To: Jason Bahnsen – Northern Lights Resources

From: William J. Tafuri PhD - Consulting Geologist/Edited Gary J. Artmont

Subject: Medicine Springs Geological Report

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Summary and Conclusions

The Medicine Springs project of Northern Lights Resources is considered by the author to have very high potential to host a Carbonate Replacement Deposit (CRD) of Pb, Zn, Ag. Historic drilling at the project site by previous companies has defined a small, possibly stratabound, resource (350,000 tons of oxide mineralization averaging a grade of 2.3 oz/ton Ag). Values in Pb, Zn, and barite are also mentioned in various reports with varying values. The historic Golden Pipe mine has produced small tonnages of Pb, Zn, Ag and barite from veins in a small underground operation where dikes of igneous rock were found cutting the host limestone of the Permian Gerster Fm. The exact amount of the tonnage and grade of the production is not accurately known. While there has been much drilling on the project by historic operators much of the drilling has been too shallow to define anything more than the small known near surface Ag deposit. A deeper hole north of the known resource, JS-105, intersected notable Pb, Zn, Ag mineralization and concealed intrusive rock but has not been offset. A review of the surface geology and limited sampling by the author has defined an area of veining and alteration similar to what occurs above the known resource over a strike distance of approximately 2.4 km (1.5 miles) with a width of approximate 0.8 km (0.5 mile). The recently completed drone aero-magnetic survey by Northern Lights Resources has outlined intrusives within the vicinity of the known mineralization, close to Hole JS 105, and under cover in other altered areas. All of these points, the past production, the known unexploited resource, drill holes with potentially economic intercepts that have not been offset, favorable host rocks, and the results of the recent aero-magnetic survey lend credence to the possibility of additional and possibly larger CRD deposits being found on the project site.

Introductory Notes

The previous mapping by Collinson, 1968, is of very high quality and very few changes were justified. The only places that differ from what this author saw is where the GPS enabled the author to make more exact locations in the Pinion-Juniper forested areas or where a bulldozer made outcrops in previously covered areas. This author did not attempt to repeat the work of previous authors especially in describing the mineralization in the NI 43-101 Technical Report but instead focused on the surficial geology, alteration and mineralization. NAD 27 coordinates are used throughout this report. US units of measurement are also used to avoid confusion with the historical reports, drill records, and surveys that are measured in US units.

Confusion over the Golden Pipe and Silver Butte Mine Naming

The terminology used on the Medicine Springs 7.5 minute USGS topographic map is what is used throughout this report. The Golden Pipe Mine is the only mine in the Mud Springs District with significant production whereas the Silver Butte Mine, as identified on the topographic map, is located approx. 1.5 km south of the Golden Pipe Mine and has not had recorded production. The Silver Butte area only consists of small prospect pits and shallow shafts. Apparently, the confusion is the result of early reporting which used various names for the Golden Pipe such as: Dead Horse or Silver Butte. Several of the older company reports and government publications refer to the Silver Butte mine, but in reality, they refer to what we now call the Golden Pipe. The Defense Mineral Administration (DMA) maps which refer to the Silver Butte Mine match the Golden Pipe underground workings and geology not the Silver Butte geology.

Recommendations

- Drill three 300 meter (~1,000 ft.) vertical holes on 30 meter (~100 ft.) spacing off-setting hole JS-105 on the corners of an equilateral triangle with the mineralized intercept in JS-105 in the center of the triangle. The coordinates for JS-105 are 656730E/446330N
- Drill at least two 300 meter (~1,000 ft.) deep holes near JS-104 through the known resource with the following approximate coordinates: 656300E/462600N and 656300E/462900N
- Focus the drilling efforts on the Golden Pipe area, hole JS-105 area, and the east intrusive area before moving on the Golden Pipe South the area.
- Drill two 300 meter (~1,000 ft.) vertical holes in the Golden Pipe South coordinates 655800E/426700N, 426550N/655700N near the M-1 geophysical anomaly
- Forego any further geophysical work and focus on drilling
- Recommendations for the location of the proposed holes are on the **Figure 1**.

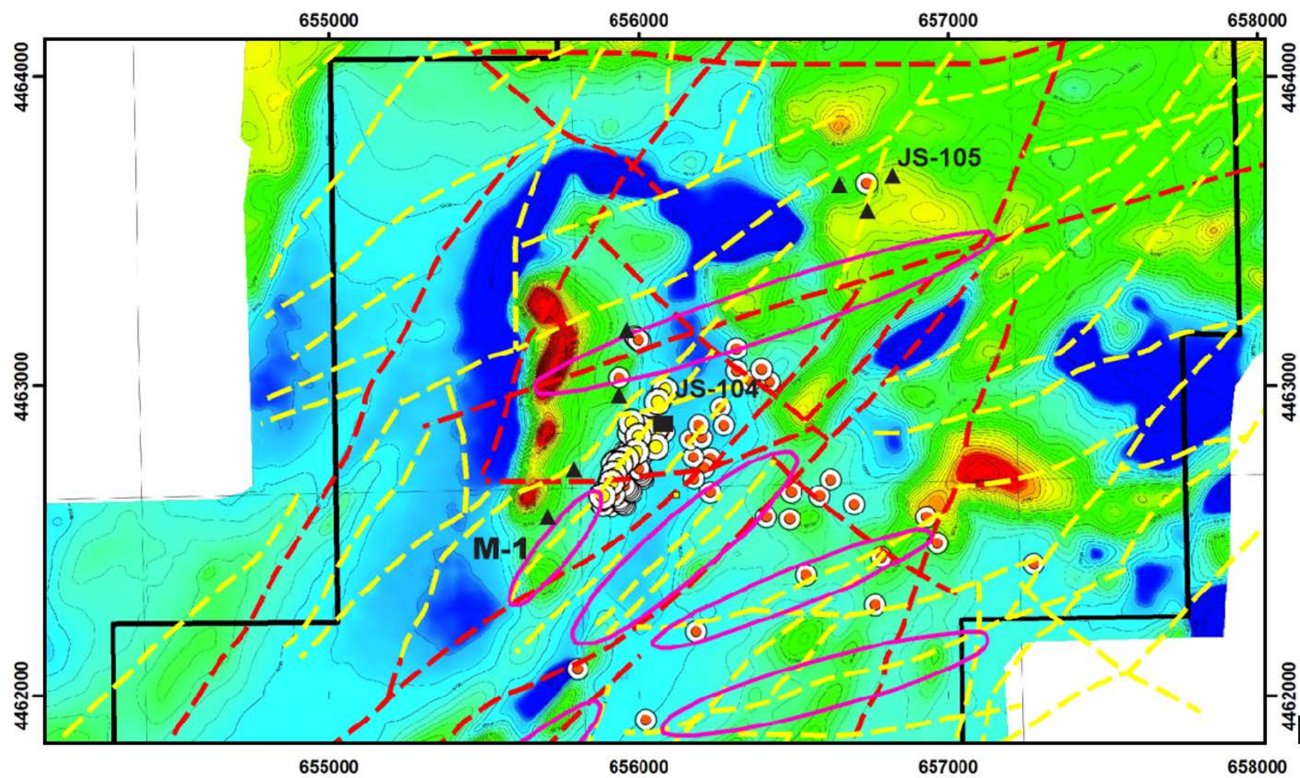

Figure 1: Recommended Drill Holes as Black Triangles, Geophysical Targets as Red Ellipses, Basemap Magnetics

General Geologic Setting

The general geologic setting of the project is well described in various reports so the author will not dwell on it here but will instead make a few comments to set the tone of the following observations. Outcropping rocks for the known mineralization are limestones of the Permian Gerster Fm. which at this locality are composed of gray fossiliferous thin bedded and in part sandy limestones. The Gerster Fm. is disconformably overlain by the Triassic Thaynes Fm. consisting of buff to yellowish colored sandstone, limy sandstone and conglomerate. This sequence is overlain by rhyolite tiffs of the tertiary Humboldt Fm. The Thaynes and Gerster Fm. rocks have been extensively faulted by NE striking normal faults while the Humboldt Fm. has not been dissected by faulting.

Intrusive rocks of various types have intruded the Thaynes and Gerster Fm. but not the Humboldt tuffs. There are two centers of mineralization, the Golden Pipe Area and the Silver Butte area. Only the Golden pipe are has had production and that was from the period between 1930 and 1952.

Outcropping Intrusives

Rhyolite

A small stock of rhyolite, of probable Tertiary age, intruding the upper member of the Thaynes Fm. was mapped by Collinson, 1968, and field checked by the author at 6577640E/608670N. The rhyolite is aphanitic bright white and fresh with platy fracturing and appears to be near or at the top of the intrusive body. Outcrops in the area are poor but there is one very small outcrop of recrystalized but otherwise fresh limestone on the rhyolite contact at 657973E/460763N.

Vesicular Basalt

This small, about 200 m^2, outcrop of vesicular basalt, also of probable Tertiary age, was also first identified by Collinson, 1968, and field checked by the author at 657436E/459988N. It is fresh and very fine grained. Even though it is mapped as a series of dikes the outcrops are not good enough to confirm this. No solid outcrop could be found but the surface area was littered with pieces of the basalt.

Diorite and Granodiorite

Several workers, starting with the DMA, 1930, report, have identified a small partially concealed outcrop of diorite approximately 1,000 meters (1,600 ft.) NW of the Golden Pipe shaft, located approximately at 656270E/463120N. No diorite was found at this location but a shallow prospect did expose some sanded decomposed granitic rock that could have been derived from a fine grained granodiorite.

The prominent Delcer Buttes situated to the NE of the property, are composed of diorite in contact with Paleozoic sediments. A smaller series of low granodiorite hills surrounded by alluvium are found to the west of the Delcer Buttes forming prominent outcrops in the alluvial valley approximately 10 km NNE of the Golden Pipe Shaft at 658380E/471620N.

Concealed Intrusives

Dike Rock Golden Pipe Dump

Fragments of gray colored fine-grained porphyritic granodiorite can be found of the GP dump. The mode of occurrence of the rock is not known. The mine workings have been mapped (DMA 1930) but the mapping only shows the location of the workings, faults and veins ignoring the host and intrusive rock. The rock consists of small, approx. 4-6mm in size, phenocrysts of quartz and feldspar in a very fine- grained matrix of quartz, feldspar, biotite and hornblende. Some of the quartz phenocrysts are rimmed with pyrite. There are some very small irregular black blebs of some mineral that is too fine grained to be identified but they are not magnetite.

Granodiorite, the small dark hill above the bend in the road, is the closest outcropping intrusive rock to the property. This photo was taken near hole JS 35 looking northerly.

Hole JS-105

The often referred to hole JS-105 intersected intrusive rock from down hole interval from 193 meters (640 ft.) to 221 meters (730 ft.) and possibly to 227 meters (750 ft.). The rock has been described as a strongly propylitized granite due to its green color, abundant chlorite and a few scattered remnant grains of pink feldspar. Some intervals are cut by calcite veins with small amounts of fine grained sphalerite. Either the calcite veins are post intrusive mineralization introduced into cracks in the cooled intrusive or the intrusive could be a carbonatite. If the chips are available, they should be carefully examined.

Stratigraphy

Humboldt Fm.

The upper Miocene Humboldt Fm. tuffs outcrop in the north, west and east ends of the property. The tuffs are extremely heterogeneous with no marker beds. The Humboldt Fm. has been divided into three informal units with only the middle tuff sequence being in the project area. In general, the lower unit exposed on the property is composed of white rhyolite tuff which is conformably over lain by tan rhyolite tuff. The tuffs have been age dated, by the fission track method in zircon grains, at 9.5 my +/- 1.9 my , Coats, 1985. Both units are poorly consolidated and easily eroded. The tan unit is composed of tuffaceous rhyolitic sandstone, layered tuffs, conglomerate, and pods of tan to gray fossiliferous limestone. Note the heterogeneity in the second photograph below. The Humboldt Fm. tuffs are not hydrothermally altered but they may be devitrified by supergene water in places.

The tan upper part of the Humboldt Fm. and the white lower part of the Humboldt Fm. as seen on the east edge of the project.

The Humboldt Fm. showing the heterogeneous nature of the unit with a gray pod of limestone exposed in the cliff face.

Triassic Thaynes Fm.

Collinson, 1968, described the Thaynes Fm. as being 57 meters (520 ft.) thick in the Medicine Springs Range. He divided the formation into an upper and lower member with the upper member consisting of interbedded limestone and calcareous siltstone and the lower member consisting of calcareous siltstone, sandy limestone, chert pebble conglomerate, and coarse sandstone. At the project, the clastic parts of the unit are often colored a tan to yellow-tan color but the coloring is syngenetic not a result of alteration. It does not appear to be an ore hosting unit but the drill logs are often lacking in detail so one can't be positive of this. However, Grauberger, possibly 1986, claims the bedded mineralization south of the GP shaft is contained in sandy limestone of the Thaynes Fm. Many of the logs refer to a sanded limestone but it is not clear if this refers to an altered limestone or one of the sandy limestone units in the Thaynes Fm. In general, yellowish to yellow tan calcite cemented sandstone on the surface is part of the lower Thaynes Fm. while the Gerster Fm. sandy limestones are usually gray.

Accurately mapping the Thaynes Fm. is difficult because the clastic beds weather into small angular pieces that form a "frosting " on slopes and in many places this frosting covers the actual underlying Gerster Fm. limestone. This phenomenon is especially noticeable on Hill 2178, named by this author for convenience only, after the metric spot elevation on the top of the hill to the NW to Golden Pipe Shaft. A drill road heading along the SW flank of Hill 2178 exposed Gerster Fm. limestone which is covered by Thaynes Fm. clastic rock talus and mapped as Thaynes Fm. by Collinson. This comment is not a criticism of Collinson, he did not have a bulldozer or GPS to map with in 1968.

Permian Gerster Fm.

Mineralization at Medicine Springs is hosted in the Permian Gerster Formation. Bissel, 1964, described the section in the Medicine Springs Mountains as being 1269 meters (4,190 ft.) thick. However, Collinson, 1968, described the section as being only 363 meters (1,200 ft) thick having been repeated several times by faulting. This author agrees with Collinson after seeing many apparently repeated sequences on the property. However, the repetitive nature of the sedimentation and the possible fault duplication of the section makes it difficult if not impossible to identify either marker beds or fault repetition and it is possible that Bissell was correct. The repetitive sedimentary sequence and possible identification of marker beds may be clarified by carefully measuring sections. This would be an expensive endeavor without much return on the investment. Since Medicine Springs is a mining project and not an academic exercise, it is better to look for markers in the drilling.

The fossil assemblage in the Gerster Fm. limestone (brachiopods, bryozoans, crinoids, sponges) points to a shallow warm water depositional setting. The shallow water sedimentation in combination with repetitive rock units and the occasional fine grained and well sorted sand grains in some beds with occasional silt layers points to a possibly deltaic depositional setting. The nature of deltaic sequences also makes for poor horizontal continuity which contributes to the difficulty in correlating units and mapping marker beds.

The thin bedded porous and permeable nature of the Gerster Fm. at MS has a very strong resemblance to the Topliff Member of the Mississippian age Great Blue Fm. at Mercur, UT which is the ore host for the gold mineralization, a deposit I am very familiar with. It is these types of physical characteristics that make it such a good ore host. The rock is not only receptive to mineralizing fluids along bedding discontinuities but the clastic material, either sand grains or fossils that resist replacement keep the rock fabric open to the ingress of mineralizing fluids.

The repetitive nature of the Gerster Fm. is depicted in **Figure 2**, published by Bissell, 1964. Bissell, 1964, describes a disconformity between the Triassic Thaynes and the underlying Permian Gerster. This is difficult to prove on site because of the faulting and poor or absent outcrops in critical areas. However, on Hill 2178 to the west of the Golden Pipe, the contact between the Thaynes Fm. and the Gerster Fm. appears to be physically conformable but only a stratigraphy familiar with the fossil assemblage could prove an age gap in the sedimentation. This would place the top of the Gerster Fm. at that locality thus having approximately 365 meters (1,200 ft.) or more of favorable Gerster Fm. lying below. But the block faulting on the property can change this picture dramatically in just a few meters. Only drilling can define the true thickness of the Gerster Fm. on site, but I am not recommending drilling a stratigraphic hole to clarify this situation.

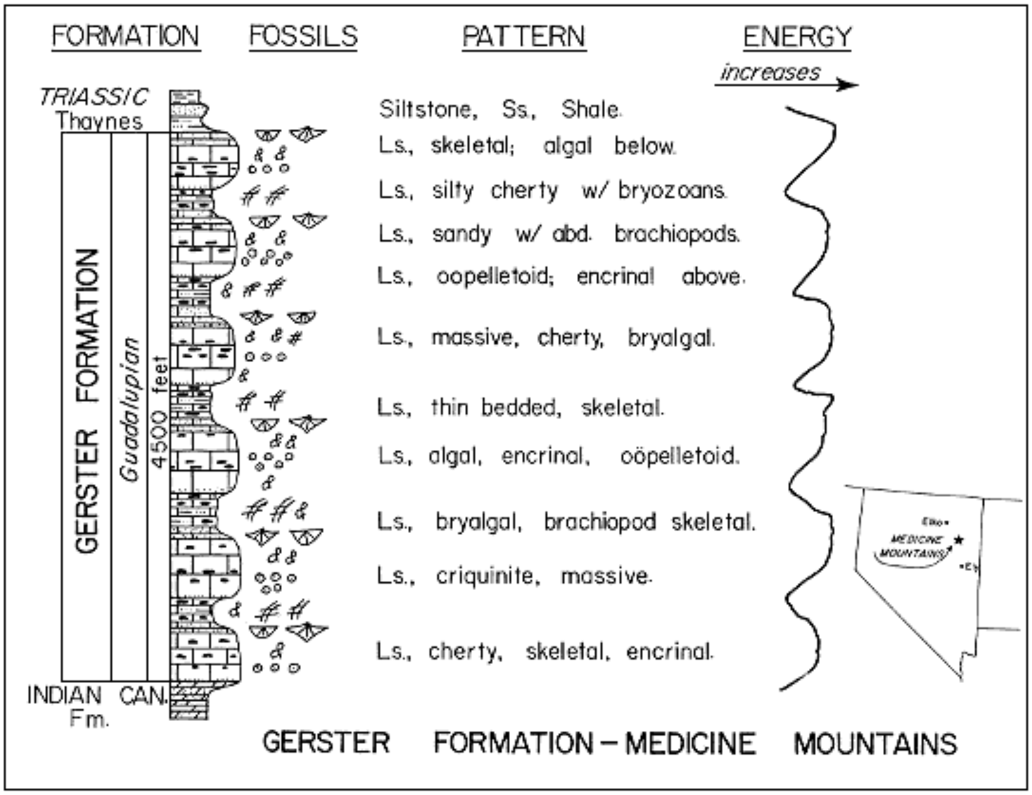

Figure 2: Stratigraphic Column Gerster Formation by Bissell, 1964

The Park City Group of Permian age underlies the Gerster Fm. in the Medicine Range, Bissell, 1964. The Park City limestones are the host rocks for the bonanza grade Pb, Zn, Ag deposits in the Park City district of Utah. Various units in the Park City Group could be excellent hosts for replacement deposits.

Approximately 85 kilometers (53 miles) further to the southwest, the Pennsylvanian Ely Fm and possibly the Mississippian Chainman Shale, form the host rocks at the Spur Zn, Ag deposit of Pasinex Resources (**www.pasinex.com**). It is the author's opinion that excellent host rocks for CRD deposits exist at the Medicine Springs project site at a reasonable mining depth.

Structure

The structure of the project is dominated by a series of semi-parallel NE striking normal faults some of which form grabens. Displacements along these faults are unknown but most have down dropped sides to the west. But the known resource lies within a graben having the Thaynes Fm. dropped into the graben and forming the surface lithology, and, as mentioned before the Thaynes Fm. at this location could be, in part, in some of the drill holes, the host for mineralization. The mechanism for the faulting and the age of the faulting is unknown but the fault pattern does indicate extension although probably not related to the Basin and Range extensional tectonic events which would be of a probable younger age than the mineralization. Some of these fault traces were either open or shattered and formed solution channels for the mineralizing fluids. All the veins observed by the author occurred as open space fillings in faults with the fault plane preserved on the footwall side.

Micon International UK, April 2018, produced a block model and sections of the known mineralization depicting NE striking fault offsets of the mineralized zones. Since the sections are oriented NW-SE along the lines of drill holes it be very difficult to show any possible NW-SE fault offsets. However, from surface observations, the faults controlling the mineralization all appear to be oriented to the NE except for the Silver Butte area where some NE to Easterly striking faults contain the usual barite, jasperoid, gossan mineralization. NE striking faults probably exist in other areas but are probably concealed by alluvium or talus.

Mineralization

There are two main centers of mineralization, the Golden Pipe area where the identified resource is located and the Silver Butte area where there is no known resource. However, these two area are connected by sporadic mineralized veins cutting the Gerster Fm. The Golden Pipe mineralized area has vein controlled mineralization on the surface and underground in the Golden Pipe Mine and replacement mineralization outlined by the historic drilling in the near subsurface. The Silver Butte area has only vein-controlled mineralization on the surface but, except for one 19-meter (60 ft.) hole, JS-29, it has not been drilled so the possibility of bedding-controlled replacement deposits can't be entirely discounted.

Drill hole JS-29 had 13-15 ppm Ag in the bottom 6 meters (20 ft.) of the hole and detectable Ag for the entire hole. The logs are poorly described but the hole appears to have intersected a jasperoid vein at the mineralized interval. The hole was placed close to of a cluster of prospects and probably hit the down dip extension of one of the neighboring veins.

The Silver Butte surface is approximately 300 meters (1,000 ft) in elevation above the Golden Pipe surface but the mineralization appears to be in same sequence of rocks. Jasperoid veins with gossan and barite appear to be similar to those above the resource to the south of Golden Pipe. Perhaps the Silver Butte area has replacement or bedding controlled mineralization at depth but there has been no drilling deep enough to test this possibility. If the mineralization at Golden Pipe is controlled by a favorable pressure/temperature regime it would take a 1,000 ft. deep drill test to just hit the top of the same favorable pressure/temperature zone unless unseen faulting uplifted the Silver Butte area to its present position.

Sphalerite mineralization was only observed by previous workers in holes JS 40, JS 104 and JS 105. In hole JS 40 an unidentified gray sulfide was observed at 17-19 meters (70-75 ft.). In hole JS 104 sphalerite was observed at approximately 103-106 meters (340-350 ft.) down hole, or 51 meters (170 ft.) below the surface and again from 156-159 meters (515 to 520 ft.). Sphalerite and pyrite was sporadically encountered from 125-227 meters (414-750 ft.) in hole JS 105 in some places the sphalerite was estimated to be up to 12%. Sporadic intervals of sphalerite in calcite veins were also described in the hole. Sphalerite in calcite veins in what appears to be a granite intrusive is an important occurrence that should be investigated. Either the sphalerite-calcite veins were formed in a cooled and cracked granite or the "granite" may be a carbonitite. The description of the "granite" is weak and leaves much to speculation. If the calcite veining is later than the "granite" then so is the mineralization which may be an important point to consider in further exploration of the property.

Sulfides were not found in outcrop except for partially oxidized galena in some of the veins immediately to the west of the Silver Butte area near 655200E/461270N and on the Silver Butte shaft dump.

The Silver Butte shaft is the largest iron stained dump in the foreground. It has since been bulldozed shut as have all the dumps visible in this photo. The Ruby Mountains are seen in the background with Ruby Valley in the middle ground.

There are only two areas having pervasive alteration; around the west side of Hill 2178 and on the ridge to the East of the Silver Butte shaft at 655350E/461100N. The concealed Golden Pipe intrusive to the west of Hill 2178 and the resource may have produced some subtle contact effects in the Gerster limestone on the western slope of the hill. A drill road heading westerly from the GP shaft has exposed a recrystalized limestone at its terminus at 655805E/463142N. The limestone at this point is very coarsely recrystalized and is soft and easily broken. When following the Gerster-Thaynes contact around the hill to the west and north, various subtle jarosite and possibly arseno-jarosite stained and altered limestone outcrops are observed some of which may be a precursor to a skarn but is still to distal from an intrusive to have visible true skarn minerals.

The above-mentioned ridge to the immediate east of the Silver Butte prospects has widespread limonite and jasperoid float that is associated with the swarm of jasperoid veins in that area.

Spotty areas of hematite staining can be found in some of the limestone near the Golden Pipe and Silver Butte areas, but those areas appear to be random rather than zoned around veins; however, these colored spots may reflect a vein at depth. More commonly, areas of limonite staining form similar patterns and limonite may form halos outward from veins and it appears to diffuse further outward from veins than hematite. Limonite may contain anomalous chemistry whereas the hematite is usually barren.

Vein Characteristics

All veins observed by this author were controlled by faults. Mineralization occurred in the fault zones as open space fillings with either jasperoid, gossan, or barite against the fault surface. The fault surfaces are usually planar on the footwall side and shattered for various distances on the hanging wall or down dropped side. The jasperoid in the fault zones may or may not have barite and gossan in it. In some localities the barite forms vein fillings parallel to the jasperoid while in other places it forms replacement appearing blobs extending outward into the host rock. Mineralization in the veins commonly pinches and swells and has inconsistent mineralogy. Jasperoid is usually present but it is not ubiquitous, the same can be said for barite and gossan. Geological observations, GPS control points, shafts and prospect pits are illustrated on **Figure 4**.

A rare unprospected jasperoid-barite vein in Gerster limestone. Both the jasperoid and barite have orange lichen on them. The hammer is laying on the jasperoid with the barite to the right

Jasperoid vein exposed in prospect pit with gossan & barite in it showing the planar fault surface facing the reader.

Gossan in the veins may contain fine crystals of cerrusite or hemimorphite or crusts of smithsonite. Barite forms opaque, white bladed crystalline masses but no euhedral crystals were observed.

The Golden Pipe Vein is the most prominent vein on the property. At this locality, Jasperoid forms a large gray to red outcrop on the west selvage of a barite vein. The jasperoid is over 3.3 meters (10 ft.) thick in places but it pinches and swells. The barite vein strikes directly into the Golden Pipe shaft and it varies from 0.3-0.9 meters (1 to 3 ft.) thick as illustrated in the photo below.

Jasperoid outcrop, gray from this view is red from the opposite view, right of the cabin w/ a massive barite vein covered with gray lichen running diagonally across the foreground.

Golden Pipe shaft with fault surface to the left and barite vein to the right of the fault. The barite is partially covered with dust and slough.

Geochemistry

The rock sampling was not intended to be comprehensive because Northern Lights had a very comprehensive geochemical soil survey being carried out. This was intended to see if there was a difference in the various areas of the property that may gives rise to a vector pointing toward a drill target and to see if there were fundamental differences in mineralization throughout the project area. Vein material and dump samples were analyzed, and no attempt was made to try and collect channel samples. Dump samples were collected from the most altered rock, usually gossan or barite-rich rock.

As illustrated on **Figure 5**, a total of 43 surface samples were collected in the concession area and 2 outside to the west. Statistically significant conclusions would not be valid, however some potentially significant conclusions can be drawn. First, there is no gold detected in the system, this is surprising because most of the CRD deposits in Nevada have gold in them, for example, the nearby Eureka district located 150 kilometers to the south. Secondly, the samples collected in the vicinity of the Golden Pipe resource (samples 5-10, 13, 41), samples above the concealed intrusive (samples 3, 4) and the concealed intrusive to the east of the Golden Pipe (samples 11, 29, 44, 45) have generally higher Mo, Sn, and W than the samples collected in the vicinity of Silver Butte (samples 14-25, 28, 35-37). This probably reflects the contact effects of the concealed intrusives or some introduced magmatic component. However, a vein system (defined by samples 26, 27, 30, 31, 32, 38,39, 40) immediately to the east of the Silver Butte area has elevated W with spotty elevated values of Sn and Mo. The source of these elevated elements is not obvious on the magnetic survey unless the vein dips into the magnetic high features to the west of SB. The vein does dip westerly so this is possible.

Silver is associated with Pb and Sb. While Sb and Bi are present their concentration is very low. Arsenic has a reverse correlation with Ag and with the low Sb and Bi probably indicates that sulfosalt minerals are not associated with the Ag mineralization. But these correlations are not perfect and there is considerable variance in the results.

Zinc varies widely probably reflecting the removal of much of the zinc during oxidation. Copper is very low throughout the system. Aluminum K, and Na are very low which correlates with the lack of sericite observed in the mineralized veins.

The high P in all areas of the project is interesting in that this could indicate some input to the hydrothermal system from underlying black shale. Phosphatic black shale is known in the Permian section in eastern Nevada but the depth to it is unknown at this locality.

Mercury concentrations are higher and with wider variance at Golden Pipe than at Silver Butte and very low at the eastern intrusive. There may be a rough correlation of Hg and Ag but it would take much more sampling to be sure of this.

The very low Mg indicates a very low contribution by dolomite in the area and also may indicate that the intrusives in the area are not mafic. The author tested many limestone samples with dilute HCl and didn't identify any dolomite on the surface, but it is mentioned in some of the drill logs and the stratigraphic references.

The sample coordinates and descriptions and the selected assay results are found in **Appendix A and B**. The samples were analyzed using ICP-MS for 35 elements by ALS in Vancouver, Canada.

Drone Magnetic Survey

A drone aeromagnetic survey was completed over the project area by MWH Geosurveys of Reno, NV. The survey results are quite useful in locating possible concealed intrusive bodies and concealed faults. The details of the survey are reported by Kim Fankcombe in his report and are not repeated here. From a geologist's standpoint, the survey was excellent and provided very good data on the probable location of concealed intrusive bodies and concealed faults. The attached sketch map shows the location of the mentioned possible intrusive bodies. The data was modified from the geophysical report by K. Frankcombe.

Drone with suspended magnetometer above the Golden Pipe shaft and headframe.

A probable dike-like intrusive, the Golden Pipe Intrusive, lies undercover to the west of the known resource. Pieces of a fine-grained granodiorite porphyry can be found on the Golden Pipe mine dump and it is mapped in two places on the surface by the DMA, 1930. The area between the intrusive and the known resource would be very favorable for the location of a Taylor-type of skarn and should be drilled with at least three holes parallel to the known resource and splitting the distance between the intrusive and the resource.

The top of a probable small intrusive stock lays under hole JS-105 which intersected a propylitized sphalerite bearing "granite" dike (?). A propylitized granite probably would not have a magnetic signature so the cause of the anomaly is enigmatic but this occurrence should be aggressively drilled with at least three drill holes spaced symmetrically around hole JS-105. Again, this occurrence could be the location of a Taylor-type of skarn deposit

A probable intrusive was located under the flat alluvial area to the East of the resource. The dump of a prospect shaft close to the edge of the probable intrusive had very hard fine-grained crystalline rock with sporadic barite which could be a rock slightly distal to a skarn. This area should be drilled after the first two mentioned targets have been drilled and that knowledge used to spot well located holes here.

The magnetic survey revealed concealed dikes below the mineralized jasperoid veins at West Silver Butte. The dikes have a NNE strike similar to the fault trends in the area. Drilling is recommended here but after the previously mentioned have been drilled.

A more detailed geologic analysis of the magnetic survey will follow. As illustrated on **Figure 5**, outline of the probable intrusive bodies is defined by the magnetic analytical signal. The outlines were taken from the K. Frankcombe geophysical report.

Reinterpretation of Historic CSAMT Survey

The historic CSAMT survey was reinterpreted by Kim Frankcombe of ExploreGeo Pty Ltd from scanned sections. Not having the original digital data was a handicap but Kim made a very good attempt to salvage as much information as possible. While no direct evidence for mineralization was uncovered the survey may not be totally useless. Future drilling may yield data that could be used to further refine the results. For example, Figure 10 taken from Kim Frankcombe's geophysical report, illustrated in **Figure 3**, shows a zone of modestly elevated resistivity where the known resource is located.

Hole JS-104 the only deep angle hole in the resource penetrates through the resource and then stops short of a similar zone of modestly elevated resistivity. Perhaps a hole penetrating this concealed zone can define what it is, possibly another mineralized zone. Further to the southeast along the cross section line the drilling stops short of a dipping zone of similar elevated resistivity and even further to the southeast two holes come close to but do not penetrate a strongly resistive zone. Since the mineralization is associated with jasperoid, a very highly electrically resistive rock, these resistors should be aggressively investigated. There are other examples to be noted in the CSAMT reinterpretation and a few quick vertical drill holes can clarify this. A further geology-based analyses of the CSAMT data in conjunction with the magnetic data will be made by this author in the near future.

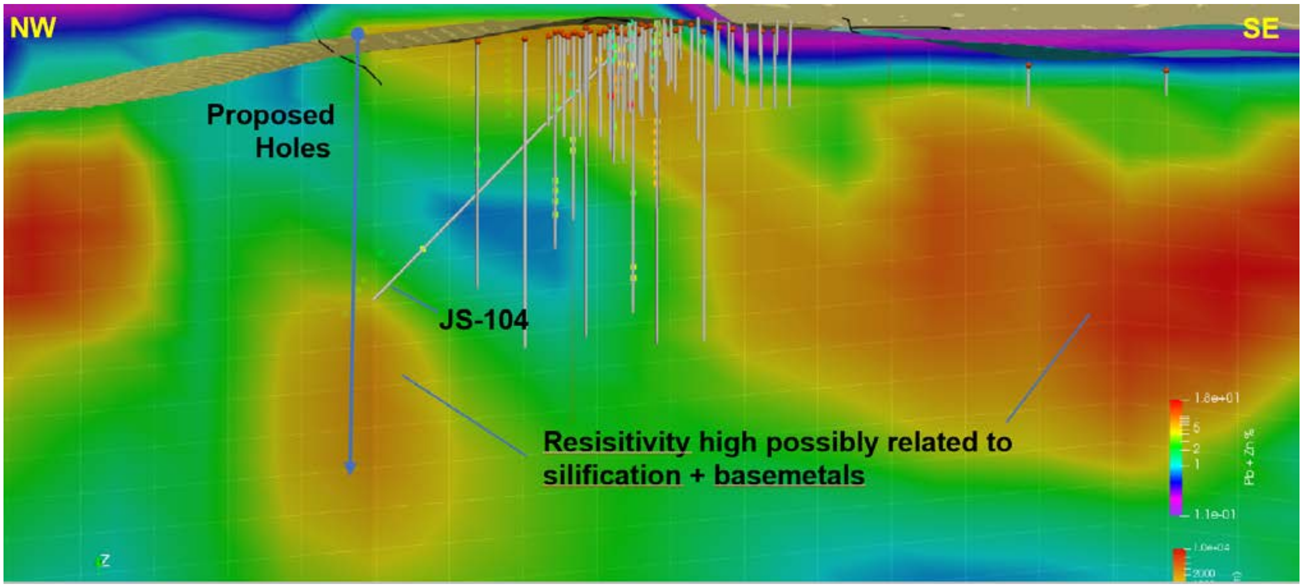

Figure 3: The section is looking NE through the known resource showing the dense drill pattern in the resource at Golden Pipe. The angle hole, JS 104 is roughly parallel to the section.

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Appendices

Appendix A - Rock Sample Descriptions Collected by W. Tafuri, August-November 2018

MS 1 – 649679E/467181N - Not on property, collected from dump at reclaimed adit at actual Medicine Springs, 1 km to the west Golden Pipe . Iron rich gossan with rextal limestone and possible ZnOx

MS 2 – 649685E/467166N - Close to same location, Limestone with bleached coating that looks similar ZnOx at Pasinex's Spur prospect.

MS3 – 656114E/463695N - Weak jas in Pg, Si is weak but lmn is strong, unidentified crystals, ba in clots

MS 4 – 655874E/463597N - Grab from dump at prospect, gossan with wk to st lmn and hem , qtz, tr ba

MS 5 – 655928E/462730N - Grab from dump at fenced shaft, st gossan with ba, lmn, hem

MS 6 – 655872E/462620N - Grab from dump at backfilled fenced shaft, st gossan with hem + minor ba

MS 7 – 655872E/462620N - Grab from same location but st lmn and ba, no gossan

MS 8 – 656003E/462881N - Rock chip large jasperoid outcrop with shack south of Golden Pipe Shaft

MS 9 – 656229E/463015N - Grab from dozer scrape, jas with st lmn stain, gritty si sandstone?

MS 10 – 656200E/463019N - Grab from prospect pit, grey barren looking jas

MS 11 – 657761E/462951N - Rock chip, Si quartzite breccia, spotty lmn and hem

MS 12 – 656504E/462688N- Grab fromdump at caved shaft, in Tra, minor red jas with st lmn and wk hem

MS 13 – 656223E/462835N - Fenced shaft, grab from dump, gossan with st, Fe, ba, Si

MS 14 – 655293E/461272N - Shallow decline on shear, grab from dump, brecciated and rextal ls, lmn, minor hem, Si

MS 15 – 655293E/461272N - Grab, brecciated rextal ls with lmn, some hem, some Si

MS 1 6 – 655293E/461272N - Pit near decline, grab, black ls, cal veined, MnOx?

MS 17 – 655336E/461317N - Trench, 50'x10', grab ,ls with lmn on fracs, tr ba and lmn, partially Ox galena

MS 18 – 655296E/461385N - Prospect trench, grab, hem to lmn colored ls, MnOx coating

MS 19 – 655369E/461313N - Prospect in dark rextal ls on shear filling vein, ba, hem bx, galena

MS 20 – 655410E/461345N - Rock chip, Si pods in Pg with minor hem, lmn

MS 21 – 655585E/461475N - Grab prospect on shear, ba vein in shear is about 5 in wide, hem, lmn, si

MS 22 – 655534E/461481N - Rock chip, jas OC, totally Si Pg, lmn color minor ba

MS 23 – 655394E/461172N - Dump grab, massive ba w/ st lmn, pit face massive ba with gossan rind

MS 24 – 655418E/461132N - Silver Butte North shaft, grab from dump, heavy lmn gossan with minor ba, some galena

MS 25 - 655421N/461123E - Silver Butte South shaft, grab from dump, gossan with ba and heavy lmn

MS 26 - 655555N/460927E - Dump grab, prospect on shear, lmn colored jas with ba

MS 27 - 655544N/461083E - Rock chip, lmn, hem colored jas with minor ba

MS 28 – 655109E/461381N -Dump grab from prospect pit, MnOx covered conglomerate with rounded small pebbles, no CO3, ba, possible rhyolite fragments, fault breccia, abundant similar rocks in area

MS 29 - 656799N/462720N -Dump grab from prospect pit in Pg, gossan with hem, lmn, ba

MS 30 – 655583E/461124N - Dump grab from cribbed prospect pit, ls with st lmn, minor hem and MnOx, ba, structure is obscured but slickensides are found on the dump

MS 31 – 655596E/461137N - Dump grab from prospect pit, jas with st lmn and wk hem and ba

MS 32 – 655441E/460704N -Dump grab from deep prospect pit in ls ,lmn colored jas with ba, wk hem

MS 33 – 655792E/460818N - Dump grab on massive ba vein about 5 ft. wide, zones of wk lmn colored jas and MnOx

MS 34 655124E/461159N - Dump grab, pit in rextal ls, small fault with 1 ft. of gouge minor lmn no visible ba

MS 35 – 655131E/461151N - Grab from trench on fault, heavy gossan with lmn, hem, MnOx

MS 36 – 655170E/460909N - Grab from road cut, massive ba vein about 6 ft. thick, mainly lmn gossan

MS 37 – 655170E/460909N - Grab of massive barite vein

MS 38 – 655711E/461331N - Rock chip, OC, lmn colored jas with trace hem, minor ba

MS 39 – 655853E/461580N - Grab pit on massive ba vein, ba, lmn colored gossan, tr. hem, tr. MnOx

MS 40 – 655942E/461641N - Trench and adit on same vein, grab from apparent stockpile, lmn gossan, tr. hem, ba

MS 41 - 655898E/462662N - OC rock chip of Tra fine grained sandstone with lmn stain

MS 42 – 656058E/462771N - OC rock chip of Pg, hem stained no ba

MS 43 – 656052E/461982N - Dump grab trench on ba veins, veins have Si selvage with lmn colored gossan

MS 44 – 656935E/462597N - Deep shaft, dump grab, hem/lmn gossan, minor ba, qtz in vugs and veinlets, hard rextal l may be a skarn precursor.

MS 45 – 656886E/462454N - Drill road possibly hole 35, Grab, some lmn jas, hem in Pg minor Si, tr. Ba

Appendix B - Geological Abbreviations

All Location coordinates are in NAD 27

ba = barite

hem = hematite

jas = jasperoid

lmn = limonite

MnOx = Mn oxide

Ox = oxide

OC = outcrop

Si = silica or silicification

tr = trace

wk = weak

mod = moderate

st = strong

Rextal = recrystalized

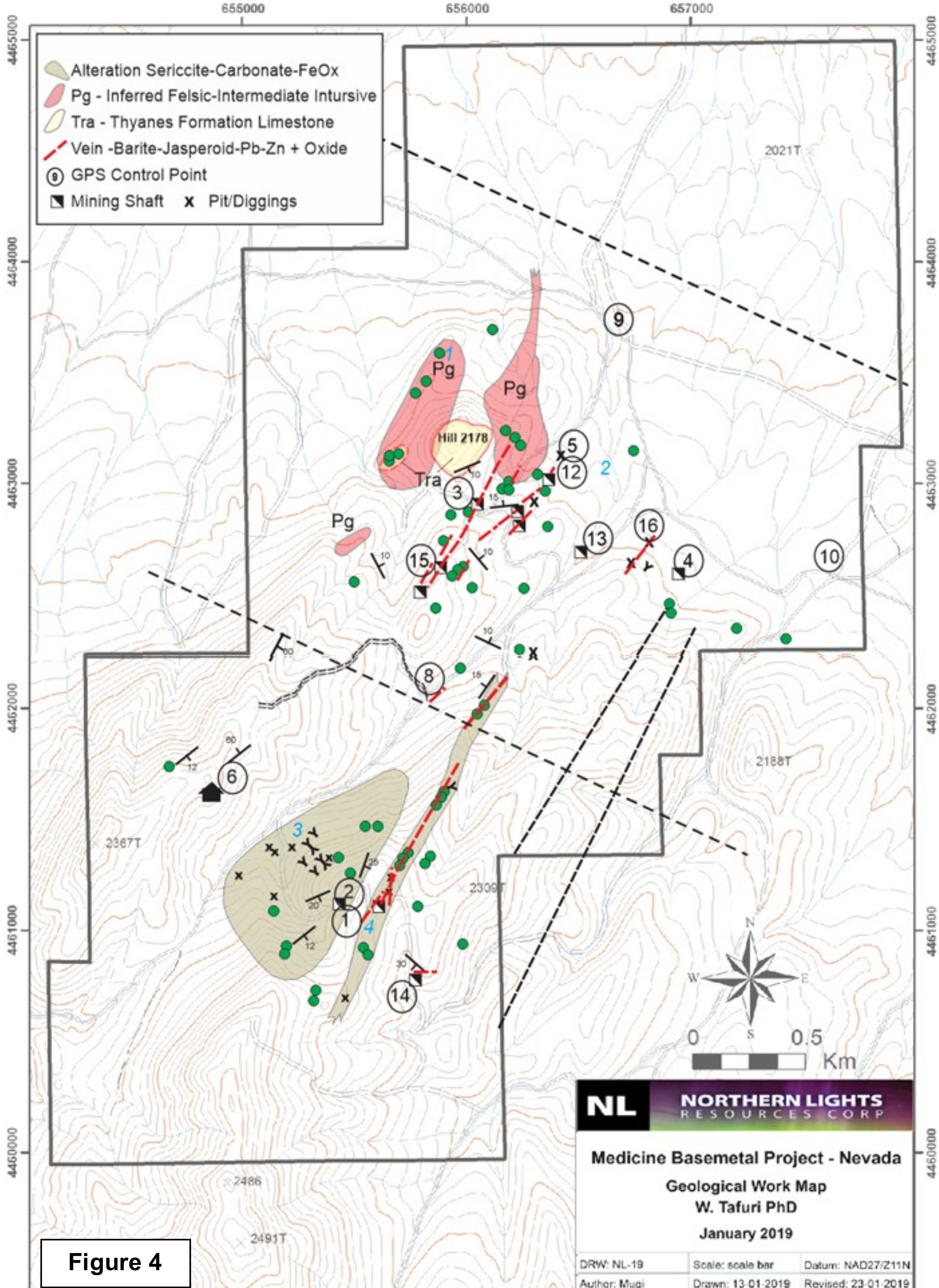
Pg = Permian Gerster

Trb = Triassic Thaynes, upper member

Tra = Triassic Thaynes Fm, lower member

Appendix C - ALS Selected Element Analyses – Medicine Springs

SAMPLE	Ag	Pb	Zn	Ba	As	Sb	Hg	Se	Mn	Cu	Mo	Bi	Au	Te	W	Sn	S
UNIT	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
Geochemical	CARBONATE REPLACEMENT ASSOCIATION				CARLIN ASSOCIATION					INTRUSIVE ASSOCIATION							
MS-1	42	11400	38700	650	684	114	58.9	3	1740	67.8	4.68	0.04	<0.02	0.01	0.27	1.5	0.15
MS-2	0.37	65.7	419	2960	21.8	3.53	0.62	0.9	68	6	0.24	0.01	<0.02	<0.01	1.52	<0.2	0.11
MS-3	4.44	1050	598	3100	160	53.1	0.6	1.9	326	15	7.04	0.02	<0.02	0.06	107.5	0.2	0.1
MS-4	1.41	2310	2110	800	3750	345	3.96	82.4	247	18	23.1	1.49	<0.02	0.04	11.5	0.3	0.09
MS-5	142	93800	3360	230	76.3	113.5	38.8	18.8	251	51.4	4.69	0.04	<0.02	0.02	5.29	0.9	0.36
MS-6	131	30600	4440	820	117	103.5	5.35	41.1	603	144.5	7.03	0.05	<0.02	0.02	25.7	1	0.25
MS-7	13	2540	1160	190	82.3	41.4	1.64	4.7	38	13.5	2.12	0.02	<0.02	0.01	6.08	0.4	0.39
MS-8	16.95	18150	50	190	122.5	44.2	0.7	89	113	12.2	3.84	0.05	<0.02	0.01	4.44	1.3	0.49
MS-9	90.1	12550	57	290	18.8	25.9	56.4	1.3	75	5.6	3.09	0.03	<0.02	<0.01	0.63	0.8	0.27
MS-9 Dup	1.92	521	159	2100	104.5	14.4	1.05	9.3	39	26.6	5.15	0.02	<0.02	0.01	1.42	<0.2	0.09
MS-10	37	21800	16150	1420	120	26.7	13.4	10.6	80	40.7	8.2	0.04	<0.02	0.01	3.49	0.7	0.1
MS-11	0.74	277	360	1600	48.5	6.83	0.25	0.4	66	21	2.28	0.03	<0.02	<0.01	5.33	<0.2	0.07
MS-12	13.4	7650	414	1550	177.5	44.4	0.7	1	298	20.9	2.21	0.03	<0.02	0.09	19.3	0.2	0.09
MS-13	165	40700	5290	2050	325	411	7.24	3.7	6690	47.9	92.6	0.04	<0.02	0.02	4.79	1	0.09
MS-14	5.72	420	600	1610	3820	13.45	1.58	6.9	640	20	3.25	0.07	<0.02	0.01	0.47	1.4	0.05
MS-15	5.63	3090	2890	2790	1300	29.5	3.05	0.9	2090	11	1.33	0.02	<0.02	0.01	0.21	0.6	0.07
MS-16	2.34	281	3230	2190	2360	32.4	1.06	3.4	3820	9.5	1.43	0.03	<0.02	0.01	0.19	0.3	0.06
MS-17	81.3	28100	1360	1940	4640	62.1	1.8	2.8	1460	25.6	61.1	0.08	<0.02	0.01	1.97	0.5	0.16
MS-18	7.48	562	560	1880	4450	23.1	1.22	1.9	906	34.9	2.72	0.1	<0.02	<0.01	0.28	2.4	0.06
MS-19	7.75	10035	1180	1640	1020	32.4	0.5	0.7	2860	3.9	4.79	0.04	<0.02	<0.01	0.31	0.2	0.09
MS-20	11.95	2200	8090	2290	1320	32	5.49	2.9	803	11.9	1.46	0.02	<0.02	<0.01	1.63	0.8	0.12
MS-21	145	41000	1740	120	557	218	1.31	6.6	2680	21.8	2.44	0.05	<0.02	<0.01	1.33	0.5	0.56
MS-22	0.96	452	1260	1320	712	65.1	0.56	1.5	259	7.4	3.92	0.03	<0.02	0.01	0.98	0.5	0.16
MS-23	14.95	7420	61300	2810	69.7	136.5	24.4	3.1	8300	227	4.14	0.02	<0.02	<0.01	0.39	0.4	0.09
MS-24	559	100550	61800	140	171.5	166.5	69.4	20.7	5620	44.3	10.65	0.05	<0.02	0.01	1.89	1.1	0.6
MS-25	107	25300	17500	410	234	316	26.6	11.1	2710	90.7	7.56	0.04	<0.02	0.01	3.48	0.7	0.23
MS-26	113	17250	11250	250	873	89.4	14.35	12.3	178	10.6	3.76	0.04	<0.02	0.01	1.54	0.4	0.39
MS-27	6.67	6360	4480	2440	609	42.1	1.59	20.7	137	16.2	13.3	0.05	<0.02	0.01	5.04	0.2	0.14
MS-28	154	61800	7820	1350	780	2190	12.55	1.3	20200	45.2	4.97	0.88	<0.02	0.01	2.3	0.7	0.12
MS-28 Dup	3.45	4410	3000	3540	254	61.9	0.51	0.2	28200	17.8	4.91	0.03	<0.02	0.01	0.86	<0.2	0.08
MS-29	0.39	317	197	3050	173.5	43.4	0.23	0.5	550	47.1	1.07	0.03	<0.02	0.03	18.95	<0.2	0.07
MS-30	8.69	7420	2840	2640	841	123.5	1.75	0.4	244	25.9	8.22	0.05	<0.02	<0.01	129	1	0.08
MS-31	8.78	3560	2160	2130	558	79.8	1.59	0.8	43	21.3	3.09	0.03	<0.02	<0.01	91.3	0.8	0.07
MS-32	183	17400	3750	1250	52.1	93.7	11.35	4	37	43.5	1.56	0.02	<0.02	<0.01	11.85	0.2	0.09
MS-33	93.2	57300	2180	1290	86.9	216	18.1	38	307	112.5	2.17	0.04	<0.02	<0.01	0.33	0.6	0.14
MS-34	1.2	2910	3780	1820	502	40.2	2.64	1.3	2190	13.2	6.44	0.03	<0.02	0.01	3.15	0.2	0.06
MS-35	56.6	40700	8560	150	529	60.1	14.05	21.1	876	25.9	12.2	0.06	<0.02	0.02	2.22	0.4	0.42
MS-36	91.6	27000	28800	1210	207	190.5	31.9	10.7	4780	63.8	9.03	0.05	<0.02	0.01	2.52	0.7	0.08
MS-37	3.45	862	1860	1420	10	38.9	1.07	0.2	269	2.3	0.23	<0.01	<0.02	0.01	0.08	<0.2	0.05
MS-38	5.59	448	372	1090	36.3	6.57	0.2	0.3	210	3	1.15	0.01	<0.02	<0.01	3.69	<0.2	0.07
MS-39	30	7670	2090	1630	119	285	3.64	1.2	159	22	13	0.02	<0.02	0.01	181	2.6	0.06
MS-40	19.55	7110	5420	1470	339	578	1.29	0.8	667	19.9	12.7	0.02	<0.02	<0.01	171.5	0.5	0.05
MS-41	4.9	1710	106	190	43.9	10.45	0.53	12.4	41	5.4	1.17	0.03	<0.02	0.01	7.81	0.3	0.57
MS-42	0.25	86.7	81	610	5.5	3.65	0.06	0.7	728	2.7	0.32	0.03	<0.02	0.01	1.92	<0.2	0.03
MS-43	42.6	2920	881	1600	24.8	97.2	3.04	3.9	37	54.2	3.14	0.01	<0.02	<0.01	37.1	1.9	0.06
MS-44	0.42	134	156	1650	193	36.5	0.15	0.7	469	64.8	0.93	0.05	<0.02	0.01	26.3	<0.2	0.06
MS-45	0.29	91.7	87	1140	191	61.9	0.09	0.6	448	80.8	0.86	0.06	<0.02	0.02	9.94	<0.2	0.04



Alteration Sericcite-Carbonate-FeOx
Pg - Inferred Felsic-Intermediate Intursive
Tra - Thyanes Formation Limestone
Vein -Barite-Jasperoid-Pb-Zn + Oxide
GPS Control Point
Mining Shaft
Pit/Diggings
Hill 2178
Pg
Tra
2021T
2188T
2367T
2309T
2486
2491T
0
0.5
Km
NL
NORTHERN LIGHTS
RESOURCES CORP
Medicine Basemetal Project - Nevada
Geological Work Map
W. Tafuri PhD
January 2019
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Scale: scale bar
Datum: NAD27/Z11N
Author: Mugi
Drawn: 13-01-2019
Revised: 23-01-2019
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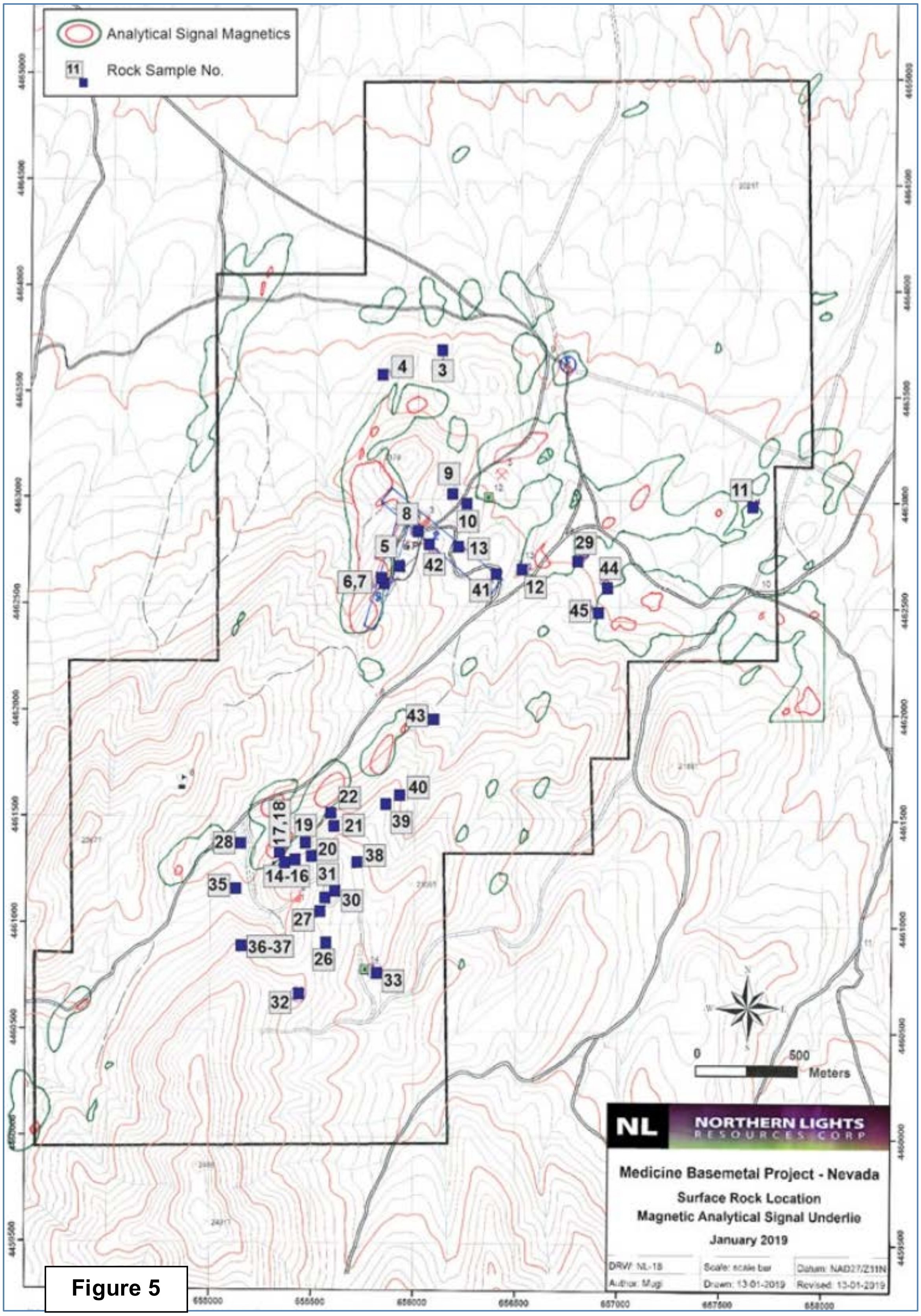
Figure 4



Analytical Signal Magnetics
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9
8
10
5
13
42
6,7
41
12
29
44
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40
22
39
17,18
19
21
28
20
38
14-16
31
35
30
27
36-37
26
33
32
0
500
Meters
NL
NORTHERN LIGHTS
RESOURCES CORP
Medicine Basemetal Project - Nevada
Surface Rock Location
Magnetic Analytical Signal Underlie
January 2019
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Author: Mugi
Scale: scale bar
Drawn: 13-01-2019
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Revised: 13-01-2019
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Figure 5