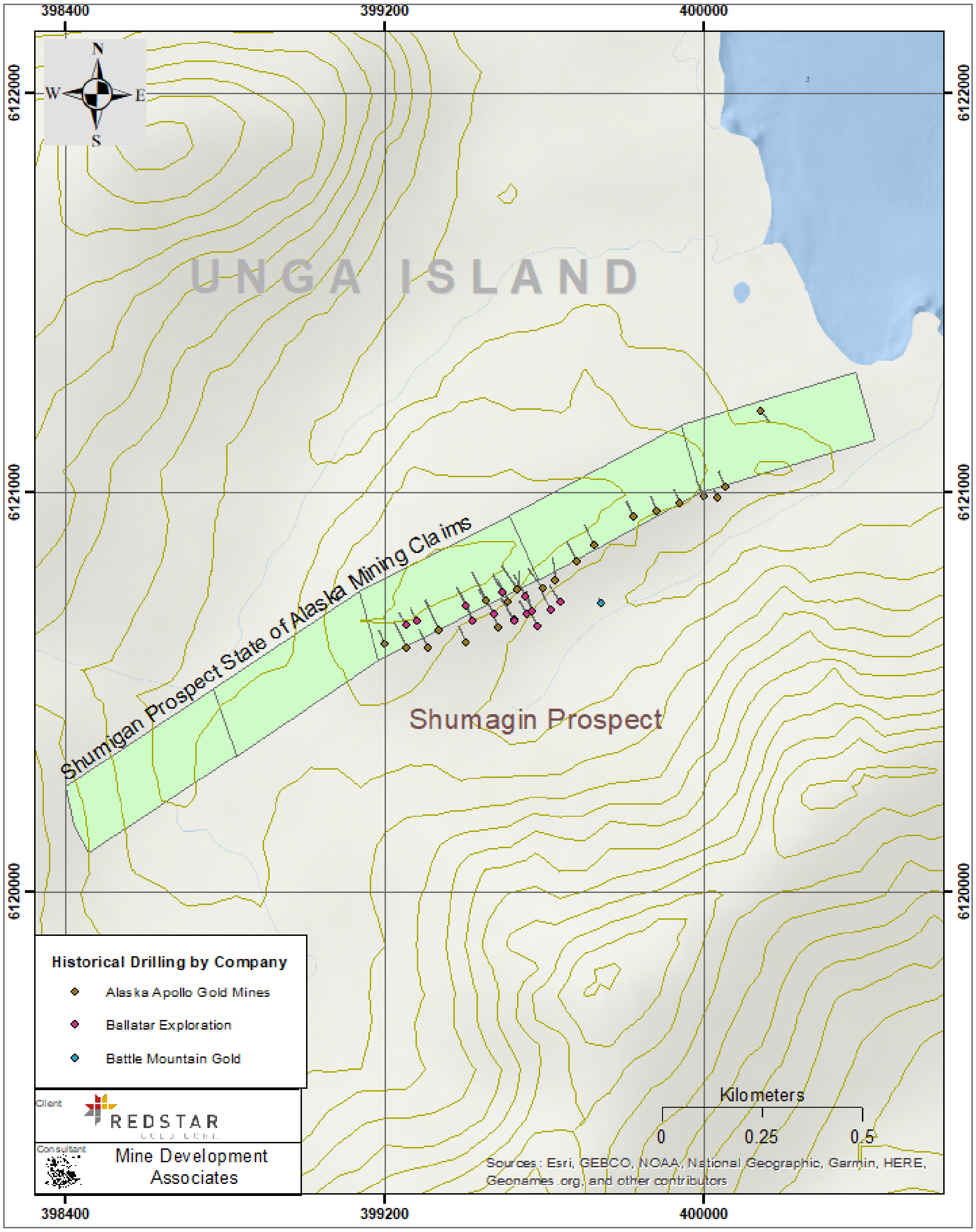


Table 10.4 Alaska Apollo Gold Mines 1983 and 1987 Shumagin Drill Intervals of Interest

(n.a. = no assay; lead, zinc and copper listed only where their sum is ≥0.25%)

Alaska Apollo Gold Mines 1983, 1987								
Hole ID	From_m	To_m	Int (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %
DDH21	29.0	30.5	1.5	0.03	5.5	0.11	0.10	0.28
and	38.1	39.6	1.5	0.75	5.5	0.01	0.12	0.12
DDH22	45.1	47.2	2.1	0.75	16.5	0.05	0.20	0.14
DDH23	71.5	75.9	4.4	0.52	12.0	0.15	0.46	0.37
and	78.9	82.0	3.0	0.03	7.9	0.04	0.62	0.62
and	89.3	91.4	2.1	1.87	6.3	n.a.	n.a.	n.a.
and	93.6	98.8	5.2	19.54	64.8	n.a.	n.a.	n.a.
including	95.7	97.2	1.5	61.71	192.0	n.a.	n.a.	n.a.
DDH24	73.8	76.8	3.0	0.10	4.5	0.08	0.15	0.20
and	83.2	86.6	3.3	0.20	9.8	0.05	0.17	0.23
and	87.8	89.0	1.2	0.75	3.4	0.01	0.10	0.18
and	94.5	106.1	11.6	0.83	7.3	n.a.	n.a.	n.a.
DDH25	72.2	75.1	2.9	0.03	3.2	0.07	0.10	0.26
and	86.4	88.7	2.3	1.59	4.8	n.a.	n.a.	n.a.
DDH26	49.1	49.8	0.8	37.71	20.6	n.a.	n.a.	n.a.
and	65.8	66.3	0.5	4.73	3.4	n.a.	n.a.	n.a.
and	67.2	68.6	1.4	1.16	2.7	n.a.	n.a.	n.a.
and	69.5	71.9	2.4	0.43	3.1	n.a.	n.a.	n.a.
and	72.8	74.1	1.2	0.82	3.4	n.a.	n.a.	n.a.
and	77.7	78.9	1.2	11.49	15.1	n.a.	n.a.	n.a.
and	80.2	84.0	3.8	0.04	6.4	0.11	0.16	0.29
DDH27	24.1	25.6	1.5	0.03	26.1	2.04	0.62	1.66
and	26.4	27.0	0.6	0.07	11.7	0.32	0.36	0.82
and	29.9	32.9	3.0	0.09	10.8	0.76	0.44	0.35
and	39.9	41.8	1.8	3.91	7.3	0.03	0.09	0.20
DDH28	38.1	38.5	0.4	0.55	9.6	0.02	0.08	0.24
and	40.5	40.9	0.4	0.51	2.1	0.06	0.14	1.00
and	41.5	42.4	0.9	5.14	15.8	0.05	0.10	0.16
and	42.4	50.0	7.6	5.24	26.6	n.a.	n.a.	n.a.
including	44.8	48.2	3.3	10.30	44.0	n.a.	n.a.	n.a.
and	50.0	51.2	1.2	2.67	17.1	0.04	0.12	0.12
and	52.4	57.0	4.6	3.45	34.6	0.04	0.12	0.15
including	53.3	54.6	1.2	1.65	68.6	0.07	0.14	0.22
also	55.9	56.7	0.8	10.97	29.5	0.04	0.18	0.20
DDH30	54.9	57.9	3.0	2.02	4.7	n.a.	n.a.	n.a.
and	58.4	60.7	2.3	0.46	4.3	n.a.	n.a.	n.a.
DDH31	73.8	74.7	0.9	1.65	5.8	n.a.	n.a.	n.a.
DDH32	35.2	35.7	0.5	0.03	1,446.9	n.a.	n.a.	n.a.

Alaska Apollo Gold Mines 1983, 1987								
Hole ID	**From_m**	**To_m**	**Int (m)**	**Au g/t**	**Ag g/t**	**Cu %**	**Pb %**	**Zn %**
DDH34	59.1	60.3	1.2	10.63	163.2	n.a.	n.a.	n.a.
and	78.8	81.7	2.9	9.42	19.1	n.a.	n.a.	n.a.
including	80.8	81.7	0.9	17.66	25.4	n.a.	n.a.	n.a.
and	83.2	84.6	1.4	3.77	9.6	n.a.	n.a.	n.a.
DDH35	77.3	78.2	0.9	129.41	3,628.2	n.a.	n.a.	n.a.
including	77.3	77.9	0.6	192.62	5,403.4	n.a.	n.a.	n.a.
and	87.9	88.7	0.8	3.60	72.7	n.a.	n.a.	n.a.
and	106.8	110.3	3.5	1.04	9.1	n.a.	n.a.	n.a.
DDH37	85.3	89.9	4.6	1.48	21.6	n.a.	n.a.	n.a.
DDH38	69.9	72.2	2.3	1.39	4.1	n.a.	n.a.	n.a.
DDH39	175.7	178.3	2.6	3.29	5.2	n.a.	n.a.	n.a.
and	179.4	182.6	3.2	0.57	13.4	n.a.	n.a.	n.a.
DDH41	184.4	185.0	0.6	1.30	2.1	n.a.	n.a.	n.a.
DDH42	124.2	126.2	2.0	5.97	65.2	n.a.	n.a.	n.a.
and	128.6	136.9	8.2	15.80	18.8	n.a.	n.a.	n.a.
including	135.6	136.9	1.2	22.32	22.6	n.a.	n.a.	n.a.
and	145.7	146.9	1.2	1.05	1.4	n.a.	n.a.	n.a.
and	168.3	175.6	7.3	0.95	2.0	n.a.	n.a.	n.a.
including	169.6	170.1	0.5	6.27	2.1	n.a.	n.a.	n.a.

Note: Some gold assays were originally reported to AAGM in ounces per ton and were later converted to grams per tonne. Relation of reported intervals to true thickness not known.

Taken together, the 1983 and 1987 drilling indicated the presence of a multi-stage, epithermal gold-silver vein and stockwork-breccia system of potential economic interest with extents of at least 400 meters laterally, 200 meters down dip, and up to several meters in true thickness. Variable amounts of base metals were found as well, in many cases in the range of 0.1 to 2% combined copper, lead, and zinc, but intervals with high-grade gold-silver mineralization are generally low in base metals (Table 10.4).

Ballatar: During 1989, Ballatar drilled a total of 2,338 meters in 16 core holes at the Shumagin prospect in efforts to expand the higher-grade portions of the vein system. MDA has no information on the drilling contractor, type of drill, or core size recovered.

Ballatar's drilling infilled the AAGM drilling and expanded the Shumagin vein system laterally. Significant drilling intercepts and intervals of interest for further exploration are listed in Table 10.5. The best intervals were in hole DDH46 with 43.58 g Au/t and 25.8 g Ag/t over 10.4 meters, including 1.2 meters with 365.35 g Au/t and 190.6 g Ag/t (Table 10.5). It is not known if the reported intervals are for true widths, or for sampled core lengths. Most of Ballatar's core was not assayed for copper, lead, and zinc.

Table 10.5 Ballatar 1989 Drill Intervals of Interest

Ballatar 1989								
Hole ID	From_m	To_m	Int (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %
DDH44	134.7	140.5	5.8	6.75	35.4	n.a.	n.a.	n.a.
including	137.5	138.2	0.8	30.27	206.4	n.a.	n.a.	n.a.
and	147.4	148.4	1.1	4.01	12.0	n.a.	n.a.	n.a.
DDH46	145.7	147.7	2.0	1.37	4.1	n.a.	n.a.	n.a.
and	151.5	161.9	10.4	43.58	25.8	n.a.	n.a.	n.a.
including	153.6	154.8	1.2	365.35	190.6	n.a.	n.a.	n.a.
DDH47	46.5	48.3	1.8	5.62	4.1	n.a.	n.a.	n.a.
and	191.4	197.2	5.8	0.63	2.6	n.a.	n.a.	n.a.
DDH48	130.1	131.5	1.4	0.89	4.5	n.a.	n.a.	n.a.
and	164.6	169.5	4.9	0.55	6.5	n.a.	n.a.	n.a.
and	170.2	171.1	0.9	2.37	3.8	n.a.	n.a.	n.a.
DDH49	123.4	130.0	6.6	2.23	29.3	n.a.	n.a.	n.a.
including	126.9	128.2	1.2	2.09	17.1	n.a.	2.26	0.64
and	135.9	148.6	12.6	3.81	5.7	n.a.	n.a.	n.a.
including	140.5	142.0	1.5	16.70	13.7	n.a.	n.a.	n.a.
DDH50	162.6	164.9	2.3	0.51	6.5	n.a.	n.a.	n.a.
and	166.1	173.6	7.5	2.91	2.0	n.a.	n.a.	n.a.
including	168.9	169.9	1.1	15.26	9.3	n.a.	0.27	0.60
and	175.0	187.0	12.0	1.33	1.7	n.a.	n.a.	n.a.
including	184.4	187.0	2.6	4.46	2.1	n.a.	n.a.	n.a.
and	188.4	190.5	2.1	8.23	8.2	n.a.	n.a.	n.a.
DDH51	132.7	134.6	1.8	0.69	3.8	n.a.	n.a.	n.a.
and	135.9	138.4	2.4	0.55	2.1	n.a.	n.a.	n.a.
and	148.1	153.2	5.0	0.79	2.6	n.a.	n.a.	n.a.
and	156.1	156.7	0.6	182.02	88.5	n.a.	n.a.	n.a.
DDH52	78.8	84.6	5.8	0.41	3.3	n.a.	n.a.	n.a.
and	97.1	99.2	2.1	0.62	3.1	n.a.	n.a.	n.a.
and	99.2	103.2	4.0	6.03	22.7	n.a.	n.a.	n.a.
DDH53	69.2	69.5	0.3	3.57	9.9	n.a.	n.a.	n.a.
and	77.4	77.9	0.5	3.43	4.8	n.a.	n.a.	n.a.
and	79.3	82.0	2.7	1.51	5.8	n.a.	n.a.	n.a.
and	88.7	91.6	2.9	1.90	6.5	n.a.	n.a.	n.a.
and	92.7	115.1	22.4	1.38	9.9	n.a.	n.a.	n.a.
DDH54	101.3	104.4	3.0	2.10	10.7	n.a.	n.a.	n.a.
and	106.4	109.7	3.4	4.44	17.9	n.a.	n.a.	n.a.
and	113.7	121.9	8.2	0.56	7.0	n.a.	n.a.	n.a.
and	132.6	136.9	4.3	0.40	2.3	n.a.	n.a.	n.a.
DDH55	96.8	99.1	2.3	1.54	1.7	n.a.	n.a.	n.a.
and	100.1	100.7	0.6	0.55	1.7	n.a.	n.a.	n.a.
and	101.8	109.1	7.3	2.24	2.3	n.a.	n.a.	n.a.
and	111.3	120.7	9.4	0.78	4.7	n.a.	n.a.	n.a.
and	138.8	141.6	2.7	0.45	3.8	n.a.	n.a.	n.a.
DDH56	38.7	66.0	27.3	1.27	6.1	n.a.	n.a.	n.a.
including	41.2	42.7	1.5	4.11	63.8	n.a.	n.a.	n.a.
DDH57	36.0	41.3	5.3	20.10	20.8	n.a.	n.a.	n.a.
including	38.1	39.6	1.5	59.59	50.1	n.a.	n.a.	n.a.
DDH58	37.6	38.4	0.8	15.77	65.5	n.a.	n.a.	n.a.
DDH59	40.4	42.4	2.0	5.28	30.5	n.a.	n.a.	n.a.

Note: n.a. = no assay; lead, zinc and copper listed only where their sum is ≥0.25%. Relation of reported intervals to true thickness is not known.

Battle Mountain Gold: BMGC drilled a single core hole at the Shumagin prospect in 1990. MDA has no information on the drilling contractor, the type of core drill, the size(s) of core recovered, and the methods and procedures used for this drilling.

Hole BM-01 penetrated the Shumagin vein system 250 meters below the surface, at an elevation of approximately 220 meters below sea level. This intercept was located 100 meters down-dip from the deepest previous drilling of the vein system, and more than 150 meters down-dip from the rest of the prior drilling.

Table 10.6 Battle Mountain Gold 1990 Drill Intervals of Interest

Battle Mountain Gold 1990								
Hole ID	From_m	To_m	Int (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %
BM-01	272.8	278.3	5.5	23.99	19.3	n.a.	n.a.	n.a.
including	272.8	275.8	3.0	41.04	31.5	n.a.	n.a.	n.a.

Note: n.a. = no assay; lead, zinc and copper listed only where their sum is ≥0.25%. Relation of reported intervals to true thickness is not known.

10.3 Drilling by Redstar

Redstar carried out drilling at the Shumagin prospect in 2011, 2015, 2016, and 2017 for a total of 9,772 meters drilled in 48 core holes (Table 10.1). Locations of the Redstar drill holes drilled at Shumagin are shown in Figure 10.5, mineralized intervals are summarized in Table 10.7, and drill-hole collar data are presented in Appendix C.

Peak Drilling Ltd. ("Peak") of Courtenay, British Columbia performed the drilling in 2011, 2015, and 2016. A Hydracore 2000 drill was used by Peak to recover NQ-diameter core. The 2017 drilling was performed by YPS using an LF-70 core drill and a Zinex U5 core drill. HQ- and NQ-diameter core was recovered.

10.3.1 2011 Drilling, Shumagin Prospect

Ten angled core holes were drilled by Redstar in 2011. The 2011 drilling confirmed the continuity of high-grade gold-silver mineralization down dip from historical drilling, indicated the presence of wider zones of gold-silver mineralization around the core high-grade veins, and expanded the lateral extent of strong gold-silver vein mineralization to at least 800 meters in strike length. Drill hole 11SH010 contained one of the highest gold grades intersected on the property, with an interval of 0.55 meters that assayed 738 g Au/t and 408 g Ag/t. The epithermal gold-silver vein mineralization was found within steeply-dipping quartz-carbonate veins and breccias at the faulted contact between andesite flows and hanging-wall crystal-lithic tuff.

Figure 10.5 Map of Redstar Drill Holes 2011 - 2017, Shumagin Prospect

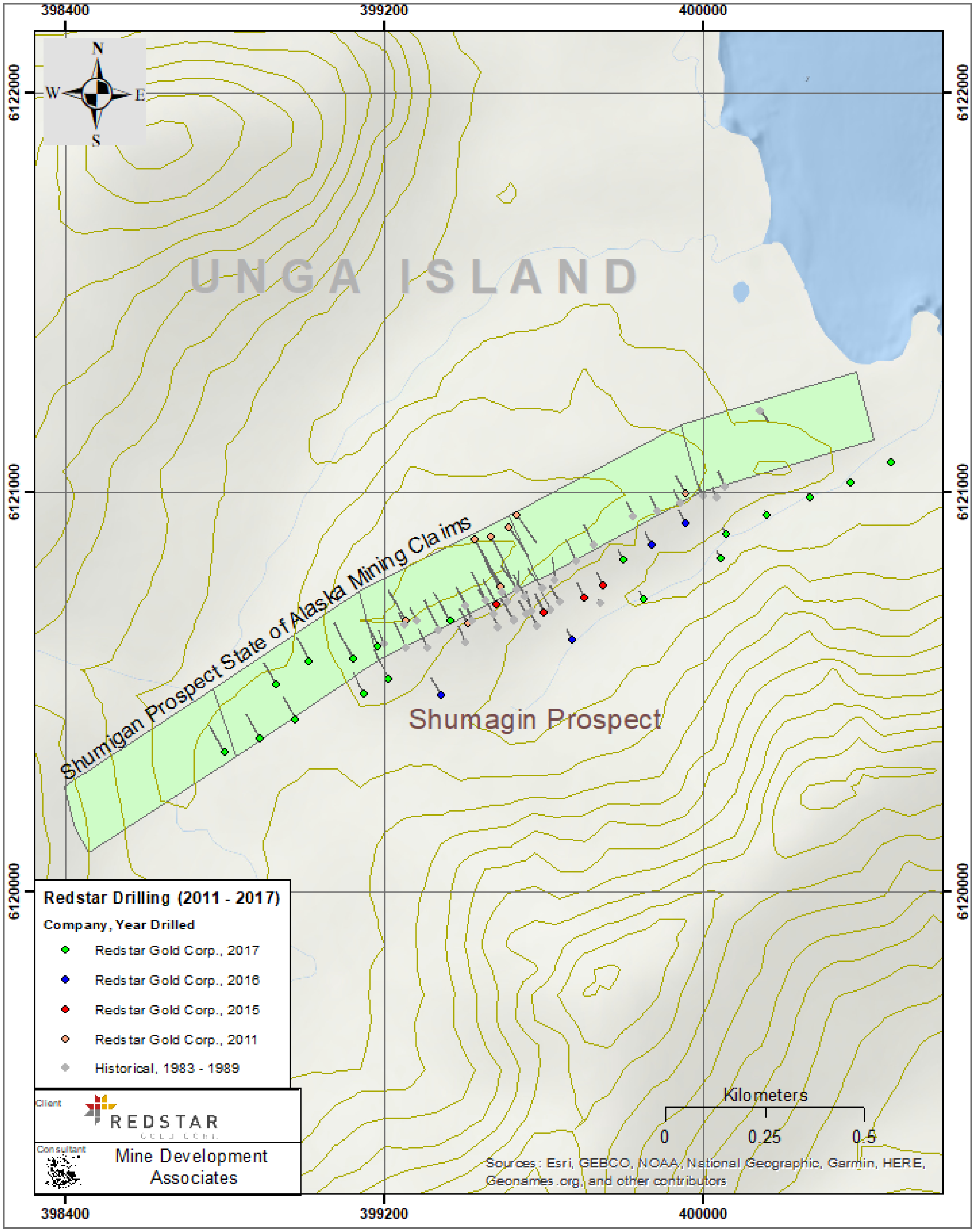


Table 10.7 Shumagin Mineralized Drill Intervals from 2011 – 2017 Redstar Drilling

(true widths estimated at 70-80% of reported core lengths;)

Hole ID	From (m)	To (m)	Int (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %	CuPbZn%
11SH001	9.0	14.0	5.0	0.02	5.5	0.12	0.16	0.03	0.31
and	21.3	25.0	3.7	4.14	9.4				
including	22.4	23.0	0.6	16.75	20.2				
and	69.1	69.8	0.7	1.50	4.8				
and	91.2	93.0	1.8	0.04	2.9	0.01	0.09	0.20	0.30
11SH002	32.0	35.6	3.5	0.45	2.9				
and	38.0	40.8	2.8	0.64	3.1				
11SH003	28.0	31.1	3.1	1.85	16.8	0.06	0.13	0.23	0.41
11SH005	115.1	116.5	1.4	0.89	2.3				
and	129.6	130.6	1.0	0.90	3.2				
and	179.4	180.4	1.0	0.05	3.9	0.03	0.21	0.47	0.71
and	187.3	187.9	0.6	0.02	1.6	0.02	0.19	0.64	0.84
11SH006	122.7	123.4	0.7	1.30	6.3				
and	171.5	193.6	22.1	1.42	9.3	0.08	0.12	0.22	0.42
including	173.7	175.1	1.3	5.38	9.8				
also including	179.6	180.0	0.4	9.56	9.2				
and	207.1	207.5	0.4	0.01	26.8	1.97	0.06	0.07	2.10
11SH007	132.3	133.0	0.7	0.77	3.6	0.03	0.21	0.36	0.60
and	139.4	140.4	1.0	0.12	3.8	0.03	0.09	0.26	0.39
and	223.0	244.0	21.0	4.02	5.4				
including	223.0	224.0	1.0	43.90	18.5				
also including	239.5	239.9	0.4	15.35	20.0				
also including	240.4	240.9	0.5	16.60	13.5				
and	250.8	253.0	2.2	0.62	2.8				
and	264.0	271.3	7.3	0.52	4.1				
and	275.6	278.0	2.4	0.15	3.1	0.01	0.14	0.18	0.34
11SH008	139.2	140.5	1.3	1.78	12.1				
and	174.9	177.0	2.1	0.31	7.7	0.03	0.39	0.48	0.91
and	180.3	182.2	1.9	1.30	6.8	0.02	0.13	0.19	0.34
including	180.3	180.8	0.5	4.26	4.8	0.03	0.21	0.24	0.47
11SH009	88.1	90.0	1.9	1.87	0.8				
and	194.0	199.4	5.4	0.99	4.5				
and	202.0	215.0	13.0	4.19	6.1				
including	210.1	211.0	0.9	43.10	37.2				
and	217.6	224.0	6.4	0.57	8.6				
and	231.0	233.0	2.0	1.26	4.4				
and	251.0	255.9	4.9	1.72	2.5				
including	254.0	255.0	1.0	6.67	5.5				
and	274.0	275.4	1.4	2.85	3.6				

Hole ID	From (m)	To (m)	Int (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %	CuPbZn%
11SH010	137.0	138.1	1.1	0.03	2.8	0.03	0.10	0.21	0.34
and	231.3	249.0	17.8	2.02	4.8				
including	237.0	238.0	1.0	5.28	9.1				
and	259.3	260.9	1.6	246.41	136.8				
including	259.3	259.8	0.5	738.00	408.0				
15SH011	50.0	52.0	2.0	1.15	44.7	0.06	0.21	0.31	0.58
and	58.0	75.0	17.0	23.90	14.1				
including	60.1	62.0	1.9	202.00	82.0				
also including	69.0	75.0	6.0	1.34	7.6	0.09	0.11	0.14	0.34
and	77.0	81.7	4.7	1.03	4.0				
and	95.3	100.2	4.9	0.35	12.4				
15SH012	58.0	73.2	15.2	5.93	40.3				
including	64.0	65.0	1.0	59.10	300.0				
also including	65.0	66.0	1.0	11.40	118.0				
and	78.3	91.5	13.2	12.08	77.3				
including	82.0	91.5	9.5	16.14	101.2	0.22	0.33	0.32	0.87
which includes	82.0	83.0	1.0	23.40	195.0	0.09	0.42	0.23	0.73
and	84.0	85.0	1.0	24.30	313.0	0.11	0.61	0.33	1.05
and	89.0	89.7	0.7	133.00	422.0	0.08	0.32	0.45	0.85
also	96.0	100.3	4.3	0.56	3.3				
and	104.3	112.1	7.8	0.63	3.8				
including	107.0	107.6	0.6	4.68	6.9				
15SH013	125.0	127.0	2.0	0.03	1.9	0.00	0.07	0.35	0.42
and	143.0	154.0	11.0	4.89	37.2				
including	144.0	147.0	3.0	14.69	120.7				
and	156.0	157.0	1.0	0.94	5.8				
15SH014	185.0	194.0	9.0	3.72	4.5				
including	187.0	188.0	1.0	19.90	16.0				
15SH015	172.0	173.0	1.0	1.50	1.8				
and	181.7	185.9	4.2	0.74	3.6				
15SH016	203.0	206.0	3.0	0.71	6.4				
and	207.0	208.7	1.7	0.50	2.0				
and	216.3	219.7	3.4	1.28	3.8				
including	216.3	216.9	0.6	4.04	5.0				
15SH017	182.0	183.0	1.0	1.13	1.9				
and	194.0	195.1	1.1	0.95	0.3				
15SH018	195.0	197.0	2.0	21.27	66.3				
including	196.0	197.0	1.0	41.20	130.0				
and	199.0	202.0	3.0	2.18	3.9				
and	210.0	212.8	2.8	1.78	4.8				
including	211.8	212.8	1.0	2.43	9.3	0.11	0.31	0.80	1.22

Hole ID	From (m)	To (m)	Int (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %	CuPbZn%
16SH019	221.8	222.2	0.4	1.01	1.2				
and	256.0	257.6	1.6	3.76	7.8				
including	256.0	256.6	0.6	9.25	17.1				
and	260.6	261.2	0.6	1.55	3.2				
and	263.3	265.5	2.2	6.34	1.9				
including	264.6	265.5	0.9	14.95	2.7				
and	267.1	269.1	2.0	2.97	5.9				
and	307.8	308.1	0.3	0.09	20.4	0.09	0.99	1.30	2.38
16SH020	268.4	277.9	9.5	2.45	12.5				
including	270.5	271.6	1.1	11.30	72.9				
and	283.0	286.5	3.5	0.75	2.7				
16SH021	135.2	136.0	0.8	3.52	24.8				
and	142.0	144.8	2.8	0.57	4.1				
and	144.8	145.9	1.1	0.06	6.1	0.12	0.57	1.34	2.03
16SH022	149.1	151.1	2.0	1.76	3.3				
and	156.5	158.0	1.5	16.98	13.1	0.13	0.48	0.47	1.08
and	160.0	163.5	3.5	0.94	2.6	0.02	0.07	0.17	0.26
and	165.7	169.7	4.0	0.14	3.4	0.03	0.18	0.35	0.56
16SH023	132.5	136.3	3.8	0.48	7.5				
and	190.2	195.6	5.4	2.48	4.2				
including	192.4	192.7	0.3	34.50	16.5	0.03	0.08	0.17	0.28
and	195.6	197.0	1.4	0.05	3.9	0.04	0.30	0.63	0.98
16SH024	147.4	150.9	3.5	3.36	6.3				
including	149.1	150.0	0.9	11.65	16.3				
16SH025	127.5	131.5	4.0	0.03	2.0	0.04	0.08	0.16	0.27
and	136.4	137.4	1.0	0.24	12.1	0.11	0.16	0.29	0.56
and	163.1	164.0	0.9	0.58	4.6	0.03	0.24	0.41	0.68
17SH027	142.3	143.3	1.0	0.43	28.5	0.03	0.31	0.26	0.59
17SH028	84.0	85.3	1.3	0.88	1.8				
17SH032	92.2	94.5	2.3	0.04	0.4	0.57	0.00	0.01	0.58
and	200.1	202.2	2.1	1.07	26.8				
17SH033	78.3	79.0	0.7	5.69	30.0	0.07	0.02	0.22	0.31
and	82.0	82.7	0.7	0.97	1.8				
and	92.6	95.5	2.9	0.46	3.2				
and	100.6	102.4	1.8	1.15	13.2				
17SH034	105.0	108.0	3.0	1.07	0.5				
and	120.0	125.4	5.4	4.43	14.9				
including	120.8	123.0	2.2	9.90	29.3				
and	150.8	151.8	1.0	0.10	11.7	0.05	0.76	0.50	1.30
17SH035	228.8	229.8	1.0	0.02	9.3	0.47	0.68	0.82	1.97
17SH036	156.4	159.2	2.8	0.06	0.3	0.27	0.01	0.00	0.28

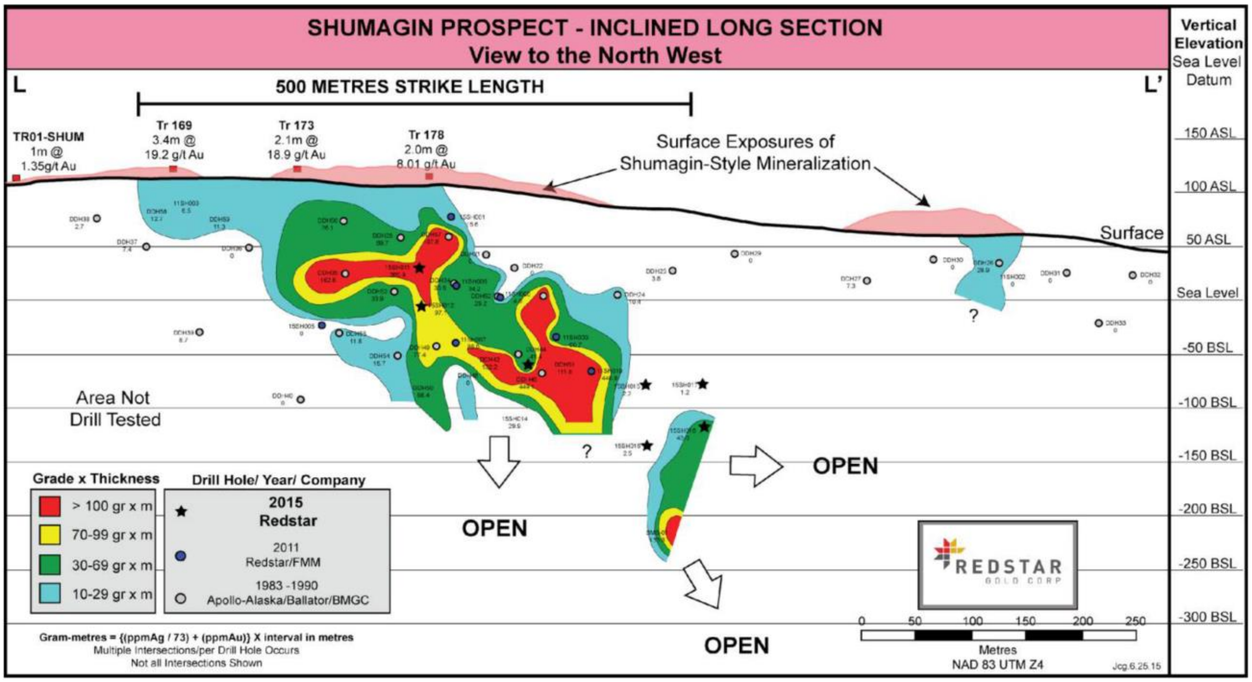
Hole ID	From (m)	To (m)	Int (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %	CuPbZn%
17SH038	268.55	269.75	1.2	0.04	14.3	0.46	0.05	0.01	0.52
and	275.8	277	1.2	0.80	0.5				
and	278	279.2	1.2	0.50	3.6				
and	282.5	284	1.5	0.12	5.9	0.10	0.07	0.20	0.36
and	287.1	287.6	0.5	2.96	3.9				
and	292.7	293.3	0.6	1.06	1.5				
and	298.6	307.3	8.7	0.83	1.6				
including	305.5	307.3	1.8	2.27	2.0				
and	317.5	322	4.5	0.81	3.0				
17SH039	264.2	265.6	1.4	0.05	2.3	0.03	0.34	0.21	0.58
17SH040	108.5	109.5	1.0	0.05	11.2	0.09	0.35	0.49	0.92
and	129	132.1	3.1	0.04	3.5	0.07	0.15	0.22	0.44
and	143.6	144.7	1.1	0.09	3.2	0.06	0.17	0.39	0.62
17SH041	146.4	147.4	1.0	0.21	23.6				
17SH042	157.5	168.3	10.8	1.17	2.2				
including	164.3	165.8	1.5	3.68	2.4	0.01	0.16	0.24	0.41
and	178	180.7	2.7	0.94	2.3				
17SH043	186.2	187.2	1.0	1.77	2.8	0.02	0.10	0.17	0.29
and	203	205.5	2.5	0.48	1.6				
and	215.5	221.6	6.1	0.70	2.5				
17SH044	123.9	125.7	1.8	0.01	1.0	0.02	0.17	0.23	0.42
17SH045	110.9	114.2	3.3	0.16	25.2	0.09	1.87	2.19	4.15
and	115.2	120.1	4.9	0.15	13.5	0.05	0.26	0.26	0.57
including	118.3	119.1	0.8	0.54	62.5	0.17	0.84	0.60	1.61
and	120.9	122.4	1.5	1.66	4.4	0.04	0.26	0.28	0.59
and	126.7	133.7	7.0	0.05	4.4	0.01	0.16	0.27	0.45
and	133.7	134.8	1.1	0.26	39.4				
and	136.3	137.7	1.4	0.15	26.3				
and	140	141	1.0	0.49	35.4	0.18	0.30	0.84	1.31
17SH046	208.5	211.4	2.9	0.04	1.9	0.03	0.17	0.35	0.55
17SH047	191.4	194.8	3.4	1.05	4.0				
and	196.3	197.7	1.4	0.52	3.1	0.05	0.13	0.46	0.64
and	200	201	1.0	0.19	14.9	0.04	0.13	0.37	0.53
17SH048	132.5	136.5	4.0	0.02	1.5	0.02	0.42	0.63	1.06

10.3.2 2015 Drilling, Shumagin Prospect

In 2015, Redstar drilled eight angled core holes to intersect the Shumagin vein system between and down dip from previous drill holes, but up dip from the BMGC hole. The first hole intersected 1.9 meters containing 202 g Au/t and 82 g Ag/t within a wider zone of 12.9 meters of gold-silver mineralization. The last hole (15SH018) intersected 5.0 meters with average grades of 9.35 g Au/t and

27.6 g Ag/t, including 1.0 meter that assayed 41.2 g Au/t and 130 g Ag/t. These results are summarized in Figure 10.6, a longitudinal view of the Shumagin prospect drilling, as of mid-2015.

Figure 10.6 Longitudinal Projection of Shumagin Drill Results through 2015
(from Redstar Gold, 2018)



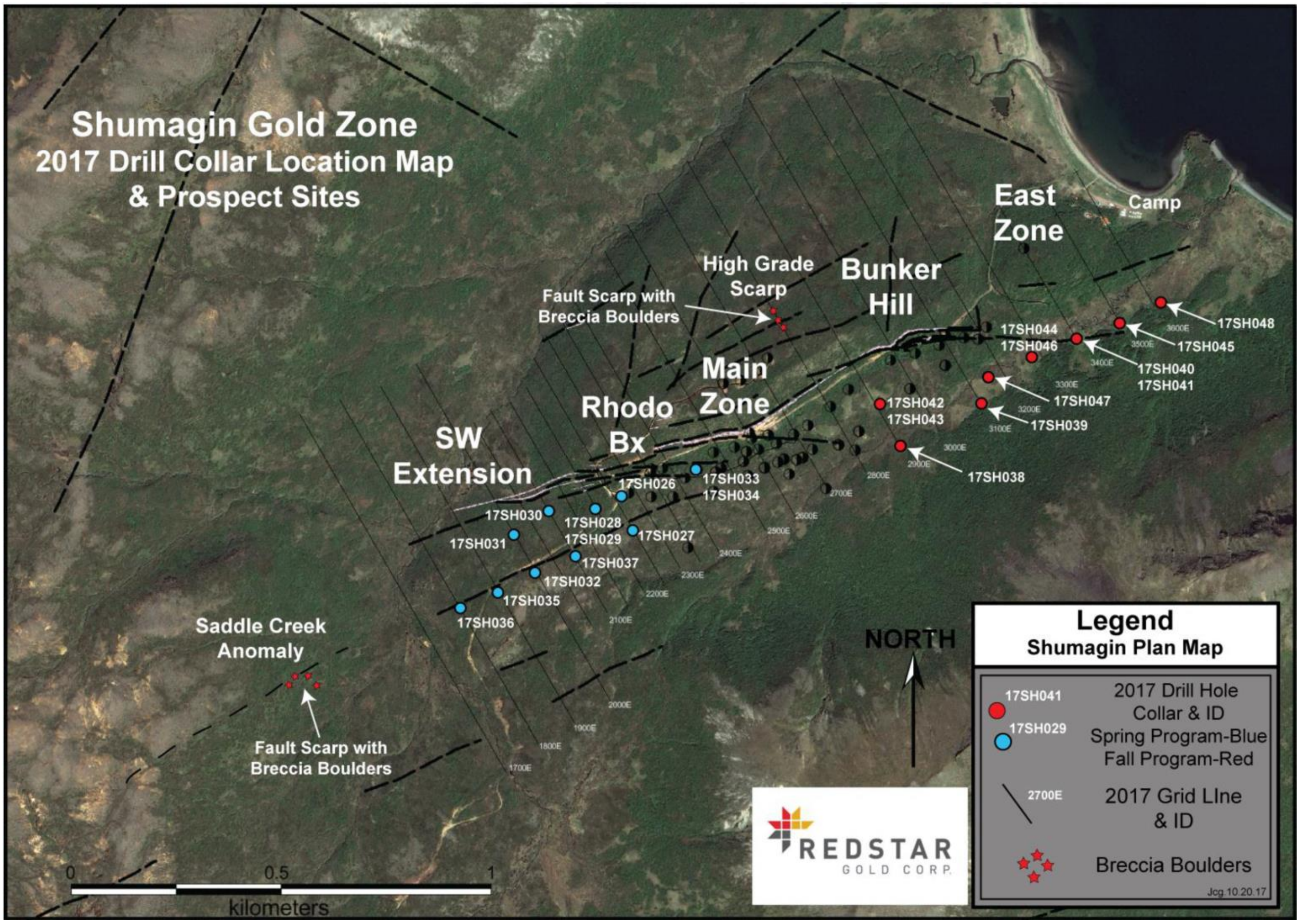
10.3.3 2016 Drilling, Shumagin Prospect

Seven angled core holes were drilled by Redstar at the Shumagin prospect in 2016. The drill holes were spaced over approximately 750 meters of strike length along the Shumagin vein zone and were designed to test potential for high-grade vein and breccia mineralization at various elevations. All drill holes intersected multi-generational phreatomagmatic breccias, hydrothermal breccias, and late Shumagin-style breccias and veins with colloform-crustiform to cockade textured quartz-adularia-carbonate (+/- rhodochrosite) +/- green clay. Five of the seven holes intersected gold grades greater than 10 g Au/t, with the highest grade of 34.5 g Au/t and 16.45 g Ag/t found in hole 16SH023 over 0.3 meters. The 2016 drilling indicated a lateral extent of at least 950 meters for significant gold-silver mineralization within the Shumagin vein system.

10.3.4 2017 Drilling, Shumagin Prospect

A total of 23 angled core holes were drilled by Redstar during 2017 in two phases. The first phase consisted of 12 holes drilled in an effort to expand the Shumagin vein system to the southwest (Figure 10.7. Eleven holes were drilled during the second phase to expand the vein system down dip and to the northeast of prior drilling in the Bunker Hill area (Figure 10.7).

Figure 10.7 Redstar 2017 Drilling Locations at the Shumagin Prospect
(from Redstar Gold, 2018)



The first phase of 12 holes extended the Shumagin vein and breccia system approximately 400 meters along strike to the southwest and encountered visible gold in hole 17SH032, but encountered lower grade mineralization throughout a number of other drilled holes. Although lower in grade, the vein, breccia, and stockwork zones were found to increase to as much as 10 meters in width down dip and to the southwest.

The second phase consisted of 11 holes. Some of these were drilled between the Main and Bunker Hill zones and the rest were drilled along strike to the northeast of the previously drilled Bunker Hill portion of the Shumagin vein system (Figure 10.7).

Redstar's 2017 drilling increased the drill-indicated strike length of the Shumagin vein and breccia mineralization to approximately 1.75 kilometers. The mineralization remains open at depth and along strike.

Mineralized intervals from the 2017 drilling are summarized in Table 10.8. The best results were in hole 17SH034, which penetrated 5.4 meters containing 4.43 g Au/t and 14.9 g Ag/t from 120.0 to 125.4

meters down hole (Table 10.7). This included 2.2 meters with 9.9 g Au/t and 29.3 g Ag/t. Continuity of mineralization between the Main and Bunker Hill portions of the system was indicated by drill hole 17SH042, which intercepted an approximate 8.3 meter interval of mineralization that included 4.33 g Au/t and 2.13 g Ag/t over 0.7 meters. Drill Hole 17SH047 intercepted an approximate 16.3 meter interval that included 3.62 g Au/t and 10.2 g Ag/t over 0.5 meters. The true width of mineralization is estimated to be 70% to 80% of the interval lengths reported. A longitudinal assay section with results through the end of the 2017 drilling is shown in Figure 7.11.

10.3.5 2017 Drilling, Rising Sun Prospect, Apollo – Sitka Area

Rising Sun is a splay off of the main Apollo structure approximately 300 meters east of the Apollo open stope and consists of an approximately 25-meter wide outcropping of veins, vein breccias, and stockwork. Two core holes totaling 233.9 meters were drilled at the Rising Sun portion of the Apollo-Sitka prospect (Figure 10.1; Figure 10.8) to test breccias and stockwork at 60- to 80-meter depths below surface exposures, constrain the dip of the mineralized structure, and define textures of the vein breccias and stockwork system. The drilling was conducted by YPS using an LF-70 core drill. NQ2-size core was recovered. The 2017 Rising Sun collar information is summarized in Appendix C.

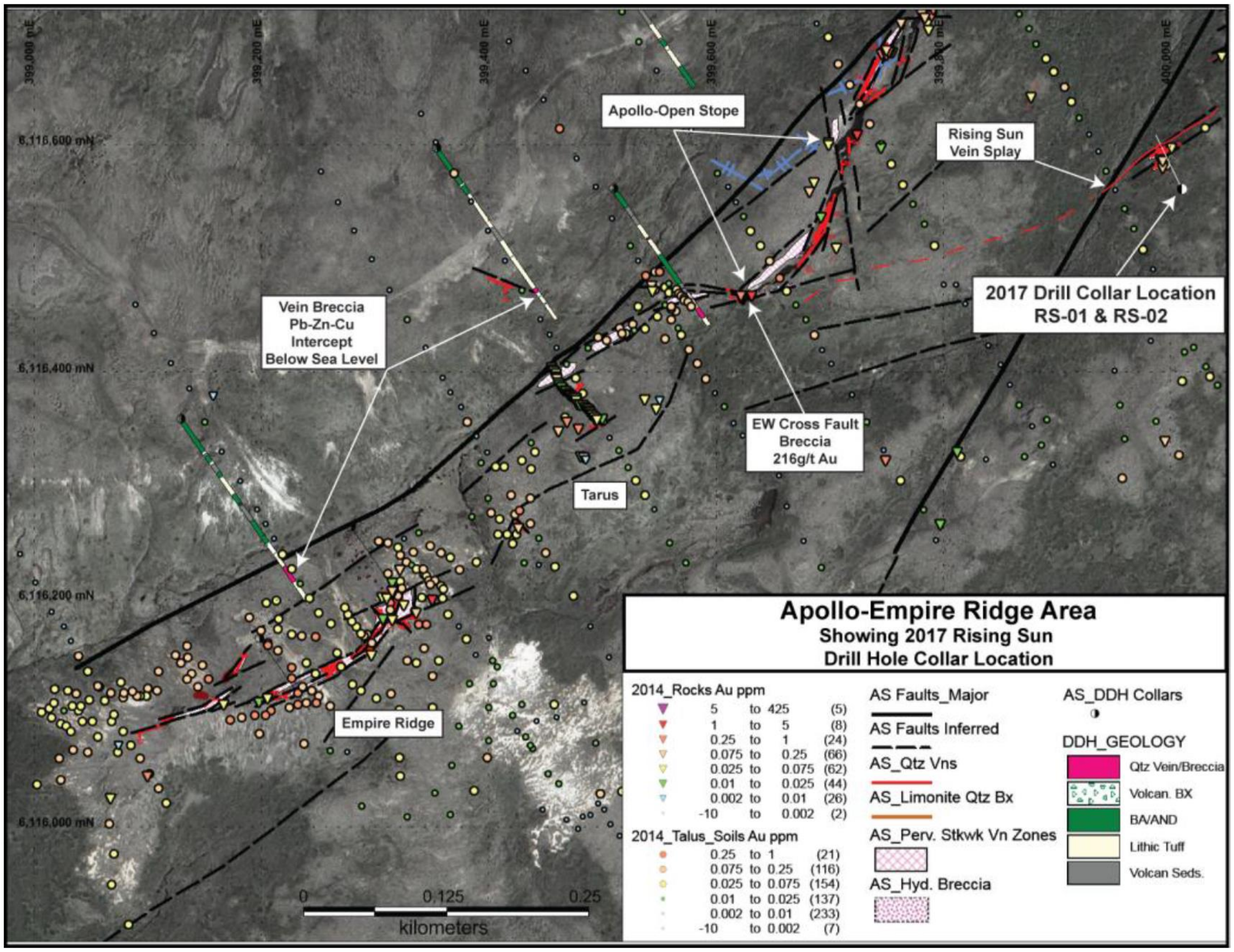
Both holes penetrated Shumagin-style quartz-adularia-carbonate breccias and stockwork approximately 20 meters down hole that are considered by Redstar to be identical to those previously sampled in and around the Sitka prospect. Narrow, 1.5-meter to 6.2-meter wide, crustiform- to cockade-textured breccias haloed by narrow quartz-sericite-pyrite alteration and strong silicification were found within propylitic altered basalt, andesite, and hyaloclastite flows. Drill hole 17RS01 intercepted 0.06 g Au/t and 17.3 g Ag/t over 1.0 meter. Drill hole 17RS02 returned values up to 0.29 g Au/t and 18.1 g Ag/t over 1.4 meters. Mineralized intervals from Redstar's 2017 drilling are listed in Table 10.8.

Table 10.8 Apollo – Sitka Mineralized Intervals 2017 Redstar Drilling

Hole ID	From (m)	To (m)	Int (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %	CuPbZn %
17RS01	22	23	1	0.07	17.3				
and	58.6	59.2	0.6	0.03	2.6	0.01	0.06	0.03	0.10
and	69.8	70.2	0.4	0.02	3.7	0.04	0.10	0.14	0.28
17RS02	23.8	25.2	1.4	0.29	18.1				
and	31	31.8	0.8	0.07	12.8				
and	77.9	80	2.1	0.02	4.0	0.03	0.02	0.06	0.11

Note: Relation of reported intervals to true thickness not known; copper, lead and zinc listed only where their sum is ≥0.1%.

Figure 10.8 Location of 2017 Drilling at Rising Sun, Apollo – Sitka Area
(from Redstar, 2017)



10.4 Drill-Hole Collar Surveys

The authors are not aware of the methods, procedures and equipment used by any of the historical operators to survey the locations of historical drill holes within the Unga project. Margolis (2014) reported that survey data are available for 16 of the historical Shumagin core holes. MDA recommends that Redstar obtain and compile information on historical collar surveys, if it exists.

Files provided by Redstar suggest that commencing in 2005, FMM and Metallica personnel began to search for historical drill collars in the field and determine their geographic coordinates using hand-held GPS receivers. Redstar personnel continued to locate historical drill pads and collars during 2011 through 2013 or 2014 using hand-held GPS receivers. The coordinates and notes regarding the evidence for the collar locations were compiled in electronic spreadsheets using the UTM NAD83 Zone 4 projection. As of 2014, a total of 47 of the 87 historical collar locations at the Aquila, Orange Mountain, Pook, Pray's Vein, Norm's Vein, Zachary Bay, and Apollo-Sitka prospects had been identified in the field and their coordinates determined by hand-held GPS. In 2014, Redstar used a differential GPS survey to accurately locate historical Shumagin drill collars. The balance of the historical collar locations may have been derived by Redstar personnel from historical maps and transformed to the UTM NAD83 projection, but MDA and Redstar are not aware of the methods and procedures used to determine those collar locations. Collar locations for historical drilling by BMGC at the Centennial, Red Cove and Propalof prospects were also transformed to the UTM NAD83 projection. It is reasonable to assume that FMM or Redstar personnel used historical reports and maps as the primary source of the BMGC collar information, but MDA has no information on how the original historical locations were converted to the UTM NAD83 projection. To increase confidence in the historical drilling data, MDA recommends that Redstar compile and document the original sources of the historical collar locations, and document the personnel and methods used to convert the locations to the UTM NAD83 projection coordinates listed in Redstar's electronic files.

For drilling in 2011 through 2017, Redstar personnel used hand-held GPS units to survey the locations of Redstar's drill hole collars.

10.5 Down-Hole Surveys

10.5.1 Historical Down-Hole Surveys

Very little is known about down-hole deviation surveys that may have been conducted during historical drilling at the Unga project. Available records indicate that no down-hole surveys were done during drilling at the Shumagin prospect by BMGC or AAGM. Ballatar apparently had their 1989 core holes surveyed at one point near the bottom of each hole, but the survey method and instrument type are not known. As far as can be determined, no down-hole surveys were conducted by AAGM during their core drilling at the Apollo-Sitka area. Likewise, MDA has found no records of down-hole surveys conducted during the Duval-Quintana and RAA-UNC Teton drilling at the Zachary Bay, Aquila, Junior, Pook, Pray's Vein, Norm's Vein, and Orange Mountain prospects. MDA recommends that Redstar obtain and compile down-hole survey data from the above historical drilling, if it is available.

Available records suggest that down-hole surveys were not conducted during BMGC's core drilling at the Centennial, Red Cove, and Propalof prospects on Popof Island. MDA recommends that Redstar obtain and compile down-hole survey data from the Popof Island drilling, if it is available.

10.5.2 Redstar Down-Hole Surveys

During Redstar's 2011 through 2016 core drilling at the Shumagin prospect, down-hole surveys were conducted by Peak using a REFLEX tool. In 2017, YPS used an isCompass inertial-sensing multishot survey instrument from Inertial Sensing One AB for down-hole surveys. For all years, measurements of dip, azimuth, magnetic field strength, and temperature were recorded mainly every 15 meters, but in some holes these were done every 30.5 meters or at 6.1-meter intervals in others.

10.6 Summary Statement

The authors are unaware of any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results discussed in this report.

11.0 SAMPLE PREPARATION, ANALYSIS, AND SECURITY (ITEM 11)

This section summarizes all information known to the authors relating to sample preparation, analysis, and security, as well as quality assurance/quality control ("QA/QC") procedures and results, which pertain to the Unga project. The information has either been compiled by the authors from historical records as cited, or provided by Redstar from company files.

11.1 Sample Preparation and Analysis

All laboratories discussed in this section were independent of the operators at the time of their use.

11.1.1 Historical Operators

MDA has little information on the methods and procedures used in the collection and preparation of rock, soil, trench, dump, and underground workings sampled and analyzed by historical operators at prospects within the project area. There is generally sparse information in the files provided by Redstar as to the names and locations of the laboratories used to assay these historical samples, or the methods of preparation and sample analysis. If such information is available, MDA recommends that Redstar compile and evaluate it.

Several hundreds of surface rock, trench, and soil(?) samples collected during 1982 by UNC Teton personnel were analyzed at the Bondar-Clegg Inc. ("Bondar") laboratory in Denver, Colorado. Bondar was independent of UNC Teton and RAA, but it is not known what certifications, if any, the laboratory may have held. MDA has no information on how the samples were prepared for analyses at Bondar. Copper, lead, silver, zinc, and mercury were analyzed by atomic absorption ("AA") following digestion with aqua regia. Gold was assayed by "*Total (fusion or HF)/atomic absorption*". For some samples, gold was also analyzed by fire assay. Arsenic was assayed by colorimetry following digestion in a mixture of nitric and perchloric acids.

Rock and trench samples collected by BMGC at the Propalof prospect were analyzed for gold, silver, arsenic, and mercury in 1989 at Bondar's laboratory in North Vancouver, British Columbia. Samples were crushed, split, and pulverized, but there are no further details about the sample preparation. Gold was measured by fire assay with an AA finish. Silver and arsenic were analyzed by AA methods following a hot two-acid digestion. Mercury was assayed by cold-vapor AA.

MDA is unaware of the methods and procedures used by the historical operators for sample security.

1975 Duval – Quintana Drill Samples: Zachary Bay

Available reports and drill logs do not specify the methods and procedures used by Duval-Quintana to log and sample the Zachary Bay drill core. In 1981, RAA-UNC Teton personnel re-logged and sampled the remaining core. MDA has no information on the methods used to sample or re-sample the core, except that sampled intervals were of 3.05 meters (10 foot) lengths. Hand-written entries on RAA-UNC Teton drill hole re-logs indicate the sampled intervals were analyzed for copper, lead, zinc, silver, gold, arsenic, and molybdenum, but MDA has no information on where the Duval-Quintana or RAA-UNC

Teton core samples were analyzed, or the methods and procedures used for the analyses or sample preparation. If such information is available, MDA recommends that Redstar compile and evaluate it.

1980 – 1981 RAA-UNC Teton Drill Samples: Aquila, Junior, Pook, and Pray's Vein

Available reports and drill logs do not specify the methods and procedures used by RAA-UNC Teton to log and sample the 1980-1981 drill core from the Aquila, Junior, Pook, and Pray's Vein prospects, except that most samples were of 3.05-meter (10-foot) lengths. Hand-written entries in the drill logs indicate that the core samples were analyzed for copper, lead, zinc, silver, gold, arsenic, and mercury, but MDA is unaware of the name or location of the assay laboratory, or the methods and procedures used for sample preparation and analysis. If such information is available, MDA recommends that Redstar compile and evaluate it.

1983 RAA-UNC Teton Drill Samples: Norm's Vein, Orange Mountain and Pray's Vein

The methods and procedures used by RAA-UNC Teton to log and sample the 1983 drill core are not known to MDA. Drill logs indicate that the 1983 core samples from these prospects were mainly of 3.05-meter (10-foot) lengths and were assayed for copper, lead, zinc, silver, gold, arsenic, and mercury at Bondar. The methods of sample preparation and analysis at Bondar for these samples are not known to MDA. If such information is available, MDA recommends that Redstar compile and evaluate it.

1983 AAGM Drill Samples: Apollo – Sitka Area

The methods and procedures used by AAGM to log and sample the 1983 Apollo-Sitka drill core are not known to MDA. Assays for gold, silver, copper, lead, and zinc were carried out at Rossbacher Laboratory Ltd. ("Rossbacher"), in Burnaby, British Columbia, and at Chemex Labs Ltd. ("Chemex") in North Vancouver, British Columbia. Rossbacher and Chemex were independent of AAGM, but it is not known what certifications, if any, these laboratories may have held at that time. At Rossbacher, samples were dried, crushed to –6.25 millimeters (-1/4 inch) and then pulverized to -100 mesh. Copper, lead, zinc, and silver were analyzed by AA following two-acid digestions of 0.5-gram aliquots of sample pulps. Gold was assayed by AA following aqua regia digestion and methylisobutyl-ketone extraction of 10-gram aliquots of pulps that were roasted at 550°C. Some samples were also analyzed for arsenic, antimony and mercury using a variety of AA and colorimetric methods. At Chemex, samples were analyzed for gold and silver, but the methods of sample preparation and analysis are not known to MDA.

1983 and 1987 AAGM Drill Samples: Shumagin Prospect

The methods and procedures used by AAGM to log and sample the 1983 and 1987 drill core at the Shumagin prospect are not known to MDA, except that the 1987 core was sawed in half and the half-core samples were crushed on-site in their entirety to -1/4 inch prior to shipment to the assay laboratory (Queen, 1988). The 1983 drill core samples were analyzed for gold, silver, copper, lead, zinc, arsenic, antimony, and mercury at Rossbacher using the same methods and procedures used for the 1983 samples from the Apollo-Sitka drilling (summarized above). In 1987, AAGM's core samples from the Shumagin prospect were analyzed for gold and silver at Rossbacher. It is not known if Rossbacher was certified to any standards at this time. Available copies of the 1987 assay certificates do not indicate the sample preparation and analytical methods used for the 1987 assays at Rossbacher.

1988 – 1989 BMGC Drill Samples: Centennial, Red Cove and Propalof Prospects

MDA has little information on the methods and procedures used by BMGC to log and sample the drill core from the Red Cove, Propalof, and Centennial prospects. A BMGC memorandum dated October 27, 1988 indicates that drill core from the Centennial deposit was sawed in half prior to analysis.

For drill samples from Centennial in 1988 and 1989, reports by BMGC (Ellis and Jacob, 1988; Ellis and Apel, 1989) do not specify the methods and procedures used for sample handling, preparation or analysis, or the name(s) of the assay laboratory. If such information is available, MDA recommends that Redstar compile and evaluate it.

Copies of assay certificates indicate the 1989 drill samples from the Propalof prospect were analyzed at Bondar in North Vancouver for gold, silver, arsenic, copper, molybdenum, lead, antimony, zinc, and mercury. Bondar was independent of BMGC, but it is not known what type(s) of certifications may have been held by Bondar at that time. Samples were crushed, split and pulverized, but there are no further details about the sample preparation. Gold was analyzed using a 30-gram fire-assay fusion with AA finish. Silver, arsenic, copper, molybdenum, lead, antimony, and zinc were analyzed by direct-current plasma-emission spectrometry ("DCPES") following a hot two-acid digestion. Mercury was analyzed by cold-vapor AA.

Drill samples from BMGC's 1989 drilling at the Red Cove prospect were analyzed at Bondar in North Vancouver. The samples were crushed, split, and pulverized, but there are no further details about the sample preparation. Gold was analyzed using a 30-gram fire-assay fusion with AA finish, and mercury was analyzed by cold-vapor AA. For the initial two drill holes, silver, arsenic, copper, molybdenum, lead, antimony, and zinc were analyzed by DCPES following a hot 2-acid digestion. For the subsequent three holes, silver, arsenic, copper, molybdenum, lead, antimony, and zinc were analyzed by inductively-coupled plasma atomic-emission spectrometry ("ICPAES") following a hot two-acid digestion.

1989 Ballatar Drill Samples: Shumagin Prospect

The methods and procedures used by Ballatar to log and sample the 1989 drill core at the Shumagin prospect are not known to MDA. Gold and silver were assayed by a metallic-screen fire-assay procedure (also referred to as a screen-fire assay) at Chemex, initially in the North Vancouver laboratory, and subsequently in the Chemex laboratory in Sparks, Nevada. Chemex was independent of Ballatar, but it is not known what type(s) of certifications may have been held by Chemex at that time. MDA is unaware of the exact methods of sample preparation and fire-assay analysis that were used.

1990 BMGC Drill Samples: Shumagin Prospect

MDA is unaware of the methods and procedures used by BMGC for logging and sampling the 1990 core. The samples were analyzed at Bondar in North Vancouver where they were crushed, split and pulverized, but further details of the preparation methods are not known. Gold was analyzed using a 30-

gram fire-assay fusion with AA finish, and mercury was analyzed by cold-vapor AA. Silver, arsenic, copper, molybdenum, lead, antimony, and zinc were analyzed by ICPAES following a hot two-acid digestion.

In 1991, BMGC sent 16 of the 1990 pulps to Acme Analytical Laboratories Ltd. ("Acme"), in Vancouver, British Columbia. Acme was independent of BMGC, but it is not known what certifications were held by the laboratory at that time. Each pulp was analyzed for gold by fire-assay fusion of a 30-gram aliquot. Each pulp was also analyzed for gold by acid leach and MIBK extraction from a 30-gram aliquot.

Storage of Historical Drill Core

Some of the historical remaining drill core is stored in the Geological Materials Center at the Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys, in Anchorage, Alaska. This includes select intervals of core from the Orange Mountain and Shumagin prospects, and outcrop samples from the Zachary Bay prospect.

11.1.2 Redstar Gold

Redstar Surface Samples

Soil, talus fines, and rock samples from 2011 through 2017 were collected by Redstar geologists, and by exploration contractors from YPS and Northern Associates Inc. ("NAI") under the supervision of Redstar geologists. The exact methods and procedures used for Redstar's surface sampling are not known to MDA. Surface samples were shipped to the ALS Minerals ("ALS") sample preparation facility in Fairbanks, Alaska, and to the ALS laboratory in Reno, Nevada. ALS was independent of Redstar and held ISO 17025:2005 and ISO 9001:2008 laboratory accreditations in Canada and the USA.

Soil and talus-fines samples in 2014, 2016, and 2017, the only years for which Redstar has certificates of assay, were dried at <60°C and sieved to -180µm. The fine fraction of each sample was shipped by ALS to the ALS laboratory in North Vancouver, where they were analyzed for gold by fire-assay fusion of 30-gram aliquots with an ICPAES finish (ALS method Au-ICP21). Silver and 50 major, minor, and trace elements were assayed by a combination of ICPAES and mass spectrometry ("ICP-MS") on a 1-gram aliquot following digestion by aqua regia (ALS method code ME-MS41). Soil and talus-fines samples collected in 2017 were prepared with the same procedures, but they were analyzed using a 50-gram fire assay with ICP finish (method code Au-ICP22). Silver and 49 major, minor, and trace elements were analyzed by ICPAES-MS (method code ME-MS61) using a 1.0-gram aliquot and a four-acid digestion. Mercury was analyzed by ICP.

In 2014, 2015, 2016, and 2017, rock and trench samples were crushed to >70% at -19 millimeters, followed by crushing to >70% at -2 millimeters, and rotary splitting of a 1.0-kilogram subsample. The subsample was then pulverized in its entirety to >85% at <75 microns. Four different methods were used to anaylze gold in various samples: (1) gold by fire-assay fusion of a 30-gram aliquot with ICPAES finish (Au-ICP21); (2) gold by fire-assay fusion of a 50-gram aliquot with AA finish (Au-AA24); (3) gold by fire-assay fusion of a 30-gram aliquot with gravimetric finish (Au-GRA21); and (4) gold by fire-assay fusion of a 50-gram aliquot with gravimetric finish. Silver and 50 major, minor, and trace elements were assayed by a combination of ICPAES and mass spectrometry (“ICP-MS”) on a 1-gram aliquot following digestion by aqua regia (ALS method code ME-MS41). For some samples, silver and 33 major, minor, and trace elements were assayed by a combination of ICPAES and mass spectrometry (“ICP-MS”) on a 1-gram aliquot following four-acid digestion (ME-MS61m), with mercury determined by cold-vapor AA. Samples assayed with >100 g Ag/t or >1.0% Cu, Pb or Zn were re-analyzed by ICPAES using method code OG46.

Redstar Drilling Samples 2011 – 2017 at Shumagin and Rising Sun Prospects

Drill core was placed in core boxes at the drill sites by Peak and YPS drilling staff. The core boxes were transported by the drillers and by Redstar personnel to the Redstar camp and logging facility at Baralof Bay. All of Redstar’s drill core was cleaned, logged, and photographed by Redstar personnel and exploration contractors under the supervision of Redstar geologists. The intervals to be sampled were selected and marked by Redstar geologists and exploration contractors. Sample intervals were sawed in half lengthwise, with one half of the core placed in numbered sample bags, which were then closed with ties, and the other half returned to the core boxes for future reference.

In 2011, drill-core samples were transported by commercial air freight from Sand Point to Anchorage, and then by truck to the ALS preparation facility in Anchorage, Alaska. The core was crushed to 70% at <2 millimeters and rotary split to obtain a 1.0-kilogram subsample. The subsamples were pulverized to 85% at <75 microns, and the pulps were shipped by air to the ALS laboratory in North Vancouver for assays. Gold was analyzed by fire-assay fusion of a 50-gram aliquot with an AA finish (method code Au-AA24). Samples with >10.0 g Au/t were re-analyzed by fire-assay fusion of a 50-gram aliquot with a gravimetric finish (method code Au-GRA22). Silver and 33 major, minor, and trace elements were analyzed by ICPAES using a 1-gram aliquot and a four-acid digestion (method code ME-ICP61). Samples with original assays >100 g Ag/t or >1.0% Cu, Pb, or Zn were re-analyzed by ICPAES after a four-acid digestion using method code OG62. Mercury was analyzed separately using cold-vapor AA.

Drill samples in 2015 were transported by commercial air freight from Sand Point to Anchorage, and then by truck to the ALS preparation facility in Anchorage. The samples were prepared with the same procedures as in 2011, except that in 2015 the core was first crushed to <19 millimeters before being crushed to 70% at <2 millimeters and rotary split to obtain a 1.0-kilogram subsample. Analytical methods in 2015 were the same as those summarized above for 2011.

Coarse rejects and portions of the remaining pulps from 162 of the 2015 core samples were later used in a 2016 study of the possible effects of coarse gold on assay results (Schaefer, 2017). A metallic-screen fire-assay procedure (method code SCR-21) was carried out by ALS on these samples.

In 2016 and 2017, Redstar’s core samples were transported by commercial air freight from Sand Point to Anchorage, and then by truck to the ALS preparation facility in Fairbanks. The crushing and pulverizing procedures used in 2016 and 2017 were the same as those described for the 2015 samples, with the exception that a barren silica “wash” material was run through the crusher and pulverizer before each crushed and pulverized core sample. In 2016, the sample pulps were shipped by air to the ALS laboratory in North Vancouver. In 2017, pulps were shipped the ALS laboratory in North Vancouver and to the ALS laboratory in Reno, Nevada for assays. Analytical methods in 2016 were the same as those summarized above for 2011 and 2015. In 2017, the fire-assay method for gold analyses (method code Au-AA24) was the same as that used in 2011 and 2015. However, in 2017, a combination of ICPAES and mass spectrometry ("ICP-MS", method code ME-MS61) were used for analyses of silver and 49 major, minor, and trace elements after a four-acid digestion of 1-gram aliquots. Mercury was analyzed by ICP-MS.

11.2 Sample Security

MDA has no information on the methods of sample security used by historical operators, which is not unusual for projects drilled in the 1970s through the early 1990s. However, Unga Island has been mostly uninhabited during the 1970s to the present.

Redstar's surface samples and drilling samples from 2011 through 2017 were periodically transported from the camp at Baralof Bay by boat, in the custody of Redstar personnel, to Redstar's secure warehouse at Sand Point. From the warehouse in Sand Point, the samples were transported by a commercial air freight service to Anchorage, and then by commercial trucking service to the ALS sample preparation facilities in Fairbanks or Anchorage. From there, sample pulps were shipped by ALS using air freight from Fairbanks and Anchorage to the North Vancouver and Reno laboratories.

Storage of Redstar Drill Core

Redstar's remaining drill core from 2011 through 2017 is stored in Sand Point at the Redstar warehouse.

11.3 Quality Assurance/Quality Control

The authors have found no information on QA/QC procedures and data that may have been used by historical operators to monitor assay quality, subsampling, and potential contamination during sample preparation and analysis. This is not unusual for properties drilled prior to the late 1990s. To increase confidence in the historical drilling assays, it is recommended that Redstar obtain, compile and evaluate any historical QA/QC information, if it exists.

The QA/QC programs and procedures of the various operators, if known to the authors, are summarized below. A discussion of the results of these programs is found in Section 12.4.

11.3.1 Redstar QA/QC Procedures, Shumagin Drilling Samples 2011 - 2017

Commencing in 2011, Redstar implemented a QA/QC program to monitor assay quality and the potential for sample contamination during preparation and analysis at ALS. This program primarily involved the insertion of coarse blanks and certified reference materials ("CRMs"), or standards, into the sample stream sent to ALS. All samples were weighed prior to shipping.

Blanks: MDA has no information on the type or source of blank material inserted with the 2011 and 2015 drilling samples. In 2016 and 2017, unmineralized basalt was inserted as blanks. The basalt was procured for Redstar by NAI from a quarry in Fairbanks. NAI has extensive assay data showing this basalt works well as a blank and provides consistent multi-element assays useful for monitoring laboratory multi-element analyses.

Standards: A total of four different commercial gold CRMs were inserted by Redstar to monitor the quality of gold assays at ALS. These CRMs are summarized in
Table 11.1.

During 2011, 2016, and 2017, Redstar inserted one QA/QC control sample per 10 core samples, starting with a blank as the first sample in each shipment and then alternating CRMs and blanks at a frequency of every 10 samples throughout the shipment. During 2015, blanks were inserted mainly every 14 to 30 samples, alternating with CRMs, such that one QA/QC control sample was inserted generally every seven to 15 core samples. The overall insertion rate of control samples for the 2011-2017 drilling was 10.5%.

Table 11.1 2011 – 2017 Shumagin QA/QC CRMs and Blanks

Year	Type	Name	Frequency	Insertions	Cert Au g/t	+/- 2 SD g/t
2011	Blank		every 20	92		
2011	CRM	CDN-GS-P5B	every 20	57	0.44	0.04
2011	CRM	CDN-GS-5E	every 20	31	4.83	0.37
2015	Blank		7 to 30	27		
2015	CRM	CDN-GS-12A	7 to 30	8	12.31	0.54
2015	CRM	CDN-GS-P7K	7 to 30	8	0.694	0.066
2016	Blank	BHQB-CHIP	every 20	26		
2016	CRM	CDN-GS-12A	every 20	12	12.31	0.54
2016	CRM	CDN-GS-P7K	every 20	10	0.694	0.066
2017	Blank	BHQB-CHIP	every 20	70		
2017	CRM	CDN-GS-12A	every 20	27	12.31	0.54
2017	CRM	CDN-GS-P7K	every 20	32	0.694	0.066

In addition, in 2015, 2016 and 2017, Redstar selected samples that ALS prepared as laboratory duplicates, with instructions for the laboratory to split the selected sample in half after crushing and place the material in an already labeled, empty sample bag for continued preparation and analysis. A total of 76 laboratory duplicates were prepared and analyzed from the 2015 through 2017 drilling.

Further to the use of blanks and CRMs, in 2016 and 2017 Redstar also weighed all samples prior to shipment to ALS. This allowed Redstar to compare the laboratory's reported weights received to the shipped sample weights. Any inconsistencies could identify sample numbering and sequence errors, which could lead to miss-matched sample numbers and assays.

An evaluation and discussion of the Redstar QA/QC sample results is presented in Section 12.4.

11.3.2 Redstar QA/QC Procedures, Rising Sun Drilling 2017

For drilling at the Rising Sun portion of the Apollo-Sitka prospect in 2017, Redstar inserted one QA/QC control sample per 10 core samples, starting with a blank as the first sample in each shipment, and then alternating CRMs and blanks at a frequency of every 10 samples throughout the shipment. The inserted control samples are summarized in Table 11.2. The overall insertion rate of control samples for the 2017 drilling was 12.6%.

Table 11.2 2017 Rising Sun QA/QC CRMs and Blanks

Year	Type	Name	Frequency	Insertions	Cert Au g/t	+/- 2 SD g/t
2017	Blank	BHQB-CHIP	every 20	6		
2017	CRM	CDN-GS-12A	every 20	2	12.31	0.54
2017	CRM	CDN-GS-P7K	every 20	4	0.694	0.066

Laboratory duplicates were also prepared from the Rising Sun core samples in the same manner as the Shumagin laboratory duplicates.

11.3.3 Redstar Soil, Talus Fines, and Rock Sample QA/QC Procedures

Redstar inserted CRM's into the soil and talus-fines sample stream to monitor assay quality at ALS. Six different commercial CRMs were used, generally inserted every 20 samples.

11.4 Summary Statement

To the extent that the historical information is available, the authors believe that the sample preparation, security, and analytical procedures employed by the historical operators and Redstar meet industry standards.

12.0 DATA VERIFICATION (ITEM 12)

12.1 Assay Database Audit

The authors supervised two separate audits of the Unga project drilling assays. One audit focused on assays reported from historical drilling at Zachary Bay, Aquila, Pook, Pray's Vein, Norm's Vein, Orange Mountain, Propalof, and Red Cove, while the other examined the assays generated from drilling programs conducted at the Shumagin, Centennial, and Apollo-Sitka prospects.

12.1.1 Peripheral Prospect Drill Assays

The authors were not provided a database that includes drill-hole information for the Zachary Bay, Aquila, Pook, Pray's Vein, Norm's Vein, Orange Mountain, Propalof, and Red Cove prospects, and copies of laboratory certificates were not available for most of the holes drilled in these areas. MDA therefore used copies of historical drilling logs to audit the sample intervals and results of the mineralized intervals summarized in Section 10.2.1, which were compiled from historical reports. These intervals are derived from 12 of the 95 drill holes drilled in these regional prospects, or 12.6% of the regional drill holes.

The reported sample from's and to's, interval lengths, and reported metal analyses were audited. For two of the holes, the reported copper assays were checked against entries on the drill logs, and five discrepancies in the assay values were found, none of which are material to the project. Two were related to the use of averages where multiple assays of the same samples were found. Three discrepancies in sample interval lengths were found in other holes and corrected. No other discrepancies were identified in the auditing.

MDA recommends that Redstar compile and fully audit a regional drilling database to identify and correct possible discrepancies and facilitate further evaluation and exploration work at these prospects.

12.1.2 Shumagin, Centennial and Apollo – Sitka Drill Assays

The Shumagin, Centennial, and Apollo-Sitka drilling assays were verified by compiling and auditing a combined database that includes information from 166 of the 171 holes drilled at these three deposits. Mr. Gustin compiled this database from digital data provided by Redstar, as well as from Mr. Ali Shahkar of Lions Gate Geological Consulting Inc., and Mr. Carl Schaefer of NAI, former contractors to Redstar during exploration at the Unga project. The database is referred to herein as the "compiled database".

Data from 28 (17%) of the compiled holes were examined. The database entries for sample ID's, sample from's and to's, gold and silver values, and assay types were compared to data recorded on copies of laboratory assay certificates and reports. In some cases, laboratory documents were not found, and for these intervals the database entries were compared to data recorded on copies of drill logs.

Of the 1,219 drill samples examined, four were found to have insignificant errors in either "depth to" or "depth from" in the compiled database. The sample depths of 25 of the Apollo-Sitka drill-sample intervals and 96 of the Shumagin intervals could not be checked because these logs were not provided to MDA.

A total of 11 gold values and seven silver values in the compiled database, representing about 1.5% of the assays examined, were found to differ from those recorded on laboratory assay reports or drill logs. Some of the discrepancies appear to be due to incorrect conversions from original Imperial units of measure to metric units, some are likely transcription errors, and the rest appear to be related to averaging of multiple assays for the same sample. Irrespective of the nature of the discrepancies, the error rate is well within acceptable limits, but the possible conversion error should be investigated carefully.

12.2 Drill-Collar Audit

As discussed in Section 10.4, MDA has no documentation of original survey data that can be used to check the drill-hole collar coordinates of any of the historical holes or Redstar holes drilled at the Unga project. The authors recommend that Redstar attempt to locate and compile such information, if it exists. For the historical holes, the methods used to capture and translate the historical drill locations from original sources to the UTM NAD83 projection presently in use for the project should be documented. This will allow increased confidence in the drill data when used to estimate mineral resources.

12.3 Down-Hole Survey Audit

MDA has is not aware of original down-hole survey data that can be used to verify the down-hole deviation data in the compiled database. The authors recommend that Redstar attempt to locate such information, if it exists, so that the deviation information in the database can be properly verified.

12.4 Quality Assurance/Quality Control

Redstar inserted a total of 221 blanks and 169 CRMs during drilling in 2011 through 2017, a quantity equal to 10.5% of the drill-core intervals assayed in those years. In addition, Redstar instructed ALS to create and analyze preparation duplicates from 76 of the core samples from the 2015 and 2016-2017 drilling campaigns. The results of these QAQC programs is presented below.

12.4.1 Shumagin Drilling QA/QC 2011 - 2017

Blanks: A total of 92 blanks were inserted into the drill-sample stream during 2011, 27 in 2015, and 96 in the 2016-2017 drilling campaign. In consideration of the 0.005 g Au/t detection limit of the assays and a greater-than-five-times-detection-limit threshold for the definition "failures", two failures were generated from the 2011 blank analyses (0.031 and 0.052 g Au/t). These failures are not at a level that is considered to be material, however. Seven failures occurred in 2015, six of which assayed in the range of 0.030 to 0.049 g Au/t, which are not material, while the other failure returned a value of .098 g Au/t, indicating the potential for material contamination during sample preparation within the laboratory. This blank (sample number M229015; drill hole M229015) was preceded by a 2.3 g Au/t sample and followed by a sample that assayed 3.91 g Au/t. It is noteworthy that two of the seven blank failures in 2015 contained elevated arsenic (82 and 320 g As/t), which is not expected in unmineralized rocks. It is possible the 2015 blank material was slightly mineralized. No failures were generated during the 2016-2017 drilling program.

CRMs: Two different CRMs were inserted for a total of 88 analyses of CRMs in 2011. One of the insertions assayed less than three standard deviations ("3SD") below the certified value of CRM GS-P5B, which is therefore considered failures. One analysis of CRM GS-5E was also below the lower control limit.

Each of two different CRMs were inserted eight times, for a total of 16 CRM insertions into the 2015 drill-sample stream. There was one high failure. While one ALS analysis (10.0 g Au/t) of CRM GS-12A is below the lower 3SD control limit, this value equals the upper reporting limit of the assay. It is therefore likely that no over-limit analysis of the CRM was completed, or, if it was, the over-limit analysis was not included in the assay data provided to MDA.

A total of 59 CRM sample pulps were inserted into the sample stream during Redstar's 2016 and 2017 drilling program. This included 27 insertions of CRM GS-12A and 32 insertions of GS-P7K. Four of the GS-12A samples returned results less than the 11.5 g Au/t lower control limit, but three of these apparent failures assayed 10.0 g Au/t and are therefore unlikely to be actual failures. The fourth apparent failure assayed 7.87 g Au/t, which is significantly below the lower control limit. There were no low failures for CRM GS-P7K. In one case, GS-P7K assayed 0.797 g Au/t, which is slightly higher than the upper control limit of 0.793 g Au/t for this CRM.

The CRMs used by Redstar were certified only for their gold concentrations. MDA recommends the use of CRMs certified for silver in addition to gold in future drilling programs.

Preparation Duplicates: For the drill samples that Redstar instructed ALS to prepare preparation duplicates, two 1-kilogram rotary splits of the coarsely crushed sample, one split being the primary sample and the second split the preparation duplicate. Each of these samples was then pulverized and analyzed with the same procedures used for all other Redstar drill samples.

The preparation-duplicate data can be used to evaluate the representativity of ALS subsampling of the coarsely crushed drill core, as well as the gold and silver grade variability inherent in the subsampling of Shumagin core in the laboratory. These duplicate data should be evaluated as part of any future resource study.

12.4.2 Rising Sun Drilling QA/QC 2017

All six of the coarse blanks inserted during the 2017 Rising Sun drilling returned less-than-detection-limit gold assays. CRMs GS-12A and GS-P7K were inserted into the drill-sample stream twice and four times, respectively. All six of the CRMs assayed within the control limits.

12.5 Site Inspection

Mr. Gustin spent two days at the project site on August 3 and 4, 2016. Due to inclement weather, which precluded helicopter transport for much of the time, only a portion of one day was spent at the Shumagin prospect. While in the field in the company of Jesse Grady, Redstar's Vice-President Exploration at the time, Mr. Gustin traversed across hanging wall and footwall units of the Shumagin fault, inspected numerous mineralized and altered exposures of the Shumagin vein zone along the fault, and visited a number of historical and Redstar drill pads. The remainder of the visit was spent at Popof Island reviewing drill core and reviewing details of the geology, mineralization, and exploration data for many of the prospects along the Shumagin and Apollo-Sitka trends. The visit allowed Mr. Gustin to gain a good understanding of the Shumagin prospect specifically and the Unga project generally.

Following the site visit, Redstar completed the 2016 and 2017 drilling programs under Mr. Grady's supervision, which focused on the Shumagin prospect. During this time period, Mr. Grady regularly discussed results and interpretations with Mr. Gustin, and sent updated maps, cross sections, and select core photos for review.

12.6 Summary Statement on Data Verification

In consideration of the information summarized in this and other sections of this report, the authors have verified that the Unga project data are acceptable as used in this report, most significantly to support the disclosure of mineralized drill-hole intersections. While Redstar was not able to provide the authors with original drill-hole collar surveys or original records of down-hole deviation surveys from which to verify their digital drill-hole data files, the historical hole locations are broadly referenced in multiple historical reports by multiple geologists who have worked at the project, and a number of Shumagin drill pads seen in the field by Mr. Gustin at Shumagin are consistent with Redstar's data.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING (ITEM 13)

While the authors are not experts with respect to metallurgy, and make no metallurgical interpretations or conclusions, the information presented in this Section is considered to be a reasonable summary of the metallurgical test work completed on the Unga project to date.

Files available to MDA show preliminary cyanidation tests were carried out for AAGM on drill core from the Shumagin vein system in 1984. Subsequently, in 1989, BMGC performed preliminary cyanide-leach and gravity concentration tests, with flotation of the gravity tails, on samples from the Centennial deposit. Since then, Redstar commissioned a preliminary mineralogical and metallurgical study of mineralized material from the Shumagin deposit. Available information from these studies is summarized below in the units of measure originally reported. Use of the original reported units is retained for historical clarity and to avoid awkwardness. In some cases metric units were mixed with Imperial units in the metallurgical documentation. The reader is referred to Section 2.2 for the appropriate conversion factors.

The term “ore” in this section replicates its use in the historical documentation; it refers only to mineralized material that was tested and therefore does not have economic implications. The available data are not sufficient for the authors to determine if any of the metallurgical samples described in this section are representative of the deposits from which they are derived.

13.1 Shumagin

13.1.1 AAGM Test Work 1984

In 1984, two composite samples from the Shumagin vein system were prepared from 19 samples of six of the AAGM core holes. These composites, one considered high grade and one low grade, were tested by Bacon, Donaldson & Associates (“BDA”) of Vancouver, British Columbia, as documented in the report of Vreugde (1984). All of the information summarized in this sub-section has been extracted from Vreugde (1984), unless cited otherwise.

The state of oxidation and sulfide mineral contents of the individual drill intervals and the two composites are not known. The higher-grade composite reportedly weighed about 18 kilograms and assayed 0.378 oz Au/ton and 1.038 oz Ag/ton. The lower-grade composite reportedly weighed about 10 kilograms and assayed 0.032 oz Au/ton and 0.147 oz Ag/ton. Two cyanidation tests were carried out on subsamples of each of the two composites, and a flotation test was performed on a subsample of the higher-grade composite.

For the cyanidation tests, the materials were ground to 37.5% to 57.8% passing -200 mesh particle size and leached for 48 hours. Gold extractions from the higher-grade composite were reported to be 85.4% and 87.8%, with silver extractions of 52.3% and 47.2%. For the lower-grade composite, gold extractions of 40.6% and 46.9% and silver extractions of 33.3% and 37.4% were reported.

For the flotation test, the subsample was reportedly ground to about 47% passing -200 mesh; extractions for gold and silver were 85.2% and 77.7%, respectively.

13.1.2 Redstar 2012 Compilation of Native Gold

In 2012, Redstar compiled available information from drill logs and historical petrographic studies to obtain an initial perspective on the size and character of observed gold particles in drill core from the Shumagin deposit. This compilation is a list of macroscopic and microscopic observations of gold by hole number and depth, with gold particle sizes estimated visually as shown in Table 13.1.

Table 13.1 Observations of Native Gold in the Shumagin Vein System
(from Margolis, 2014)

Hole / Depth (ft)	Gold (oz Au/ton)	Gold Residence	Source
DH23 / 317	1.800	0.02-0.03mm inclusions in marcasite, which locally occurs in chalcopyrite	Vancouver Petrographics (1984)
DH23 / 318.5	1.800	0.03-0.1mm inclusions in pyrite, one grain between quartz grains	Vancouver Petrographics (1984)
DH21 / 124.5	0.001	$\leq$0.05mm grains in galena	Vancouver Petrographics (1984)
DH21 / 127	0.022	0.05mm grain between quartz grains	Vancouver Petrographics (1984)
DH22 / 201	0.001	0.03mm grains between marcasite grains	Vancouver Petrographics (1984)
DH46 / 504-508	10.656	No details	Lalonde (1989)
DH50 / 554-557.5	0.445	No details	Lalonde (1989)
DH51 / 512-514	5.309	No details	Lalonde (1989)
BMS-1 / 904.5	0.377 - 1.197	1.5cm clot of fine-grained gold with fine galena in quartz vein	Margolis (2012 observation); not noted in BMGC log
11SH010 / 259.25-259.8m	21.525	2cm clot of fine-grained gold with fine-grained galena in quartz vein in altered andesite	Redstar Gold logging
11SH07 / 239.5-239.9m	0.448	~3mm clot within quartz vein	Redstar Gold logging
11SH09 / 224-225.1m	152 ppb	Small specs with minor galena-sphalerite in quartz vein	Redstar Gold logging

13.1.3 Redstar Test Work 2017

Redstar commissioned a preliminary study of mineralogy and a suite of metallurgical tests by ALS Metallurgy in 2017 that were documented in the report of Roulston and Mehrfert (2017). The mineralogy study and test work were performed at the ALS Metallurgy laboratory in Kamloops, British Columbia, with some supporting assays done at the ALS laboratory in North Vancouver. All of the information summarized in this sub-section has been extracted from Roulston and Mehrfert (2017), unless cited otherwise.

A single composite was prepared from assay coarse rejects of 29 samples from six Shumagin drill holes, for a total of about 25 kilograms of material that had been crushed to < 6 mesh particle size. The objectives were to:

- Determine the mineralogical content of the composite using QEMSCAN Bulk Mineral Analysis (BMA) protocols;

- Investigate the gold within the composite through a QEMSCAN Trace Mineral Search, assessing the nature and association of gold grains in the composite; and
- Assess the amenability of the composite to gravity, cyanidation, and flotation flowsheets through Knelson gravity, whole-ore bottle-roll cyanidation, and froth flotation testing, respectively.

The composite head assay data are summarized in Table 13.2. Duplicate head assays and complete metallic screen results are available in Appendix IV of Roulston and Mehrfert (2017).

Table 13.2 2017 Shumagin Drill Core Composite Head Assay Summary

Sample	Assay - percent or g/tonne				
	S	C	Ag	Au	$Au_{(SM)}$
Composite 1	2.38	1.60	6	1.94	2.42

Notes: a) Silver and gold assays are displayed in g/tonne, other assays are displayed in percent.
b) $Au_{(SM)}$ - Gold content determined through a screened metallic assay method.

Sulfur ("S" in Table 13.2) was reportedly primarily contained in pyrite, which was about 4% of the sample; traces of galena, sphalerite, and chalcopyrite were also detected. Most of the measured carbon ("C") was inferred to reside in calcite, which comprised approximately 9.4% of the composite.

A portion of the composite was ground to <122 microns and processed through a Knelson Concentrator. A subsample of the gravity tails was screened at 53 microns. All three products were analyzed with a QEMSCAN trace mineral search ("TMS") procedure. Forty-four gold grains were detected. The gold grains observed were approximately eight microns in effective diameter on average. The largest grain observed was 38 microns in effective diameter. Effective diameter was calculated from the area of each grain.

Most of the TMS-detected gold grains occurred as liberated gold/electrum particles. Liberated gold in the gravity concentrate was found to be notably coarser than liberated gold in the gravity tailings. About 22% of the detected gold/electrum by measured surface area was observed as inclusions within sulfide minerals or sulfide-bearing, multiphase particles. About 23% of the located gold/electrum by measured surface area was found as inclusions within non-sulfide gangue particles, primarily quartz. Several back-scattered scanning-electron microscopy ("SEM") images presented in Roulston and Mehrfert (2017) clearly document the TMS-detected gold grains.

Three flow sheet options were explored in the ALS Metallurgy tests on the 2017 composite. One involved flotation of a bulk sulfide concentrate followed by cyanidation of the concentrate, the second involved a gravity concentration step followed by cyanidation of the gravity tailings, and the third was a whole-ore leach of the entire feed. Details on the specific grind sizes and other test parameters are given by Roulston and Mehrfert (2017).

In summary, whole-ore cyanide leaching resulted in 84% to 86% gold extraction and 67% to 72% silver extraction over 48 hours. When preceded by a Knelson gravity concentration step, the overall leach extraction and gravity recovery for gold and silver measured about 85% and 71%, respectively; the gravity concentration step recovered about 16% of the gold and 15% of the silver. With flotation followed by cyanidation, gold and silver extractions were recorded at 76% and 63%, respectively. About 18% of the gold and silver reported to the flotation tailings, and about 6% of the feed gold and 19% of the feed silver remained in the cyanidation tailings.

13.2 Apollo - Sitka

The authors are unaware of metallurgical testing of mineralized material from the Apollo and Sitka mines, or any of the prospects in the Apollo-Sitka trend.

13.3 Centennial

Concerns about gold-assay variability and possible nugget effects led BMGC to conduct studies of the Centennial deposit gold-particle size using metallic-screen assays, conventional optical microscopy, and bulk gravity concentration. BMGC concluded significant free gold is present in the Centennial mineralization, with a mean particle size of about 22 microns (see Ellis and Jacob, 1988). At least some of this work was done at Bondar-Clegg in Lakewood, Colorado.

BMGC carried out preliminary cyanide-leach tests in 1989 with ½ sawed core samples and coarse rejects. Copies of internal BMGC memorandums in the files of Redstar document the procedures and samples used, the test conditions, and the results. Though not specifically stated, it appears the tests were carried out at BMGC's mine operations laboratory near Battle Mountain, Nevada. This laboratory was not independent of BMGC, and it is not known what certifications were held by this laboratory, if any. BMGC performed "coarse roll bottle" cyanide-leach tests on 17 samples from six Centennial drill holes. The samples were crushed to a p80 of -2 millimeters and leached for 48 hrs. Gold extractions ranged from 37% to 100%, with an average of 75% extraction; the average head grade for the 17 samples was 0.034 oz Au/ton (M.G. Gorman memo dated February 10, 1989).

Preliminary extraction tests were also carried out by BMGC in 1989 using a combination of gravity concentration followed by flotation of the gravity tails. The gravity concentrations were done using a "Knelson Bowl", and by hand panning, with a total of eight samples of drill core. Combined extractions varied from 62% to 97%, with an average combined gold extraction of 92% (M.G. Gorman memo dated March 3, 1989).

13.4 Author's Summary Comments

The authors do not have sufficient information to make judgements as to the representativity of the various samples used in the Unga metallurgical test work. Having stated this, the authors also have no reason to believe the samples are not representative of the mineralized prospects from which they are derived.

14.0 MINERAL RESOURCE ESTIMATES (ITEM 14)

There are no current mineral resource estimates at the Unga project as of the Effective Date of this report.

15.0 RESERVES ESTIMATES (ITEM 15)

Items 15 through 22 are not required because the Unga project is not an advanced property.

23.0 ADJACENT PROPERTIES (ITEM 23)

The authors are not aware of any information regarding properties adjacent to the Unga project that is relevant to the technical information summarized in this report.

24.0 OTHER RELEVANT DATA AND INFORMATION (ITEM 24)

The authors are not aware of any other materially relevant data or information necessary to make this technical report understandable and not misleading.

25.0 INTERPRETATION AND CONCLUSIONS (ITEM 25)

The authors have reviewed the project data, constructed a drill-hole database, and visited the project site. The authors believe that the data provided by Redstar, as well as the geological interpretations Redstar has derived from the data, are generally an accurate and reasonable representation of the Unga project.

A significant number of diversely mineralized showings has been identified to date within the large land position of the Unga project (Figure 7.5). Many of the prospective areas on Unga Island are related to northeast-trending structural zones, most notably the Shumagin and Apollo-Sitka trends with strike extents of up to 10 kilometers, while those on Popof Island appear to have northerly-striking trends.

It is likely that groups of Unga project mineralized showings are genetically related to magmatic and intrusive activity of the Popof volcanics and discrete magmatic-hydrothermal centers, with the most obvious being Orange Mountain, a high-level high-sulfidation alteration zone that can reasonably be inferred to be underlain by an intrusion. The Shumagin-trend intermediate-sulfidation gold-silver occurrences lie on either side of, and appear to emanate from, Orange Mountain. The Zachary Bay copper-gold porphyry target, which lies about 7 kilometers north of Orange Mountain, may represent a completely different manifestation of a similar magmatic-hydrothermal system, but in this case at a deeper erosional level than at Orange Mountain. The Unga project appears to offer the full vertical and lateral spectrum of high-sulfidation to intermediate-sulfidation (and possibly low-sulfidation) targets.

Intermediate-sulfidation targets are the most abundant of the presently known mineralized areas at the Unga property, and of these, the Shumagin vein-breccia zone is the most advanced. The Shumagin vein zone has a drilled strike extent of 1.75 kilometers and remains open in both directions. The central portion of the drilled strike length has returned significant gold and silver intercepts, including a number of intersections in excess of 10 g Au/t, and a few in excess of 100 g Au/t, but hole-to-hole continuity of these high grades is often not present. However, in addition to the vein system being open along strike, with the potential of hosting a separate mineralized segment along the vein zone, the presently defined mineralized portion of the vein zone is open at depth. Of the four deepest intersections of the Shumagin vein system, three of the holes returned single-sample values in excess of 10 g Au/t, accompanied by lower-grade but still significant results (>3 g Au/t). These three intersections lie along a 450-meter strike extent of the vein zone, below the central portion of the presently drilled vein zone; the fourth deep hole lies outside of this strike length. The Shumagin vein-breccia zone remains strong in these holes, and base-metal values are lower, both of which support the concept that the mineralized core of the Shumagin system has not yet been defined.

While some details of the nature of the Apollo-Sitka gold-silver vein system remain uncertain, it clearly has some similarities to Shumagin, with the most significant difference being its greater quantities of base metals, particularly lead and zinc. Although the exact locations of the surface drill holes at Apollo-Sitka are uncertain, and the drill core was incompletely sampled, the available results suggest that gold values drop below the level of the Apollo and Sitka historical mine workings. The Apollo-Sitka zone could represent a deeper erosional level of a Shumagin-type vein system.

The geology of the Centennial deposit is incompletely understood, but it clearly represents a style of mineralization different from the intermediate-sulfidation vein systems at Shumagin and Apollo-Sitka. Drilling at Centennial appears to have defined a subhorizontal zone with gold values typically in the range of 0.2 to 2 g Au/t, with no appreciable silver or base-metal values and apparently only superficial oxidation. While high-angle, high-grade, structurally controlled mineralization may be present, and there is some evidence of this in sea-cliff exposures at the southern extent of the prospect area, this concept has not yet been adequately tested due to insufficient drill density and the predominance of vertical holes. The Centennial deposit provides an example of potential bulk-tonnage-style gold mineralization at the Unga project, and work to advance the geologic understanding of the deposit prior to additional drilling is warranted.

The Zachary Bay prospect is presently defined by the results from four holes drilled into one or more intermediate intrusions that intersected porphyry-style alteration and highly anomalous gold and copper values. The most significant intercept was in the first hole drilled at the target, which returned approximately 0.1% Cu and 0.3 g Au/t over the entire 107-meter length of the hole drilled in bedrock. The prospect is close to the transition between the Eocene-Oligocene volcanic sequence to the south and the Miocene sequence to the north; it is possible that the porphyry mineralization is covered by post-mineral volcanic rocks. This prospect clearly warrants serious evaluation.

The Shumagin, Apollo-Sitka, Centennial, and Zachary Bay prospects show the diversity of target types present at the Unga project. While the Shumagin, Apollo-Sitka, and Centennial areas have received the bulk of exploration work to-date, each of these warrants further exploration. All other prospect areas within the Unga project, including Zachary Bay and the numerous, primarily epithermal vein-type prospects (Aquila, Norm’s Vein, Pook, Pray’s Vein, Bloomer Ridge, California, etc.), remain at an early stage of exploration. These less-explored prospects require a complete compilation and review of existing data, and systematic field evaluations by experienced geologists in the field, including mapping and rock and soil sampling. The goal of this work would be to properly place each prospect into the overall geologic framework of the project area, define additional work appropriate for each target (e.g., trenching, geophysics, drilling), and to prioritize the targets. Seemingly little-explored prospects could easily develop into priority targets during this review. For example, the Bloomer Ridge target, which lies less than one kilometer southeast of Shumagin, is presently defined by numerous rock-chip gold values over an apparent strike length of almost one kilometer, and it could quickly advance in importance.

Finally, it is noteworthy that all of the existing prospects were identified by a first-pass level of surface exploration. Significant portions of the property have therefore experienced only cursory field review, if any at all. Recently developed concepts of potentially mineralized high-sulfidation alteration and related intrusive centers (e.g., Orange Mountain; Zachary Bay) and laterally associated epithermal systems (e.g., Shumagin; Apollo Sitka) should be used to develop exploration strategies that can be applied to the entire project, including areas of limited exposure. Consideration should also be given to the variable levels of erosion that are likely present on the property.

26.0 RECOMMENDATIONS (ITEM 26)

The authors believe that the Unga property is a project of merit that warrants considerable exploration investment. The project includes numerous prospects that have undergone various stages of exploration, and essentially all of them warrant some level of additional work.

Shumagin is the most advanced prospect at Unga, but it remains open for expansion. Most significantly, the four holes that intersect the deepest portion of the presently defined core of the mineralized zone demonstrate that the vein zone remains strong and, in three of the holes, highly mineralized. The challenge at Shumagin has been to identify mineralization of sufficient grade, continuity, and size to bring the project to the next level. The sufficiency of the grade has been demonstrated, but the continuity of this grade and the size of the deposit remain to be established. Drilling is recommended to test the possibility that only the top of the core zone of the Shumagin system has been intersected by drilling to date. It is possible that the historically mined Apollo-Sitka vein system represents the roots of a Shumagin-type vein system. If this is true, it lends support to the idea that the vertical extents of the Shumagin vein zone could extend significantly deeper than present drilling levels, as the base-metal contents at Shumagin system remain much lower than those at Apollo-Sitka.

Historical drilling at Apollo-Sitka appears to define the depth limits of the productive portion of the vein system. However, there are conflicting interpretations as to the dip of the vein system, which could dramatically change the interpretation of the down-dip potential. Even if the presently accepted dip orientation is confirmed, the historical holes are only partially sampled. The orientation of the vein zone needs to be confirmed, as do the collar locations of the historical drill holes. Remaining drill core should also be carefully logged to assure the vein zone was intersected. The results of this work will help determine if further drilling is warranted in the area of historical mining.

The Centennial prospect also needs further work prior to any additional drilling. Available historical drill core needs to be reviewed, re-logged, and possibly sampled, with an emphasis on discerning possible structural controls. The degree of oxidation should also be noted. New trenches and cleaning out of old trenches should also be considered with the same goals in mind. Further drilling would be subject to the results of this work.

The Zachary Bay prospect represents a very real opportunity to define a significant copper-gold porphyry-style deposit and should be prioritized as such. Surface mapping and sampling should be undertaken, as should additional geophysical work once the geology of the prospect is better understood. Drill targeting can then be refined, but it is important to state that the authors believe drilling of the prospect is already warranted, it is the optimization of the drilling program that should be achieved with the recommended surface work.

As discussed in Section 25.0, the comprehensive review of all Unga prospects, including field reviews, should be undertaken within the geologic framework of potentially mineralized high-sulfidation alteration and genetically related intrusive centers and their laterally associated epithermal systems. The goal of these reviews is to prioritize the prospect areas and define the work needed to advance them.

In order to initiate the comprehensive review of prospects, a single project-wide digital database needs to be compiled that incorporates all data associated with every drilling campaign completed at the project. All relevant data should be included, such as the exploration company that executed the drilling program, dates of holes drilled, the target areas of the holes, analytical laboratories and assay methods used, etc. Logged data should be captured in individual tables such as mineralization, alteration, oxidation, vein types, and structure. The creation of this database will bring issues to light that will need to be resolved. For example, the authors found numerous issues with hole depths and sample intervals when compiling an interim database that includes Shumagin, Apollo-Sitka, and Centennial drill data. As part of this compilation, the method used to transform the historical drill-hole collar coordinates into UTM NAD83 coordinates needs to be determined and properly documented.

Following the creation of the project drill-hole database, all other project information for each prospect area needs to be organized on a prospect-by-prospect basis, including the available paper records that serve as the backup to the information in the drill-hole database. When this work has been completed, the office reviews of each prospect area can initiate, followed by field work.

Based on the information available, a Phase I program of exploration work to accomplish the above is recommended with an estimated cost of $2.1 million as summarized in Table 26.1.

Table 26.1 Cost Estimate for the Recommended Program

Phase I Exploration Item	Estimated $ Cost	
Project Database Compilation, Validation, Maintenance	$	65,000
Field Review, Mapping Sampling	$	100,000
Surface Geochemical Sampling, Assays	$	100,000
Geophysics - Zachary Bay	$	100,000
Camps, Logistics	$	250,000
Helicopter	$	300,000
Drilling at Shumagin, Zachary Bay, Centennial	$	1,025,000
Drill Assays	$	85,000
Travel	$	75,000
Total	$	$2,100,000

27.0 REFERENCES (ITEM 27)

Andersen, G.D., Butherus, D.L., Frankhauser, R.E., Pray, J.C., Lindberg, P.A., and Hoffman, B.L., 1980, Volume III Book 1 Exploration and evaluation of lands leased from Aleut Native Corporation 1980: unpublished report by Research Associates of Alaska prepared for Houston Oil and Minerals Corporation, 68 p.

Atwood, W.W., 1911, Geology and mineral resources of parts of the Alaska Peninsula: U.S. Geological Survey Bulletin 467, 137 p., 14 pl.

Bowdidge, C.R., 1993, Summary report on the Apollo and Shumagin gold mining projects, Unga Island, Alaska: unpublished report prepared for Alaska Apollo Resources, Inc.

Bundtzen, T.K., Green, C.B., Deagen, J., and Daniels, C.L., 1987, Alaska's mineral industry 1986: Alaska Division of Geological & Geophysical Surveys Special Report 40, 68 p. http://doi.org/10.14509/2639.

Burk, C.A., 1965, Geology of the Alaska Peninsula: Geol. Soc. of America Memoir 99, p. 250.

Burtherus, D.L., Gressitt, E.E., Pray, J., Corner, N.G., Lindberg, P.A., and Frankhauser, R.E., 1979, Exploration and evaluation of the Aleut Native Corporation lands: unpublished report prepared by Resource Associates of Alaska, Inc., v. III, 71p.

Detterman et al 1996 Detterman, R.L., Case, J.E., Miller, J.W., Wilson, F.H., and Yount, M.E., 1996, Stratigraphic framework of the Alaska Peninsula: U.S. Geological Survey Bulletin 1969-A, 74 p.

Dirks, N.J., and Richards, G.G., 1976, (January), Final report on Zachary Bay Project Unga Island, Alaska Port Moller B-2 Quadrangle: unpublished in-house report to Quintana Minerals Corporation, 17 p.

Drobeck, P.A., 2005 (October), Shumagin Islands evaluation, Aleutians East Borough, Alaska, project review and exploration plan: unpublished report prepared for Metallica Resources Inc., 52 p.

Ellis, W.T., and Apel, R.A., 1989 (December), Unga / Alaska Peninsula project 1989 final report: unpublished internal report for Battle Mountain Exploration Company, 48 p.

Ellis, W.T., and Harris, D.E., 1989, Centennial prospect final report 1989: unpublished internal report for Battle Mountain Exploration Company, 91 p.

Finzel and others, 2005, Preliminary interpretative report 2005-4, Bristol Bay Basin and Alaska Peninsula: State of Alaska Division of Geological & Geophysical Surveys, 67 p.

Galey, J., 2005 (October), Memorandum to Bill Ellis regarding Unga Island 2005, 42 p.

Knappen, R.S., 1929, Geology and mineral resources of the Aniakchak district, Alaska: U.S. Geological Survey Bulletin, v. 797-F, p. 161-227.

Mining Journal, 1987, Shumagin results evaluation: Mining Journal, v. 309, no. 7940, p. 328.

Margolis, J., 2014 (June), Unga project review of priority targets and exploration program recommendations: internal company report, Redstar Gold Corp., 161 p.

Marincovich, L., Jr., and Wiggins, V.D., 1990, Oligocene age of strata on Unga Island, Shumagin Islands, southwestern Alaska: *in* Dover, J.H., and Galloway, J.P., eds., Geologic studies in Alaska by the U.S. Geological Survey, 1989: U.S. Geological Survey Bulletin 1946, p. 39-43.

Peterson, R.J., Lemmers, J., Handverger, P., Gallagher, J., Pilcher, R., East, J., Macleod, A., and Bartels, E., 1982, Geology and precious metals potential Unga, Popof, and Korovin Islands Shumagin Group Aleutian Chain, Alaska 1982: unpublished internal report by UNC Teton Drilling Inc., 144 p.

Peterson, R.J., Handverger, P., Rosenkrans, D., Bartels, E., and Woolston, D., 1983a, Shumagin Islands precious metals exploration program southwest Alaska 1983: unpublished internal report by UNC Teton Drilling Inc., 107 p. plus appendices.

Peterson, R.J., Handverger, P., Rosenkrans, D., Bartels, E., and Woolston, D., 1983b, Shumagin Islands precious metals exploration program southwest Alaska 1983 Appendix: unpublished report by UNC Teton Drilling Inc., 291 p.

Pilcher, R.C., 1983, Report on the geology of the Apollo and Shumagin vein systems and results of the 1983 exploration program Unga Island, Alaska: unpublished report prepared for Alaska Apollo Gold Mines, Ltd., 95 p.

Queen, L.D., 1988, Geologic report on the Shumagin claims, Unga Island, Alaska: unpublished report prepared for Alaska Apollo Gold Mines Ltd., 7 p.

Redstar News Release dated January 18, 2012; https://www.sedar.com.

Redstar News Release dated February 19, 2014; https://www.sedar.com.

Roulston, D., and Mehrfert, P., 2017 (April); Metallurgical test work on the Unga Project Alaska KM5292: unpublished report to Redstar Gold Corp. by ALS Metallurgy, Kamloops, 79 p.

Riehle, J.R., Wilson, F.H., Shew, N.B. and White, W.H., 1998, Geologic map of Unga Island and the northwestern part of Popof Island, Alaska: 1:63,360 scale, *in* Riehle, J.R., (ed.). Geological and geophysical setting of the gold-silver vein systems of Unga Island, southwestern Alaska: USGS Open-File Report 99-136.

Riehle, J.R., Wilson, F.H., Shew, N.B. and White, W.H., 1999, Geology of Unga Island and the northwestern part of Popof Island: *in* Riehle, J.R., (ed.). Geological and geophysical setting of the gold-silver vein systems of Unga Island, southwestern Alaska, USGS Open-File Report 99-136, Chapter 2.

Schaefer, C., 2017 (January), Review of 2016 screen fire gold assays, Shumagin project: unpublished report to Redstar Gold Corp., 9 p.

SRK Consulting (US), 2000, Unga Island project resource and reserve review for Daugherty Resources Inc., 27 p.

Stevens, D.L., 2012 (February), Unga project Popof and Unga Islands Southwest Alaska: NI 43-101 technical report prepared for Redstar Gold Corp., 83 p.

Strandberg, E.O., Jr., 1996, Unga Islan project, Unga Island, Alaska: Ore reserves (preliminary): unpublished report prepared for Alaska Apollo Resources, Inc.

Trujillo, R., Andersen, G., Macleod, A., Hendrick, K., Farnham, S., and Peterson, J., 1981, Exploration and evaluation of the Unga-Popof-Korovin Islands portion of lands leased from Aleut Native Corporation: unpublished report by Research Associates of Alaska prepared for UNC Teton Exploration Drilling, Inc., and the Aleut Corporation, 79 p.

Van Wyck, N., Ellis, W.T., Petersen, M.A., and McLeod, R., 2005 (December), Southwest Alaska Peninsula-Shumagin Islands project 2005 technical report Port Moller Region: unpublished report to the Full Metal Minerals – Metallica Resources Joint Venture, 54 p.

Vann, J., and Crowl, W., 2000 (March), Daugherty Resources, Inc. Unga Island project resource and reserve review SRK project 130701: unpublished report by Steffen Robertson and Kirsten (U.S.), Inc., for Daugherty Resources Inc., 27 p.

Vreugde, M.J.A., 1984 (February), Preliminary beneficiation tests on gold ore, file number 4917: unpublished report to Alaska Apollo Gold Mines by Bacon, Donaldson & Associates, 14 p.

White, W.H., and Queen, L.D., 1989, Preliminary geologic and rock-chip geochemical data from drill core and trenches at the Shumagin gold deposit, Unga Island, Alaska: USGS Open-file Report 89-361, 38 p.

Wilson, F.H., Detterman, R.L., Miller, J.W. and Case, J.E., 1995, Geologic map of the Port Moller, Stepovak Bay, and Simeonof Island quadrangles, Alaska Peninsula, Alaska: U.S.G.S. Map I-2272, 1:250,000 scale.

28.0 DATE AND SIGNATURE PAGE

Effective Date of report: June 14, 2018

Completion Date of report: ***July 26, 2018***

"Michael M. Gustin"
Michael M. Gustin, C.P.G.

Date Signed:
July 26, 2018

" Steven I. Weiss"
Steven I. Weiss, C.P.G.

Date Signed:
July 26, 2018

29.0 CERTIFICATE OF QUALIFIED PERSON

MICHAEL M. GUSTIN, C.P.G.

I, Michael M. Gustin, C.P.G., do hereby certify that I am currently employed as Senior Geologist by Mine Development Associates, Inc., 210 South Rock Blvd., Reno, Nevada 89502 and:

1. I graduated with a Bachelor of Science degree in Geology from Northeastern University in 1979 and a Doctor of Philosophy degree in Economic Geology from the University of Arizona in 1990. I have worked as a geologist in the mining industry for more than 30 years. I am a Licensed Professional Geologist in the state of Utah (#5541396-2250), a Licensed Geologist in the state of Washington (# 2297), a Registered Member of the Society of Mining Engineers (#4037854RM), and a Certified Professional Geologist of the American Institute of Professional Geologists (#CPG-11462).
2. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101"). I have previously explored, drilled, evaluated, and modeled similar epithermal gold and silver deposits throughout the western United States and Mexico. I certify that by reason of my education, affiliation with certified professional associations, and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
3. I visited the Unga project site on August 4, 2016.
4. I am co-responsible for all Sections of this report titled, *"Technical Report on the Unga Project, Southwest Alaska, U.S.A."*, with an Effective Date of June 14, 2018 (the "Technical Report").
5. I am independent of Redstar Gold Corporation and all of their respective subsidiaries, as defined in Section 1.5 of NI 43-101 and in Section 1.5 of the Companion Policy to NI 43-101.
6. As of the effective date of this Technical Report, to the best of my knowledge, information, and belief, this Technical Report contains all the scientific and technical information that is required to be disclosed to make those parts of this Technical Report for which I am responsible for not misleading.
7. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 26th day of July 2018

"Michael M. Gustin"

Signature of Qualified Person
Michael M. Gustin

STEVEN I. WEISS, PH.D., C.P.G.

I, Steven I. Weiss, C.P.G., do hereby certify that:

- I am currently a self-employed Senior Associate Geologist for Mine Development Associates, Inc., located at 210 South Rock Blvd., Reno, Nevada, 89502 and
- I graduated with a Bachelor of Arts degree in Geology from the Colorado College in 1978, received a Master of Science degree in Geological Science from the Mackay School of Mines at the University of Nevada, Reno in 1987, and hold a Doctorate in Geological Science from the University of Nevada, Reno, received in 1996.
- I am a Certified Professional Geologist (#10829) with the American Institute of Professional Geologists and have worked as a geologist in the mining industry and in academia for more than 35 years.
- I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101"). I have previously explored, drilled, evaluated and reported on gold-silver deposits in volcanic and sedimentary rocks in Nevada, Canada, Greece, and Mexico. I certify that by reason of my education, affiliation with certified professional associations, and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- I am the author of this Technical Report titled *"Technical Report on the Unga Project, Southwest Alaska, U.S.A."* prepared for Redstar Gold Corporation, and with an Effective Date of June 14, 2018. Subject to those issues discussed in Section 3.0, I am co-responsible for all sections of this Technical Report.
- I have not had prior involvement with the property that is the subject of this Technical Report and I have not visited the Unga property.
- To the best of my knowledge, information and belief, as of the Effective Date the Technical Report contains the necessary scientific and technical information to make the Technical Report not misleading.
- I am independent of Redstar Gold Corporation and all of their respective subsidiaries applying all of the tests in Section 1.5 of National Instrument 43-101 and in Section 1.5 of the Companion Policy to NI 43-101.
- I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in accordance with the requirements of that instrument and form.

Dated this 26th day of July 2018

"Steven I. Weiss"

Signature of Qualified Person
Steven I. Weiss

APPENDIX A

Listing of Mining Claims, Subsurface Mineral Tenure, and Surface Tenure, Unga Project

Alaska State Mining Claims

Claim Name	Date of Posting (YYYY/MM/DD)	Date of Recording (YYYY/MM/DD)	Aleutian Islands Recording District Book / Page	DNR Serial Number
Hecla	1980/03/05	1980/03/11	19/443	ADL 318700
	Not posted	1983/05/11	22/242	
	1988/04/27	1988/05/17	27/886	
Sunshine	1980/03/05	1980/03/11	19/445	ADL 318701
	Not posted	1983/05/11	22/244	
	1988/04/27	1988/05/17	27/883	
Lucky Friday	1980/03/05	1980/03/11	19/447	ADL 318702
	Not posted	1983/05/11	22/246	
	1988/04/24	1988/05/17	27/889	
Galena	1980/03/05	1980/03/11	19/449	ADL 318703
	Not posted	1983/05/11	22/248	
	1988/04/27	1988/05/17	27/874	
Bunker	1980/03/05	1980/03/11	19/451	ADL 318704
	Not posted	1983/05/11	22/250	
	1988/04/24	1988/05/17	27/877	
Harbor	1980/03/05	1980/03/11	19/453	ADL 318705
	Not posted	1983/05/11	22/252	
	1988/04/24	1988/05/17	27/880	

The six State claims are located in the following land sections, Seward Meridian:

- Sections 19, 20, and 30 of Township 57 South, Range 74 West; and
- Section 25 of Township 57 South, Range 75 West

Patented Federal Mining Claims

Claim Name	Mineral Survey	Patent Number
Little Joker	MS 290	148439
Empire	MS 291	325813
Alaska	MS 292	123965
Almeda	MS 293	123965
California	MS 294	123965
Carleton	MS295	123965
Tiger	MS 296	123965
King	MS 297A	123966
First North Extension of King	MS 298	123966
Olgen, Lot Thirty-seven (37)	MS 548	M. Cert. 53
Rising sun, Lot Thirty-eight (38)	MS 548	M. Cert. 53
Giant, Lot Thirty-nine (39)	MS 548	M. Cert. 53
Apollo, Lot Forty (40)	MS 548	M. Cert. 53
Prospect, Lot forty-one (41)	MS 548	M. Cert. 53
Ptarmigan, Lot forty-two (42)	MS 548	M. Cert. 53
Apollo Consolidated Mining Company's Millsite, Lot forty-three (43)	MS 548	M. Cert. 53

The 16 patented Federal mining claims are located in the following land sections, Seward Meridian:

- Section 32 of Township 57 South, Range 74 West;
- Sections 5 and 6 of Township 58 South, Range 74 West; and
- Sections 1, 11, and 12 of Township 58 South, Range 75 West.

Alaska Native Claims Settlement Act Land Conveyance

Part 1: The Aleut Corporation Subsurface Estate / Shumagin Corporation Surface Estate

TWP	Range	Sections	Subsurface Conveyance	Surface Conveyance
56S	73W	20-25, 26 (Lots 1-2, 27-29, 32-36	TAC (50-90-0720)	Shumagin Corp. (50-2004-0194, which corrects 50-90-0719
56S	74W	30	TAC (50-2005-0530)	Shumagin Corp. (50-2005-0529)
56S	74W	20-21, 22 (Lots 1-3), 23, 26-27, 29, 31-32, 35	TAC (50-90-0720)	Shumagin Corp. (50-2004-0194, which corrects 50-90-0719)

Part 2: The Aleut Corporation Subsurface Estate / Unga Corporation Surface Estate

TWP	Range	Sections	Subsurface Conveyance	Surface Conveyance
57S	74W	19 (Lots 1-3), 20, 21 (Lots 1-2), 27 (Lots 1-2), 28, 31, 34	TAC (50-2004-0417)	Unga Corp. (50-2004-0416)
57S	74W	22, 29, 30 (Lots 1-2)	TAC (50-90-0346)	Unga Corp. (50-90-0345)
57S	74W	32-33	TAC (50-2005-0158)	Unga Corp. (50-2005-0157)
57S	75W	1-3, 10 Lot 1), 11-12	TAC (50-2005-0158)	Unga Corp. (50-2005-0157)
57S	75W	13-30, 31 (Lots 1-2), 32, 33, (Lots 1-2), 34-36	TAC (50-90-0346)	Unga Corp. (50-90-0345)
58S	74W	4 (Lots 1-2), 7-9, 16-19	TAC (50-90-0346)	Unga Corp. (50-90-0345)
58S	74W	5 (Lots 1 & 3)	TAC (50-2004-0417)	Unga Corp. (50-2004-0416)
58S	74W	5 (Lot 2), 6 (Lots 1-2)	TAC (50-2005-0158)	Unga Corp. (50-2005-0157)
58S	75W	1-3, 4 (Lots 1-2), 9-11, 12 (Lots 1-2), 13, 14 (Lots 1-2), 15	TAC (50-90-0346)	Unga Corp. (50-90-0345)

Part 3: The Aleut Corporation Subsurface Estate / Surface Estate

TWP	Range	Sections	Subsurface Conveyance	Surface Conveyance
56S	74W	28, 33-34	TAC (50-2008-0380) [14(h)(8)]	TAC (50-2008-0380) 14(h)(8)

Part 4: The Aleut Corporation Subsurface Estate / USFWS Surface Estate

TWP	**Range**	**Sections**	**Subsurface Conveyance**	**Surface Conveyance**
57S	75W	4-9, 10 (Lot 2)	TAC (selected) [in lieu & 14(h)(8)	TAC (selected) 14 (h)(8)

All lands are referenced to the Seward Meridian.

APPENDIX B

Historical Drilling Collar Data,
Unga Project

Collar Data for Historical Drilling, Peripheral Prospects, Unga and Popof Islands

(*Note: all coordinates given in meters, UTM NAD 83 projection, unless specified otherwise*)

Zachary Bay 1975:

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
Z1	Zachary Bay	394,250	6,126,450	0	-90	116.7	Duval - Quintana
Z2	Zachary Bay	394,669	6,126,600	0	-90	71.3	Duval - Quintana
Z3	Zachary Bay	394,892	6,126,766	0	-90	43.9	Duval - Quintana
Z4	Zachary Bay	395,002	6,126,520	0	-90	59.1	Duval - Quintana

Aquila 1980 - 1981:

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
AQALT-1-81	Aquila	394,325	6,116,787	160	-55	93.0	RAA-UNC-TETON
AQALT-2-81	Aquila	394,325	6,116,787	160	-73	114.3	RAA-UNC-TETON
AQAME-1-80	Aquila	394,774	6,117,083	95	-50	80.2	RAA-UNC-TETON
AQAME-2-80	Aquila	394,774	6,117,083	95	-45	48.8	RAA-UNC-TETON
AQAME-3-80	Aquila	394,662	6,116,885	95	-45	91.4	RAA-UNC-TETON
AQAME-4-81	Aquila	394,886	6,117,169	110	-56	153.9	RAA-UNC-TETON
AQAME-5-81	Aquila	394,727	6,116,983	110	-55	153.9	RAA-UNC-TETON
AQAME-6-81	Aquila	394,796	6,116,958	111	-50	180.7	RAA-UNC-TETON
AQANK-1-81	Aquila	394,468	6,116,929	340	-50	158.5	RAA-UNC-TETON
AQANK-2-81	Aquila	394,423	6,117,026	165	-50	77.7	RAA-UNC-TETON
AQANK-3-81	Aquila	394,423	6,117,026	165	-73	28.3	RAA-UNC-TETON
AQO-1-80	Aquila	393,931	6,117,148	180	-50	175.9	RAA-UNC-TETON

Pook 1981

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
Pook 1	Pook	396,735	6,118,055	165	-65	111.3	RAA-UNC-TETON

Junior 1981

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
JV-1-81	Junior	393,738	6,122,421	290	-45	159.1	RAA-UNC-TETON

Pray's Vein 1981 and 1983

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
PV-1-81	Pray's Vein	398,702	6,119,723	71	-45	14.9	RAA-UNC-TETON
PV-2-83	Pray's Vein	398,783	6,119,769	308	-65	88.4	RAA-UNC-TETON

Norm's Vein 1983

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
NV-1-83	Norm's Vein	396,252	6,122,859	108	-57	114.0	RAA-UNC-TETON
NV-2-83	Norm's Vein	396,087	6,122,540	124	-51	122.5	RAA-UNC-TETON

Orange Mountain 1983

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
OM-1-83	Orange Mountain	396,791	6,119,328	174	-45	185.0	RAA-UNC-TETON
OM-2-83	Orange Mountain	396,462	6,119,097	307	-60	296.6	RAA-UNC-TETON
OM-3-83	Orange Mountain	396,842	6,119,036	350	-60	266.1	RAA-UNC-TETON

Red Cove 1988 – 1989 (Popof Island):

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
RC-1	Red Cove	409,375	6,128,041	90	-60	207.3	BMGC
RC-2	Red Cove	410,818	6,128,693	90	-60	152.7	BMGC
RC-3	Red Cove	410,570	6,128,493	90	-60	158.8	BMGC
RC-4	Red Cove	410,349	6,128,402	90	-60	150.0	BMGC
RC-5	Red Cove	409,443	6,128,828	90	-60	152.7	BMGC

Propalof 1989 (Popof Island):

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
Prop-1	Propalof	407,077	6,129,787	90	-70	144.5	BMGC
Prop-2	Propalof	406,242	6,129,470	90	-70	135.3	BMGC
Prop-3	Propalof	407,034	6,129,769	90	-60	89.3	BMGC

Apollo – Sitka Historical Drill Collar Data 1982 – 1989

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
AS2	Apollo-Sitka	400,758	6,117,433	145	-50	172.2	AAGM
AS2a	Apollo-Sitka	400,758	6,117,433	180	-50	125.9	AAGM
AS3	Apollo-Sitka	400,699	6,117,427	160	-57	180.7	AAGM
AS4	Apollo-Sitka	400,390	6,117,349	145	-60	240.5	AAGM
AS5	Apollo-Sitka	400,265	6,117,311	145	-62	270.4	AAGM
AS6	Apollo-Sitka	400,187	6,117,255	145	-60	256.0	AAGM
AS7	Apollo-Sitka	400,057	6,117,200	145	-60	271.6	AAGM
AS8	Apollo-Sitka	399,820	6,117,094	145	-60	413.0	AAGM
AS9	Apollo-Sitka	399,708	6,117,029	145	-58	403.6	AAGM
AS11	Apollo-Sitka	399,481	6,116,806	145	-60	390.8	AAGM
AS12	Apollo-Sitka	399,542	6,116,529	145	-52	237.4	AAGM
AS13	Apollo-Sitka	399,384	6,116,560	145	-58	345.3	AAGM
AS15	Apollo-Sitka	399,159	6,116,317	145	-60	394.7	AAGM
AS17	Apollo-Sitka	398,486	6,115,972	145	-45	299.9	AAGM
AS18	Apollo-Sitka	398,492	6,115,824	145	-64	165.2	AAGM
AS19	Apollo-Sitka	398,408	6,115,776	120	-45	119.9	AAGM
AS19a	Apollo-Sitka	398,408	6,115,776	120	-80	112.2	AAGM
AS20	Apollo-Sitka	398,408	6,115,776	145	-60	87.8	AAGM
AS30	Apollo-Sitka	399,316	6,116,217	145	-60	152.4	AAGM
AS31	Apollo-Sitka	399,316	6,116,217	145	-60	152.4	AAGM
AS32	Apollo-Sitka	400,159	6,116,677	135	-60	121.9	AAGM

Centennial Historical Drill Collar Data 1988 – 1989 (Popof Island)

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
CENT-1	Centennial	404739	6130186	90	-45	152.4	BMGC
CENT-2	Centennial	404901	6130184	270	-45	152.4	BMGC
CENT-3	Centennial	404750	6130424	110	-47	150.0	BMGC
CENT-4	Centennial	404948	6129957	270	-45	152.4	BMGC
CENT-5	Centennial	404953	6129955	90	-45	152.1	BMGC
CENT-6	Centennial	404913	6130340	90	-55	106.7	BMGC
CENT-7	Centennial	404828	6130170	270	-70	193.2	BMGC
CENT-8	Centennial	404654	6130188	270	-80	91.7	BMGC
CENT-9	Centennial	404551	6130184	90	-80	122.2	BMGC
CENT-10	Centennial	404454	6130187	90	-80	102.4	BMGC
CENT-11	Centennial	404485	6130027	90	-80	155.5	BMGC
CENT-12A	Centennial	404975	6130179	270	-80	44.5	BMGC
CENT-12B	Centennial	404971	6130179	270	-80	169.5	BMGC
CENT-13	Centennial	405091	6130169	270	-80	118.9	BMGC
CENT-14	Centennial	404786	6129809	90	-80	169.5	BMGC
CENT-15	Centennial	404605	6129822	90	-80	116.4	BMGC
CENT-16	Centennial	404816	6129597	90	-90	47.6	BMGC
CENT-17	Centennial	404705	6129704	90	-90	43.0	BMGC
CENT-18	Centennial	404824	6129957	90	-80	145.1	BMGC
CENT-19	Centennial	404708	6130344	90	-80	158.8	BMGC
CENT-20	Centennial	405043	6129733	90	-80	84.1	BMGC
CENT-21	Centennial	404798	6130345	90	-80	64.3	BMGC
CENT-22	Centennial	404738	6130260	90	-80	65.8	BMGC
CENT-23	Centennial	404796	6130263	90	-80	61.3	BMGC
CENT-24	Centennial	404867	6130265	90	-80	61.3	BMGC
CENT-25	Centennial	404925	6130262	90	-80	55.2	BMGC
CENT-26	Centennial	404704	6130188	90	-80	61.3	BMGC
CENT-27	Centennial	404864	6130107	90	-80	67.4	BMGC
CENT-28	Centennial	404795	6130113	90	-80	152.7	BMGC
CENT-29	Centennial	404733	6130114	90	-80	152.7	BMGC
CENT-30	Centennial	404734	6130033	90	-80	61.3	BMGC
CENT-31	Centennial	404822	6130034	90	-80	68.9	BMGC
CENT-32	Centennial	404731	6129962	90	-80	55.2	BMGC
CENT-33	Centennial	404726	6129883	90	-80	76.5	BMGC
CENT-34	Centennial	404821	6129880	90	-80	61.3	BMGC
CENT-35	Centennial	404691	6129812	90	-80	61.3	BMGC
CENT-36	Centennial	404758	6129734	90	-80	64.3	BMGC
CENT-37	Centennial	404783	6129659	90	-80	33.8	BMGC
CENT-38	Centennial	405222	6129586	90	-80	91.7	BMGC
CENT-39	Centennial	404940	6129437	90	-90	61.3	BMGC
CENT-40	Centennial	405039	6129346	252	-60	131.1	BMGC
CENT-41	Centennial	405186	6129357	270	-80	76.5	BMGC
CENT-42	Centennial	404888	6130415	90	-50	61.3	BMGC

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
CENT-43	Centennial	404649	6130423	90	-70	61.9	BMGC
CENT-44	Centennial	404602	6130348	90	-70	68.6	BMGC
CENT-45	Centennial	404580	6130113	90	-70	61.6	BMGC
CENT-46	Centennial	404638	6130039	90	-70	82.3	BMGC
CENT-47	Centennial	404490	6129970	90	-70	61.0	BMGC
CENT-48	Centennial	405018	6130038	90	-70	61.0	BMGC
CENT-49	Centennial	404871	6129888	90	-70	61.6	BMGC
CENT-50	Centennial	404818	6129736	90	-70	58.5	BMGC
CENT-51	Centennial	404964	6129393	270	-60	105.8	BMGC
CENT-52	Centennial	405112	6129299	90	-70	95.4	BMGC
CENT-53	Centennial	405295	6129351	90	-70	93.6	BMGC
CENT-54	Centennial	405131	6129437	90	-70	86.0	BMGC
CENT-55	Centennial	405119	6129592	90	-80	92.4	BMGC
CENT-56	Centennial	405121	6129745	90	-70	197.2	BMGC
CENT-57	Centennial	405172	6129958	270	-70	92.4	BMGC
CENT-58	Centennial	405405	6129579	270	-70	92.1	BMGC
CENT-59	Centennial	405377	6130537	270	-50	93.6	BMGC

Shumagin Historical Drill Collar Data 1983 - 1990

Hole ID	Prospect	UTM East	UTM North	Azimuth	Inclination	TD (m)	Company
BMS-01	Shumagin	399,765	6,120,710	330	-65	311.5	BMGC
DDH21	Shumagin	399,526	6,120,771	324.5	-45	131.4	AAGM
DDH22	Shumagin	399,526	6,120,771	3.5	-50	76.8	AAGM
DDH23	Shumagin	399,592	6,120,772	323.5	-45	108.2	AAGM
DDH24	Shumagin	399,629	6,120,799	352	-45	189.6	AAGM
DDH25	Shumagin	399,677	6,120,848	334.5	-45	95.7	AAGM
DDH26	Shumagin	399,931	6,121,016	334.5	-49	88.4	AAGM
DDH27	Shumagin	399,812	6,120,974	334.5	-45	70.1	AAGM
DDH28	Shumagin	399,445	6,120,735	334.5	-45	122.5	AAGM
DDH29	Shumagin	399,715	6,120,892	334.5	-45	89.6	AAGM
DDH30	Shumagin	399,876	6,120,988	334.5	-45	87.5	AAGM
DDH31	Shumagin	399,985	6,121,040	334.5	-45	90.8	AAGM
DDH32	Shumagin	400,041	6,121,066	334.5	-45	61.6	AAGM
DDH33	Shumagin	400,025	6,121,032	334.5	-60	122.8	AAGM
DDH34	Shumagin	399,504	6,120,731	334.5	-45	95.1	AAGM
DDH35	Shumagin	399,421	6,120,677	334.5	-45	118.3	AAGM
DDH36	Shumagin	399,333	6,120,649	334.5	-47	125.9	AAGM
DDH37	Shumagin	399,253	6,120,599	334.5	-45	103.6	AAGM
DDH38	Shumagin	399,191	6,120,609	334.5	-60	80.5	AAGM
DDH39	Shumagin	399,304	6,120,605	334.5	-60	195.7	AAGM
DDH40	Shumagin	399,405	6,120,623	334.5	-60	217.6	AAGM
DDH41	Shumagin	399,488	6,120,667	334.5	-60	189	AAGM
DDH42	Shumagin	399,572	6,120,714	334.5	-60	177.7	AAGM
DDH43	Shumagin	400,114	6,121,250	142.5	-60	186.8	AAGM
DDH44	Shumagin	399,572	6,120,714	343	-45	160.3	Ballatar
DDH45	Shumagin	399,591	6,120,677	330.5	-57.5	236.5	Ballatar
DDH46	Shumagin	399,622	6,120,720	333	-44	171.9	Ballatar
DDH47	Shumagin	399,622	6,120,720	333	-61	221.3	Ballatar
DDH48	Shumagin	399,558	6,120,706	330	-55	180.1	Ballatar
DDH49	Shumagin	399,526	6,120,689	328.5	-45	162.2	Ballatar
DDH50	Shumagin	399,526	6,120,689	326.5	-60	203	Ballatar
DDH51	Shumagin	399,642	6,120,743	328.5	-45.5	169.5	Ballatar
DDH52	Shumagin	399,551	6,120,749	332.5	-45	115.8	Ballatar
DDH53	Shumagin	399,468	6,120,698	327	-44	134.1	Ballatar
DDH54	Shumagin	399,468	6,120,698	328	-60	163.4	Ballatar
DDH55	Shumagin	399,421	6,120,677	330	-62	158.5	Ballatar
DDH56	Shumagin	399,399	6,120,717	331.5	-44.5	81.1	Ballatar
DDH57	Shumagin	399,488	6,120,758	331	-43.5	70.4	Ballatar
DDH58	Shumagin	399,246	6,120,654	332.5	-42.5	53	Ballatar
DDH59	Shumagin	399,275	6,120,668	331.5	-46.5	57.3	Ballatar

APPENDIX C

Redstar Gold Drilling 2011 - 2017:
Shumagin Collar Data and Rising Sun (Apollo – Sitka) Collar Data, Unga Project

Shumagin Drill Collar Data 2011 – 2017

(*Coordinates given in UTM meters, UTM NAD 83 projection; azimuth and inclination reported at 0 meters, except * indicates first surveyed depth down hole.*)

Hole ID	Year	UTM East	UTM North	Azimuth	Inclination	TD (m)
11SH001	2011	399,488	6,120,762	330	-45	110
11SH002	2011	399,954	6,120,996	330	-45	131.1
11SH003	2011	399,253	6,120,677	330	-45	130.45
11SH004	2011	399,407	6,120,669	330	-50	47.9
11SH005	2011	399,407	6,120,669	330	-60	222.5
11SH006	2011	399,424	6,120,881	150	-45	222.5
11SH007	2011	399,424	6,120,881	150	-55	313.94
11SH008	2011	399,466	6,120,887	150	-50	262.13
11SH009	2011	399,512	6,120,912	150	-55	310.9
11SH010	2011	399,531	6,120,942	150	-55	323.09
15SH011	2015	399,481	6,120,718	*329.6	-44.5	106.7
15SH012	2015	399,481	6,120,718	*331.9	-59.8	134.1
15SH013	2015	399,600	6,120,699	*331.6	-43.8	170.7
15SH014	2015	399,600	6,120,699	*331.4	-60.6	213.4
15SH015	2015	399,700	6,120,735	*333.1	-44.1	210.3
15SH016	2015	399,700	6,120,735	*332.6	-54.7	232.6
15SH017	2015	399,748	6,120,767	*330.7	-45	201.2
15SH018	2015	399,748	6,120,767	*331.2	-53.6	228.6
16SH019	2016	399,340	6,120,490	331.5	-55	313.9
16SH020	2016	399,669	6,120,631	329	-56	307.8
16SH021	2016	399,954	6,120,923	330	-45	152.4
16SH022	2016	399,954	6,120,923	330	-57	173.7
16SH023	2016	399,954	6,120,923	328.5	-67	204.2
16SH024	2016	399,869	6,120,868	330	-45	167.6
16SH025	2016	399,869	6,120,868	330	-57	185.9
17SH026	2017	399,183	6,120,612	330	-45	109.7
17SH027	2017	399,210	6,120,530	330	-45	205.7
17SH028	2017	399,121	6,120,582	330	-45	146.3
17SH029	2017	399,121	6,120,582	330	-65	178.6
17SH030	2017	399,010	6,120,576	330	-50	141.7
17SH031	2017	398,927	6,120,519	330	-50	137.2
17SH032	2017	398,976	6,120,431	330	-55	265.2
17SH033	2017	399,363	6,120,676	330	-45	125
17SH034	2017	399,363	6,120,676	330	-60	164.6
17SH035	2017	398,887	6,120,383	330	-55	274.3
17SH036	2017	398,797	6,120,347	330	-50	292.6
17SH037	2017	399,073	6,120,469	330	-55	246.9
17SH038	2017	399,849	6,120,732	330	-55	352.6
17SH039	2017	400,042	6,120,833	330	-53	278.6
17SH040	2017	400,266	6,120,987	330	-50	198.1
17SH041	2017	400,266	6,120,987	330	-65	188.7
17SH042	2017	399,798	6,120,831	330	-57	197.5

Hole ID	Year	UTM East	UTM North	Azimuth	Inclination	TD (m)
17SH043	2017	399,798	6,120,831	330	-67	228.6
17SH044	2017	400,159	6,120,943	330	-50	161.2
17SH045	2017	400,368	6,121,023	330	-60	160
17SH046	2017	400,159	6,120,943	330	-60	249.3
17SH047	2017	400,055	6,120,895	330	-50	249.9
17SH048	2017	400,468	6,121,073	330	-70	142.6

Rising Sun (Apollo – Sitka) Drill Collar Data 2011 – 2017

(*Coordinates given in UTM meters, UTM NAD 83 projection; azimuth and inclination reported at 0 meters, except * indicates first surveyed depth down hole.*)

Hole ID	Year	UTM East	UTM North	Azimuth	Inclination	TD (m)
17RS01	2017	400,101	6,116,694	310	-50	107.4
17RS02	2017	400,101	6,116,694	310	-60	126.5