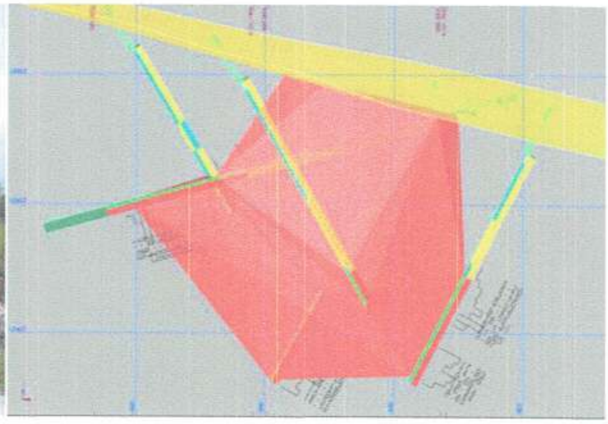
TECHNICAL REPORT

MINERAL RESOURCE ESTIMATE – MUGLA CHROMITE DEPOSIT

LICENSE 200712070, MUGLA PROVINCE, TURKEY



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1 EXECUTIVE SUMMARY

DMT has been commissioned by HASAT BNO GRUP GIDA YEMEK HAYV. TEKS. INS. SAN. TIC A.S. (hereafter 'Hasat' or 'the client') to prepare a mineral resource estimate based on a trenching and diamond drilling programme executed in license 200712070 in the Mugla province, Turkey. The license is held by the client. The target commodity is chromite.

The mineral project started at the end of 2016 with an initial programme of geological mapping. Based on the findings a trenching and drilling programme was planned by DMT. Resource definition work has been done following standard operating procedures (SOPs) designed and implemented on site by DMT in December 2017.

As a result of the resource definition work, 7 chromite lenses have been discovered and mapped. Results of geological logging and assays of 11 drill holes, drilled to date, have confirmed depth and continuity of chromite mineralization at 4 locations. Two showings were combined to a single wireframe named A/B, two more wireframes are named C and D. In consequence, three wireframes were modelled.

In total, densities and assay data of 112 samples have been available for this resource estimate. No block model or data interpolation has been done due to the early stage of the project. This report provides an inferred resource based on wireframes which are envelopes of chromite mineralization.

Several Cr_2O_3 cut-off grades were applied to the resource database and corresponding average grades and densities were calculated. The portion of the assayed intervals was set in correspondence to the volume of wireframe, which again was used to calculate a bulk tonnage. Estimated tonnages range from 74 800 t with an average Cr_2O_3 grade of 18.5 % without any application of a cut-off to 3 200 t with an average Cr_2O_3 grade of 52.3 % at a 50 % Cr_2O_3 cut-off grade (see Table 1).

For this resource estimate no cut-off grade has been applied due to the early status of the project.

In addition, some 14 % of the resource (appr. 10 000 t) might be direct shipping ore with almost 45 % Cr_2O_3 based on a 28 % Cr_2O_3 cut-off grade. However, a processing study must show, if any deleterious elements are acceptable.

Table 1. Inferred resource comprising all three bodies A/B, C and D

Cut-off Cr_2O_3 [%]	Density [t/m³]	Cr_2O_3 [%]	Tonnage [t]
0	3.39	18.54	74 800
2	3.40	19.82	69 800
4	3.41	20.27	67 800
6	3.42	20.47	66 900
8	3.44	21.50	62 100
10	3.48	22.82	56 100
12	3.49	23.76	52 000
14	3.51	24.60	48 500
16	3.52	25.80	43 200
18	3.62	30.17	28 900
20	3.67	32.74	23 500
22	3.75	36.97	17 200
24	3.79	40.33	13 800
26	3.82	43.26	11 600
28	3.84	44.98	10 500
30	3.90	45.63	10 100
32	3.90	45.63	10 100
34	3.93	46.46	9 500
36	3.98	48.03	8 400
38	3.98	48.03	8 400
40	4.01	48.67	7 800
42	4.01	48.67	7 800
44	4.01	48.67	7 800
46	4.03	51.40	4 700
48	4.03	51.40	4 700
50	4.06	52.32	3 200
52	4.06	52.32	3 200

The applied interpretation concept for the wireframing should be adapted when further drilling and trenching clarifies the geological structure of chromite mineralization.

INTRODUCTION

The mineral project started in 2016 as a grass-root exploration project. After prospective mapping found chromite lenses, trenching and drilling including assaying could verify the geological and grade continuity to depth and the discoveries have been developed to resource status. The estimate of the inferred resource is subject of this report.

3 RELIANCE ON OTHER EXPERTS

This report has been prepared by DMT, for the client.

The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to DMT at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and other information supplied by the client and other third party sources, e.g. ARGETEST laboratory

For the purpose of this report, DMT has relied on ownership information provided by the client. DMT has not researched property title or mineral rights for the project and expresses no opinion as to the legal ownership status of the property.

4 PROPERTY DESCRIPTION AND LOCATION

The Mugla license area is located ca. 50 km to the E of Mugla and located between the villages Camovasi in the W, Otmanlar in the E and Sazak in the S. The license area 200712070 is covering an area of appr. 1936 ha (around 20 km^2).

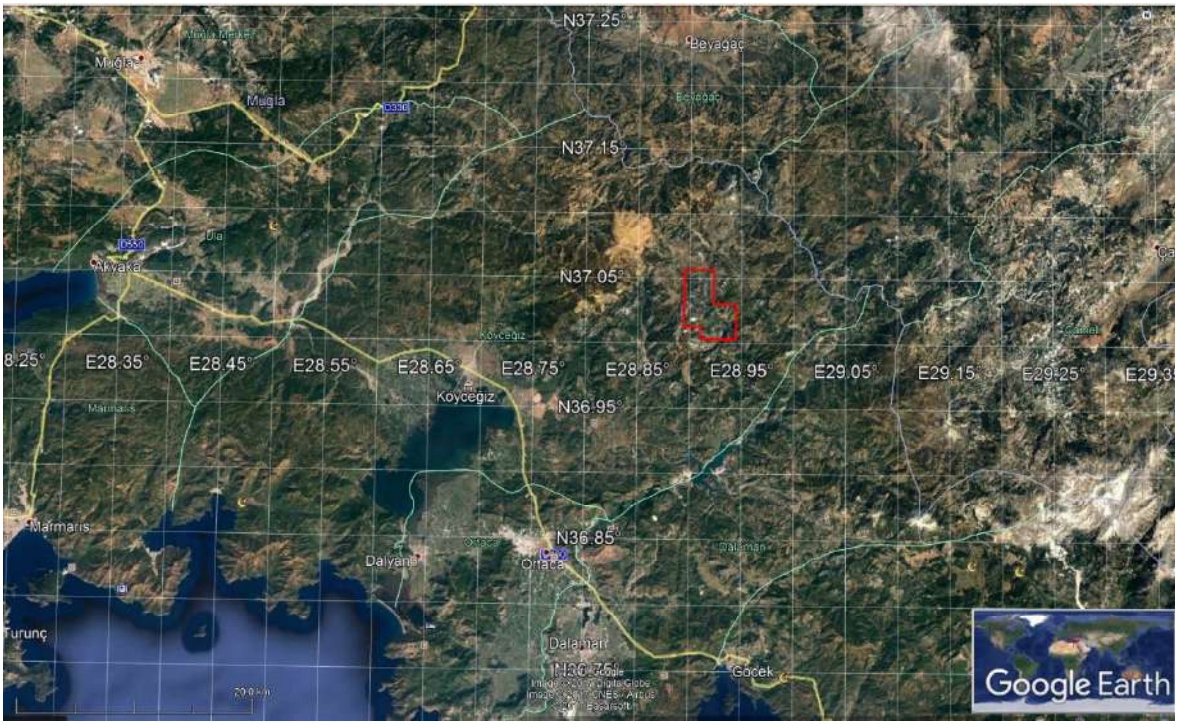


Figure 1. Mugla license area 200712070 (red polygon) is located appr. 50 km to the West of Mugla (Source: Google Maps).

The altitude of the license area ranges from 700 m up to 1400 m and the surface is partly very steeply incised (see Figure 2 and Figure 3).

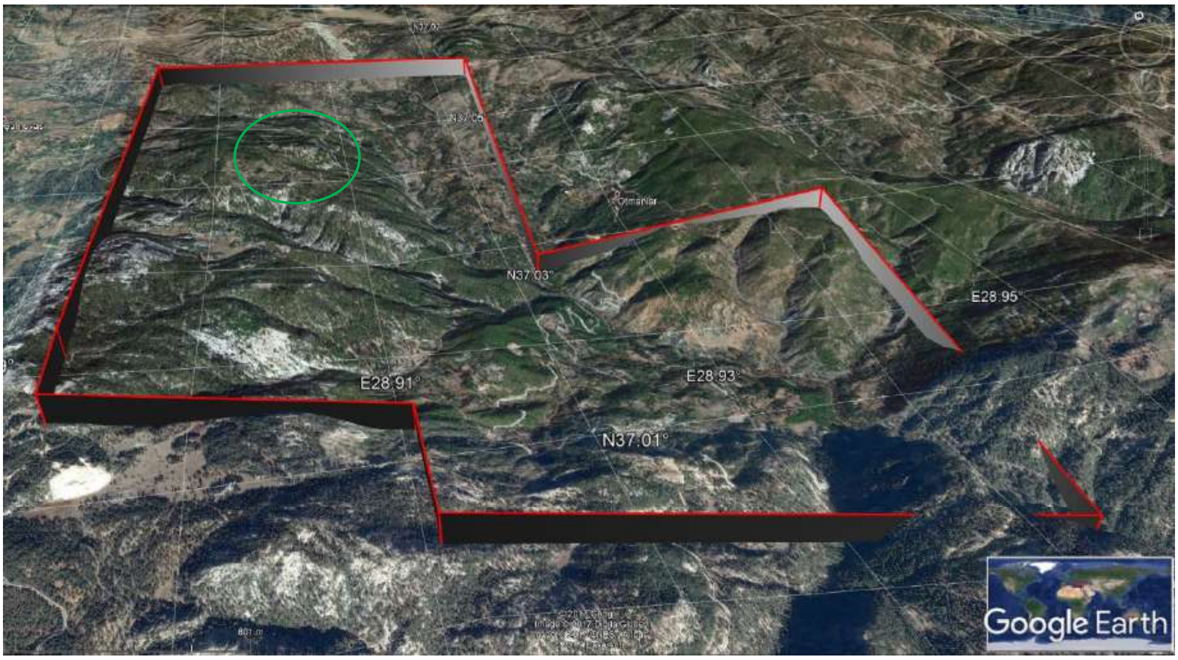


Figure 2. The license area 200712070 (red fence) is located appr. 50 km to the E of Mugla; main area of drilling activities in green circle (Source: Google Maps).

Figure 3. General view of license 200712070.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The license area is accessible from the town Mugla within 2 hrs by car; 1 hour via D400 motorway to Mugla Fethiye Yolu and another hour via Beyobasi and Sazak on paved road through the mountains. There are major surfaced and minor roads as well as tracks made for agriculture or forestry purposes within the license area.

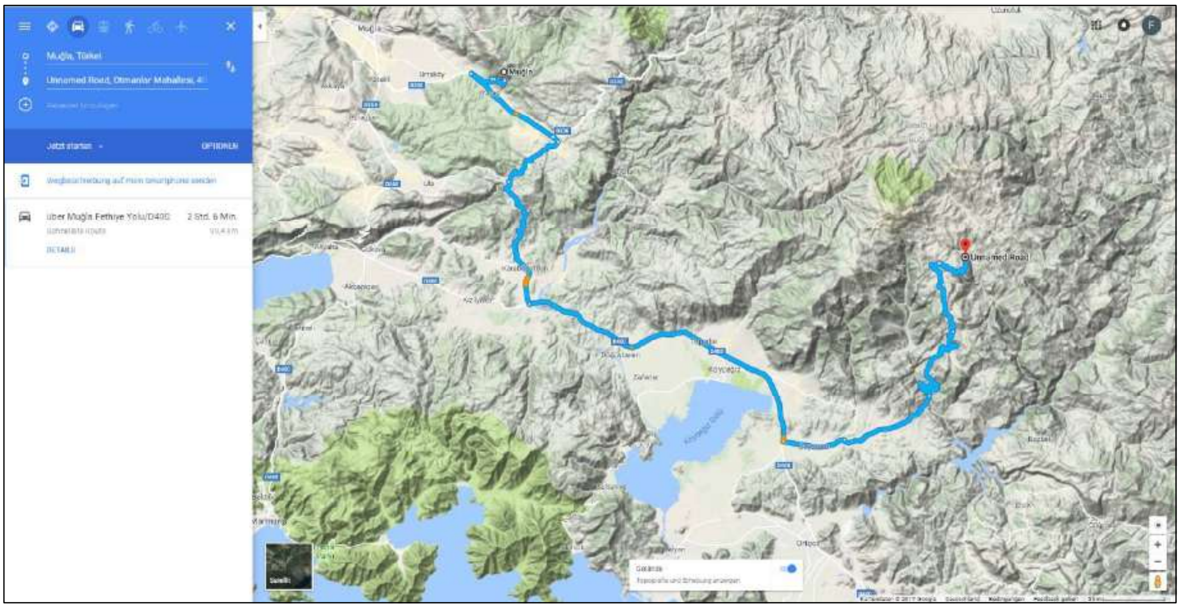


Figure 4. Access to license from the town of Mugla (Source: Google Maps).

Mugla is the capital of the Muğla Province, which stretches along Turkey's Aegean coast. Mugla is a relatively small city of 61,550 (2009 estimates) and has received a new boost with the foundation of Muğla University in the 1990s. Its former profile of a predominantly rural, difficult to access, isolated and underpopulated region enclosed with a rugged mountainous complex is now coming to an end. The nearest airports are Bodrum-Milas and Dalaman, each around 1.5 hrs by car (Source: https://en.wikipedia.org/wiki/Mugla).

Muğla has a Mediterranean climate. It is characterised by long, hot and dry summers with cool and wet winters (Source: https://en.wikipedia.org/wiki/Mugla).

Climate data for Muğla [hide]

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C (°F)	10.1 (50.2)	10.9 (51.6)	14.3 (57.7)	18.6 (65.5)	24.4 (75.9)	29.8 (85.6)	33.5 (92.3)	33.6 (92.5)	29.3 (84.7)	23.3 (73.9)	16.5 (61.7)	11.4 (52.5)	21.3 (70.33)
Average low °C (°F)	1.5 (34.7)	1.8 (35.2)	3.6 (38.5)	7.0 (44.6)	11.3 (52.3)	16.2 (61.2)	19.7 (67.5)	19.6 (67.3)	15.2 (59.4)	10.2 (50.4)	5.6 (42.1)	3.2 (37.8)	9.58 (49.25)
Average precipitation mm (inches)	222.7 (8.768)	183.0 (7.205)	118.3 (4.657)	71.0 (2.795)	46.8 (1.843)	22.7 (0.894)	9.8 (0.386)	10.2 (0.402)	23.3 (0.917)	69.2 (2.724)	139.2 (5.48)	272.9 (10.744)	1,189.1 (46.815)
Average rainy days	14.1	13.2	10.9	9.9	7.8	3.6	1.6	1.4	2.8	6.6	9.8	14.9	96.6
Average relative humidity (%)	76	76	72	67	61	52	45	47	50	62	73	80	63.4
Mean monthly sunshine hours	127.1	140.0	189.1	213.0	263.5	306.0	341.0	331.7	288.0	229.4	153.0	114.7	2,696.5

Source #1: Devlet Meteoroloji İşleri Genel Müdürlüğü [3]

Source #2: Weatherbase [4]

Figure 5. Climate data for Mugla.

The climate may be challenge for open cast mining during the winter months.

6 HISTORY

The project started at the end of 2016 with a mapping programme identifying 7 showings of chromitiferous ultramafic rocks. No other exploration work has been done before or is reported.

Sporadic exploitation of license 200712070 takes place by farmers collecting chromitite rubble discovered during field work.

7 GEOLOGICAL SETTING AND MINERALIZATION

This section is sub-divided into three sub-sections describing the general situation of ophiolitic chromitites in Turkey as well as the local geology and mineralization.

7.1 GENERAL

Turkey has been an important producer of metallurgical-grade, high-chrome chromite. For example, Turkey was the 4th largest producer in 2005, with an estimated production of 45 Mt (Mobbs, 2007). Chromite deposits of Turkey are associated with Alpine-type peridotites that are a part of ophiolitic assemblages covering large areas, with the most important zones in northern and southern Turkey (Figure 6).

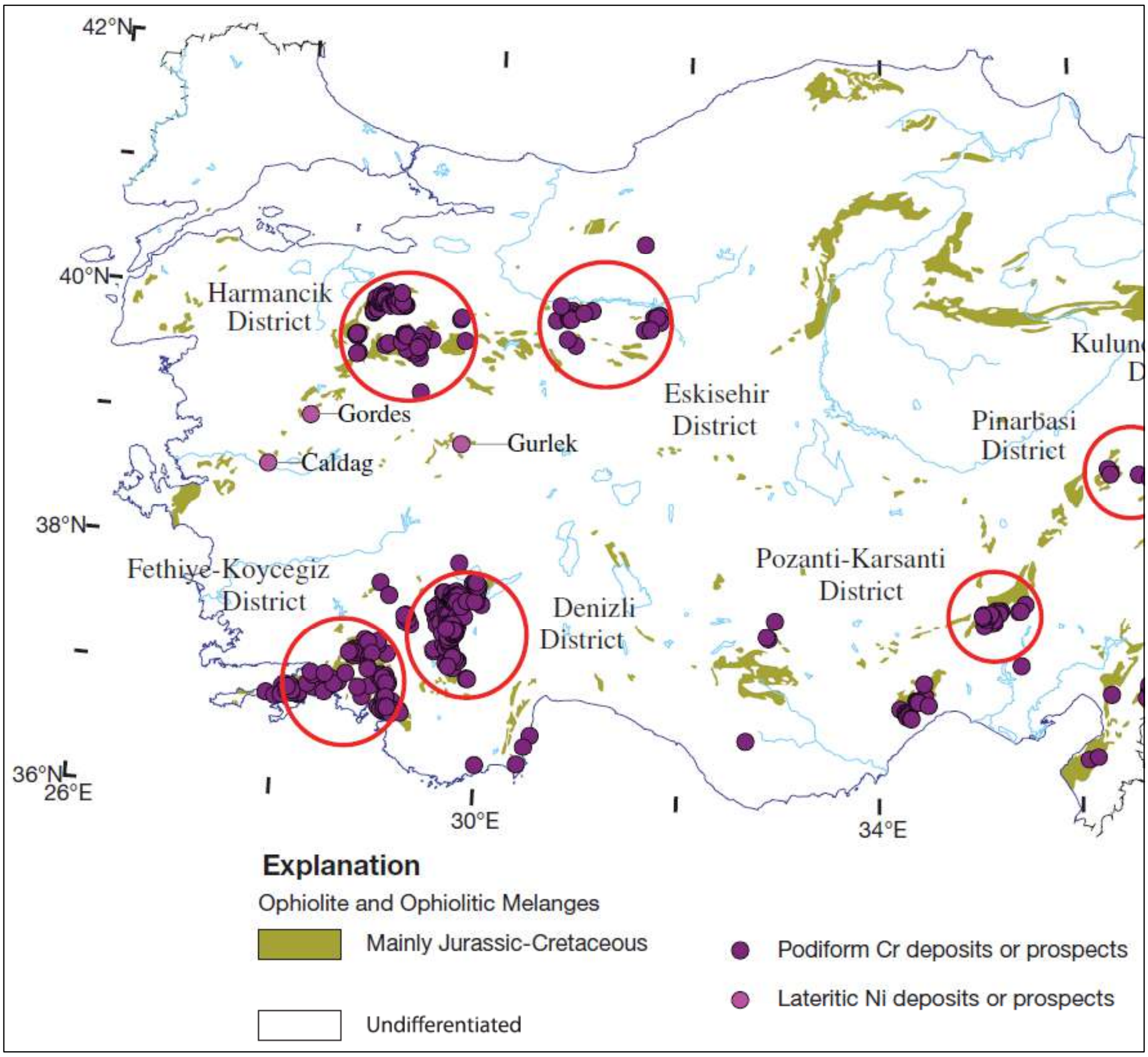


Figure 6. Distribution of the podiform chromite districts of Turkey including lateritic nickel with emphasis on host-rock lithology (Yigit, 2009).

Most of the ophiolitic assemblages are incomplete, except the one in Kizildag-Hatay, south-

iolitic rocks ranges from Jurassic to Cretaceous, but occurred mainly in the Late Cretaceous (Yigit, 2009)

Chromitite or chromitiferous lithologies are found in four stratigraphic positions of ophiolitic assemblages, which from bottom to top are as follows:

- harzburgite with enclosing dunite,
- the upper part of the tectonized harzburgite,
- dunite layers at the cumulate-tectonite contact,
- dunite layers of the cumulate sequence (MTA, 1966; Engin et al., 1987).

The podiform chromitite deposits are usually small in size, as in most other podiform chromite deposits (rarely >1 Mt ore), with complex structural relationships and podiform, lenticular, irregular, shapeless, and/or banded type geometries (MTA, 1966; Engin et al., 1987).

7.2 REGIONAL

The overall metallogenic setting is ophiolitic. This metallogenic province is well known and described and further details can be read in the literature. Ophiolites are tectonically emplaced at their current position and are generally very strongly deformed.

The main source of the information for this section is Uysal (2004). The area of this study is located 17 km S of the license area (Figure 7) and describes the general geology hosting the chromite mineralization, style of mineralization and chromite composition.

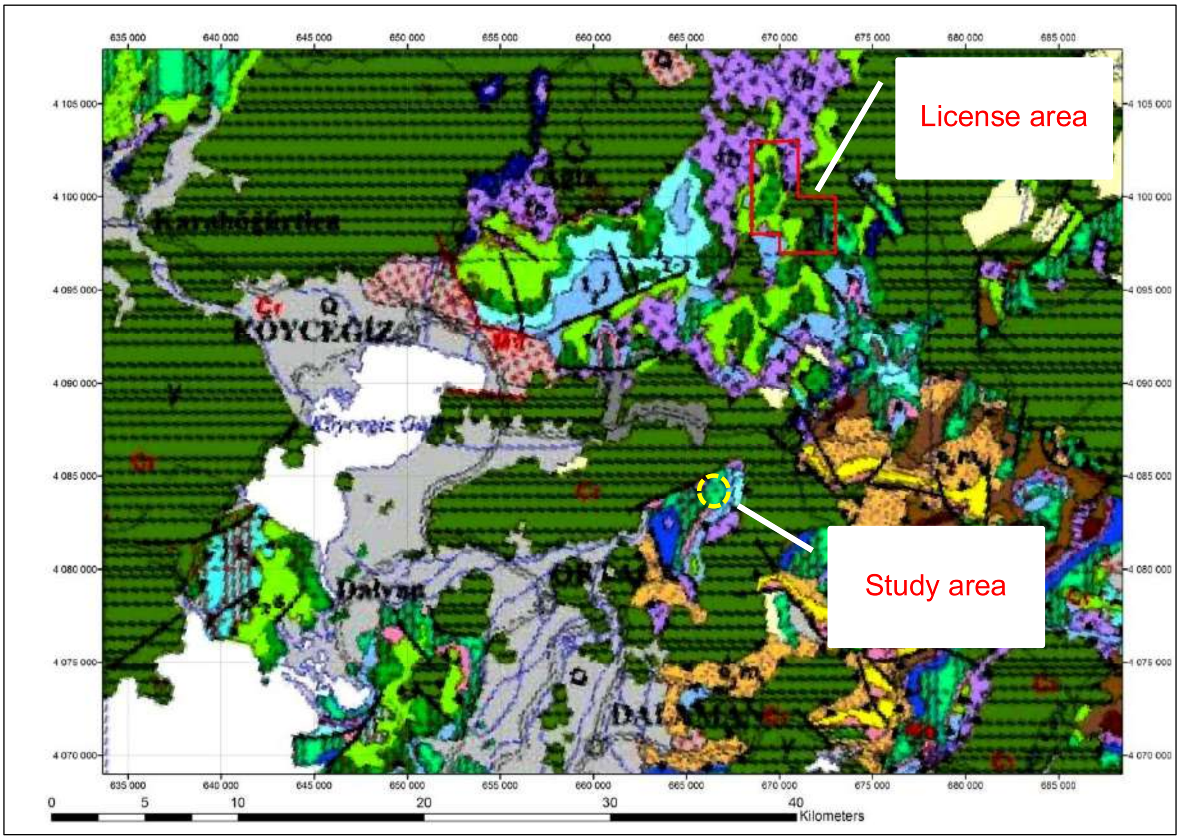


Figure 7. The study area is located around 17 km South of the license area in a similar geological setting as given in the license area (Source: MTA, 2002. Geological Map of Turkey, Scale 1:500 000).

Geology:

Ultramafic rocks in the Ortaca area are interpreted to be part of the large orogenic belt extending from the Balkans through Greece, along southern Turkey into Iran (e.g., Engin, 1972; Robertson, 2002; Uysal, 2003). The ultramafic rocks, situated within the Tauride province of Southern Turkey, have been interpreted as a peridotitic complex, presumably 88±4 to 102±4 Ma in age (Thuizat et al., 1981). It originated in a supra subduction zone setting (e.g., Thuizat et al., 1981; Robertson, 2002; Koepke et al., 2002; Uysal, 2003; Uysal et al., 2003). Beydaglari Otoctone, the Lycian nappe and the Yesilbarak nappe are essential tectonic units in the study area. Beydaglari Otoctone forms a tectonic window below the Lycian nappe, and consists of Upper Paleocene–Eocene neritic limestones (Disitastepe Formation) and Lower Miocene limestones, marls and claystones (Sinekci Formation). The Yesilbarak nappe, tectonically overlying Beydaglari Otoctone, is composed of Upper Lutetian-Lower Burdigalian turbiditic sandstones and shales (Elmaly Formation). The Lycian nappe is represented by the Tavas, Bodrum, Gulbahar and Marmaris ophiolites in the study area. The Tavas, Bodrum and Gulbahar nappes are represented by Carboniferous to Middle Eocene, Upper Triassic to Upper Cretaceous and Jurassic to Cretaceous rocks, respectively, while the Marmaris ophiolite consists of a Cretaceous peridotite (e.g., Senel, 1997)

The Ortaca ultramafic rocks are typically moderately to severely depleted harzburgites, as is the case for many other ophiolites around the world (Pearce et al., 1984; Roberts, 1988; Leblanc and Nicolas, 1992; Uysal, 2003). They occur as masses of highly sheared tectonites ranging in size from a few meters to several hundred meters and are intruded by dolerite dikes. The tectonites are composed of variably serpentinized harzburgite and dunite, containing podiform chromitites enclosed in dunitic rocks. The harzburgitic and dunitic rocks show porphyroblastic textures with millimetre-sized porphyroclasts of brecciated olivine and, kink-banded and plastically deformed orthopyroxene. Modally less than 5 vol.% clinopyroxene is present as small crystals and exsolution lamellae in orthopyroxene.

Spinels are typically reddish-brown colored and display corroded or elongated texture.

Mineralization:

The shape of the Ortaca chromitites (OC) is lens-like, the ore bodies having relatively sharp contacts with the surrounding dunites and harzburgites. In some cases, the boundaries of the ore bodies with the enclosing dunite are diffuse. Surrounding dunites and harzburgites are poor in spinel (less than 3 vol.%), which is small in size (<1mm diameter). The size of individual ore bodies and pods ranges from 0.5 to 8 m in thickness and to 50 m in length.

Chromite occurrences within the study area are mostly small bodies of massive, nodular and disseminated type chromitite. All of the deposits were mined for about 30 years since 1940 as a small source of high-Cr chromite. None of the bodies is estimated to contain more than a few thousand tons of ore. Massive chromitites are composed of subhedral chromite grains and grade into disseminated chromite in a harzburgitic and dunitic host rock. The amounts of chromite range from 50–60 vol. % in the disseminated one to 90–98 vol. % in the massive one. The interstitial matrix of the chromitites consists of olivine, serpentine minerals, accessory base metal alloys and sulphides, and arsenides. The grain size of chromite ranges from 2 to 25mm in massive ore and from 3 to 30mm in the disseminated one. Nodular ores are composed of rounded, rarely elongated aggregates of chromite in a moderately to highly serpentinized matrix. The axial ratios of chromites are 2:1 in the nodular part. The size of the nodules varies between 1 and 1.5 cm in diameter. The nodules are massive and composed of subhedral chromite grains usually <1 mm in diameter.

Mineral composition:

Chromites are usually fresh. In massive chromitites, chromite crystals display fracturing and brecciation. Podiform chromite deposits from Ortaca are characterized by chromites with Cr# [Cr/(Cr+Al)] usually from 0.73 to 0.81 and Mg# [Mg/(Mg+Fe2+)] from 0.65 to 0.71, although one chromitite sample contains chromite with Cr# of 0.61. Selected microprobe analyses of chromian spinels are presented in Table 1. Chemical zoning is very limited; locally a thin rim of ferrit-chromite along grain boundaries and cracks is developed. With exception

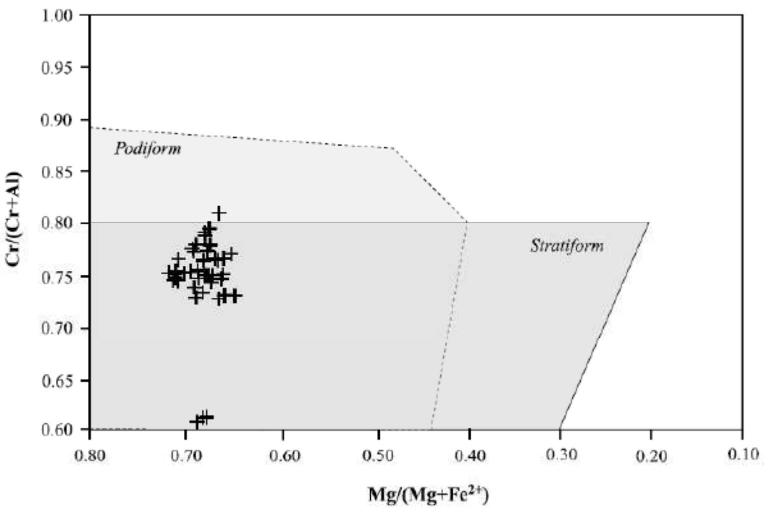


Figure 8. Composition of chromite in the Cr/(Cr+Al) vs. Mg/(Mg+Fe2+) diagram. Fields defined for podiform (dashed line) and stratiform (solid line) chromitites according to Dick and Bullen (1984).

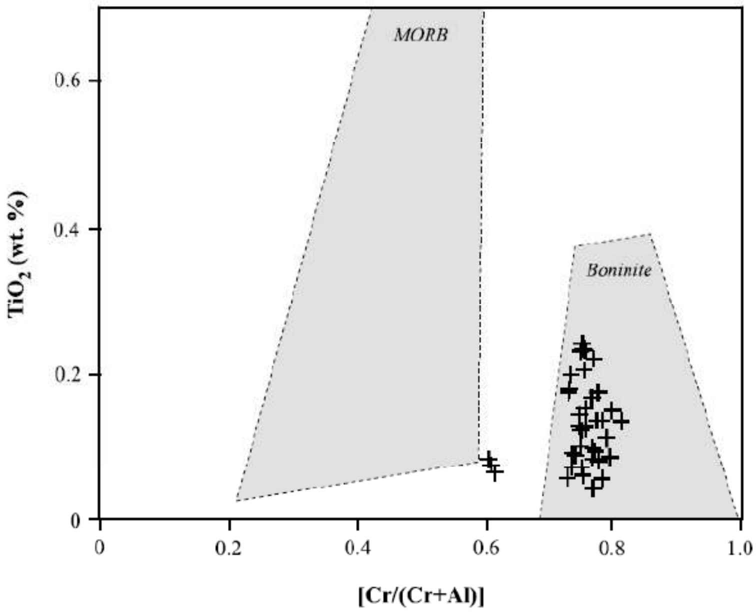


Figure 9. TiO2 vs. Cr# [Cr/(Cr+Al)] ratio of chromites of the Ortaca chromitites, showing the distinct fields for boninites and MORB (mid-ocean ridge basalts) (after Dick and Bullen, 1984; Arai, 1992).

of one sample which is high in Al, the analysed chromites are all high in Cr. The composition of chromites from the OC deposits vary within the following ranges:

Cr_2O_3: 48.90–61.42 wt.%,

Al_2O_3: 9.79–21.33 wt.%,

MgO: 13.45–15.09wt.%,

FeO: 10.74–13.60 wt.%,

Fe_2O_3: 1.81–4.44 wt.%.

Minor amounts of TiO_2 (0.04–0.24 wt.%) and MnO (0.15–0.28 wt.%) were also detected. The diagram Mg/(Mg+Fe^{2+}) vs. Cr/(Cr+Al) indicates that almost all samples plot within the overlapping field for podiform and stratiform type (Figure 8). On a diagram of Cr/(Cr+Al) vs. TiO_2, most chromitites plot in the boninitic field; only three analyses of one chromitite sample plot near the MORB field as defined by Dick and Bullen (1984) and Arai (1992) (Figure 9).

The conversion factor from Cr to Cr_2O_3 is 1.462.

7.3 PROPERTY

This section is largely based on the site visit by Dr. Bernd Teigler (QP) in 2016, during which the following salient observations have been made:

- Typical rock types of an ultramafic sequence in an ophiolite complex are wide-spread.
- All lithologies are severely tectonised.
- Serpentinisation of the ultramafic units is common. The degree varies.
- Clearly identified lithologies are serpentinite after dunite and harzburgite, chromitite and gabbro.
- Sedimentary rocks and massive chromitite have been observed as scree only.

Two types of chromite mineralisation have been observed. As clarification the present writer uses the term massive chromitite for rocks with more than 50 % chromite indicating a Cr_2O_3-content of more than 25 %. Rocks with less than 50 % chromite are called chromitiferous ultramafic (see Figure 10). If chromite is present as an accessory phase the term "dissemi-nated" is used.

Both types of mineralization appear to be of economic interest. Non-systematic rock grab sampling has indicated Cr_2O_3-contents of up to 46 %. It appears that the massive chromitite is only weakly to moderately magnetic in contrast to the heavily serpentinised ultramafic hosts.

A second location with massive chromitite float, located at the NE corner of the license was also briefly visited, but did not reveal any additional information. There are further chromite showings in the license reported.

Harzburgite, serpentinised

Massive chromitite

Chromitiferous ultramafic, serpentinised

Figure 10. Lithologies observed. Top right: contact between ultramafic and gabbroic rocks. Top left: contact between ultramafic and strongly altered lithology.

8 EXPLORATION

Site visit showed that the license indicates encouraging evidence to continue with exploration. Showings with economically interesting values have already been discovered and sporadic exploitation has occurred. Based on the field visit and the work done by other workers a decision to invest in more exploration was recommended.

Following-up geological mapping of parts of license 200712070 Otmanlar (Mugla) was successfully performed by Hasat's staff and several chromite mineralized prospects identified. A large proportion of the license area has not yet been mapped.

Further geological details were recognised during the geological mapping by Hasat's staff during November and December 2016. Mapping along selected lines and of two additional road cuts was done during this period of time. Focus was on already identified chromite mineralization and its geological/structural setting. Along the lines waypoints or points of observations were marked and all relevant data recorded together with structural measurements. A total of 293 points of observations are available along the lines A – R and road cuts 1 and 2.

All data have been transferred into excel spreadsheets, so that the use in a GIS software was possible, which assisted the planning of the next phase of trenching and drilling.

Geological mapping covered sedimentary as well as igneous lithologies. The latter are the hosts to the chromite mineralization. Lime- and dolostones were observed to cover major proportions of the license area and appear to be associated mostly with reversed faulted sections in the S and N part of the license. They are underlain by ophiolitic lithologies, viz. massive ultramafic and mafic rocks (dunite, clinopyroxenite, chromitite and gabbro). All primary ultramafic lithologies are severely serpentinised and primary textures are very often completely overprinted by serpentinisation thus hampering unequivocal identification.

Figure 11 shows the results of the geological mapping, while Figure 12 displays the geological legend. Hasat's staff have observed eight locations, which may indicate chromite mineralization, volume, tonnage or grade cannot be gauged from mapping results.

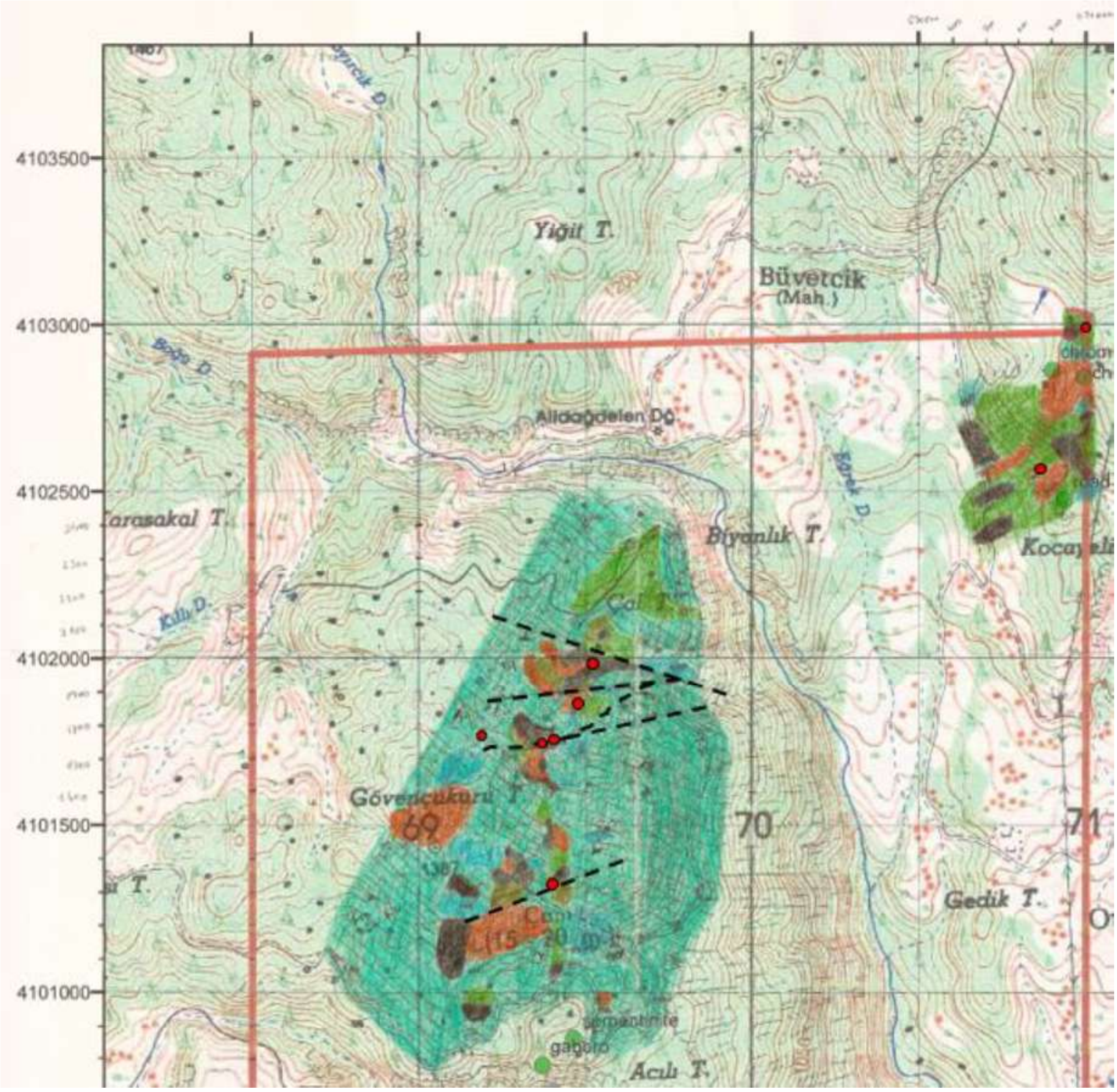


Figure 11: Results of the geological mapping (chromite - red dots and probable faults - dashed lines).

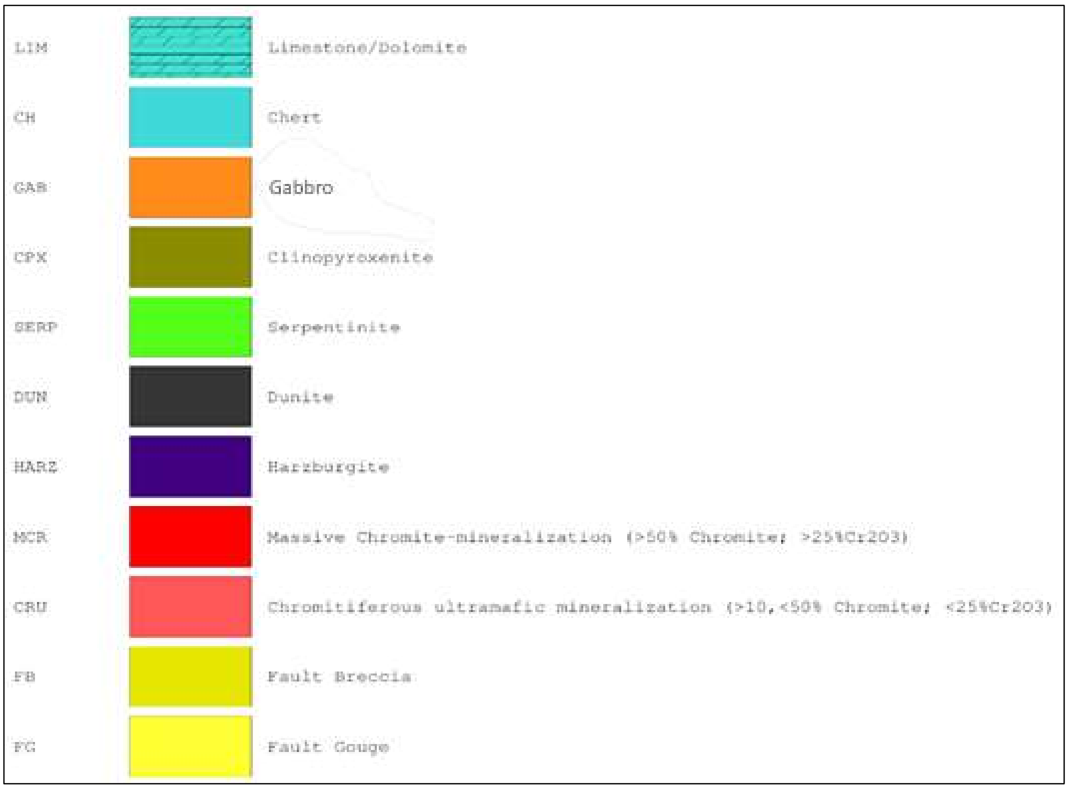


Figure 12: Lithological legend.

Based on these results, DMT recommended a full interpretation and planning of a trenching/drilling programme to locate the chromite mineralization in situ and to test any depth continuation of mineralization with the main objective to develop a resource.

The results of geological logging of 8 drill holes, drilled until end of 2017, confirmed depth continuity of chromite mineralization at 4 locations. Preliminary wireframes had been modelled resulting in appr. **58 000 t** of chromitiferous rock. Results of 17 pilot samples looked promising averaging appr. **30 % Cr_2O_3.** These results were reported in a TR entitled “Preliminary Estimate on the Mineral Potential and Resources for Chromite in License 200712070, Mugla Province, Turkey” prepared by DMT in December 2017.

Based on these early results, DMT planned, implemented SOPs including a sampling programme in December 2017 to achieve a representative data basis for bulk density and relevant chemical concentrations with the objective to upgrade the mineral potential to a resource.

9 DEPOSIT TYPES

A typical sequence of an ophiolitic sequence is shown in Figure 13.

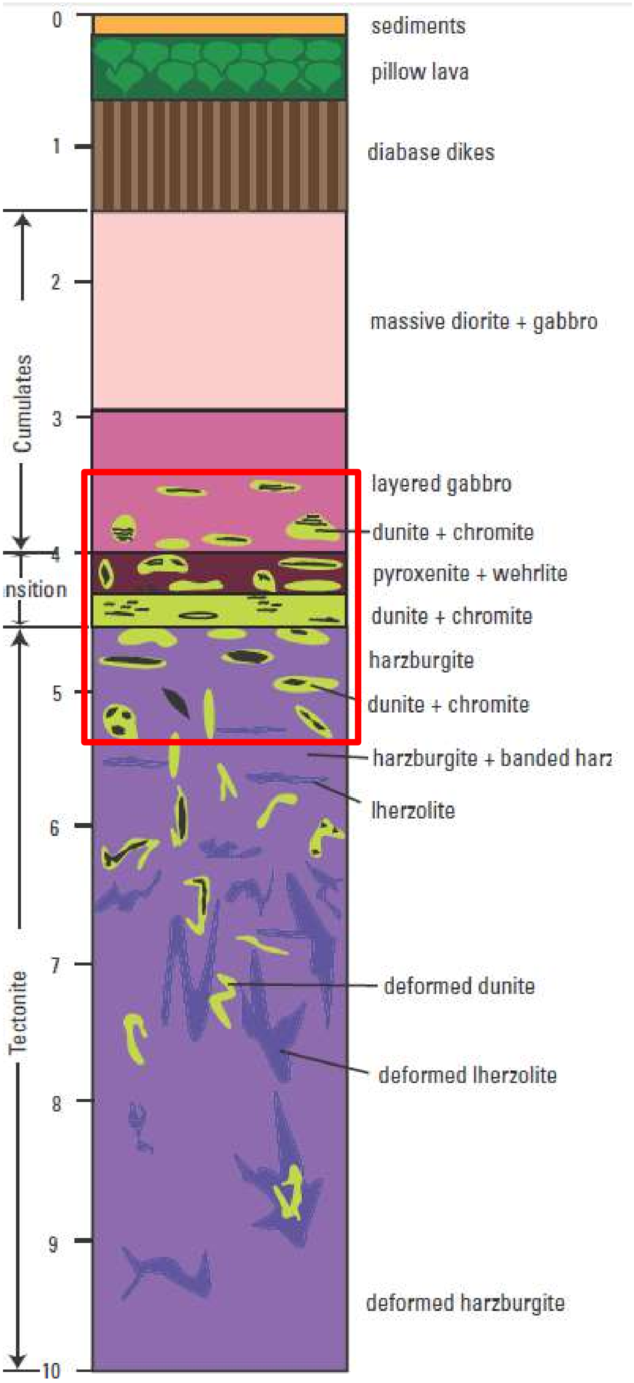


Figure 13. Typical lithological column of an ophiolite sequence (source: USGS). The red square indicates the interpreted stratigraphic position of the lithologies of interest in license 200712070.

10 TRENCHING AND DRILLING

Drilling after trenching was planned to test the depth continuation of 7 chromite showings identified within the mapped license area. In situ outcrops of chromitite or chromitiferous lithologies have not been found, hence trenching was supposed to be executed in order to define the general orientation of the chromite mineralization. Alternatively, scissor drilling was recommended to ensure intersections.

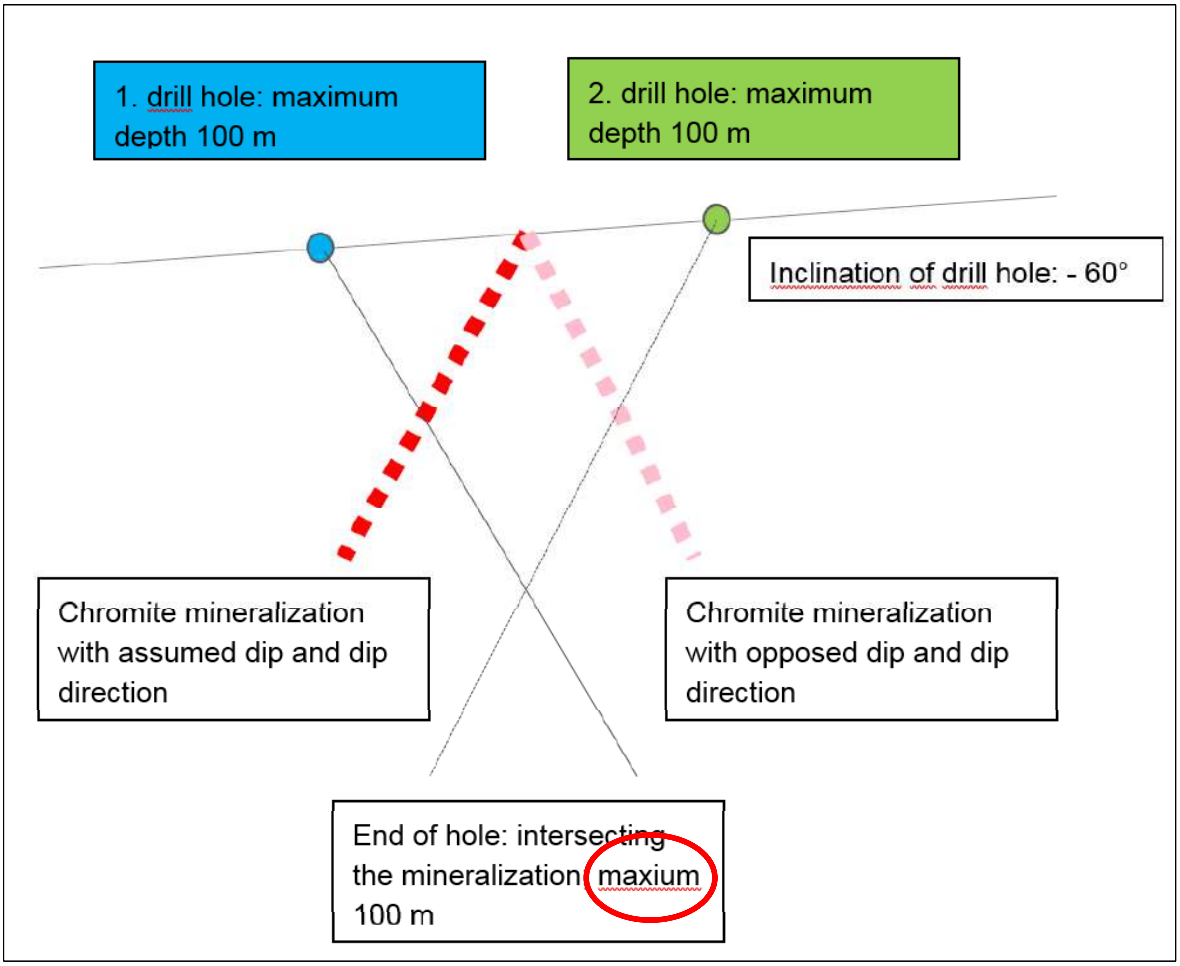


Figure 14. Proposed scheme of exploration drilling.

During implementation of the SOPs in December 2017, further 5 drill holes were planned to confirm the geological and grade continuity of the two main bodies AB and C.

Up to date 5 trenches (77,6 m) and 15 drill holes (764 m) have been opended and drilled, respectively. The below given table summarizes the location and orientation of the trenches and drill holes.

Table 2. Summary of drill holes and trenches

Hole ID	Easting	Northing	Elevation	Inclination	Azimuth	End of hole
DDH_M_001	669498.00	4102001.00	1242.00	-60.00	55.00	40.00
DDH_M_002	669533.00	4101981.00	1237.00	-60.00	285.00	100.00

DDH_M_003	669451.00	4101868.00	1252.00	-60.00	120.00	30.00
DDH_M_004	669498.00	4101854.00	1243.00	-60.00	292.00	100.00
DDH_M_005	669412.00	4101766.00	1268.00	-60.00	227.00	40.00
DDH_M_006	669378.00	4101737.00	1279.00	-60.00	47.00	40.00
DDH_M_007	669390.00	4101764.00	1272.00	-60.00	228.00	45.00
DDH_M_008	669360.00	4101732.00	1284.00	-60.00	48.00	30.00
DDH_M_009	669311.00	4101771.00	1289.00	-60.00	227.00	33.00
DDH_M_010	669300.00	4101763.00	1293.00	-60.00	31.00	28.00
DDH_M_011	669388.00	4101349.00	1341.00	-60.00	133.00	23.00
DDH_M_012	669417.00	4101313.00	1332.00	-60.00	315.00	25.00
DDH_M_015	669309.00	4101797.00	1289.00	-60.00	227.00	80.00
DDH_M_016	669288.00	4101769.00	1298.00	-60.00	52.00	80.00
DDH_M_017	669399.00	4101768.00	1275.00	-15.00	218.00	70.00
T_M_001	669507.00	4101993.00	1267.00	9.10	140.10	15.82
T_M_002	669456.00	4101862.00	1234.00	21.30	191.20	16.43
T_M_003	669405.00	4101759.00	1273.50	-6.20	232.50	31.60
T_M_004	669309.00	4101773.00	1312.00	41.50	26.30	6.00
T_M_005	669401.00	4101342.00	1330.00	0.00	50.10	7.81

Table 3 summarizes the availability on data sourced from drill holes and trenches.

Table 3. Summary of data available for drill holes and trenches (EODH: end of drill hole, SURV collar survey, DHSU: down-hole survey, DIAM: diameter of hole, GEOL: geological logging, GEOT: geotechnical logging, MINL: Logged chromite mineralisation [m], QUAL: meterage of samples assayed for element concentrations, DENS: meterage of samples determined for density); 'X' means data for complete hole or trench are available

DHID	EODH	SURV	DHSU	DIAM	GEOL	GEOT	MINL	QUAL	DENS
DDH_M_001	40.00	X	X	X	X	X			
DDH_M_002	100.00	X	X	X	X	X			
DDH_M_003	30.00	X	X	X	X	X			
DDH_M_004	100.00	X	X	X	X	X			
DDH_M_005	40.00	X	X	X	X	X	18.5	16.0	16.0
DDH_M_006	40.00	X	X	X	X	X	5.7	8.0	8.0
DDH_M_007	45.00	X	X	X	X	X	14.7	17.0	17.0
DDH_M_008	30.00	X	X	X	X	X	6.2	9.0	9.0
DDH_M_009	33.00	X	X	X	X	X	3.8	5.0	5.0
DDH_M_010	28.00	X	X	X	X	X	4.8	6.0	6.0
DDH_M_011	23.00	X	X	X	X	X	5.2	6.0	6.0
DDH_M_012	25.00	X	X	X	X	X	2.4	4.0	4.0
DDH_M_015	80.00	X	X	X	X	X	42.8	8.0	8.0
DDH_M_016	80.00	X	X	X	X	X	37.6	16.0	16.0

DDH_M_017	70.00	X	X	X	X	X	22.9	17.0	17.0
T_M_001	15.82	X	X						
T_M_002	16.43	X	X						
T_M_003	31.60	X	X						
T_M_004	6.00	X	X						
T_M_005	7.81	X	X						

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

SOPs were designed and implemented in December 2017. All work of data acquisition was done or re-done following these SOPs. For details about the procedures applied see document: 'Data Acquisition Manual – Standard Operating Procedures on the Chromite Project for License 200712070, Mugla Province, Turkey' finalized by DMT in January 2018.

Sampling was done based on integer meter marks considering core losses. Core losses were allocated to the end of each drill run or allocated to distinct zones, when possible. The samples were taken in 1 m intervals starting two metres above visual mineralization in the hanging wall host rocks and ending two metres below visual mineralization in footwall host rocks. In each batch of 10 samples 4 QA/QC samples were inserted; two CRM samples to control overall laboratory work, one blank sample to control sample preparation (contamination) in the laboratory and one core duplicate to control sample preparation (cutting with diamond-bladed saw) in the field. Moreover, the laboratory made a second split duplicate for each 10th field sample to control sample preparation (sample reduction) in the laboratory.

In total, 156 samples (112 samples from drill holes) were dispatched to laboratory ARGETEST, which is certified to ISO Quality Management System ISO 9001: 2008. All samples were sent as half core, despite the core duplicates (quarter core). All samples were measured for density using laboratory code SGR-02 (water replacement method for complete unbroken half-core sample; see Figure 15). Thereafter, samples were prepared using code PREP-03 and assayed using code XRF-WR01 (see Figure 16 andFigure 17)

SGR02 Specific Gravity Core, SG: Analysis can be conducted on whole samples of rock or core in irregular shape. Specific gravity is determined by measuring the displacement of water. A sample is dried at 105°C to remove all moisture then allowed to cool. The sample of the rock or drill core is first weighed in air then submerged in a container of water. Measure the mass of immersed sample and record the weight then calculate for specific gravity. Sample can also be coated with a thin layer of hot wax (**SGR04**) so that any soluble material in the core or rock is not in contact with the water.

Density if reported will be a conversion from specific gravity

where: Density = SG x Density of water

Density of the sample will be determined based on the temperature at the time of easurement.

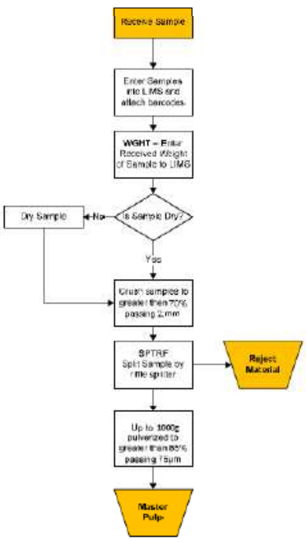
TEMPERATURE °C	DENSITY OF WATER (g/cm^3)
19	0.998405
20	0.998203
21	0.997992
22	0.997770
23	0.997538
24	0.997296
25	0.997044

Figure 15. SGR02 - bulk density determination as described by ARGETEST.

PREP 03

Package Description	Crushing and Pulverizing
Samples Digestion	None
Instrumentation Method	None
Applicability	Rock and Drill Core

METHOD DESCRIPTION



Received samples are entered into the Laboratory Information Management System (LIMS), weighed, dried and crushed to ensure that greater than 70% pass a 2mm sieve. A 1000g split of the crushed material is then pulverized to greater than 85% passing a 75µm sieve.

At random intervals and at the start of each shift QC testing is completed on both crushed and pulverized material to ensure that the above specifications are met.

The flowchart to the left describes the standard practice. Additional splits of the pulp or reject may be taken at client request and to prepare internal Prep QC duplicates.

By default if clients have not specified otherwise Master Pulps are retained and storage charges apply. Rejects are stored for 90 days and are then disposed of at the client's cost.

Figure 16. PREP03 - sample preparation as described by ARGETEST.

XRF-WR01

Package Description	Whole Rock by XRF
Samples Digestion	Press Pellet
Instrumentation Method	X-ray Spectrometer
Applicability	Sediment, Soil, Non-mineralized Rock and Drill Core

The WR01 package is commonly used for rock characterization and is not susceptible to incomplete dissolution and matrix effects as the wet methods are. The WR01-X package reports single elements by fusion XRF.

METHOD DESCRIPTION

A predetermined amount of sample is roasted to determine the loss on ignition (LOI). A second Split of sample dried at 105°C sample is then processed under high pressure. Press pellet discs are analyzed by XRF.

ELEMENT	DETECTION LIMIT	UPPER LIMIT
SiO_2	0.01	100
Al_2O_3	0.01	60
Fe_2O_3	0.01	90
CaO	0.01	55
MgO	0.01	60
Na_2O	0.01	50
K_2O	0.01	50
MnO	0.01	90
TiO_2	0.01	50
P_2O_5	0.01	40
Cr_2O_3	0.01	45
BaO	0.01	65
SO_3	0.01	60
SrO	0.01	50
LOI	0.10	-

Figure 17. XRF-WR01 - chemical analysis on pressed powder pellets as described by ARGETEST.

PDF assay certificate and a corresponding Excel file was sent from ARGETEST directly to DMT via email.

12 DATA VERIFICATION

Data verification was done on several levels, which are described in detail below.

12.1 SITE VISITS

A visit inspecting the chromite showings in the license area has been done in 2016 by Dr. Bernd Teigler, who is a competent/qualified person registered at SACNASP.

A visit for implementation of SOPs and training of on-site personal has been done in December 2017 by Florian Lowicki who is a competent/qualified person registered at SACNASP. Florian Lowicki visited the core storage yard in the village Alibeyli, around 70 km from Izmir and around 400 km from the license area. All drill core is stored there and will be further logged, sampled and prepared before dispatch to ARGETEST in Izmir.

12.2 STANDARD OPERATING PROCEDURES (SOPS)

SOPs procedures set-up specifically for this project have been implemented and trained in December 2017. The SOPs include a comprehensive QA/QC management to enable DMT to control the quality and representativeness of acquired data, e.g. meter marking was controlled by photographs prior cutting, sample recovery was noted, weights of dispatched and received sample were recorded and QA/QC sample sets were included in each batch of 10th samples (see details in chapter: ‘Sample Preparation, Analyses and Security’)

The client has contracted Aktif Yerbilimleri A.S. (AY) to manage the exploration programme in the Mugla license. This company is specialized on several ground activities for mining and civil infrastructure. AY is doing all survey work and all work related to geological logging, sampling, sample preparation and sample dispatch.

All laboratory work is done by ARGETEST, a laboratory certified to ISO Quality Management System (ALS: ISO 9001:2008). ARGETEST provided results of bulk density and assay data for each sample submitted.

12.3 AVAILABILITY OF DATA

Up to date, 5 trenches (77,6 m) and 15 drill holes (764 m) have been cut and drilled, respectively. The following data sets are available for 15 drill holes (for details see Table 3 in chapter: ‘Trenching and Drilling):

- Collar location and orientation
- Hole deviation
- Drill diameter
- Core recovery
- RQD: geotechnical rock quality data
- Geological logs distinguishing host rocks and several grades of chromite mineralization
- Sample list
  1 m marking, sample recovery, portion and degree of chromite mineralisation and QA/QC samples plus information about name of laboratory and methods to be applied for density determination on unbroken half-core, sample preparation and chemical analysis.
- Assay certificates as PDF signed by ARGETEST and corresponding Excel file including the bulk density in [t/m^3] and following chemical parameters in [%]: Al_2O_3, BaO, **CaO**, **Cr_2O_3**, Fe_2O_3, K2O, LOI, MgO, MnO, Na_2O, P_2O_5, **SiO_2**, SO_3, SrO, TiO_2
- Coordinates and elevations of drill hole collars were provided by the client to DMT in map datum UTM ED50 Zone 35 Northern Hemisphere.

License coordinates were provided by the client to DMT in map datum UTM ED50 Zone 35 Northern Hemisphere. The license certificate was provided to DMT as well.

A detailed geological map of the license area scaled to 1:25 000 has been provided by the client to DMT. This map was given in map datum UTM ED50 Zone 35 Northern Hemisphere.

A topographical map scaled to 1:25 000 was provided by the client to DMT in map datum UTM ED50 Zone 35 Northern Hemisphere.

12.4 DATA PREPARATION AND MANAGEMENT

All data of drilling and trenching has been compiled to a Relational Database Management Software (RDBMS), Microsoft Access, in order to be checked for consistency and errors. Thereafter data has been transferred to the modelling software Geovia Surpac to visualize the drill holes in a 3D environment. A digital terrain model (DTM) was also added to Surpac and visualized. Topographic, geological and geophysical maps have been draped onto the DTM. Available collar locations were validated against the DTM, surface topographic features, geology mapped and license boundaries.

All these data are the underlying basis for the geological interpretation and wireframe modelling.

12.5 DRILLING LOCATION AND ORIENTATION

All surveying work is done by AY. All holes and trenches have been surveyed at collar position and down-the-hole, in order to identify any deviation from the planned path. A full topographic survey is planned in the near future to support planning of mining activities. Currently, a comparison of surveyed collar positions with the ASTERDEM DTM shows discrepancies of 3 meters for some of the holes.

At this early stage of work, the available DTM is appropriate. However, for a follow-up mine plan a detailed survey has to be available in order to consider morphology adequately.

12.6 DRILLING RECOVERY AND DIAMETER

Drilling was aimed at maximising sample recovery in order to ensure representative nature of the samples. The overall core recovery is 86 %, and 88 % for 11 holes, which intersected chromitiferous rock. The core recovery within chromitiferous rock is 76 % (165 m: 153 m NQ and 12 m HQ).

Table 4. Core recovery and diameter in chromitiferous rock separated by interpreted bodies AB, C and D

Interpreted Body	Diameter	Metres in chromitiferous rock	Core recovery [%]
AB	HQ	4.3	83
AB	NQ	63.7	71
AB	SUBTOTAL	68.0	72
C	HQ	5.6	90
C	NQ	83.4	77
C	SUBTOTAL	89.0	78
D	HQ	1.7	70
D	NQ	5.9	81
D	SUBTOTAL	7.6	78
TOTAL		164.6	76

The issue of increased core recoveries has been identified and will have to be considered in any follow-up drilling. However, a sample bias caused by lost core could not be observed from following cross plots of bulk density and Cr_2O_3 vs. core recovery.

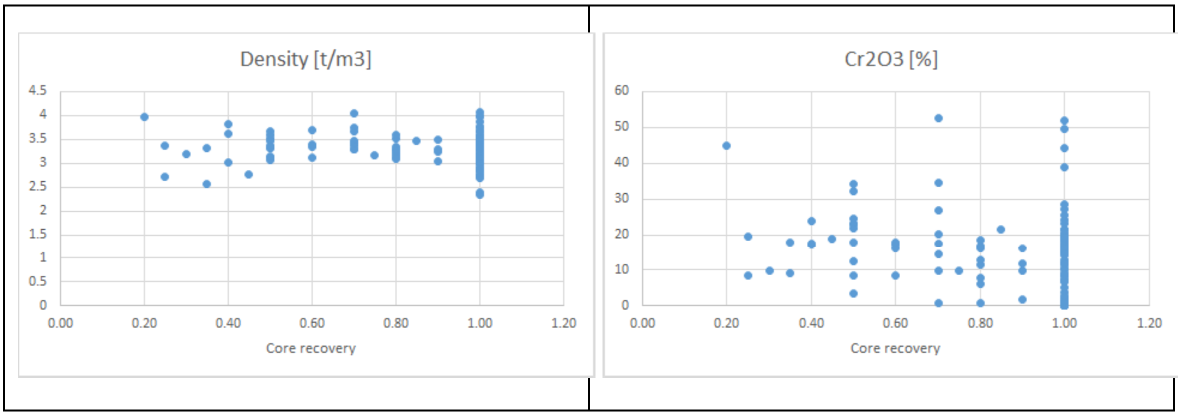


Figure 18. Cross plots of bulk density and Cr_2O_3 vs. core recovery.

12.7 GEOLOGICAL LOGGING

Core samples have been geologically and geotechnically logged to a level of detail to support geological modelling. Logging results have been checked against drill core and core photographs. Based on these results, logging is assessed as qualitative to be used for modelling.

Table 5, Table 6 and Table 7 lists the total lengths and percentages of the relevant rock types intersected and logged.

Table 5. Lengths and percentages of the relevant rock types

Major rock type	Minor rock type	Meters of intersection [m]	Percentage of intersection [%]
dunite	chromitite	164.6	21.5
gabbro		3.1	0.4
gabbro	gabbro breccia	119.4	15.6
gabbro breccia	gabbro	217.4	28.5
gabbro breccia	serpentinite	15.9	2.1
lherzolite	dunite	10.2	1.3
serpentinite	gabbro breccia	212.3	27.8
soil		6.1	0.8
soil	gabbro	3.1	0.4
soil	gabbro breccia	10.9	1.4
soil	serpentinite	1.0	0.1
TOTAL		764	

Table 6. Lengths and percentages of chromitiferous rock

Major rock type	Minor rock type	Meters of intersection [m]	Percentage of intersection [%]
dunite	chromitite	164.6	33.3%
gabbro	gabbro breccia	42.3	8.6%
gabbro breccia	gabbro	84.1	17.0%
gabbro breccia	serpentinite	15.9	3.2%
lherzolite	dunite	10.2	2.1%
serpentinite	gabbro breccia	162.2	32.8%
soil		4.3	0.9%
soil	gabbro breccia	9.4	1.9%
soil	serpentinite	1.0	0.2%
TOTAL		**494**	

In total 11 of 15 drill holes intersected overall 165 m massive chromitite mineralization (Table 7).

Table 7. Logging results for chromite mineralization

Hole ID	From	To	Interval	Lith major	Lith minor	Degree of mineralization	Interpreted Body
DDH_M_005	21.5	40	18.5	dunite	chromitite	moderate-strong	AB
DDH_M_006	34.3	40	5.7	dunite	chromitite	moderate-strong	AB
DDH_M_007	30.3	45	14.7	dunite	chromitite	strong-massive	AB
DDH_M_008	23.8	30	6.2	dunite	chromitite	strong-massive	AB

DDH_M_009	29.2	33	3.8	dunite	chromitite	strong-massive	C
DDH_M_010	23.2	28	4.8	dunite	chromitite	strong-massive	C
DDH_M_011	17.8	23	5.2	dunite	chromitite	strong-massive	D
DDH_M_012	22.6	25	2.4	dunite	chromitite	strong-massive	D
DDH_M_015	37.2	80	42.8	dunite	chromitite	strong-massive	C
DDH_M_016	42.4	80	37.6	dunite	chromitite	strong-massive	C
DDH_M_017	36.9	59.8	22.9	dunite	chromitite	strong-massive	AB

12.8 SAMPLING

In total, 11 holes intersecting chromite mineralization have been representatively sampled resulting in 112 samples taken. Samples were taken on regular intervals of 1 m considering core losses. The overall sample recovery is 83 %. In total, 112 m were sampled.

In summary, 97.3 m were sampled from 164.6 m chromite-bearing rock implying that 67.3 m of chromite-bearing rock were not sampled mainly due to visually low mineralisation, especially in DDH_M_015 and DDH_M_016. Four samples could not be sampled due to heavy core loss (in DDH_M_005).

12.9 SAMPLE PREPARATION AND ANALYSIS

The sample weights received by ARGETEST are slightly higher than the sample weights dispatched from site, in average 60 g ranging from 10 g to 120 g. This variation does not affect the resource estimate and is probably due to the higher precision of the laboratory scales. Total sample weight of the 112 samples dispatched is 165 kg, weight received by ARGETEST is 171 kg.

All results of the used CRMs AMIS 0387 and AMIS 0388 fall within the recommended range. Hence, the analytical method applied is assessed as suitable to have produced reliable chemical concentrations of Cr_2O_3.

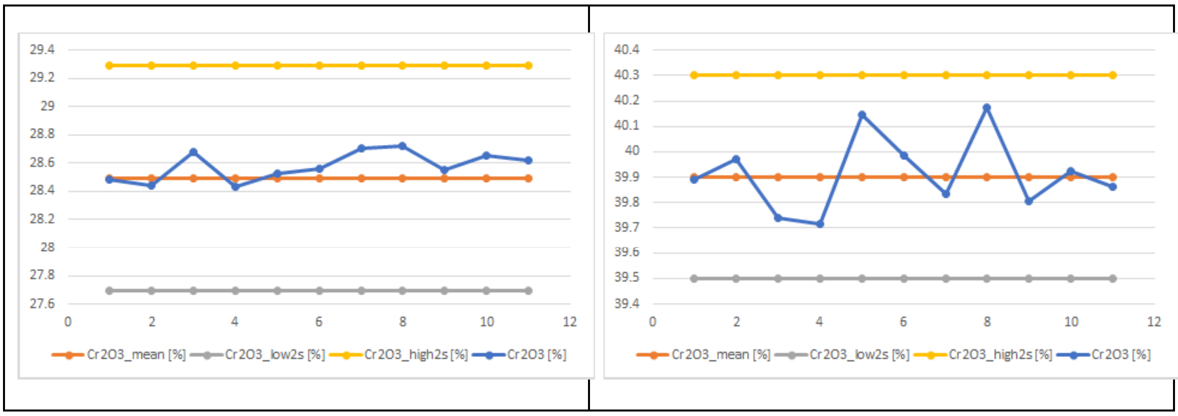


Figure 19. Assay results for CRMs AMIS 0387 (left) and AMIS 0388 (right) for Cr_2O_3.

Cr_2O_3 concentrations of all blank samples (crushed quartz) was below the detection limit. Hence the sample preparation method is assessed to be free of contamination.

Quarter core duplicates reproduced density and Cr_2O_3 with a deviation not exceeding 5 % for Cr_2O_3 and 10 % for bulk density with one exception (A-0024 and A-0025). Hence, the core cutting procedure is assessed to have produced representative results. Minor deviations may also be explained by limited variations of concentrations of chromite.

Table 8. Deviations of bulk density and Cr_2O_3 of quarter core duplicates

Batch ID	Duplicate Sample ID	Original Sample ID	Duplicate Density [t/m3]	Original Density [t/m3]	Density Dev [%]	Duplicate Cr2O3 [%]	Original Cr2O3 [%]	Cr2O3 Dev [%]
1	A-0011	A-0010	3.27	3.20	2.19	9.65	9.92	-2.70
2	A-0025	A-0024	3.65	3.29	10.94	22.97	26.85	-14.44
3	A-0039	A-0038	3.47	3.46	0.29	21.45	21.56	-0.48
4	A-0053	A-0052	3.37	3.41	-1.17	10.42	10.51	-0.91
5	A-0067	A-0066	3.26	3.03	7.59	17.87	17.50	2.10
6	A-0081	A-0080	3.05	2.98	2.35	6.78	7.02	-3.39
7	A-0095	A-0094	3.28	3.14	4.43	20.17	20.13	0.19
8	A-0109	A-0108	3.08	3.35	-8.06	0.06	0.06	-5.66
9	A-0123	A-0122	3.28	3.10	5.81	16.30	16.65	-2.11
10	A-0137	A-0136	3.18	3.50	-9.09	11.47	11.77	-2.62
11	A-0151	A-0150	3.58	3.60	-0.56	24.48	24.43	0.19

12.10 DENSITY DETERMINATION

For all samples density has been measured. A plot of densities vs. Cr_2O_3 shows some scatter and only w weak correlation is evident. It might be that variations in chemical composition of chromite causes this scatter, but more likely other parameters are responsible, like presence of magnetite and serpentine. Tests with electron micro-probe are still outstanding. However, the measured densities are in a reasonable range and representativeness is ensured due because all core material per sample was used for density determination.

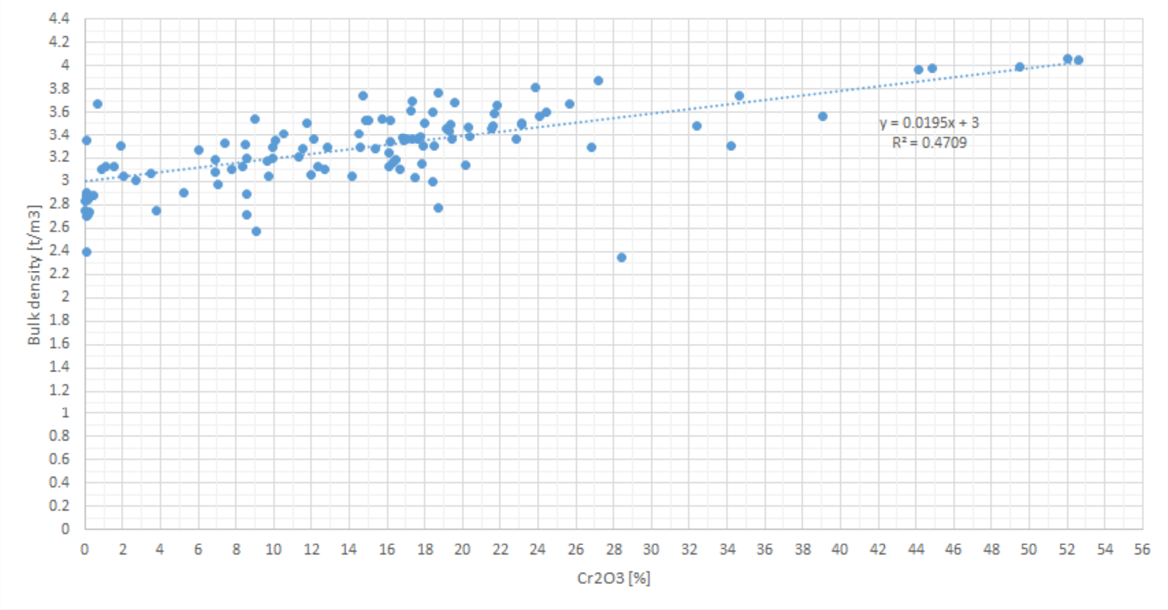


Figure 20. Cross plot bulk density [t/m^3] vs. Cr_2O_3 [%] showing a high scatter.

12.11 CONFIRMATION OF HISTORICAL DATA ACQUISITION

There is no historical data used for this estimate.

12.12 CONCESSION AREA

Hasat holds license 200712070 with the coordinates given in Table 9.

Table 9. Coordinates limiting the license area

Point ID	Easting	Northing
1	668,500	4,102,910
2	671,000	4,102,978
3	671,000	4,100,000
4	673,000	4,100,000
5	673,000	4,097,000
6	670,000	4,097,000
7	670,000	4,098,000
8	668,500	4,098,000
9	668,500	4,098,500

The license certificate was also provided to DMT. An independent validation on the license and ownership status has not been done by DMT at this stage.

T.C.
ENERJİ VE TABİİ KAYNAKLAR BAKANLIĞI
MADEN İŞLERİ GENEL MÜDÜRLÜĞÜ
IV. Grup İŞLETME RUHSATI

İLİ : MUĞLA
İLÇESİ : KÖYCEĞİZ
KÖYÜ : OTMANLAR
RUHSAT NUMARASI : 200712070
RUHSAT GRUBU : IV. GRUP
YÜRÜRLÜĞE GİRİŞ TARİHİ : 25.03.2014
RUHSATIN BİTİM TARİHİ : 25.03.2024
ERİŞİM NUMARASI : 3169022
RUHSAT ALANI : 1935.87 Hektar
RUHSAT SAFHASI : İşletme
RUHSAT SAHİBİ : HASAT BNO GRUP GIDA YEMEK HAYV. TEKS. İNŞ. SAN. TİC. A.Ş.
T.C. KİMLİK NO :
VERGİ DAİRE VE NO : Menemen V.D. 4580476066
ADRES : YILDIRIM MAH. KAHVE CİVARI MEVKİİ ÇANAKKALE-İZMİR ASFALTI NO:36 TÜRKELLİ MENEMEN / İZMİR

PAFTALAR n21c3

P.No	S.No	Y	X	P.No	S.No	Y	X	P.No	S.No	Y	X	P.No	S.No	Y	X
1	1	668500	4102910												
1	2	671000	4102970												
1	3	671000	4100000												
1	4	673000	4100000												
1	5	673000	4097000												
1	6	670000	4097000												
1	7	670000	4098000												
1	8	668500	4098000												
1	9	668500	4098500												

ENERJİ VE TABİİ KAYNAKLAR BAKANI A.
Muzaffer ÇOBAN
Genel Müdür Yrd.

Figure 21. Certificate of license 200712070.

12.13 DIGITAL TERRAIN MODEL

Up to date a detailed survey of topography is not yet available. For that reason, a DTM was sourced from Global Mapper software using ASTERDEM in 1arc-second resolution in map datum UTM ED50 Zone 35 Northern Hemisphere.

12.14 MINED OUT AREA

Sporadic exploitation by farmers collecting massive chromitite scree distributed on the surface has occurred. It is assessed that these limited activities have no significant influence on the estimate.

12.15 DATA QUALITY SUMMARY

DMT assesses, that the quality and quantity of data available is sufficient to state an inferred resource. The parts where chromitiferous rock was intersected but not sampled will be stated as upside mineral potential. This affects parts of drill holes DDH_M_015 and DDH_M_016.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

This is an early stage project and no mineral processing and/or metallurgical test work have been done.

14 MINERAL RESOURCE ESTIMATES

This report provides a mineral resource estimate based on a trenching and diamond drilling programme executed in license 200712070. The basis of this resource estimate is the volume of 3 wireframes modelled based on drill holes with data of assays and density. Several Cr_2O_3 cut-off grades were applied to the database. In addition, average grades and associated densities were calculated. The percentages of the remaining intervals was set in correspondence to the volume of wireframe, which again was used to calculate a bulk tonnage.

The wireframe model and estimate of this chapter are dated 22.02.2018.

14.1 GEOLOGICAL MODEL

The general concept, which underlies the wireframe interpretation is based on lens-shaped mineralized bodies (ellipsoid) with a lateral continuity along axis a (Figure 22: axis a*2) not exceeding the thickness (Figure 22: axis c*2) more than a factor of 2. For example, if two drill holes intersect chromitiferous rock in lateral distance of 20 m, the thickness was set 10 m. The continuity along axis b (longest axis) was given by the distance of chromitiferous rock at surface and drill hole contacts of chromitiferous rock in the underground.

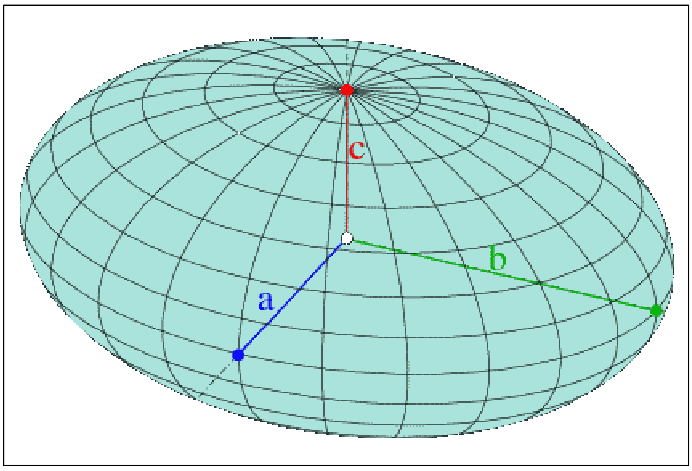


Figure 22. Ellipsoid as geometry underlying the interpretation of chromite lenses.

Up to date it is not known, if mineralized lenses show general orientations following strike and dip of the surrounding silicate rocks. Detailed geological logging from trenches will help to investigate the geometry in more detail and to shed light on continuity, short range modal composition of mineralization and types of surrounding rocks. Understanding of these parameters will generate higher confidence in the geological interpretation of the mineralization.

14.2 STATISTICAL ANALYSIS

Up to date 112 samples from drill holes are available, which are representative for the logged and interpreted mineralization. Results of basic statistics are shown in Table 10. All chemical parameters are weighted by sample length and density.

Table 10. Basic statistics

	Density	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	LOI	MgO	MnO	Na_2O	P_2O_5	SiO_2	SO_3	SrO	TiO_2
Mean	3.32	6.07	0.01	**1.97**	**15.94**	11.41	0.22	5.04	32.17	0.14	0.13	0.06	**26.98**	0.07	0.01	0.30
Std. Deviation	0.33	3.93	0.03	**4.28**	**11.56**	1.79	0.57	3.04	11.93	0.06	0.37	0.15	**8.86**	0.04	0.02	0.67
Minimum	2.35	0.29	0.01	**0.08**	**0.04**	4.14	0.01	0.21	2.16	0.07	-0.09	0.01	**3.06**	0.02	0.01	0.01
Maximum	4.06	16.96	0.24	**25.38**	**52.64**	16.93	3.48	19.48	46.22	0.36	2.18	0.91	**66.92**	0.33	0.11	3.86
Range	1.71	16.68	0.23	**25.30**	**52.60**	12.79	3.48	19.27	44.06	0.29	2.27	0.90	**63.86**	0.31	0.10	3.86
Percentiles																
10	2.88	1.89	0.01	**0.12**	**0.67**	9.77	0.01	1.81	10.91	0.10	0.01	0.01	**18.33**	0.04	0.01	0.03
20	3.06	2.37	0.01	**0.14**	**6.91**	10.40	0.01	3.17	17.03	0.10	0.01	0.01	**21.60**	0.04	0.01	0.05
30	3.14	3.56	0.01	**0.16**	**9.75**	10.76	0.01	3.68	33.08	0.11	0.01	0.01	**23.63**	0.05	0.01	0.07
40	3.28	4.29	0.01	**0.18**	**12.75**	11.18	0.01	4.00	35.60	0.11	0.01	0.01	**24.74**	0.05	0.01	0.08
50	3.34	4.94	0.01	**0.22**	**16.09**	11.32	0.01	4.22	37.19	0.12	0.01	0.01	**26.60**	0.06	0.01	0.09
60	3.39	6.02	0.01	**0.25**	**17.32**	11.65	0.01	4.86	38.42	0.12	0.01	0.01	**28.46**	0.06	0.01	0.10
70	3.49	7.47	0.01	**0.42**	**18.98**	11.94	0.01	5.53	39.29	0.13	0.01	0.01	**30.30**	0.07	0.01	0.12
80	3.57	10.65	0.01	**1.64**	**21.65**	12.24	0.09	6.66	41.26	0.18	0.07	0.04	**32.67**	0.08	0.01	0.17
90	3.74	12.02	0.01	**7.35**	**27.88**	13.39	1.00	9.36	42.87	0.22	0.49	0.16	**35.82**	0.09	0.04	0.67

Figure 23 shows frequency plots of bulk density and Cr_2O_3. It is obvious that both data sets are following more or less a normal distribution, which indicates that these data belong to a single sample population.

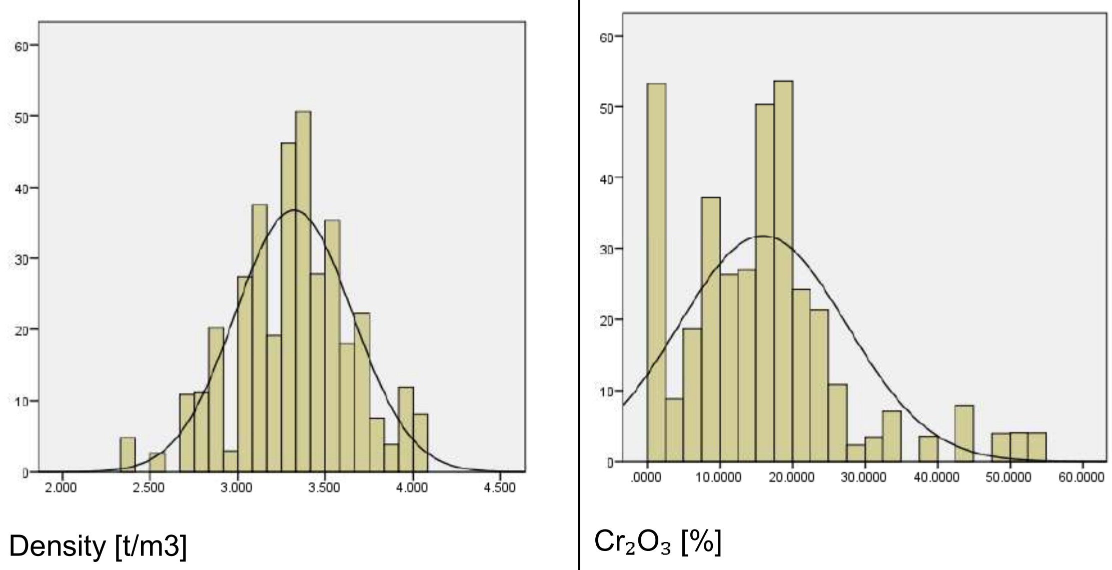


Figure 23. Frequency plots of density and relevant chemical parameters.

Table 11 shows a correlation analysis of bulk density and all chemical parameters assayed.

Table 11. Correlation analysis of all chemical parameters

		Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	LOI	MgO	MnO	Na2O	P2O5	SiO2	SO3	SrO	TiO2
Al2O3	Pearson Correlation	1														
	Sig. (2-tailed)															
	N	112														
BaO	Pearson Correlation	.388**	1													
	Sig. (2-tailed)	0														
	N	112	112													
CaO	Pearson Correlation	.568**	.402**	1												
	Sig. (2-tailed)	0	0													
	N	112	112	112												
Cr2O3	Pearson Correlation	.252**	-.289**	-.335**	1											
	Sig. (2-tailed)	0.007	0.002	0												
	N	112	112	112	112											
Fe2O3	Pearson Correlation	.222*	-0.045	-.255**	.466**	1										
	Sig. (2-tailed)	0.019	0.636	0.007	0											
	N	112	112	112	112	112										
K2O	Pearson Correlation	.636**	.509**	.659**	-.223*	-.416**	1									
	Sig. (2-tailed)	0	0	0	0.018	0										
	N	112	112	112	112	112	112									
LOI	Pearson Correlation	.274**	.374**	.820**	-.516**	-.436**	.543**	1								
	Sig. (2-tailed)	0.003	0	0	0	0	0									
	N	112	112	112	112	112	112	112								
MgO	Pearson Correlation	-.918**	-.373**	-.763**	-0.114	0.043	-.735**	-.475**	1							
	Sig. (2-tailed)	0	0	0	0.231	0.656	0	0								
	N	112	112	112	112	112	112	112	112							
MnO	Pearson Correlation	.548**	0.076	.360**	.410**	.346**	.242*	0.053	-.588**	1						
	Sig. (2-tailed)	0	0.424	0	0	0	0.01	0.578	0							
	N	112	112	112	112	112	112	112	112	112						
Na2O	Pearson Correlation	.576**	.548**	.705**	-.297**	-0.01	.531**	.498**	-.663**	.254**	1					
	Sig. (2-tailed)	0	0	0	0.001	0.916	0	0	0	0.007						
	N	112	112	112	112	112	112	112	112	112	112					
P2O5	Pearson Correlation	.598**	.447**	.625**	-.387**	.286**	.363**	.504**	-.582**	.300**	.703**	1				
	Sig. (2-tailed)	0	0	0	0	0.002	0	0	0	0.001	0					
	N	112	112	112	112	112	112	112	112	112	112	112				
SiO2	Pearson Correlation	-0.087	.236*	.291**	-.848**	-.651**	.403**	.355**	-0.104	-.291**	.302**	.268**	1			
	Sig. (2-tailed)	0.362	0.012	0.002	0	0	0	0	0.274	0.002	0.001	0.004				
	N	112	112	112	112	112	112	112	112	112	112	112	112			
SO3	Pearson Correlation	.460**	.588**	.668**	-.334**	-0.02	.450**	.580**	-.535**	.203*	.873**	.657**	.234*	1		
	Sig. (2-tailed)	0	0	0	0	0.832	0	0	0	0.032	0	0	0.013			
	N	112	112	112	112	112	112	112	112	112	112	112	112	112		
SrO	Pearson Correlation	.574**	.711**	.853**	-.429**	-0.024	.587**	.739**	-.658**	.251**	.763**	.805**	.296**	.784**	1	
	Sig. (2-tailed)	0	0	0	0	0.802	0	0	0	0.007	0	0	0.002	0		
	N	112	112	112	112	112	112	112	112	112	112	112	112	112	112	
TiO2	Pearson Correlation	.597**	.467**	.616**	-.370**	.314**	.337**	.492**	-.572**	.282**	.733**	.991**	.238*	.688**	.812**	1
	Sig. (2-tailed)	0	0	0	0	0.001	0	0	0	0.003	0	0	0.012	0	0	
	N	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112
** Correlation is significant at the 0.01 level (2-tailed).																
* Correlation is significant at the 0.05 level (2-tailed).																

14.3 INTERPRETATION OF MINERALIZED ZONES (DOMAINS)

For 4 chromitiferous showings continuity down-dip could be established by 11 drill holes (Table 13). Two showings were combined to a single wireframe named A/B, two more wireframes are named C and D (Figure 24). In consequence, three wireframes were modelled. There is no chromitite of chromitiferous ultramafic exposed on surface, i.e. only rubble and scree, and hence, orientation and contacts of assumed lens-shaped chromite-rich bodies are unknown at surface. A drill hole to drill hole interpretation was required.

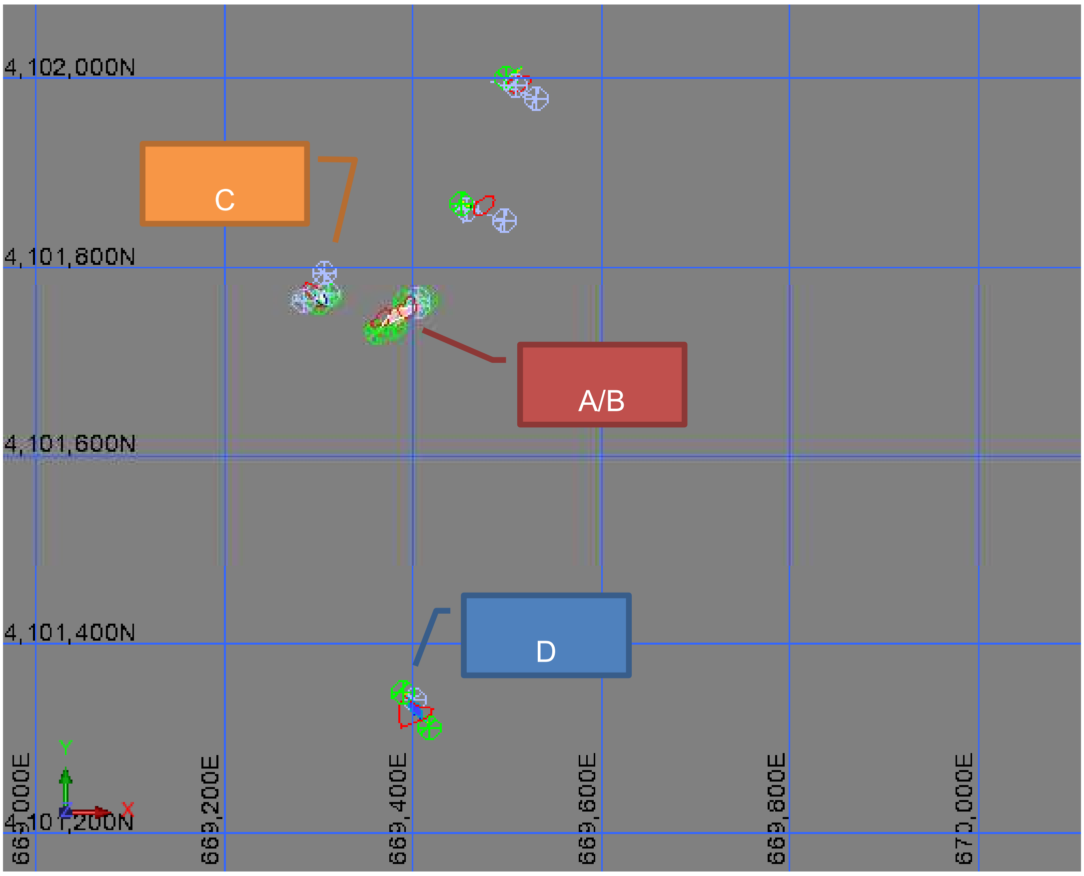


Figure 24. Location of the four ore lenses A/B, C and D modelled.

Following the SOPs, a minimum visual content (cut-off) of appr. 10 wt% chromite (appr. 5 wt% Cr_2O_3) should be within an integer meter to be taken as sample. Considering an assumed density of 4.8 t/m³ for chromite 2.8t/m³ for dunite, a minimum of 6 cm or 6 vol. % chromite mineralisation should be within an integer meter. That is the reason why not all material logged as chromite mineralisation was sampled.

Table 12. Overview about data basis (geology, chemistry, density) for interpreted bodies

Interpreted Body	Number of drill holes	Metres of logged chromite	Metres sampled and assayed intervals	Metres not sampled
AB	5	68.0	57.1	10.9
C	4	89.0	32.6	56.4
D	2	7.6	7.6	0

Wireframes were set-up connecting chromite contacts from drill hole to drill hole, when data of chemical parameters and bulk density were available. These wireframes were projected to surface and adapted not exceeding the lengths of trenches and mapped spots of chromite rubble at surface. These wireframes resulted in 3D volume bodies. In total, 3 wireframes were modelled; A/B, C and D (Figure 24). Wireframes were modelled only in the area in-between drill holes and not extended to the untested areas beyond the drilled area in order to respect the complex geometry, which requires further investigations, e.g. trenching:

- For **wireframe A/B** chromite contacts of all 5 holes were connected to a polyhedron.
- For **wireframe C** chromite contacts of all 4 holes were connected to a polyhedron.
- For **wireframe D chromite** contacts of only two drill holes were available. Hence, the distance of the chromite contacts was used as the major axis of an ellipse, the minor axis was set to the half of the major axis.

Table 13. Mineralized bodies A/B, C and D and drill holes used for wireframing

Hole ID	Depth from	Depth to	Interval	Interpreted Body
DDH_M_005	21	39	18	A/B
DDH_M_006	34	40	6	A/B
DDH_M_007	30	45	15	A/B
DDH_M_008	23	30	7	A/B
DDH_M_017	42	56	14	A/B
DDH_M_009	29	33	4	C
DDH_M_010	23	28	5	C
DDH_M_015	42	50	8	C
DDH_M_016	44	57	13	C
DDH_M_011	18	23	5	D
DDH_M_012	22	25	3	D

The interpretation concept should be amended after further drilling and trenching clarifies the geological structure of chromite mineralization.

14.4 WIREFRAME MODEL

In total, three wireframes were modelled: A/B, C and D based on 11 drill holes, for which geological, chemical and density data were available. The following volumes were calculated.

Mineralized Body	Volume [m^3]
A/B	8 970
C	10 160
D	2 960
TOTAL	22 090

The following screenshots from Geovia’s Surpac software show the wireframes from above and in 3D.

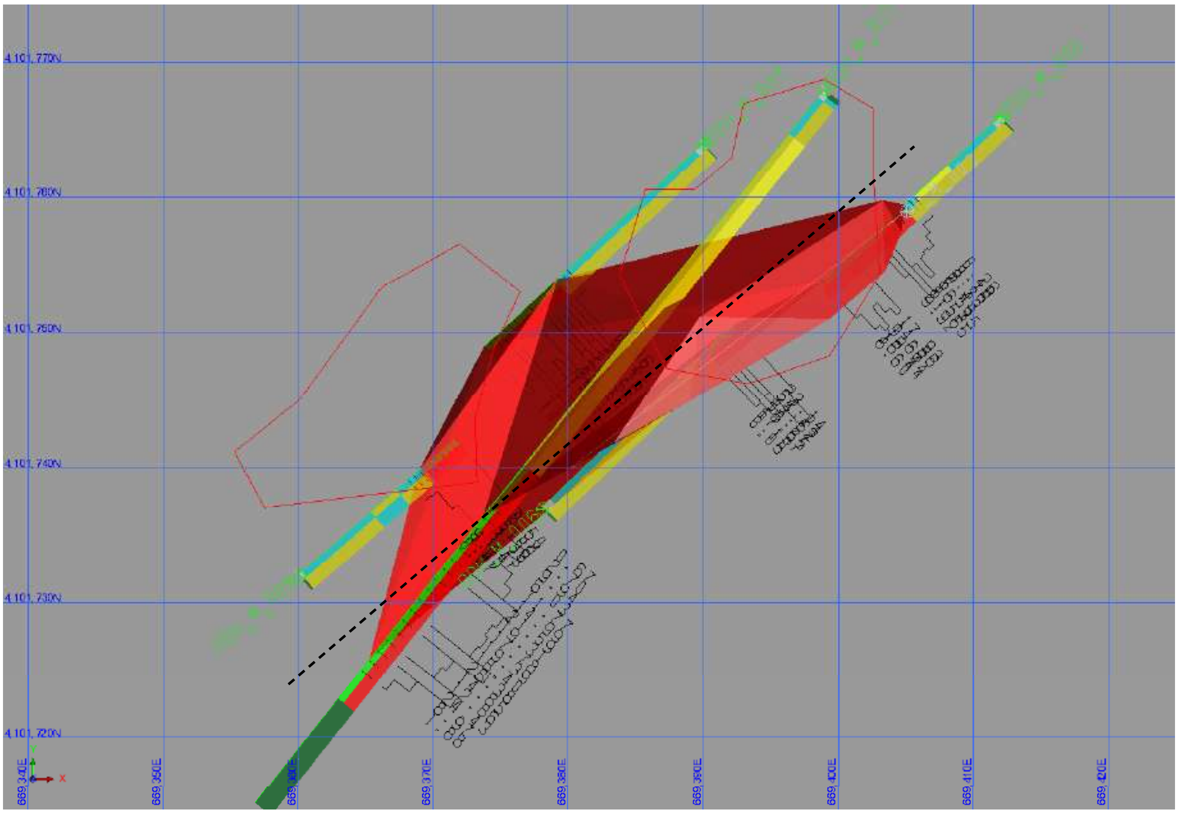


Figure 25. Wireframe A/B from above and section line (black dashed line; see next figure).

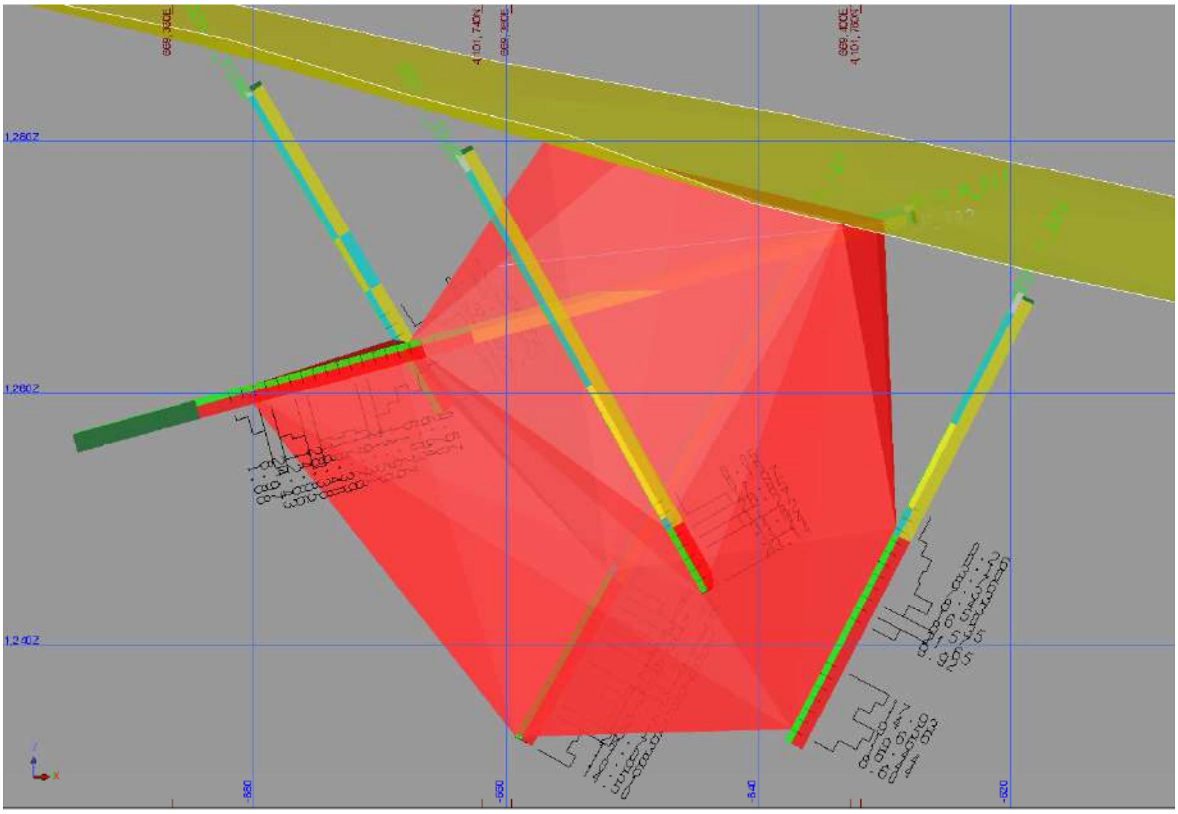


Figure 26. Wireframe A/B in section (location of section line is given in Figure 26).

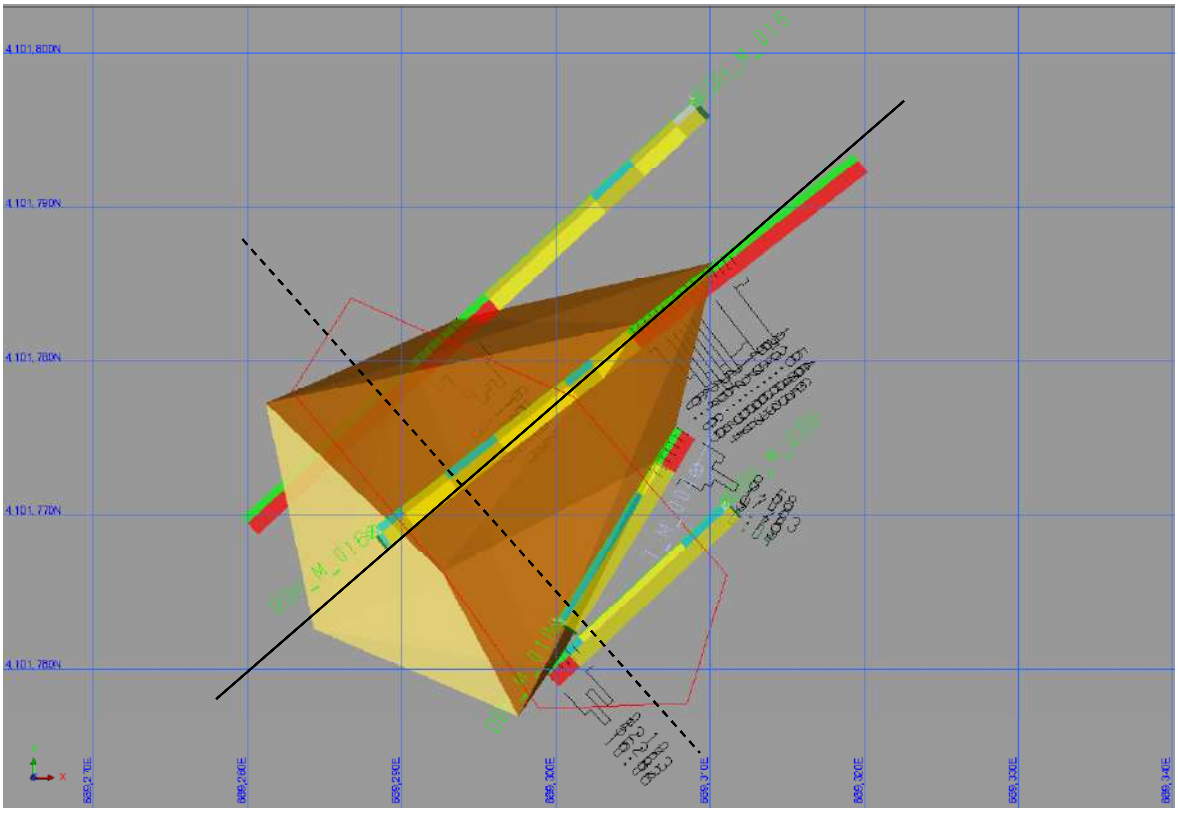


Figure 27. Wireframe C from above and section line (black dashed and full line; see next two figures).

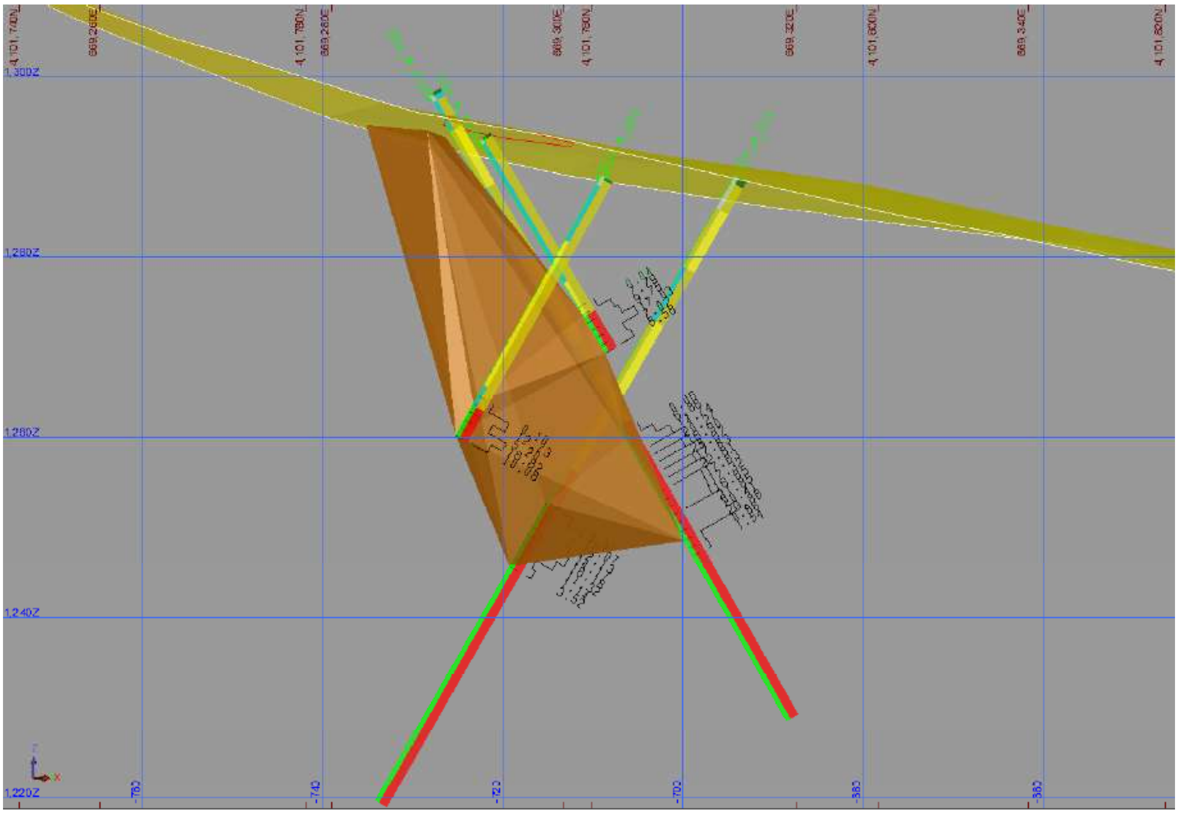


Figure 28. Wireframe C in section (location of section line is given in Figure 28).

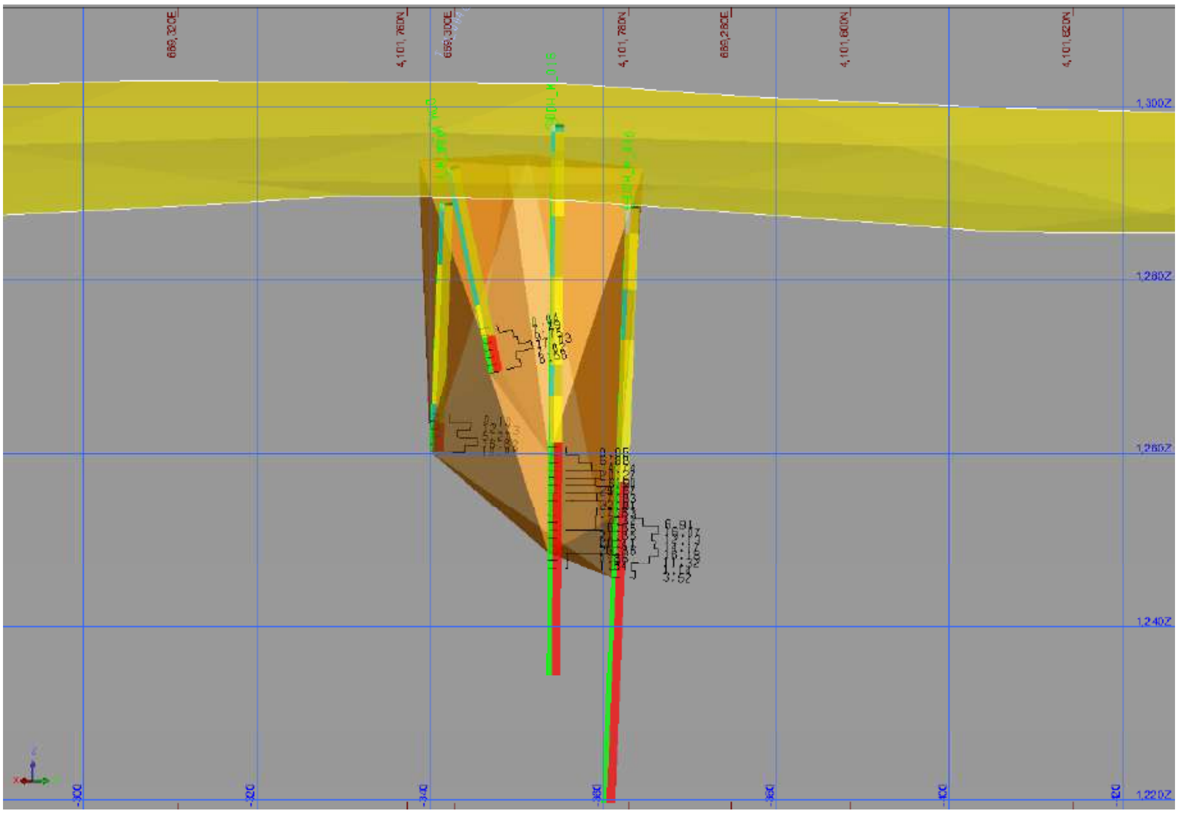


Figure 29. Wireframe C in section (location of section line is given in Figure 28).

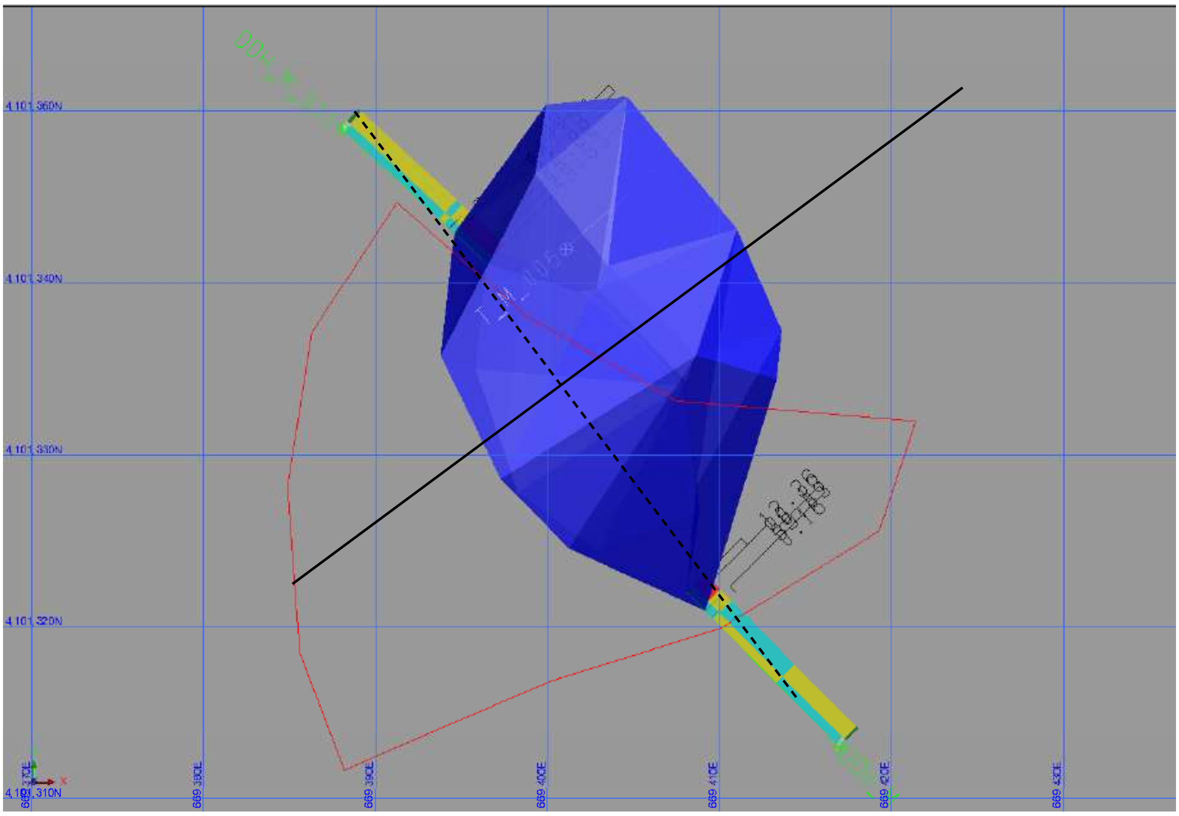


Figure 30. Wireframe D from above and section line (black dashed line; see next figure).

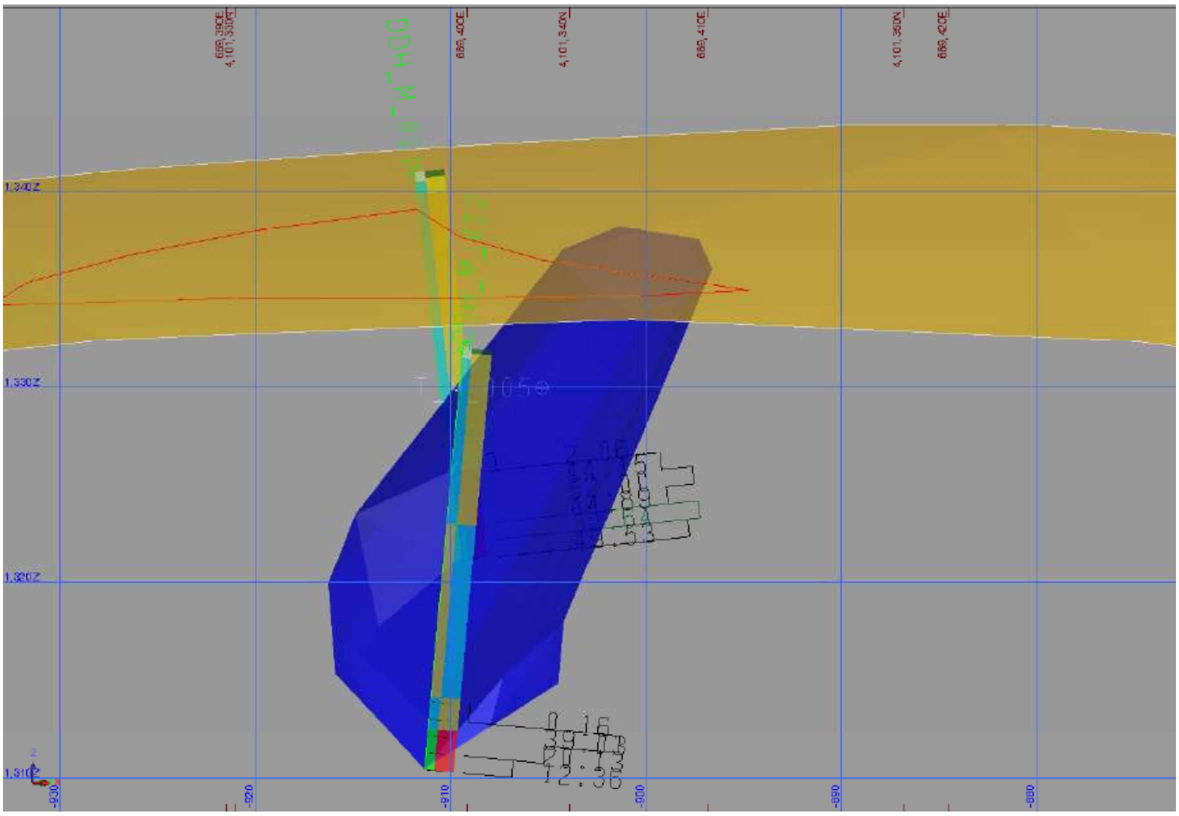


Figure 31. Wireframe D in section (location of section line is given in Figure 30).

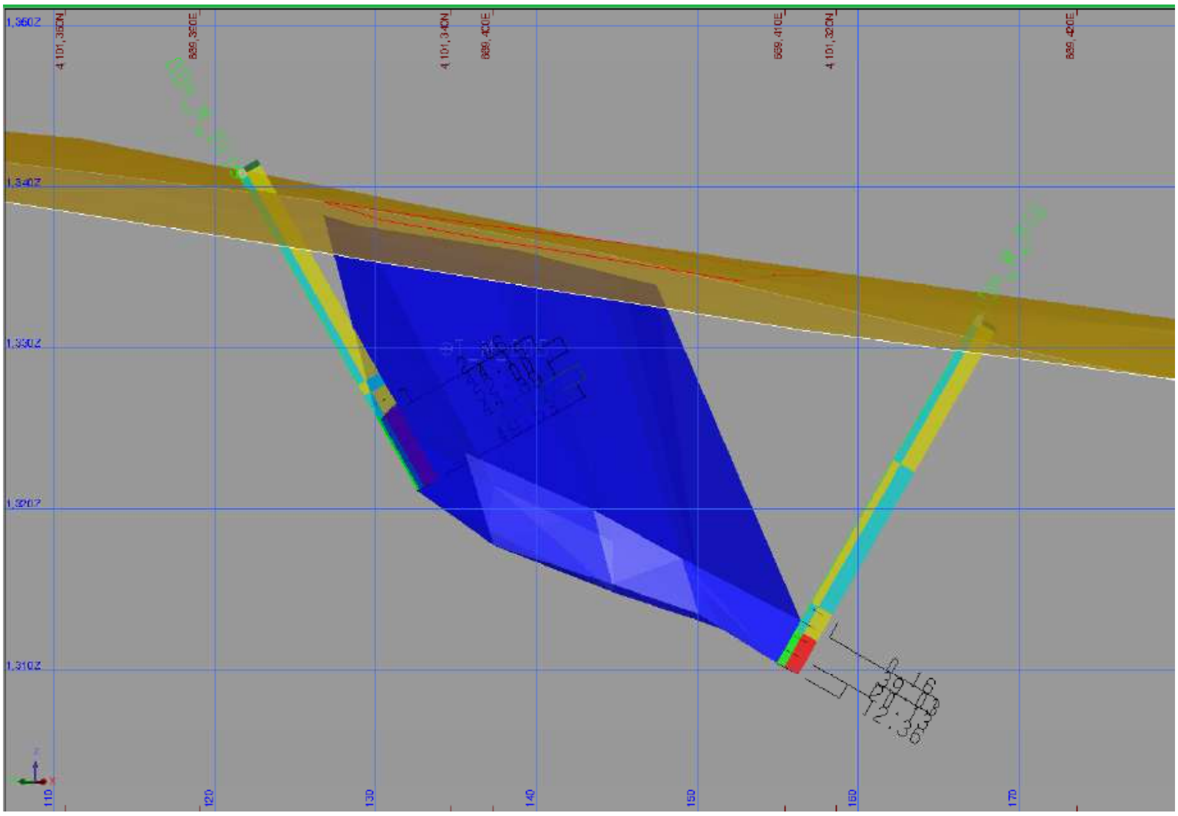


Figure 32. Wireframe D in section (location of section line is given in figure before; dashed black line).

14.5 GRADE CAPPING / COMPOSITING / BLOCK MODEL DEFINITION

A block model has not been set-up due the early stage of this project. A block model should be done as soon as further drilling and trenching clarifies the geological structure of the chromite mineralization.

14.6 BULK DENSITY ATTRIBUTION

A cross plot of densities vs. Cr_2O_3 shows scatter. However, the measured densities are in an expected range and representativeness is ensured because all core material per sample was used for the density determination.

The arithmetic assay average of all samples is ca. 16 % Cr_2O_3 Application of the below given diagram results in an average density of around 3.3 t/m^3.

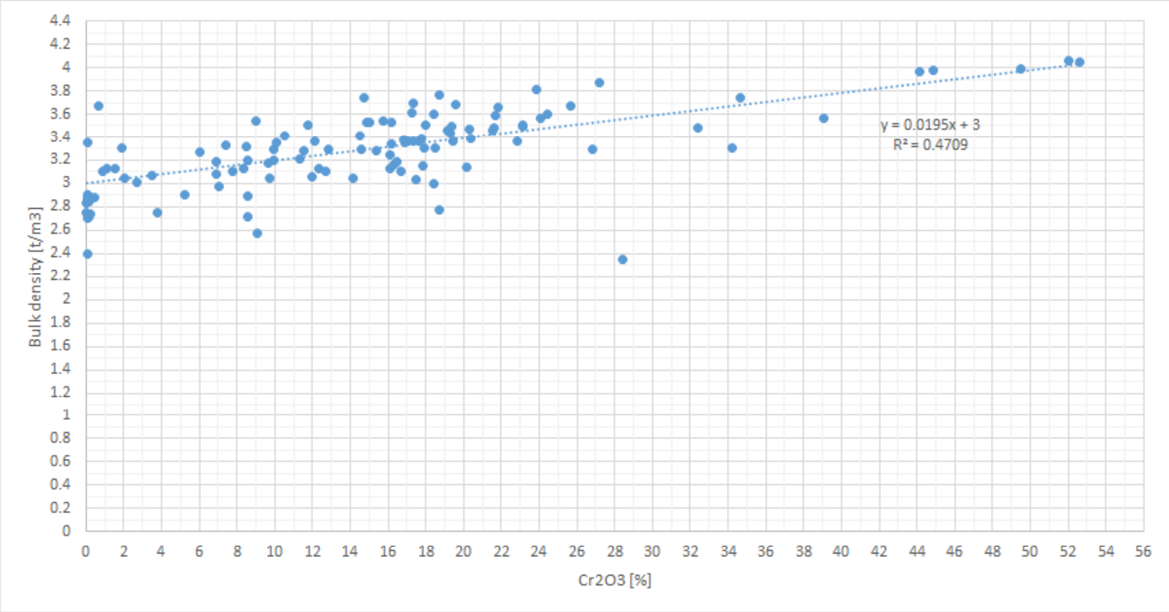


Figure 33. Cross plot bulk density [t/m^3] vs. Cr_2O_3 [%] showing scatter.

14.7 GEOSTATISTICS / INTERPOLATION METHOD

Geostatistics and data interpolation have not been done to date due the early stage of this project.

14.8 RESOURCE CLASSIFICATION

Resource classification is based on the confidence in the estimate regarding mainly geometry of the orebody and grade continuity.

The interpreted wireframes are based on geological logging, density data and chemical data. Even if the the geological structure of the chromite mineralization needs to be investigated in more detail, a rough estimate on geological and grade continuity can be made. In consequence the wireframes were classified as inferred resource.

Hasat's Mugla project is still an early stage project, however with very promising results from drilling. DMT's experience in the geological setting of podiform chromite deposits shows that these are complex and need detailed investigations on thickness, mineral composition and spatial distribution.

14.9 MODEL VALIDATION

Model validation is done in order to show that wireframed volumes meet basic geometric parameters based on drilling results and the interpretation methodology. These basic geometry parameters include average drilled thickness, length of outcrop, which is currently interpreted on the extension in the drill holes, and, finally, inclined length from surface to bottom of wireframe. It is also noted that, at this stage, it is not clear, how the holes are orientated with regards to the orientation of the chromite-rich bodies, which could affect thicknesses.

Table 14. Validation of volumes of wireframes

Mineralized Body	Volume of Wireframes [m^3]	Average drilled thickness [m]	Outcrop length along assumed strike	Length along assumed dip	Volume of control
A/B	8 970	12.0	30	30	11 000
C	10 160	7.5	30	40	9 000
D	2 960	4.0	20	30	2 400
TOTAL	22 090				20 400

14.10 ESTIMATE OF MINERAL RESOURCES

This report provides an inferred resource. This estimate is based on wireframes modelled based on results of geological logging, assays and densities of 11 drill holes, which intersected chromite mineralization. These wireframes are envelopes of chromite mineralization.

No block model has been done due to early stage of the project.

Several Cr_2O_3 cut-off grades were applied to the resource database and corresponding average grades and densities were calculated. The portion of the assayed intervals was set in correspondence to the volume of wireframe, which again was used to calculate a bulk tonnage. The results of the grade-tonnage relationships are given in the following tables.

Estimated tonnages range from 74 800 t with an average Cr_2O_3 grade of 18.5 % without any application of a cut-off grade to 3 200 t with an average Cr_2O_3 grade of 52.3 % at a 50 % Cr_2O_3 cut-off grade (see Table 15 to Table 18).

For this resource estimate no cut-off grade has been applied due to the early status of the project.

In addition, some 14 % of the resource (appr. 10 000 t) might be direct shipping ore with almost 45 % Cr_2O_3 based on a 28 % Cr_2O_3 cut-off grade. However, a processing study must show, if any deleterious elements are acceptable.

Table 15. Inferred resource comprising all three bodies A/B, C and D

Cut-off Cr_2O_3 [%]	Density [t/m³]	Cr_2O_3 [%]	Tonnage [t]
0	3.39	18.54	74 800
2	3.40	19.82	69 800
4	3.41	20.27	67 800
6	3.42	20.47	66 900
8	3.44	21.50	62 100
10	3.48	22.82	56 100
12	3.49	23.76	52 000
14	3.51	24.60	48 500
16	3.52	25.80	43 200
18	3.62	30.17	28 900
20	3.67	32.74	23 500
22	3.75	36.97	17 200
24	3.79	40.33	13 800
26	3.82	43.26	11 600
28	3.84	44.98	10 500
30	3.90	45.63	10 100
32	3.90	45.63	10 100
34	3.93	46.46	9 500
36	3.98	48.03	8 400
38	3.98	48.03	8 400
40	4.01	48.67	7 800
42	4.01	48.67	7 800
44	4.01	48.67	7 800
46	4.03	51.40	4 700
48	4.03	51.40	4 700
50	4.06	52.32	3 200
52	4.06	52.32	3 200

Table 16. Inferred resource for body A/B

Cut-off Cr_2O_3 [%]	Drilled Interval [m]	Density [t/m³]	Cr2O3 [%]	Volume [m³]	Tonnage [t]
0	57.1	3.37	16.56	**8 970**	30 300
2	55.1	3.37	17.14	8 656	29 200
4	53.6	3.38	17.48	8 420	28 500
6	53.6	3.38	17.48	8 420	28 500
8	51.6	3.38	17.89	8 106	27 400
10	43.4	3.42	19.45	6 818	23 300
12	39.4	3.43	20.24	6 189	21 200
14	38.4	3.43	20.42	6 032	20 700
16	32.7	3.43	21.38	5 137	17 600
18	23	3.45	23.17	3 613	12 500
20	13	3.48	26.35	2 042	7 100
22	10	3.47	27.82	1 571	5 400
24	8	3.46	29.02	1 257	4 300
26	6	3.41	30.72	943	3 200
28	4	3.31	32.78	628	2 100
30	3	3.52	33.76	471	1 700
32	3	3.52	33.76	471	1 700
34	2	3.54	34.44	314	1 100

Table 17. Inferred resource for body C

Cut-off Cr_2O_3 [%]	Drilled Interval [m]	Density [t/m³]	Cr2O3 [%]	Volume [m³]	Tonnage [t]
0	32.6	3.28	13.13	**10 160**	33300
2	28.6	3.30	14.79	8 913	29400
4	27.6	3.30	15.17	8 602	28400
6	26.6	3.32	15.50	8 290	27500
8	22.8	3.35	16.80	7 106	23800
10	20.8	3.38	17.44	6 482	21900
12	18.8	3.39	18.14	5 859	19900
14	17	3.41	18.72	5 298	18100
16	15	3.41	19.29	4 675	15900
18	6	3.57	22.53	1 870	6700
20	6	3.57	22.53	1 870	6700
22	3	3.63	24.15	935	3400
24	1	3.67	25.67	312	1100

Table 18. Inferred resource for body D

Cut-off Cr_2O_3 [%]	Drilled Interval [m]	Density [t/m³]	Cr2O3 [%]	Volume [m³]	Tonnage [t]
0	7.6	3.77	40.01	2 960	11200
2	7.6	3.77	40.01	2 960	11200
4	7.4	3.79	40.85	2 882	10900
6	7.4	3.79	40.85	2 882	10900
8	7.4	3.79	40.85	2 882	10900
10	7.4	3.79	40.85	2 882	10900
12	7.4	3.79	40.85	2 882	10900
14	6.4	3.87	44.47	2 493	9700
16	6.4	3.87	44.47	2 493	9700
18	6.4	3.87	44.47	2 493	9700
20	6.4	3.87	44.47	2 493	9700
22	5.4	3.98	48.03	2 103	8400
24	5.4	3.98	48.03	2 103	8400
26	5.4	3.98	48.03	2 103	8400
28	5.4	3.98	48.03	2 103	8400
30	5.4	3.98	48.03	2 103	8400
32	5.4	3.98	48.03	2 103	8400
34	5.4	3.98	48.03	2 103	8400
36	5.4	3.98	48.03	2 103	8400
38	5.4	3.98	48.03	2 103	8400
40	5	4.01	48.67	1 947	7800
42	5	4.01	48.67	1 947	7800
44	5	4.01	48.67	1 947	7800
46	3	4.03	51.40	1 168	4700
48	3	4.03	51.40	1 168	4700
50	2	4.06	52.32	779	3200
52	2	4.06	52.32	779	3200

15 MINERAL RESERVE ESTIMATES

This is an early stage project and no mineral reserve estimate has been done.

16 MINING METHODS

This is an early stage project and no study on mining methods has been done.

17 RECOVERY METHODS

This is an early stage project and no study on recovery methods has been done.

18 PROJECT INFRASTRUCTURE

This is an early stage project and no study on the project infrastructure has been done.

19 MARKET STUDIES

This is an early stage project and no market study has been done.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

This is an early stage project and no environmental studies have been done.

21 CAPITAL AND OPERATING COSTS

This is an early stage project and no studies on capital and operating costs have been done.

22 ECONOMIC ANALYSIS

This is an early stage project and no economic studies have been done.

23 ADJACENT PROPERTIES

Exploration activities of adjacent properties have not been considered.

24 OTHER RELEVANT DATA AND INFORMATION

No other relevant data and information is available.

25 INTERPRETATION AND CONCLUSIONS

The results of geological logging confirms the continuity of chromite mineralization at depth for 4 sites, two site were combined. In consequence, three wireframes were modelled.

Several Cr_2O_3 cut-off grades were applied to the resource database and corresponding average grades and densities were calculated. The portion of the assayed intervals was set in correspondence to the volume of wireframe, which again was used to calculate a bulk tonnage.

Estimated tonnages range from 74 800 t with an average Cr_2O_3 grade of 18.5 % without any application of a cut-off to 3 200 t with an average Cr_2O_3 grade of 52.3 % at a 50 % Cr_2O_3 cut-off grade.

For this resource estimate no cut-off grade has been applied due to the early status of the project.

In addition, some 14 % of the resource (appr. 10 000 t) might be direct shipping ore with almost 45 % Cr_2O_3 based on a 28 % Cr_2O_3 cut-off grade. However, a processing study must show, if any deleterious elements are acceptable.

26 RECOMMENDATIONS

From the above it is obvious that the interpretation methodology has to be confirmed and possibly amended, after further drilling and trenching has clarified the geological structure of the chromite mineralization. Therefore, DMT recommends to do the following work in order to clarify the geological structure of the chromite mineralization.

- Trenches will be logged geologically and sampled according to SOPs
- Detailed mapping of side walls of the trenches in order to investigate the geological structure and continuity.
- Re-survey of trenches and topographical survey around trenches.
- Electron microprobe analysis on chromite samples from weak, moderate and massive chromite mineralization should be done in order to test the chromite composition and possible variations thereof.
- Additional drilling (1000 m) based on the results of the trenching program in order to confirm understanding of the orientation and structure of the chromite minerali-

sation as well as fill-in gaps in the assay data base, produce a block model, increase the resource and probably transform some of the resource into a higher category in preparation of an economic assessment.

27 REFERENCES

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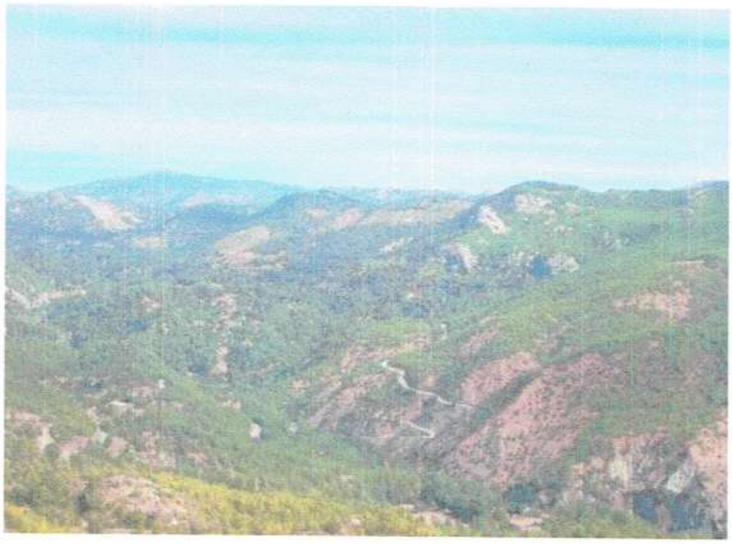
I. Uysal, M. B. Sadiklar, M. Tarkian, O. Karsli, and F. Aydin (2005) Mineralogy and composition of the chromitites and their platinum-group minerals from Ortaca (Mugla-SW Turkey): evidence for ophiolitic chromitite genesis. Mineralogy and Petrology (2005) 83: 219–242

Preliminary Cost and Production Schedule for Mugla Chromite License 200712070



For:	Hasat BNO Grup Gıd. Yem. Hayv. Teks. İnş. San. Tic. A.Ş.
Date:	26.2.2018
Prepared by:	Dipl.-Ing. Dirk H. Wagner

DMT Consulting GmbH

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Annex 1 – CV of Dirk H. Wagner

1 Introduction

Hasat BNO Grup Gıd. Yem. Hayv. Teks. İnş. San. Tic. A.Ş. (HASAT BNO) is exploring a chromite deposit in the Mugla province of Turkey.

An initial drilling program has been finalized and HASAT BNO needs to provide a status report to the government. According to local experts a volume of 74.800 t of chromite ore with 30% Cr_2O_3 has to be expected from the deposit.

The status report should include a preliminary production and cost schedule. HASAT BNO contracted Dirk H. Wagner Mining Consulting (DHWMC) for preparing the preliminary cost and production schedule.

2 Waste Volume

According to local experts the deposit consists of 3 orebodies. All the ore bodies are close to surface and therefore open pit method has been selected as mining method.

Based on the assumed orebody geometry the volume of simplified open pits has been generated with a general slope angle of 60° from which the ore volume (based on an average ore density of 3.4 t/m^3) was deducted. Total waste volume was calculated as 247,000 m^3. Assuming a waste density of 2.5 t/m^3 the total waste tonnage would amount to

618,000 t waste,

giving a stripping ratio of

8.3 t:t.

3 Production Plan

HASAT BNO intends to produce a maximum amount of 20,000 t per year. Accordingly, the mine life would be almost 4 years (assuming high selectivity and almost zero losses and dilution).

Usually such operations require some pre-stripping to get to the ore. Therefore, the production plan as shown in Table 1 was assumed.

Table 1 – Production Plan

Years	1	2	3	4	Total
Ore [t]	14,800	20,000	20,000	20,000	74,800
Waste [t]	154,500	154,500	154,500	154,500	618,000
Stripping Ratio [t:t]	10.4	7.7	7.7	7.7	8.3

Pre-Stripping has been considered by reducing ore production in the first year to ¾ of the requested production rate pushing the stripping ratio in year 1 to 10.4 (t:t). In the following years the stripping ratio is going down to 7.7 (t:t).

4 Production Approach

The current mine life is 4 years. Such a short period requires a contractor mining approach since capital expenditures for production equipment would not be amortized over the short mine life. All works will be sub-contracted to a contractor including:

- Waste drilling and blasting
- Waste loading
- Waste haulage
- Ore drillling and blasting
- Ore crushing and screening
- Ore loading
- Ore haulage

Due to the low production of maximum 580 t per day material (waste and ore) normal sized equipment available from civil construction contractors will be sufficient for the operation.

HASAT BNO will engage a minimum team of engineers and technicians to monitor the contractor work.

5 Operating Cost

Cost estimate is based on experience from other similar projects, information received from HASAT BNO and estimates of DHWMC.

5.1 Mining

Mining cost is based on DHWMC experience from other hard rock projects in Turkey. It is assumed that mining will cost 6.1 TRY per m³ of rock. This translates into 2.5 TRY/t cost for waste mining (2.5 t/m³ density) and 1.8 TRY/t for ore mining (3.3 t/m³ density). The ore has to be crushed and screened. For this operation a specific cost of 3 TRY/t has been assumed.

5.2 Owner's Team

The owner's team consists of:

- 1 Manager @ 90,000 TRY/a
- 1 Assistant @ 50,000 TRY/a
- 1 Clerk @ 50,000 TRY/a
- 2 Helpers/Workers @ 80,000 TRY/a

Total cost amounts to 270,000 TRY per year.

5.3 General & Administration

An amount of 75,000 TRY per year has been considered for all other general and administration cost of the operation.

5.4 Licence Fee

For retaining the licence, a fee of 30,694 TRY has to be paid per year. The number has been provided by HASAT BNO. In the calculations 31,000 TRY was used.

5.5 Royalties

According to HASAT BNO the royalty payment to governmental organisations amounts to 24.83 TRY/t per year. In the calculations 25 TRY/t was used.

5.6 Transport to port

The concentrate has to be trucked to the port of Iskenderun. The distance to the port is more than 900 km. The Transport cost has been estimated to 182 TRY/t by HASAT BNO.

5.7 Contingency

The project is still in an early stage and therefore a contingency of 15% has been applied to the operating cost excluding transport cost. Transport cost has been excluded since this cost estimate has a high accuracy.

6 Capital Expenditure

Due to the contractor mining concept the capital expenditures are limited. Following items have been considered:

- 500,000 TRY for road preparation
- 200,000 TRY for other infrastructure like fences, lighting, paving of a site for office containers, etc.
- 100,000 TRY per year for small items and unexpected expenditures.

7 Cash Flow

All above estimates have been summarized in a Cash-Flow Calculation (see Table 2).

The total revenue received from the concentrate sales is 68.5 million TRY based on a concentrate price of 916 TRY/t.

The average operating cost of the operation amounts to 70 USD/t. Including the capital expenditures a total expenditure of 74 USD/t is required for the production of the concentrate.

The project shows right from the beginning a positive Cash Flow. The total Cash Flow amounts to 47.7 million TRY.

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Table 2 – Cash Flow Calculation

Exchange Rate	3.75 TRY/USD						
		Year	1	2	3	4	Total
Mine Production							
Chromite		kt	14,800	20,000	20,000	20,000	74,800
Waste		000 t	154,500	154,500	154,500	154,500	618,000
Stripping Ratio		t:t	10.4	7.7	7.7	7.7	8.3
Revenue							
Concentrate	916 TRY/t	000 TRY	13,557	18,320	18,320	18,320	68,517
	244 USD/t	000 USD	3,615	4,885	4,885	4,885	18,271
Operating Cost							
Waste Mining (Contr.)	2.50 TRY/t	000 TRY	386	386	386	386	1,545
Chromite Mining (Contr.)	1.80 TRY/t	000 TRY	27	36	36	36	135
Concentrate Preparation	3.00 TRY/t	000 TRY	44	60	60	60	224
Owner's Team	270 000 TRY/a	000 TRY	270	270	270	270	1,080
G&A	75 000 TRY/a	000 TRY	75	75	75	75	300
License Fee		000 TRY	31	31	31	31	124
Transport to port	182.00 TRY/t	000 TRY	2,694	3,640	3,640	3,640	13,614
Royalties	25.00 TRY/t	000 TRY	370	500	500	500	1,870
Contingency	15 % of Total*	000 TRY	180	204	204	204	792
Total		**000 TRY**	**4,077**	**5,202**	**5,202**	**5,202**	**19,683**
		000 USD	1,087	1,387	1,387	1,387	5,249
		USD/t	73	69	69	69	70
Capital Expenditures							
Road Preparation		000 TRY	500				500
Other Infrastructure		000 TRY	200				200
Others		000 TRY	100	100	100	100	400
Total		**000 TRY**	**800**	**100**	**100**	**100**	**1,100**
		000 USD	213	27	27	27	293
Cash Flow							
Annual		**000 TRY**	**8,679**	**13,018**	**13,018**	**13,018**	**47,733**
		000 USD	2,315	3,471	3,471	3,471	**12,729**
Acc.		000 TRY	8,679	21,697	34,715	47,733	
		000 USD	2,315	5,786	9,257	12,729	

*Total excluding transport to port

Brilon, 26.2.2018,

DMT Consulting GmbH DMT Consulting GmbH

ANNEX 1

CV Dirk H. Wagner

Dirk H. Wagner
Mining Consulting

CV Dirk Wagner

as of 01.011.2017

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Dirk H. Wagner
Mining Consulting

Curriculum Vitae

Name of Firm	Dirk H. Wagner Mining Consulting
Name of Expert	**Dirk Wagner**
Date of Birth	1965
Country of Citizenship / Residence	Germany

Professional Education:

Institution	**Technical University Berlin /Germany**
Date	1986 – 1992
Degree / Diploma	Diploma in Mining Engineering

Employment Record:

Period	Employing Organisation, title/position, Contact Info
From 2016 to present	**self employed/Associate to DMT**
From 2011 to 2015	**DMT Consulting GmbH** **Essen / Germany** **Senior Project Manager**
From 2008 to 2011	**Bucyrus Europe GmbH** **Saarbrücken / Germany** **Senior Project Manager**
From 2000 to 2008	**IMC Montan Consulting** **Essen/ Germany** **Senior Project Manager**
From 1992 to 2000	**Sachtleben Bergbau Services GmbH** **Lennestadt / Germany** **Project Engineer, Mine Planning Department**

Membership in Professional Societies:

Ring Deutscher Bergingenieure e.V. (Society of German Mining Engineers), GDMB, SME

Language Skills:

	speaking	reading	writing
German		Mother Tounge	
English	Excellent	Excellent	Excellent
Russian	Good	Very Good	Average

Other Skills / Training / Specialised Education:

Data Processing: MS Office, MS Project, MS Access, Basic Datamine Knowledge

Key Qualifications:

- Technical and economic evaluation of underground mining projects and open-pit mining projects
- Project management
- Evaluation of tender documents
- Supervision of underground mines
- Implementing of Quality Management Systems acc. to ISO 9000 Standard

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Countries of Work Experience:

Argentina, Australia, Brazil, China, Colombia, Czech Republic, Estonia, Ethiopia,Finland, India, Ireland, Kazakhstan, Mongolia, Poland, Russia, Spain, Turkey, Ukraine, USA, Venezuela, Vietnam, Zimbabwe

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Professional Experience Record:

Wassoul'Or, Mali

Year, Country	September/October 2017, Mali
Client	Pearl Gold AG
Services	Review and evaluation of open pit gold operations
Position in Project	Financial Expert & Mining Engineer

Rich Metals Group, Georgia

Year, Country	August/September 2017, Georgia
Client	Bank of Georgia
Services	Lenders Engineer Due Diligence, review of copper and gold mines open pit and underground, long term mine plans, gold processing facilities
Position in Project	Cost Engineer & Mining Engineer

Professional Experience Record:

Coal Mining Company, Eastern Europe

Year, Country	January/February 2017, Eastern Europe
Client	Undisclosed
Services	Technical Due Diligence incl. operating cost assessment as preparation for a bid
Position in Project	Project Manager, Cost Engineer

Clara Mine, Wolfach, Germany

Year, Country	Since 2016, Germany
Client	Sachtleben Minerals
Services	Advisor of the Management Board, Support in: - updating of reporting system - preparation of life of mine plan (LOMP) - preparation of economic studies - monitoring of strategy process
Position in Project	Senior Advisor

Aguas Tenidas Mine

Year, Country	2016, Spain
Client	DMT
Services	Fatal Flaw Analysis
Position in Project	Mining Expert
Input	Review of mine plans and operations of 3 underground ore mines

Vozkhod Oriel Chromite Mine

Year, Country	2014 - 2015, Kazakhstan
Client	Yilmaden
Services	JORC Reserve review, Geotechnical Investigations, Health and Safety Audit preparation to support financing process. Owner's engineer
Position in Project	Project Manager
Input	Project Management, Peer Review

Professional Experience Record:

Kalkim Lead-Zinc Mine

Year, Country	2014 - 2015, Turkey
Client	CVK Maden
Services	Resource Estimate for a Lead Zinc Mine
Position in Project	Project Manager
Input	Project Coordination, Peer Review

Merzifon Underground Lignite Deposit

Year, Country	2013 – 2015, Turkey
Client	Gürmin Enerji
Services	Resource Estimate, Preliminary Economic Assessment and Gas Drainage concept for the Amasya / Merzifon Project of Gürmin Enerji
Position in Project	Project Manager
Input	Project management, Preliminary Mine planning, Economic Assessment

Zonguldak Baglik-Inagzi Underground Coking Coal Project

Year, Country	2013 – 2015
Client	Soma Holding
Services	Resource Estimate, Preliminary Economic Assessment and Gas Drainage Concept for the Zonguldak Project of Soma Kömür
Position in Project	Project Manager
Input	Project Management, mine planning, economic assessment, peer review of other chapters

Gökirmag Copper Project

Year, Country	2013 – 2015
Client	Asya Maden
Services	Feasibility Study on the Gökirmak Copper Project in Northern Turkey
Position in Project	Project Manager
Input	Project management, mine planning, cost calculation, cash flow modelling

Soma Eynez Lignite Deposit

Year, Country	2013, Turkey
Client	Undisclosed
Services	Due Diigence on an underground coal mining project in Soma area
Position in Project	Project Manager
Input	Project coordination, review of Mine Plan, production plan and economic evaluation

Camlik, Goynukoren and Pulluca silver deposits

Year, Country	2012- 2013, Turkey
Client	Yildizlar Holding
Services	Preparation of Technical Report according to NI43-101 for Eti Gümüs Silvermine, Pit Optimization
Position in Project	Project Manager
Input	Project management, pit optimization, mine planning, equipment selection, economic evaluation

Komorovskoje gold mine

Year, Country	2012, Kazakhstan
Client	Kazzinc
Services	Investigation of In-Pit Crushing and continuous haulage systems for Komorovskoye open pit.
Position in Project	Project Manager
Input	Project management, cost calculation, mine planning

Paz del Rio Coal Mine

Year, Country	2011 – 2012, Colombia
Client	Votorantim
Services	Underground Part of Prefeasibility Study for underground coal mine project
Position in Project	Mining Engineer
Input	Mine Planning, equipment selection

La Mancha Resources

Year, Country	2012, Australia
Client	Societe Generale
Services	Due Diligence on an underground and an open pit Gold Mine
Position in Project	Mining Engineer
Input	Review of mine plans, review of operations, review of costs

Banphu Nickel mine

Year, Country	2012 Vietnam
Client	Pala Investment
Services	Due Diligence on Underground Nickel Mine
Position in Project	Mining Engineer
Input	Review of operations, review of costs, review of Life of Mine Plan

Dijon Mining

Year, Country	2011, Tajikistan
Client	DION
Services	Assessment of a small scale underground mine
Position in Project	Project Manager
Input	Review of underground coal mining project

Mibrag Lignite Open Pit

Year, Country	2011, Germany
Client	Undisclosed
Services	Competent Persons Report on Coal assets of a German Company
Position in Project	Economic Expert
Input	Review of cost, review of business plans

Tuncbilek underground lignite mine

Year, Country	2010 – 2014, Turkey
Client	TKI
Services	Engineering Assistance, Review of FS on Tuncbilek deposit
Position in Project	Project Manager
Input	Supervision of Turkish Consultants, Mine Planning, Project Coordination (Serbian, Turkish and German team members)

Soma Eynez Underground coal project

Year, Country	2010, Turkey
Client	Demir Export
Services	Engineering Assistance on Tender preparation for Cayirhan Tender including mine planning.
Position in Project	Project Manager
Input	Review of mine plan, review of engineering, preparation of cost schedules

KTK 7/8 coal mining project, SCCL

Year, Country	2010, India
Client	Indu Projects
Services	Equipment Proposal Preparation, including mine planning
Position in Project	Project Manager
Input	Proposal coordination, mine planning

Eniseyskaja Coal Mining Project

Year, Country	2009, Russia
Client	EPK
Services	Pre-Feasibility Study on application of slice mining
Position in Project	Project manager
Input	Project Coordination, Mine Planning, economic evaluation

Komorovskoye Coal Mine

Year, Country	2008, Russia
Client	Undisclosed
Services	Due Diligence Report on an underground Coal mine
Position in Project	Senior Mining Expert
Input	Review of mining plans and operations, review of mining costs

Sapadnij Kamys

Year, Country	2008, Kazakhstan
Client	Undisclosed
Services	Reserve assessment for Manganese projects
Position in Project	Senior Mining Expert
Input	Review of Mine plan, review of mining cost, review of operations

Eurasia Gold

Year, Country	2008, Kazakhstan
Client	Kazakhmys
Services	Reserve assessment for all operations of "Kazakhmys Gold"
Position in Project	Senior Mining Expert
Input	Review of mining operations, review of mining cost, review of life of mine plan

Cerattepe Copper Mine Project

Year, Country	2007/8, Turkey
Client	CBI (Cayeli Bakir)
Services	EPCM Project on an underground copper mine
Position in Project	Project Manager
Input	Project coordination, supervision of surface civil construction, specification of works, tender preparation

MSOL Gold Mines

Year, Country	2007, Brazil
Client	Undisclosed
Services	Due Diligence on several small gold mining operations in Brazil
Position in Project	Senior Mining Expert
Input	Review of Mining operations, review of life of mine plan, review of costs

Burnstone Gold Project

Year, Country	2007, South Africa / USA (Nevada)
Client	Undisclosed
Services	Due diligence on two gold mining projects
Position in Project	Senior Mining Expert
Input	Review of Mining operations, review of life of mine plan, review of costs

San Jose Mine

Year, Country	2006, Argentina
Client	Hochschild PLC
Services	Reserve Evaluation San Jose gold Mine
Position in Project	Project Manager
Input	Review of reserve Estimate, review of modifying factors

DTEK Coal Mines

Year, Country	2006, Ukraine
Client	DTEK
Services	Optimisation of underground coal mines and methane utilization of 11 underground coal mines.
Position in Project	Dep. Project Manager
Input	Project Coordination

Aguas tenidas Mine

Year, Country	2005/06, Spain
Client	Investec Bank
Services	Due Dilligence for a Polymetallic Project in Spain
Position in Project	Senior Mining Engineer
Input	Review of Feasibility Study, review of economic model and mine planning

JSW coal mines

Year, Country	2005, Poland Upper Silesia
Client	World Bank
Services	Efficiency improvement of selected Polish hard coal mines
Position in Project	Senior Mining Engineer
Input	Review of Mining Operations, review of mine efficiency