وزارة الطاقة والثروة المعدنية

الذهب

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REPORT ON THE RESULTS OF SURFACE SAMPLING OF THE WADI ARABA (SOUTH JORDAN) GOLD MINERALIZATION

Chemical & Mining Industries Co. Ltd
&
Jordan Economic Development & Trading Co. – Comedat

Consortium

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Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF PHOTOS

1. INTRODUCTION

It was requested by CMI Co. Ltd. And Jordan Economic Development & Trading Co. – Comedat Consortium (The Consortium) that DAMA Engineering Co. (DAMA) design a reconnaissance survey program in its license area of Wadi Araba property in southwestern part of Jordan. Several exploration studies have been carried out on the Cu and Au mineralization in Wadi Araba in general.

Between 1992 and 1994, Natural Resources Authority (NRA) & Bureau de Recherches Géologiques et Minières (BRGM) conducted geochemical exploration project on the whole of the southern Jordanian Panafrican basement. Enhanced gold concentrations were detected at a number of locations, particularly in the felsic volcanic rocks of the Aheimir Suite in Wadi Abu Khushyba, Wadi Hower and Wadi Sabra areas (Araba Complex), which are within the license area.

Depending on the results of this previous exploration work, a reconnaissance programme, combining geological and geochemical surveys over Wadi Abu Khushyba, Wadi Hower and Wadi Sabra areas, was designed. In addition to this, stream sediment sampling was added to the reconnaissance program so that any mineralization in the license area would not go unnoticed.

Geological Engineer Mr. Mustafa Atalay from DAMA Engineering and a team from The Consortium carried out the geological, geochemical surveys and stream sediment sampling between November 12th and 27th,2019. The stream sediment sampling was mainly undertaken by The Consortium geologists (4) and local workers (5) under the supervision of Mustafa Atalay from DAMA.

During the reconnaissance program, a total of 42 rock chip samples and 47 stream sediment samples were collected by DAMA. The rock samples were collected from the quartz veins and outcrops of hydrothermally altered rocks. The stream sediment samples were collected from the streams draining from the areas underlain by the felsic volcanic rocks and sedimentary rocks. All the samples were sent to ALS İzmir laboratory for sample preparation and analysis.

This report summarizes the results of surface sampling, presents DAMA's interpretations and opinions about geology, mineralization, and exploration potential of the project area located in the Wadi Araba property, and makes recommendations for further exploration to test the defined exploration targets on the property.

Jordan 6 degree system, zone 36N, WGS 84 was used as the coordinate system in the report.

2. STUDY AREA

2.1.Property Description and Location

The studied property is located near Ar-Rishah village, 37 km to west of Ma'an, 90 km to the north-northeast of Aqaba, 4 km east of Wadi Araba-Aqaba Highway, and 250 km south-southwest of Amman in South Jordan (**Figure 1**).

The project consists of one mining license covering an area of 15,636.1168 hectares in one polygon. The project coordinates are given in **Table 1** below.

Figure 1 Location map of license area (Google Map)

Table 1 Border coordinates of the concession areas

Point	Easting	Northing	Point	Easting	Northing
1	714882	3351787	12	728837	3349181
2	719059	3351869	13	729553	3349296
3	719092	3349983	14	729457	3342866
4	719231	3349878	15	724245	3342502
5	719562	3349216	16	721639	3337693
6	719925	3349507	17	721718	3336424
7	723246	3348323	18	714898	3335359
8	722862	3349282	19	714885	3337600
9	726288	3349262	20	716340	3337614
10	725323	3350347	21	716307	3339598
11	727096	3350383	22	715216	3339605

2.2. Accessibility, Climate, Local Resources, Infrastructure and Physiography

The property can be accessed by an hour drive via Dead Sea-Aqaba highway stretching out for 250 km to Ar-Rishah village.

Ar-Rishah village, is located at the western border of the property. The study area has limited accessibility, only through the use of 4-wheel drive vehicles. Most of the outcrops can be reached only on foot.

The property is located on the desert valley of Wadi Araba and is closed to Petra, the most famous archaeological site in Jordan. Wadi Araba has a desert climate, meaning that the annual temperature is above 18 degrees Celsius. Additionally, the annual rainfall does not exceed 250mm. In summer, daytime temperature in Wadi Araba is around 30 degrees Celsius on average, but with peak temperatures that can rise to well over 40 degrees Celsius. The average night temperature is around 10 degrees. The winters are much colder. The average daytime temperature is between 10 and 15 degrees Celsius.

The property is located in Wadi Araba and it lies in a desert valley area. Thus, license area is mostly a sandy and rocky terrain almost without vegetation. The property is characterized by planar to high relief, with relative elevation changing up to 300 m from the valley to the hills. The elevations in the area change between 250 m along Ar-Rishah and about 900 m in the southeastern part of the claim.

Exploration and mining activities in the region may take place all year-round with only occasional weather-related interruptions.

3. HISTORY

The information for this subsection is taken from a number of reports and documents generated by mainly Natural Resources Authority (NRA) geologists.

Otto Gold (1964) produced a geological map at a scale of 1:100,000 covering Wadi Abu Khushyba area, including the copper mineralization of different formations, during the years 1966, 1967, 1973 and 1977. The Natural Resources Authority (NRA) with assistance of BGR and BRGM carried out the prospecting for the copper mineralization. The NRA and BRGM carried out several geochemical and mineral exploration studies on Aqaba and Araba complexes. According to these studies gold anomaly was detected (not exceeding 0.4 g/t) during the NRA &BRGM collaborative project (Nimery et al, 1995).

Detailed geochemical prospecting was carried out in the areas which were chosen based on the previous data that is obtained from the geochemical exploration program done by Natural Resources Authority (NRA) & Bureau de Recherches Géologiques et Minières (BRGM) of interest and the felsic- vein within contains gold and gold nuggets and the adjacent altered rocks by using rock geochemistry and heavy mineral geochemistry methods.

This stage proceeded between 1994 and 1997 on the zone of the gold anomalies and showed concentrations of gold in the area of Abu Khushyba, reaching 40g/t in the heavy mineral concentrates. Visible gold also detected in heavy minerals.

With the aim of seeking the source of the anomalies highlighted in the sector of Abu Khushyba, the samples have been collected from all the structures which were thought to have the potential of being mineralized.

The rock samples have taken in an aplite dyke shows a grade of gold up to 5g/t. (Bullen, et al., 1995, Bullen, et al., 1996 and Nimery, et al., 1998).

Between 1999 and 2000, detailed works concentrated on the zone of Wadi Abu Khushyba in order to delimit the distribution of gold mineralization. These detailed works completed in the sector of Abu Khushyba gave results that reached 50 g/t Au in some samples. The extension of the aplitic vein is about 700m, with a thickness of 0.5 to 1m. The mineralized zone with significant grade does not exceed 100 m in extension.

Detailed geophysical prospecting using horizontal–loop electromagnetic (HLEM), magnetic gravity and induced polarization were carried out by Geophysical Division (AL-Zoubi, et al.,

1999) and detailed mineral exploration activities applying digging pits (5 pits), open trenches (2 trenches) and drilling boreholes were also conducted by Exploration Studies Division, on the study area (Dana, et al., 2001). A total of 10 boreholes were drilled by NRA in the Abu Khushyba area. Six of them were drilled out of the project area due to the geophysical prospecting recommendations and the surface geochemical results. The others were drilled within the area. The samples collected from thrench and pits returned significant values up to 20 g/t Au. On the other hand, core samples returned elevated values up to 0,18 g/t Au.

4. GEOLOGICAL SETTING

*4.1.*Regional Geology

The property is located in the southwestern Jordan. In southwestern Jordan, part of the Nubo-Arabian Shield (ANS) is exposed. It is characterized by Precambrian plutonic and metamorphic rocks, and by some minor occurrences of upper Proterozoic sedimentary rocks. Cambrian, Ordovician, and Silurian sandstone and shale of continental and marine origin have a maximum thickness of 1,800 m and unconformably overlie the rocks of the Precambrian basement complex (Bender, 1974).

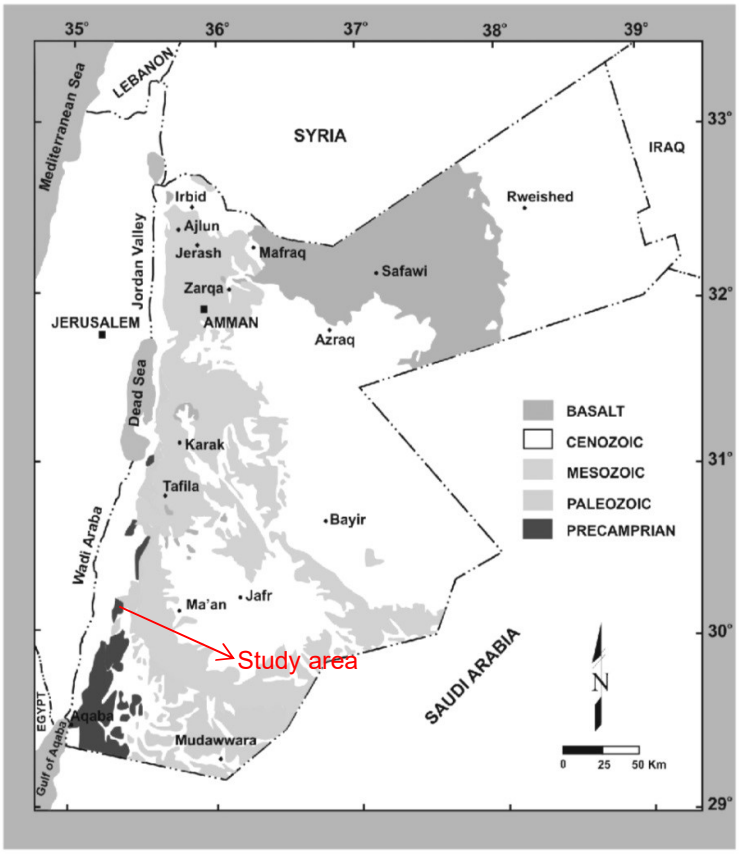

Figure 2 General geological map of Jordan, showing distribution of the main rocks (Abed, 2000)

The basement rocks are broadly subdivided into two lithostratigraphic and intrusive divisions; namely, the older Aqaba and younger Araba complexes (Ibrahim andMcCourt, 1995) that are separated by the Araba Unconformity (G.H. Jarrar et al., 2017).

The Aqaba Complex (older) which is calc-alkaline plutonic igneous and metamorphic rocks ranging in age from 800 – 570 Ma.

The Araba Complex (younger) comprises the Safi Group, Feinan Granitic Suite, Qirenifat Volcanic Suite and Ahayrnir Volcanic Suite (the youngest igneous rocks in the southwest Jordan. The later suite forms the host rocks crossed by the mineralized zone (MEMR, 2015).

The two complexes are separated by a regional unconformity represented by the Saramuj Conglomerate Formation.

<table>
<tr><th colspan="2">Complex</th><th>Suite</th></tr>
<tr><td colspan="3">Dyke event</td></tr>
<tr><td colspan="2" rowspan="4">Araba Complex
Alkaline
(600-550 Ma)</td><td>Ahaymir and Qirenifat Volcanics</td></tr>
<tr><td>Ghuweir Volcanics</td></tr>
<tr><td>Finan Granitic</td></tr>
<tr><td>Safi Group</td></tr>
<tr><td colspan="3">Regional Unconformity (Peneplain)</td></tr>
<tr><td colspan="3">Dyke event</td></tr>
<tr><td rowspan="6">Aqaba Complex
(800-600 Ma)</td><td rowspan="4">Calc-Alkaline
Granitoides
(630-600 Ma)</td><td>Yutum Granitic</td></tr>
<tr><td>Urf Porphyritic</td></tr>
<tr><td>Rumman Granodiorite</td></tr>
<tr><td>Darba Tonalitic</td></tr>
<tr><td>Rahma Foliated</td><td></td></tr>
<tr><td rowspan="2">Metamorphic
(800-750 Ma)</td><td>Abu Baraq Metasedimentary</td></tr>
<tr><td>Janub Metamorphic</td></tr>
</table>

Figure 3 Field established hierarchy of Aqaba and Araba Complexes, southern Jordan (McCourt and Ibrahim, 1990)

4.2.Regional Structural Geology

The main regional structure in Jordan is Wadi Araba- Dead Sea Transform fault, which is a part of the long rift that extend from east Africa across Gulf of Aden-Red Sea and to south Turkey. The Wadi Araba-Dead Sea Transform fault extends 360 km long and the main hypothesis of the origin of this fault is related to vertical and horizontal displacements (Abed, 1982). The N–NE-trending Wadi Araba Fault is also the most prominent structural feature in the study area. The Al Quweira Fault which is situated on the eastern border of the study area, ~15 km east of the Araba Fault, is a ~N-trending fault extending for several hundreds of km from Saudi Arabia in the south to the Finan area in southern Jordan. The study area between the Wadi Araba and Al Quweira faults is densely dissected by a set of parallel NW–SE antithetic step-faults south of Wadi Abu Khushayba.

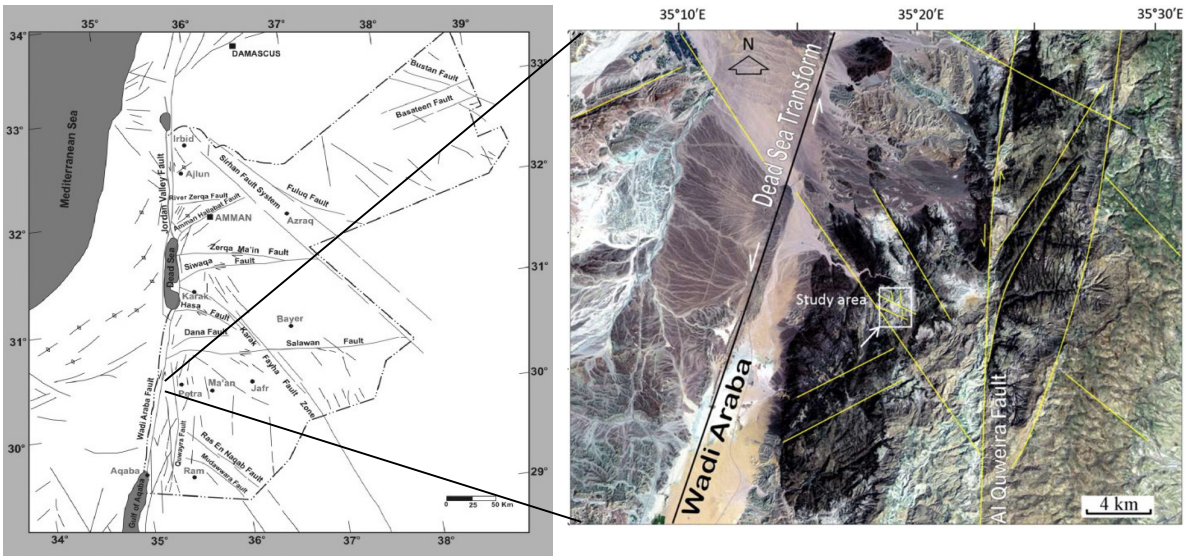

Figure 4 Structural map of Jordan, showing the distribution of the main structures on the left (Alnawafleh et al., 2013). Landsat image showing the fault pattern of the study area including the currently active Dead Sea Transform (solid black), and other older strike-slip faults inactive at present (e.g., the Al Quweira fault) and NW–SE faults on the right (M. Al-Hwaiti et al., 2010).

4.3.Local Geology

The information for this subsection is taken from a number of internal reports and documents, including geological maps and sections generated by mainly Natural Resources Authority (NRA) geologists, especially Al-Hwaiti (2010) and McCourt (1990).

The basement rocks exposed in the study area comprise granite, volcanic and volcaniclastic sequences and subordinate metasedimentary rocks. The metasedimentary rocks are mainly metagraywacke and -siltstone forming an elongate slab along the tectonic contact (strike-slip fault) between granite and rhyolite in the southwestern part of the Wadi Abu Khushyba and Wadi Hower (**Figure 5**). The granitic rocks vary from monzogranite to syenogranite, characteristically with hypidiomorphic texture and equal amounts of biotite and muscovite, and K-feldspar dominates over oligoclase-andesine. In terms of field relationships and mineralogical composition, these rocks are similar to the Huwar two-mica granite suite which is exposed in Wadi Sabra and Wadi Abu Khushyba.

The volcanic rocks exposed in the project area are part of the Ahaymir Volcanic Suite. Also, these rock units are the main lithologies and the principal target for gold mineralization in the area.

The Ahaymir Volcanic Suites includes four units, and these are

- **Qusayb Rhyolite**: It consists of mainly fine-grained porphyritic and non-porphyritic rhyolitic lavas, which have a variably developed, or preserved, banding or fluid structure, intercalated with tuffaceous horizons with abundant ignimbrites.
- **Musaymir Effusive**: It comprises fragmental effusives, dominated by xenolithic agglomerate, volcanic breccia, lithic tuff, rhyolitic tuff and quartz porphyry.
- **Mufarqad Conglomerates**: It consists predominantly of oligomict conglomerate comprising angular to subangular, clast-supported, poorly-sorted cobbles and boulders.
- **Al Bayda Quartz Porphyry**: It is the youngest phase of volcanism in the Ahaymir Suite. It consists mainly of quartz, feldspar rhyolite porphyry.

The Early to Late Cambrian Salib Formation and Abu Khushayba Sandstone consist of coarse- to fine-grained micaceous sandstone to siltstone with fragments of volcanic basement rocks are exposed in the northern part of the Wadi Abu Khushyba. These formations are the part of the lower part of the Ram Group uncomformably overlying Precambrian rocks. These rocks host important stratabound copper mineralization.

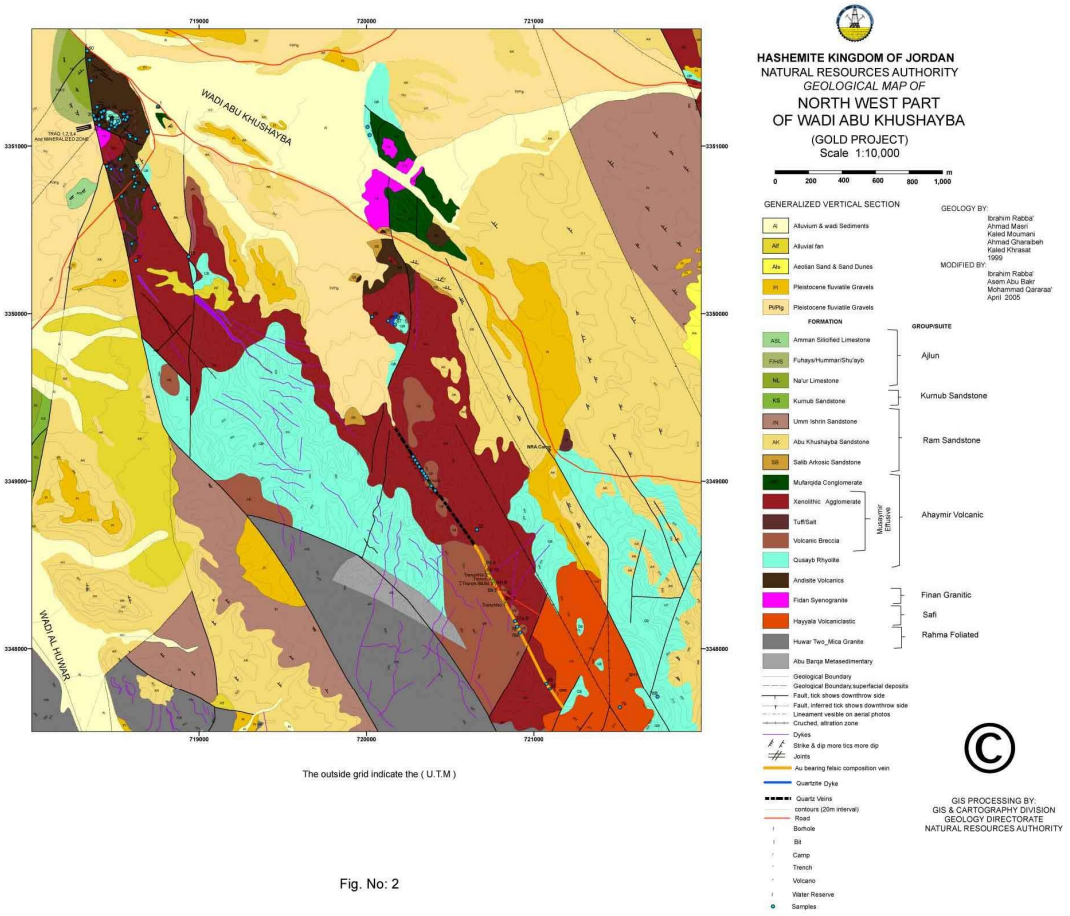

Figure 5 Geological map of Wadi Abu Khushayba (NRA,2005)

5. MINERALIZATION

5.1.Wadi Abu Khushyba

Gold mineralization at Wadi Abu Khushyba is associated with banded silica rich, brecciated vein. The quartz vein hosts agglomerates and rhyolites of the Ahaymir Volcanic Suite. Mineralizations are typically localized in structures and exhibits many geological features common to low sulphidation epithermal gold mineralization.

During the field study, one major vein has been identified. The vein is related to the NNW-trending (N340/38 to 59) shear zone and dipping to the northeast. It is hard to recognize the vein in the outcrops or hillstops in the field due to weathering. However, it is well exposed in the areas where the excavator has opened up a trench. Also the vein material is easily recognizable in float and talus. The vein is almost continuously observed for over 250 meters with the help of the excavated trenches. However, the vein can be traced as a few mm to cm thick quartz veinlets in the Northern extension of the shear zone. It is intermittently traced for about 800 meters in total and locally has 0.3-1 meter horizontal thickness which is observed clearly in the trenches.

The main vein shows evidence of multiple stages of mineral deposition, including episodes of brecciation and hydrofracturing. The quartz-rich breccias are made up mainly of different types of fragments. Multiple textures of quartz and silica were observed, including massive formless quartz/silica, drusy quartz crystals with open space centerline textures, fine silica/quartz with devitrification textures, opalescent silica with colors that range from red to green, and colloform, banded quartz/silica vein material (Jensen, 2019). Also, bladed calcite texture was observed and is thought to indicate boiling of the hydrothermal solution (Simmons and Christenson, 1994). Taken collectively, these textures are clearly illustrative of an epithermal (low temperature) environment of formation, with dilute fluids undergoing boiling.

At Wadi Abu Khushyba, pyrite is the main sulphides observed in the quartz/silica veins and breccias. Also adularia (pink color) is observed in the mineralized veins. Quartz is the most common gang mineral. Calcite is common after quartz indicating near-neutral PH conditions of low-sulphidation (Buchanan, 1981).

Rock chip samples from the main zone returned a high of 4.35 g/t Au and up to 20.1 ppm Ag, 293 ppm Cu. Other chip samples taken from the main vein returned anomalous gold, including 4.27 g/t Au (Sample no: 2406), 1.27 g/t Au (Sample no:2402), 0.959 g/t (Sample no:2402). Also, Ba values returned highly anomalous value. But, Cu, Pb, and Zn are also weakly elevated. Pathfinder elements including Sb, As are not anomalous. This implies that top of the epithermal system is somewhat eroded.

The Wadi Abu Khushyba has not been the subject of detailed alteration mapping. Information is largely relies on experience to identify alteration minerals in the field. During the field works, the wall rocks showed reddish (hematite) to greenish (chlorite) colored. However, the rocks did not show an obvious alteration halo around the veins, such as argillic alteration or silicification.

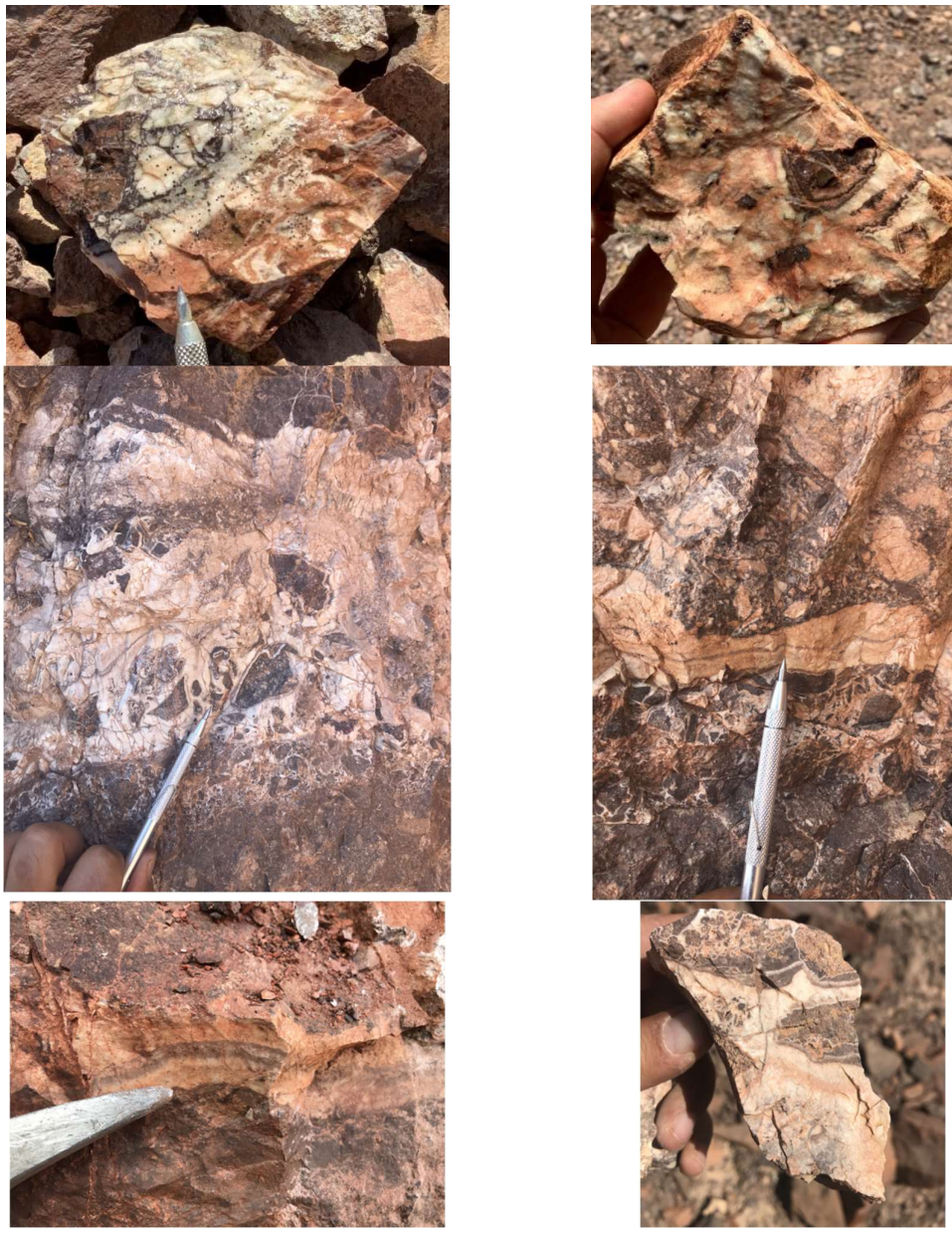

Photo 1 Typical textures from the main vein at Wadi Abu Khushyba

In addition to gold mineralization, copper mineralization was observed in northern part of the area. Copper mineralization is found as green coating of malachite along joints and small veins in the volcanics and as disseminated lithoclasts in the several horizons of the sandstones (Abu Khushayba Formation) (**Photo 2**). Copper ore was mined and smelted extensively in ancient times by Nabatians, Egyptians and Romans (Omari, 1978). NRA has calculated estimated reserves of Cu in Wadi Abu Khushayba are 8 million ton with average Cu content of 0.64%.

Photo 2 Copper mineralization (malachite) in sandstones

5.2.Wadi Sabra

Between 1992 and 1994, Natural Resources Authority (NRA) and BRGM carried out a regional geochemical prospecting on the complexes of Aqaba and Araba. During this phase, enhanced gold concentrations were detected at a number of localities in the felsic volcanic rocks of the Aheimir Suite in Wadi Sabra. Depending on the results of the program, this field work has been focused on these river drainage areas.

The volcanic rocks of the Ahaymir Volcanic Suite are the main lithology of Wadi Sabra. Also, metasediment rocks of Abu Barqa Metamorphic Suite were observed in the eastern part of the Wadi Sabra. The metasedimentary rocks are consisting of schists and gneiss in the area. This unit cut by numerous aplite-granite dykes. These dykes are oriented NNE direction. During the field works, most of the samples were collected from these dykes. Besides, a weak alteration zone was observed between metasediments and volcanic rocks in the eastern part of the area. Two samples were taken from this alteration zone. In the alteration zone, it has been observed that most of the rocks are hematitized and weakly kaolinized.

Rock chip samples from the dykes returned insignificant gold values. However, only one sample (Sample no: 2443) taken from the alteration zone returned 0,058 g/t Au and 1250 ppm Zn. The other sample taken from the alteration zone returned no anomalous values.

Photo 3 Alteration zone at Wadi Sabra (Sample No:2443)

5.3.Wadi Hower

Wadi Hower is situated south of the Wadi Abu Khushyba. Most of the region has limited access due to lack of roads. The basement rocks exposed in the study area comprise volcanic and volcaniclastic rocks of Ahaymir Volcanics. The volcanic units are cut by dykes which are continuously exposed over 50 meters. Hydrothermal alteration was not observed in this area.

Rock samples taken from the area returned slightly elevated zinc (up to 216 ppm) and barite values. Other elements including Au, Cu, Pb, and pathfinder elements including Sb, As are not anomalous.

6. SURFACE SAMPLING

6.1.Rock Chip Sampling, Preparation and Analysis

A total of 42 rock chip samples were collected during the reconnaissance survey in Wadi Abu Khushyba, Wadi Hower and Wadi Sabra areas. Sample locations are shown on the google map (**Figure 6**). **Table 2** gives the list of rock chip samples with coordinates of each sample. **Appendix 1** gives the short description and photos of the samples. All sample locations were marked in the field with handheld GPS units with ± a few m accuracy.

Rock samples collected by the DAMA were submitted to the ALS Chemex Lab in İzmir, Turkey. This facility has received and prepared samples for analyses in Ireland ALS Chemex Loughrea laboratories. Standard sample preparation for rock samples involves drying, crushing, and pulverizing the entire sample so that greater than 85% passes through a 75-micron screen.

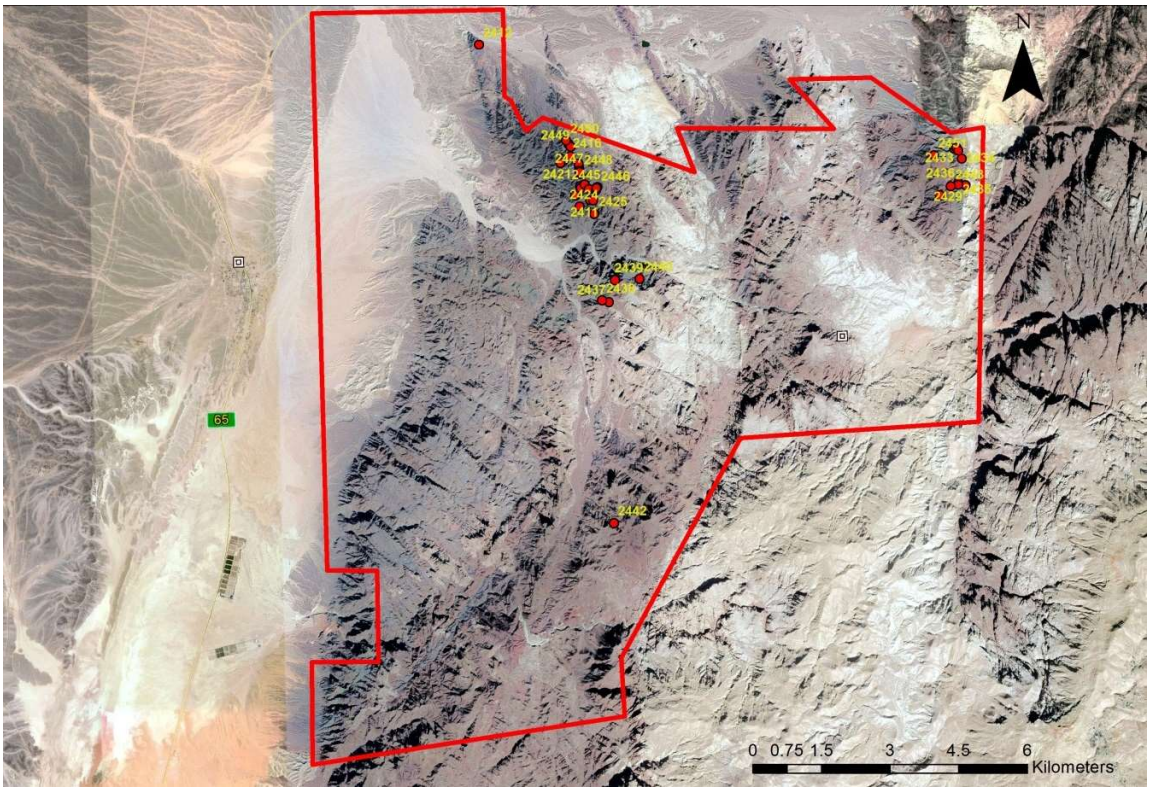

Figure 6 Map showing rock sample locations

Analyses were performed by ALS Chemex Loughrea laboratory in Ireland. Gold was analyzed with a fire-assay pre-concentration followed by dissolution of the resulting metallic bead in an aqua regia solution. Following this, a final analysis will be done by inductively coupled plasma atomic absorption spectrophotometry (Au-ICP22). Trace elements will be determined by leaching a sample aliquot in four acid digestion with analysis by inductively coupled plasma

emission spectrometry and mass spectrometry (ME-MS61). ALS Chemex maintains an internal quality control program including the use of blank, duplicate, and standard samples inserted into the sample stream.

Table 2 Wadi Araba rock sample locations

Sample No	Easting	Northing	Sample No	Easting	Northing
2401	720716	3348451	2430	728918	3348822
2402	720730	3348407	2431	728952	3348853
2403	720723	3348350	2432	728969	3348852
2404	720746	3348007	2433	729011	3348786
2405	720756	3347971	2434	729090	3348608
2406	720840	3348042	2435	729012	3348087
2407	720934	3347948	2436	729011	3348034
2408	721096	3347921	2437	721376	3345479
2410	720961	3347700	2438	721221	3345512
2411	721029	3347693	2439	721505	3345958
2412	718529	3351104	2440	722043	3345989
2413	720714	3348506	2442	721481	3340648
2414	720528	3348666	2443	728847	3348006
2416	720490	3348928	2444	770823	3347847
2421	720316	3348519	2445	721127	3347995
2422	720740	3348272	2446	721103	3347967
2423	720635	3347811	2447	720717	3348350
2424	720732	3347564	2448	720734	3348322
2425	721054	3347406	2449	720536	3348865
2426	728608	3347818	2450	720435	3349010
2429	729164	3348031	2451	728479	3348686

6.2.Stream Sediment Sampling, Preparation and Analysis

A total of 47 stream sediment samples were collected during the reconnaissance survey. At each stream sediment sample location, all data pertaining to the stream and sample characteristics along with coordinates were recorded on geochemical sample data log sheets. The locations of these samples and respective sample numbers are shown in **Figure 7** and **Table 3**.

At least 10 kg stream sediments were collected from each location. All the streams in the area were dry during the sampling period so samples were not sieved due to lack of water. As many fine silt sediments were collected as possible, avoiding the organic material. Care was also taken to collect samples from up a tributary above the point of influence of water flow from the main stream.

The stream-sediment samples were put in cloth bags. All the samples were sent to ALS laboratory in İzmir. Prior to dispatch to the laboratory, all samples were checked to ensure that labels and seals were intact to avoid contamination and tampering. Care was also taken during sampling and handling to avoid the introduction of any foreign material that could give biased results.

Standard sample preparation for stream samples involves drying, sieving to -180 micron (80mesh), and pulverizing the entire sample so that greater than 85% passes through a 75-micron screen. Samples (–180 microns stream sediment samples) were assayed by inductively coupled plasma mass spectrometry method (ALS Code ME-MS41L) for gold to a lower detection limit of 0.0002 ppm Au and gold pathfinder elements such as As, W, Cu, Pb, Zn, Sb, Bi, Mo, etc.

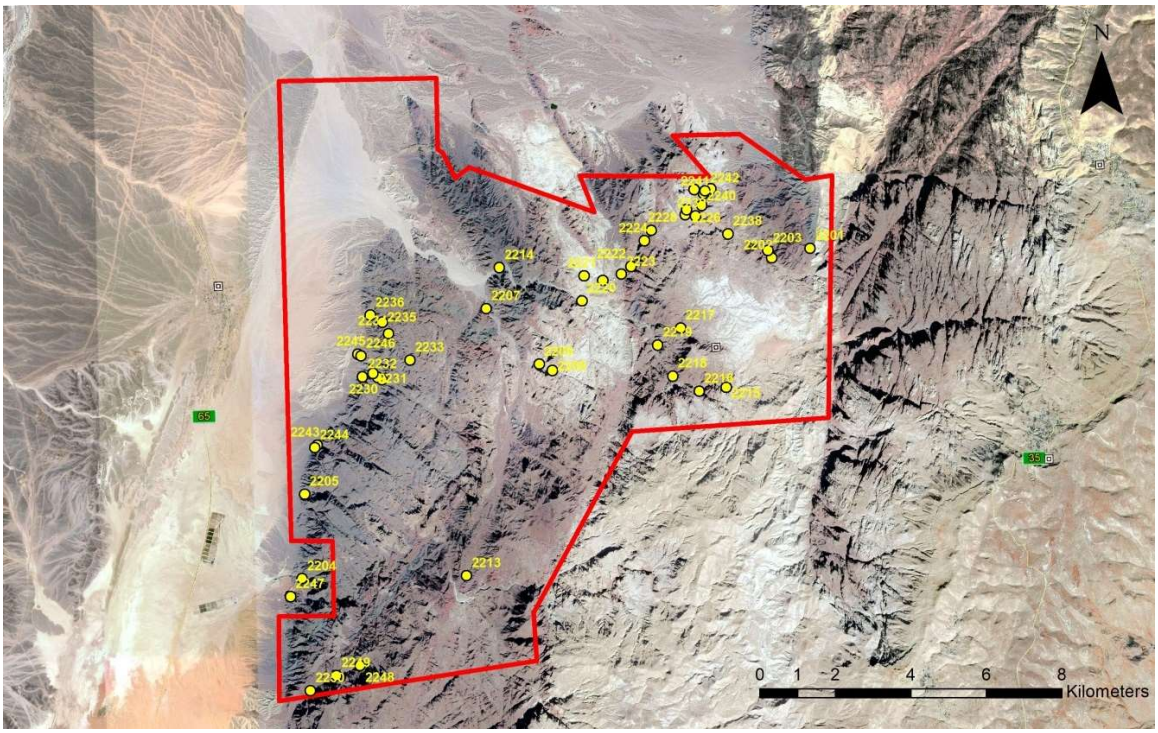

Figure 7 Map showing stream sediment sample locations

Table 3 Wadi Araba stream sample locations

Sample No	Easting	Northing	Sample No	Easting	Northing
2201	728971	3347358	2227	725889	3348917
2202	727950	3347105	2228	724757	3347837
2203	727847	3347297	2229	717617	3343875
2204	715500	3338602	2230	717506	3343944
2205	715569	3340841	2231	717379	3344046
2206	723467	3346503	2232	717104	3343952
2207	720385	3345757	2233	718365	3344395
2208	722134	3344123	2234	717795	3345094
2209	721786	3344287	2235	717622	3345406
2213	719864	3338679	2236	717308	3345584
2214	720734	3346847	2237	726331	3348934
2215	726740	3343672	2238	726788	3347739
2216	726033	3343571	2239	725929	3348219
2217	725534	3345246	2240	726094	3348496
2218	725330	3343971	2241	726145	3348801
2219	724931	3344798	2242	726186	3348881
2220	722915	3345965	2243	715908	3342138
2221	722978	3346627	2244	715841	3342072
2222	724216	3346878	2245	716978	3344554
2223	723962	3346671	2246	717060	3344500
2224	724574	3347560	2247	715191	3338126
2225	725654	3348253	2248	717040	3336290
2226	725694	3348384	2249	716407	3336033
			2250	715720	3335631

7. INTERPRETATION OF GEOCHEMİSTRY

7.1.Rock Assay Results

The rock sampling data highlights a number of anomalies which are unlike typical low-sulphidation anomalies, but still could be interpretated as the geochemical signature of a low sulphidation gold mineralization.

Most of the rock chips which is collected from Wadi Abu Khushyba proved highly anomalous in gold and barium in the quartz vein on the property. Enriched barite values in rock samples may indicate the potential for highly enriched gold mineralizing fluids that have traveled along deep-seated basement structures.

However, rock samples returned insignificant silver (mostly<1ppm), molibdenum and antimony (mostly <1.0 ppm) values. Only samples 2401 returned elevated values for silver (20.1 ppm). Arsenic values are found at a few tens of ppm at most, which are much lower than in the low sulphidation deposits. Lower arsenic or antimony contents may indicate that the top of the hydrothermal system has been eroded away (**Figure 8**).

Unlike these elements, Wadi Araba rock samples contain elevated quantities of base metals, usually more than 100 ppm in total. Zn is anomalous at almost all samples; Samples 2408 and 2412 returned highly anomalous copper values (%2.18 and %3.23 respectively) in the Wadi Abu Khushyba area.

Results of geochemical analyses of rock samples are included in the **Appendix 2** and summarized **Table 4** below.

Table 4 Assay results of rock samples

Sample No	Au(ppm)	Ag(ppm)	As(ppm)	Ba(ppm)	Cu(ppm)	Mo(ppm)	Pb(ppm)	Sb(ppm)	Zn(ppm)
	Au-ICP22	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
					Cu-OG62				
2401	4.35	20.1	4.1	480	293	4.47	12.5	1.32	63
2402	1.27	2.29	3.6	800	29.2	2.09	56.6	1.06	1590
2403	0.11	0.44	3.5	660	16.6	2.6	46.9	1.12	63
2404	0.959	0.64	16.7	1270	719	2.47	134	1.1	60
2405	0.024	0.7	5	1230	9.1	1.62	19.4	1.37	45
2406	4.27	2.22	5	1380	24.5	3.9	8.6	2.07	36
2407	0.004	0.22	2.6	1140	13.1	2.23	10.5	0.69	76
2408	0.011	0.26	3.2	1820	21800	0.8	11.8	0.39	30
2410	0.003	0.23	4.5	1070	29.6	2.95	16.9	2.23	56
2411	0.001	0.96	11.2	1310	1030	1.34	15	1.14	67
2412	0.005	0.95	2.2	1650	32300	1.07	12.2	0.43	63
2413	0.097	3.45	2.6	850	60.9	1.48	35.7	1.15	147
2414	0.009	0.03	3.3	470	24.2	0.38	11	0.28	40
2416	0.005	1.49	4.9	620	71.7	3.57	114	5.08	172
2421	0.001	0.48	2.6	1860	17.6	1.03	22.5	0.79	26
2422	0.044	0.36	1.5	840	10.5	3.91	24.9	1.04	92
2423	0.033	0.23	24.7	2260	44.4	1.51	20.2	0.95	37
2424	<0.001	0.07	3.8	1970	40.1	2.18	9.8	0.94	16
2425	0.008	0.11	21.7	1010	9.5	1.05	19.4	1.26	63
2426	0.001	0.26	1.5	1650	7.8	2.09	19.2	0.11	33
2429	<0.001	0.53	1.2	230	10.4	7.15	1.1	0.23	110
2430	0.002	0.27	6.4	1250	19.3	1.19	20	0.76	42
2431	0.001	0.72	14.3	1230	22.7	1.36	16.5	0.9	39
2432	0.001	0.24	4.9	1080	20.8	1.2	13.3	0.37	140
2433	<0.001	0.2	3.2	800	16.4	1.09	8.4	0.86	49
2434	0.003	0.09	4.5	3390	6.6	2.72	16.9	1.2	120
2435	<0.001	0.08	2.4	490	10	2.08	7.1	0.4	33
2436	0.001	0.22	4.5	870	16.1	1.95	20.6	1.55	69
2437	0.001	0.22	7.6	1100	5.3	1.2	12.8	0.59	33
2438	<0.001	0.15	4.7	810	11.3	1.39	48.6	1.04	160
2439	0.001	0.16	13.9	1330	8.2	2.06	9.8	0.46	45
2440	<0.001	0.1	3.1	910	5.9	2.59	6.6	0.97	106
2442	0.001	0.07	3.7	240	6.5	1.03	13.6	0.31	216
2443	0.058	0.23	6.8	1060	44.4	0.89	112.5	1.5	1250
2444	0.097	0.3	79.3	790	187	0.71	154.5	1.15	66
2445	0.007	0.09	4.8	3410	799	1.09	10.3	1.01	41
2446	0.001	0.82	5.8	1680	7.3	1.19	8.2	1.08	34
2447	0.717	1.61	1.5	590	30.3	2.21	14.7	0.88	32
2448	0.027	0.27	2.5	790	7.9	3.93	9.4	0.57	29
2449	0.056	2.28	3.1	1010	93.2	2.37	62	2.28	80
2450	0.181	5.03	10.4	980	69.7	1.73	69.1	0.97	118
2451	0.004	0.3	10	530	10.6	0.92	25.5	1.88	37

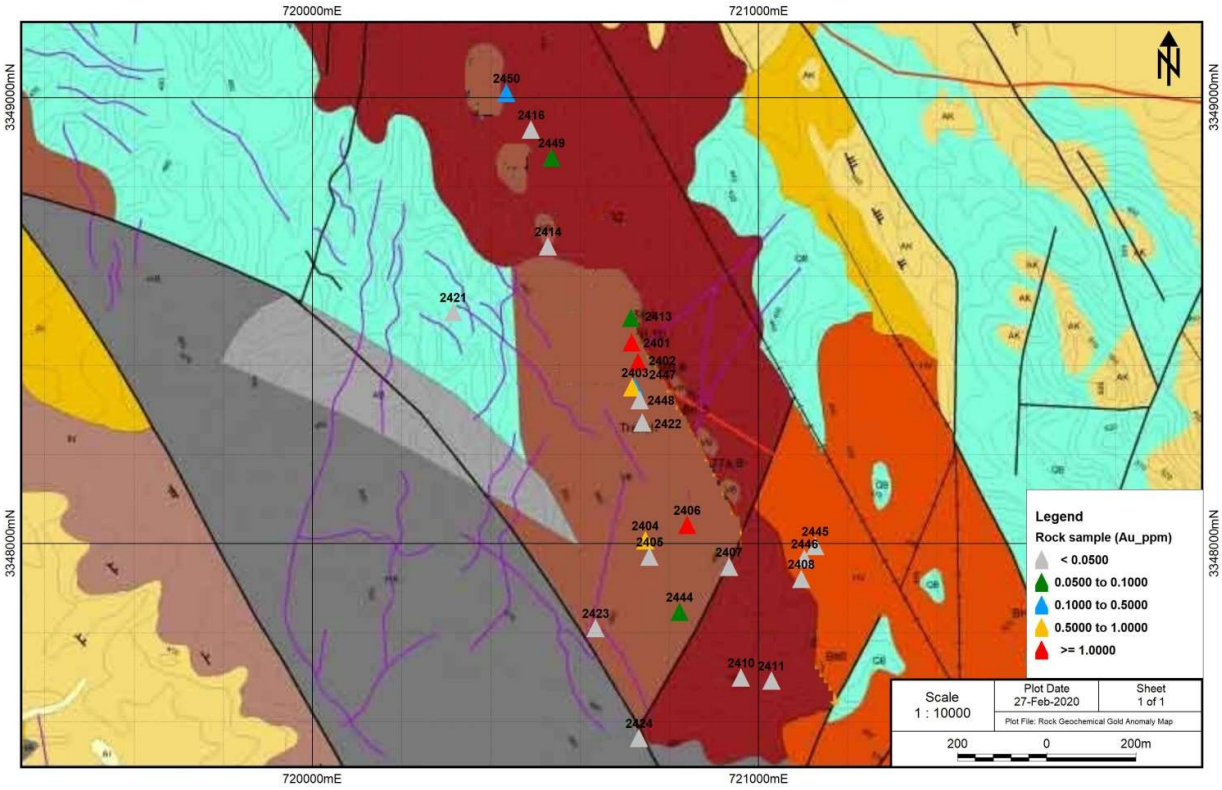

Figure 8 Rock sample 'Au' anomaly map

7.2. Stream Sampling Assay Results

All the stream sample analyses for 9 elements are given in **Table 6** and original certificates are given **Appendix 3**.

Studying anomaly maps there are some anomalies in various parts of the concession area.
In the Wadi Sabra there are 'Au' , 'As' , 'Ag' , 'Hg' , 'Pb' , 'Sb' , 'Ag' , 'Zn' anomalies.
In central and SW section of Wadi Hower, collected stream sediments have anomalous 'Pb' , 'Sb' , 'Zn' anomalies.

Besides, some samples returned 'Cu' anomalies in the W and N sections of Wadi Abu Khushyba where the sandstones are exposed.

7.2.1.Statistical Analyses

Background and Treshold Values

Although samples were analyzed for 52 elements (**Appendix 3**), statistical studies were done only for 9 elements (Au, Ag, As, Cu, Mo, Pb, Zn, Hg, Sb), which were considered to be somehow related with mineralizations. The basic statistics for the 9 samples are presented in **Table 5**.

Table 5 Statistical summary of selected elements in stream-sediment samples based on raw data* (Number of samples = 47)

	Min.	Max.	Mean	Median	Std. Dev.	Treshold-1	Threshold-2
Au	0.0001	0.007	0.0008	0.0006	0.0011	0.003	0.003
Ag	0.014	0.067	0.0312	0.0310	0.0108	0.053	0.053
As	0.47	5.72	1.8160	1.6800	0.9141	3.644	3.508
Cu	5.05	36.8	14.7130	12.9500	7.8988	30.511	28.748
Hg	0.002	0.016	0.0069	0.0060	0.0043	0.015	0.015
Mo	0.22	1.44	0.5789	0.5600	0.2762	1.131	1.112
Pb	2.57	38.5	8.9181	6.8300	7.0805	23.079	20.991
Sb	0.064	0.39	0.1457	0.1430	0.0644	0.275	0.272
Zn	8.1	126	34.2000	26.8000	23.0980	80.396	72.996

**All element values are in parts per million (ppm).*
The threshold-1 is defined as the mean value plus two standard deviations. The threshold-2 is defined as the median value plus two standard deviations.

The trace background values of the study area are taken as mean values of sample distributions (the mean of lognormal distribution is suggested as the background by Rose et al., 1979; whereas the median of lognormal distribution is suggested as the background by Levinson, 1974). The separation between background and anomalous values was defined using a classical statistical treatment, with the thresholds calculated from the mean or median plus two standard deviations (Rose et al. 1979) and are shown in **Tables 5**.

Anomaly maps have been prepared based on the statistical threshold values i.e. mean+2SD, median+2SD. Anomaly maps for Au, Ag, As, Cu, Mo, Pb, Zn, Hg, Sb are given in **Figure 9-17**.

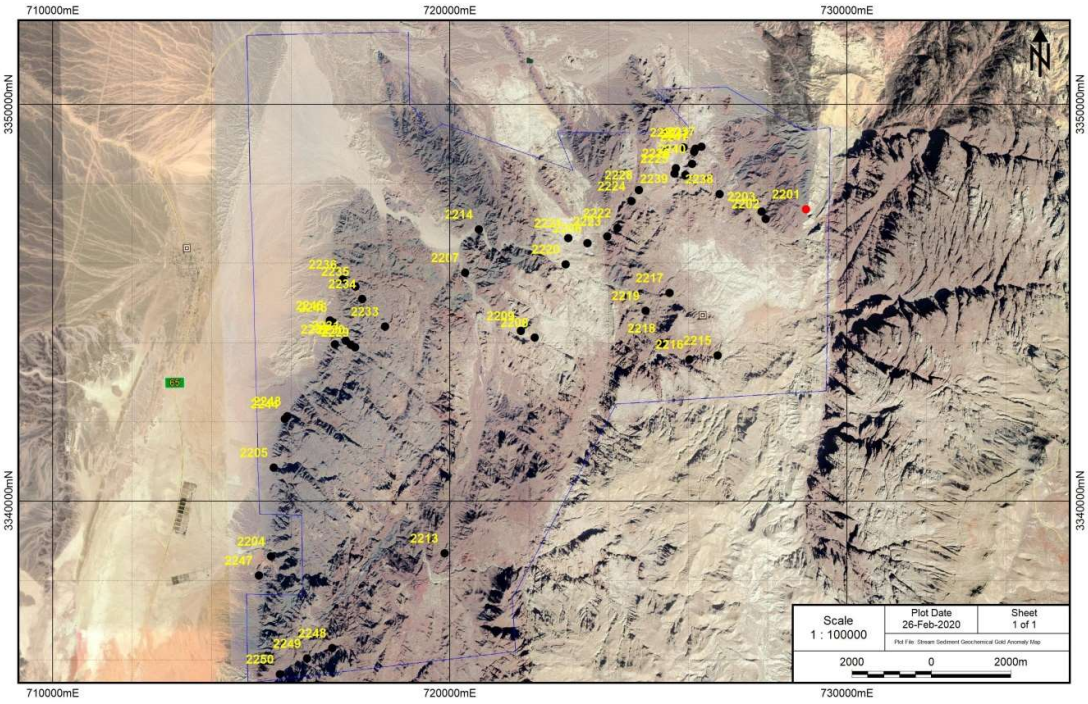

Figure 9 Distribution of 'Au' anomalies

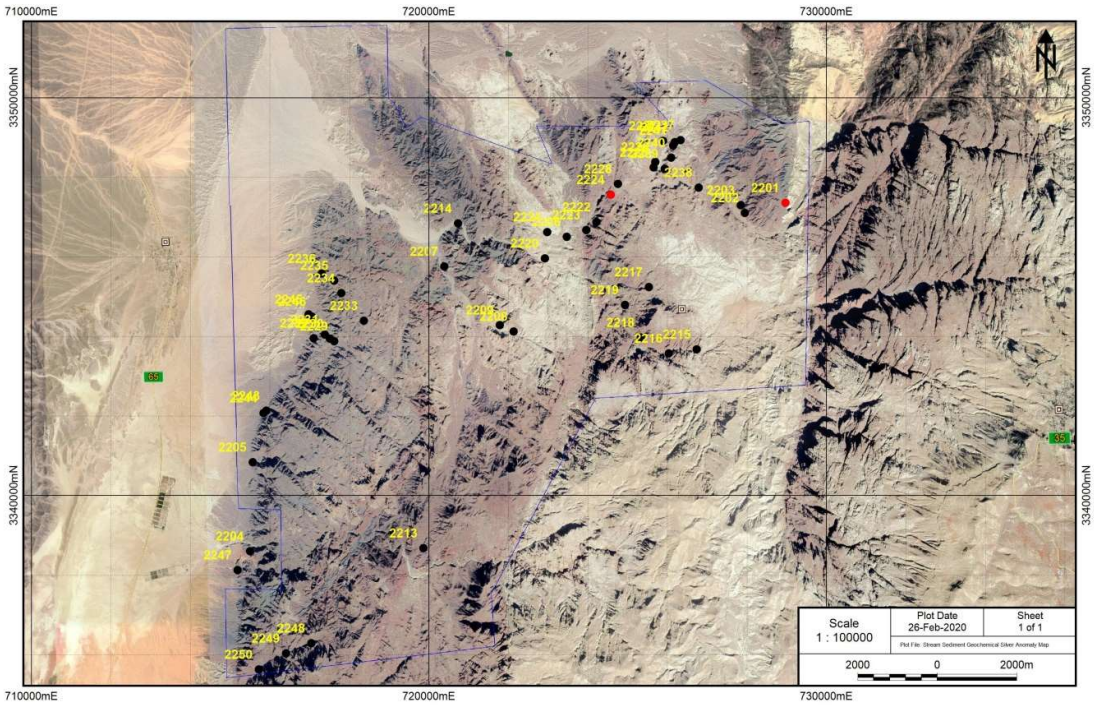

Figure 10 Distribution of 'Ag' anomalies

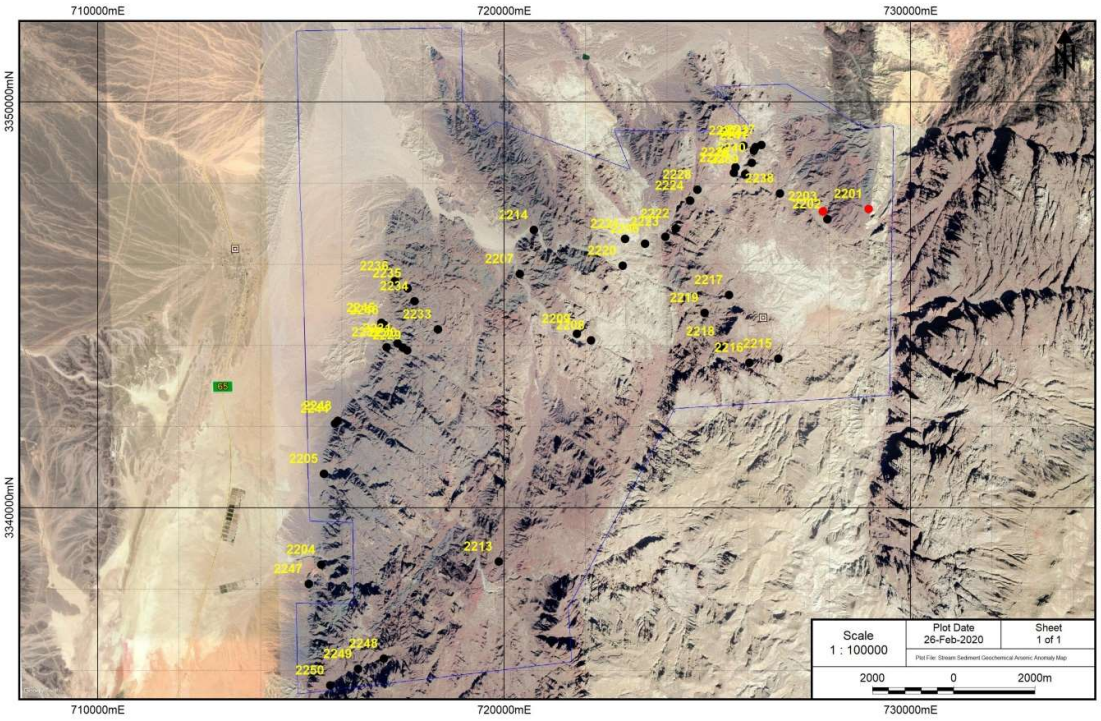

Figure 11 Distribution of 'As' anomalies

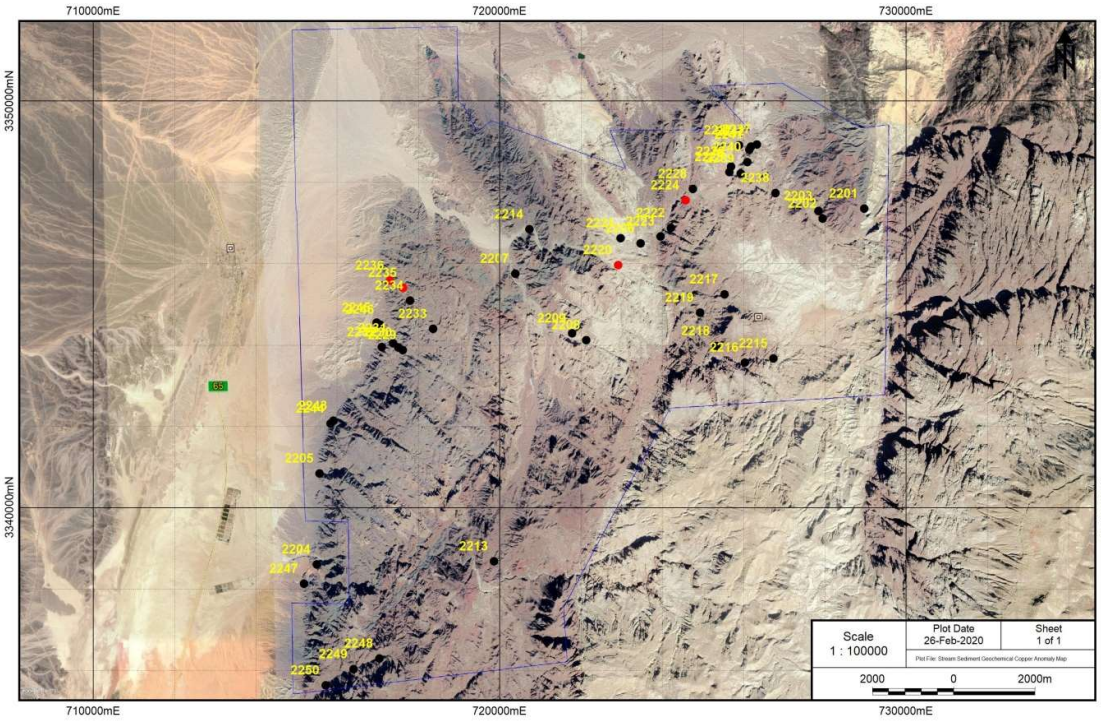

Figure 12 Distribution of 'Cu' anomalies

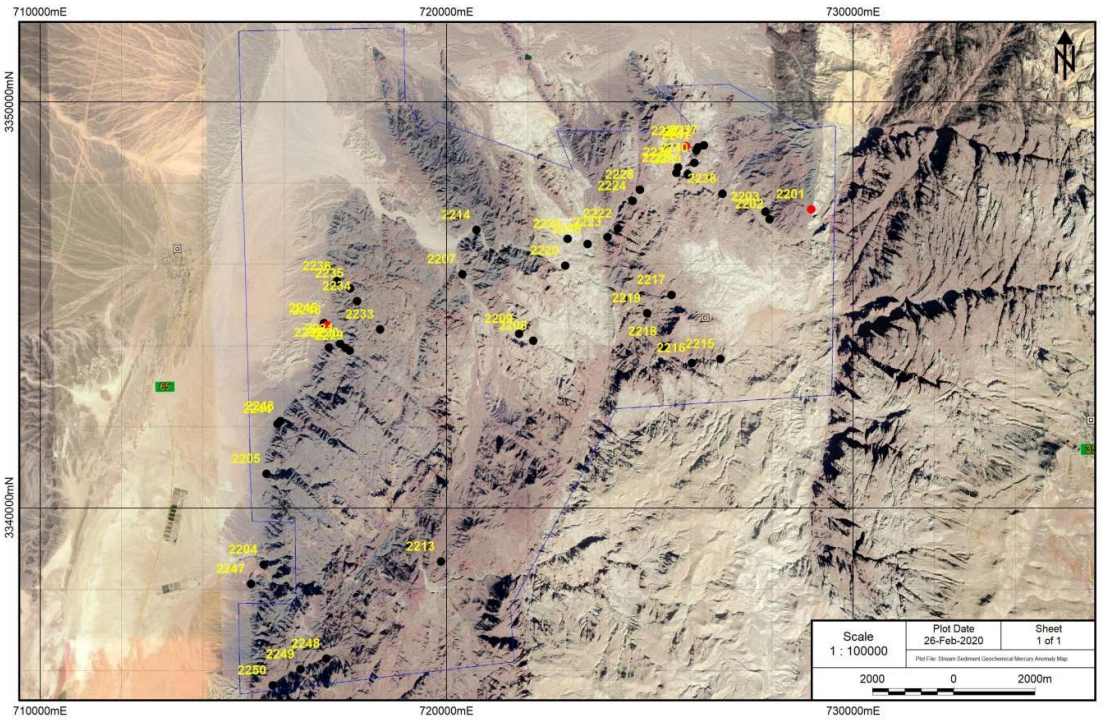

Figure 13 Distribution of 'Hg' anomalies

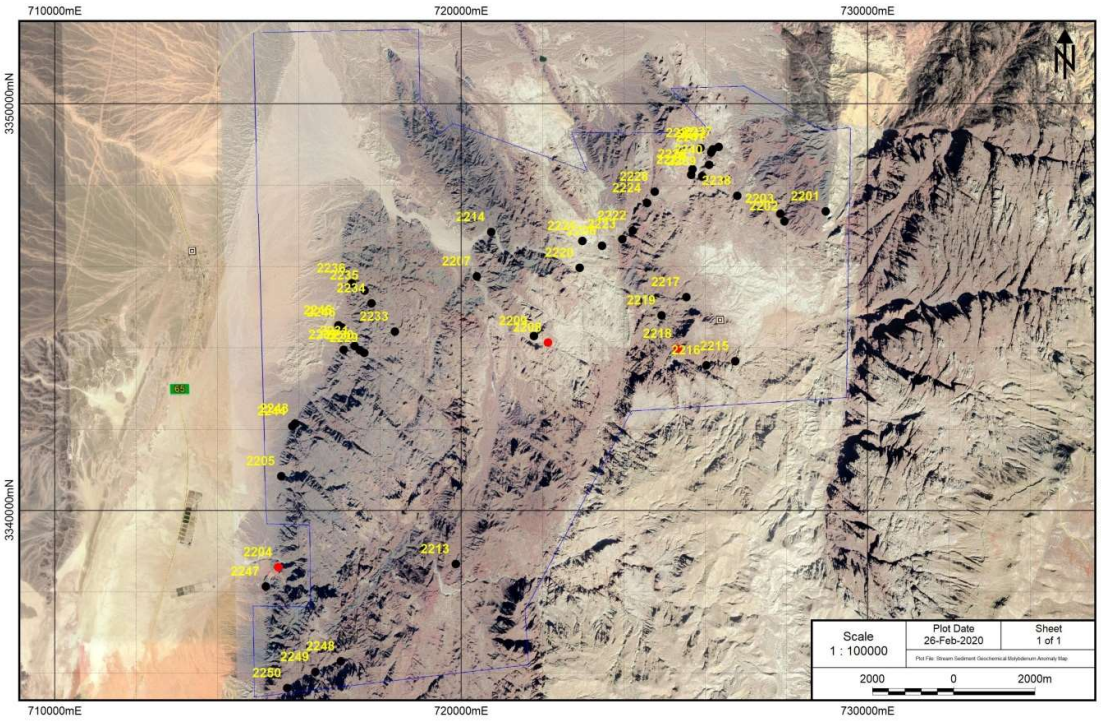

Figure 14 Distribution of 'Mo' anomalies

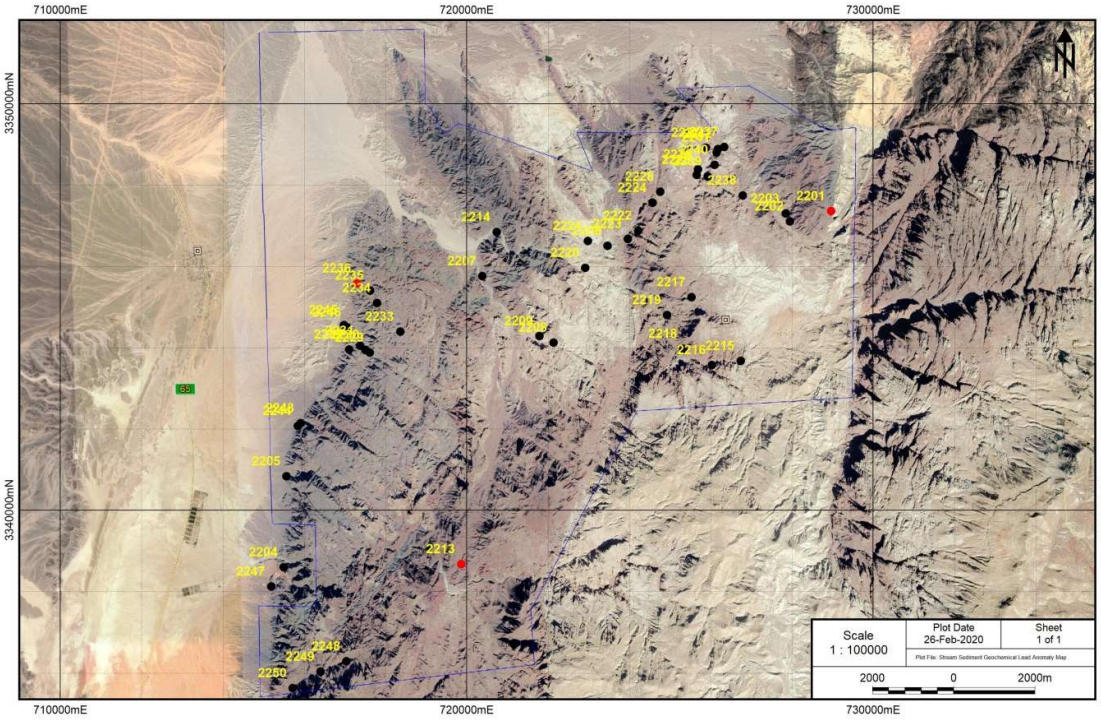

Figure 15 Distribution of 'Pb' anomalies

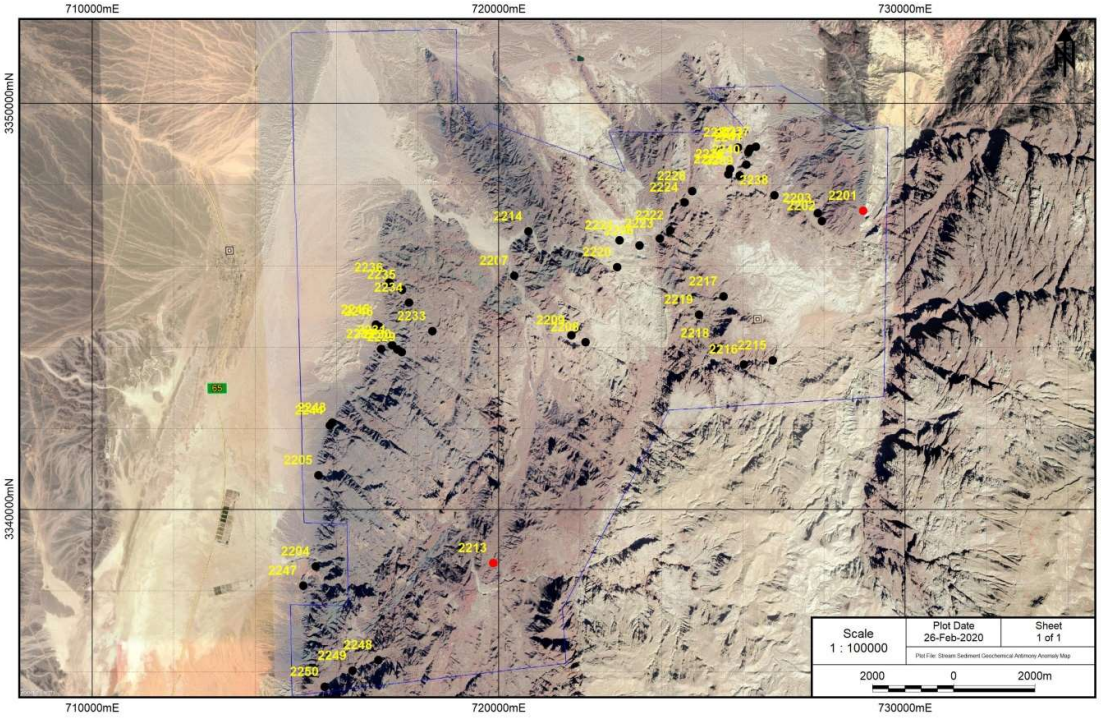

Figure 16 Distribution of 'Sb' anomalies

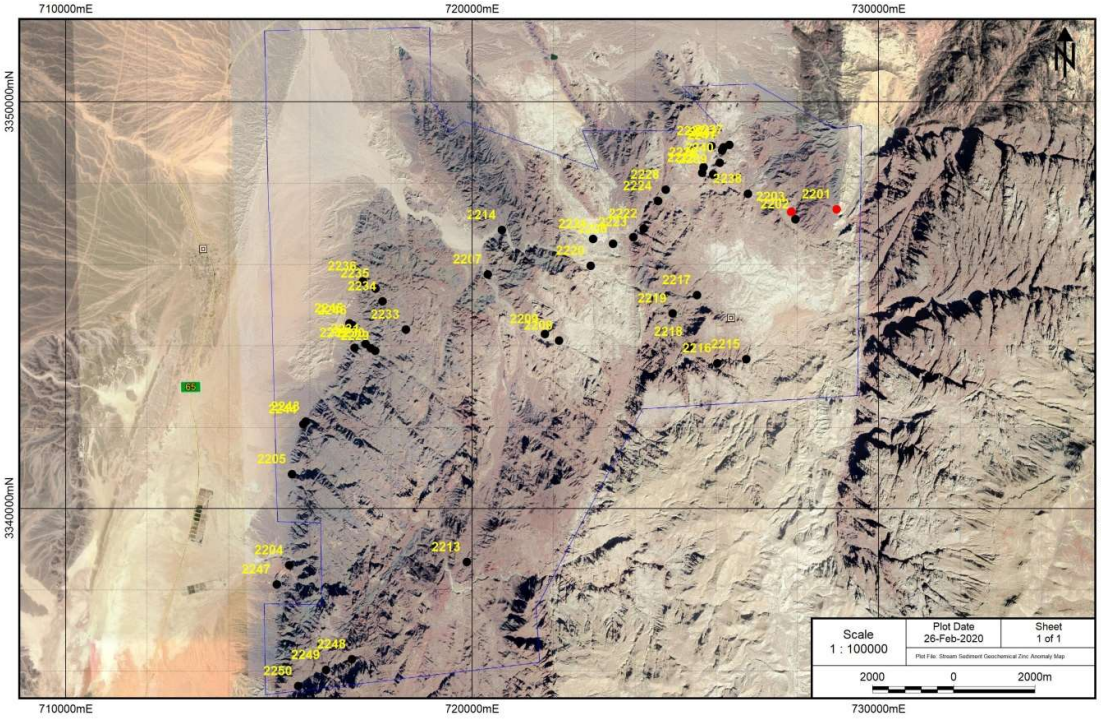

Figure 17 Distribution of 'Zn' anomalies

Table 6 Chemical analyses of the stream sediments*

Sample No	Au(ppm)	Ag(ppm)	As(ppm)	Cu(ppm)	Hg(ppm)	Mo(ppm)	Pb(ppm)	Sb(ppm)	Zn(ppm)
	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L
2201	0.007	0.067	5.72	26.10	0.016	0.81	28.70	0.390	126.0
2202	0.0006	0.028	1.64	6.89	0.010	0.68	6.31	0.143	25.4
2203	0.0011	0.046	3.65	15.15	0.010	0.78	18.65	0.227	74.7
2204	0.0006	0.05	3.23	9.54	0.010	1.44	5.48	0.189	35.7
2205	0.0024	0.035	1.68	20.70	0.004	0.57	7.44	0.152	37.5
2206	0.0006	0.03	1.61	12.30	0.006	0.42	5.99	0.105	17.9
2207	0.0024	0.029	1.49	13.60	<0.004	0.81	7.32	0.114	21.8
2208	0.0009	0.014	1.62	8.85	<0.004	1.34	6.51	0.148	12.2
2209	0.0004	0.017	0.71	12.95	<0.004	0.25	4.48	0.066	9.8
2213	0.0011	0.036	2.09	10.35	0.008	0.62	38.50	0.30	48.2
2214	0.0003	0.031	1.55	6.98	0.006	0.67	5.28	0.118	21.3
2215	0.0006	0.027	1.5	5.05	<0.004	0.57	4.92	0.099	17.0
2216	0.0004	0.027	2.27	5.90	0.006	0.88	3.75	0.108	20.9
2217	0.0003	0.021	1.04	7.34	<0.004	0.33	5.88	0.072	14.4
2218	0.0002	0.034	3.04	6.22	<0.004	1.21	3.67	0.162	23.3
2219	0.0002	0.033	1.94	5.54	<0.004	0.86	3.91	0.112	20.0
2220	0.0006	0.044	3.01	31.00	0.005	0.54	9.33	0.176	27.9
2221	0.0008	0.015	0.64	6.91	<0.004	0.27	2.57	0.065	8.1
2222	0.0007	0.027	2.04	20.50	0.006	0.39	7.72	0.144	30.0
2223	0.0007	0.041	1.69	17.30	0.008	0.53	8.99	0.171	44.1
2224	0.0004	0.053	2.43	31.40	0.010	0.53	8.50	0.188	43.8
2225	0.0004	0.018	1.17	12.80	<0.004	0.25	4.54	0.076	20.8
2226	0.0004	0.019	1.33	14.35	0.011	0.26	5.60	0.115	28.9
2227	0.001	0.023	1.18	11.30	0.015	0.28	5.98	0.098	13.5
2228	0.0014	0.026	1.20	14.75	0.005	0.32	6.01	0.116	21.0
2229	0.0007	0.037	2.63	21.10	0.013	0.71	17.25	0.235	71.8
2230	0.0005	0.037	2.17	15.95	0.013	0.67	9.79	0.204	51.7
2231	0.0009	0.021	1.80	12.55	<0.004	0.48	11.40	0.185	46.6
2232	0.0008	0.034	2.02	13.75	<0.004	0.68	9.19	0.174	48.3
2233	0.0007	0.038	2.33	24.90	0.006	0.65	9.77	0.210	58.7
2234	0.0007	0.041	2.16	26.00	0.008	0.65	10.55	0.185	54.7
2235	0.0011	0.032	2.35	31.70	0.010	0.75	13.50	0.187	56.5
2236	0.0009	0.029	1.94	36.80	0.006	0.56	30.30	0.137	58.4
2237	0.0002	0.021	0.82	8.91	<0.004	0.22	4.66	0.086	13.4
2238	0.0002	0.017	0.88	9.70	<0.004	0.33	7.78	0.081	16.6
2239	0.0002	0.037	0.47	6.86	0.007	0.27	4.25	0.065	9.6
2240	0.0006	0.021	0.61	7.23	<0.004	0.23	4.42	0.064	9.6
2241	<0.0002	0.028	1.15	9.51	0.012	0.39	4.82	0.065	15.3
2242	<0.0002	0.024	1.02	9.34	0.006	0.30	5.83	0.099	16.5
2243	0.0002	0.035	2.16	23.80	0.013	0.77	9.18	0.182	65.8
2244	0.0002	0.045	2.23	19.80	0.011	0.74	8.41	0.209	70.3
2245	<0.0002	0.021	1.84	12.15	0.009	0.60	7.92	0.149	36.0
2246	0.0006	0.034	2.06	13.45	0.015	0.72	8.93	0.173	44.5
2247	0.0004	0.019	1.26	8.34	0.004	0.44	4.24	0.095	21.0

Sample No	Au(ppm)	Ag(ppm)	As(ppm)	Cu(ppm)	Hg(ppm)	Mo(ppm)	Pb(ppm)	Sb(ppm)	Zn(ppm)
	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L
2248	<0.0002	0.031	1.22	14.50	0.009	0.38	6.83	0.131	23.4
2249	0.0003	0.037	1.37	17.10	0.011	0.56	6.80	0.151	27.7
2250	0.0003	0.035	1.39	14.30	0.009	0.50	7.30	0.129	26.8

**Statistically anomalous values for selected elements have been marked with red writings*

8. CONCLUSION

Wadi Araba property is situated in Panafrican Arabian-Nubian Shield. International companies and the government carried out a geochemical exploration which covered Jordanian Pan African basement. As a result of regional stream-sediment prospecting, some geochemical anomaly areas have been detected in the Aqaba-Araba basement.

Depending on the results of this previous exploration work, a reconnaissance programme, combining geological and geochemical surveys over Wadi Abu Khushyba, Wadi Hower and Wadi Sabra areas, was completed by DAMA.

A total of 42 rock chip samples and 47 stream samples were taken by DAMA and were analyzed for gold and other 52 elements. Anomalous gold and copper values were encountered in the ten samples collected from Wadi Abu Khushyba. Only one sample returned elevated gold value at Wadi Sabra region.

The main gold mineralization at Wadi Abu Khushyba is associated with quartz/silica vein which is intermittently traced for about 800 meters and 0.3-1 meter in thickness. The vein shows massive formless quartz/silica, drusy quartz crystals with open space centerline textures, fine silica/quartz with devitrification textures, opalescent silica, colloform and bladed calcite textures which are illustrative of an epithermal (low sulphidation) system. However, the rocks did not show an obvious alteration around the vein, such as argillic alteration or silicification which is typical in epitermal systems.

In Wadi Sabra area, a limited alteration was observed during this program. Samples taken from this area returned elevated gold value but nature and the dimension of the mineralization could not been identified.

Most of the Wadi Hower region has limited access due to lack of roads. However, no considerable alteration and mineralization were observed in the study area during the field studies.

Based on the information summarized above, DAMA reached the opinion that Wadi Abu Khushyba is only prospect warrant to further exploration.

9. RECOMMENDATIONS

At Wadi Abu Khushyba, all the surface indications including favourable host rocks (felsic volcanics), elevated barite values, and anomalous gold values and vein textures possibly demonstrate the presence of a mineralizing system similar to those encountered at low sulphidation epithermal gold deposits. Based on the examination of the available geological and geochemical data, the author believes that significant gold potential is likely present in these systems, if it is found further extensions at both directions. Therefore, further exploration is warranted on the properties.

DAMA recommends a two-phase approach for further exploration focusing on the possible strike extensions of the Wadi Abu Khushyba mineralization beyond its known surface extent. However, it is hard to recognize the vein in the field due to weathering. Therefore, trenching is recommended as previously done to test strike extension of the vein as a first step. It is recommended to open two trenches at 40 meter intervals along the both sides of the extensions of the vein, and continue trenching if the results are positive. If it is needed, a geophysical survey program (i.e. IP/R surveys) should be design to support trenching.

Advancing to Phase 2 work on the property is contingent on positive results from Phase 1. When Phase 1 works (trenching/mapping) are complete, then diamond drilling (the Phase 2) should begin. The number, depth and orientation of the drillholes will depend on how many significant bedrock targets are defined by mapping, trenching and sampling surveys together with the historical and collected geophysical data.

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11. APPENDICES

Appendix 1 Rock chip sample locations and short descriptions

Appendix 2 Analyses certificates of rock chip samples

Appendix 3 Analyses certificates of stream sediment samples

11.1. Appendix 1 Rock chip sample locations and short descriptions

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2401	720716	3348451	265	48	Colloform/crustiform textures, locally brecciated including silica veinlets, hematitic cemented badded silica rich/quartz vein. 90 cm thickness	
2402	720730	3348407	250	61	Colloform/crustiform textures, locally brecciated including green colored silica veinlets, hematitic cemented badded main silica rich vein. Main Trench	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2403	720723	3348350	255	48	Colloform/crustiform textures, hematitic cemented, locally milky badded silica rich/quartz vein.	
2404	720746	3348007	241	60	Hematitic and limonitic volcanic rock outcrop.	
2405	720756	3347971	254	28	Hematitic and limonitic, locally silicified volcanic rock outcrop.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2406	720840	3348042	242	38	Colloform/crustiform textures, locally brecciated milky and dark gray colored silica veinlets crosscutting each other, badded main silica rich vein. 50 cm thickness	
2407	720934	3347948	76	60	Brecciated dyke with quartz and silica fragments. 40 cm thickness	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2408	721096	3347921			Malachite staining fracture in volcanic rock.	
2410	720961	3347700			Sugary texture quartz vein in rhyolite. 1-10 cm thickness.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2411	721029	3347693	76	60	Malachite staining silicified zone with trace py , quartz fragments, hematite and silica veinlets in rhyolite and agglomerate boundary? 20 cm thickness.	
2412	718529	3351104			Malachite staining fracture in volcanic rock.	

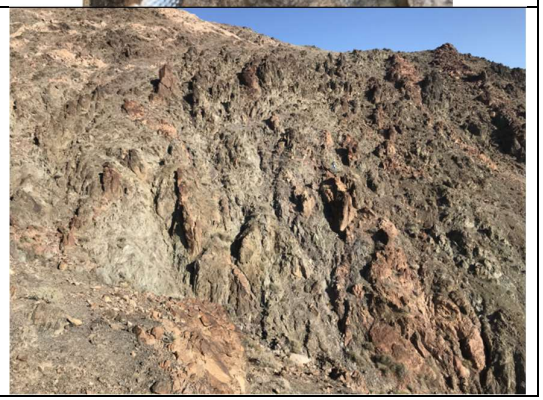
Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2413	720714	3348506	240	70	Silica and crustiform? Quartz veinlets in north oriented trench.	
2414	720528	3348666			Quartz and calcite veinlets cutting each other in agglomerate.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2416	720490	3348928	230	80	Silicified and locally brecciated with quartz and silica veinlets in fault zone.	
2421	720316	3348519			Hematite cemented breccia with silica fragments and silica veinlets.	

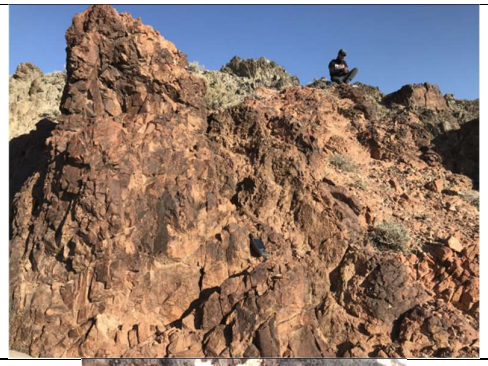
Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2422	720740	3348272	275	44	Colloform/crustiform textures, locally brecciated including dark gray silica veinlets, hematitic cemented badded silica rich/quartz vein with py, pyox and adularia. 1.5 m thickness	
2423	720635	3347811			Brecciated limotitic and hematic alteration zone.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2424	720732	3347564			N215 fault with silica veinlets with quartz.	
2425	721054	3347406			Crustiform texture quartz veinlets (mm) cutting each other in volcanic rock.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2426	728608	3347818			Sugary texture mm thickness quartz vein with crustiform texture in reddish brownish colored volcanic rock.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2429	729164	3348031	86	71	Chert with green colored veinlets.	
2430	728918	3348822			Reddish colored N95 glassy texture dyke in metasedimentary rock.	

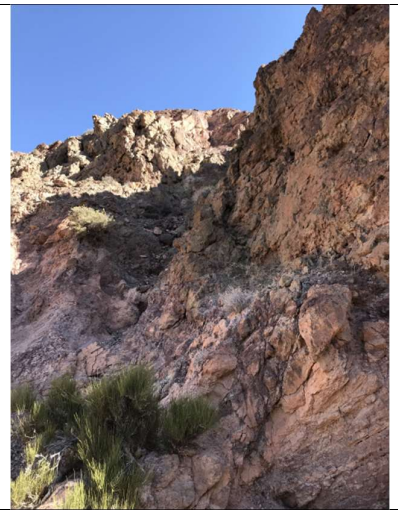
Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2431	728952	3348853			Reddish colored glassy texture dyke in metasedimentary rock.	
2432	728969	3348852			Metasedimentary rock with ? veinlets.	

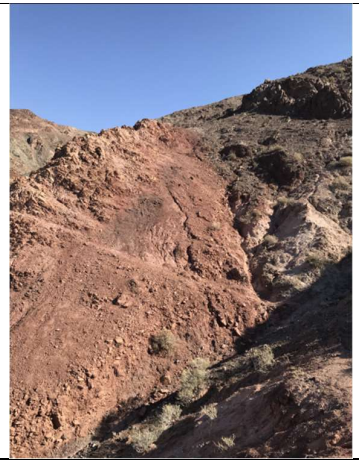
Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2433	729011	3348786			Reddish colored dyke in metasedimentary rock.	
2434	729090	3348608			Dark reddish colored glassy texture dyke in metasedimentary rock.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2435	729012	3348087			Dark reddish colored glassy texture dyke in metasedimentary rock.	
2436	729011	3348034			Dark reddish colored glassy texture dyke in metasedimentary rock.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2437	721376	3345479			Dyke in volcanic rock with dark reddish colored glassy texture.	
2438	721221	3345512			Dyke in volcanic rock with dark reddish colored glassy texture.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2439	721505	3345958			Dyke with silica? veinlets like milky	
2440	722043	3345989			Very dark colored (manganese?) dyke in volcanic rock with dark reddish colored glassy texture.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2442	721481	3340648			Green colored clay? Staining fracture zone in volcanic rocks.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2443	728847	3348006			Alteration zone, hematitic and weak kaolinitization?	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2444	720823	3347847			Weak alterated hematitic limonitic zone. Malachite?	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2445	716978	3344554			2-5 cm silica veins cutting each other in volcanic rocks. Malachite. Drill location.	
2446	721127	3347995			Close to the drill location, weak altered volcanic rock	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2447	720717	3348350	255	40	Main trench. Colloform/crustiform textures, locally brecciated including green colored silica veinlets, hematitic cemented badded main silica rich vein.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2448	720734	3348322			Silica veinlets very few in trench open in agglomerate.	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2449	716407	3336033			Hematitic stockwork quartz veinlets, fault zone?	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2450	715720	3335631	240	50	Stockwork quartz veinlets, locally brecciated	

Sample No	Easting	Northing	Dip	Dip_Direction	Description	Photos
2451	728479	3348686			Quartz veinlets in volcanic rocks.	

11.2.Appendix 2 Analyses certificates of rock chip samples

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CERTIFICATE OF ANALYSIS IZ20010085

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP22 Au ppm 0.001	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05	ME-MS61 Cu ppm 0.2
2401		2.83	4.35	20.1	4.14	4.1	480	1.02	0.62	0.14	0.03	13.10	1.5	60	3.02	293
2402		3.29	1.270	2.29	5.61	3.6	800	1.43	0.06	0.12	0.04	27.0	3.4	31	3.73	29.2
2403		4.01	0.110	0.44	4.99	3.5	660	1.91	0.09	0.33	0.05	23.5	2.9	38	3.28	16.6
2404		3.64	0.959	0.64	6.85	16.7	1270	1.78	0.10	0.38	0.08	58.5	3.7	27	4.15	719
2405		2.76	0.024	0.70	6.91	5.0	1230	1.95	0.10	0.78	0.09	57.5	5.0	40	2.54	9.1
2406		5.04	4.27	2.22	5.68	5.0	1380	2.01	0.24	0.66	0.05	45.7	4.0	30	6.52	24.5
2407		3.31	0.004	0.22	5.29	2.6	1140	3.27	0.21	1.73	0.16	108.0	1.7	29	8.13	13.1
2408		2.31	0.011	0.26	7.61	3.2	1820	2.51	0.31	0.82	0.03	61.1	5.7	12	4.41	>10000
2410		2.14	0.003	0.23	4.82	4.5	1070	2.64	0.19	0.32	0.05	59.5	5.6	43	2.44	29.6
2411		3.10	0.001	0.96	6.38	11.2	1310	3.26	0.31	0.63	0.05	144.5	6.7	18	5.96	1030
2412		2.56	0.005	0.95	7.47	2.2	1650	2.57	0.16	0.89	0.06	68.0	11.8	7	2.71	>10000
2413		3.01	0.097	3.45	6.32	2.6	850	2.94	0.33	0.47	0.16	42.4	4.6	33	2.37	60.9
2414		1.37	0.009	0.03	2.67	3.3	470	1.07	0.06	23.7	0.24	25.4	4.4	14	1.18	24.2
2416		2.43	0.005	1.49	3.27	4.9	620	2.31	3.84	0.32	0.17	29.8	3.6	40	3.00	71.7
2421		3.27	0.001	0.48	7.56	2.6	1860	2.89	0.10	0.64	0.04	73.4	2.5	12	3.15	17.6
2422		9.56	0.044	0.36	3.30	1.5	840	1.00	0.06	0.32	0.11	16.60	1.9	49	1.95	10.5
2423		3.79	0.033	0.23	7.69	24.7	2260	1.86	0.08	0.57	0.07	45.4	1.8	15	5.25	44.4
2424		2.32	<0.001	0.07	6.53	3.8	1970	1.93	0.11	0.49	0.04	72.3	1.4	25	2.85	40.1
2425		2.09	0.008	0.11	5.79	21.7	1010	1.85	0.10	3.10	0.13	65.0	5.2	13	1.98	9.5
2426		3.67	0.001	0.26	5.75	1.5	1650	1.84	0.03	1.00	0.08	102.5	2.6	23	9.97	7.8
2429		5.59	<0.001	0.53	0.13	1.2	230	0.46	0.01	10.85	8.10	4.85	0.5	103	<0.05	10.4
2430		4.21	0.002	0.27	7.17	6.4	1250	2.02	0.28	0.81	0.06	77.7	1.8	14	2.99	19.3
2431		3.72	0.001	0.72	7.20	14.3	1230	1.53	0.28	0.70	0.06	69.8	1.1	12	2.72	22.7
2432		3.79	0.001	0.24	7.61	4.9	1080	2.25	0.32	1.09	0.04	43.9	11.0	63	3.33	20.8
2433		4.36	<0.001	0.20	6.29	3.2	800	1.69	0.25	0.97	0.05	55.8	1.1	13	1.42	16.4
2434		3.71	0.003	0.09	5.34	4.5	3390	1.20	0.22	0.78	0.10	64.3	0.8	34	2.02	6.6
2435		3.35	<0.001	0.08	5.81	2.4	490	1.98	0.19	0.50	<0.02	26.3	2.6	31	1.15	10.0
2436		4.11	0.001	0.22	6.44	4.5	870	2.69	0.30	0.50	0.09	69.5	0.9	19	7.14	16.1
2437		3.16	0.001	0.22	5.36	7.6	1100	2.02	0.10	2.93	0.11	75.4	3.1	8	5.47	5.3
2438		2.49	<0.001	0.15	5.95	4.7	810	2.22	0.17	1.16	0.81	68.9	2.0	21	1.14	11.3
2439		2.67	0.001	0.16	6.54	13.9	1330	1.14	0.32	0.96	0.08	114.0	3.1	24	2.50	8.2
2440		2.81	<0.001	0.10	5.98	3.1	910	2.86	0.10	0.60	0.10	100.5	1.1	7	6.24	5.9
2442		2.60	0.001	0.07	5.37	3.7	240	6.31	0.22	0.15	0.04	103.0	0.2	13	9.17	6.5
2443		8.14	0.058	0.23	6.57	6.8	1060	4.72	0.26	2.09	1.13	70.8	17.6	63	7.33	44.4
2444		2.58	0.097	0.30	7.23	79.3	790	2.46	0.10	0.95	0.52	54.4	2.8	5	1.84	187.0
2445		3.60	0.007	0.09	5.43	4.8	3410	3.09	0.09	2.27	0.07	44.2	8.9	17	3.77	799
2446		3.59	0.001	0.82	5.86	5.8	1680	3.02	0.33	0.45	0.04	104.5	1.6	15	5.75	7.3
2447		3.92	0.717	1.61	4.67	1.5	590	1.29	0.08	0.13	0.03	19.50	1.6	30	2.89	30.3
2448		5.30	0.027	0.27	3.94	2.5	790	1.00	0.04	1.03	0.03	14.20	2.0	48	3.52	7.9
2449		4.52	0.056	2.28	5.03	3.1	1010	2.87	4.83	2.62	0.16	65.1	3.4	38	3.32	93.2

***** See Appendix Page for comments regarding this certificate *****

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Page: 2 - B
Total # Pages: 3 (A - D)
Plus Appendix Pages
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CERTIFICATE OF ANALYSIS IZ20010085

Sample Description	Method / Analyte / Units / LOD	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1	ME-MS61 Ni ppm 0.2	ME-MS61 P ppm 10
2401		1.06	7.12	0.11	1.0	0.008	4.40	6.2	46.9	0.15	201	4.47	0.37	1.9	2.7	150
2402		1.58	12.60	0.15	1.4	0.053	6.64	13.7	48.5	0.37	327	2.09	0.15	2.4	4.5	210
2403		2.03	12.20	0.15	2.5	0.026	4.00	9.4	48.0	0.39	363	2.60	0.86	4.5	3.6	340
2404		1.95	15.50	0.20	5.3	0.033	5.33	23.9	35.6	0.34	407	2.47	1.63	9.4	5.3	510
2405		2.45	16.50	0.23	5.9	0.048	4.31	24.8	30.7	0.39	393	1.62	2.49	10.2	5.0	580
2406		2.09	12.70	0.21	3.8	0.032	5.47	20.4	91.5	0.47	526	3.90	0.56	6.3	2.0	620
2407		1.86	20.4	0.29	13.4	0.090	6.06	64.7	21.4	0.18	669	2.23	0.22	25.5	2.0	290
2408		0.92	16.90	0.19	7.1	0.055	6.38	25.5	48.9	0.37	79	0.80	0.10	11.2	5.8	1220
2410		2.18	15.30	0.24	4.6	0.044	2.86	26.5	74.6	0.66	754	2.95	1.35	6.9	2.0	560
2411		2.04	22.3	0.28	15.8	0.112	7.26	66.2	29.1	0.39	778	1.34	0.13	30.3	2.8	60
2412		2.16	18.75	0.26	7.2	0.064	4.52	30.0	30.9	0.64	907	1.07	2.12	11.9	6.3	930
2413		2.35	18.30	0.23	5.2	0.033	3.61	21.6	60.1	0.67	512	1.48	2.14	8.1	5.2	590
2414		0.98	7.44	0.16	2.3	0.019	1.22	18.9	21.1	0.90	319	0.38	0.86	4.3	5.7	510
2416		3.51	9.72	0.24	2.8	0.086	3.09	12.1	48.2	0.19	339	3.57	0.07	4.8	8.5	700
2421		3.18	20.3	0.27	7.2	0.042	5.31	22.7	113.0	0.22	215	1.03	2.22	12.0	1.0	950
2422		1.15	6.42	0.16	1.1	0.016	3.51	7.5	37.9	0.15	230	3.91	0.26	2.0	2.5	170
2423		2.74	16.15	0.28	7.2	0.032	7.02	20.8	16.2	0.30	165	1.51	0.94	12.2	1.2	590
2424		1.99	10.10	0.24	8.7	0.028	7.34	32.3	13.6	0.13	266	2.18	0.14	13.5	2.2	170
2425		2.09	14.25	0.28	5.7	0.040	3.18	29.9	63.1	1.24	1220	1.05	1.62	8.9	1.9	810
2426		4.25	16.65	0.31	8.3	0.087	6.06	42.2	16.9	0.34	549	2.09	0.21	16.8	1.0	490
2429		0.40	0.53	0.11	0.1	<0.005	0.04	8.1	11.1	0.08	53	7.15	0.18	0.2	8.8	>10000
2430		1.93	16.55	0.26	7.6	0.044	4.89	35.5	30.4	0.34	593	1.19	2.75	10.7	2.5	180
2431		1.66	14.05	0.25	7.3	0.040	5.57	35.3	24.6	0.23	450	1.36	2.45	10.8	2.1	160
2432		3.09	18.95	0.19	2.1	0.035	3.12	22.2	73.0	1.40	857	1.20	2.76	6.8	27.7	730
2433		1.72	14.85	0.22	6.1	0.050	4.32	25.1	17.0	0.27	468	1.09	2.35	10.0	2.0	150
2434		1.11	12.00	0.19	4.2	0.034	6.31	30.8	16.3	0.10	168	2.72	0.15	8.5	1.9	110
2435		0.90	12.25	0.15	2.0	0.019	2.48	10.9	24.5	0.41	317	2.08	3.05	6.1	4.7	280
2436		1.53	15.40	0.18	6.9	0.044	3.67	28.5	27.0	0.14	298	1.95	3.04	9.6	1.0	130
2437		2.56	16.80	0.23	10.0	0.120	6.17	32.1	13.2	0.23	1260	1.20	0.16	31.4	2.4	270
2438		1.84	15.30	0.19	7.8	0.062	5.00	32.1	33.9	0.48	600	1.39	1.52	12.0	3.2	180
2439		1.62	13.70	0.26	4.1	0.017	5.38	64.6	32.9	0.39	469	2.06	1.99	6.0	1.9	410
2440		3.09	21.6	0.25	10.7	0.135	6.20	44.7	38.6	0.52	383	2.59	0.24	33.8	1.1	260
2442		1.31	28.0	0.28	10.7	0.123	6.12	46.5	25.2	0.28	202	1.03	0.08	32.9	0.5	20
2443		3.72	26.5	0.20	5.0	0.066	4.60	29.5	80.1	1.38	2420	0.89	0.41	13.9	34.3	580
2444		3.48	18.00	0.19	7.1	0.045	3.56	27.1	56.8	0.42	346	0.71	2.94	12.3	1.5	930
2445		1.64	17.00	0.19	5.5	0.051	4.85	19.1	33.1	0.32	1170	1.09	0.17	9.0	4.7	730
2446		1.74	17.70	0.22	14.5	0.096	6.88	44.7	18.1	0.19	274	1.19	0.13	27.0	1.2	80
2447		1.09	9.48	0.15	1.7	0.016	4.77	9.2	43.1	0.19	303	2.21	0.78	3.0	2.8	170
2448		1.06	7.48	0.13	1.1	0.014	4.59	6.6	27.2	0.17	234	3.93	0.23	2.3	3.2	160
2449		4.79	11.50	0.21	4.4	0.076	4.40	31.3	30.1	0.15	232	2.37	0.10	7.3	6.8	10000

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Page: 2 - C
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CERTIFICATE OF ANALYSIS IZ20010085

Sample Description	Method / Analyte / Units / LOD	ME-MS61 Pb ppm 0.5	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Sc ppm 0.1	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Tl % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1
2401		12.5	184.5	0.002	0.03	1.32	2.0	<1	0.5	66.1	0.13	17.20	1.42	0.066	1.02	2.6
2402		56.6	144.0	<0.002	0.01	1.06	2.6	<1	0.7	73.8	0.17	0.71	2.26	0.084	1.48	1.1
2403		46.9	142.5	0.002	0.01	1.12	4.2	<1	1.1	65.4	0.31	0.75	3.87	0.145	0.73	1.6
2404		134.0	178.5	0.002	0.04	1.10	7.8	1	2.1	172.0	0.69	<0.05	9.88	0.231	1.01	5.5
2405		19.4	148.5	0.002	0.05	1.37	8.3	<1	2.3	107.5	0.68	<0.05	8.89	0.256	0.69	2.7
2406		8.6	215	0.002	0.03	2.07	6.2	1	1.5	125.5	0.37	0.23	4.78	0.249	1.16	3.1
2407		10.5	146.0	0.005	0.08	0.69	0.4	1	4.9	71.1	1.56	<0.05	15.15	0.066	1.05	3.6
2408		11.8	140.0	<0.002	0.03	0.39	11.6	1	2.6	85.0	0.71	<0.05	8.76	0.485	0.92	6.3
2410		16.9	94.3	<0.002	0.02	2.23	6.0	1	1.5	80.1	0.41	<0.05	5.43	0.256	0.53	1.7
2411		15.0	134.0	0.004	0.04	1.14	0.3	<1	5.9	108.5	1.84	<0.05	19.00	0.071	1.97	6.3
2412		12.2	139.5	0.003	0.05	0.43	12.1	1	1.6	171.5	0.70	<0.05	8.45	0.417	0.74	6.5
2413		35.7	130.0	<0.002	0.01	1.15	6.6	1	1.9	104.0	0.61	5.67	7.99	0.267	0.62	3.4
2414		11.0	44.7	<0.002	0.08	0.28	4.1	1	0.9	281	0.31	<0.05	3.52	0.126	0.23	1.8
2416		114.0	105.0	<0.002	0.03	5.08	5.2	1	1.1	53.5	0.31	<0.05	3.79	0.153	0.62	1.8
2421		22.5	149.5	0.003	0.03	0.79	11.7	1	2.4	75.1	0.69	<0.05	8.60	0.409	0.80	8.0
2422		24.9	115.0	<0.002	0.02	1.04	1.8	<1	0.5	47.9	0.14	0.05	1.82	0.059	0.70	0.8
2423		20.2	132.0	0.002	0.17	0.95	12.1	1	2.4	181.0	0.72	<0.05	8.48	0.466	1.13	3.8
2424		9.8	94.3	0.002	0.03	0.94	5.6	1	3.0	54.1	0.84	<0.05	12.70	0.141	1.23	3.3
2425		19.4	94.0	0.003	0.03	1.26	8.8	1	1.8	118.5	0.55	<0.05	7.16	0.333	0.52	3.0
2426		19.2	86.7	0.003	0.03	0.11	17.7	<1	2.1	48.4	0.98	<0.05	6.29	0.288	0.83	1.8
2429		1.1	0.9	0.008	0.25	0.23	0.7	5	<0.2	681	<0.05	<0.05	0.35	0.006	0.14	29.4
2430		20.0	165.5	0.002	0.02	0.76	7.4	<1	2.5	133.5	0.71	<0.05	11.35	0.131	0.92	4.3
2431		16.5	137.0	0.003	0.03	0.90	6.7	<1	2.6	102.0	0.71	<0.05	11.60	0.122	1.08	4.5
2432		13.3	112.0	<0.002	0.01	0.37	9.2	1	1.3	366	0.48	<0.05	4.07	0.325	0.67	1.3
2433		8.4	139.0	0.002	0.03	0.86	5.1	<1	3.0	70.8	0.70	<0.05	11.45	0.090	0.79	3.2
2434		16.9	155.0	0.002	0.10	1.20	3.5	<1	2.4	69.9	0.60	<0.05	10.40	0.045	1.10	2.5
2435		7.1	81.9	0.002	0.01	0.40	3.0	<1	1.4	161.0	0.52	<0.05	4.98	0.086	0.41	1.0
2436		20.6	120.0	<0.002	0.02	1.55	5.8	1	2.6	62.5	0.63	<0.05	10.95	0.096	0.72	2.9
2437		12.8	92.7	0.003	0.07	0.59	5.5	<1	2.8	77.9	1.64	<0.05	5.67	0.232	1.25	2.8
2438		48.6	157.5	0.003	0.06	1.04	6.9	1	2.6	144.0	0.74	<0.05	9.85	0.121	0.86	2.8
2439		9.8	201	0.002	0.04	0.46	2.1	<1	1.5	148.5	0.42	<0.05	6.28	0.157	1.17	2.2
2440		6.6	129.0	<0.002	0.06	0.97	6.4	1	2.9	89.0	1.71	<0.05	7.99	0.226	1.01	2.5
2442		13.6	284	<0.002	0.01	0.31	0.2	<1	6.7	20.5	1.84	<0.05	15.35	0.061	3.49	5.4
2443		112.5	177.0	<0.002	0.07	1.50	8.5	<1	2.3	194.0	1.50	<0.05	5.78	0.309	0.99	2.4
2444		154.5	124.0	0.002	0.31	1.15	12.1	2	2.6	587	0.69	<0.05	8.81	0.480	0.64	4.0
2445		10.3	132.0	<0.002	0.07	1.01	7.7	1	2.0	90.2	0.53	<0.05	5.92	0.316	0.89	2.1
2446		8.2	176.0	0.002	0.05	1.08	0.2	1	5.1	87.8	1.57	<0.05	15.80	0.072	1.84	5.5
2447		14.7	204	0.002	0.01	0.88	2.6	<1	0.8	73.1	0.22	0.93	3.06	0.080	1.05	0.9
2448		9.4	167.0	0.002	0.02	0.57	2.1	<1	0.6	74.1	0.16	<0.05	1.82	0.061	0.97	0.6
2449		62.0	153.0	<0.002	0.03	2.28	6.8	1	2.0	76.3	0.43	<0.05	5.86	0.206	0.86	4.5

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Page: 2 - D
Total # Pages: 3 (A - D)
Plus Appendix Pages
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CERTIFICATE OF ANALYSIS IZ20010085

Sample Description	Method	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	Cu-OG62
	Analyte	V	W	Y	Zn	Zr	Cu
	Units	ppm	ppm	ppm	ppm	ppm	%
	LOD	1	0.1	0.1	2	0.5	0.001
2401		19	0.5	5.4	63	40.4	
2402		16	3.7	6.8	1590	56.2	
2403		18	2.0	11.9	63	96.8	
2404		27	0.8	21.1	60	196.5	
2405		34	2.2	25.7	45	229	
2406		39	2.0	16.7	36	156.0	
2407		10	0.9	55.6	76	>500	
2408		104	0.9	29.7	30	274	2.18
2410		32	2.0	18.0	56	171.5	
2411		15	1.7	67.6	67	>500	
2412		53	0.9	33.0	63	289	3.23
2413		31	2.0	20.8	147	184.0	
2414		17	0.6	11.3	40	90.5	
2416		20	22.0	15.4	172	108.5	
2421		36	2.3	34.2	26	291	
2422		8	0.9	5.1	92	43.4	
2423		23	2.2	27.6	37	289	
2424		10	1.7	27.1	16	310	
2425		32	1.0	24.5	63	223	
2426		5	0.6	32.5	33	368	
2429		33	0.1	20.0	110	0.9	
2430		19	1.4	34.0	42	280	
2431		13	2.7	34.5	39	273	
2432		62	1.1	14.5	140	76.6	
2433		18	1.6	28.0	49	210	
2434		8	1.0	27.0	120	123.5	
2435		22	0.5	8.0	33	60.1	
2436		11	1.6	30.8	69	252	
2437		10	1.3	35.9	33	411	
2438		14	0.4	29.6	160	306	
2439		21	0.5	22.8	45	167.0	
2440		5	2.0	49.4	106	410	
2442		2	0.5	59.8	216	322	
2443		54	3.8	26.0	1250	188.5	
2444		48	1.6	26.4	66	288	
2445		41	0.6	19.6	41	218	
2446		11	0.5	56.5	34	>500	
2447		11	0.6	7.2	32	67.5	
2448		8	0.5	5.1	29	47.8	
2449		39	49.8	20.6	80	177.0	

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Page: 3 - A
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 29-JAN-2020
Account: CEMMIN

CERTIFICATE OF ANALYSIS IZ20010085

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP22 Au ppm 0.001	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05	ME-MS61 Cu ppm 0.2
2450		3.96	0.181	5.03	5.39	10.4	980	1.78	8.20	2.56	0.08	37.8	3.2	20	2.47	69.7
2451		5.50	0.004	0.30	4.98	10.0	530	2.37	1.17	1.55	0.07	71.9	2.0	13	1.52	10.6

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Page: 3 - B
Total # Pages: 3 (A - D)
Plus Appendix Pages
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CERTIFICATE OF ANALYSIS IZ20010085

Sample Description	Method / Analyte / Units / LOD	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1	ME-MS61 Ni ppm 0.2	ME-MS61 P ppm 10
2450		2.97	12.50	0.17	5.4	0.084	4.86	15.2	196.5	0.15	109	1.73	0.96	8.9	3.5	720
2451		1.69	16.95	0.22	10.2	0.069	4.86	29.1	19.0	0.29	200	0.92	0.37	20.6	2.8	270

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CERTIFICATE OF ANALYSIS IZ20010085

Sample Description	Method / Analyte / Units / LOD	ME-MS61 Pb ppm 0.5	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Sc ppm 0.1	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Tl % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1
2450		69.1	157.0	0.002	0.02	0.97	8.0	1	2.0	66.5	0.52	<0.05	6.35	0.304	0.83	1.9
2451		25.5	157.5	<0.002	0.03	1.88	3.0	<1	4.8	167.5	1.22	<0.05	10.50	0.116	1.05	4.1

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CERTIFICATE OF ANALYSIS IZ20010085

Sample Description	Method / Analyte / Units / LOD	ME-MS61 Pb ppm 0.5	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Sc ppm 0.1	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Tl % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1
2450		69.1	157.0	0.002	0.02	0.97	8.0	1	2.0	66.5	0.52	<0.05	6.35	0.304	0.83	1.9
2451		25.5	157.5	<0.002	0.03	1.88	3.0	<1	4.8	167.5	1.22	<0.05	10.50	0.116	1.05	4.1

***** See Appendix Page for comments regarding this certificate *****

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Page: 3 - D
Total # Pages: 3 (A - D)
Plus Appendix Pages
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CERTIFICATE OF ANALYSIS IZ20010085

Sample Description	Method / Analyte / Units / LOD	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	Cu-OG62 Cu % 0.001
2450		33	5.1	20.7	118	216	
2451		24	3.7	53.4	37	364	

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11.3.Appendix 3 Analyses certificates of stream sediment samples

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CERTIFICATE OF ANALYSIS IZ20010094

Sample Description	Method	WEI-21	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L
	Analyte	Recvd Wt.	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.0002	0.001	0.01	0.01	10	0.5	0.01	0.0005	0.01	0.001	0.003	0.001	0.01	0.005
2201		0.78	0.0070	0.067	1.40	5.72	10	605	1.36	0.234	6.39	0.283	50.8	9.15	39.6	1.530
2202		0.89	0.0006	0.028	0.41	1.64	10	135.0	0.34	0.0474	6.88	0.335	16.40	3.36	12.85	0.292
2203		0.70	0.0011	0.046	0.87	3.65	10	511	1.34	0.0919	6.07	0.334	58.3	4.63	17.60	1.200
2204		1.04	0.0006	0.050	0.56	3.23	10	220	0.34	0.0548	12.30	0.690	19.35	4.04	19.80	0.397
2205		1.61	0.0024	0.035	0.68	1.68	10	305	0.51	0.0801	5.71	0.391	25.8	4.14	17.00	0.869
2206		0.78	0.0006	0.030	0.41	1.61	<10	459	0.33	0.0452	3.55	0.213	14.80	2.38	9.65	0.404
2207		18.14	0.0024	0.029	0.39	1.49	10	696	0.35	0.0490	3.49	0.220	19.30	2.67	10.70	0.436
2208		9.95	0.0009	0.014	0.25	1.62	<10	819	0.24	0.0363	2.56	0.094	13.95	2.21	6.46	0.253
2209		10.74	0.0004	0.017	0.24	0.71	<10	375	0.21	0.0327	1.60	0.116	8.79	1.315	5.78	0.229
2213		13.39	0.0011	0.036	0.61	2.09	10	165.5	0.92	0.0920	5.86	0.360	59.6	3.44	14.05	0.731
2214		16.80	0.0003	0.031	0.35	1.55	<10	264	0.29	0.0434	6.69	0.305	17.60	2.75	11.10	0.295
2215		10.62	0.0006	0.027	0.35	1.50	10	82.5	0.26	0.0329	5.40	0.213	15.85	2.80	9.87	0.254
2216		12.33	0.0004	0.027	0.33	2.27	10	129.5	0.24	0.0381	8.59	0.371	15.55	3.03	11.65	0.229
2217		13.57	0.0003	0.021	0.29	1.04	<10	69.7	0.22	0.0328	2.67	0.198	13.55	2.22	7.44	0.139
2218		15.32	0.0002	0.034	0.31	3.04	10	157.5	0.22	0.0386	9.04	0.390	13.95	3.31	13.45	0.217
2219		14.95	0.0002	0.033	0.34	1.94	10	143.5	0.25	0.0357	8.17	0.302	16.40	3.04	10.90	0.234
2220		19.47	0.0006	0.044	0.55	3.01	10	850	0.62	0.108	4.96	0.309	26.9	3.09	11.45	1.005
2221		4.28	0.0008	0.015	0.19	0.64	<10	93.7	0.11	0.0202	1.65	0.098	6.69	1.320	4.65	0.107
2222		16.53	0.0007	0.027	0.57	2.04	10	434	0.65	0.0682	3.23	0.266	26.7	3.94	13.05	1.070
2223		13.45	0.0007	0.041	0.72	1.69	10	201	0.66	0.0646	4.94	0.335	28.1	5.83	22.3	0.867
2224		14.70	0.0004	0.053	0.82	2.43	10	198.0	0.88	0.105	5.48	0.438	33.7	6.36	22.5	1.400
2225		17.88	0.0004	0.018	0.50	1.17	10	296	0.66	0.0342	1.25	0.093	18.25	2.71	9.20	1.665
2226		16.60	0.0004	0.019	0.65	1.33	10	314	0.86	0.0547	2.08	0.159	18.70	3.44	12.15	1.415
2227		24.11	0.0010	0.023	0.36	1.18	10	773	0.38	0.0318	1.75	0.133	17.00	1.835	6.78	0.696
2228		16.47	0.0014	0.026	0.52	1.20	10	531	0.57	0.0496	3.01	0.208	17.85	2.70	10.00	0.981
2229		10.26	0.0007	0.037	0.94	2.63	10	173.5	0.61	0.151	8.23	0.591	30.0	5.24	21.7	1.385
2230		10.88	0.0005	0.037	0.88	2.17	10	182.0	0.52	0.0944	8.90	0.641	29.0	5.22	21.3	1.100
2231		10.13	0.0009	0.021	0.76	1.80	10	129.0	0.42	0.154	4.79	0.317	45.3	4.38	14.00	1.595
2232		12.41	0.0008	0.034	0.83	2.02	10	158.0	0.46	0.0931	7.85	0.519	29.2	5.07	19.75	1.100
2233		9.14	0.0007	0.038	0.98	2.33	10	172.0	0.52	0.105	8.20	0.575	33.6	5.73	22.3	1.515
2234		11.15	0.0007	0.041	0.88	2.16	10	163.5	0.52	0.0938	7.79	0.568	33.9	5.26	20.4	1.165
2235		10.20	0.0011	0.032	0.86	2.35	10	169.0	0.56	0.102	7.73	0.628	32.9	5.35	27.5	1.035
2236		10.27	0.0009	0.029	0.84	1.94	10	151.5	0.57	0.121	5.76	0.426	44.6	4.88	22.3	1.305
2237		11.51	0.0002	0.021	0.36	0.82	10	612	0.34	0.0260	1.72	0.121	12.40	1.775	6.74	0.589
2238		8.65	0.0002	0.017	0.37	0.88	<10	171.5	0.27	0.0401	3.22	0.213	16.50	1.940	8.57	0.257
2239		10.94	0.0002	0.037	0.27	0.47	<10	636	0.23	0.0240	1.65	0.102	12.55	1.510	5.21	0.213
2240		11.53	0.0006	0.021	0.27	0.61	<10	736	0.21	0.0200	1.56	0.104	10.70	1.320	5.22	0.218
2241		10.07	<0.0002	0.028	0.45	1.15	10	279	0.30	0.0293	3.79	0.164	13.95	2.66	9.41	0.307
2242		10.11	<0.0002	0.024	0.41	1.02	10	316	0.35	0.0519	2.44	0.140	15.55	2.18	8.10	0.517
2243		11.63	0.0002	0.035	0.81	2.16	10	228	0.50	0.0800	7.96	0.564	28.6	5.12	19.45	0.845

***** See Appendix Page for comments regarding this certificate *****

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CERTIFICATE OF ANALYSIS IZ20010094

Sample Description	Method Analyte Units LOD	ME-MS41L Cu ppm 0.01	ME-MS41L Fe % 0.001	ME-MS41L Ga ppm 0.004	ME-MS41L Ge ppm 0.005	ME-MS41L Hf ppm 0.002	ME-MS41L Hg ppm 0.004	ME-MS41L In ppm 0.005	ME-MS41L K % 0.01	ME-MS41L La ppm 0.002	ME-MS41L Li ppm 0.1	ME-MS41L Mg % 0.01	ME-MS41L Mn ppm 0.1	ME-MS41L Mo ppm 0.01	ME-MS41L Na % 0.001	ME-MS41L Nb ppm 0.002
2201		26.1	3.00	8.42	0.113	0.152	0.016	0.035	0.25	26.9	33.7	1.14	866	0.81	0.046	0.745
2202		6.89	1.240	1.860	0.055	0.092	0.010	0.010	0.09	7.98	3.4	1.16	180.0	0.68	0.018	0.415
2203		15.15	2.45	6.81	0.110	0.178	0.010	0.042	0.19	32.9	11.3	0.67	750	0.78	0.030	1.360
2204		9.54	1.230	2.30	0.052	0.091	0.010	0.011	0.11	10.10	4.5	1.67	201	1.44	0.029	0.542
2205		20.7	1.200	3.23	0.059	0.175	0.004	0.014	0.18	13.40	8.5	0.63	229	0.57	0.024	0.640
2206		12.30	0.780	1.800	0.041	0.127	0.006	0.010	0.08	7.69	2.8	0.34	125.0	0.42	0.019	0.435
2207		13.60	0.880	1.880	0.046	0.183	<0.004	0.008	0.09	9.34	3.7	0.41	145.0	0.81	0.024	0.454
2208		8.85	0.810	1.225	0.037	0.218	<0.004	0.006	0.05	6.53	1.5	0.37	96.8	1.34	0.022	0.206
2209		12.95	0.510	1.040	0.022	0.160	<0.004	0.006	0.05	4.32	1.6	0.14	66.6	0.25	0.014	0.202
2213		10.35	1.530	3.41	0.114	0.235	0.008	0.037	0.14	35.1	5.1	0.51	291	0.62	0.024	2.07
2214		6.98	1.010	1.545	0.050	0.165	0.006	0.014	0.07	8.58	3.0	1.08	161.0	0.67	0.019	0.348
2215		5.05	0.860	1.525	0.037	0.106	<0.004	0.017	0.07	7.69	2.2	0.84	133.5	0.57	0.013	0.444
2216		5.90	0.980	1.400	0.043	0.078	0.006	0.017	0.08	7.41	2.3	1.43	179.0	0.88	0.015	0.274
2217		7.34	0.700	1.330	0.038	0.133	<0.004	0.012	0.04	6.72	1.5	0.23	86.5	0.33	0.009	0.316
2218		6.22	0.950	1.260	0.049	0.088	<0.004	0.020	0.07	6.68	2.3	1.20	166.5	1.21	0.018	0.223
2219		5.54	1.000	1.445	0.044	0.099	<0.004	0.008	0.08	7.74	2.4	1.34	166.0	0.86	0.020	0.272
2220		31.0	1.070	2.69	0.062	0.156	0.005	0.016	0.14	14.65	4.3	0.59	174.5	0.54	0.029	0.837
2221		6.91	0.480	0.850	0.021	0.107	<0.004	<0.005	0.03	3.23	1.0	0.18	59.0	0.27	0.007	0.200
2222		20.5	1.160	2.82	0.059	0.157	0.006	0.006	0.15	14.10	5.2	0.37	167.5	0.39	0.022	0.640
2223		17.30	1.530	3.41	0.066	0.136	0.008	0.015	0.17	14.75	9.5	0.69	281	0.53	0.025	1.215
2224		31.4	1.580	3.99	0.073	0.162	0.010	0.016	0.21	16.25	8.6	0.60	265	0.53	0.022	0.758
2225		12.80	0.880	2.26	0.047	0.183	<0.004	0.011	0.21	8.27	3.5	0.18	92.3	0.25	0.014	0.295
2226		14.35	0.960	2.81	0.048	0.168	0.011	0.015	0.24	9.13	4.7	0.26	112.5	0.26	0.016	0.465
2227		11.30	0.670	1.580	0.037	0.323	0.015	<0.005	0.11	8.48	2.1	0.16	94.7	0.28	0.022	0.309
2228		14.75	0.810	2.22	0.043	0.173	0.005	0.008	0.15	9.18	3.3	0.28	128.0	0.32	0.021	0.588
2229		21.1	1.590	5.07	0.081	0.123	0.013	0.017	0.20	15.60	17.1	0.91	339	0.71	0.033	0.697
2230		15.95	1.410	4.26	0.064	0.122	0.013	0.020	0.18	14.45	14.1	0.94	297	0.67	0.030	0.657
2231		12.55	1.640	4.61	0.079	0.185	<0.004	0.011	0.16	21.8	20.9	0.66	298	0.48	0.037	0.495
2232		13.75	1.480	4.14	0.064	0.133	<0.004	0.011	0.17	14.60	15.2	0.90	298	0.68	0.031	0.629
2233		24.9	1.610	5.25	0.081	0.124	0.006	0.011	0.21	16.85	20.9	0.97	353	0.65	0.034	0.755
2234		26.0	1.480	4.67	0.067	0.128	0.008	0.010	0.18	16.95	17.8	0.89	306	0.65	0.033	0.715
2235		31.7	1.440	4.42	0.071	0.159	0.010	0.025	0.17	16.15	15.8	0.90	306	0.75	0.030	0.686
2236		36.8	1.510	5.09	0.081	0.191	0.006	0.022	0.18	21.9	22.6	0.78	328	0.56	0.032	0.610
2237		8.91	0.600	1.655	0.032	0.162	<0.004	<0.005	0.10	6.50	3.0	0.17	75.4	0.22	0.023	0.314
2238		9.70	0.770	1.565	0.037	0.086	<0.004	0.012	0.06	7.99	3.3	0.27	105.0	0.33	0.015	0.377
2239		6.86	0.570	1.140	0.025	0.251	0.007	<0.005	0.07	6.10	1.7	0.15	63.0	0.27	0.020	0.220
2240		7.23	0.540	1.110	0.031	0.168	<0.004	0.014	0.06	5.26	1.7	0.14	63.1	0.23	0.020	0.204
2241		9.51	0.780	1.785	0.031	0.099	0.012	0.012	0.09	6.72	3.1	0.33	117.0	0.39	0.019	0.469
2242		9.34	0.730	1.710	0.039	0.138	0.006	0.007	0.11	7.74	3.8	0.25	110.0	0.30	0.025	0.513
2243		23.8	1.450	3.75	0.060	0.134	0.013	0.011	0.18	14.20	11.8	0.87	279	0.77	0.027	0.685

***** See Appendix Page for comments regarding this certificate *****

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Page: 2 - C
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 27-JAN-2020
Account: CEMMIN

CERTIFICATE OF ANALYSIS IZ20010094

Sample Description	Method / Analyte / Units / LOD	ME-MS41L Ni ppm 0.04	ME-MS41L P % 0.001	ME-MS41L Pb ppm 0.005	ME-MS41L Pd ppm 0.001	ME-MS41L Pt ppm 0.002	ME-MS41L Rb ppm 0.005	ME-MS41L Re ppm 0.0002	ME-MS41L S % 0.01	ME-MS41L Sb ppm 0.005	ME-MS41L Sc ppm 0.005	ME-MS41L Se ppm 0.003	ME-MS41L Sn ppm 0.01	ME-MS41L Sr ppm 0.01	ME-MS41L Ta ppm 0.005	ME-MS41L Te ppm 0.003
2201		24.5	0.108	28.7	<0.001	<0.002	11.80	0.0007	0.05	0.390	5.01	0.189	37.8	176.5	<0.005	0.012
2202		8.62	0.080	6.31	0.001	<0.002	4.15	<0.0002	0.04	0.143	1.955	0.248	1.07	120.0	<0.005	0.006
2203		12.50	0.089	18.65	<0.001	<0.002	10.80	0.0003	0.04	0.227	3.75	0.185	13.10	151.5	<0.005	0.008
2204		13.25	0.178	5.48	<0.001	<0.002	5.29	0.0005	0.06	0.189	2.71	0.506	0.78	236	<0.005	0.014
2205		12.00	0.102	7.44	0.001	<0.002	10.15	0.0002	0.04	0.152	2.34	0.178	1.93	137.5	<0.005	0.007
2206		6.74	0.059	5.99	<0.001	<0.002	4.53	0.0002	0.04	0.105	1.445	0.117	1.23	95.5	<0.005	0.004
2207		7.19	0.064	7.32	0.001	<0.002	4.53	<0.0002	0.04	0.114	1.580	0.122	0.78	85.5	<0.005	<0.003
2208		4.41	0.038	6.51	<0.001	<0.002	2.28	<0.0002	0.04	0.148	1.295	0.068	0.46	65.5	<0.005	<0.003
2209		3.74	0.035	4.48	<0.001	<0.002	2.52	<0.0002	0.03	0.066	0.821	0.051	0.46	49.1	<0.005	<0.003
2213		10.25	0.073	38.5	0.007	<0.002	6.86	<0.0002	0.04	0.300	2.02	0.200	2.63	144.0	<0.005	0.006
2214		7.80	0.081	5.28	0.001	<0.002	3.60	0.0002	0.04	0.118	1.820	0.290	0.47	122.5	<0.005	0.008
2215		6.66	0.055	4.92	<0.001	<0.002	3.36	<0.0002	0.03	0.099	1.610	0.214	0.39	97.4	<0.005	0.005
2216		8.36	0.098	3.75	0.004	<0.002	3.42	0.0007	0.05	0.108	2.15	0.452	0.26	153.0	<0.005	0.008
2217		5.24	0.045	5.88	0.001	<0.002	2.05	<0.0002	0.03	0.072	1.110	0.072	0.40	71.6	<0.005	0.005
2218		9.79	0.109	3.67	<0.001	<0.002	3.07	0.0006	0.05	0.162	2.06	0.623	0.34	205	<0.005	0.009
2219		7.94	0.085	3.91	<0.001	<0.002	3.47	0.0004	0.05	0.112	2.09	0.348	0.30	142.5	<0.005	0.009
2220		8.45	0.073	9.33	0.001	<0.002	8.01	0.0003	0.05	0.176	1.910	0.237	1.04	126.5	<0.005	0.005
2221		3.14	0.022	2.57	0.001	<0.002	1.460	<0.0002	0.03	0.065	0.731	0.066	0.32	41.6	<0.005	0.003
2222		8.11	0.081	7.72	0.001	<0.002	8.85	<0.0002	0.04	0.144	1.815	0.111	0.92	88.6	<0.005	0.003
2223		16.15	0.090	8.99	<0.001	<0.002	8.22	0.0003	0.05	0.171	2.62	0.162	0.89	135.0	<0.005	0.004
2224		12.90	0.123	8.50	<0.001	<0.002	12.60	<0.0002	0.03	0.188	2.77	0.186	1.28	138.0	<0.005	0.005
2225		6.52	0.036	4.54	0.001	<0.002	14.10	<0.0002	0.04	0.076	1.510	0.039	0.46	53.5	<0.005	<0.003
2226		9.14	0.059	5.60	<0.001	<0.002	15.15	<0.0002	0.03	0.115	1.980	0.059	0.55	62.1	<0.005	<0.003
2227		4.67	0.051	5.98	<0.001	<0.002	5.38	<0.0002	0.04	0.098	1.130	0.061	0.46	57.2	<0.005	0.003
2228		7.40	0.060	6.01	<0.001	<0.002	8.47	<0.0002	0.04	0.116	1.460	0.101	0.61	85.1	<0.005	0.004
2229		15.65	0.141	17.25	<0.001	<0.002	11.75	0.0002	0.05	0.235	3.05	0.313	0.82	198.5	<0.005	0.008
2230		15.80	0.150	9.79	0.003	<0.002	10.40	0.0005	0.04	0.204	3.01	0.350	0.71	202	<0.005	0.008
2231		10.25	0.117	11.40	<0.001	<0.002	11.15	<0.0002	0.03	0.185	2.28	0.184	0.73	107.5	<0.005	0.005
2232		14.45	0.131	9.19	<0.001	<0.002	9.54	0.0003	0.04	0.174	2.90	0.228	0.72	175.0	<0.005	0.006
2233		16.60	0.144	9.77	<0.001	<0.002	12.25	<0.0002	0.04	0.210	3.15	0.297	0.86	187.5	<0.005	0.007
2234		15.30	0.128	10.55	<0.001	<0.002	10.70	<0.0002	0.04	0.185	2.95	0.260	0.79	174.0	<0.005	0.005
2235		17.70	0.137	13.50	<0.001	<0.002	10.80	<0.0002	0.04	0.187	3.22	0.283	0.88	174.5	<0.005	0.010
2236		14.95	0.102	30.3	<0.001	<0.002	11.65	0.0003	0.03	0.137	2.90	0.226	0.89	129.0	<0.005	0.007
2237		4.51	0.062	4.66	<0.001	<0.002	5.37	<0.0002	0.04	0.086	1.065	0.065	0.42	56.3	<0.005	<0.003
2238		6.13	0.053	7.78	<0.001	<0.002	3.04	<0.0002	0.03	0.081	1.115	0.106	0.53	90.6	<0.005	0.004
2239		3.92	0.037	4.25	<0.001	<0.002	2.99	<0.0002	0.04	0.065	0.787	0.046	0.38	51.5	<0.005	<0.003
2240		3.74	0.033	4.42	0.001	<0.002	2.67	<0.0002	0.04	0.064	0.773	0.057	0.33	47.2	<0.005	<0.003
2241		7.88	0.035	4.82	0.004	<0.002	4.16	<0.0002	0.08	0.065	1.325	0.148	0.46	105.5	<0.005	0.005
2242		6.46	0.047	5.83	0.001	<0.002	4.93	<0.0002	0.03	0.099	1.100	0.093	0.56	70.7	<0.005	0.003
2243		15.90	0.136	9.18	0.004	<0.002	9.29	<0.0002	0.04	0.182	2.61	0.240	0.78	180.5	<0.005	0.007

***** See Appendix Page for comments regarding this certificate *****

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Page: 2 - D
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 27-JAN-2020
Account: CEMMIN

CERTIFICATE OF ANALYSIS IZ20010094

Sample Description	Method / Analyte / Units / LOD	ME-MS41L Th ppm 0.002	ME-MS41L Ti % 0.001	ME-MS41L Tl ppm 0.001	ME-MS41L U ppm 0.005	ME-MS41L V ppm 0.1	ME-MS41L W ppm 0.001	ME-MS41L Y ppm 0.003	ME-MS41L Zn ppm 0.1	ME-MS41L Zr ppm 0.01
2201		4.61	0.051	0.075	1.515	47.8	0.524	14.30	126.0	9.31
2202		2.61	0.013	0.040	1.015	16.2	0.067	6.41	25.4	5.40
2203		3.66	0.041	0.072	1.305	21.2	0.322	10.75	74.7	10.00
2204		2.35	0.021	0.062	1.885	25.8	0.099	9.42	35.7	5.68
2205		3.78	0.034	0.078	1.245	22.2	0.111	7.48	37.5	8.91
2206		2.64	0.018	0.036	0.822	12.9	0.133	4.59	17.9	6.92
2207		3.50	0.019	0.039	0.950	14.9	0.165	5.51	21.8	9.09
2208		3.30	0.011	0.026	0.751	10.2	0.200	5.19	12.2	10.45
2209		2.01	0.010	0.020	0.551	7.1	0.074	2.76	9.8	7.89
2213		3.55	0.034	0.051	1.180	19.3	0.611	7.50	48.2	12.00
2214		3.11	0.015	0.037	1.065	15.1	0.095	6.53	21.3	7.46
2215		2.38	0.012	0.035	0.798	13.7	0.130	5.23	17.0	5.63
2216		2.02	0.009	0.044	1.140	15.2	0.055	7.23	20.9	4.39
2217		2.93	0.013	0.024	0.695	11.0	0.145	4.76	14.4	6.97
2218		2.00	0.007	0.043	1.295	15.7	0.092	7.42	23.3	4.09
2219		2.43	0.011	0.040	1.045	14.9	0.077	7.04	20.0	5.53
2220		3.21	0.020	0.058	1.195	16.0	0.205	6.33	27.9	8.57
2221		1.385	0.007	0.017	0.380	5.0	0.081	2.20	8.1	4.85
2222		3.81	0.023	0.064	0.996	19.4	0.148	5.90	30.0	9.41
2223		3.14	0.033	0.055	1.020	30.0	0.213	7.36	44.1	7.73
2224		4.38	0.032	0.087	1.415	36.0	0.160	8.48	43.8	9.25
2225		4.27	0.019	0.091	0.711	11.0	0.093	4.07	20.8	8.14
2226		4.31	0.023	0.093	0.793	14.7	0.066	5.47	28.9	8.59
2227		4.25	0.015	0.039	0.863	9.8	0.121	4.31	13.5	14.10
2228		3.20	0.018	0.057	0.868	13.5	0.101	4.91	21.0	8.60
2229		3.61	0.041	0.080	1.835	29.9	0.204	9.73	71.8	8.09
2230		3.80	0.038	0.081	1.680	28.9	0.130	9.86	51.7	7.70
2231		7.05	0.047	0.065	1.375	24.8	0.141	10.75	46.6	9.51
2232		4.16	0.052	0.070	1.495	29.8	0.102	9.46	48.3	8.19
2233		4.72	0.046	0.092	1.755	30.7	0.137	10.35	58.7	7.61
2234		5.26	0.044	0.081	1.715	28.1	0.099	9.69	54.7	7.74
2235		5.39	0.042	0.083	1.910	30.1	0.154	10.05	56.5	9.03
2236		7.91	0.043	0.081	1.840	26.1	0.190	9.69	58.4	9.15
2237		2.63	0.012	0.038	0.644	8.6	0.095	3.67	13.4	7.10
2238		3.14	0.017	0.027	0.883	12.6	0.146	4.90	16.6	5.30
2239		3.28	0.010	0.025	0.659	7.2	0.050	3.40	9.6	12.05
2240		2.44	0.010	0.023	0.597	6.8	0.057	3.11	9.6	8.74
2241		2.57	0.017	0.036	0.612	13.3	0.078	4.70	15.3	5.90
2242		2.97	0.016	0.032	0.667	11.7	0.133	4.55	16.5	7.50
2243		4.06	0.039	0.078	1.620	28.2	0.126	9.09	65.8	7.75

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To: CHEMICAL MINING INDUSTRIES CO. LTD.
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ABDULLAH II ST69
AMMAN
JORDAN

Page: 3 - A
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 27-JAN-2020
Account: CEMMIN

CERTIFICATE OF ANALYSIS IZ20010094

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41L Au ppm 0.0002	ME-MS41L Ag ppm 0.001	ME-MS41L Al % 0.01	ME-MS41L As ppm 0.01	ME-MS41L B ppm 10	ME-MS41L Ba ppm 0.5	ME-MS41L Be ppm 0.01	ME-MS41L Bi ppm 0.0005	ME-MS41L Ca % 0.01	ME-MS41L Cd ppm 0.001	ME-MS41L Ce ppm 0.003	ME-MS41L Co ppm 0.001	ME-MS41L Cr ppm 0.01	ME-MS41L Cs ppm 0.005
2244		12.18	0.0002	0.045	0.92	2.23	10	1310	0.54	0.0733	8.61	0.606	24.5	5.48	20.7	1.010
2245		10.78	<0.0002	0.021	0.65	1.84	10	135.0	0.38	0.0640	6.06	0.419	30.2	4.04	15.20	0.697
2246		11.23	0.0006	0.034	0.82	2.06	10	191.5	0.45	0.0780	7.48	0.548	30.3	4.89	18.75	0.887
2247		11.73	0.0004	0.019	0.50	1.26	10	56.1	0.34	0.0406	3.73	0.209	16.20	2.85	10.75	0.371
2248		11.28	<0.0002	0.031	0.46	1.22	10	302	0.47	0.0565	3.67	0.304	21.5	2.41	9.54	0.441
2249		11.14	0.0003	0.037	0.54	1.37	10	163.0	0.49	0.0512	5.00	0.362	25.0	3.17	12.15	0.561
2250		10.27	0.0003	0.035	0.51	1.39	10	228	0.46	0.0514	4.74	0.373	23.9	2.85	11.65	0.487

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Page: 3 - B
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 27-JAN-2020
Account: CEMMIN

CERTIFICATE OF ANALYSIS IZ20010094

Sample Description	Method	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L	ME-MS41L
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.01	0.001	0.004	0.005	0.002	0.004	0.005	0.01	0.002	0.1	0.01	0.1	0.01	0.001	0.002
2244		19.80	1.490	3.96	0.075	0.133	0.011	0.011	0.17	12.35	11.5	0.95	281	0.74	0.041	0.612
2245		12.15	1.170	3.07	0.065	0.159	0.009	0.016	0.13	14.65	9.6	0.69	212	0.60	0.022	0.396
2246		13.45	1.360	3.78	0.060	0.137	0.015	0.008	0.16	15.10	12.0	0.86	253	0.72	0.026	0.517
2247		8.34	0.890	2.21	0.038	0.107	0.004	0.015	0.15	8.04	4.8	0.48	137.0	0.44	0.016	0.436
2248		14.50	0.880	2.13	0.050	0.177	0.009	0.017	0.08	10.95	3.7	0.34	128.0	0.38	0.018	0.580
2249		17.10	0.950	2.50	0.049	0.142	0.011	0.012	0.12	12.60	4.7	0.49	172.5	0.56	0.019	0.626
2250		14.30	0.920	2.32	0.049	0.179	0.009	0.007	0.10	12.35	4.2	0.44	153.5	0.50	0.019	0.538

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Page: 3 - C
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 27-JAN-2020
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CERTIFICATE OF ANALYSIS IZ20010094

Sample Description	Method / Analyte / Units / LOD	ME-MS41L Ni ppm 0.04	ME-MS41L P % 0.001	ME-MS41L Pb ppm 0.005	ME-MS41L Pd ppm 0.001	ME-MS41L Pt ppm 0.002	ME-MS41L Rb ppm 0.005	ME-MS41L Re ppm 0.0002	ME-MS41L S % 0.01	ME-MS41L Sb ppm 0.005	ME-MS41L Sc ppm 0.005	ME-MS41L Se ppm 0.003	ME-MS41L Sn ppm 0.01	ME-MS41L Sr ppm 0.01	ME-MS41L Ta ppm 0.005	ME-MS41L Te ppm 0.003
2244		17.20	0.146	8.41	<0.001	<0.002	9.07	0.0002	0.07	0.209	2.71	0.307	0.76	205	<0.005	0.008
2245		12.20	0.101	7.92	<0.001	<0.002	6.68	<0.0002	0.04	0.149	2.00	0.202	0.58	140.5	<0.005	0.007
2246		14.80	0.130	8.93	0.002	<0.002	8.39	<0.0002	0.04	0.173	2.47	0.274	0.74	169.5	<0.005	0.008
2247		8.24	0.058	4.24	0.004	<0.002	4.94	<0.0002	0.04	0.095	1.545	0.133	0.48	86.2	<0.005	0.005
2248		7.45	0.074	6.83	0.001	<0.002	3.92	<0.0002	0.03	0.131	1.230	0.139	0.83	88.7	<0.005	0.005
2249		9.49	0.088	6.80	<0.001	<0.002	5.62	<0.0002	0.03	0.151	1.550	0.179	0.81	116.5	<0.005	0.007
2250		8.86	0.091	7.30	0.002	<0.002	4.79	<0.0002	0.03	0.129	1.505	0.151	0.74	112.5	<0.005	0.005

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CERTIFICATE OF ANALYSIS IZ20010094

Sample Description	Method / Analyte / Units / LOD	ME-MS41L Th ppm 0.002	ME-MS41L Ti % 0.001	ME-MS41L Tl ppm 0.001	ME-MS41L U ppm 0.005	ME-MS41L V ppm 0.1	ME-MS41L W ppm 0.001	ME-MS41L Y ppm 0.003	ME-MS41L Zn ppm 0.1	ME-MS41L Zr ppm 0.01
2244		3.18	0.041	0.080	1.715	31.2	0.129	9.84	70.3	7.75
2245		4.55	0.031	0.057	1.305	22.0	0.088	7.77	36.0	8.22
2246		4.51	0.038	0.075	1.610	27.0	0.096	8.84	44.5	8.11
2247		3.14	0.019	0.041	0.764	14.6	0.085	4.89	21.0	5.81
2248		2.67	0.020	0.038	0.971	13.6	0.160	4.95	23.4	8.08
2249		3.02	0.024	0.050	1.140	16.8	0.117	5.80	27.7	7.45
2250		3.01	0.024	0.043	1.160	15.9	0.125	5.76	26.8	8.38

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