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REPORT

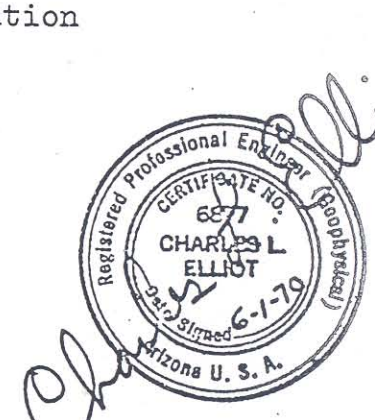
PROPRIETARY

GEOPHYSICAL EVALUATION OF THE HOTTENTOT PROSPECT
WALKER RIVER INDIAN RESERVATION
MINERAL COUNTY, NEVADA

for

Occidental Minerals Corporation

Wheat Ridge, Colorado



ELLIOT GEOPHYSICAL COMPANY
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As requested by you an evaluation of all of the presently available geophysical data for the Hottentot prospect and immediately surrounding areas has been made. The pertinent references available to me for this evaluation are as follows:

1. Report - Evaluation of Iron Ore Reserves, South Hottentot Project, Walker River Indian Reservation, Mineral County, Nevada, J. H. Volgamore, April 22, 1969.
2. Geological Map - Hottentot Area, Walker River - Paiute Reservation, Mineral County, Nevada, 1 inch = 200 feet, undated.
3. Drill Logs, Hottentot Prospect, Walker River Indian Reservation.
4. Report - Review, Hottentot Area Data, Robert E. Holt February 25, 1966.
5. Report on Induced Polarization and Resistivity Surveys, Walker River Area, Paiute Reservation, Nevada for Martel Mining Co., McPhar Geophysics, Ltd., August 13, 1964.
6. Report on the Induced Polarization and Resistivity Survey on the Hottentot Prospect, Walker River Area,

Paiute Reservation, Nevada for Martel Mining Co., McPhar Geophysics, Ltd., March 6, 1964.

7. Report on the Induced Polarization and Resistivity Tests on the Calico and Hottentot Prospects, Walker River Area, Paiute Reservation, Nevada for Martel Mining Co., McPhar Geophysics, Ltd., October 10, 1963.
8. Miscellaneous Selection of Ground Magnetic Profiles, Hottentot Prospect by Walker-Martel Mining Company.
9. Report - Reinterpretation of Airborne Magnetic Data, Walker River Indian Reservation, Mineral, Lyon and Churchill Counties, Nevada for Occidental Minerals Corporation, Wheat Ridge, Colorado, Elliot Geophysical Company, C. L. Elliot, May 28, 1970.
10. Interpretation of Airborne Magnetic Data, Walker River Indian Reservation, Mineral, Lyon and Churchill Counties Nevada for Occidental Minerals Corporation, Wheat Ridge, Colorado, C. L. Elliot, December 19, 1969.
11. Interpretation of Induced Polarization, Resistivity and Ground Magnetic Data, Black Eagle South Area, Walker River Indian Reservation, Mineral County, Nevada for Occidental Minerals Corporation, Wheat Ridge, Colorado, Elliot Geophysical Company, C. L. Elliot, May 30, 1970.

Basically the geophysical data available for the Hottentot

area consists of: induced polarization - resistivity data performed by McPhar Geophysics, Ltd., Toronto, Ontario in three separate surveys; airborne magnetic data resulting from the recompilation of Aero Service data by Lockwood, Kessler & Bartlett and as previously reported on; and selected ground magnetic profiles from the files of Walker-Martel Mining Company and likely run by their personnel. The Hottentot Prospect like Calico contains significant quantities of magnetite as well as some potentially interesting occurrences of copper. Therefore in the evaluation of the geophysical data one must look for possibilities of magnetite occurrences in economic quantities as well as copper sulfides in sufficient quantity to be of economic interest.

Attached to this report is an Interpretation Overlay of the magnetic data at a scale of 1 inch = 1 mile. The positioning control of the interpretation leaves much to be desired in that in all of the data available to me the only positioning control was the baseline for North Hottentot and the baseline for South Hottentot. Consequently, the positioning relative to other features and other data perhaps available to the reader will not necessarily be very accurate.

For the regional magnetic setting the reader is referred to my report of May 28, 1970 with contained interpretation overlays

of airborne magnetic data and of the recompiled magnetic contoured sheets resulting from the recompilation by Lockwood, Kessler & Bartlett in the spring of 1970. Even in a brief perusal of the airborne magnetic sheets, one is impressed with the remarked similarity between the airborne magnetic anomalies over the Black Eagle South area in T 14 N, R 31 E and the Hottentot prospect area, located in T 12 N, R 30 E. This noted similarity would suggest that these two areas have the same source magnetic body giving rise to the anomalies and were probably of the same age and may have at one time been contiguous bodies. This would support the conclusion of Spector in his analysis of high level airborne magnetic data published by the U.S. Geological Survey that this section of the Walker River Indian Reservation is cut up badly by northeast-southwest trending faults that have offset the main structures which have a northwest-southeast trend. (See Elliot report, December 19, 1969). It is known that the main intrusive at the Hottentot prospect is dioritic in composition and it seems a reasonable conclusion that the same diorite would exist at Black Eagle South even though no confirming outcrop and no intersecting drill hole is available at Black Eagle South. The airborne magnetic data interpretations yielded an average magnetic susceptibility of 9800 x 10^{-6} cgs units at a body depth of 1500 feet at Black Eagle South versus an average magnetic susceptibility of 8900 x 10^{-6} cgs units at

a body depth of 800 feet at the Hottentot prospect. These are indeed very similar situations.

In the various reports, letters and maps on the Hottentot area, there is considerable confusion as to the appropriate names of the various independent anomalous areas comprising the general Hottentot complex area. The North Hottentot area appears to be synonymous with the Main Hottentot area and the East Hottentot area seems to be synonymous with the Southeast Hottentot area. For sake of simplicity in this report, the separate areas will be noted as the North Hottentot, the South Hottentot and the Southeast Hottentot. The North Hottentot area is the general anomalous area in which drill hole H-1 is located. The South Hottentot area is the general area where drill hole H-3 is located. The southeast Hottentot area is the general area where drill hole H-6 is located. These three areas are illustrated on the attached Interpretation Overlay.

The interpretation of the airborne magnetic data as reported in the Elliot report, May 28, 1970 does not differentiate between the separate magnetic bodies that are known to exist at the Hottentot project; that is, the North Hottentot, South Hottentot and the Southeast Hottentot. The flight altitude effectively merges the three separate responses from the separate bodies and then effectively indicates a single deep body

similar in response to that at Black Eagle South. On the other hand, the ground magnetic survey work of an unknown source but likely run by Walker-Martel Company personnel, clearly differentiates the three separate Hottentot zones in that at the ground surface, the measurements were made very close to each of the bodies and therefore differentiation is automatically ascertained. The horizontal extent of the three Hottentot zones is shown on the attached Interpretation Overlay.

The North Hottentot zone has an average indicated magnetic susceptibility of 11,500 x 10^{-6} cgs units and is indicated to have a depth of burial the order of 650 feet. This zone is by far the main magnetically indicated intrusive zone of the Hottentot complex. The average magnetic susceptibility would indicate between three and four per cent magnetite by volume which is quite typical of dioritic material and in excellent agreement with the indicated magnetic properties of the postulated dioritic material at Black Eagle South. The interpreted depth of 650 feet agrees quite well with the drilling results from drill holes H-1 and H-1A. In H-1 the depth to the magnetite indications and dioritic material was 713 feet and in drill hole H-1A the depth to the diorite was 864 feet. Obviously the body is not a homogeneous magnetic mass even though the ground magnetic survey data would suggest this. Drill hole H-1B drilled to a total depth of 1117 feet did not

intersect any dioritic or magnetite material. Consequently, H-1B must be an hiatus within the general magnetic body comprising the North Hottentot feature.

The North Hottentot zone is likely just a dioritic mass of fairly good depth extent and the magnetic data from North Hottentot does not in any way suggest the possibility of magnetite rich zones associated with it. That is, no tactite material is indicated from the magnetic data, therefore there is perhaps no further potential in North Hottentot in terms of iron ore possibilities. However, it is always possible to have small tactite zones on the flanks of the dioritic mass which would give rise to very small additional magnetic responses in that surface. The point is well taken that no extensive magnetite zones are possible at North Hottentot.

The South Hottentot zone is indicated as a small near surface body with high magnetite content. It has an indicated average magnetic susceptibility of 19,000 x 10^{-6} cgs units which is quite similar to the indicated magnetite content at the Calico deposit. This would suggest an overall average of magnetite content of at least six per cent magnetite by volume. Undoubtedly it is much higher than this in that it has questionable vertical extent. Also the horizontal extent is limited as shown on the attached Interpretation Overlay and lies at

a depth of 140 feet on average. This is in excellent agreement with the drilling results at South Hottentot.

The Southeast Hottentot zone is also indicated to be a small zone much like that at South Hottentot. It has an average magnetic susceptibility of 18,000 x 10^{-6} cgs units again reflecting at least six per cent magnetite by volume and is undoubtedly larger than this in that there is questionable vertical extent. Horizontal extent is also limited as shown on the attached Interpretation Overlay and the body exists at a depth of the order of 150 feet which is supported adequately by the present drilling results.

The iron potential of the Hottentot area seems to be mainly in South Hottentot and Southeast Hottentot which are small bodies containing high magnetite content. These small bodies are well defined horizontally and of questionable vertical extent and therefore the volume of these features is not large. Comparing the present drilling results with the interpreted magnetite rich outlines as shown on the attached Interpretation Overlay shows that the present drilling has adequately sampled these bodies and that for all intent and purposes not much additional magnetite will probably be developed here. On the other hand, the iron potential of the North Hottentot is likely nil in that the North Hottentot magnetic

feature is mainly reflecting a large dioritic mass without any associated zones of magnetite. It is conceivable that small magnetite rich zones could be on the flanks of the dioritic mass, however this cannot be determined from the magnetic data itself.

For all intent and purposes, the induced polarization - resistivity data performed by McPhar Geophysics, Ltd. is worthless. The majority of the data was performed at a dipole length of 200 feet and therefore this data did not provide any depth information but merely skimmed the surface looking for sulfide zones. The only deep information at dipole lengths of 500 feet and one at 1000 feet was on a north-south line cutting across the Hottentot complex. However, this data was performed at an upper frequency of 2.5 hertz which is way too high for the Hottentot area in which very low resistivities are paramount. As a consequence the data is full of electromagnetic line coupling effects and therefore is difficult to interpret. Most of the induced polarization - resistivity survey work was performed over the South Hottentot and Southeast Hottentot areas and this near surface information did not show any anomalies of any interest.

Basically induced polarization and resistivity work should have a definite application in any further exploration for copper

mineralization in the Hottentot area. The best application would be to cover North Hottentot, a deep dioritic plug, and surrounding areas looking for an intrusive source for the copper mineralization noted in the drilling at Hottentot. This would be a similar program to that already performed at Black Eagle South. The present McPhar data does not help us in this regard and only one line of data is available and this of course is of questionable use and accuracy.

At the Hottentot complex no further ground or airborne magnetic work is recommended. It would appear that the ground and airborne magnetic work to date have more than adequately outlined the magnetite rich zones of South Hottentot and Southeast Hottentot and has adequately outlined the dioritic intrusion of North Hottentot. Any further magnetite potential over and above that already known from the drilling is restricted in horizontal and vertical extent and has been adequately outlined. Perhaps further drilling may be necessary within the outlines shown on the attached Interpretation Overlay. No further drilling can be recommended at North Hottentot in that the magnetic work does not indicate any magnetite rich zones over and above the normal magnetite content of the dioritic material. It would appear that North Hottentot is nothing more than a dioritic intrusion with no extensive zones of rich magnetite concentrations.

If further work is planned or contemplated in terms of copper exploration in the Hottentot area, then decidedly a deep induced polarization - resistivity survey should be performed in the vicinity of North Hottentot. Such a survey would be similar to those performed at Black Eagle South and the Calico area looking for mineralized intrusive bodies in or in the vicinity of the dioritic intrusion of North Hottentot. By proper technique and array the problem of low resistivity can adequately be handled just like it was at Black Eagle South and Calico and with proper approach deep information to adequately determine presence of mineralized intrusions can readily be obtained. It is strongly urged that such a program be accomplished for copper exploration before completing the evaluation of the Walker River Indian Reservation, as a continuation and final phase of the program which has included the Afterthought, Calico, Little Calico and Black Eagle South areas.

Respectfully submitted,

ELLIOT GEOPHYSICAL COMPANY

Charles L. Elliot

Charles L. Elliot

Tucson, Arizona
June 1, 1970

Attachment: Interpretation Overlay

Distribution: James A. Anderson
Arthur R. Still
John H. Volgamore

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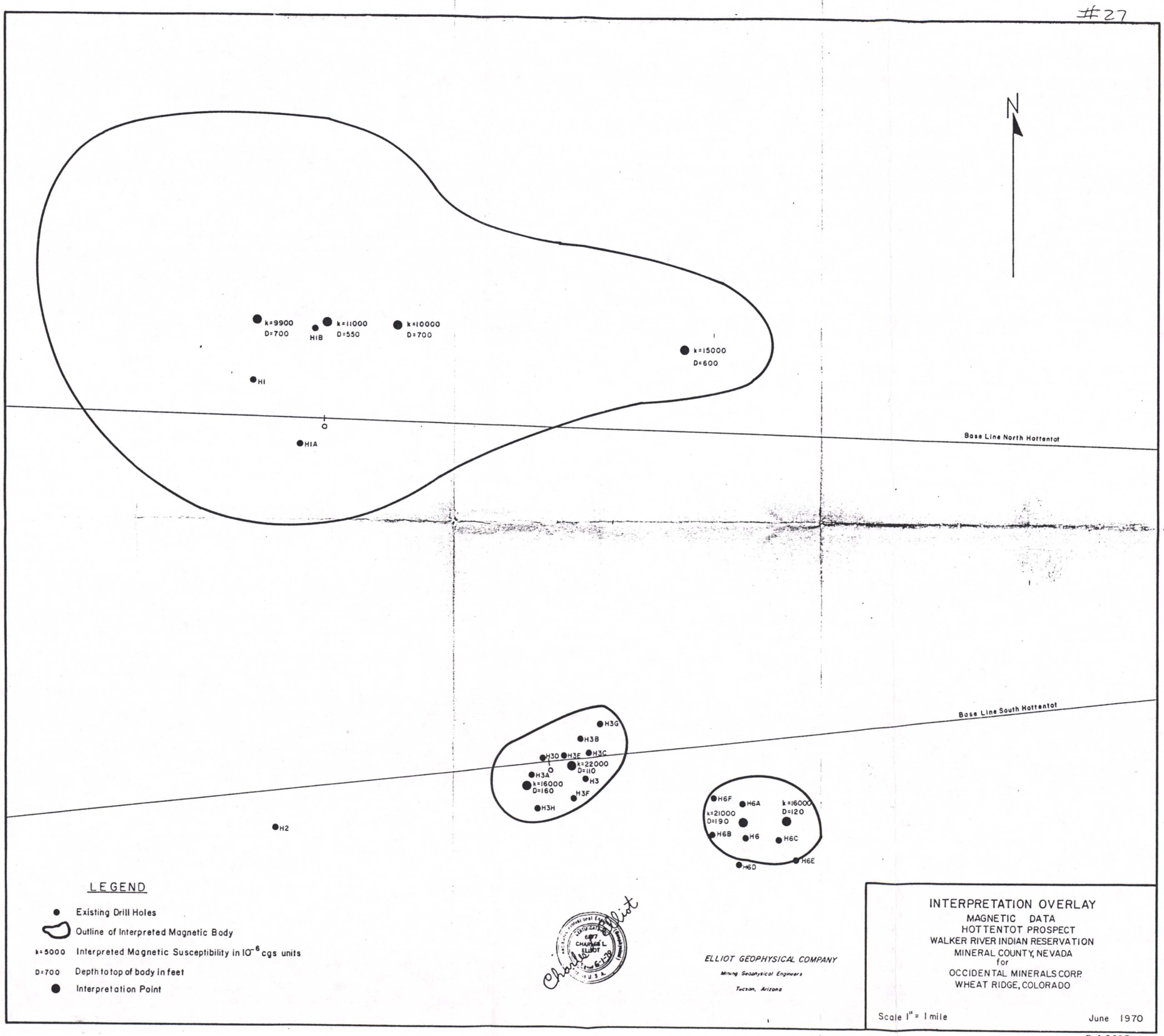

LEGEND

- ● Existing Drill Holes
- Outline of Interpreted Magnetic Body
- k=5000 Interpreted Magnetic Susceptibility in 10^{-6} cgs units
- D=700 Depth to top of body in feet
- ● Interpretation Point

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Charles L. Elliot

ELLIOT GEOPHYSICAL COMPANY
Mining Geophysical Engineers
Tucson, Arizona

INTERPRETATION OVERLAY
MAGNETIC DATA
HOTTENTOT PROSPECT
WALKER RIVER INDIAN RESERVATION
MINERAL COUNTY, NEVADA
for
OCCIDENTAL MINERALS CORP.
WHEAT RIDGE, COLORADO

Scale 1" = 1 mile June 1970