2002 Geophysical Report

for the Play and Ref Claims

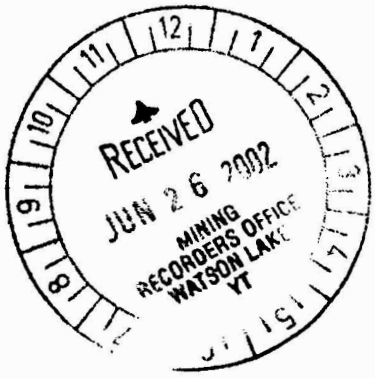
in the Watson Lake Mining District

Yukon Territory, Canada

094300

Ref: 1-17, 19, 21, 23, 25, 51-61,
63, 65, 67, 69, 71, 86, 88, 90, 92,
94-110, 121-125,127,129-150

NTS: 105G14/ 01, 02, 07, 08
105G13 /05, 06, 11, 12



	Central UTM Easting	Central UTM Northing
Ref Center Coordinates:	374 655.27	6 857 468.22
Play Center Coordinates:	366 203.83	6 860 735.14

June 18th, 2002

Expatriate Resources Ltd.
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This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 9400.00.

M. B.

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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Appendix

Appendix I	General Interpretive Considerations

1.0 Introduction

This is a report on an airborne geophysical survey carried out for Expatriate Resources Limited by Aerodat Inc. (currently Fugro Airborne Surveys) under a contract dated February 20, 1996. Principal geophysical sensors included a five frequency electromagnetic system and a high sensitivity cesium vapor magnetometer. Ancillary equipment included a colour video tracking camera, Global Positioning System (GPS) navigation instrumentation, a radar altimeter, a power line monitor and a base station magnetometer.

The survey covered the Play and Ref properties, located in the southeast Yukon, held by Expatriate Resources Ltd. It covered an area of 64 square kilometres with approximately 354 line kilometres including 35 kilometres of tie lines. The Aerodat Job Number is J9603.

This report describes the survey, the data processing, data presentation and interpretation of the geophysical results. Identified electromagnetic anomalies appear on selected map products as EM anomaly symbols with interpreted source characteristics. The interpretation map indicates conductive areas of possible interest. It also shows prominent structural features interpreted from the magnetic results. Significant structural, conductive and/or magnetic associations are the basis for the selection of specific geophysical anomalies for further investigation.

2.0 2002 Work Program

2.1 Introduction

The Ref and Play property consists of 94 and 176 contiguous claims respectively (Plate 1). Figure 1 illustrates the claim location area in the Yukon, Canada. Plate 1 illustrates the Ref and Play claims location within the national topographic system grid (NTS). Table 1 details the Ref and Play claims information.

2.2 Work Program

Expatriate Resources Ltd. contracted J. Klein to re-evaluate the Ref and Play property geophysical data. The data, which J. Klein reviewed, was originally from Aerodat of Mississauga, Ontario (Woolham, 1996). The original survey was flown in 1996; it was comprised of electromagnetic and magnetic data. In this survey, the geophysical helicopter operators were J. Cunningham and G. Webster. M. Logotheti, E. Hamilton, and G. McDonald processed the geophysical data; Rod W. Woolham prepared the report (Woolham, 1996). The author of this reports geophysics, J. Klein, acknowledges their work as portions of the text in this report are directly from Woolham (1996).

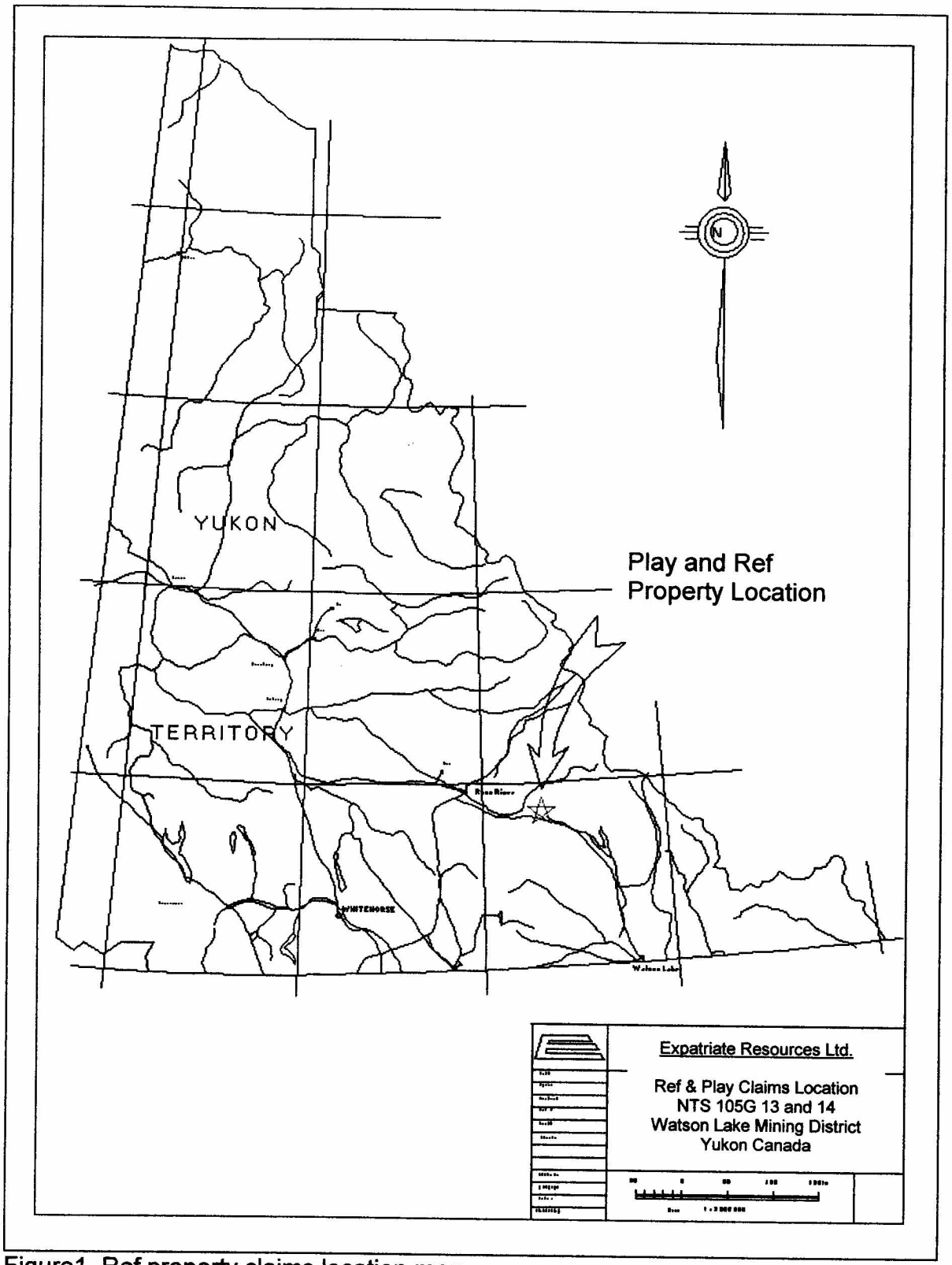


Figure1 Ref property claims location map.

Claim Group	Claim Number From	Claim Number To	Fractions	Number of claims	Record Number From	Record Number To	Expiry Date
Ref	1	16		16	YB77069	YB77084	20-Feb-03
Ref	17			1	YB79593		20-Feb-03
Ref	19			1	YB79595		20-Feb-03
Ref	21			1	YB79597		20-Feb-03
Ref	23			1	YB79599		20-Feb-03
Ref	25			1	YB79601		20-Feb-03
Ref	51	61		11	YB79627	YB79637	20-Feb-03
Ref	63			1	YB79639		20-Feb-03
Ref	65			1	YB79641		20-Feb-03
Ref	67			1	YB79643		20-Feb-03
Ref	69			1	YB79645		20-Feb-03
Ref	71			1	YB79647		20-Feb-03
Ref	86			1	YB79662		20-Feb-03
Ref	88			1	YB79664		20-Feb-03
Ref	90			1	YB79666		20-Feb-03
Ref	92			1	YB79668		20-Feb-03
Ref	94	110		17	YB79670	YB79686	20-Feb-03
Ref	113	120		8	YB79689	YB79696	20-Feb-03
Ref	121	125		5	YB79697	YB79701	20-Feb-03
Ref	127			1	YB79703		20-Feb-03
Ref	129	150		22	YB79705	YB79726	20-Feb-03
Play	1	64		64	YB59183	YB59246	17-Mar-06
Play	65	88		24	YB60911	YB60934	17-Mar-05
Play	89	139		51	YB76998	YB77048	17-Mar-03
Play	140	147	F	8	YB89332	YB89339	17-Mar-03
Play	148	154		7	YB89386	YB89392	17-Mar-03
Play	155			1	YB89607		17-Mar-03
Play	156	176		21	YB89394	YB89414	17-Mar-03

Table 1 Ref and Play claims information.

3.0 Statement of Expenditures

I, J. A. Moore, as agent for Expatriate Resources Limited located at 701-475 Howe St., Vancouver, B.C., do solemnly declare that J. Klein reviewed and analyzed geophysical data from a Dighem survey carried out in 1996 (Table 3).

I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Declared before me at Vancouver in the Province of British Columbia this 14th day of June, 2002.



J. A. Moore
Exploration Geologist

Cost Code	Description of Work	Cost
5130	Geophysical Consultants (1)	6000
5195	Printing and Reproduction	750
5132	Geological Consultants (2)	3150
	Total Cost:	$9900

Table 3 Summary of expenditures by category.

3.0 Survey Area

The survey area is located between Ross River to the northwest and Watson Lake to the southeast. Local relief is moderate to very rugged. Elevations range from 900 m to over 1,580 m above mean sea level. The survey area is shown on the attached Plate 1, it includes individual and block outlines of the Play and Ref Claims, as well as hydrology and NTS position. Geophysical lines were flown in a N33°E direction using a line spacing of 200 metres (Plates 2-9).

4.0 General Survey Logistics

The survey was part of a larger survey that was flown between February 25 and April 16, 1996. Four flights were required to complete the survey over the Play and Ref property (flights 38, 39, 40 and 59). Aircraft ground speed is maintained at approximately 60 knots (30 metres per second) and mean terrain clearance of 60 metres consistent with the safety of the aircraft and crew.

A global positioning system (GPS), consisting of a Magnavox MX 9212 operated in differential mode, guides aircraft navigation and flight line control. Field processing of the differential GPS data in the field utilizes a PC using software supplied by the manufacturer. One system is installed in the survey helicopter. This involves mounting the receiver antenna on the tail boom. A second system acts as the base station.

The published NTS maps provide the Universal Transverse Mercator (UTM) coordinates of the survey area corners. These coordinates program the navigation system. A test flight confirms if area coverage is correct. Thereafter, the navigation system guides the pilot along the survey traverse lines marked on the topographic map. The operator also enters manual fiducials over prominent topographic features. Survey lines showing excessive deviation are re-flown.

The magnetic tie line navigation is visual and, where possible, traverses cover areas of low topographic and magnetic relief. Aircraft position is registered by the navigation system. The operator calibrates the geophysical systems at the start, middle (if required)

and end of every survey flight. During calibration the aircraft is flown away from ground effects to record electromagnetic zero levels.

5.0 Deliverables

The following map products were created to accompany this report:

- Profiles of 865 Hz Copl. and 935 Hz Coax. Data
- Total Field Magnetic Contours
- Calculated Resistivity from 865 Hz Coplanar Data
- Calculated Resistivity from 4175 Hz Coplanar Data
- Interpretation
- Claims Location Map

6.0 Aircraft and Survey Equipment

6.1 Aircraft

The survey aircraft was a SA315B Lama helicopter, piloted by B. Johnstone and G. Tremblay, owned and operated by Turbo West Helicopters Ltd. of Calgary. J. Cunningham and G. Webster of Aerodat acted as navigator and equipment operator. Aerodat performed the installation of the geophysical and ancillary equipment. The survey aircraft is flown at a mean terrain clearance of 60 metres (200 feet) and speed of 60 knots.

6.2 Electromagnetic System

The electromagnetic system is an Aerodat five-frequency configuration. Two vertical coaxial coil pairs operate at frequency ranges of 935 Hz and 4,600 Hz and three horizontal coplanar coil pairs at frequency ranges of 865, 4,175 Hz and 32 kHz. The transmitter-receiver separation is 6.4 metres. Inphase and quadrature signals are measured simultaneously for the five frequencies with a time constant of 0.1 seconds. The HEM bird is towed 30 metres below the helicopter.

6.3 Magnetometer

A Scintrex H8 cesium, optically pumped magnetometer sensor, measures the earth's magnetic field. The sensitivity of this instrument is 0.001 nanoTeslas (nT) at a sampling rate of 0.2 per second. The sensor is towed in a bird 15 metres below the helicopter.

6.4 Ancillary Systems

6.4.1 Base Station Magnetometer

A Gem Systems, Inc. GSMIS magnetometer was set up at the base of operations to record diurnal variations of the earth's magnetic field. Synchronization of the clock of the base station with that of the airborne system was checked each day to insure diurnal corrections would be accurate. Recording resolution is 1 nT with an update rate of four seconds.

6.4.2 Radar Altimeter

A King KRA-10 radar altimeter records terrain clearance. The output from the instrument is a linear function of altitude. The radar altimeter is pre-calibrated by the manufacturer and is checked after installation using an internal calibration procedure.

6.4.3 Tracking Camera

A Panasonic colour video camera records the flight path on VHS video tape. The camera operates in continuous mode. The video tape also shows the flight number, 24 hour clock time (to 0.01 second), and manual fiducial number.

6.4.4 Global Positioning System (GPS)

The Global Positioning System is a US. Department of Defense program that will provide worldwide, 24 hour, all weather position determination capability. GPS consists of three segments:

- a constellation of satellites
- ground stations that control the satellites
- a receiver

The receiver takes in coded data from satellites in view and there after works out the range to each satellite. The coded data must therefore include the instantaneous position of the satellite relative to some agreed earth-fixed coordinate system. The satellite constellation consists of 24 satellites with a proportion of the satellites acting as standby spares.

6.4.5 Analog Recorder

The magnetic and electromagnetic data was digitally recorded at a 0.1 second interval and resolutions of 0.001 nT and 0.03 and 0.06 ppm for the magnetometer and coaxial and coplanar coils respectively.

7.0 Data Processing and Presentation

7.1 Flight Path Map

7.1.1 Global Positioning System

The GPS receiver takes in coded data from satellites in view and there after calculates the range to each satellite. The coded data must therefore include the instantaneous position of the satellite relative to some agreed earth-fixed coordinate system.

A further calculation using ranges to several satellites gives the position of the receiver in that coordinate system (e.g. UTM, latlong.). The elevation of the receiver is given with respect to a model ellipsoidal earth.

Normally the receiver must see four satellites for a full positional determination (three space coordinates and time). If the elevation is known in advance, only three satellites are needed. These are termed 3D and 2D solutions.

The position of the receiver is updated every tenth of a second. The accuracy of any one position determination is described by the Circular Error Probability (CEP). Ninety-five percent of all position determinations will fall within a circle of a certain radius. If the horizontal position accuracy is 25 m CEP, for example, 95% of all trials will fall within a circle of 25 m radius centered on the mean. The system may be degraded for civilian use and the autonomous accuracy is then 100 m CEP. This situation is called selective availability (SA). Much of this error (due principally to satellite position/time errors and atmospheric delays) can be removed using two GPS receivers operating simultaneously. One receiver acting as the base station is at a known position. The second remote receiver is in the unknown position. Differential corrections determined for the base station may then be applied to the remote station. Differential positions are accurate to five m CEP (for a one second sample). Averaging will reduce this error further.

7.1.2 Flight Path

The flight path is drawn using linear interpolation between x and y positions from the navigation system. These positions are updated every second (or about 1.5 mm at a scale of 1:20,000). Occasional dropouts occur when the optimum number of satellites are not available for the GPS to make accurate positional determinations. Interpolation is used to

cover short flight path gaps. The navigator's flight path and/or the flight path recovered from the videotape may be stitched in to cover larger gaps. Such gaps may be recognized by the distinct straight-line character of the flight path.

The aircraft position is expressed in geographic latitude and longitude coordinates, using the international WGS84 spheroid. Any particular survey area located on the globe has a specific reference ellipsoid or projection zone. A further refinement for a better fit to the earth's surface at the survey location is applied by adding or subtracting slight x, y and/or z datum shifts (a few metres to hundreds of metres) to the origin of the ellipsoid. The geographic coordinates are converted to fit this ellipsoid before calculating the UTM coordinates. The UTM coordinates are expressed as UTM easting (x) and UTM northing (y).

The flight path map is merged with the base map by matching UTM coordinates from the base maps and the flight path record. The match is confirmed by checking the position of prominent topographic features as recorded by manual fiducial marks or as seen on the flight path video record.

7.2 Electromagnetic Survey Data

Electromagnetic data is recorded digitally at a sample rate of 10 per second with a time constant of 0.1 seconds. A two stage digital filtering process rejects major sferic events and reduces system noise. Local sferic activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events. This is referred to as a "surgical mute" in signal processing terms. The signal to noise ratio is further enhanced by the application of a low pass digital filter. This filter has zero phase shift that prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 0.25 seconds. This low effective time constant gives minimal profile distortion.

Following the filtering process, a base level correction is made using EM zero levels determined during high altitude calibration sequences. The correction applied is a linear function of time that ensures the corrected amplitude of the various inphase and quadrature

components is zero when no conductive or permeable source is present. The filtered and levelled data are the basis for the determination of apparent resistivity (see following section). The inphase and quadrature responses along the flight line are presented in profile form offset along the flight lines. Differentiation of the various profiles is achieved using two colours (coaxial and coplanar) and two line weights (inphase and quadrature). For interpretation purposes, the coaxial and coplanar data sets for a similar frequency range are presented in profile form together on one map (865/935 Hz).

7.3 Total Field Magnetics

The aeromagnetic data is corrected for diurnal variations by adjustment with the recorded base station magnetic values. No corrections for regional variations are applied. The corrected profile data are interpolated on to a regular grid using an Akima spline technique. The grid provided the basis for threading the presented contours. The minimum contour interval is 5 nT with a grid cell size of 50 m. Magnetic high areas are assigned warm colours (orange/red) while magnetic low areas show as cool colours (blue).

7.4 Apparent Resistivity

The apparent resistivity is calculated by assuming a 200 metre thick conductive layer over resistive bedrock. The computer determines the resistivity that would be consistent with the sensor elevation and recorded inphase and quadrature response amplitudes at the selected frequency. The apparent resistivity profile data is re-interpolated onto a regular grid at a 50 metres true scale interval using an Akima spline technique. The colour presentation assigns warmer colours (reds) to low resistivity or very conductive responses and cooler colours (blues) to high resistivity or poor conductivity responses. The highest measurable resistivity is approximately equal to the transmitter frequency. The lower limit on apparent resistivity is rarely reached.

8.0 Interpretation

8.1 Area Geology

The Play and Ref properties cover rocks of the Yukon-Tanana Terrane comprising, in part, mafic and felsic metavolcanics, carbonaceous metasediments, quartz-eye grits, and orthogneiss intruded by felsic and mafic stocks.

8.2 Magnetic Interpretation

The total field magnetic responses reflect major changes in the magnetite content of the underlying rock units. The amplitude of the magnetic responses relative to the regional background help to assist in identifying specific magnetic and nonmagnetic units related to, for example, mafic flows or tuffs, mafic to ultramafic intrusives, felsic intrusives, felsic volcanics and/or sediments etc. Obviously, several geological sources can produce the same magnetic response. These ambiguities can be reduced considerably if basic geological information on the area is available to the geophysical interpreter.

In addition to amplitude variations, magnetic patterns related to the geometry of the particular rock unit also help in determining the probable source of the magnetic response. For instance, long narrow magnetic linears usually reflect mafic tuff/flow horizons or mafic intrusive dyke structures while semi-circular features with complex magnetic amplitudes may be produced by local plug-like intrusive sources such as pegmatites, carbonatites or kimberlites.

Calculated vertical magnetic gradient may assist considerably in mapping weaker magnetic linears that are partially masked by nearby higher amplitude magnetic features. The broad zones of higher magnetic amplitude, however, are severely attenuated in the vertical magnetic gradient results. These higher amplitude zones reflect rock units having magnetic susceptibility signatures. For this reason both the total and gradient magnetic data sets must be evaluated.

Theoretically, the magnetic gradient zero contour line marks the contacts or limits of large magnetic sources. This applies to wide sources, greater than 50 metres, having simple slab geometries and shallow depth. (See discussion in Appendix I.) Thus, the

gradient map may aid in a more accurate delineation of contacts between differing magnetic rock units.

The cross cutting structures, shown on the interpretation map as faults, are based on interruptions and discontinuities in the magnetic trends. Generally, sharp folding of magnetic units will produce a magnetic pattern indistinguishable from a fault break. Thus, if anomaly displacements are small such fault structures, where they mark an anomaly interruption, may actually represent a deformation node rather than faulting.

8.3 Magnetic Survey Results

The magnetic amplitudes are quite low on the Ref and Play properties; they range from 57,950 to 58,200 nT. In fact, the greatest amplitude difference is registered by a negative anomaly at the extreme west part of the property on the north boundary. This anomaly is 150 nT below background and related to an extensive magnetic domain in the north (Plates 2,3).

The positive amplitude portion of this area consists of intermittent narrow linear horizons trending east-southeast with amplitudes from 20 to 50 nT above background. A few local higher amplitude semi-circular features having amplitudes up to a maximum of 110 nT are present in the west and east central part of the survey area (Plates 2,3). A series of thin slightly magnetic mafic horizons possibly reflecting flow or tuff units intercalated with felsic volcanics or sediments are the likely source of the low amplitude responses on this property (Plates 2,3).

8.4 Electromagnetic Anomaly Selection/Interpretation

Interpretation of electromagnetic data and selection of anomalies is based on conductivity as indicated by the inphase to quadrature ratios of the 935 Hz (and/or 4,600 Hz) coaxial data, anomaly shape, and anomaly profile characteristics relative to coaxial and corresponding coplanar responses (Plate 3) (see discussion and figure in Appendix I). It is difficult to differentiate between responses associated with the edge effects of flat lying conductors and actual poor conductivity bedrock conductors on the edge of or overlain by flat lying conductors. Poor conductivity bedrock conductors having shallow dips will also exhibit responses that may be interpreted as surficial overburden conductors. In such

cases, where the source of the conductive response appears to be ambiguous, the anomaly is still selected for plotting. In some situations, the conductive response has line-to-line continuity and some magnetic association thus providing possible evidence that the response is related to an actual bedrock source (Plates 2,3).

In some areas, the inphase profile component exhibits a negative anomaly response usually over obvious magnetic areas. This is produced by local concentrations of magnetite and usually occurs when the sensor is flying close to the ground surface. If only magnetite is present there will be no quadrature response associated with the negative inphase response. If conductive material is present, however, such as graphite or sulphides, a positive quadrature response will be evident with the negative inphase response. In this case, the anomaly is selected for plotting and evaluation and designated as a magnetic/conductive response.

The amplitude of the 935 Hz inphase and quadrature responses are used for the conductivity x thickness (in Siemens) calculations. The data is listed in section 9.0. Further detailed discussion and illustration of the determination of these values is contained in Appendix I.

The calculation of the conductivity x thickness values of low amplitude anomalies can be very inaccurate. Therefore, anomalies having amplitudes below a certain level and/or low conductivity x thickness value are given a low rating.

8.5 Electromagnetic Survey Results and Conclusions

Very conductive flat lying to gently north to northeast dipping material is contributing to the electromagnetic responses in various degrees throughout the survey area. This usually implies that conductive overburden is the main source of the conductive effects. The extreme low resistivity levels, from 30 to below 2 ohm metres, are more indicative of conductive sediments containing graphite and/or pyrite rather than alluvial material (Plates 4,5).

Thus, it is postulated, the lowest resistivity zones are mapping stratigraphy. Therefore, in order to compare these conductive areas with the magnetic structures, the limits of the lowest resistivity zones are outlined on the interpretation map (Plate 6). Before proceeding further a discussion of some of the electromagnetic profile signatures seen on

the profile maps is appropriate as these signatures indicate the source geometries of the conductors.

The flat lying responses are characterized by identically shaped coaxial and coplanar response profiles while gently dipping responses show a slight offset of the coaxial peak from the coplanar peak. These response shapes are illustrated in Appendix I, in the figure entitled "HEM Response Profile Shapes." profiles B, C and I. For a gently dipping source the small up-dip tail of the coplanar profiles B and C is not present. Note the coplanar peak is down dip from the coaxial peak. For the present areas most of the responses are related to very conductive flat lying material and the resistivity maps give the best presentation of these types of conductors (Plates 4,5).

Other flat lying type, but more limited width, conductive responses are present in some locations. These responses are characterized by a "M" shaped coaxial anomaly with a single peaked coplanar anomaly centered in the trough between the two coaxial peaks. This is illustrated in Appendix I in the same figure as previously mentioned (see profile shape E or G).

The actual geometry of the source of these flat ribbon type responses is difficult to determine. Where the profile is not perfectly symmetrical, a shallow dipping sheet conductor may be present. A combination of vertical and horizontal conductors similar to profile shape H in Appendix I could also produce such responses. Without a detailed knowledge of the geological structure in the area a probable source geometry cannot be ascertained.

Extensive flat lying to gently dipping conductors often have an "edge effect" anomaly which is a coaxial peak on the flank of the coplanar responses similar to one side of profile E, G or H. Often only one edge can be seen if the source is dipping.

The electromagnetic results from the Play property show large areas of multiple weak to strong gently north to northeast dipping conductors, these are labeled Z1 to Z5 (Plate 6). The extent of these zones is indicated with a long dashed line and follows the approximate trace of the 100-ohmm resistivity contour calculated from the 4175 Hz coplanar coil data. It is very difficult in these zones to trace individual conductors from line to line. Very few of the individual conductor intercepts in these zones show a magnetic association. These magnetic peak values are very low (often only one or two nT). It

should be noted that these associations often occur near the edge of the zones. Conductor intercepts showing a magnetic association on two adjacent lines are shown and labeled (Z1a, Z2a, b and c, Z4a and Z5a and b) (Plate 6).

Several more defined or isolated conductors can be traced for one kilometer or more (Plate 6). They often extend and continue into the larger zones. Weak conductor C and moderate conductor D show a magnetic association, the latter with peak values of 20 to 32 nT near its west end (Plate 6). Moderate conductor K2 shows a weak magnetic association near its east end close to zone Z4 (Plate 6).

The flat dipping nature of the conductors and relatively very weak to weak magnetic sources does not permit to state conclusively if the associations are direct or that the magnetic source is direct above or below the conductor (Plate 6).

Targets for follow up are: A1, A2, A3, B2, C, D1, J, K1, K2, M1 and M2, while parts of the larger zones may be checked for outcrops of interest (Plate 6).

9.0 Play and Ref Properties Anomaly Table

LISTING OF CONDUCTORS FROM THE 1996 HELICOPTER-BORNE ELECTROMAGNETIC/MAGNETIC SURVEY OVER THE PLAY AND REF PROPERTIES, YUKON TERRITORY (Project # J9603)

Line number	UTM-X	UTM-Y	Anomaly label	Conductance in Siemens	Conductor depth in meters	935 Hz In-Phase in ppm	935 Hz Out-of-Phase in ppm	EM-bird height in meters
70010	360820	6862495	1	10	25	14.4	14.1	24.3
70010	360838	6862518	2	10	24	15.2	14	23.1
70010	361144	6863119	3	14	31	16.5	10.8	20
70010	361691	6863909	4	26	13	42.6	22.6	28.8
70010	361756	6864004	5	30	4	67.9	35.9	28
70010	361796	6864066	6	35	3	87.5	38.8	29.4
70010	361855	6864150	7	53	0	111.7	46.5	30.1
70010	361914	6864232	8	40	0	132.9	54.5	29.1
70010	361966	6864308	9	48	4	84.3	33.4	28
70010	362013	6864386	10	25	6	56.2	39.7	27.2
70010	362046	6864447	11	25	4	68.5	46.5	27.6
70020	362105	6864283	1	22	2	90.6	63.9	23.9
70020	362063	6864239	2	27	4	91.3	54.1	24.9
70020	361975	6864121	3	45	3	134.7	60.1	24.8
70020	361935	6864045	4	45	2	123.3	56.2	25.8
70020	361902	6863974	5	35	7	100.2	54.5	23.8
70020	361866	6863896	6	18	8	54.6	45.8	22.5
70020	361799	6863765	7	18	10	67.3	53.8	21.2
70020	361771	6863711	8	25	10	65.4	42.7	22
70020	361232	6862911	9	18	29	18.7	11.4	20.6
70020	360949	6862473	10	15	28	14.8	10.4	28.1
70030	361150	6862413	1	5	38	4.8	5.2	27.1
70030	361382	6862761	2	7	36	8	8	19.8
70030	361678	6863217	3	8	21	16.6	19.1	21.1
70030	361705	6863256	4	4	16	13.4	21.2	21.8
70030	361862	6863496	5	19	16	29	17.8	27.6
70030	361901	6863558	6	19	14	24.5	14.5	29.7
70030	362001	6863708	7	13	8	29	22.5	32.8
70030	362044	6863777	8	18	8	34.2	24.6	32.7
70030	362083	6863841	9	12	9	25.7	21.4	31.8
70030	362167	6863981	10	38	2	68.6	28.8	32.2
70030	362218	6864061	11	45	2	78.4	32.7	30.9

70040	362428	6864024	1	24	10	31.7	17.9	33
70040	362407	6863989	2	27	7	32.7	16.3	33.9
70040	362341	6863881	3	19	8	26.4	17.6	33.1
70040	362224	6863724	4	11	9	26.6	26.2	30
70040	362143	6863609	5	27	10	60.1	33	24.9
70040	362041	6863470	6	25	14	44.5	25.6	26
70040	361968	6863378	7	33	16	37.8	17.2	27.2
70040	361889	6863252	8	28	7	75.1	39.2	25
70040	361865	6863208	9	26	8	69.2	41.8	23.8
70040	361831	6863152	10	26	13	60.3	36.3	21.2
70040	361671	6862874	11	0	19	1.1	11.8	15.3
70040	361542	6862601	12	7	28	10.9	11.3	21.8
70040	361417	6862365	13	14	27	16.1	10.8	26.4
70050	361534	6862301	1	26	19	20.9	9.4	33.6
70050	361650	6862492	2	8	25	11.2	10.2	28.1
70050	362191	6863380	3	26	17	26.8	14.6	33.9
70050	362261	6863477	4	27	9	39.3	19.4	33.2
70050	362324	6863562	5	26	12	35.1	18	29.7
70050	362533	6863864	6	27	10	38.7	19.1	31.6
70050	362647	6864049	7	17	15	25.9	16.5	29.1
70060	362797	6863825	1	15	28	15.2	9.6	25.6
70060	362721	6863716	2	32	19	32.7	13.2	25.4
70060	362646	6863616	3	28	15	54.6	29.7	20.6
70060	362543	6863482	4	29	31	29.8	22.9	15.9
70060	362493	6863415	5	14	27	24.4	18.8	16
70060	362394	6863268	6	80	18	56.8	13.7	20.9
70060	362354	6863204	7	65	15	56.9	15	24
70060	362299	6863116	8	50	14	49.3	16.5	27
70060	361777	6862334	9	7	22	9.7	10.8	28.2
70060	361701	6862230	10	12	18	16.6	12.9	31.5
70060	361649	6862159	11	12	16	17.4	13.6	31.6
70070	361945	6862119	1	25	24	7.6	9.2	27.3
70070	361989	6862195	2	3	23	3.8	6.7	30.3
70070	362238	6862592	3	29	20	24	10.1	29.9
70070	362281	6862663	4	32	17	35	9.6	28.2
70070	362331	6862737	5	50	19	38.4	10.4	26.5
70070	362417	6862876	6	150	17	41.6	6.3	30.3
70070	362619	6863219	7	35	15	20.5	6.7	38
70070	362805	6863526	8	28	13	20.7	7.7	39.9
70080	362979	6863417	1	25	23	22.8	10.6	27.3

70080	362958	6863372	2	33	22	28.5	11.4	25.4
70080	362945	6863343	3	29	22	30.2	12.6	24
70080	362764	6863057	4	35	15	26.7	10.3	22.4
70080	362679	6862916	5	53	19	31.9	7.9	26.7
70080	362561	6862700	6	33	25	21.7	8.4	26.7
70080	362408	6862487	7	26	26	23.4	10.5	23.9
70080	362321	6862360	8	25	22	19.3	8.5	30.2
70080	362078	6862015	9	2	22	4.1	8.8	26.5
70090	362449	6862251	1	17	29	12.6	6.1	33.7
70090	362576	6862445	2	34	25	21.6	7.7	28.3
70090	362812	6862810	3	55	27	24.3	6	27.5
70090	362884	6862931	4	45	27	21	5.6	28.3
70090	363068	6863228	5	29	24	18.5	7.8	31.8
70100	363272	6863148	1	22	19	11	5.1	43.8
70100	363234	6863082	2	36	22	13	3.9	39.7
70100	363166	6862975	3	20	22	16.9	7.5	34.9
70100	362982	6862686	4	11	28	18.2	8.1	28.4
70100	362964	6862665	5	22	31	17.2	8.2	25.5
70100	362826	6862463	6	25	37	16.7	8.3	19.7
70100	362797	6862425	7	11	31	19	8.5	22.8
70100	362601	6862119	8	3	36	3.9	4.8	27.1
70110	362600	6861718	1	1	1	1.3	4.3	52.6
70110	362782	6862004	2	2	10	3.5	7.4	37.6
70110	363007	6862343	3	25	24	14.1	5.7	36
70110	363129	6862510	4	*	*	9.4	6.7	25.9
70110	363344	6862809	5	27	24	13	5.4	35.6
70110	363377	6862868	6	33	28	13.1	4.2	35.2
70110	363509	6863126	7	18	25	9.6	4.9	48.2
70120	363472	6862699	1	40	30	14.5	4.1	32
70120	363410	6862614	2	27	31	11.1	4.1	32.7
70120	363198	6862298	3	12	37	13.8	9.9	19.5
70130	363087	6861809	1	0	7	0.8	11.5	23.2
70130	363409	6862273	2	7	27	10.1	9.4	24.5
70130	363602	6862562	3	17	25	12.6	7.6	32.5
70130	363635	6862627	4	26	27	12.8	5.5	33.2
70140	364116	6862945	1	0	14	1.2	6.1	33.2
70140	363795	6862465	2	10	25	16.5	8.3	32.3
70140	363662	6862258	3	18	29	15.2	8	27.7
70140	363633	6862213	4	*	*	14.9	7.8	25.1

70140	363335	6861790	5	4	20	7	8.8	31.8
70140	363175	6861539	6	5	19	4.9	4.9	46.2
70150	363350	6861444	1	5	29	5.6	6.6	34.3
70150	363554	6861764	2	4	17	19.9	6.8	38.9
70150	363657	6861919	3	80	1	28.9	6	48.2
70150	363697	6861975	4	*	*	26.6	7.7	43.1
70150	363810	6862152	5	34	28	19.7	6.8	28.9
70150	363892	6862273	6	28	19	18.8	8.2	36.4
70160	364437	6862792	1	2	20	2.7	6.1	33.2
70160	364351	6862652	2	3	16	5.3	11.5	31
70160	364328	6862619	3	2	17	3.7	8.7	30.3
70160	364070	6862221	4	35	20	16.2	5.2	39.2
70160	364036	6862164	5	35	12	21.8	7.9	41.8
70160	363984	6862079	6	20	7	25.8	14.4	35.5
70160	363946	6862017	7	22	12	25.5	17.3	31.3
70160	363882	6861916	8	60	19	33.9	8.4	29.4
70160	363812	6861813	9	120	4	44.2	7.6	38.7
70160	363758	6861723	10	100	0	41.6	8.4	43.8
70160	363493	6861313	11	18	24	17.1	9	32.3
70160	363436	6861231	12	7	31	7	5.9	31.1
70170	363411	6860789	1	3	16	4.9	8.9	34
70170	363695	6861204	2	20	4	40.9	28.1	35.2
70170	363756	6861291	3	12	13	24.5	22.6	26.6
70170	363928	6861557	4	45	13	31.9	9.4	34
70170	363985	6861652	5	140	8	49.4	7.8	33.2
70170	364050	6861751	6	45	0	67.3	24.7	37.9
70170	364135	6861871	7	26	8	44.2	23.7	30.7
70170	364167	6861926	8	25	9	40.5	24.3	32.2
70170	364495	6862446	9	6	11	17.3	20.8	27.7
70180	364781	6862477	1	2	11	4.7	13.1	25.5
70180	364723	6862382	2	2.6	8	6.8	14.8	28.5
70180	364314	6861779	3	33	2	60.6	26.5	35.4
70180	364287	6861748	4	2	0	58.4	23.2	35.2
70180	364232	6861664	5	33	6	48.1	21.7	32.3
70180	364140	6861500	6	160	9	38.5	4.9	56.2
70180	364090	6861413	7	48	7	35	10.9	37.8
70180	364043	6861326	8	22	5	35.6	20.1	38.4
70180	363930	6861166	9	22	5	61	43.2	27.3
70180	363860	6861079	10	24	10	37.1	20.2	30.7
70180	363787	6860965	11	30	12	21.6	7.5	41.2

70190	364020	6860914	1	20	11	44.7	28	27.2
70190	364063	6860971	2	26	6	62.2	38.3	27.1
70190	364111	6861043	3	*	*	74.7	57	21.2
70190	364158	6861119	4	26	2	105.1	68.9	21.5
70190	364181	6861157	5	25	2	124.6	93.5	21.1
70190	364236	6861250	6	24	3	84.2	54.3	27.1
70190	364357	6861441	7	24	0	47.1	15.2	34
70190	364428	6861551	8	35	0	47.4	17.6	42.4
70200	365030	6862199	1	3	4	6.2	13.5	36.1
70200	364966	6862089	2	0	5	3.9	40.7	13.4
70200	364592	6861537	3	48	0	26.2	6.9	58.2
70200	364548	6861416	4	35	3	58.6	25.7	34.1
70200	364517	6861367	5	42	6	53.5	21.4	33.5
70200	364429	6861213	6	26	6	44.1	23.6	34.6
70200	364318	6861069	7	38	2	87.8	42.1	28.6
70200	364262	6860989	8	35	6	117	61.8	21.8
70200	364177	6860876	9	28	13	49.3	25.7	24
70200	364122	6860805	10	31	9	39.7	19.8	32
70200	364014	6860609	11	26	0	61.3	37.6	35.7
70200	363846	6860306	12	10	0	43	26.9	46.8
70200	363835	6860291	13	19	0	39.4	27.4	40.9
70210	364035	6860297	1	20	0	20.7	11.1	55.1
70210	364115	6860426	2	18	13	18.2	11.3	35.1
70210	364315	6860707	3	28	3	72.3	41.5	29.3
70210	364385	6860791	4	20	13	59	41	20.8
70210	364479	6860919	5	21	12	58.8	40.6	21.4
70210	364525	6860993	6	33	4	66.3	33.9	29.9
70210	364568	6861073	7	50	5	69.6	25.7	29.5
70210	364605	6861148	8	55	8	57.8	17.4	31.3
70210	364743	6861360	9	100	5	59.4	22.7	33
70210	364838	6861501	10	65	0	22.4	4.7	58.2
70210	365082	6861943	11	1	7	4.5	16.1	27.1
70210	365171	6862071	12	4	9	8.1	12.2	37.6
70220	365358	6861943	1	5	14	18.1	30.7	19.1
70220	365296	6861820	2	3	1	18.5	48.4	26.1
70220	365268	6861787	3	2	4	10.1	37.7	22.9
70220	365008	6861420	4	29	6	50.1	25.8	32.5
70220	364963	6861336	5	30	9	59.5	31	25.8
70220	364745	6861009	6	48	0	213.4	115.2	22.8
70220	364654	6860873	7	33	4	75.3	39.4	27.5

70220	364605	6860811	8	33	4	81.1	44.8	26.7
70220	364535	6860708	9	35	5	56.6	27	32.4
70220	364470	6860599	10	29	4	36.8	16.1	40
70220	364380	6860438	11	19	0	23.5	13.6	49.4
70220	364244	6860210	12	32	1	18.1	6.2	58.4
70220	364227	6860176	13	30	1	18.6	6.8	54.7
70230	364432	6860130	1	28	0	18.3	7.2	59.6
70230	364495	6860251	2	21	0	25.4	15	44.4
70230	364546	6860318	3	19	7	20	12.4	42.7
70230	364638	6860444	4	27	0	37	16.7	44.7
70230	364654	6860488	5	33	0	35.4	13.6	43
70230	364766	6860673	6	26	6	39.1	20.4	36.2
70230	364792	6860727	7	32	0	49.2	22.5	33.2
70230	364879	6860859	8	18	9	52.2	40.7	24.3
70230	364982	6860993	9	26	4	39.9	22.2	36.8
70230	365014	6861033	10	38	0	37.8	14.6	43
70230	365105	6861148	11	13	11	36.1	36.4	23.8
70230	365217	6861330	12	39	9	28.9	10.3	38.8
70230	365466	6861777	13	53	0	16.4	23	39.8
70230	365485	6861811	14	5	0	13.5	22.4	36.6
70230	365546	6861922	15	3	6	7.8	16	31.8
70240	365748	6861896	1	3	15	12.1	34.8	14.2
70240	365725	6861850	2	4	14	15.7	36.7	14.9
70240	365646	6861711	3	11	7	43.7	45.6	23.6
70240	365309	6861189	4	31	0	55.7	28.9	39.4
70240	365271	6861116	5	37	6	98.8	51.3	25.1
70240	365125	6860883	6	28	4	95.8	57.8	26.4
70240	365080	6860822	7	28	7	75.4	45.5	24.3
70240	364954	6860615	8	39	8	32.3	11.5	36
70240	364762	6860331	9	33	0	34.8	14.3	49.8
70240	364684	6860216	10	26	0	29.7	14.6	46.4
70240	364597	6860047	11	13	0	16.1	11.8	56.3
70240	364535	6859939	12	15	0	15.4	8.9	58.9
70250	364843	6860003	1	30	0	25.2	16.7	48.1
70250	364952	6860231	2	37	0	38.4	14.9	48.5
70250	365037	6860353	3	38	2	78.5	37.9	29.5
70250	365070	6860395	4	38	4	78.1	31.5	29
70250	365123	6860475	5	35	5	60.7	27	32.2
70250	365147	6860512	6	33	6	53.3	25.9	31.7
70250	365305	6860766	7	21	18	45.6	29.3	20.1
70250	365347	6860850	8	30	11	72.4	40.1	21.4

70250	365372	6860897	9	28	10	74.8	45	21.8
70250	365402	6860945	10	31	8	79.7	45.4	22.5
70250	365477	6861049	11	30	9	53.6	26.1	28.8
70250	365532	6861134	12	28	3	50.6	26.8	35.1
70250	365566	6861198	13	27	7	35.7	17.2	36.1
70250	365761	6861524	14	6	9	18.3	26.3	26.1
70250	365791	6861580	15	7	6	20.8	26.8	29.2
70260	366085	6861576	1	4	13	9.7	18.3	22.6
70260	366006	6861463	2	6	2	16.1	20	37.8
70260	365788	6861121	3	17	3	21.7	14.4	43
70260	365710	6861011	4	30	3	59.5	30.5	33.1
70260	365650	6860917	5	20	3	49.7	33.1	32.2
70260	365623	6860878	6	26	7	49	29.7	30.2
70260	365529	6860741	7	26	10	20.7	10	41
70260	365301	6860384	8	27	1	55.4	31.4	34.5
70260	365248	6860287	9	38	4	63.5	26.7	32.2
70260	365210	6860231	10	38	2	63.6	28.2	33.2
70260	365084	6860036	11	26	1	25.4	12	46.7
70260	364998	6859913	12	20	0	26.6	16.8	50.1
70260	364951	6859832	13	17	0	22.9	16.3	53.5
70270	365145	6859790	1	33	8	31.5	23.2	32.5
70270	365202	6859862	2	24	2	49	30	34.5
70270	365272	6859942	3	23	8	47	29.8	28.9
70270	365328	6860041	4	26	2	96.1	64	24.8
70270	365388	6860137	5	33	10	89.6	48.6	20.7
70270	365488	6860290	6	37	6	101.2	54.4	23.8
70270	365516	6860343	7	9	4	95.9	62.1	24.4
70270	365582	6860442	8	28	4	65.4	35.1	28.6
70270	365642	6860529	9	20	12	42.2	25.2	26.6
70270	365713	6860657	10	26	15	35.3	19	28.2
70270	365771	6860745	11	28	3	77.6	44.4	29.1
70270	365842	6860845	12	27	5	33.7	16.8	36.8
70270	365921	6860974	13	33	0	49.1	24	37.5
70270	366012	6861107	14	13	14	18.6	16.2	31.7
70270	366066	6861204	15	13	11	18.9	13.8	37.3
70270	366178	6861374	16	8	4	17.4	19.8	37.5
70280	366397	6861316	1	9	26	15.8	16.4	19.7
70280	366259	6861114	2	18	11	30.7	21.9	30.9
70280	366245	6861093	3	37	9	32.3	20.7	33.3
70280	366137	6860949	4	13	1	76.9	79.2	22.9
70280	366107	6860896	5	26	7	90	66.9	22

70280	366025	6860742	6	18	6	40.5	31.1	30.7
70280	365947	6860638	7	33	3	157	100.6	20.7
70280	365833	6860454	8	18	7	82.2	68.4	20.7
70280	365801	6860410	9	28	9	95.3	59.6	20
70280	365735	6860309	10	70	1	169.5	65.2	22.3
70280	365702	6860254	11	80	2	167.8	56.7	21.8
70280	365624	6860140	12	35	3	110.5	55.3	25.8
70280	365550	6860020	13	33	3	69.3	36.4	30
70280	365516	6859960	14	52	0	77.6	29	34.5
70280	365463	6859875	15	48	1	48.1	16.8	40.8
70280	365351	6859672	16	18	0	25.8	15.5	44.3
70290	365578	6859697	1	26	0	30.3	16.4	43
70290	365656	6859802	2	50	0	74.9	30.8	36.4
70290	365711	6859878	3	32	0	150.2	82.2	26.6
70290	365814	6860039	4	31	5	73.8	39.2	27.2
70290	365873	6860138	5	80	0	120.7	38.8	28.4
70290	365896	6860173	6	70	2	121.6	40.2	26.6
70290	365967	6860277	7	30	2	128.5	71.9	23.6
70290	366060	6860416	8	33	14	48.1	20.2	28
70290	366156	6860585	9	21	10	38.7	24.9	30.8
70290	366271	6860782	10	20	3	37.2	24.6	39.2
70290	366354	6860899	11	26	7	58.2	35.9	27.3
70290	366461	6861062	12	21	13	45.2	27.8	26.3
70300	366625	6860992	1	26	11	57.7	33.8	23.7
70300	366562	6860871	2	28	3	138.9	91.8	21.2
70300	366530	6860813	3	33	7	114.4	55.7	21.7
70300	366491	6860751	4	38	10	88.7	39.4	25.2
70300	366388	6860610	5	13	8	31.6	30.2	27.9
70300	366324	6860515	6	12	5	57.2	67.3	21.6
70300	366291	6860457	7	10	5	68.2	86.8	18.4
70300	366232	6860351	8	13	17	48.8	44	15
70300	366186	6860276	9	12	15	36.5	35.7	19.2
70300	366029	6860011	10	20	7	32.6	18.5	35.7
70300	365945	6859870	11	6	4	11.3	12.7	43.7
70300	365774	6859600	12	8	14	10.3	8.1	43.5
70310	366314	6860111	1	18	12	35.4	24.3	30.1
70310	366350	6860168	2	18	7	40.4	29.3	29.5
70310	366385	6860219	3	14	11	34.2	28	28.9
70310	366455	6860325	4	15	4	37.1	31.6	31.5
70310	366577	6860513	5	11	1	29.6	29.7	34.9
70310	366611	6860564	6	16	2	36.7	29.9	34.7

70310	366731	6860769	7	33	2	52.1	25.2	35.9
70310	366818	6860907	8	26	5	50.9	29.5	32
70320	367005	6860795	1	55	3	245.9	103.8	19.9
70320	366951	6860727	2	37	9	87.7	41.9	23
70320	366810	6860535	3	20	0	112.6	95.1	26.2
70320	366779	6860488	4	13	0	94.1	104.7	20.4
70320	366725	6860413	5	15	10	66.6	70	16.6
70320	366510	6860077	6	5	12	16	26	24.3
70320	366009	6859223	7	5	9	10	14.2	36.1
70320	365968	6859164	8	3	2	8.2	14.4	39.9
70330	366091	6858986	1	3	7	8.3	13.1	37
70330	366161	6859083	2	26	5	29.8	15.7	37.7
70330	366171	6859104	3	26	7	26.7	13.6	37.7
70330	366726	6860004	4	2	9	4.8	18.9	24.8
70330	366756	6860049	5	2	7	7.4	23.4	24.9
70330	366925	6860315	6	7	2	20.5	23.2	34.4
70330	366986	6860416	7	15	4	48.4	38.9	30.1
70330	367045	6860513	8	35	4	58.1	25.3	33.2
70330	367094	6860600	9	50	1	68.1	24.8	35.4
70330	367125	6860651	10	50	1	76.5	30.5	31.7
70330	367195	6860752	11	30	5	45.7	18.9	37
70340	367365	6860617	1	50	0	181.3	78	20.3
70340	367262	6860449	2	30	1	54.8	24.4	36.5
70340	367159	6860320	3	26	1	52.5	32.5	34
70340	366890	6859933	4	2	7	3	6.9	43.7
70340	366475	6859236	5	2	0	6.5	15.5	40.3
70340	366316	6858965	6	14	9	17.8	7	47.5
70340	366252	6858859	7	26	6	17.1	7.3	51.7
70340	366164	6858718	8	1	0	2.2	8.8	43.9
70340	366079	6858600	9	1	13	2.2	9	29.1
70350	366506	6858799	1	26	6	29.4	13.9	37.1
70350	366550	6858880	2	34	1	43.8	17.4	41
70350	367090	6859800	3	0	0	1.1	8.5	38.1
70350	367112	6859833	4	0	0	0.9	7.3	36.2
70350	367367	6860215	5	17	10	29.3	19.6	35.2
70350	367442	6860321	6	16	1	43.3	33	33.8
70350	367496	6860401	7	18	0	55.5	40.7	32.5
70350	367538	6860472	8	33	0	73.3	36.6	33.6
70350	367624	6860626	9	35	4	23.9	8.6	46.4

70360	367796	6860541	1	25	4	130.3	105.9	19.9
70360	367750	6860458	2	16	0	217	251.6	9.6
70360	367699	6860385	3	8	0	147.9	127.9	11.5
70360	367639	6860298	4	10	9	29	32.5	26.1
70360	366706	6858836	5	26	12	12.3	5.4	50.6
70360	366641	6858742	6	16	14	11.5	6.5	45.8
70360	366506	6858548	7	2	9	4.3	11.9	33.4
70371	366696	6858443	1	3	7	4.3	8.3	42.9
70371	366810	6858600	2	13	8	15	9.6	46.8
70371	366864	6858680	3	20	11	17.5	8.4	45.2
70371	367905	6860367	4	7	4	24.7	33.2	31.4
70371	367955	6860440	4	11	3	31.8	34.3	30.3
70371	368016	6860518	5	15	3	38.4	30.4	32.1
70380	366933	6858394	1	4	10	10.5	17.4	31
70380	366989	6858496	2	60	1	81.7	27.3	30.2
70380	367025	6858558	3	70	1	84.4	25.8	31.1
70380	367937	6859991	4	1	6	1.9	8.5	38.9
70380	368276	6860520	5	12	4	50.8	34.9	30.3
70380	368297	6860558	6	12	5	52.8	33.5	30.9
70380	368331	6860620	7	25	12	40.3	26	33.8
70390	368637	6860730	1	28	0	60.4	33.4	37.3
70390	368610	6860688	2	35	1	86.1	44.2	32.2
70390	368550	6860595	3	26	0	86.4	54	24.8
70390	368524	6860558	4	26	0	97	57.2	23.5
70390	368496	6860515	5	24	0	77.6	49.3	24
70390	368444	6860431	6	13	0	33.1	28.3	25.6
70390	367212	6858483	7	100	0	132.2	38.3	27.8
70390	367172	6858421	8	150	0	242	63.8	23.7
70400	367296	6858325	1	50	1	48.4	12.7	41.9
70400	367338	6858395	2	80	0	79.3	19	37.4
70400	367365	6858440	3	70	0	83.7	21.9	35.2
70400	367610	6858839	4	7	1	4.9	5.9	41.8
70400	368629	6860425	5	12	10	24.6	21.3	30.2
70400	368673	6860486	6	12	6	36.7	30.6	29.6
70400	368723	6860561	7	30	6	53.7	27.6	32
70400	368740	6860589	8	35	8	55.4	25.3	33.7
70410	368894	6860457	1	22	0	74.7	53.5	14.4
70410	368855	6860400	2	20	0	70	54.3	16.8
70410	367895	6858954	3	10	15	12.4	9.9	40.9

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70410	367828	6858855	4	18	15	15.3	9.1	41.7
70410	367582	6858470	5	60	15	26.9	5.3	36.5
70410	367549	6858417	6	60	5	44.8	9.6	39.6
70410	367512	6858353	7	40	5	30.8	7.9	46.4
70410	367450	6858256	8	45	0	21.5	6.3	54.2
70420	367678	6858180	1	25	10	29.2	13.9	35.1
70420	367732	6858247	2	55	3	70.7	21.3	34.9
70420	367789	6858322	3	70	0	106.6	28.6	29
70420	367817	6858362	4	100	0	104.9	24.8	29.1
70420	367989	6858649	5	33	5	48.8	20.8	35.2
70420	368022	6858701	6	40	4	70.3	25.8	33.1
70420	368041	6858729	7	110	0	75	18.8	36.4
70420	368074	6858776	8	130	0	59.8	10.6	43
70420	368147	6858898	9	125	0	78	15.8	42
70420	368262	6859062	10	5	25	10.3	12.1	25.3
70430	368435	6858890	1	55	15	46.9	13.1	27.7
70430	368392	6858814	2	200	0	74.6	12.1	36.1
70430	368349	6858741	3	200	0	83.4	12.9	32.1
70430	368279	6858638	4	175	0	175.4	29.1	28.5
70430	368253	6858598	5	160	0	182.4	35.1	26.5
70430	368214	6858532	6	75	3	97.4	22.5	29.8
70430	368173	6858461	7	90	0	73.4	16.5	37.1
70430	368143	6858418	8	90	0	68.6	15.5	40
70430	367966	6858169	9	30	0	67.2	25.7	37.7
70430	367927	6858111	10	52	0	85.7	28.8	33.5
70440	368086	6858063	1	27	0	42.5	19.2	42.4
70440	368198	6858210	2	55	0	82.8	24.5	34.9
70440	368234	6858253	3	65	0	89.2	23.4	34.1
70440	368290	6858322	4	52	0	95.6	25.8	33.9
70440	368391	6858445	5	70	0	98.3	27.9	27.3
70440	368435	6858502	6	155	3	102.1	19.4	29.9
70440	368532	6858632	7	135	0	94.4	16.6	37.6
70440	368571	6858687	8	140	0	81.2	13.7	37.5
70450	368770	6858692	1	200	0	154.9	30.1	32.2
70450	368753	6858668	2	130	0	172	33	29.1
70450	368704	6858589	3	20	0	109.3	21.7	31.1
70450	368594	6858449	4	100	0	99.4	22.1	36.7
70450	368464	6858249	5	55	0	116.3	39.9	32.3
70450	368397	6858127	6	35	4	86.9	41.3	29.8
70450	368375	6858090	7	35	0	75.8	36.5	30.4

70450	368321	6857984	8	13	7	25.7	17.8	38.3
70460	368477	6857899	1	3.5	23	7	9.5	26.4
70460	368777	6858348	2	100	0	56.2	13	50.3
70460	368805	6858407	3	95	0	77.7	17.8	40.1
70460	368827	6858462	4	90	5	73.5	16.7	34.2
70460	368889	6858573	5	90	0	46.4	9.3	51.1
70460	368940	6858665	6	260	0	35.7	3.3	65.2
70460	368967	6858716	7	130	0	27.3	4.2	65.7
70470	369073	6858523	1	*	*	40.8	1.2	68.2
70470	369031	6858380	2	130	0	94.2	21.1	34.4
70470	368999	6858308	3	60	10	45.1	10.5	35.8
70470	368976	6858234	4	*	*	22.1	-0.2	59.1
70470	368661	6857802	5	3	20	5.9	9.7	29.5
70480	368858	6857681	1	4	0	9.5	15.9	35.2
70480	369282	6858321	2	40	7	19.3	6.2	48
70480	369391	6858490	3	80	0	52.2	11.3	48.6
70480	369419	6858530	4	75	0	56.5	13.4	43.1
70490	369518	6858352	1	80	0	77	19.4	41.2
70490	369497	6858298	2	40	0	86.2	36	31
70490	369479	6858255	3	35	6	62.8	27.9	29.6
70490	369080	6857636	4	2	11	4.4	9.2	38.3
70500	369218	6857592	1	2	20	2.1	9.1	25.8
70500	369295	6857692	2	1.6	11	3.3	9.8	34.3
70500	369655	6858244	3	14	22	11.3	5.8	42.6
70510	369906	6858212	1	13	10	11.6	4.6	56.1
70510	369877	6858163	3	8	20	7.6	3.1	44.2
70510	369712	6857921	4	1.5	15	3.5	10.3	26.9
70510	369445	6857543	5	1.3	11	3	12.6	24.4
70520	369894	6857864	1	2.5	18	5.3	11	27.4
70520	370248	6858420	2	40	0	58.2	23.6	37.7
70520	370267	6858449	3	40	0	61.2	25.6	34
70520	370287	6858479	4	43	7	59	22.9	31.6
70530	370550	6858473	1	15	6	29.6	22.5	36.5
70530	370437	6858324	2	12	8	24.6	20.4	34.4
70530	370171	6857847	3	2	8	8.2	23	20.9
70530	369798	6857332	4	8	18	21.5	23.4	20.8

70540	370072	6857290	1	6	10	17.3	24.5	25.6
70540	370118	6857363	2	2.3	12	10	15.8	26.6
70540	370171	6857470	3	1.8	12	6.2	13.7	25
70540	370281	6857657	4	3	15	8.2	15.2	24.7
70540	370621	6858303	5	8	5	11.6	12	48.4
70540	370676	6858393	6	10	4	16.6	13.5	43.3
70550	370557	6857701	1	3.5	15	8.6	15.1	27.3
70550	370495	6857602	2	4.5	8	17.1	31.7	25
70550	370443	6857515	3	3.5	7	12.1	22.8	27.7
70550	370240	6857231	4	9	10	17.6	18.6	32.3
70560	370433	6857185	1	12	13	30.1	33.4	21.6
70560	370585	6857419	2	3	3	7.4	14.4	36.9
70560	370673	6857561	3	3.5	5	10.1	17.3	36.6
70560	370958	6858011	4	2	•	4	9.1	42.9
70570	371127	6857900	1	1.2	8	4.3	19.4	21
70570	370844	6857454	2	2	7	10.4	30	21.2
70570	370600	6857096	3	20	7	32.3	21.2	32.5
70580	370755	6857031	1	26	7	44.8	27	33.6
70580	371465	6858039	2	3.5	9	10.1	17.4	30.8
70580	371640	6858349	3	50	3	54.3	20.6	36.7
70580	371675	6858415	4	50	0	76.1	25.5	36.9
70580	371757	6858559	5	60	0	68.8	21	36.6
70580	371839	6858695	6	35	0	89.6	42.8	31.3
70590	372018	6858642	1	45	6	203.3	110.6	16.3
70590	371947	6858532	2	50	4	127.8	55.3	22.3
70590	371896	6858451	3	50	2	145.2	57	23.4
70590	371864	6858393	4	80	0	205.4	79.8	23.8
70590	371838	6858347	5	50	0	201.5	86.8	22.9
70590	371761	6858228	6	28	6	93.8	54.5	23.4
70590	370943	6856953	7	15	13	23.3	17.9	32
70590	370736	6856621	8	8	2	21.8	28.5	32.9
70590	370703	6856575	9	7.5	2	23.8	31.9	32.4
70600	370863	6856532	1	7	5	30	43.8	24.6
70600	370885	6856568	2	12	2	43.8	44.6	27.1
70600	370931	6856642	3	10	8	21.5	19.7	35.8
70600	371142	6856972	4	6.5	12	11	11.7	37.6
70600	371427	6857378	5	2.5	2	9.3	23.5	28.1
70600	371807	6857931	6	1.8	14	4.1	10.4	30.9

70600	371953	6858178	7	11	9	32.7	29.7	25.2
70600	372009	6858289	8	45	4	108.2	48.9	26
70600	372080	6858432	9	18	1	66.6	42.9	30.1
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70600	372200	6858625	11	22	4	69.5	49.3	24.3
70600	372243	6858687	12	27	3	73	41.6	27.4
70600	372420	6858944	13	28	0	46.3	18.3	39.4
70600	372463	6859009	14	35	0	44.6	17.7	43.2
70600	373042	6859915	15	30	1	27	11.6	46.8
70600	373074	6859963	16	25	1	30.7	16.6	42.3
70610	373390	6859882	1	20	10	17.8	7.9	46.2
70610	373359	6859796	2	25	3	26.9	14.3	41.3
70610	372916	6859178	3	22	25	27.3	15.2	19.9
70610	372792	6859023	4	35	3	72.4	30.3	30.2
70610	372757	6858982	5	40	4	81.2	33.4	29
70610	372705	6858917	5	30	11	103.8	64	18.7
70610	372678	6858866	6	26	8	163.8	107.5	14.2
70610	372307	6858272	7	50	9	124.6	49.6	20.9
70610	372164	6858092	8	4	15	14.3	24.6	19.4
70610	371998	6857857	9	1.5	14	4	13.7	20.4
70610	371619	6857275	10	2.5	6	15.2	47.3	18.6
70610	371176	6856523	11	13	9	43.6	39.4	25.3
70610	371149	6856479	12	13	7	31.8	29.9	27.3
70620	371360	6856432	1	10	12	21.6	23.3	26.4
70620	371656	6856884	2	13	18	9.7	6.5	41.9
70620	371882	6857261	3	1	10	1.9	9.3	30
70620	372321	6857993	4	3	10	8.7	19	26.4
70620	372450	6858187	5	100	0	161.5	48.2	25.7
70620	372496	6858249	6	100	2	143.1	36.3	26.9
70620	372593	6858384	7	26	5	51.9	30.8	31.7
70620	372810	6858684	8	12	4	27.1	24.9	36.2
70620	373094	6859069	9	15	18	29.3	22.4	27
70620	373152	6859166	10	13	20	25.7	19.2	25.1
70620	373473	6859744	11	13	6	14.3	9.7	46.7
70630	373579	6859514	1	2	12	7	8.8	40.4
70630	373308	6859097	2	10	16	39.3	42.4	17
70630	373232	6858987	3	17	14	72.8	61.5	15.6
70630	373165	6858897	4	21	12	62.2	45.8	20
70630	372949	6858601	5	16	0	85.2	78	24.9
70630	372917	6858548	6	22	4	124.6	113.6	19.4
70630	372867	6858462	7	17	5	92.2	89	18.9

70630	372778	6858330	8	32	7	167.7	104.2	16.5
70630	372669	6858165	9	30	9	73.3	40.5	22.8
70630	372576	6858019	10	40	8	87.7	43.1	23.2
70630	371806	6856762	11	21	19	26.8	14.2	25.8
70630	371575	6856413	12	2	15	6.2	12.9	22
70640	371768	6856392	1	2	20	4.2	8.1	29.9
70640	371999	6856703	2	50	4	74.2	29.5	30.4
70640	372475	6857482	3	1	10	2.1	9.2	30.4
70640	372842	6858064	4	18	13	26.8	17.6	32.1
70640	372924	6858179	5	9	8	40.3	24.5	31.3
70640	372954	6858222	6	18	8	37.8	24.7	31.6
70640	373028	6858331	7	20	4	45.4	31.2	32.7
70640	373275	6858701	8	23	14	25.2	14.4	32.7
70640	373306	6858753	9	12	13	25.1	20.2	29.6
70640	373449	6858982	10	26	13	33.7	16.4	31.6
70640	373655	6859290	11	26	12	12.7	4.7	47.7
70650	373843	6859202	1	18	9	48.9	34.6	23.1
70650	373808	6859151	2	22	11	74.3	55.2	19.5
70650	373780	6859112	3	20	12	78	62	16.6
70650	373699	6858992	4	26	13	67.5	40.3	20.1
70650	373645	6858918	5	17	8	50.2	41.1	23.9
70650	373593	6858857	6	16	10	67.6	64.8	20.2
70650	373532	6858778	7	12	7	69.3	82.6	18.4
70650	373429	6858627	8	8	16	30.8	38.4	16.3
70650	373230	6858330	9	10	10	40.9	48.6	22.8
70650	373185	6858262	10	11	11	68.4	80.4	13.5
70650	373148	6858201	11	38	10	188.3	109.3	13.1
70650	373121	6858155	12	35	6	168	83.5	17.6
70650	373072	6858071	13	26	14	50.3	30.1	24
70650	372707	6857426	14	17	30	5.3	18.3	24.5
70650	372164	6856622	15	40	17	63.2	24.5	19.4
70650	372133	6856565	16	38	12	60.1	25.9	24.7
70650	371995	6856354	17	8	18	18.5	20.2	23.9
70660	372103	6856147	1	2	6	6.3	10.5	44.4
70660	372185	6856251	2	8	9	19.6	18.2	35.9
70660	372237	6856325	3	10	11	15.1	12.5	36.3
70660	372338	6856470	4	26	3	45.9	20	37.7
70660	372362	6856508	5	18	3	48.1	20.3	36.2
70660	372510	6856750	6	5	10	10.4	12.8	37.2
70660	372673	6857006	7	27	8	34.8	18.6	33.2
70660	372785	6857185	8	10	13	19	18.7	30.4

70660	372867	6857309	9	4	5	13.7	28.5	27.1
70660	373309	6858001	10	20	13	27.4	18.2	29.7
70660	373397	6858135	11	30	18	18	7.3	37
70660	373524	6858337	12	17	16	37.5	32.4	21.2
70660	373605	6858474	13	18	5	92.9	75.6	18.6
70660	373656	6858573	14	26	6	131.3	102.4	16.9
70660	373680	6858619	15	26	5	125.8	88	17.4
70660	373824	6858868	16	28	9	51.3	28	30.4
70660	373860	6858931	17	33	9	51.6	26.3	29.4
70660	373900	6859000	18	35	8	62.6	29.2	28.4
70660	373997	6859149	19	27	11	23.3	10.6	38.6
70670	374140	6858912	1	30	0	131.6	77.7	25.4
70670	374114	6858874	2	27	1	123	88.3	22.1
70670	374016	6858720	3	11	9	68.1	78.1	17.1
70670	373989	6858673	4	14	8	100.6	116.1	14.1
70670	373966	6858632	5	16	12	79.4	80.9	13.7
70670	373935	6858581	6	24	11	100.6	76.5	14.9
70670	373867	6858474	7	16	9	106.9	125	13.6
70670	373833	6858424	8	20	9	129.9	120.3	12.6
70670	373775	6858335	9	14	14	67.7	68	13
70670	373686	6858205	10	20	18	52	37	15
70670	373619	6858106	11	38	14	72.4	35.4	18.1
70670	373450	6857855	12	25	6	58.9	36.1	27.4
70670	373027	6857151	13	10	11	45.4	51.5	18.4
70670	372954	6857029	14	35	3	137.1	78.1	20.3
70670	372911	6856961	15	33	4	115.9	56.9	22.1
70670	372721	6856645	16	22	4	80.3	56.2	24.6
70670	372661	6856543	17	8	9	28.1	35.2	23.1
70670	372615	6856473	18	21	10	54.3	37	24.4
70670	372471	6856256	19	34	6	81.5	45.8	26
70670	372396	6856125	20	35	8	47.8	21	32.1
70680	372304	6855747	1	30	15	41.6	18.1	27.4
70680	372365	6855837	2	21	10	41.2	26.9	30
70680	372626	6856271	3	35	6	82.3	44.7	26.2
70680	372740	6856450	4	30	6	62.4	32.4	29
70680	372852	6856612	5	33	0	72.8	41.9	32.6
70680	372899	6856678	6	26	1	72.6	44.5	30.6
70680	373014	6856841	7	40	0	114	60.6	26.4
70680	373110	6856977	8	20	0	293.2	143.5	19.7
70680	373139	6857019	9	8	0	260.1	161.4	17.3
70680	373173	6857067	10	26	6	165.7	112.5	16.4
70680	373781	6858030	11	19	*	44.9	13	25.8

70680	373906	6858226	12	70	1	132.3	52.8	26.6
70680	373973	6858325	13	25	6	57.7	39.4	27.3
70680	374162	6858607	14	17	8	38.3	26.2	31.7
70690	374501	6858807	1	26	13	25.1	11.9	31.6
70690	374420	6858683	2	11	12	25.3	19.1	32.6
70690	374271	6858457	3	12	10	50.2	56.2	19.2
70690	374238	6858408	4	12	9	68.1	75	16.1
70690	374186	6858337	5	17	16	54.5	48.4	17.7
70690	374137	6858264	6	18	7	86.4	72.1	19.7
70690	374063	6858158	7	24	2	192.6	134.7	16.1
70690	374015	6858087	8	16	17	49.9	43.1	16.4
70690	373827	6857802	9	65	5	110.6	33.8	24.7
70690	373603	6857448	10	3	1	10.5	20.6	33.6
70690	373436	6857149	11	3	12	16.3	45.4	14
70690	373349	6857004	12	50	4	247.8	121.2	17.5
70690	373303	6856923	13	80	6	208.1	69.1	17.8
70690	373212	6856785	14	32	6	96.5	53.4	25.7
70690	373144	6856685	15	8	6	28.8	40.7	27.4
70690	372962	6856418	16	30	5	60	27.1	30
70690	372847	6856245	17	27	5	34.3	15.6	36.6
70690	372633	6855892	18	13	11	50	47.7	21.7
70690	372440	6855595	19	40	2	71.4	30.1	32.1
70700	372732	6855665	1	20	3	29.2	17.3	39.3
70700	373995	6857658	1	100	0	184	62.1	27
70700	372802	6855764	2	20	7	39.3	18.4	35.2
70700	373115	6856220	3	40	6	30.6	10.9	41.3
70700	373241	6856393	4	40	10	28.5	9.7	38.2
70700	373433	6856691	5	10	10	20.2	20.1	30.7
70700	373542	6856908	6	80	0	180.8	67.2	24.7
70700	373569	6856959	7	50	0	184	70.8	23.5
70700	373848	6857425	8	3	5	10.9	18.4	31.8
70700	373908	6857512	9	7	5	22.2	28.9	30.4
70700	374100	6857821	11	26	9	60.6	37.9	24.4
70700	374191	6857945	12	13	8	38	35.1	25.6
70700	374296	6858103	13	13	8	32.8	26.6	29.8
70700	374347	6858170	14	23	10	37.8	19.4	32.8
70700	374708	6858667	15	25	12	25.4	11.6	35.4
70710	374750	6858414	1	10	10	35.9	25.8	29.5
70710	374523	6858057	2	13	8	61	61.6	19.5
70710	374479	6857986	3	18	10	77.5	71.8	17
70710	374398	6857863	4	15	10	56.5	50.9	19.8

70710	374326	6857750	5	17	10	60.7	51.4	15.6
70710	374274	6857671	6	11	17	39.4	40.5	15.6
70710	374169	6857517	7	55	8	117.8	41.3	22.2
70710	374115	6857437	8	70	4	100.6	29.5	26.7
70710	374065	6857362	9	65	4	106.8	38.4	27.3
70710	373783	6856928	10	60	4	137.3	46	25.8
70710	373727	6856847	11	50	5	92.7	35.2	27.3
70710	373586	6856641	12	22	11	53.1	37.8	22.1
70710	373408	6856372	13	30	6	57.4	30.1	28.7
70710	373382	6856328	14	32	7	78.6	35.9	26.4
70710	373320	6856227	15	50	4	88.1	32	27.7
70710	373269	6856131	16	30	5	38.9	18	37
70710	373138	6855922	17	10	16	29.3	28.9	18.2
70710	373075	6855806	18	15	17	23.3	17.9	27.7
70710	372955	6855614	19	13	4	29.2	26.1	32.6
70720	373127	6855546	1	23	0	20	11.2	52.5
70720	373352	6855887	2	13	7	15.3	8.2	45.7
70720	373567	6856214	3	60	0	39.2	9.9	45.8
70720	373681	6856367	4	30	6	23.6	9.6	43.8
70720	373971	6856780	5	65	6	39.2	9.9	39.2
70720	374027	6856861	6	26	9	46.9	10.8	32.7
70720	374130	6857008	7	70	10	62.1	17.1	28.3
70720	374181	6857114	8	40	10	49.4	19.6	29.6
70720	374214	6857188	9	55	9	59.8	18.1	29.5
70720	374338	6857418	10	35	16	26.1	20.1	34.4
70720	374411	6857543	11	12	11	23	20.3	30.6
70720	374556	6857756	12	10	11	23.7	22.8	26.4
70720	374639	6857894	13	24	11	32.3	19	32.1
70720	374748	6858058	14	16	12	19	11.8	39
70720	374978	6858390	15	18	9	28.1	17.9	33.6
70720	375061	6858508	16	22	14	27.3	16.2	30.3
70730	373043	6854993	1	54	5	50.4	15.3	36.7
70730	373200	6855198	2	26	4	59.3	36.6	28.6
70730	373233	6855239	3	35	6	78.3	39.7	27.1
70730	373377	6855427	4	14	9	28.9	25.3	32.9
70730	373466	6855561	5	23	8	42.7	26	32.3
70730	373532	6855657	6	24	7	50.2	31	29.8
70730	373582	6855738	7	21	6	58.2	40.6	26.7
70730	373627	6855816	8	21	8	52	33.1	27.1
70730	373739	6856033	9	40	6	87.9	39.1	26
70730	373789	6856128	10	70	3	116.3	34.6	28.2
70730	373884	6856313	11	35	7	35.7	12.8	38.3

70730	374160	6856813	12	125	8	47.7	8.3	33.8
70730	374296	6857023	13	100	7	69.7	16.8	29.8
70730	374399	6857170	14	70	8	62.4	18.4	29
70730	374886	6857820	15	15	16	17.1	10.8	35.4
70730	375021	6858005	16	28	9	29.9	13.3	35.4
70730	375125	6858151	17	35	14	30.3	20.1	29.2
70730	375188	6858241	18	20	13	35.8	25.7	28
70730	375304	6858433	19	27	12	32.6	24.5	27.6
70740	374922	6857624	1	4	14	22.8	25.5	24.3
70740	374809	6857466	2	16	12	80.1	76.5	12.3
70740	374729	6857347	3	12	12	59.4	62.3	15.2
70740	374463	6856932	4	80	17	64	17	22.2
70740	374072	6856272	5	33	15	68.7	30.6	19.4
70740	373905	6856019	6	50	2	487.2	227.7	15.3
70740	373842	6855947	7	45	9	208.6	112.4	13.6
70740	373788	6855875	8	52	8	218.3	107.9	14.7
70740	373753	6855810	9	30	5	275.9	189.2	13.9
70740	373740	6855784	10	32	4	295.2	201	13.5
70740	373689	6855690	11	18	9	138.7	138.3	12.3
70750	373811	6855504	1	32	4	144	75.5	20.8
70750	373922	6855667	2	28	6	81.2	45.5	23.3
70750	373992	6855779	3	35	4	131	63.1	22.8
70750	374057	6855888	4	45	2	141.6	66.9	21.8
70750	374094	6855946	5	30	2	142	66	22.7
70750	374116	6855978	6	45	2	138.1	61.5	23.3
70750	374210	6856117	7	37	4	107.6	49.1	28.4
70750	374237	6856159	8	50	2	101.6	41.8	29.2
70750	374289	6856243	9	70	13	48.1	12.1	30.2
70750	374440	6856463	10	40	5	43.5	14.6	37.2
70750	374683	6856834	11	70	13	35.8	6.2	34.4
70750	374783	6856996	12	35	4	47.5	10.6	37.6
70750	374820	6857055	13	30	1	50.4	26.6	36.7
70750	374971	6857275	14	20	4	46.5	33.5	31.7
70750	375056	6857399	15	16	6	47.4	37.2	27
70750	375421	6857968	16	25	15	34.6	18.1	28
70750	375538	6858167	17	24	22	40.2	22.8	20.2
70750	375581	6858243	18	27	23	40.7	19.1	19.9
70760	375273	6857399	1	14	20	49.3	45.9	13
70760	375144	6857212	2	13	10	72.1	72.3	15.8
70760	375107	6857157	3	21	12	64.1	44.2	20
70760	374693	6856491	4	105	1	206.4	60.5	22

70760	374634	6856393	5	50	0	245.4	123.6	20.2
70760	374420	6856089	6	75	2	234.6	80.6	21.2
70760	374384	6856035	7	85	0	221	67.1	22.6
70760	374332	6855962	8	80	2	274.6	93.5	21.3
70760	374296	6855912	9	60	0	380.3	164	18
70760	374253	6855847	10	30	5	197.5	150	14.6
70760	374239	6855823	11	32	8	195.1	122	14.8
70760	374172	6855717	12	25	12	84.7	60.7	17.9
70760	374131	6855657	13	18	10	72.4	64.7	19
70760	374010	6855473	14	35	5	113.9	63.2	22.1
70760	373962	6855403	15	28	7	93.5	53.9	22.2
70770	374183	6855318	1	27	0	67.8	35.4	34.9
70770	374263	6855434	2	75	0	136.1	73.7	24.9
70770	374329	6855515	3	28	7	108.2	68.8	19.9
70770	374424	6855638	4	20	12	81.8	63	15.8
70770	374455	6855681	5	22	18	62.6	48.3	14.4
70770	374512	6855760	6	20	9	141.2	99.9	14.6
70770	374590	6855857	7	18	6	108.8	77.8	18.6
70770	374664	6855947	8	65	1	230	85.6	21.2
70770	374709	6856007	9	55	3	221.2	91.7	20.5
70770	374756	6856077	10	48	4	173.3	79.9	19.8
70770	374852	6856215	11	33	5	124.5	63.3	22.5
70770	374889	6856265	12	35	0	153.1	75.6	24.4
70770	375044	6856499	13	50	0	113.1	43.3	31.3
70770	375099	6856606	14	30	13	43.1	19.8	26.8
70770	375389	6857237	15	14	21	28.1	22.1	21.6
70770	375767	6857730	16	14	27	14.9	9.8	27.9
70770	376043	6858111	17	13	22	19.8	15.4	24.8
70780	375310	6856740	1	33	7	30.3	11.6	38.8
70780	375111	6856395	2	55	4	201.2	81.6	19.4
70780	375029	6856258	3	50	0	716.9	426.2	13.8
70780	374960	6856144	4	60	5	315.9	144	14.8
70780	374919	6856084	5	60	3	311.3	120	17.4
70780	374836	6855954	6	50	9	133.5	48.9	20.6
70780	374767	6855853	7	60	4	272.3	106.6	18.6
70780	374707	6855753	8	80	6	165.8	102.5	18.3
70780	374657	6855664	9	40	5	186.4	91.4	18.7
70780	374547	6855475	10	14	8	88.1	95.8	17.3
70780	374504	6855407	11	26	9	159.9	119.9	13.8
70780	374478	6855368	12	27	5	174.5	116.7	14.7
70780	374400	6855233	13	20	5	137.8	91.4	18.5

70790	374434	6855042	1	30	0	57.8	31.9	36.2
70790	374516	6855139	2	28	5	88.1	49.7	27.7
70790	374570	6855195	3	35	4	95.2	49.2	25.3
70790	374656	6855290	4	28	7	72.6	46	25
70790	374732	6855378	5	20	5	74.4	57.1	24.3
70790	374893	6855630	6	22	5	93	65.4	22.1
70790	374919	6855679	7	27	4	117.6	74.5	20.9
70790	374959	6855749	8	28	7	108	61.3	20.7
70790	375061	6855905	9	45	6	104.8	44.8	23.6
70790	375118	6855994	10	55	0	149.6	54.6	24.5
70790	375172	6856086	11	45	2	166.4	69.7	23.1
70790	375215	6856163	12	50	0	195.6	83.8	22.7
70790	375261	6856237	13	55	2	150.7	60.4	23.8
70800	376513	6857805	1	24	39	24.6	13.2	17
70800	376358	6857576	2	20	15	45.9	29	23.2
70800	376309	6857498	3	22	13	42.6	22.2	25.2
70800	375531	6856291	4	40	10	84.2	35.4	21.6
70800	375460	6856167	5	48	3	114.2	50.6	24.4
70800	375423	6856103	6	50	6	127.3	53.2	22.1
70800	375386	6856036	7	35	11	92.8	45.9	18.4
70800	375334	6855957	8	48	10	109.5	44.9	21.9
70800	375309	6855920	9	50	5	103.9	39.1	24.6
70800	375221	6855770	10	30	11	50	25.7	27.1
70800	375115	6855622	11	30	9	79.1	42	22.7
70800	374972	6855417	12	10	6	34.9	37.1	27
70800	374904	6855315	13	18	10	69.5	50.7	22.9
70800	374861	6855242	14	18	10	56	41.3	22.6
70800	374808	6855154	15	14	9	43.3	36.2	25.2
70800	374708	6854995	16	25	9	37.4	21.5	32.7
70810	374798	6854930	1	30	4	23.7	9.4	47.4
70810	374991	6855184	2	26	10	28.1	14.5	34.8
70810	375093	6855315	3	17	19	31.8	19.9	25.8
70810	375280	6855573	4	26	21	30.8	17.2	25.1
70810	375384	6855731	5	35	17	53.7	24.9	20.4
70810	375464	6855856	6	55	12	91.7	31.3	19.5
70810	375501	6855914	7	50	15	77.9	26.4	19.9
70810	375600	6856064	8	50	18	50.8	16.5	21.3
70810	375661	6856161	9	50	20	47.4	14	23.2
70810	375718	6856250	10	18	12	32.9	11.7	23.4
70810	376327	6857234	11	30	17	18.9	6.8	37.1
70810	376430	6857390	12	27	7	38.2	19.9	37.1
70810	376483	6857466	13	26	7	30.8	16.9	34.4

70810	376545	6857553	14	26	12	28.1	13.7	34.4
70810	376634	6857693	15	30	15	22.1	9.1	37.7
70810	376700	6857794	16	35	22	16.9	7.7	32.4
70820	376777	6857544	1	35	22	43.7	19.8	18.8
70820	376650	6857361	2	21	11	50.2	37.1	23.1
70820	376606	6857295	3	26	17	47.2	26.3	22
70820	376490	6857128	4	27	9	29.5	12.9	35.9
70820	375884	6856215	5	50	28	18.6	3.6	33.5
70820	375695	6855914	6	33	27	21.9	7.9	25.9
70820	375563	6855681	7	25	17	38.8	20.8	24.7
70820	375359	6855370	8	18	19	40.6	29.7	18.6
70820	375322	6855316	9	11	20	43.4	25.5	20
70820	375226	6855161	10	27	13	60	34	21.7
70820	375156	6855048	11	33	13	70.3	33.6	20.8
70820	375085	6854925	12	26	7	71.1	42.8	25.4
70820	375034	6854841	13	10	*	60.5	40.2	24
70830	375816	6855641	1	27	29	18.5	7.3	28.5
70830	375931	6855843	2	30	19	21.8	7.8	32.5
70830	376486	6856729	3	15	17	15.6	9.6	36.2
70830	376609	6856912	4	12	11	20.5	16.7	33.9
70830	376690	6857027	5	22	8	39.9	22.7	33.7
70830	376776	6857163	6	20	8	32.5	20.7	33.8
70830	376812	6857226	7	80	12	46	17.3	29.6
70830	376899	6857369	8	35	19	30.4	11.3	26.8
70830	376953	6857446	9	30	19	24.5	8.6	30.9
70840	377176	6857346	1	18	13	23.3	13.8	29.3
70840	377011	6857108	2	27	9	66.7	39.1	23.8
70840	376928	6856980	3	28	3	120.3	79.1	22.3
70840	376871	6856896	4	26	6	101.6	71.5	21.4
70840	376831	6856838	5	11	7	57.6	69.8	19.3
70840	376788	6856772	6	15	7	71.8	66.9	20.4
70840	376747	6856705	7	12	4	59.8	67.6	23
70840	376698	6856630	8	13	4	72.6	70.7	22.6
70840	376597	6856495	9	12	14	29.8	28.1	22.3
70840	376517	6856390	10	12	14	17.1	14.3	34
70840	376200	6855872	11	50	20	29.4	8.3	28.1
70840	376100	6855709	12	40	13	51.1	19.8	27.3
70840	376044	6855624	13	35	10	49.2	21.2	29.9
70840	375987	6855534	14	29	13	32.7	14.3	28.7
70840	375890	6855394	15	44	11	25.5	8.1	39.1
70840	375824	6855298	16	44	11	27.3	8.1	38.9

70850	375998	6855181	1	26	0	75.5	42.4	32.8
70850	376017	6855221	2	29	2	71.2	36.2	30.8
70850	376101	6855379	3	26	11	47.8	27.2	27.3
70850	376173	6855506	4	30	6	45	19.6	37.5
70850	376269	6855650	5	28	5	44.1	20.7	33.5
70850	376330	6855741	6	34	8	35.5	14.6	34.1
70850	376684	6856246	7	15	8	32.2	24.5	32.9
70850	376742	6856330	8	20	1	48.4	35.4	34
70850	376794	6856406	9	18	3	35	28.6	34.5
70850	376833	6856467	10	8	2	41.5	33.4	33.6
70850	376878	6856542	11	13	1	40.1	34.5	31.9
70850	376918	6856610	12	15	1	49.4	40.8	31.1
70850	376945	6856653	13	20	3	50.9	36.9	31.5
70850	376984	6856714	14	22	3	48	32.3	32.5
70850	377038	6856798	15	25	4	57.4	32.7	31.1
70850	377058	6856829	16	28	5	58.7	30.1	30.5
70850	377111	6856917	17	29	6	56.1	28	30.6
70850	377142	6856967	18	30	4	57	28.8	32
70850	377174	6857018	19	30	3	57.6	24.5	32.9
70850	377236	6857111	20	27	9	39.8	19.9	32.8
70850	377332	6857270	21	12	11	19.3	14.8	37
70860	377585	6857203	1	10	14	30.9	33.5	22.2
70860	377482	6857072	2	14	8	27.3	20.3	34.1
70860	377409	6856963	3	27	4	55.7	29.4	31.7
70860	377333	6856846	4	31	6	47.9	20.5	33.4
70860	377252	6856707	5	26	3	33.4	15.6	41.4
70860	377041	6856392	6	15	5	32	24.3	36.7
70860	376940	6856246	7	15	4	29.9	21.7	38.8
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70860	376207	6855109	11	35	4	133.4	63.1	24.3
70860	376154	6855028	12	33	3	115.7	63.7	23.8
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70870	376508	6855276	2	18	8	24.6	15.2	38.4
70870	376583	6855376	3	21	8	30.7	19.1	33.3
70870	376628	6855437	4	12	11	42	24.5	31.3
70870	376673	6855500	5	28	13	37.6	16.9	29.7
70870	376963	6855901	6	24	21	18	7.6	32.7
70870	377041	6856009	7	27	21	32.2	14.6	34.1
70870	377114	6856118	8	29	5	56.8	29.2	34

70870	377140	6856158	9	26	0	55.8	31.8	34.4
70870	377208	6856268	10	25	0	50.2	29	36.7
70870	377260	6856350	11	23	3	41.4	24.1	38.3
70870	377330	6856459	12	27	0	40.4	20.1	41.9
70870	377409	6856586	13	37	0	37.7	16.7	46
70870	377446	6856645	14	29	0	39.2	18	44.6
70870	377520	6856755	15	24	4	32.5	18.7	37.9
70870	377592	6856864	16	29	7	40.2	18.3	34.4
70870	377673	6857000	17	13	14	16.2	10.7	38.4
70870	377734	6857107	18	12	10	15.8	11.9	39.5
70880	377878	6856986	1	5	11	15.3	19.5	27.2
70880	377782	6856848	2	9	21	43.5	26	29
70880	377710	6856744	3	11	14	44.7	26.3	27.3
70880	377613	6856577	4	12	6	58.3	34	29.2
70880	377590	6856533	5	13	3	68.5	42.5	29.2
70880	377536	6856437	6	28	0	92	53.1	30.3
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70880	377458	6856300	8	30	3	102.6	56.1	26.8
70880	377421	6856242	9	45	5	122.5	52.8	24.4
70880	377361	6856152	10	32	2	144.6	72.6	22.9
70880	377331	6856109	11	32	1	162.3	95.6	22.3
70880	377298	6856060	12	35	3	177.7	93.8	21.2
70880	377189	6855888	13	29	17	44.7	21.3	22.8
70880	376508	6854853	14	50	7	48.4	16	35.3
70890	376803	6854886	1	25	30	12.9	4.4	34.9
70890	376856	6854955	2	28	26	13.9	4.6	35.8
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70890	377580	6856099	7	38	6	43.3	17	35.9
70890	377634	6856183	8	40	4	49	18.6	38.4
70890	377695	6856280	9	30	0	47.6	22.5	40.4
70890	377763	6856399	10	27	0	41.9	19.1	43.1
70890	377822	6856514	11	26	0	32.5	15.6	44.9
70890	377862	6856591	12	18	2	20.7	12.7	44.6
70890	377917	6856692	13	19	15	17.6	9.7	41.1
70900	378111	6856572	1	12	18	16.4	12.4	31.5
70900	377996	6856398	2	20	5	25.4	14.2	41.9
70900	377902	6856245	3	9	3	40.2	25.2	36.2
70900	377867	6856187	4	25	0	56.3	35.8	34.5

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70900	377785	6856074	6	29	0	69.1	34.8	32.6
70900	377749	6856018	7	27	3	67.7	34.1	31.4
70900	377712	6855959	8	35	3	69.5	32.7	30.1
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70910	377127	6854678	1	*	*	17	4	36.1
70910	377463	6855150	2	27	5	41	22.2	36.1
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70910	377585	6855310	5	33	2	64.9	30.1	33
70910	377667	6855416	6	29	8	34	15.8	34.6
70910	377798	6855613	7	35	24	13.7	4.4	38.2
70910	378003	6855929	8	30	4	36.9	14.1	38.8
70910	378052	6856011	9	26	1	41.2	20.4	39.9
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70910	378223	6856274	12	18	2	22.1	14.6	45.7
70910	378278	6856380	13	14	9	16.5	11.8	43.1
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70920	377394	6854738	11	30	18	32.6	13.9	23.4
70920	377256	6854489	12	27	25	23.5	9.8	25
70930	377459	6854458	1	30	22	21.7	7.6	29.7
70930	377615	6854718	2	24	7	36.5	12.3	35.9
70930	377710	6854863	3	50	1	53.9	17.7	37.7
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70930	377955	6855233	5	12	1	28.6	14.9	42.3
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70930	378284	6855728	7	29	23	21.6	8.8	31.2

70930	378347	6855825	8	27	14	29.8	14	29.4
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70960	378440	6854871	6	24	7	29	13.5	40.1
70960	378509	6854985	7	35	0	32.5	12.9	42.3
70960	378561	6855074	8	27	1	28.9	12.7	42.8
70960	378632	6855196	9	25	17	19.5	8.9	37.4
70970	378660	6854871	1	28	4	40.6	20.3	36.1
70970	378589	6854752	2	35	5	79.9	38.2	26.8
70970	378565	6854713	3	33	8	72.1	36.9	25
70970	378500	6854608	4	19	11	44.5	30.4	26.5
70970	378423	6854487	5	8	9	23.4	30.2	25.7
70970	378348	6854372	6	10	11	24.9	24.9	25.5
70970	378223	6854177	7	7	9	21.8	26.2	27.2
70970	378156	6854078	8	14	17	25.3	19	24.6
70970	378080	6853938	9	12	8	38.9	38.9	24.5

70980	378264	6853837	1	11	15	14.6	10.8	35.9
70980	378391	6854054	2	13	17	12.5	8.2	40.9
70980	378525	6854277	3	14	20	15.8	10.4	33.8
70980	378589	6854382	4	14	15	29	22.7	27.4
70980	378708	6854556	5	15	8	43.5	34.5	27.4
70980	378777	6854661	6	28	10	47.5	24	28.8
70980	378826	6854742	7	28	10	35.6	17.1	31.7
70980	378955	6854954	8	25	10	19.1	8.8	43.7
70980	379016	6855053	9	21	14	15.7	8.2	41.7
70980	379189	6855338	10	2	10	4.5	9.9	37.9
70980	379355	6855580	11	2	19	4.4	9.3	28.8

10.0 Statement of Qualifications

I, J. A. Moore, of 39147-3695 W. 10th Ave. Vancouver, V6R 4P1, in the Province of British Columbia, Canada, do hereby certify:

- I am a graduate of Prescott College in Prescott, Arizona, U.S.A, with a B. A. in Environmental Geology (1996). I completed a postgraduate degree at Rhodes University in Grahamstown, South Africa. I was admitted to the degree of M. Sc. in Mineral Exploration in 2002.

- Since 1991, I have been involved in the exploration and exploitation of precious metals and diamonds in British Columbia, NWT, Central America, the eastern shields of South America, and West Africa.

- The information, conclusions, and recommendation in this report are based on collaboration of other professional colleagues involved with various aspects of exploration on the property and in review of the literature stated in the bibliography. I have prepared this report on behalf of Expatriate Resources Ltd.

- This report may be used for the development of the property, provided that, no portion will be used out of context in such a manner as to convey meanings different from that set out in the whole.

- I am unaware of any material fact or material change with respect to the technical matter of this report that might cause the technical report to be inaccurate or misleading.

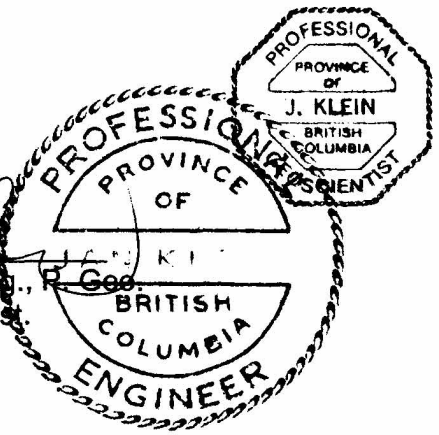
- Consent is hereby given to the company for which this report was prepared to reproduce the report or any part of it for the purposes of development of the property, or facts relating to the raising of funds by way of a prospectus and/or statement of material facts.

Dated June 17th 2002 Signed J. A. Moore

J. A. Moore, M.Sc.

I, Jan Klein, of 7025 Dunblane Avenue, Burnaby, in the province of British Columbia, Canada do hereby certify that:

- I am the author of this report.
- I am a graduate of the Technological University of Delft, Netherlands, having received an Honour Master Degree in Mining Engineering (Exploration) in 1965.
- I have practiced, throughout the world in the field of mineral exploration since 1965.
- I am a Professional Engineer and a Professional Geoscientist registered with the Association of Professional Engineers and Geoscientists of British Columbia.
- I am a member of numerous Geophysical Societies.
- I have not received nor do I expect to receive any interest in the properties described in this report. I do not own nor do I expect to receive, directly or indirectly, any securities in Expatriate Resources Ltd.
- I consent to the use of this report by Expatriate Resources Ltd.



Dated June 17/02 Signed

Jan Klein, M.Sc., P.Eng., P.Geo.
Consulting Geophysicist.

11.0 Bibliography

Woolham, R. W., 1996, Report on a Combined Helicopter-Borne Electromagnetic and Magnetic Survey, by Aerodat Inc: Internal Report for Expatriate Resources Ltd., p. 1-200.

APPENDIX I

GENERAL INTERPRETIVE CONSIDERATIONS

GENERAL INTERPRETIVE CONSIDERATIONS

Electromagnetic

The Aerodat electromagnetic system utilized two different transmitter-receiver coil geometries. The traditional coaxial coil configuration is operated at widely separated frequencies. The horizontal coplanar coil configuration is similarly operated at different frequencies where at least one pair is approximately aligned with one of the coaxial frequencies.

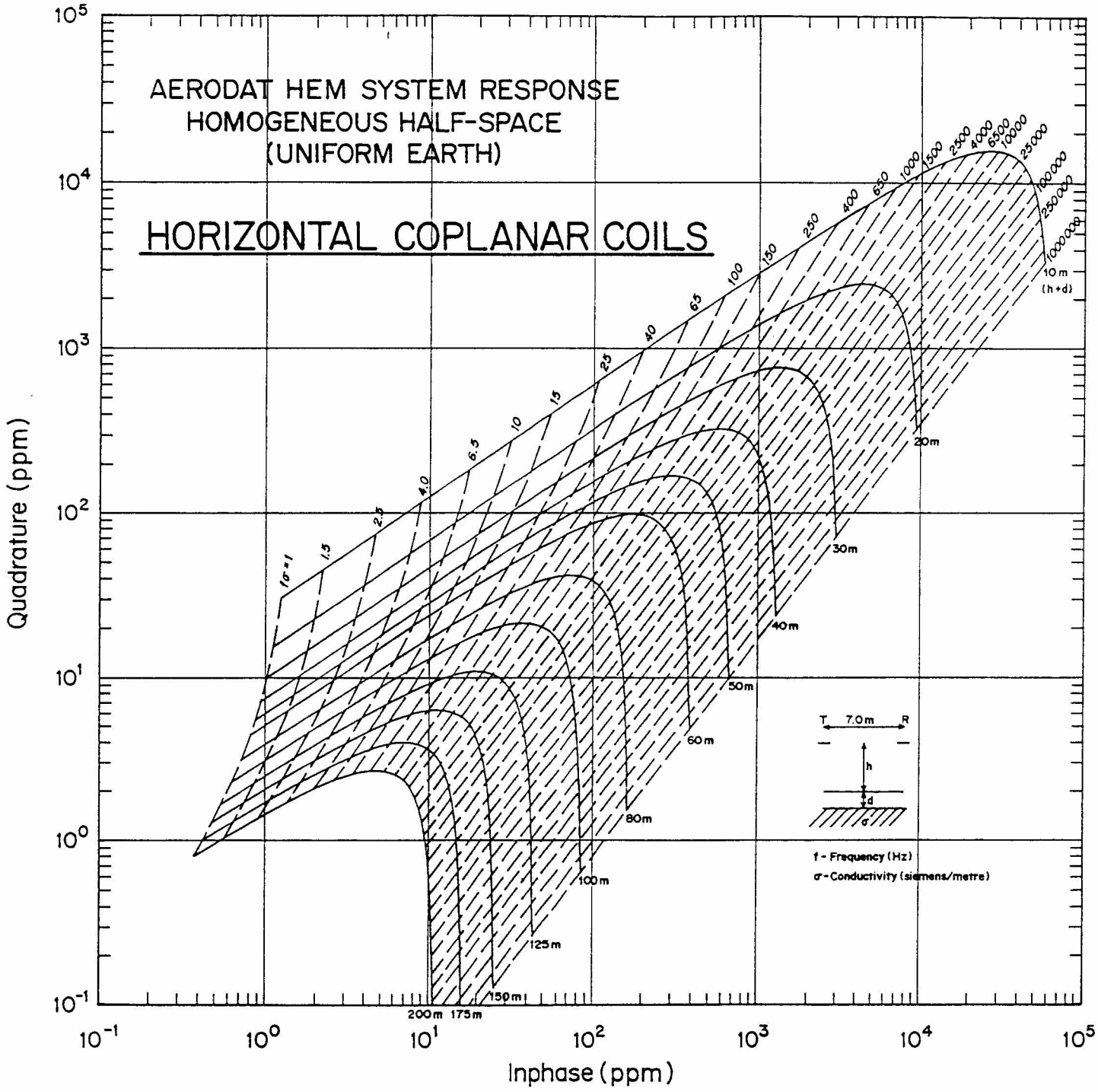
The electromagnetic response measured by the helicopter system is a function of the "electrical" and "geometrical" properties of the conductor. The "electrical" property of a conductor is determined largely by its electrical conductivity, magnetic susceptibility and its size and shape; the "geometrical" property of the response is largely a function of the conductor's shape and orientation with respect to the measuring transmitter and receiver.

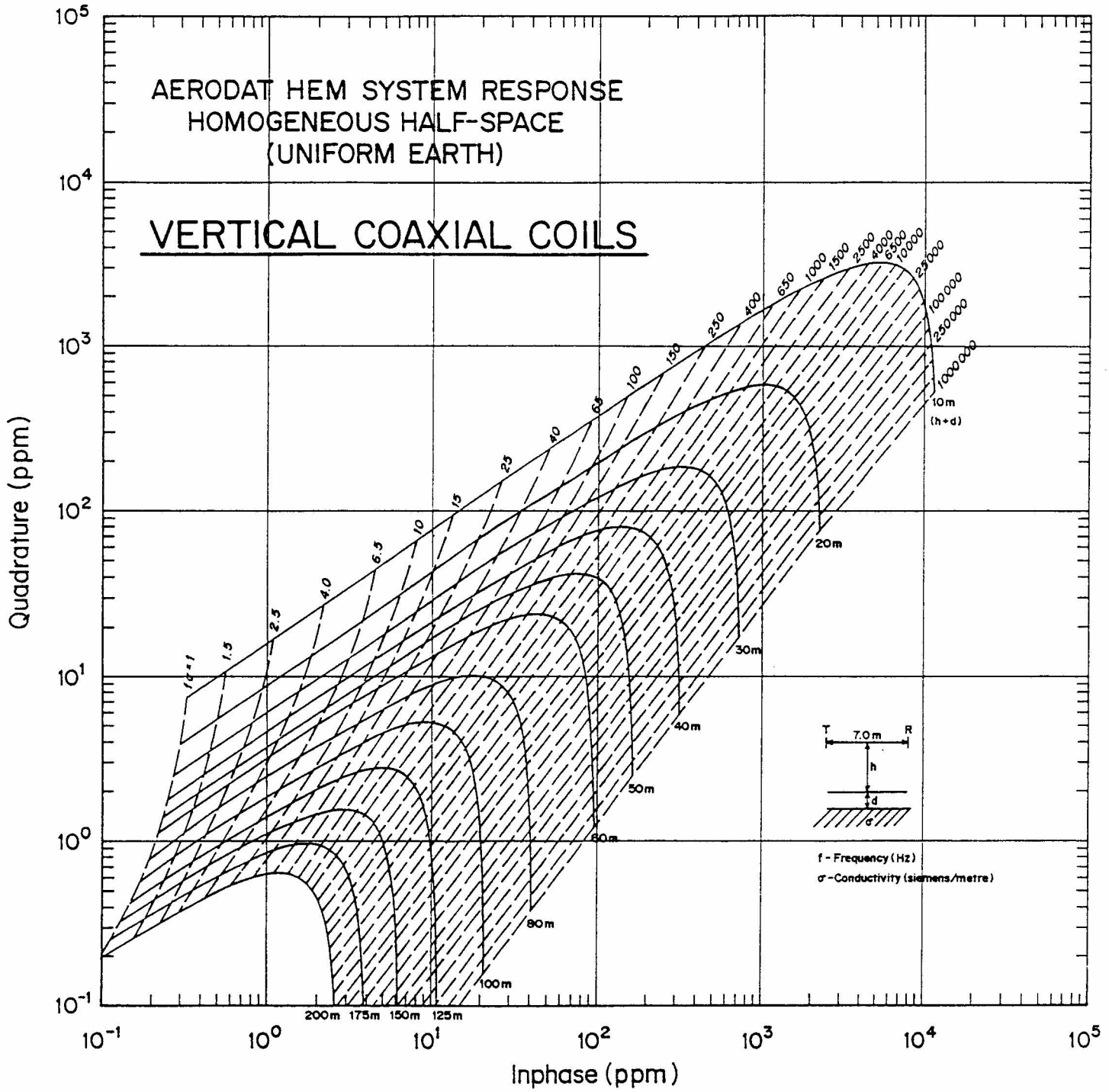
Electrical Considerations

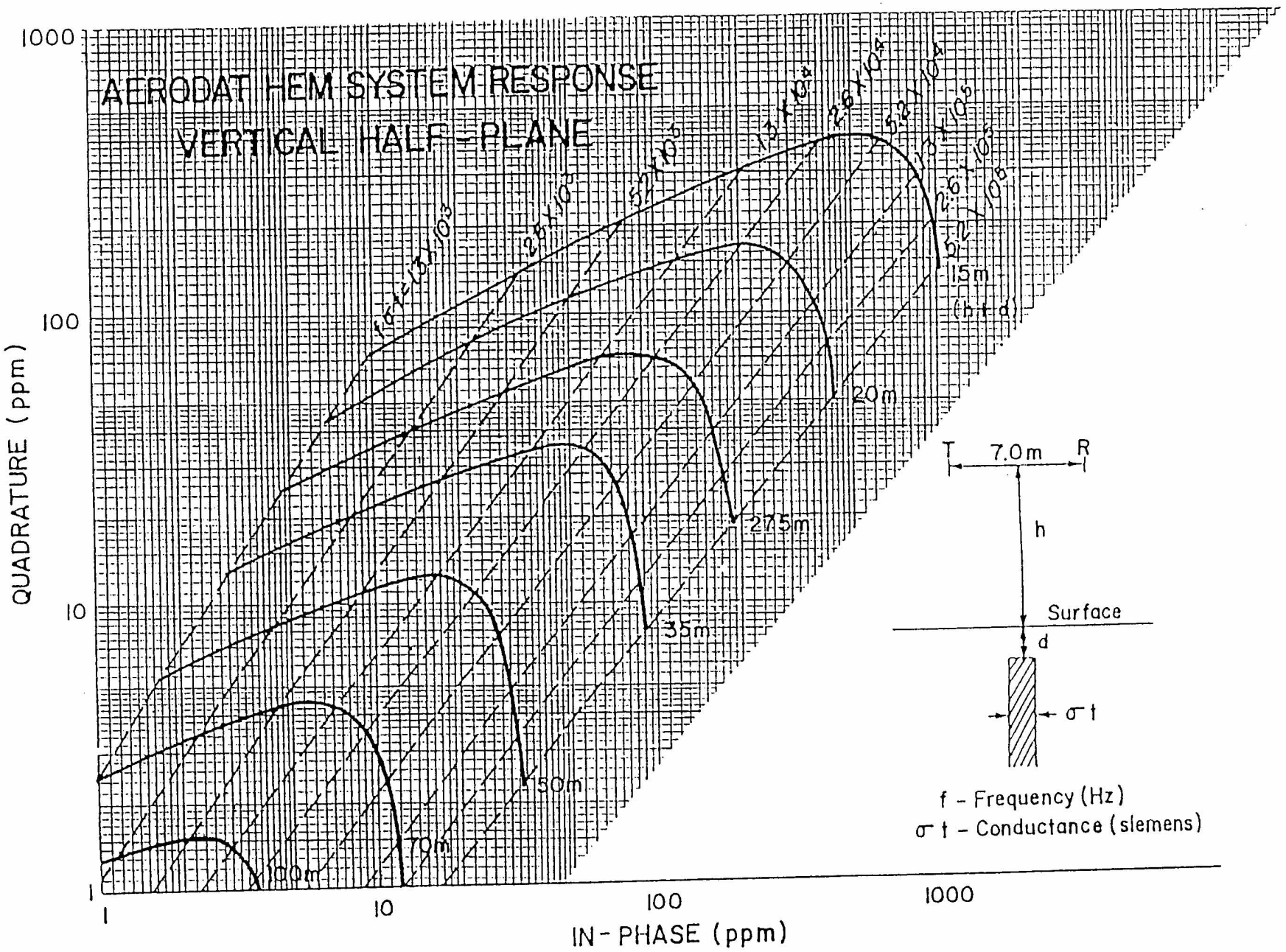
For a given conductive body the measure of its conductivity or conductance is closely related to the measured phase shift between the received and transmitted electromagnetic field. A small phase shift indicates a relatively high conductance, a large phase shift lower conductance. A small phase shift results in a large inphase to quadrature ratio and a large phase shift a low ratio. This relationship is shown quantitatively for a non-magnetic vertical half-plane and half space models on the accompanying phasor diagrams. Other physical models will show the same trend but different quantitative relationships.

The phasor diagram for the vertical half-plane model, as presented, is for the coaxial coil configuration with the amplitudes in parts per million (ppm) of the primary field as measured at the response peak over the conductor. To assist the interpretation of the survey results the computer is used to identify the apparent conductance and depth at selected anomalies. The results of this calculation are presented in anomaly listings included in the survey report and the conductance and inphase amplitude are presented in symbolized form on the map presentation.

The conductance estimate is most reliable when anomaly amplitudes are large and background resistivities are high. Where the anomaly is of low amplitude and background resistivities are low, the conductance estimates are much less reliable. In such situations, the conductance estimate is often quite low regardless of the true nature of the conductor. This is due to the elevated background response levels in the quadrature channel. In an extreme case, the conductance estimate should be discounted and should not prejudice target selection.


AERODAT HEM SYSTEM RESPONSE
HOMOGENEOUS HALF-SPACE
(UNIFORM EARTH)
HORIZONTAL COPLANAR COILS
Quadrature (ppm)
Inphase (ppm)
10 m (h+d)
20m
30m
40m
50m
60m
80m
100m
125m
150m
175m
200m
T 7.0m R
h
d
σ
f - Frequency (Hz)
σ - Conductivity (siemens/metre)


AERODAT HEM SYSTEM RESPONSE
HOMOGENEOUS HALF-SPACE
(UNIFORM EARTH)
VERTICAL COAXIAL COILS
Quadrature (ppm)
Inphase (ppm)
10m (h+d)
20m
30m
40m
50m
60m
80m
100m
200m 175m 150m 125m
T 7.0m R
h
d
σ
f - Frequency (Hz)
σ - Conductivity (siemens/metre)


AERODAT HEM SYSTEM RESPONSE
VERTICAL HALF-PLANE
QUADRATURE (ppm)
IN-PHASE (ppm)
1000
100
10
1
1
10
100
1000
15m
20m
27.5m
35m
50m
70m
100m
T
7.0m
R
h
Surface
d
σ t
f - Frequency (Hz)
σ t - Conductance (siemens)

The conductance and depth vales as presented are correct only as far as the model approximates the real geological situation. The actual geological source may be of limited length, have significant dip, may be strongly magnetic. Its conductivity and thickness may vary with depth and/or strike and adjacent bodies and overburden may have modified the response. In general the conductance estimate is less affected by these limitations than is the depth estimate, but both should be considered as relative rather than absolute guides to the anomaly's properties.

Conductance in mhos is the reciprocal of resistance in ohms and in the case of narrow slab-like bodies is the product of electrical conductivity and thickness.

The higher ranges of conductance, greater than 2-4 mhos, indicate that a significant fraction of the electrical conduction is electronic rather than electrolytic in nature. Materials that conduct electronically are limited to certain metallic sulphides and to graphite. High conductance anomalies, roughly 10 mhos or greater, are generally limited to massive sulphides or graphites.

Sulphide minerals, with the exception of such ore minerals as sphalerite, cinnabar and stibnite, are good conductors. Sulphides may occur in a disseminated manner that inhibits electrical conduction through the rock mass. In this case the apparent conductance can seriously underrate the quality of the conductor in geological terms. In a similar sense the relatively non-conducting sulphide minerals noted above may be present in significant concentrations in association with minor conductive sulphides, and the electromagnetic response will only relate to the minor associated mineralization. Indicated conductance is also of little direct significance for the identification of gold mineralization. Although gold is highly conductive, it would not be expected to exist in sufficient quantity to create a recognizable anomaly. Minor accessory sulphide mineralization may however provide a useful indirect indication.

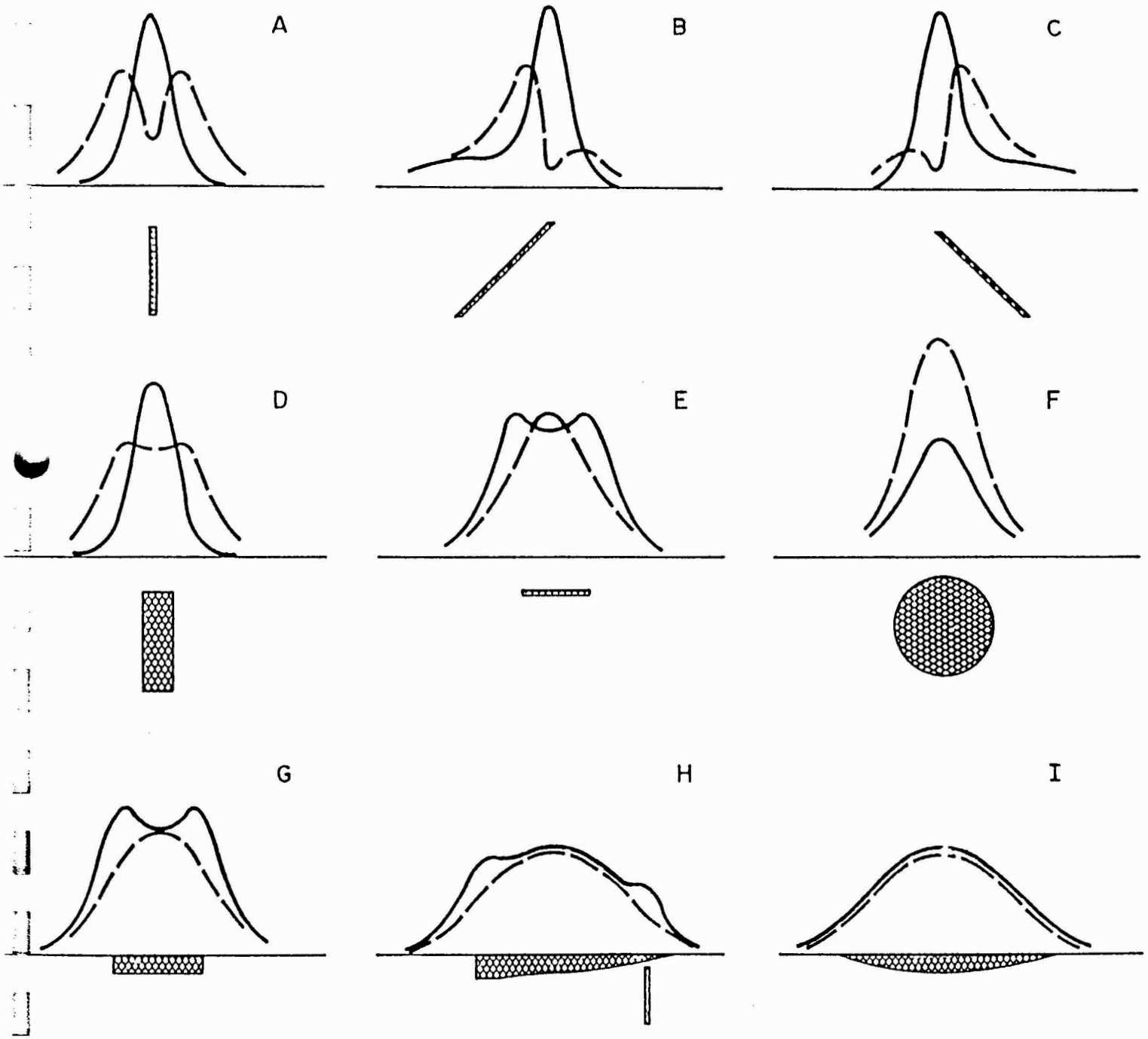
In summary, the estimated conductance of a conductor can provide a relatively positive identification of significant sulphide or graphite mineralization. A moderate to low conductance value does not rule out the possibility of significant economic mineralization.

Geometrical Considerations

Geometrical information about the geologic conductor can often be interpreted from the profile shape of the anomaly. The change in shape is primarily related to the change in inductive coupling among the transmitter, the target, and the receiver. The accompanying figure shows a selection of HEM response profile shapes from nine idealized targets. Response profiles are labelled A through I. These labels are used in the discussion which follows.

HEM RESPONSE PROFILE SHAPE AS AN INDICATOR OF CONDUCTOR GEOMETRY

——— COAXIAL vertical scale 1 ppm/unit
– – – COPLANAR vertical scale 4 ppm/unit



In the case of a thin, steeply dipping, sheet-like conductor, the coaxial coil pair will yield a near symmetric peak over the conductor. On the other hand, the coplanar coil pair will pass through a null couple relationship and yield a minimum over the conductor, flanked by positive side lobes (Profile A). As the dip of the conductor decrease from vertical, the coaxial anomaly shape changes only slightly, but in the case of the coplanar coil pair the side lobe on the down dip side strengthens relative to that on the up dip side (Profiles B and C).

As the thickness of the conductor increases, induced current flow across the thickness of the conductor becomes relatively significant and complete null coupling with the coplanar coils is no longer possible (Profile D). As a result, the apparent minimum of the coplanar response over the conductor diminishes with increasing thickness, and in the limiting case of a fully 3 dimensional body or a horizontal layer or half-space, the minimum disappears completely.

A horizontal conducting layer such as a horizontal thin sheet or overburden will produce a response in the coaxial and coplanar coils that is a function of altitude (and conductivity if not uniform). The profile shape will be similar in both coil configurations with an amplitude ratio (coplanar:coaxial) of about 4:1* (Profiles E and G).

In the case of a spherical conductor, the induced currents are confined to the volume of the sphere, but not relatively restricted to any arbitrary plane as in the case of a sheet-like form. The response of the coplanar coil pair directly over the sphere may be up to 8* times greater than that of the coaxial pair (Profile F).

In summary, a steeply dipping, sheet-like conductor will display a decrease in the coplanar response coincident with the peak of the coaxial response. The relative strength of this coplanar null is related inversely to the thickness of the conductor. A pronounced null indicates a relatively thin conductor. The dip of such a conductor can be inferred from the relative amplitudes of the side-lobes.

Massive conductors that could be approximated by a conducting sphere will display a simple single peak profile form on both coaxial and coplanar coils, with a ratio between the coplanar to coaxial response amplitudes as high as 8*.

Overburden anomalies often produce broad poorly defined anomaly profiles (Profile I). In most cases, the response of the coplanar coils closely follows that of the coaxial coils with a relative amplitude ration of 4*.

Occasionally, if the edge of an overburden zone is sharply defined with some significant depth extent, an edge effect will occur in the coaxial coils. In the case of a horizontal conductive ring or ribbon, the coaxial response will consist of two peaks, one over each edge; whereas the coplanar coil will yield a single peak (Profile H).

* It should be noted at this point that Aerodat's definition of the measured ppm unit is related to the primary field sensed in the receiving coil without normalization to the maximum coupled (coaxial configuration). If such normalization were applied to the Aerodat units, the amplitude of the coplanar coil pair would be halved.

Magnetics

The Total Field Magnetic Map shows contours of the total magnetic field, uncorrected for regional variation. Whether an EM anomaly with a magnetic correlation is more likely to be caused by a sulphide deposit than one without depends on the type of mineralization. An apparent coincidence between an EM and a magnetic anomaly may be caused by a conductor which is also magnetic, or by a conductor which lies in close proximity to a magnetic body. The majority of conductors which are also magnetic are sulphides containing pyrrhotite and/or magnetite. Conductive and magnetic bodies in close association can be, and often are, graphite and magnetite. It is often very difficult to distinguish between these cases. If the conductor is also magnetic, it will usually produce an EM anomaly whose general pattern resembles that of the magnetics. Depending on the magnetic permeability of the conducting body, the amplitude of the inphase EM anomaly will be weakened, and if the conductivity is also weak, the inphase EM anomaly may even be reversed in sign.

The interpretation of contoured aeromagnetic data is a subject on its own involving an array of methods and attitudes. The interpretation of source characteristics for example from total field results is often based on some numerical modelling scheme. The vertical gradient data is more legible in some aspects however and useful inferences about source characteristics can often be read off the contoured VG map.

The zero contour lines in contoured VG data are often sited as a good approximation to the outline of the top of the magnetic source. This only applies to wide (relative to depth of burial) near vertical sources at high magnetic latitudes. It will give an incorrect interpretation in most other cases.

Theoretical profiles of total field and vertical gradient anomalies from tabular sources at a variety of magnetic inclinations are shown in the attached figure. Sources are 10, 50 and 200 m wide. The source-sensor separation is 50 m. The thin line is the total field profile. The thick line is the vertical gradient profile.

The following comments about source geometry apply to contoured vertical gradient data for magnetic inclinations of 70 to 80°.

Outline

Where the VG anomaly has a single sharp peak, the source may be a thin near-vertical tabular source. It may be represented as a magnetic axis or as a tabular source of measurable width - the choice is one of geological preference.

Where the VG anomaly has a broad, flat or inclined top, the source may be a thick tabular source. It may be represented as a thick body where the width is taken from the zero contour lines if the body dips to magnetic north. If the source appears to be dipping to the south (i.e. the VG anomaly is asymmetric), the zero contours are less reliable indicators of outline. The southern most zero contour line should be ignored and the outline taken from the northern zero contour line and the extent of the anomaly peak width.

Dip

A symmetrical vertical gradient response is produced by a body dipping to magnetic north. An asymmetrical response is produced by a body which is vertical or dipping to the south. For southern dips, the southern most zero contour line may be several hundred meters south of the source.

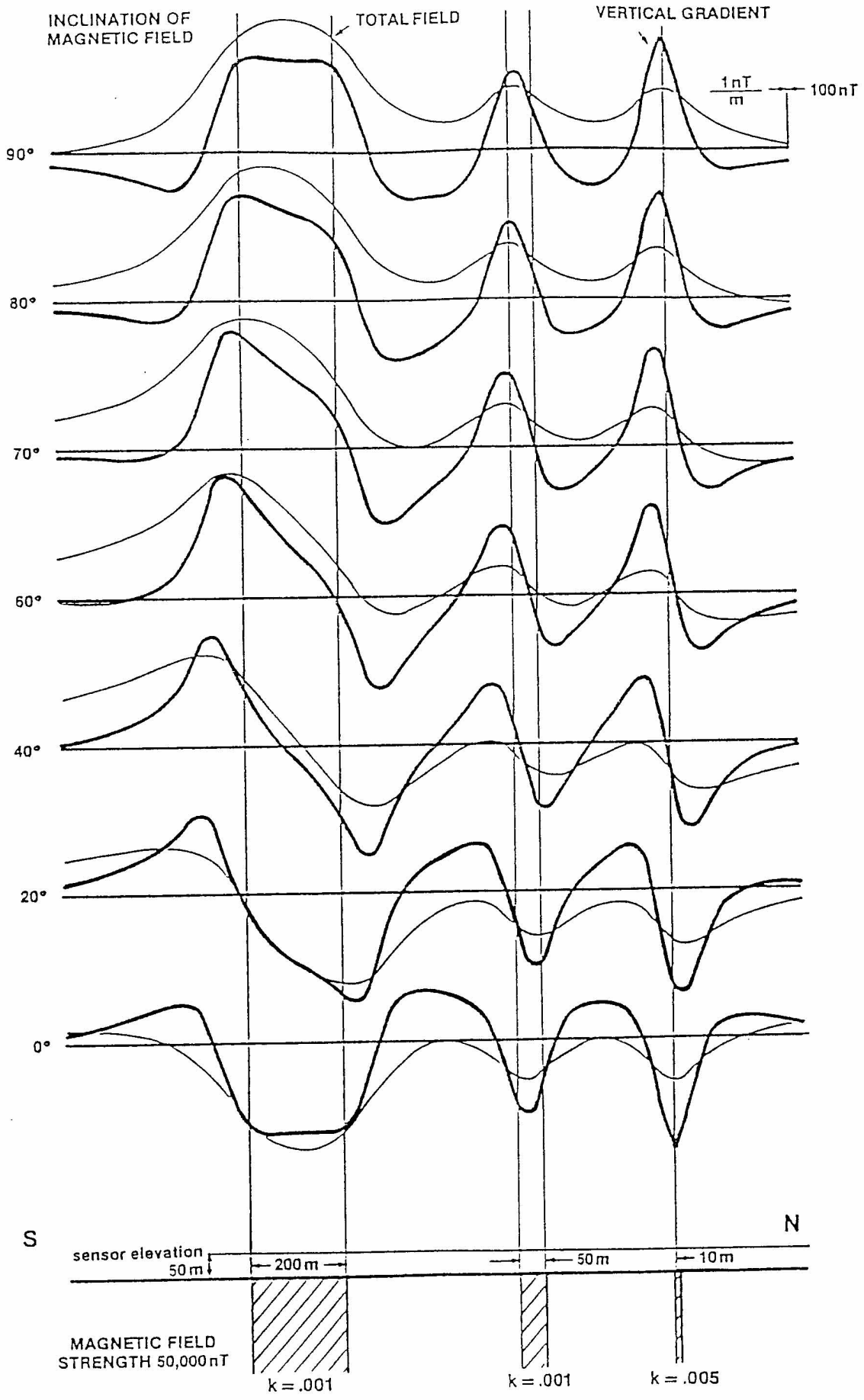
Depth of Burial

The source-sensor separation is about equal to half of the distance between the zero contour lines for thin near-vertical sources. The estimated depth of burial for such sources is this separation minus 50 m. If a variety of VG anomaly widths are seen in an area, use the narrowest width seen to estimate local depths.

VLF Electromagnetics

The VLF-EM method employs the radiation from powerful military radio transmitters as the primary signals. The magnetic field associated with the primary field is locally horizontal and normal to a line pointing at the transmitter.

The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component from two VLF stations. These stations are designated Line and Ortho. The line station is ideally in a direction from the survey area at right angles to the flight line direction. Conductors normal to the flight line direction point at the line station and are therefore optimally coupled to VLF magnetic fields and in the best situation to gather secondary VLF currents. The ortho station is ideally 90 degrees in azimuth from the line station.


INCLINATION OF MAGNETIC FIELD
TOTAL FIELD
VERTICAL GRADIENT
1nT/m
100nT
90°
80°
70°
60°
40°
20°
0°
S
N
sensor elevation 50m
200m
50m
10m
MAGNETIC FIELD STRENGTH 50,000nT
k = .001
k = .001
k = .005

The relatively high frequency of VLF (15-25) kHz provides high response factors for bodies of low conductance. Relatively "disconnected" sulphide ores have been found to produce measurable VLF signals. For the same reason, poor conductors such as sheared contacts, breccia zones, narrow faults, alteration zones and porous flow tops normally produce VLF anomalies. The method can therefore be used effectively for geological mapping. The only relative disadvantage of the method lies in its sensitivity to conductive overburden. In conductive ground to depth of exploration is severely limited.

The effect of strike direction is important in the sense of the relation of the conductor axis relative to the energizing electromagnetic field. A conductor aligned along a radius drawn from a transmitting station will be in a maximum coupled orientation and thereby produce a stronger response than a similar conductor at a different strike angle. Theoretically, it would be possible for a conductor, oriented tangentially to the transmitter to produce no signal. The most obvious effect of the strike angle consideration is that conductors favourably oriented with respect to the transmitter location and also near perpendicular to the flight direction are most clearly rendered and usually dominate the map presentation.

The total field anomaly is an indicator of the existence and position of a conductor. The response will be a maximum over the conductor, without any special filtering, and strongly favour the upper edge of the conductor even in the case of a relatively shallow dip.

Conversely a negative total field anomaly is often seen over local resistivity highs. This is because the VLF field produces electrical currents which flow towards (or away from) the transmitter. These currents are gathered into a conductor and are taken from resistive bodies. The VLF system sees the currents gathered into the conductor as a total field high. It sees the relative absence of secondary currents in the resistor as a total field low.

As noted, VLF anomaly trends show a strong bias towards the VLF transmitter. Structure which is normal to this direction may have no associated VLF anomaly but may be seen as a break or interruption in VLF anomalies. If these structures are of particular interest, maps of the ortho station data may be worthwhile.

Conductive overburden will obscure VLF responses from bedrock sources and may produce low amplitude, broad anomalies which reflect variations in the resistivity of thickness of the overburden.

Extreme topographic relief will produce VLF anomalies which may bear no relationship to variations in electrical conductivity. Deep gullies which are too narrow to have been surveyed at a uniform sensor height often show up as VLF total field lows. Sharp ridges show up as total field highs.

The vertical quadrature component over steeply dipping sheet-like conductor will be a cross-over type response with the cross-over closely associated with the upper edge of the conductor.

The response is a cross-over type due to the fact that it is the vertical rather than total field quadrature component that is measured. The response shape is due largely to geometrical rather than conductivity considerations and the distance between the maximum and minimum on either side of the cross-over is related to target depth. For a given target geometry, the larger this distance the greater the depth.

The vertical quadrature component is rarely presented. Experience has shown the total field to be more sensitive to bedrock conductors and less affected by variations in conductive overburden.

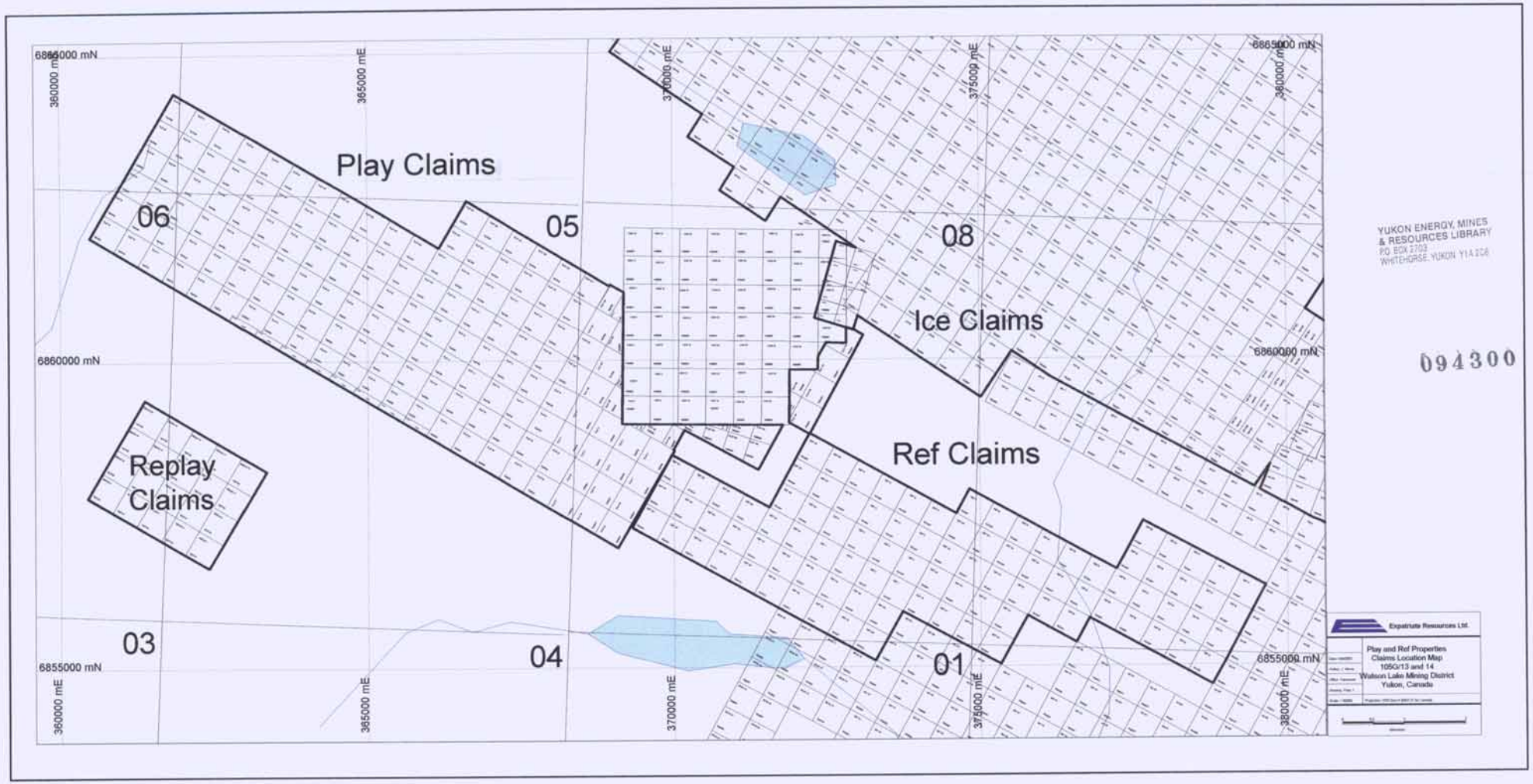
Apparent Resistivity/Conductivity Maps

Overburden and different types of bedrock may be modelled as a large area horizontal conductor of fixed thickness. A phasor diagram may be constructed, in the same fashion as for the vertical sheet, to convert the measured HEM in-phase and quadrature response to a depth and conductivity value for a horizontal layer. Traditionally if the thickness is large, an infinite half-space, the associated conductivity value is referred to as "apparent conductivity". We have generalized the use of the word "apparent" to include any model where the thickness of the layer is a fixed as opposed to a variable parameter. The units of apparent resisitivity are ohm-m and those of apparent conductivity are the inverse mhos/m or siemen/m. If the chosen model layer thickness is close to the true thickness of the conductor then the apparent conductivity will closely conform to the true value; however, if the thickness is inappropriate the apparent value may be considerably different from the true value.

The benefit of the apparent conductivity mapping is that it provides a simple robust method of converting the HEM in-phase and quadrature response to apparent change in ground conductivity.

A phasor diagram for several apparent resistivity models is presented. The general forms for the various thicknesses is very similar and also closely resembles the diagram for the vertical sheet. The diagrams also show the curves for apparent depth. As with the conductivity value the depth value is meaningful if the model thickness closely resembles the true conductive layer thickness. If the HEM response from a thin conducting layer is applied to a thick layer model the apparent conductivity and depth will be less than the true conductivity and depth.

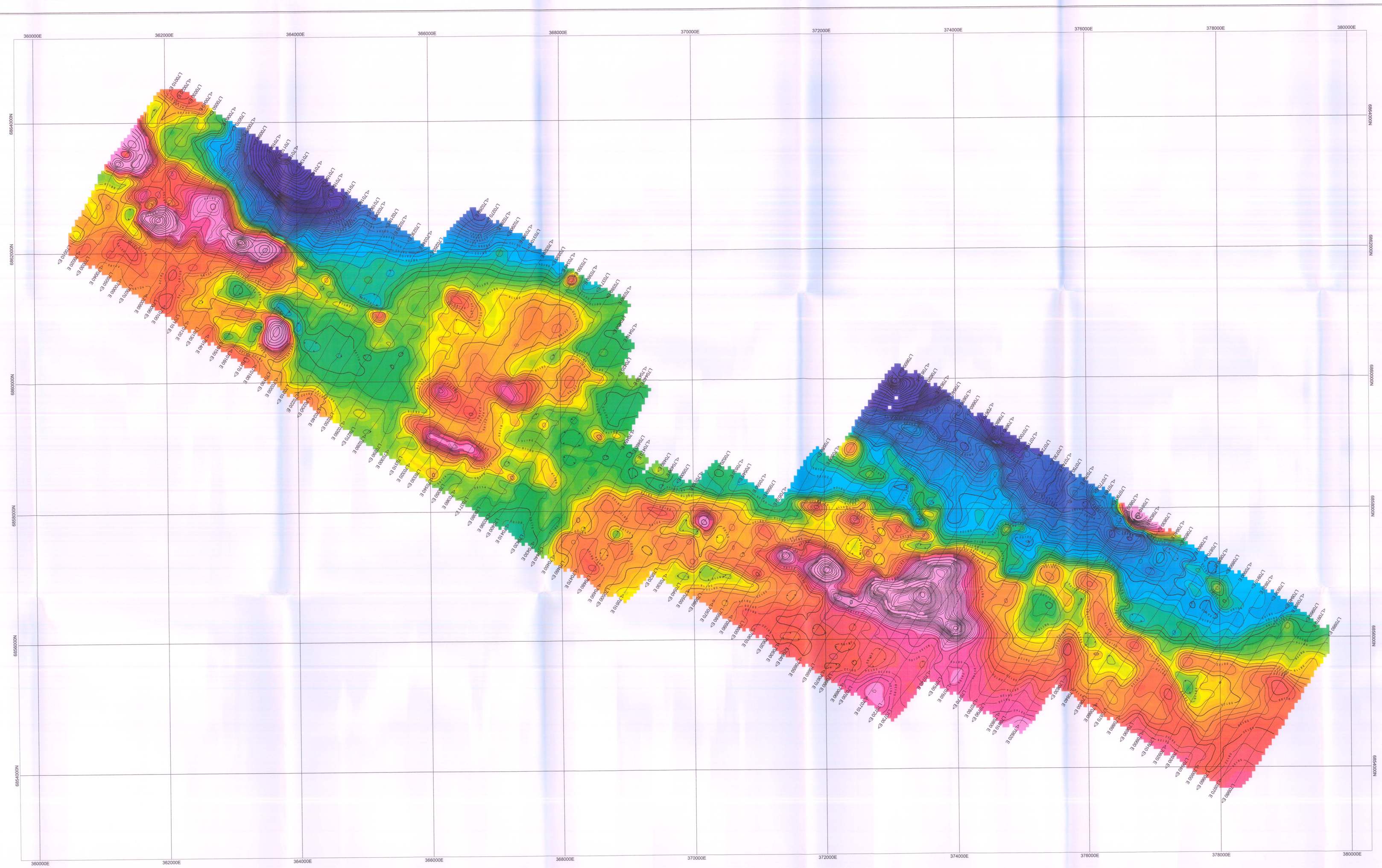
Plate 1
Play and Ref Properties,
Claims Location Map



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& RESOURCES LIBRARY
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WHITEHORSE, YUKON Y1A 2C6

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Plate 2
Power Play Property,
Magnetic Data and Conductors



NOTES:

Magnetic data gridded at 50 m.
Contours in multiples of 2, 10, 50 and 250 nT.

The survey lines were flown at an azimuth of 32- 212 degrees with an average line spacing of 200 m.
The grid coordinates are in UTM projection Zone 9N using the NAD27 datum.

58267
58157
58143
58138
58135
58132
58131
58129
58127
58126
58125
58124
58123
58122
58121
58121
58120
58119
58118
58118
58117
58116
58115
58115
58114
58113
58112
58112
58111
58109
58108
58106
58104
58102
58100
58095
58088
58080
58063
57884

Magnetic
in nT

250 0 250 500 750 1000 1250
metres

094300 Pla

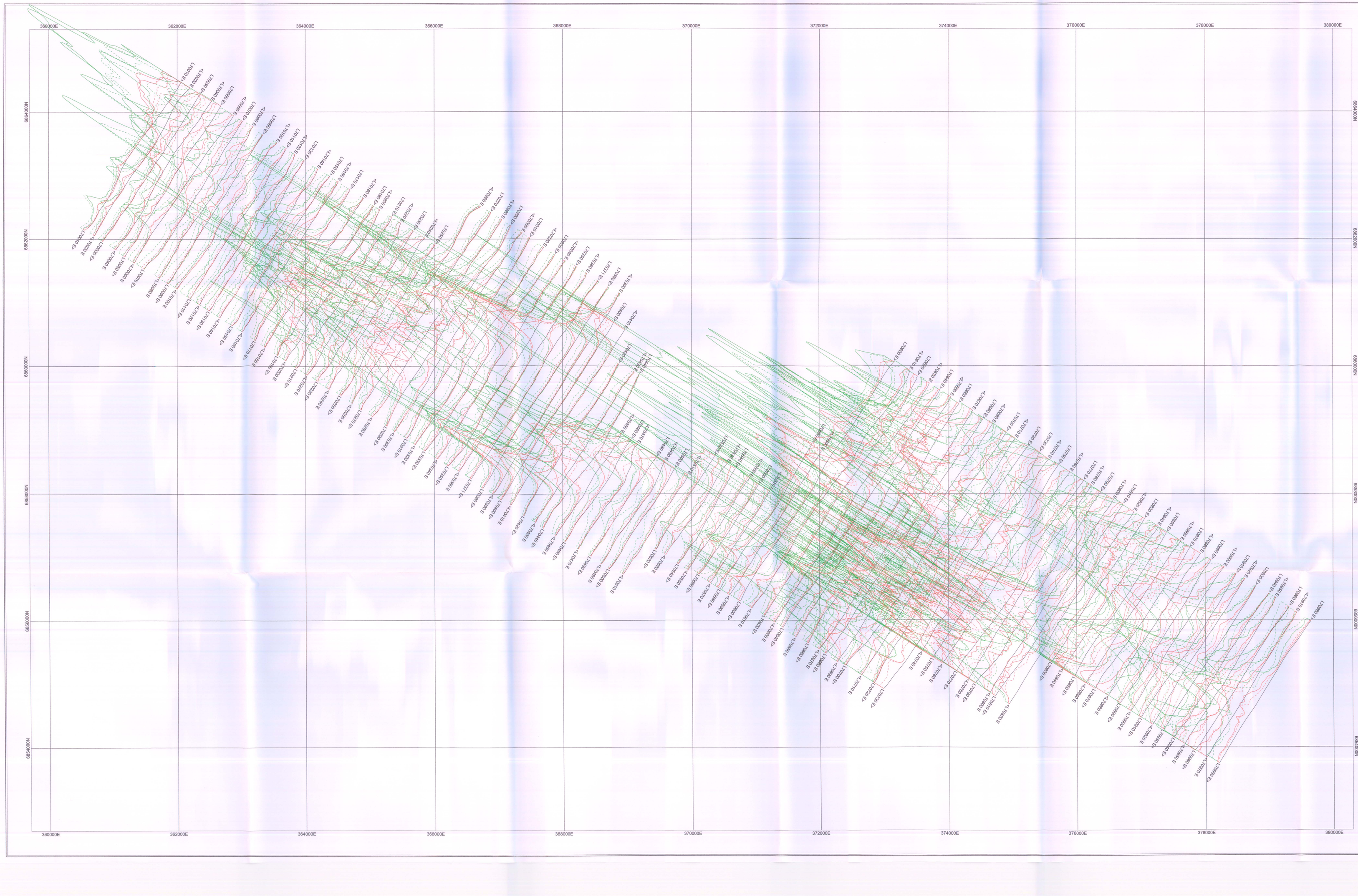
EXPATRIATE RESOURCES Lt

POWER PLAY Property
Yukon Territory, NTS 105G/13, 14
MAGNETIC DATA and CONDUCTORS

Helicopter EM and Magnetic Survey
Executed by: Aerodat Inc. (Fugro Airborne Surveys)
during February 25 - April 18 1996, Project: J960
Mapfl Magnetic-cond.map

Reprocessed by: J. Klein, February 20

Plate 3
Power Play Property,
Profiles of 865 Hz Copl.
and 935 Hz Coax. Data



NOTES:

Profiles of 865 Hz Coplanar (green) and 965 H
Coaxial (red) data. In-Phase as solid and
Out-of-Phase as dashed lines. Vertical scale
at 4 ppm/mm (based on a basic map scale of
1:20,000). Positive values to the left with the
zero value along the flight line.

The survey lines were flown at an azimuth
of 32- 212 degrees with an average line
spacing of 200 m.
The grid coordinates are in UTM projection
Zone 9N using the NAD27 datum.

250 0 250 500 750 1000 1250
metres

094300 Plat

EXPATRIATE RESOURCES Ltd

POWER PLAY Property
Yukon Territory, NTS 105G/13, 14
PROFILES of 865 Hz Copl. and 935 Hz Coax.

Helicopter EM and Magnetic Survey
Executed by: Aerodat Inc. (Fugro Airborne Surveys)
during February 25 - April 16 1996, Project: J9603
Map# Profiles.map

Reprocessed by: J. Klein, February 200

Plate 4
Power Play Property,
Calculated Resistivity from
865 Hz Coplanar Data

360000E 362000E 364000E 366000E 368000E 370000E 372000E 374000E 376000E 378000E 380000E

6864000N 6862000N 6860000N 6858000N 6856000N

NOTES:

Resistivity data calculated by Aerodat Inc. f
the 865 Hz Coplanar coil data set assuming
thick layer overlying a resistive half-space.
All calculated values below zero and above
ohmm were deleted before gridding at 50 m
Contour interval: 3/log decade in ohmm.

The survey lines were flown at an azimuth
of 32- 212 degrees with an average line
spacing of 200 m.
The grid coordinates are in UTM projection
Zone 9N using the NAD27 datum.

4893
3077
2957
2887
2828
2776
2720
2656
2587
2510
2425
2318
2189
2060
1921
1771
1615
1430
1262
1129
1019
941
875
814
758
706
661
610
561
514
469
427
383
334
280
222
155
88
42
1

Resistivity
in ohmm

250 0 250 500 750 1000 1250
metres

094300 Plate

EXPATRIATE RESOURCES Ltd.

POWER PLAY Property
Yukon Territory. NTS 105G/13, 14
CALCULATED RESISTIVITY from 865 Hz Coplanar C

Helicopter EM and Magnetic Survey
Executed by: Aerodat Inc. (Fugro Airborne Surveys)
during February 25 - April 16 1998, Project: J9803
Map# Res865.map

Reprocessed by: J. Klein, February 2002

Plate 5
Power Play Property,
Calculated Resistivity from
4175 Hz Coplanar Data

EXPATRIATE RESOURCES LTD.

POWER PLAY Property
Yukon Territory, NTS 105G/13, 14

CALCULATED RESISTIVITY from 417S Hz Coplanar

Helicopter EM and Magnetic Survey
Executed by: Aerodat Inc. (Fugro Airborne Surveys)
during February 25 - April 18 1998. Project: 1982
Map# Fase417S.map

Reprocessed by: J. Klein, February 200

09h30 Plate

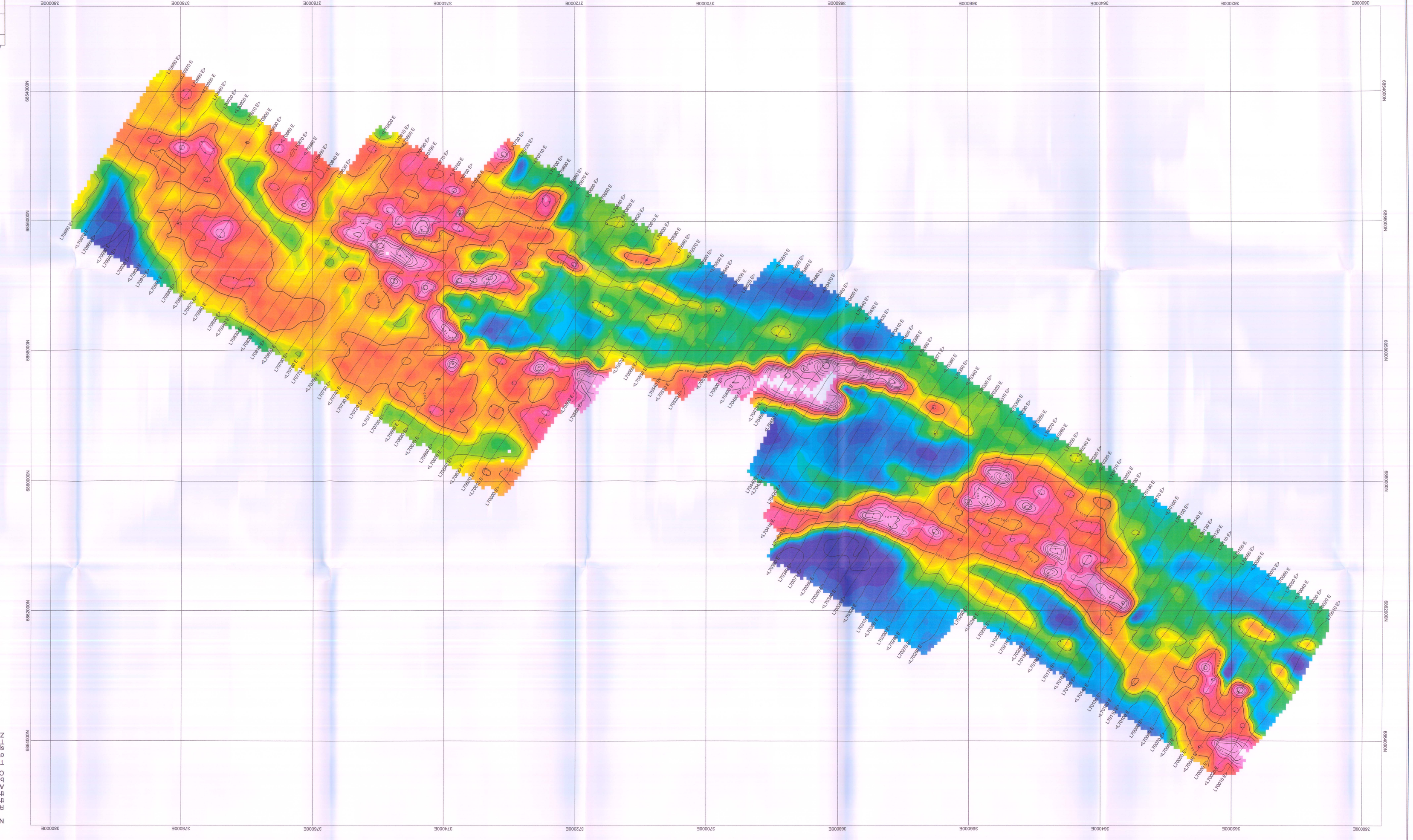
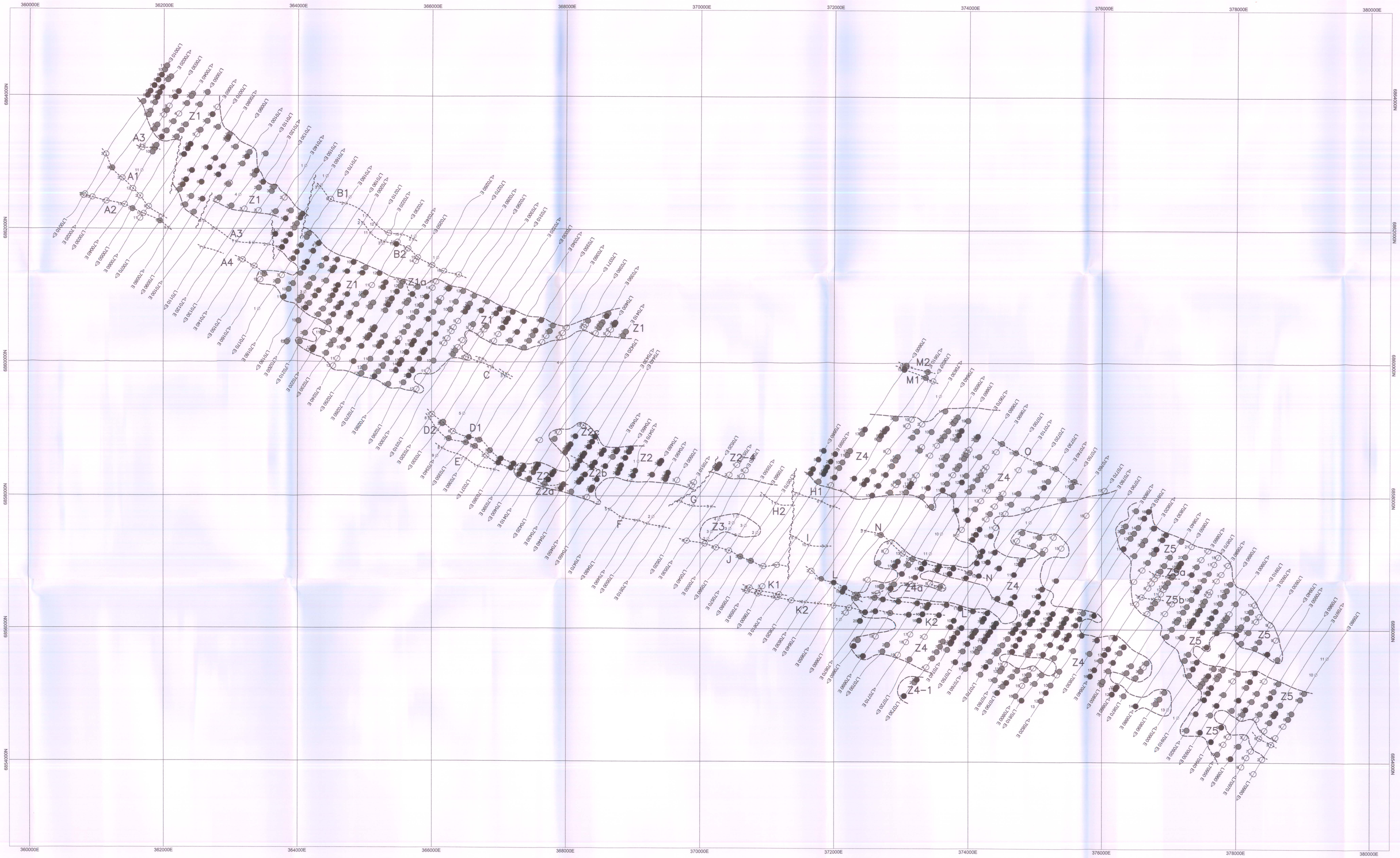


Plate 6
Power Play Property,
Interpretation



NOTES:

EM anomalies (conductors) are manually se
This selection is based on correlating the
actual data with theoretical responses from
steeply dipping half-planes. Calculation of th
conductivity x thickness products in Siemens
is for this data set based on the 935 Hz coax
coil results. Numbers alongside anomalies a
identify each individual anomaly.
The following grading is used:

- 0 to 4 Siemens
- 5 to 15 Siemens
- 16 to 29 Siemens
- 30 to 49 Siemens
- 50+ Siemens

Z3 — Outline of large areas of mult
conductors with identifier.

A — Conductor axis with identifier.

Possible fault.

The survey lines were flown at an azimuth
of 32-212 degrees with an average line
spacing of 200 m.
The grid coordinates are in UTM projection
Zone 9N using the NAD27 datum.

250 0 250 500 750 1000 1250
metres

094300 Plat

EXPATRIATE RESOURCES Ltd

POWER PLAY Property
Yukon Territory, NTS 105G/13, 14
INTERPRETATION

Helicopter EM and Magnetic Survey
Executed by: Aerodat Inc. (Fugro Airborne Surveys
during February 25 - April 16 1996, Project: J9603
Map# interpretation.map

Reprocessed by: J. Klein, February 200