EXPLORATION LICENCE NO. 120

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NORTHERN TERRITORY

REPORT ON 1976 INVESTIGATIONS



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1 INTRODUCTION

This report outlined investigations carried out within the area of Exploration Licence No. 120 (referred also as EL 120) during the year 1st January 1976 to 31st December 1976.

Exploration Licence No. 120 was comprised of two separate sections with a total area of 51.72 square miles. This represented the portion of the Exploration Licence retained after the reduction in area required at the end of 1975 as a condition under the Northern Territory Mining Ordinance for renewal of Exploration Licences. The areas of the 1976 renewal were designated A and B, and were shown on Plate 1 in relation to prominent cultural features.

Access to these areas was via the Oenpelli/Pine Creek road. Area A extended partially across this road between the South Alligator River and Barramundie Creek, access to other parts of Area A was via baseline tracks and drill access tracks. Area B was reached by turning off the Oenpelli Road towards Goodparla Homestead and thence via the track parallel to Goodparla Creek through Coirwong Gorge.

The area was at the transition between black soil plains in the north and dissected plateau country to the south. A central sandstone mass gave an area of prominent hills to the east of the South Alligator River, whilst the rest of the area was of low relief with swampy drainage and occasional "strike ridges" and low hills.

Previous work carried out within the area under discussion had consisted of :-

- (a) Airborne radiometric and magnetic surveys.
- (b) Ground radiometric follow-up, including geological mapping and geochemistry.
- (c) Investigation of a base metal anomaly north of the South Alligator River.
- (d) Auger drill geology and geochemistry, with associated geological mapping, on a regional scale in E.L.120, extending into E.L.123.
- (e) A regional scale Track Etch Survey.
- (f) Percussion drilling at Anomaly 5D, Anomaly 5P and Anomaly 77

No bedrock uranium mineralization was found during these investigations.

Following the broad scale investigations of the 1975 season a number of specific follow-up targets were outlined. Investigations in 1976 were geared to elicit more detail from the outlined areas. The techniques applied during the 1976 programme were detailed grid soil and radiometric surveys, geological mapping, rock chip geochemistry and percussion drilling.

The field programme in Exploration Licence No. 120 was commenced on 1st May and was terminated at the conclusion of the drilling programme on 5th October.

The remainder of this report was devoted to the description of 1976 programmes.

No economically significant uranium or base metal mineralization was encountered during 1976.

2 CONCLUSIONS

- 1. Uranium anomalies at Anomaly 77 South were shown to result from a concentration of metals within porcellaneous calcite which developed at the top of the weathering zone.
- 2. Drilling indicated that concentrations of uranium existed below the carbonate zone at anomaly 77 south in a shallow syncline of shales. This uranium occurred in association with strong ferruginization in very weathered shale, but values present were less than 0.33 lbs/short ton. Circulation of near surface solutions and changes in Eh/pH conditions from the sandstone into shale facies were the mechanisms of concentration.
- 3. The shallow syncline of rocks hosting uranium mineralization was overlain by an overthrust conglomerate/sandstone unit. Thrusting and folding were most probably related, with a displacement in the order of 100 to 200 metres indicated, top to the west.
- 4. Surface and subsurface base metal geochemical anomalies at 9000E 4000N were the result of co-precipitation with grain fringing limonite in a coarse grained sandstone. Very little sulphide was indicated to be present.
- 5. Uranium and metals dispersing from a fault structure at Track Etch Anomaly I were shown to be derived from an above water table concentration in clay weathering products and perous zones near the fault plane.
- 6. At Anomaly 8500E 5500N percussion drilling confirmed the surface mapping and geochemical interpretation that a N.W. to S.E. linear anomaly was due to metal concentrations near the contact between dolerite and sediments. No significant metal values were intersected on the percussion drilling section.
- 7. Track Etch Anomaly II the geochemical and laterite anomalies. Surface geochemical anomalies were associated with the development of a ferruginous surface layer and not to metal rich basement. A possible correlation existed between laterite development, high laterite geochemistry and 'basement' carbonate facies.
- 8. Traversing on basal Koolpin interbedded shales and cherts showed that iron sulphides were present and, in part, quite common within the sequence. Minor amounts of base metal sulphides were interpreted as being present with the pyrite.

- 9. Ferruginization and iron redistribution within the near surface zone of the lower Koolpin shale/chert units was extensive.

 Limonite/hematite replacement and accumulation had been accompanied by precipitation of the more mobile metals zinc, nickel and copper.
- 10. No potential for the development of economic metal concentrations was seen in areas considered during the 1976 work programme.

3 RECOMMENDATIONS.

Based on work completed within the present area in 1976 and for preceding years no suitable potential was indicated to exist for the location of large bodies of metal mineralization. No further work on this exploration licence was warranted.

4 GEOLOGY

4.1 Regional Setting.

This is a synthesis of available published and unpublished information for the area north of the South Alligator Valley uranium deposits and north east of the South Alligator River system to the Jim Jim Creek/Barramundie Creek watershed.

A series of dolerite bodies intruded a sequence of psammitic through to pelitic/chemical sediments of the Lower Proterozoic Agicondian System. The sediments of this system, and possibly in part the dolerite bodies, have been folded and slightly metamorphosed and were overlain unconformably by an unmetamorphosed, generally gently dipping, sequence of psammitic and rudaceous sediments with some localized developments of volcanic rock.

Rocks of the Agicondian System have been divided into two distinctive groups, the Goodparla Group and the overlying South Alligator Group.

Goodparla Group rocks in this area consisted of a basal unit of Stag Creek Volcanics (Upper part of Masson Formation) overlain by a local facies unit of conglomerate, quartzite and sandstone, the Mundogie Sandstone Member. This was in turn overlain by a sequence of conglomerate, arkose, quartzite, siltstone and shale known as the Mt. Partridge Formation.

The fine grained rocks of the South Alligator Group overlay both the Mundogie and Mt. Partridge units. They consisted of shales, with iron rich carbonaceous facies, siltstone and interbedded poddy chert and silicified limestone/dolomite of the Koolpin Formation which were overlain by siltstone of the Fisher Creek Siltstone.

Substantial bodies of dolerite formed intrusive dykes and sills within rocks of the South Alligator Group and, to a much lesser extent, in the Goodparla Group.

To the south, unconformably overlying rocks of the Agicondian System, were units of unmetamorphosed Katherine River Group. These consisted of sandstone and conglomerate with interbedded, but lensoid, basaltic and rhyolitic volcanics. This Group was assigned a Middle Proterozoic or Carpentarian age.

The very tight, elongate, north west/south east folding west of the South Alligator River died away towards the east. Important manifestations of this folding system were seen in the central and southern portions of the area described, both as a south east plunging syclinorium of South Alligator Group rocks and as over-printing on north/south folding within the Goodparla Group. A possible later east/west fold affected both the Mundogie Sandstone Member and the Koolpin Formation on an axis through the southern outcrop of the Mundogie Member. The interference effect of this fold with either the north south or north west/south east folding systems had produced the domal structure which exposed Stag Creek Volcanics in the west of this area.

Faulting was suggested as an important element of structure within the area described and examples of various interpreted faults exist in the literature. However, evidence forwarded as to the positions and possible displacements of a number of these faults appeared open to a degree of interpretational latitude.

4.2 Geology of the Barramundie Creek Area.

A rapid, broad scale, geological mapping programme was carried out in the central and southern portions of area A in 1975 and minor modifications were made following 1976 investigations. Plate 3,

The original mapping was carried out by means of a series of traverses across areas of interest as defined by photographic inspection, traversing in areas of extensive recent cover deposits, auger drilling and compilation of information gained from previous geological mapping in the area shown on Plate 3. Information was plotted at photoscale and an overall photo interpretation was carried out. The final presentation at 1:25,000 scale was obtained by reduction from photoscale, approximately 1:16,670.

The degree of geological reliability across the map showed a marked variation. Northern and eastern sections of the map had a large measure of ground control on the final interpretation. In the south western section of the map area ground visits were curtailed by wet weather and interpretation was based mainly on photo inspection and auger drilling information.

4.2.1 Stratigraphy.

Lower Proterozoic rocks within the mapped area fell conveniently into three lithologically based sedimentary units; these have been equated with the previously named Mundogie Sandstone Member, Mt. Partridge Formation and Koolpin Formation.

The Mundogie Sandstone Member was the oldest unit mapped, being overlain with apparent disconformity by the Mt.Partridge Formation and apparent unconformity by the Koolpin Formation. This Member outcropped along the western boundary of Exploration Licence No. 120 thence swinging to the north east at the northern end of the mapped area. The unit consisted of hard quartzite, sandstone and minor coarse grained clastics. It formed a topographically upstanding "wrinkled" sheet extending to the South Alligator River in the west and dipped below younger formations in the east.

The base of the Mt. Partridge Formation lithologies was taken at the prominent conglomerate horizon which appeared to disconformably overlie the eastern margin of the Mundogie Sandstone outcrop in the northern part of the mapped area. This conglomerate consisted mainly of quartz pebbles and cobbles with sandy or chloritic matrix, but also contained a small percentage of rock fragments e.g. chlorite schist, chert, carbonaceous sediments and sandstone. The conglomerate was radiometrically anomalous and probably contained detrital urano-thorium minerals. Outcrop and drill information indicated the succession above the conglomerate to be:-

Coarse grained arkose Sandstone and siltstone

Thick shale with minor sandstone and arkose

Quartzite - possibly 200 - 400 metres thick.

Shale - lensing out to south

In the central part of this mapped area (i.e. approximately 10000 N) the conglomerate horizon took on a more sandy and arkosic aspect, although characteristic radioactive measurements were still present. The ridge of sandstone and quartzite extending from 2650E 9400N to 6000E 5250N had this same conglomerate horizon at the base of the eastern slope, with an apparent west dip to the bedding. On this basis, taking the relationship observed at 10000N into account, the quartzites, feldspathic quartzites and sandstones of this ridge were interpreted as being of the Mt. Partridge Formation. This interpretation was selected as the most favoured on present information, but a

distinct possibility exists that these quartzites may in fact be of the Mundogie Member.

In the area of the 8000E base line from 6000N to approximately 8000N the Mt. Partridge sequence included, besides quartzite and arkose, shales, silicified shale and dolomite (carbonate horizons were noted in 5P drilling see 1973 report) and siltstone. A sequence, in fact, not unlike lower parts of the Koolpin Formation of the area.

The most easterly outcropping and youngest of the assigned Mt. Partridge rocks were a series of conglomerate arkose, quartz pebble arkose and coarse to fine grained arkose. The boundary of this unit, as interpreted from exposure and drill holes, suggested strongly an overlap relationship to older units. It was entirely possible that this, rather than the conglomerate unit selected, should have been considered as the base of the Mt. Partridge Formation. If this in fact was the case, the relationship between Mt. Partridge and Koolpin Formations became less certain.

Rocks assigned to the Koolpin Formation consisted of shale with interbedded chert and siltstone with lenses of massive chert, silicified dolomite and ortho quartzite. Substantial portions of the lower shaley facies of this unit were hematite/limonite rich dark shale/chert interbeds possibly representing pyritic carbonaceous units at depth.

In the central eastern and south eastern sections of the Koolpin outcrop, where more detailed mapping had been carried out, this unit clearly overlay the arenaceous units, where it could be established that the contact was not tectonically disturbed. The sequence appeared to be:-

Mt. Partridge (Quartzite and sandstone Formation. (plus mixed finer grained (sediments

The occurrence of ortho quartzite within the lower part of the Koolpin shales may indicate pauses in general detrital sedimentation, but the apparent association of ortho quartzite with silicified carbonate rocks suggested contemporaneous chemical or biological sediment accumulation. Facies interfingering of Koolpin with Partridge formation would also explain the observed relations.

Auger drilling and mapping indicated that the shaley facies of lower Koolpin units apparently gave way to a more silty facies with minor thin bedded fine grained sandstones, towards the central south area near the Pine Creek/Oenpelli Road.

Dolerite dykes and sills intruded the Koolpin and Mt. Partridge Formations. The dolerites were recognised at surface by dark red residual clayey soils, sometimes containing black secondary minerals from the dolerite, heavy tree cover and very dark photographic tones. Numerous auger drill confirmations were obtained for this correlation of surface features and rock type. The prominent body of dolerite extending north from Anomaly 5P (approximately 7500E 7000N) had a distinct sill like form in its surface disposition and where drilled at Anomaly 5P the apparent dip of the top dolerite surface was very near to horizontal.

Quarternary deposits consisted of scree, residual and transported rubble, sand, pisolitic laterite, transported and residual soils, alluvial silts and organic muds.

4.2.2 Structure.

Detailed study was insufficient to allow a micro structural analysis to be attempted. All comment has been confined to the interpretation of gross structure as perceived.

4.2.2.1 Folding.

A number of fold directions can be interpreted from the geological map.

The Mundogie Sandstone Member outcropped along the western boundary of the reduced Exploration Licence as the core of a north south trending fold system. In the south of the Mundogie outcrop a broad domal type uplift occurred as a response to cross folding on north west/south east and/or east/west to east north east/west south west axes. The latter fold system appeared to be a fairly late development in the tectonic history of the area and affected the Mundogie and Koolpin rocks in the south.

Folding in the Mt. Partridge and Koolpin Formations was of four types:-

The initial <u>north/south folding</u> which gave rise to the general distribution of Mt. Partridge Formation and the Mundogie Sandstone Member in this area.

North west/south east folding in the Koolpin Formation and the central outcrop of Mt. Partridge Formation producing tight and locally overturned folds. This was clearly illustrated by the Koolpin Formation outcrop distribution in the central area. Eastern margins of the infaulted/infolded Koolpin Formation showed every indication of being overturned and exhibited tectonic disturbance sub-parallel to strike. These tectonic dislocations could be construed as bedding slides in response to folding or reverse faults.

The broad distribution of Koolpin Formation outcrop appeared to reflect a generally south east plunging basin or synclinorium.

North east/south west and East/west to east north east/west south west folding was evident in Koolpin and Mt. Partridge Formations and the latter type affected the Mundogie Sandstone Member in the south.

Possibly related to these cross folding episodes, but more likely to reflect earlier north/south folding, were folds which became apparent on a large scale by tracing the outcrop of the Mt. Partridge Formation basal The general north or north conglomerate. west outcrop orientation of this unit was disturbed by a series of sharp asymmetric folds with east to south dipping axial planes, one limb of the fold being overturned or This pattern of folding was steepened. very suggestive of relative lateral movement between Mundogie Sandstone and Mt. Partridge Formation in a sinistral sense producing a drag folding effect, possibly also developing the strong north or north north west striking fracture cleavage which was prevalent in this area.

The eastern margin of the Exploration Licence was occupied by moderate to shallow easterly dipping arkosic units.

4.2.2.2 Faulting.

Numerous faults have been interpreted on Plate 3. These were mainly photo interpreted lineaments notable by their prominence and/or displacement of geological units.

Interpreted faults with an approximate north west/south east orientation predominated in the central and south eastern sections In addition, lineaments of the mapped area. with approximate north north west/south south east and north east/south west orientations The contact between were also present. Mt. Partridge and Koolpin Formation rocks west of the 5000E line was considerably modified by manifestations of relative movement between the two units. This feature can be postulated with a fair degree of certainty, to continue to the end of the

prominent Mt. Partridge Formation north west/south east ridge. Beyond that point the natural continuation of the structure was apparently overlain by Mt. Partridge Formation rocks, suggesting either noncontinuance of the structure north westward or an, as yet, unidentified divergence in In the south the probable direction. continuation of this structure, on the other side of the prominent break in outcrop between 5000E and 5500E, was marked by a clearly established fault; the folded section of Mt. Partridge Formation and lower members of the Koolpin Formation were up faulted against a lower Koolpin Formation cherty member. Considering the close association between the folding and this fault structure, plus postulated restrictions in lateral extent, it was considered that the origin may be akin to a bedding slide developed during folding or a slide generated initially at a low angle to bedding and subsequently folded.

The "swarm" of north west oriented interpreted faults in the area bounded by lines 5000E and 8000N showed a progressive apparent displacement of the dolerite contact north westward in a northern direction, whilst the general sense of lateral displacement of the arkose unit in the same area was in an opposite direction. may have been a reflection of a divergence of dip between the arkose band and the dolerite contact. Vertical displacement indicated by the east dipping arkose band was in general small, up to 200 metres. southern most interpreted fault of this group appeared to be a much more substantial structure with marked displacement and development of planar fabrics in arkosic rocks.

North west/south east oriented faulting in the south east corner of the mapped area showed progressive, but small, displacement of the steep southerly dipping shale unit in a north westerly direction when going towards the west, i.e. the faults were stepped down towards the west.

The interpreted north north west/south south east fault in the Mt. Partridge Formation of the central area appeared as a distinct clear break with downthrow on the eastern side, displacement unknown but possibly substantial.

In the northern portion of the mapped area interpreted fault lineaments had a general north east or north north east orientation. The latter showed small apparent dextral outcrop displacements whilst the former had a less easily interpretable sense of movement, but which was considered to be of the same order and sense as for the north north east faults.

Finally a north south trending fault has been interpreted to pass through the mapped area in the strip of ground between the 5000E and 6000E lines. The basis of this interpretation was the following series of observations:-

- (a) Changes in geology across a depressed topographic feature.
- (b) Photo interpreted lineament continuation from a known fault to the south.
- (c) A marked discontinuity in relative background values in the Track Etch regional survey coinciding with the photo and geologically interpreted line.

Occurrences of schist within the arkosic upper units of the Mt. Partridge Formation appeared to be the physical expression of shear deformation impinging on this unit in the general area.

Sheared and brecciated zones, especially in axial regions of folding in brittle rock, contained locally substantial amounts of quartz vein material.

In addition to silica injection, and/or secretion, silicification of shale and dolomitic rocks had taken place. The timing of those silicification events was not clear.

The grade of metamorphism of rocks in this area was very low but highly deformed rock fabrics were present as localised features.

5 DETAILED GRID RADIOMETRICS, GEOCHEMISTRY AND GEOLOGY.

Two areas, indicated by 1975 regional investigations and designated Anomaly 9000E 4000N and Anomaly 8500E 5500N, were gridded on a 100m. square pattern. Soil samples were taken from the bottom of hand augered holes and analysed for Cu, Ni, Co, Pb, Zn and U_3O_8 . A Scintrex GIS-3 spectrometer was used to measure gamma radiation at each site. The area gridded was mapped for bedrock geology and soil type whilst sampling was being carried out. Results of these investigations were presented on Plates 4, 5 and 6.

5.1 Anomaly 9000E 4000N.

An undefined base metal anomaly was indicated by 1975 regional soil and auger programmes as being present at location 9000E 4000N.

In 1976 an area of approximately 800 metres by 500 metres was gridded at 100 metre line spacing and geochemical soil samples were collected.

5.1.1 Geology.

The gridded area covered a low featureless topographic "swell" in its central and eastern portions. was covered by sandy and silty soils and contained occasional exposures of arenaceous, ferruginous arenaceous and rudaceous sediments of the Lower Proterozoic Mt. Partridge Formation. The attitude of Lower Proterozoic rocks found on this grid was not determinable but dip was suspected, on a regional basis, to be in an east to north east direction. Scattered, localized, developments of ferruginous pisolite laterite were found in this area. Between this area and the quartzite scree in the south west corner of the grid were areas of swampy drainage with black organic sandy soil and no rock exposure. In the north east corner of the grid, orange soil with possible 'collapse' depressions was encountered.

5.1.2 Geochemistry.

The distribution of metal values on the grid indicated three anomaly types i.e. anomaly over metal rich Lower Proterozoic rocks, dispersion to drainage from the area of the bedrock anomaly and anomaly associated with thick orange soils.

A strong bedrock related copper/lead anomaly extended in a N.N.W. direction from 9000E 3800N. The zone crossed the topographically highest part of the area and ran for part of its length across the main zone containing scattered and partly ferruginous arenaceous exposure. Copper values up to 120 ppm (median value 14 ppm) and lead values to 400 ppm (median value 36 ppm) were encountered in this anomaly. The zinc high zone appeared on either side of the main copper lead zone and had a contoured strike of WNW/ESE.

Copper, lead and zinc dispersion leading from the main bedrock related anomaly to the swampy drainage area and the ferruginous nodular laterite, which bounded it on the N.E. side, probably represented a train of solid ferruginous rock particles.

Anomalous geochemical values were obtained from a sample of iron rich silty to sandy soils taken from the bottom of a six foot collapse depression. These soils and their related structures could possibly have been partly derived from the residual fraction after dissolution of a carbonate rock.

Uranium assays were very low both in soils and in rock samples collected on this grid.

Metal values in the six ferruginous arenite rock chip samples collected on this grid were relatively high.

Value ranges were :-

42 to 130 ppm Copper 90 to 160 ppm Nickel 22 to 210 ppm Lead 420 to 840 ppm Zinc

5.1.3 Radiometrics.

Spectrometer count rates were generally at a level considered to be background for the geology present. Minor anomalies at 2x the general background were found in areas of ferruginous 'pisolite laterite' and at one sample site in the orange soil area in the N.E. portion of the grid.

5.1.4 Assessment.

The bedrock related geochemical anomaly, associated with observed manganiferous and ferruginous surface exposure, was thought to constitute a target for

exploratory percussion drilling. The concluding phase of the exploration of this area has been dealt with in section 6.2 of this report.

5.2 Anomaly 8500E 5500N

Undefined surface auger and soil sample metal anomalies were located in the area of grid point 8500E 5500N during the 1975 programme.

In 1976 an area of approximately 0.4 sq.km. was gridded at 100m. spacing to cover the area indicated as being anomalous by 1975 work.

5.2.1 Geology.

Exposure of a folded and faulted Lower Proterozoic quartzite horizon in the north west section and cherty breccias in the central section were the only Lower Proterozoic rocks visible on the gridded area, these were tentatively assigned to the Mt. Partridge formation. Scree dispersing from these ridges of exposure and from cherts to the south west of the gridded area formed the bulk of surficial deposits on the western portion of the gridded area.

Eastern portions of the gridded area were flat lying with swampy drainage and sandy soils. An area of sandy soil with ferruginous nodules was outlined at the northern margin of the main swamp. Swampy drainage, with associated sandy soils, also bisected the scree areas of the western portion of the map. This drainage zone was very straight and had a N.W./S.E. orientation.

Red clay soils, usually indicative of a dolerite bedrock within this general area, were found as a wedge shaped body between the zone of Lower Proterozoic exposure/scree and the low lying sandy and swampy areas.

Lower Proterozoic bedrock structures, as deduced from outcrop and surficial unit distributions, showed three clearly interpretable features :-

(a) A NNW or NW trending anticlinal fold as outlined by the quartzite exposure.

- (b) N.W./S.E trending faults as evidenced by a small linear swampy zone, by displacement of quartzite outcrop at 8400E 5900N and the possible termination of dolerite against the suspected fracture trace.
- (c) A zone of cherty and slightly ferruginous breccias extended in a N.N.W. direction along the northern side of the small cross cutting swampy area.

5,2,2. Geochemistry.

Metal value distribution on this grid showed a number of anomaly situations :-

- (a) Strong linear anomaly in Pb, Zn, Co and U₃O₈ parallel and possibly coincident with an interpreted N.W. fault structure which cut the folded quartzite unit. This anomaly was strongest where interpreted dolerite came in fault contact with, presumed, sedimentary units to the S.E. of the main quartzite exposure. Mineral enrichment along, or adjacent to, a faulted contact between dolerite and sediments was strongly indicated.
- (b) A small lead/zinc anomaly was outlined in scree downslope of the mapped exposures of cherty breccia. A rock chip sample from the breccias (ESR 2538) showed no marked anomalism for these two metals, but the most credible explanation for the anomaly was considered to be dispersion from the area of the breccias with possible value enhancement by a natural separation of ferruginous and cherty components. No further work was considered necessary.
- (c) Cu, Co, U₃O₈ anomalies associated with ferruginous nodules and ferruginous laterite of surficial origin.
- (d) Composite anomalies of Co, Zn, Cu and U₃O₈ associated with areas near the base of the scree slopes and at the margins of the main swampy area. These were considered to result from the local metal concentrating environment consequent of the charge in chemical and dispersion regimes and no further work was recommended.

5.2.3 Radiometrics.

Spectrometer backgrounds on this grid were very low (15 to 20 counts per second).

A spot high of approximately $4\frac{1}{2}$ x background occurred over laterite at 8530E 2670N. The faulted zone, approximately 100 metres to the N.E. of the above high, had a radiometric response of approximately $1\frac{1}{2}$ to 2x background.

Another spot high, of approximately 2x background, occurred at 8500E 5200N at the base of a cherty scree slope. Geochemistry did not reveal anomalous U_3O_8 in this area.

5.2.4 Assessment.

The fault related anomaly in the central northern area of this grid was considered worthy of follow-up drilling. This phase of the investigation has been dealt with in section 6.4 of this report.

6 PERCUSSION DRILLING.

Following recommendations made at the end of 1975 and follow up work completed in 1976 (See Section 5) six areas were selected for investigation by percussion drilling in mid 1976.

A contract for the required drilling was let out to Afrac Drilling Pty. Ltd. of Brisbane. A Mayhew 1500 air blast rig and a 250 psi Holman air compressor were used to complete the contract.

Fifteen miles of access tracks were graded into the drill sites.

Locations of the six areas for drilling were shown on Plates 2 and 3. Drill site locations were shown on Plates 4, 13, 16 and 20.

6.1 Anomaly 77 South.

Drilling here was in two phases, the initial cross strike traverse, holes BDH 38 to 42 inclusive, and a follow-up programme of three holes, BDH 47 to 49 inclusive, drilled at a later date.

Eight holes were drilled in this location for a total drilled length of 327 metres. Hole locations were shown on Plates 2, 3 and 13 and drill section information was shown on Plates 11 and 12.

6.1.1 Section 17840N.

Initial drilling on this section was undertaken to test an area of surface radiometric anomaly and auger drill geochemical anomaly outlined in the 1975 programme.

6.1.1.1 Geology.

The lithological sequence intersected by these holes was (oldest at Base) :-

Shale and limonitic shale

Sericitic sandstone

Quartzite

Alternating conglomerate, arkose and phyllite

Chloritic and carbonaceous phyllite Quartz - chlorite schist.

These rocks were assigned to the lower part of the Mt. Partridge Formation in the 1975 regional mapping, but could be part of the Mundogie Sandstone Member depending on the selection of a base to the Mt. Partridge formation.

Conglomerate outcrops form two sub-parallel zones, one on either side of the surface radioactive anomaly, with eastward dips for both units indicated. Results of drilling showed that the western outcrop of conglomerate was correlatable with the interpreted conglomerate unit intersected in the mid to lower portions of holes BDH 38, 39, 40 and 41. The western outcrop was correlatable with intersections of conglomerate in the top of holes BDH 41 The latter unit overlay a shallow and 47. syncline of schist, conglomerate, arkose and shale/phyllite with apparent disconformity, unconformity, suggesting two separate conglomerate units were present within the An alternative, and more probably, interpretation of this relationship was that the two conglomerates were of the same horizon with the upper portion thrust over the lower. This proposition would be supported by steep apparent dips at some points along the eastern outcrop and by shearing parallel to bedding.

The water table level was related closely to the arkosic sandstone member in the middle of the drilled section. Porosity and permeability within this unit appeared to be high.

A small amount of malachite and chrysocolla was noted in the chips from the upper portion of the quartz-chlorite schist unit in BDH 38. This was associated with quartz limonite veins, suggesting derivation from a local sulphide source.

6.1.1.2 Radiometric Monitoring of Percussion Samples

Distinctly anomalous sample readings were encountered in holes BDH 40, 42 and 47.

The high readings were near the top of these holes, with the highest values being in red/orange, limonitic, highly decomposed, shale or phyllite. A positive correlation existed between the darkest orange/red colours (related to limonite content) and the high radiometrics.

6.1.1.3 Assay Results.

High U₃O₈ values were obtained from the radioactive ferruginous shale section mentioned above. Values ranged up to 165ppm U₃O₈ and the zone of highest values occurred just above the contact between the shale and underlying porous arkose and on the western limb of the shallow syncline. The U₃O₈ values decreased to surface, cut off sharply within the shale unit approximately 5 metres below the upper conglomerate unit and 'fingered out' westwards into the porous arkose. This latter distribution was clearly related to water table and water table movements.

Assay of selected white porcellaneous carbonate from near surface samples, under the peak of the surface radiometric high, showed that surface responses must, to a great extent, be due to metal concentration within a form of calcrete material (ESR 2611 - 177 ppm U₃O₈, 460 ppm Cu, 330 ppm Ni, 190 ppm Co and 4300 ppm Zn)

The possible Ni/U3O₈ correlation suggested by 1975 work was not confirmed. High nickel and U₃O₈ values in the calcrete at surface probably contributed to the impression of a correlation, but inspection of assay results indicated that the nickel high zone cut across the anomaly trend for U₃O₈ at a high angle.

Copper values in the U₃O₈ anomalous area had a marked positive correlation with U₃O₈ values, but value levels were quite low. High copper geochemistry was associated with the lower chlorite phyllites and schists, the peak value of 550 ppm being where copper carbonates were observed in drill cuttings.

6.1.2 Section 17890N

Following the geochemical confirmation of the presence of 'abnormal' uranium values on section 17840N, it was decided to drill down the plunge of the synclinal structure on the section 17890N. Two holes BDH 48 and 49 were drilled.

6.1.2.1 Geology.

A shallow east dipping sequence of shale and arkose/conglomerate was intersected.

The 'upper' conglomerate horizon on this section was overlain by an arkosic sandstone. The aggregate thickness of these two units was much larger than for the upper arenite/rudite unit on section 17840N. A north east dip at approximately 15°0 was indicated for the base of this unit.

Underlying the upper conglomerate was a shale and ferruginous weathered shale unit, equatable with that carrying the high U₃O₈ geochemistry on section 17840. The unit appeared to thicken with depth towards the axis of the shallow fold.

Both BDH 48 and 49 were terminated in the sericitic arkose, which was found directly above the 'lower' conglomerate unit of section 17840.

Interpretive structural contours placed the axis of the synclinal structure approximately 10 metres to the east of BDH 48.

The water table surface appeared to reflect the contact zone of porous arkosic and shales, its surface inclination being in the same direction as this contact.

6.1.2.2 Assay Results.

Drilling on section 17890N was interpreted to have taken place at an equivalent structural position as that in which the abnormal U₃O₈ values were obtained from section 17840N. The rock types,

succession and ferruginous alteration were comparable but assay and radiometric responses were much lower.

U₃O₈ high values, to a maximum of 59 ppm, again occurred within the middle and lower portion of the shale unit with low order high values extending partly into the arkosic unit.

Nickel (up to 220 ppm) again showed a marked cross cutting anomaly zone whilst copper (up to 120 ppm) was within, and close to, the zone of anomalous U3O8.

6.1.3 Assessment.

Anomalous U₃O₈ values occurred within the lower portion of a highly weathered and partially ferruginized shale. A strong correlation existed between iron content, U₃O₈ value, water table and underlying arkose contact. U₃O₈ values did not appear to increase with depth and surface values, which give rise to surface radiometric anomaly, were related to the content of calcrete like carbonate.

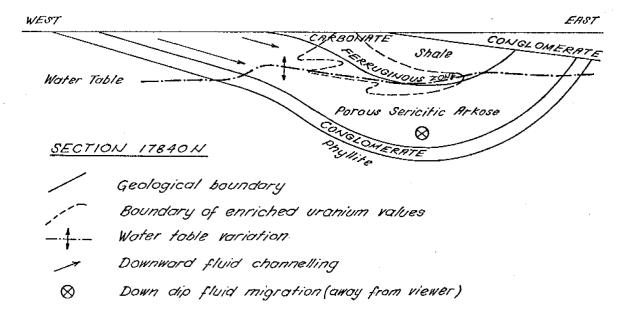
Surficial weathering and groundwater condition were considered to be the agents by which the anomalous values of U₃O₈ had developed in the shale unit. The lower conglomerate, which was known to be radioactive at surface and to contain minor amounts of uranium, was the source of the U₃O₈ and water flowing in the overlying arkose the carrier. Separation had been effected in the shale host, mainly in the area of water table oscillation, along with iron and copper (see sketch below). Uranium in the shales did not show any potential to develop ore grade values.

Interpretive structural contours, based on limited information from surface outcrop distribution, auger drilling and percussion drilling, suggested that the shallow N.NE plunging shale unit was progressively thinning to the north, truncated by the N.E. dipping 'upper' conglomerate/arkose unit.

The potential for ore grade development was very low and the gross bulk of the host shales was considered very small (estimated 250×100 metres x 15 metres thickness). No further work was warranted.

Anomaly 77 South

Sketch showing relationship of uranium, geology and interpreted fluid system.



6.2 Anomaly 9000E 4000N.

This base metal anomaly was first located during the regional soil sampling programme completed in 1975. It was subsequently drilled with three shallow auger holes late in 1975 and interesting copper, lead and zinc assays were recorded. In 1976 the local area around the original discovery was gridded and soil samples were taken. Results of this survey were presented in Section 5.1 of this report.

A recommendation for percussion drilling was made and five holes (BDH 29 to 33 inclusive) were laid out to cross the area of geochemical anomaly. Subsequent to the initial five holes, two follow-up holes were drilled (BDH 50 and 51).

Drill hole locations were shown on Plate 4 and the drilling section on Plate 14.

6.2.1 Geology.

Percussion drilling in this area encountered a sequence of arenaceous rocks, mainly coarse grained sandstone and arkose with minor amounts of fine grained quartzite. The attitude of the sequence was difficult to ascertain as there were no unique marker horizons or sequences, but a tentative correlation of hard, fine grained, quartzite at the east of the section suggested a shallow, 10° to 12°, apparent dip to the N.E.

At various levels within the sequence manganiferous sandstones were encountered, these being coarse sandstones containing coarse to fine nodules of manganese. Also within the sequence, but in greater proportions than the manganiferous variety, were ferruginous and jaspery coarse grained sandstones. In some samples this material had a gossanous appearance, but, in the main, limonite appeared to be interstitial and exotic.

Descriptions of rock samples ESR 2631 and ESR 9435 by Delta tended to suggest an interstitial exotic accumulation. Complex depositional textures probably account for the 'almost like boxwork' texture described in the appended petrological reports for these rock samples (Appendix 3).

A very pronounced colour differentiation was noted between drill holes. Products from drill holes BDH 29, 30 and 51 were predominantly yellow, from BDH 31 they were red and from BDH 32, 33 and 50 orange to red products dominated. This gross variation seems to reflect zonation of the oxidation state of iron within the weathered zone, the hematite zone being found in what was suspected, from tentative geological and geochemical correlations, to be a fractured zone.

6.2.2 Assay Results.

Copper, lead, zinc and nickel values exhibited very marked anomaly above the interpreted band of fine grained non-porous quartzite in areas above the water table. Some anomalously high values of copper, lead and zinc extend into areas below the water table without appreciable change in value level, but the main group of highest values was above the water table.

Copper values ranged up to 350 ppm, lead to 2600 ppm and zinc to 900 ppm and high values showed a general relationship to limonite cemented coarse grained sandstone and arkose rather than to the presence of hematite or manganese. (Appendix 2 - ESR 2609, 2610, 2626, 2627, 2628, 2629)

Spotty U_3O_8 high values, to 38 ppm, were also associated with the limonitic zones. In the bottom of BDH 33 the U_3O_8 high values were located in jaspery limonite which gave anomalous, but not extremely high, metal

values. 'Moderate' (13 and 14 ppm) U₃O₈ values accompanied copper high zone in the main base metal anomalous zone.

BDH 31 differed from the other holes drilled on this section in that it intersected a zone in which the predominant oxide iron was hematite rather than limonite. Contour correlation of metal value zones and some continuance of a possible marker indicated that BDH 31 may have penetrated a fractured zone. The distribution of iron minerals suggested an oxidation/reduction boundary condition, but there was no discernible relationship of this feature with uranium values.

6.2.3 Assessment.

A sequence of coarse grained porous sandstone and arkose contained zones of limonite and manganese. The limonite and manganese appeared mutually exclusive and not strictly of a bedded nature. Recorded manganese was confined to uncorrelateable 'blobs' whilst the limonite zones appeared to parallel the band of fine grained impermeable quartzite and to form sub-horizontal/ 'fingers' within the porous weathered arenites.

High geochemistry was associated with the limonite which had been described as interstitial and in hand specimen had a textural appearance indicating an exotic origin (exhibits grain coating, pore fill, botryoidal habit and structureless varieties).

It was considered that the origin of metal values was, like the limonite rich zones and possibly the manganese, exotic and was not related to in situ weathering of original base metal sulphide minerals within the sandstone units.

It was recommended that no further work be done.

6.3 Track Etch Anomaly I.

This anomaly was located during the regional Track Etch survey completed during 1975. A follow-up grid sample programme in 1975, using closer spaced Track Etch radon measurement and soil geochemistry, indicated that radon, zinc and nickel were dispersing from a suspected east west fault zone between orthoquartzite and shale of the Koolpin Formation. The faulted zone itself, as indicated by soil sampling of the scree slope above, contained high $\rm U_3O_8$ values compared with the rest of the grid.

It was recommended to percussion drill across the suspected mineralised fault zone to investigate the source of metal dispersion.

Location of the 1976 percussion holes was shown on Plate 16 and the sectional information on Plate 15.

6.3.1 Geology.

Drilling intersected two rock units, an orthoquartzite in the north and a sequence of dark shales and carbonaceous shales, with a tuff band, in the south. The contact between the two units was apparently sharp and dipped at approximately 78° south on section. Surface relationships suggested that this contact was a fault. The contact intersected in BDH 36, was preceded by a 10 metre section of yellow clays and a zone of fractured chert/orthoquartzite. In BDH 35, where the contact was fairly sharp between the unweathered dark shale and orthoquartzite, slickensides on some fragments indicated shearing near the contact.

Pyrite was common within the shale units as veins, films and disseminations, but no base metal sulphides were identified.

6.3.2 Assay Results.

High U_3O_8 and base metal values were obtained from the clay zone and from the fractured region around the contact in BDH 36.

Range PbZn N_i Co ppm of :- U₃O₈ Cu Clay 18-34 140-220 28-56 240-380 180-250 210-330 Fractured contact 14-24 190-390 86~150 40-64 66-120 70-180 zone

High background metal values were obtained within the shale unit in general, but no enrichment was obtained for samples at the shale/orthoquartzite boundary in BDH 35. Copper and zinc values showed a general decrease with depth in the shale unit.

6.3.3 Assessment.

High metal values in the permeable faulted zone at surface were clearly related to accumulations within the clay weathering products associated with a permeable solution channel structure. The process of formation was surficial and not of any significance as an indicator of the presence of economic concentrations of metals. No further work was warranted.

6.4 Anomaly 8500E 5500N

A percussion drilling traverse, consisting of four holes BDH 43 and 46 inclusive, was completed at this locality following recommendations made as a result of the soil sampling and geological programme described in section 5.2 of this report.

Locations of the drill holes were shown on Plate 14 and sectional drilling information on Plate 17.

6.4.1 Geology.

Drilling confirmed that arenaceous, argillaceous and possibly carbonate sediments were in contact with a dolerite body. Drill holes BDH 43 and 44 intersected mainly dolerite or the clay weathering products from dolerite decomposition. In drill hole BDH 44 a contact with phyllite appeared to have been intersected at the bottom of the hole.

Holes BDH 45 and 46 intersected mainly arenaceous sediments, some containing small amounts of manganese. No correlation of rock units was made and the attitude of the succession was unknown.

6.4.2 Assay Results.

The assay results from this drilling were of geochemical interest only and they could not be taken as indicators of the presence of possible ore grade mineralisation.

U₃O₈ results show a low value anomaly zone dipping to the S.W. at approximately 40-75°, possibly the fault zone?

Copper high zones occur in the sediments above the water table, values up to 190 ppm were noted.

Zinc values to 580 ppm were present but not considered unusual. Other elements measured showed no significantly anomalous values.

6.4.3 Assessment.

As with other anomalies drilled in this area, i.e. the 5P area and auger drilling on dolerite N. of the main Oenpelli Road, this enrichment of metals at a sediment/dolerite contact had no significance as a guide to possible economic metals concentrations.

6.5 Track Etch Anomaly II - Geochemical.

An eight hole percussion drill traverse was completed across the strike of a geochemical anomaly outlined by the 1975 programme.

Radon anomalies were obtained in this area in the 1975 regional programme. In follow-up Track Etch and soil geochemical sampling a N.E./S.W. zone of U₃O₈, Pb, Cu, Zn, and Co anomalies and associated 'flanking' radon and radiometric anomalies was outlined. A sedimentary unit or mineralized fault were interpreted as possible sources.

Drill hole locations were shown on Plate 20 and drill section information was shown on Plate 18.

6.5.1 Geology.

Drilling intersected shales, carbonaceous shale, siltstone and dolomitic shales of the Koolpin formation. These rocks were veined with quartz and, near carbonate rich rocks, calcite. Pyrite was common both in veins and as disseminations within the rock mass. No base metal sulphides were identified, but geochemistry suggests some very minor concentration of chalcopyrite or cupriferous pyrite.

Surface deposits of ferruginous clay with ferruginous nodules formed an almost continuous cover on the drilled section. This was underlain by a clay weathered zone which contained white porcellaneous carbonate and possibly gypsum.

The projected position of the geochemical anomaly onto this section coincided with the centre of the section where 'dolomitic' shales existed.

6.5.2 Assay Results.

No assay value measured on this section was in any way of interest with regards the location of economic metal concentration.

The soil sample anomaly of 1975 appeared to reflect variation of metal concentration in the ferruginous clay layer. Metal concentrations within the ferruginous surface deposits may be related to the carbonate content of underlying bedrock, hence the strike extent of the geochemical anomaly.

6.5.3 Assessment.

Further work was not warranted.

6.6 Track Etch Anomaly II - Laterite.

Radon, radiometric and geochemical soil anomalies occurred in a proximal relationship to a nodular ferruginous 'laterite' body alongside the Pine Creek/Oenpelli road.

Three short drill holes were planned to test if these anomalies were related to the presence of laterite or represented a valid bedrock anomaly.

Drill hole locations were shown on Plate 20 and sectional drill information was shown on Plate 19.

6.6.1 Geology.

Thin but hard nodular 'laterite' occured on the western flank of a hill of Koolpin formation rocks. Exposures to the east of the laterite body were of the cherty ferruginous type i.e. interbedded chert and hematite/limonite shales. Drill hole logging and exposures in works department 'borrow pits' indicated that the laterite was underlain by a more normal shale facies, BDH 27, drilled at the centre of this laterite, intersected 'dolomitic' shales. The possible correlation of laterite, metal values and a carbonate bedrock could be interpreted as for Track Etch Anomaly II - geochemical.

6.6.2 Assay Results.

No depth improvement of metal values was noted in the samples assayed. The surface geochemical values were attributed to a surficial concentration process both within the 'laterite' and at the margin of a nearby swampy drainage.

6.6.3 Assessment.

No further work was warranted.

7 BASAL KOOLPIN TRAVERSES.

Following geological and geochemical reconnaissance in 1975 a recommendation was made to further investigate the metal values and sulphides of the basal Koolpin formation member exposed in E.L. 120.

A rapid investigation of these units was carried out early in 1976. Rock chip sampling and geochemistry of visually assessed outcrop, located during photo controlled foot traverses, was the technique adopted for evaluation.

Results of sampling were shown on Plates 7, 8, 9 and 10 and the index to general location was shown on Plate 2.

7.1 Geology.

Basal units of the Koolpin formation over the area of E.L. 120 consisted of a sequence of shales, ferruginous shales, cherts and silicified limestone. Sampling of the topographically upstanding cherty ferruginous shale facies rocks in 1975 revealed high, but spotty, metal values.

Rocks of this horizon consisted mainly of interbedded shale and chert, the shale and, to a limited extent, the chert containing a high proportion of iron. Iron in the cherts was mainly limonite and occured in fractures or vugs, a result of migration from the iron rich shale portions of the sequence. In shale, iron rich horizons were common and both hematite and limonite were Pseudomorphs after pyrite were common. related to primary sulphides within the original shale portion of this unit included bedded layering, disseminations, bedded and crosscutting breccia zones and vein forms. The primary textural relationships had undergone modification due to the longstanding exposure to the surface process. Redistribution of iron into rock 'free space' and the progressive formation of massive 'exotic' limonite and hematite jaspers obscured primary textural relationships to a considerable extent.

The closely interbedded chert and shale unit had proved highly mobile, small scale folding and brecciation were common and large scale structures showed an 'extravagance' not apparent in more competent units.

No large body of rock investigated gave the appearance of containing a significant concentration of base metal sulphides. Localised concentration of metals within this unit appeared highly likely.

7.2 Geochemistry.

Four traverses were completed on known outcropping zones.

7.2.1 Traverse 1

Exposed Koolpin formation rocks were sampled on two parallel east west ridges in the south east corner of EL 120, west of the Barramundie Creek.

On the northern outcrop zone three samples ESR 2453, 2544 and 2545 exhibited anomalous metal values from what was originally disseminated sulphide in shale and chert. Textures suggested that pyrite was the dominant sulphide.

On the southern outcrop zone four samples of predominantly 'exotic' limonite exhibited high copper values. A high lead value (1610 ppm) was obtained from limonite veined quartz breccia at sample site ESR 2554.

None of the anomalous situations located here gave reason to expect large bodies of base metal mineralization. Although the presence of sulphide in significant proportions in part of the sequence was apparent, form and geochemistry suggest that this was mainly pyrite.

7.2.2 Traverse 2

This traverse, completed on a large block of mega-folded Koolpin produced very little in the way of sulphide indication. Samples taken show some minor high values, but nothing substantial enough to warrant the interpretation of significant base metal sulphides. As for traverse 1, a high lead value (760 ppm) was found in a brecciated siliceous rock with limonite veining.

7.2.3 Traverse 3

A NW/SE ridge of Koolpin cherty ferruginous shale units in the central eastern area of EL120 was sampled. The strike of the Koolpin formation crossed the ridge at an acute angle in the north west but was sub-parallel in the south east.

Two groups of anomalous rock chip samples were located.

- (i) Spotty and low copper (to 390 ppm), zinc (to 470 ppm) and minor lead (to 220 ppm) values at the north west end of the ridge. The distribution of values, amount of 'exotic' iron and topography were considered to favour the proposition that the scavenging effect of a limonite forming surface process in an area of high background rock metal values caused the build up of local metal concentrations.
- (ii) A group of high zinc (to 6400 ppm) and nickel (to 900 ppm) + copper (to 190 ppm) values within brecciated shale and chert. Botryoidal and massive limonites formed veins and structural cavity fillings, the limonite being 'exotic'.

Auger holes drilled in 1975 (line 1B) intersected dolerite bodies to the south east of this anomalous zone and geochemistry from soil sampling of the follow-up grid at track etch anomaly II outlined NW/SE striking dykes of dolerite with high cobalt, nickel, copper, lead and zinc values. Dispersions of nickel, zinc and copper from shale outcrop were also found to occur on the latter grid. This anomaly was thus interpreted to result from the deposition of mobile nickel, zinc and copper with the exotic limonite, the elements being derived from a dolerite source or from 'high background' shale.

7.2.4 Traverse 4

A 'loop' of Koolpin outcrop was traversed in the central western part of EL120. In addition to selected rock chipping, a more detailed rock sampling traverse was completed across the strike of the Koolpin sequence.

As for traverse 3 above two anomaly groupings were apparent.

(i) Copper (to 170 ppm), lead (to 270 ppm) and zinc (to 1300 ppm) high values. These occured either in brecciated limonitic chert or limonite specked chert and were presumed to result from the presence of a small amount of base metal sulphide within a predominantly pyrite rich cherty facies.

(ii) The association of massive, sometime vuggy, limonite and high zinc/nickel values. Again it was considered most likely that the association of limonite and the geochemically mobile elements was of surficial derivation. These limonites did not occur on the tops of the outcrop ridge but on the flanks of the exposed shales. Iron, nickel and zinc were probably derived from the surrounding shale units and moved in solution to be concentrated at Eh/pH 'barriers'.

7.3 Assessment.

Sulphides were present as disseminations, veins and bands within chert and shale. The majority of the sulphide appears to have been pyrite but scattered occurrence of base metal sulphides was also indicated. Surface redistribution/concentration processes involving iron and traces of zinc, nickel and copper produced local concentrations of high geochemical metal values.

No further work was warranted.

8 STATEMENT OF EXPENDITURE

Expenditure on the area the subject of Exploration Licence No. 120 for the year ended December 31, 1976 was :-

\$
Geology 13,789
Geophysics 5,707
Geochemistry 13,850
Drilling 27,525
Claims 477

61,348

APPENDIX 2

ROCK SAMPLES

APPENDIX 2 ROCK SAMPLES - BARRAMUNDIE

COLLECTED - J.H.WRIGHT

BARRAMUNDIE

Samples from Follow-Up Grids 9000E 4000N and 8500E 5500N

Sample	Barramu	ndie Grid	Field Description	Assay	in ppn				
number ESR	Easting	Northing	•	U3O8	Cu	Ni	Со	Pb	Zn
2533	8980	3870	Ferruginized quartzite.	4	66	160	116	150	500
2534	8970	3865	Ferruginous quartz.	6	130	150	42	140	580
2535	8900	4000	Ferruginous siltstone	6	48	90	66	240	510
2536	8700	4000	Ferruginous sandstone	4	100	94	30	170	840
2537	9070	4300	Ferruginous sandstone	8	42	98	70	22	420
2538	8570	5400	Ferruginous breccia	13	66	58	28	80	140
2539	8475	5800	Ferruginous quartzite	14	22	70	60	160	280

Basal Koolpin Traverses - Location and Assay as per Plates 7, 8, 9, 10

Sample Number ESR	
2540	Cherty siltstone with limonite cubes after pyrite (30%).
2541	Red to orange vuggy limonite - lateritized? shale.
2542	Fractured desilicified chert with red limonite flecks.
2543	As above.
2544	As for ESR 2540.
2545	Weathered shale with limonite flecks.
2546	Fractured quartz with red limonite.
2547	Partly silicified shale with limonite replacements.
2548	Massive limonitic Jasper.
2549	Quartz fragments, vuggy, partly botryoidal, limonite.
2550	Vuggy nodular limonite - variable colour banding.
2551	Vuggy yellow brown limonite, possibly lateritized? shale.
2552	As above.
2553	Smooth, hard, red limonite with conchoidal fracture.

- 2554 Brecciated quartz with limonitic jasper.
- 2555 Laterite, nodular soil from 15" depth (Barramundie Grid 3270 E/3145N).
- 2556 Massive red limonite with platey limonite? patches
- 2557 Brecciated chert with red limonite matrix.
- 2558 Brecciated chert with vuggy red limonite possibly sulphide boxwork?
- 2559 Brecciated chert with limonitic matrix.
- 2560 Red, vuggy (solution pipes?) limonite, possibly laterite.
- 2561 Brecciated quartz with hard and vuggy limonite veins.
- 2562 Brecciated quartz (chert?) with limonitic veins.
- 2563 Brecciated, banded, silicified shale "pseudo" gossan.
- 2564 Brecciated quartz vein with vuggy limonite.
- 2565 Spotted altered shale limonite spotting approx. 40% of rock.
- 2566 Sheared and shattered chert with limonite in shear planes.
- 2567 Banded chert and limonite.
- 2568 Banded chert and shale with limonite layers and patches.
- 2569 As above.

2570	As above.
2571	Cherty shale with thin limonite bands.
2572	Chert bands within limonite replacement of shale.
2573	Limonite speckled and banded shale.
2574	Brecciated pyritic (limonite cubes) chert with limonite matrix.
2575	Brecciated chert with vuggy limonite.
2576	Banded chert and limonite/haematite replacement of shale.
2577	Limonite spotted and banded "altered" shale.
2578	Chert/limonite/quartz breccia.
2579	Cleaved chert with limonite vugs and replacement.
2580	Massive vuggy limonite - areas of botryoidal limonite with spongey cores.
2581	Crystalline quartz in massive vuggy limonite.
2582	Porous and vuggy red limonite with fractured quartz veins.
2583	Desilicified chert with vuggy replacement? limonite.
2584	Leached, partially replaced, brecciated limonitic chert.

Massive, slightly vuggy, limonitic jasper.

2585

2586	Limonite speckled "altered" chert (50% limonite).
2587	Limonite replacement of brecciated chert.
2588	Vuggy limonite with secondary quartz.
2589	Fractured chert with limonitic veins (vuggy and banded).
2590	Fractured chert with limonitic sponge.
2591	Chert/limonite bands.
2592	Massive limonitic jasper.
2593	Chert with red, vuggy, botryoidal limonite/haematite.
2594	Quartz/limonite breccia.
2595	Red "limonitic" replacement of shales.
2596	Friable quartz/chert/limonite breccia.
2597	Quartz/limonite breccia.
2598	Vuggy botryoidal limonite.
2599	As above.
2600	Limonite stained shale breccia.
2601	Massive botryoidal limonite.

2603	Chert?/limonite breccia	ì.						
2604	Massive botryoidal lime	onite.						
2605	Brecciated shale with i	rridescent botryoidal limonite.						
2606	Massive limonite.							
2607	Chert/botryoidal limoni	te - replacement or vein fill limo	nite?					
	Location	Field Description	Assa	ıy ppm				
			U ₃ O ₈	Cu	Ni	Со	Pb	Zn
Barram	nundie Drilling		,		- <u> </u>	<u> </u>		
2609	BDH-31, 18 to 20 metr	es Hard ferruginous jasper	8	240	40	30	675	865
2610	BDH-33. 20 to 22 metr	es As above	5	10	30	10	40	40

177

460 330

BDH-39. 2 to 4 metres White porcellaneous carbonate

50 4300

190

As above.

2602

2611

Sample	Location	Field Description	Assay in ppm							
Number ESR	· · · · · · · · · · · · · · · · · · ·		U ₃ O ₈	Cu	Ni	Со	Pb	Zn		
2626	BDH-51. 18 to 20 metres	Selected chips of manganese and manganiferous sandstone	2	18	30	20	750	66		
2627	BDH-51. 26 to 28 metres	Selected chips of hard limonitic replacement material	27	360	390	120	470	2000		
2628	BDH-51. 38 to 40 metres	Manganese speckled sandstone	1	6	24	24	10	36		
2629	BDH-51. 40 to 42 metres	Manganese speckled sandstone	3	20	50	50	10	66		
2630	BDH-51. 24 to 26 metres	Fine grained banded quartzite	Delta I Silicifi					•		
2631	BDH-51. 24 to 26 metres	Limonite replaced sediment 'Exotic limonite'?	Fault 3	Brecci	a.					
9435	BDH-31. 18 to 20 metres	Coarse grained limonitic quartzite	. Limoni	itic sa	ndstone	e/siltst	one			
9513	BDH-36. 28 to 30 metres	Black chert and fine grained quartzite.	Recrys	tallise	d cher	t.				
9535	BDH-38. 38 to 40 metres	Feldspar-chlorite "schist"	Quartz	-chlor	ite sch	ist.				
9564	BDH-39. 46 to 48 metres	As above	Quartz	-chlor	ite sch	ist.				
9618	BDH-41. 54 to 56 metres	Conglomerate Matrix	Meta o	alcare	ous sa	ndston	е.			
9639	BDH-35. 38 to 40 metres	Grey Tuff/greywacke?	Basic	to Inte	rmedia	ate Me	ta-Vo	lcanic.		
9679	BDH-43. 28 to 30 metres	Dolerite	Altere	d Dole	rite					

APPENDIX 3

PETROLOGICAL DESCRIPTIONS

DELTA PETROLOGICAL SERVICES

SPECIALISTS IN PETROLOGY, MINERALOGY, MINERAGRAPHY, BEACH SANDS.

G.D. BARTRAM. B.Sc., Ph.D. R.C. MORRIS, B.Sc. R.K. REYNOLDS.

THIN SECTIONS POLISHED MOUNTS

TOTOPHINASTERN TOTHESE

PHONESCHIS!

316 CHURCHILL AVENUE,
SUBJACO, W.A., 6008

Tel: 816326

4th November, 1976

NORANDA AUSTRALIA LTD,

P.O. Pine Creek.

N.T. 5782

REPORT NO. 2880

12 brief petrological descriptions - category B - of samples ESR / 2630-2631

Reference: 414/C/20

J.H. Wright

G.D. Bartram

D. Bat=.

ESR 2630 : Silicified Fine-Grained Sediment

The rock consists now of quartz plus around 25% clay, limonite and voids. A few small flecks of muscovite are preserved in the quartz. The limonite and clay appear to be after fine-grained carbonate, and are concentrated in thin layers (laminae?). These layers trace out complex patterns which are difficult to interpret but which could represent original chevron folding patterns.

Occasional quartz grains, averaging around 0.5mm in size and totalling around 2% of the rock, are scattered through the sample.

This rock was probably a laminated fine-grained argillaceous sandstone with occasional larger quartz clasts, tightly folded in a chevron pattern.

ESR 2631 : Fault Breccia ?

The rock consists of irregular areas of granular quartz (ranging up to 3mm) alternating with and often marginally intergrown with limonite.

At first glance this sample looks rather like surface clastic material heavily cemented by limonite. However the limonite has a rather complex texture which in places looks almost like boxwork. While not identifiable with confidence this rock is probably best interpreted as a fault breccia, the matrix containing some carbonate and possibly sulphide (see however ESR 2632).

DELTA PETROLOGICAL SERVICES

SPECIALISTS IN PETROLOGY, MINERALOGY, MINERAGRAPHY, BEACH SANDS.

G.D. BARTRAM. 8.Sc., Ph.D. R.C. MORRIS. 8.Sc. R.K. REYNOLOS.

THIN SECTIONS POLISHED MOUNTS

316 CHURCHILL AVENUE, SUBIACO, W.A., 6008

Tel: 81 6326

10th September, 1976

NORANDA AUSTRALIA LIMITED,
EL SHARANA CAMP,
PINE CREEK, N.T.

REPORT NO. 2839

Petrographic examination of samples ESR 9435, 9513, 9535, 9564, 9618, 9639 and 9679.

Reference : J. H. Wright

C. T. MATHISON

ESR 9435 : Limonitic Sandstone/Siltstone

The main constituents are quartz and limonite, possibly with minor hematite, and smaller amounts of sericite.

One grain of detrital tourmaline was observed.

Quartz grains vary from 0.05 to 1mm in size, and are generally angular with low sphericity. Some grains are polycrystalline granular aggregates, usually with sutured grain boundaries and other strain effects. Some of the grains thus probably represent metaquartzite rock fragments. Rare flakes of sericite or muscovite, or small rock fragments of muscovite schist also occur as clastics. All the clastic grains are completely surrounded and probably partly replaced by interstitial limonitic matrix or cement, increasing the angularity of the grains as a result.

The rock probably represents a poorly sorted silty to sandy sediment derived largely from metamorphic source rocks. The original matrix and some of the clastic components appear to have been replaced by limonite introduced during or after diagenesis, or during subsequent weathering. Metamorphism appears to have been slight.

ESR 9513 : Recrystallised Chert

Quartz is the major constituent (more than 90-95%) and the only other constituents are small amounts of limonite and clay, and traces of graphite or ?magnetite.

Quartz occurs in two forms: mainly as very fine granular areas (av. grainsize 0.03-0.1mm) with traces of interstitial opaque material, and also as coarser grained more recrystallised areas (0.1-0.5mm) occurring as veinlike patches cutting across the finer grained areas. Obvious relict textures or structures are lacking. Limonite and clay occur in irregular patches.

The original rock was probably some sort of cherty sediment which has been recrystallised during very low grade metamorphism, and weakly fractured and veined with slightly more recrystallised quartz.

ESR 9535 : Quartz-Chlorite Schist

Chlorite and quartz are the main constituents, and minor albite may be present as well. Rutile is a prominent trace constituent.

Chlorite occurs as aligned flakes (0.1mm) defining a schistose structure, and quartz and possibly minor ?albite occur interstitially as fine granular material. Weak layering is sometimes present. Rutile occurs as very fine granular clots and as minute isolated prisms. One fragment shows outlines of lath shaped ?porphyroblasts aligned mainly across the schistosity, but these are now recrystallised to granular quartz. No other relict features are visible. In this and other respects, ESR 9535 is quite similar to ESR 9564. The porphyroblasts do not have a unique interpretation and may be relict phenocrysts.

The original rock may have been a chlorite-rich shale which has suffered greenschist metamorphism, and retrogressive metamorphism involving the recrystallisation of ?albite porphyroblast. Alternatively the relict ?porphyroblast outlines may be interpreted as relict phenocrysts so that the pre-metamorphic rock would then be volcanic.

ESR 9564 : Quartz-Chlorite Schist

Chlorite is the main component, with minor quartz and possibly a little albite, and traces of rutile.

The texture is fine grained schistose with aligned flaky chlorite (showing some small-scale warping of foliation planes) and granular quartz. Subhedral equant to lath-like relict outlines of pre-existing ?feldspar phenocrysts or alternately, ?albite porphyroblast s are now represented by decussate to granular areas of quartz, chlorite, and minor ?albite. This rock is very similar to ESR 9535, except that it contains less rutile and better developed relict outlines of these recrystallised porphyroblasts.

Owing to the uncertain interpretation of the relict ?porphyroblasts, either a metasedimentary or a volcanic origin is possible, as outlined for ESR 9535. The former possibility is favoured, but this origin requires a second, retrogressive metamorphism.

ESR 9618 : Meta Calcareous Sandstone

The main constituents are quartz and carbonate (? calcite), with minor sericite and chlorite, and traces of pyrite.

Quartz occurs as larger relict clasts (av. lmm) in a finer grained granular matrix of quartz (0.1-0.3mm) and carbonate. Both the matrix and the outer margins of the clasts have been modified by metamorphic recrystallisation so that the dominant texture is granoblastic. Chlorite and sericite show a moderate schistose alignment. Pyrite occurs as rare isolated cubic grains (1-2mm) and also as granular clusters of small subhedral grains. One of the rock fragments is a carbonate-rich slaty metasediment and this contains abundant pyrite.

The original rock was probably some sort of clastic sediment which has been recrystallised during low grade metamorphism (greenschist facies). The carbonate may have been an original constituent of the sediment or a cement rather than being introduced later.

ESR 9639 : Basic to Intermediate Meta-Volcanic

The most obvious constituent is plagioclase, occurring in an altered chloritic groundmass containing minor biotite, quartz, and leucoxene, and traces of ?pyrite.

Plagioclase occurs generally as randomly arranged laths (av. 0.1-0.2mm) in a very fine grained altered groundmass in which most of the constituents are not distinguishable. The plagioclase laths show a weak flow alignment in some fragments. Randomly arranged biotite occurs in the groundmass and may be the product of weak thermal metamorphism. Traces of ?pyrite occur irregularly disseminated in some of the fragments, and also in rare quartz veinlets.

The rock represents a basic to intermediate lava which has been altered and slightly recrystallised, possibly during weak thermal metamorphism.

ESR 9679 : Altered Dolerite

The main constituents are plagioclase and pyroxene (augite), with altered pyroxene and chlorite, and minor ilmenite and traces of ?pyrite and carbonate. The altered pyroxene appears to be represented by very fine decussate actinolite.

The original doleritic texture is well preserved, and laths of plagioclase occur with subophitic, partly intersticial pyroxene and altered pyroxene, and plates of ilmenite. The rock is structureless. ?Pyrite occurs locally as irregular patches apparently replacing silicates and also in rare, minute carbonate veinlets. One of the chips represents a basic lava showing flow-aligned laths of plagioclase in a glassy groundmass.

The rock represents a minor, near-surface intrusive basic igneous rock, probably of tholeiitic character. This doleritic rock has been partly altered, but is virtually unmetamorphosed.

APPENDIX 4

PERCUSSION DRILL LOGS

NORANDA AUSTRALIA LIMITED FIELD DRILL RECORD

From	To		Recover				Les	Ass:	ays (r	pm)	777	Geological Log	_		<u> </u>
	 	 	 	70	 	4346	1	111	Co	Po	1 4 11		to core	Grade	ļ
Me	tres	Metre:	\$		ESR			ļ'				•		Instrumen	! :
							<u> </u>	<u> </u>		Ĺ			[]	Spectrome	
						['	'	'						GIS-3 No.	208-198
								1			1	Ro	ck-	Sample	Sample
			l	1		ļ	†····						und	Reading	Minus
		-1-1				·	ļ <i>.</i>	ļJ	}				.s.	c.p.s.	Back-
							 !	ļ!	ļ			~•1		C.p.s.	ground
						<u> </u> '	. '	 		ļ	.			1	6.0
0	2	2			9246	8	54	40	26	58	30	Ferruginous clay with fragments of quartz, shale, laterite			
							<u> </u>	<u> </u>]	<u> </u>	11	nodules and very minor quartzite.	58	68	10
l						'	['	'						,	
2	4	2			9247		[[[Cher wellow and inon nich brown alon with white and			
				11				[† · · · ·	Grey, yellow and iron rich brown clay with white calcareous nodules.			
······································			ļ	+		ļ <i>l</i>	ļI	······			-	nodures.	70	55	-15
						ļ!	ļl	ĮJ	ļl		ļI				
4	6	2			9248	!	ļJ	<u>[</u>]				As above with possible crystal gypsum, minor quartz and			l
 			<u> </u>				1	1		<u> </u>		weathered shale.	65	63	- 2
l						'	1 1	j d				·			
6	8	2			9249	8	74	68	30	18	102	Grey shale with minor calcareous nodules, quartz and clay.	64	58	- 6
	†						1	<u> </u>				January Grand State of the College	UZ	00	- 0
8	10	2	ļ	-	9250	 		jl	ļ <u>-</u>	 	ļ		ļ		
0	10	4	ļ		9400		ļ	ļ	ļ	ļ		Dark grey cleaved shale with quartz and buff clay fragments.	70	58	-12
		ļ!				!	ĮJ	ļ		ļ					
10	12	2	ļ		9251	!	<u>[</u>]	<u>. </u>	<u> </u>	l		Black shale and dark grey phyllitic shale with quartz veins.	70	64	- 6
		1				'	1 1	1 1						·	
12	14	2			9252	9	60	58	28	16	60	Hard dark uncleaved siltstone with quartz veins, shale and		······································	
						1	(1				soft opalescent pale green mineral (possibly clay).	64	64	
	<u> </u>		ļ					[]			-	soft opatescent pate green inneral (possibly etay).	04	04	0
14	16	1	}	-	9253	ļ	ļ	<u> </u>		ļ	· · · · · · · · · · · · · · · · · · ·	A 1			
7.4	10	2	ļ		9403	 !	ļl	ļ				As above.	68	60	- 8
~			<u> </u>	ليل	<u></u>	<u> </u>	لــِــا	لـــا							
		rac Dril H. Wrig		Ту	/pe of Dri	illing.	Kot	./Per ₽ D	rc	Date	: Starte	ed 7.8.76 Date Completed 7.8.76 Depth of Hole 30m 1/6 Record	I Comp	leted ()·W	<i>w</i>
		Ann		⊃a ∡nn¹	imp≀ed by	ON	IX., C	X. 1				Core Recovery % NO. OF HOLE BD)H -		

Bearing Inclination Vertical

LOCATION TE Anomaly II - Geochem.

Co-ords. of Collar Approx. 6400E/3200N

	From To Sample Recovery Sample Assays (ppm) Geological Log Fixed To Core Grade Fixed To Core Grade Fixed To Core Grade Fixed To Core Grade Fixed Fix														
From	То		Recover					Assa	ys (ppm		Geological Log	Angle to core	Estimated Grade	
ът	tres	Length Metres		%	ESR	1 73 78	Cu	N1	Co	Pb	Δn		10 00/2	Orace	
MIE	tres	Metres			LON							•			
16	18	2			9254							As above.	65	64	- 1
								,			.				
18	20	2			9255							Black/grey shale with quartz and minor dark siltstone.	64	63	- 1
20	22	2			9256	7	64	48	24	10	94	Black hard siltstone and shale with quartz and green			
20	44				0200	i	V.1				-	mineral (clay?).	52	62	10
											100	• • • • • • • • • • • • • • • • • • •	-		
22	24	2			9257	6	68	80	30	14	120	Black shale with minor black siltstone, quartz and green	-		
								-				mineral (clay?).	60	60	0
4-14-14-11-11-1				ļ											
24	26	2			9258	7	52	64	32	16	310	As above.	62	65	3
26	28	2			9259	-	. !					Black, slightly carbonaceous shale (micro crenulations)		· .	
			*			İ						with very minor pyrite.	66	54	- 12
	-1											***			
		1		1	9260	9	68	64	20	10	150	As above (plus thin pyrite veins).	62	52	- 10
28	30	2			9260	<u> </u>	0.0	04	30	1 10	134	As above (plus tilli pyrite veins).	"		
					 	ļ						Tall a Caralla			
***************************************						ļ						End of Hole.			
						.				ļ	ļ	-911			-
				<u>.</u>			ļ		ļ			Drilling Record: 0 - 1m 8 ³¹¹ Rotary Blade Bit.			
	ļ	1	[ļ		1 - 30m $6\frac{1}{2}$ Mission Cross Hammer	<u>'</u>		
						1				1					
*												Casing Record: Collar piece.			
***************************************	1					1		†······							
	1									<u>†</u>		Water Record: Depth: 26m			
							†					Flow: less than 500 gal/hr.		_	
D. 111 - 1	Δ. Δ.	na o Dri	lling	 	WDO of D	<u> </u>	Rot	/Pe		L Dat	a Start		rd Com	oleted Think	<u></u>
		H. Wrig		ا Si	ype or Di ampled b	v N	I. Ki	lkel	ly	Dat R.L	of Co	Olfar Core Recovery % NO. OF HOLE	3DH	oleted 기사 .~ - 18	
	of Colla											ng Inclination Vertical LOCATION TE	Anon	aly II - Ge	ochem.
CO-0103	. OI COIID		<u>ಖ್ಯಾಪರ್, ನೀರಗಿ ಸಿ</u>	: ಗಾನ್	ಗವ ಅಕ#ವಕ್ರೆ	astrala S.S.				*:	- Q 447 I				

NORANDA AUSTRALIA LIMITED

											N	FIELD DRILL RECORD			
From	To	Sample	Recover		Sample		Cu	As say	ys (1	ppm	75	Geological Log	Angle to core	Estimated Grade	,
, , , , , , ,		Length		%		3 8	Cu	N1		Pu	211		1	Instrument	•
Met	res	Metres			ESR									Spectrome	
														GIS-3 No.	208-198
															G1-
													Back-	Sample Reading.	Sample Minus
									1				p.s.		Back-
					,2,,,,2,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			1					p. 5.		ground.
		!]	
			,				0.0	F 0	0.0		010	Pale-greeny/white clay with quartz grains and dark shale			٠.
0	2	2	i		9261	6	66	72	36	30	210	fragments - minor limonite only.	55	53	- 2
					.,								.,		
									ļ			Pale grey clay with white carbonate nodules, plus dark			
2	4	2			9262							weathered, quartz veined, shale (phyllitic?).	54	50	- 4
]										·			
Λ	6	2			9263							Grey shale (phyllitic?) with quartz, clay, ferruginized	50	51	
	<u>.</u>				a Tuinaenen							shale and greeny clay.	1 20	31	*
										~ 4	100	As above.	50	55	5,
6	8	2			9264	5	86	.38	28	34	130	As above.			
												Quartz injected phyllitic grey shale with fragments of	,		
8	10	2			9265							quartz, ferruginous clay and clay from above.	48	43	- 5
							1					quartz, refruginous clay and cary			
***************************************				ĺ											
10	12	2	1		9266							As above.	42	44	2
<u>.</u> 10	1 2	1													
					9267	6	52	52	36	24	220	Quartz injected grey to green phyllitic shale with minor			
12	14	2	. }		3201	· · · ·	134	1 14	30	41	220	ferruginous weathered shale.	42	48	6
						ļ									
			.			ļ]		1. 11:42: ab-10	45	53	8
14	16	2	1		9268	7	70	60	40	26	290	Quartz injected grey phyllitic shale.	_ -10	-	1
					<u> </u>				<u></u>			7 0 Ft	ــــــــــــــــــــــــــــــــــــــ	!	
Drilled	by Af	rac Dri	lling	1	Type of Di	rilling	Ro	l/Pe	rc.	Dat	e Start	ed 7.8.76 Date Completed 7.8.76 Depth of Hole 30m ft. Rec	ord Cor H - 1	ubieteg ?	
Logged	by J_{\bullet}	H, Wri	ght	S	ampled by	/ M	, Kil	kell	У	R.L	, of Co	ollar Core Recovery % NO. OF HOLE BL ng Inclination Vertical LOCATION TE as	omal	y II - Geoch	em.
Co-ords	. of Colla	r App	rox, 6	300	E / 32	00 I/					Beari	ng Inclination LOCATION			aa la aa jaar aa aa a

NORANDA AUSTRALIA LIMITED FIELD DRILL RECORD

												FIELD DRILL RECORD	, , , , ,		
From	To	Sample Length	Recover	y %	Sample No.	110	C11	Assa Ni	γ ₂ (1	ppm Ph	7.n	Geological Log	Angle to core	Estimated Grade	
	 					3 8	1	171		1 1/2	~'''				
Met 16	res 18	Metres 2		· !	ESR 9269	i						As above and minor calcite? veining.	65	53	-12
															.4811-4811-1-1-1-1-1-1
18	20	2			9 2 70							As for 16 - 18m.	58	54	- 4
20	22	2			9271	8	130	40	26	46	150	Pale grey to black, cleaved and crenulated shale and quartz.	58	66	8
22	24	2			9272							Grey to black crenulated shale with abundant quartz			
												fragments.	55	55	0
24	26	2		ļ	9273		190	76	34	50	240	Black, crenulated carbonaceous shale with thin veins of			
#3												pyrite, approx. 5%, and quartz.	55	52	- 3
26	28	2			9274		170	116	40	78	250	Grey to black shale, carbonaceous in part, with pyrite, approx. 5%, quartz and pyritic quartz.	51	48	- 3
												approx. 3/0, quartz and pyritic quartz.			
28	30	2			9275	9	170	80	42	64	280	As above.	46	45	- 1
												End of Hole.			
											,	Drilling Record: $0 - 1m = 8\frac{3}{4}$ Rotary Blade Bit. $1 - 30m = 6\frac{1}{2}$ Mission Cross Hamm	er_		
					<u> </u>									······································	
												Casing Record: Collar piece : recovered			
												Water Record: Depth: 26m Flow: less than 500 gal/hr.			
		<u></u>	<u></u>			1		<u> </u>	<u> </u>	<u> </u>	لـــا			land χ_{α}	1
Drilled	byAfr	ac Drill	ing	T	ype of D	rilling To	Rot	/Per		Dat	e Start	ed 7.8.76 Date Completed 7.8.76 Depth of Hole 30m ft. Recording Core Recovery % NO. OF HOLE BDH	a Comp	neteo	

Co-ords. of Collar Approx. 6360 E / 3280 N

Bearing Inclination Vertical LOCATION TE Anomaly II - Geochem.

	From To Sample Recovery Sample Assay(ppm) Geological Log Angle Estimated to core Grade														
From	то			\Box				Assa	y (pp	m)		Geological Log	- 1	_	
		Length		%	No.	U_3O_8	Cu	Ni	Co	Pb	Zn		to core		
Metr	es	Metre	5	İ	ESR					, ,	ļ .			Instrumen	
												·		Spectrome	
														GIS-3 No.	208-198.
		.,										The state of the s	.ck-	Sample	Sample
				- 1									ound		Minus Back-
													p.s.	c.p.s.	ground.
		1													ground,
							į								
0	2	2			9276	8	50	40	28	60	62	Sticky orange (iron rich) clay with laterite nodules and	51	52	1
											<u> </u>	quartz grains.	71		
,													ļ., ., !		
		1			9 2 77							Sticky orange/yellow/grey clay (smooth almost soapy		1	
2	4	2			9211							texture) with laterite nodules, quartz and clay with relict			
	1						ļ					shale appearance.	50	44	- 6
									.,			bilaro appoaranos.			
4	6	2			9278							Hard dark grey cleaved? shale with white/red clay, quartz			}
***************************************					02.0							and white carbonate nodules,	52	44	- 8
·· ····											ļ				
]												:	
6	8	2			9279	6	48	44	24	24	270	Pale to dark grey phyllitic shale, quartz and white carbonate			
	<u> </u>									ļ		(hard grey banded dolomite?)	50	40	-10
			·····				ļ				,		52	46	- 6
8	10	2			9280		ļ					As above,	02	40	- 0
			 				<u> </u>								
10	12	2			9281	7	66	70	28	28	240	As above, minor limonite in some shale.	48	5 2	4
τ.0						1					1				
												Grey to dark grey phyllite and limonitic phyllite.	50	46	- 4
12	14	2			9282	ļ	ļ	ļ				Grey to dark grey phythic and innomine phymic,			
									İ						
14	16	2			9 2 83							Grey to black phyllite, quartz and pale grey dolomitic			•
						†	1					phyllite.	48	47	- 1
5 (1)	Λ.σ.	- Deci233		ـــِــا		<u> </u>	D c4	/De	<u></u>	Det	. Stort	ed 7.8.76 Date Completed 7.8.76 Depth of Hole 30m /t. Recor	d Com	pleted J. H.	J
Urilled	by Alra	C Drilli daini	+ rtrR	. iy	rpe of Dr	HIHR T	T TZ	ilkeli ilkeli	 I vz	יים מנ	- 4 C-	Core Recovery % NO OF HOLE DUD	1 - 20	Ü	
Logged	by J. II.	Wrigh	x, 6330								D	ng Inclination Vertical LOCATION TE Anom	maly	II - Geoche	em.
Co-ords	of Colla	L ubbr.é	,	. +4/							pearir	ig Location			

	From To Sample Recovery Sample Assays (ppm) Geological Log Angle Estimated to core Grade														
F	т.	Sample	Recover	y		Ī						Geological Log	Angle		
rrom	10	Length		%	No.	U,O	Cu	Ni	Co	Рb	Zn		to core	Grade	
Met	res	Metre	<u></u>		ESR	١٠٠									
16	18	2			9284	,						As above,	52	48	- 4
		1													
18	20	2			9 2 85							Grey to dark grey quartz injected phyllite, quartz and minor		,,	
												grey banded dolomitic rock.	52	47	- 5
2υ	22	2			9 2 86	8	88	66	26	30	180	Grey to black quartz injected phyllite, quartz and grey			
												dolomitic shale.	5 2	48	- 4
															.]
22	24	2			9287							Black to grey phyllite and dolomitic phyllite with quartz and			
						1						calcite vein material.	50	46	- 4
***************************************		1												· 	
24	26	2			9288							Black shales, slightly carbonaceous, with minor dolomitic		ļ	
9 .3						1						phyllite and quartz.	50	45	- 5
					•					2					
26	28	2			9289							Black carbonaceous shale with quartz veining and pyrite			
ev												(much less than 5%).	48	44	- 4
28	30	2			9290	6	80	52	26	24	140	Black carbonaceous shale with calcite vein material			
40	30					1						(cross cutting).	48	46	- 2
				1 .								End of Hole.			
						1					,				
												Drilling Record: $0 - 1m = 8\frac{3}{4}$ Rotary Blade Bit.			
a							1					$1 - 30m - 6\frac{1}{2}$ Mission Cross Hammer	•		
							1								
												Casing Record: Collar piece : recovered.			
		1										Water Record: Slight water 27m - dry bottom hole.]		<u> </u>
		c Drilli		7	ype of D	rilling	Ro	t/ P	erc	Dat	e Star	ted 7,8,76 Date Completed 7,8,76 Depth of Hole 30m ft. Recor	d Comp	pleted J.H.	<u>. w</u>
Logged	by J .Н.	Wrigh	t	S	ampled b	уМ.	Kil	kelly	7	R.L	, of C	ollar Core Recovery % NO. OF HOLE BDH	malv	TT - Geoc	nem.
Co-ords	of Colla	r Appro	x. 633	0 E	/ 3270	N					Beari	ing Inclination Vertical LOCATION TE And			

Co-ords, of Collar Approx. 6330 E/ 3270 N Bearing Inclination Vertical

NORANDA AUSTRALIA LIMITED FIELD DRILL RECORD

FIELD DRILL RECORD															
From	То	Sample Length	Recover	ery %	Sample No∎	150	H Cu	Assa 1 Ni	ays Co	(ppm Pb	Zn	Geological Log	Angle to core	Estimated Grade	
T./f	etres	Metres		+	ESR	1-0-4	1		-					Instrume	nt:
174.4	311.00	101051 0	1		1,020	1	-		ļ	<u> </u>	†			Spectrom	eter
					4	·		ļ!	ļ!		 		<u> </u>	GIS-3 No.	
					4 '				ļ!	ļ	 	Bad	k-	Sample	Sample
					.['		!	. !	<u> </u> !			und	Reading	Minus
		<u> </u>	<u> </u>	'	1'	1		'	<u> </u>	<u> </u>		Ü	p.s.	c.p.s.	Back-
				'	'			<u>'</u>	1	[!				l	ground
0	2	2		'	9291	12	2 60	44	28	62	80	Buff to yellow clay with limonite pipes and diffuse blebs		ļ	
				1	1			Ţ <u></u>	'	['		with hard limonitic nodules.	48	52	6
				7	1			1						ĺ ,	
2	4	2		-	9292	9	78	72	30	30	170	Soft weathered grey shale and grey clay plus quartz,		<u> </u>	
				1	1	1		,		1		limonitic nodules and banded dolomitic rock.	43	52	9
.,					1			,	ļ	ļ	 		1	1	
4	—		ļ		1			· · · · · · · · · · · · · · · · · · ·	ļ			Grey to black weathered shale, minor limonite and quartz.	47	45	- 2
4	6	2			9293					ļ!		Grey to mack weathered share, minor innomice and queries	ī±ž		
				!	ļ	1			ļ	ļ			10	1,1	4
6	8	2			9294	6	72	60'	30	30	180	As above.	48	44	-4
									,		 !		ļ <u>.</u>		
8	10	2			9295							As above with white porcellaneous calcareous fragments.	38	40	2
				'							ļ		ļ		
10	12	2			9296	9	96	70 اد	30	28	230	Black shale with limonite, quartz and pale green soapy			
			1	'	,				1	,	1	mineral as for BDH - 18 (clay?).	42	48	6
				1							ļ				
12	14	2		-	9297		+		1		ļ	Pale to dark grey shale, with quartz and minor white/grey/			
		1				1 ,			1			green banded carbonate (possibly vein).	45	45	0
					-[1	+			-	ļ	5100H Sallada Cal Society Apostonia			
	1.0	-			1 2200	.	-					Grey shale (crenulated) plus dark grey calcite/quartz	†		
14	16	2			9298	-	,			+	.		44	44	0
					,						<i>!</i>	veined siltstone/dolomitic shale.	44	44	U
			11111111				1,00	±/13.6	<u></u>	<u></u>	'ــــــــٰـــٰ	ted 9.8.76 Date Completed 9.8.76 Depth of Hole 30m ft/ Recor	<u> </u>	Law	1
Drilled		frac Dri H. Wrig		T	Type of Dr Sampled by	cilling N	πυ _ι	(/re/	rc.			ted 9.8.76 Date Completed 9.8.76 Depth of Hole 30m ft. Record Core Recovery % NO. OF HOLE BDI	rd Comp H =	pleted J.N.	ω_{-}
Logged	ру		giit					Andre	J	K, L.		Oliar		nalv II - Ge	eochem.

Bearing Inclination Vertical

Co-ords, of Collar Approx. 6310E/3290N

TE Anomaly II - Geochem.

LOCATION

EIELD DOLL I RECORD

												FIELD DRILL RECORD			
	T -	Sample	Recovery		Sample		Cu	Assa	ys (p	pm)		Geological Log	Angle to core	Estimated Grade	
From	10	Length		%	No.	Ų,Q	Cu	Ni	Co	Pb	Zn		w core	Glade	
Met	es	Metres		.	ESR	3 8					1				
16	18	2			9299	6	72	68	20	20	150	As above.	42	48	6
															
	20	2			9300							Grey to black crenulated shale with quartz and carbonate		4.0	-3
18	20				0000							veins.	43	40	-3
											ļ	As above but very quartz rich.	40	38	-2
20	22	2	· · · · · · · · · · · · · · · · · · ·	ļ	9301							As above but very quarte 1-o			
						ļ									
2 2	24	2			9302	14	64	72	28	24	170	Black slightly carbonaceous shale and dolomitic shales			
						ļ						with carbonate veining and thin pyrite stringers, less than	40	40	0
												5% pyrite.	10		
														; ,	
		2			9303							As above but only minor dolomitic shale and pyrite.	40	4υ	0
24	2 6	-			2503										
					9304		74	74	28	52	270	As for 22 - 24m (contains 5% pyrite, part as stringers,			_
2 6	28	2			3304		1.3	13	20	02	2.0	partly as cubes).	40	40	0
28	30	2			9305	7	102	100.	32	40	170	As for 22 - 24m, pyrite as stringers, veins and accumulation on the margins of thin quartz veins, approx. 5% pyrite and			
	<u> </u>									ļ		minor quartz,	38	40	2
	Ì	-	<u> </u>						<u>.</u>						
										l		End of Hole.			
				ļ	1	1									
				1		1		-	1			Drilling Record: $0 - 1m = 8\frac{3}{4}$ Rotary Blade Bit.			
				·		1						$1 - 30$ m $6\frac{1}{2}$ Mission Cross Hammer			
,,,,									· · · · · · ·	ļ	-				
								ļ				Casing Record: Collar piece: recovered.	\		
												Do-41- 00-			
					-							Water Record: Depth: 20m Flow: Approx. 500 gal/hr.			
	1	<u> </u>	1145	<u> </u>			1 -	1,77	Pero	<u>_</u>	<u> </u>		rd Com	pleted J.N	W.
Drilled	5 /	frac Dri		_	ype of D	**	*****	- 11		ъ.	- 4 0	Core Recovery % NO. OF HOLF BDF	1 - 21	1	
Logged	by	H. Wri	gnt "	2 21 (2	ampied b ਜਾ/ ੧੭	y IVI UN NI	TITE	erry		N.L	Rest	ing Inclination Vertical LOCATION TE And	maly	II - Geoch	nem.
Co-ords	s. of Colla	ır App	TOX. 00) <u>i</u> (.u/ .04	8 M. AN					. DCal	116			

		Sample	Recovery	- 1	Sample			Assa	/s /s	nm			Angle	Estimated	
From	To	Length		%	No.	$\overline{\mathbf{U}}_{\mathbf{z}}\mathbf{O}_{\mathbf{z}}$	Cu	Assa; Ni	Co	Pb	Zn	Geological Log	o core	Grade	· · · · · · · · · · · · · · · · · · ·
Met	res	Metres			ESR	3 8							- 1	Instrument	
									14		·····			Spectrome	
	y													GIS-3 No.	208-198.
														*** · · · · · · · · · · · · · · · · · ·	
											1	Ba	ck-	Sample	Sample
												gr	ound	Reading.	Minus
. 144-144												C,	о.в.	c.p.s.	Back-
															ground,
				.,											
0	2	2		ĺ	9306	9	62	56	36	70	74	Yellow to orange clay with quartz fragments and ferruginous			<u></u>
												nodules and patches.	35	40	5
2	4	2			9307		ļ					Grey to white weathered crenulated shale and calcite	35	35	0
												nodules with minor fraction as above (0 - 2m).		33	
						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									
					40.00		40	E 9	24	9.4	110	White to grey crenulated shale, white clay, carbonate			
4	· 6	2			9308	6	48	52	24	44	17.7	nodules and quartz fragments.	35	33	-2
											ļ .	nodutes and quartz tragmonts,			
										,					
6	8	2			9309							Pale to dark grey crenulated phyllitic shale with minor	35	40	5
												limonite in part, calcite nodules and minor quartz.	35	40	O ,
													38	45	7
8	10	2	ļ		9310							As above, some cross crenulation.	30		
10	12	2		'	9311							As for 6 - 8m, some calcite with quartz.	34	42	8
		-		İ											•
		2		ļ	9312	5	60	70	20	30	160	As for 6 - 8m but more and larger fragments of quartz with			
12	14	Z		ļ	9312		00	10	20		100	calcite, possibly of vein origin.	36	45	9
						ļ				ļ 		carottes, people-1, carrettes-B			
14	1 6	2			9313							Grey quartz injected, crenulated phyllitic shale with minor	,		
1/1	10		1	1					<u> </u>	Ī		calcite.	40	43	3
				·			1	· · · · · · · · ·							
	<u> </u>			<u></u>	1		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	ed 9.8.76 Date Completed 9.8.76Depth of Hole 30m ft. Record	l Com	pleted 7. H	. U.
Drilled 1	by Afra	e Drilli	ng	Т	ype of Dr	યાાing	κot∤.	rerc		∪at	e otart	ollar Core Recovery % NO. OF HOLE BDH		J	

Bearing Inclination Vertical

Co-ords, of Collar Approx, 6290 E / 3310 N

LOCATIONTE Anomaly II - Geochem.

	To	Sample	Recovery	_	Sample	1		Assa	ys	ppn	1) [Geological Log	Angle	Estimated	
rom	10	Length		%	No.	U,Q	Cu	Ni	Co	Рb	Zn	Oeological Pog	to core	Grade	
Me	tres	Metres			ESR	30									
16	18	2			9314							Pale to dark grey crenulated phyllitic shale with quartz and			
												calcite veining plus minor calcitic phyllite.	35	35	0
18	20	2			9315							Pale grey to black crenulated phyllitic shale with calcitic (dolomitic?) phyllite and quartz plus calcite vein material.	37	43	6
20	22	2			9316	6	68	70	26	2 6	160	Dark grey crenulated phyllite with quartz/calcite vein material.	34	46	12
22	24	2			9317				ا		:	Black dolomitic shale? and black, slightly carbonaceous,			
												shale with vein calcite/dolomite.	35	40	5
24	26	2			9318							Black, slightly carbonaceous, shale with pronounced			
				,		ļ			********			crenulation cleavage, quartz and white carbonate. Pyrite content of shales and vein margins less than 5%.	38	43	- 5
26	28	2			9319	7	78	68	24	30	280	As above with pyrite in thin bands and as cubes within the shale.	37	35	- 2
28	30	2			9320		86	76	30	28	200				
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									crystallized aggregates in thin quartz.	35	35	0
	• • • • • • • • • • • • • • • • • • • •	1			***************************************						ļ	End of Hole.			
	-											Drilling Record: $0 - 1m - 8\frac{3}{4}$ Rotary Blade Bit. $1 - 30m - 6\frac{1}{2}$ Mission Cross Hamme			
										141411.		Casing Record: Collar piece : recovered.			
	 						ļ					Water Record: Depth: 29m			-
												Flow: less than 500 gal/hr.			
		ac Dril					<u> </u>	<u> </u>	L	<u> </u>	<u></u>	ed 9.8.76 Date Completed 9.8.76 Depth of Hole 30m fk. Recor	<u> </u>	<u> </u>	Ļ

Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 22

Co-ords. of Collar Approx. 6290E/3310N Bearing Inclination Vertical LOCATION TE Anomaly II - Geochem.

												FIELD DRILL RECORD			
From	То	Sample Length	Recovery	%	Sample No.	υα	Cul	Assa N1	ys (ppm Pb	Zn	Geological Log	Angle to core	Estimated Grade	
Me	res	Metre	s		ESR	 3 8								Instrumen	t:
	d									,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		•		Spectrome	
														GIS-3 No.	208-198
				*********								Bac		Sample	Sample
												grot		Reading	Minus Back-
												с.р	ъ.	c.p.s.	ground
0	2	2			9321	6	46	50	26	28	62	Red to orange ferruginous clay with quartz fragments and			
	.,				[laterite nodules.	28	32	4
2	4	2	,		9322							Grey to red clay with grey phyllitic shale chips.	2 6	30	4
4	6	2			9323	.,				4======================================		Grey to white crenulated shale with calcite fragments,		•	
					<u> </u>	ļ						ferruginous clay and quartz.	27	30	. 3
6	8	2			9324	6	96	70	34	20	160	Grey to dark grey crenulated phyllitic shale (cross crenu-			
							}					lated in part) with fragments of quartz, porcellaneous			
												calcite and ferruginous material from up hole.	27	31	4
8	10	2			9325							Black siltstone plus black to grey crenulated shale with			
										ļ		minor porcellaneous calcite.	26	35	.9
10	12	2			9326							Black siltstone, grey to black crenulated shale, banded			
							ļ					calcite/dolomite rock (limestone?) plus calcareous clay			
]			ļ 			and minor quartz.	29	38	9
			,				<u> </u>								
12	14	2	<u> </u>	<u> </u>	9327	<u> </u>						Black shale with crenulation cleavage.	32		10
Drilled b	•	rac Dri			ype of Dr								d Comp DH -	pleted J.H.	_ در
Logged I	οy J.	H. Wrig	7.11L		ampled by			TIKE	ыy	. K,L.	of Co	llar Core Recovery % NO. OF HOLE B			

Bearing Inclination Vertical LOCATION TE Anomaly II - Geochem.

Approx. 6275E/3325N

Co-ords. of Collar

												FIELD DRILL RECORD			
		Sample	Recover	у	Sample	Ι		Assa	ys (T	mac	<u> </u>	Geological Log	Angle	Estimated	
From	To	Length		7%	No.	$U_{\alpha}O_{\alpha}$	Cu	Ni	Co	Pb	Zn	Geological Log	to core	Grade	
						3 8									
M e	tres	Metre			ESR						ļ				
14	16	2			9328	9	94	100	36	38	240	Dark grey to black, silty in parts, crenulated shale with	i		
									9. 4.	, .		calcite vein material and minor quartz.	29	46	17
											ļļ				
													:		
					0000							Pale to dark grey crenulated phyllitic shale and quartz.	30	41	11
16	18	2			9329							Fale to dark grey cremulated phylittle share and quarter			
												A - ab	30	41	11
18	20	2			9330						ļ !	As above.			.,.,,
						1	ļ								
								92		0.4	1.00	A b	26	38	12
20	22	2			9331	9	88	92	তত	44	100	As above .			
		1													
	., .,,			1	0000							Black, slightly carbonaceous, crenulated shales plus quartz			
22	24	2			9332							and carbonate.	27	39	12
												and carbonate.			
				1									i i		1
				.		ļ							····		
24	26	2			9333							As above plus dolomitic shale (minor) and pyrite in quartz			
										ļ		veins.	30	35	5
,															
				1]					<u>.</u>		ļ		
0.0		0			9334		74	80	32	24	150	Black, slightly carbonaceous, phyllitic shales, thin bedded			•
26	28	2			3334		- · · · · ·		"-			dolomitic shale, calcite and quartz. Pyrite is present in			
												the shale as scattered thin bands and in thin quartz veins.	31	38	7
			ŀ								1	the shale as scattered thin bands and in thin quarts veries.	-		
													30	36	6
28	30	2			9335	35	62	70	26	24	110	As for 26 - 28m but dolomitic shale minor only.	30	- 00	ļ
			ļ			l		1	İ						
				+								End of Hole.	1		
					 					ļ	ļ	BIR Of Hote,			
									1					•	J
	-					1	†	1	† <i>-</i>				Ī		
	<u> </u>						ļ	ļ		ļ	.				<u> </u>
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									ļ				ļ		
		i													<u> </u>
Drilled	by Afra	Drilli	ng	T	ype of D	rilling	Ro	t/Pe	rc	Dat	e Start	ted 9.8.76 Date Completed 9.8.76 Depth of Hole 30m. ft. Recor	d Cogen	leted H	٠ د.
Loaged	by J.H.	Wright		S	ampled by	, M.	. Kil	kelly	7		of Co	Ollar Core Recovery % NO. OF HOLE BDH	- 23		
												ng Inclination Vertical LOCATION TE Ano	maly	II - Geoc	hem.
Co-ords.	of Collar	Appro	x. 0270		/ 3343	14					Bearl	ng inclination 177			

												FIELD DRILL RECORD			
	-	Sample	Recover	у	Sample			Assa	ys			Geological Log	Angle	Estimated Grade	
From	To	Length		%	No.								to core	Grade	· · · · · · · · · · · · · · · · · · ·
									1]		•			
												D 111 Determy Plade Bit			
												Drilling Record: $0 - 1m$ $8\frac{3}{4}$ Rotary Blade Bit. $1 - 30m$ $6\frac{1}{2}$ Mission Cross Ham	mer		
												Casing Record: Collar piece : recovered.			

			Į									Water Record: Depth: 30m			
										·••	ļ				
												Flow: less than 500 gal/hr.			
		ļ													
		l		·· † · · · · ·		<u> </u>									
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		1						1							<u>.</u>
							1		1	1	1				[.
	by Afr	o Dril	ling		Tuna of D	rillin a	Rot	/ Per	rc	L	o Star	ted 9.8.76 Date Completed 9.8.76 Depth of Hole 30m ff.	Record Com	pleted	ನ.
Urilled 1	by J.H	ac Dili Wria	<u>++118</u> 	ا	iype of D Sampled 5	uumg √TM	Ki1	lkell.	ır	D 1	of C	Core Recovery % NO. OF HOLE	BDH - 23	3	
Logged	of Collar	Appr	ox. 62'	75 T	E / 3325	N	. B A. A. A.	n to To Till Alberta	<i>j</i>	131	Rear	ing Inclination Vertical LOCATION TE	Anomal	ly II - Geo	chem.
Co-ords	of Colla	PPI		. · · ·							Ucai	mg		<u> </u>	

												FIELD DRILL RECORD			
From	То	Sample	Recovery	97	Sample No.	IJΟ	a. I	As say	vs (pr	m)	7.0	Geological Log	Angle to core	Estimated Grade	
75-		Length	·	76	ESR	3 8	Cu	NI	CO	Po	211			Instrumen	•
Me	tres	Metres			ESIL					.,				Spectrome	
														GIS-3 No.	208-198.
				Ì											
												Bac	≥k-	Sample	Sample
						i						gro	und	Reading	Minus
, , ,												c.p	.s.	c.p.s.	Back-
]								, . ,					ground.
													ļ .		
										~ A	0.0	Orange to red clay with ferruginous patches, quartz		•	
0	2	2			9336		70	76	34	04	0.0	fragments and hard limonitic nodules plus weathered	.,		
												bedrock clay with a white mica sheen.	40	47	······7
				ı								bedrock dray with a white inited sheeth.	l		
			:												
					0007							Grey clay with calcareous nodules and white to grey			
2	4	2			9337							phyllitic shale.	41	42	1
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			1	ļ!						phylittle bhare;			
				1									<u> </u>		
4	6	2			9338							As above.	40	38	-2
4					0000					······					
									26	1.0	77.0	Grey clay, pale to dark grey phyllitic shale, granular calcite			
6	8	2			9339	5	52	60	40	10	72	and quartz.	42	45	3
												and quartz.			
		1													
	1				9340		ļ					Pale to dark grey phyllitic shale, granular and banded			
8	10	2			9340							calcite /dolomite material and quartz.	39	39	0
								,					ļ		
	ļ	i	Ì		ļ					İ					
10	12	2			9341							Grey to dark grey dolomitic shale and crenulated shale	İ		
10	1 14				0011		ļ					with calcite and quartz vein material.	41	40	-1
														1	
				<u> </u>						ļ					
12	14	2			9342	1 6	80	70	30	22	94	Grey to dark grey crenulated shale plus dolomitic shale		ļ	
	· ····			1	1	1	"					and minor quartz.	38	45	7
	. A.c.	no o Dmil	ling		<u> </u>	<u> </u>	Rot	Per	<u></u>	L Dat	o Stari	ted 9.8.76 Date Completed 9.8.76 Depth of Hole 30m th. Recor	d Com	pleted	<i>u</i> ,
Drilled	by #1.11	rac Dril H. Wrig		ا .ي	ype of Di	annag J	л 127	اعمالة	1 77	о .	-40	Core Recovery % NO. OF HOLE DID	I - 24	4	
		rı, wııg					.a		 J	. 11114	Bone!	Inclination Vertical LOCATION TE Ano	maly	/II - Geoch	nem.

Co-ords, of Collar Approx. 6255 E / 3345 N

Bearing Inclination Vertical LOCATION TE Anomaly II - Geochem.

NORANDA AUSTRALIA LIMITED

												FIELD DRILL RECORD				
		Sample	Recovery	, –	Sample			Ass	ays (ppm	J		Geological Log	Angle to core	Estimated Grade	
From	То	Length		%		IJQ.	Cu	Ni	Co	Pb	Zn			to core.	crade	
M e	tres	Metres			ESR	3 8		-			Ì					
												Drilling Record:	$0 - 1 \text{m}$ $8\frac{3}{4}$ " Rotary Blade Bit. 1- 30 m $6\frac{1}{2}$ " Mission Cross Hammer.			
		·····											1-30 m $6\frac{1}{2}$ " Mission Cross Hammer.			
													Collar piece: recovered.			
				ļ					ļ			Casing Record:	Conar piece. Iccovered.		,	
									ļ							
										-		Water Record:	Depth: 26m			
	<u> </u>			1									Flow: less than 500 gal/hr.			
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															0	
	<u> </u>	1	1	Ш.			 5	1 01/12	erc		<u> </u>	1 9.8.76 Para Car	pleted 9.8.76 Depth of Hole 30m ff. Reco	ord Com	pleted	i w.
Drilled	by Afr	ac Drill	.ing	آ م	Type of D	eillin: M	Kill Kill	ell v	GLC	Da	te Sta	Coller	Properties 1 Prope	H - 2	4 V	
Logged	Бу Ј.Н	. wrign	L ROE		oampled t a/ qq4¤	y . ***. • N	TITTE	· · · · · J		K.	, OI '	eina	Inclination Vertical LOCATION TE Ar	omal	y II - Geo	hem,
Co-ords	s. of Colla	, Appro	JA. UAU	يرب	2/ 33-20						. Dea	ing	memasser			

												FIELD DRILL RECORD			
From	То	Sample Length	Recovery	/ %	Sample No.	U ₂ O ₄	Cul	As sa N1	ys (ppm Pb	Zn	Geological Log	Angle to core	Estimated Grade	
Me	tres	Metres			ESR		,							Instrumen Spectrome GIS-3 No.	ter
												Bac gro c.p	ınd	Sample Reading c.p.s.	Sample Minus Back- ground
0	2	2			9351	7	58	56	28	60	72	Red to orange ferruginous clay with quartz and hard			
												limonitic pellets passing into yellow to grey clay.	39	46	7
2	4	2			9352							Yellow to grey clay with fragments of quartz, porcellaneous			
												carbonate, quartz injected phyllite and phyllitic shale,			
												(weathered and partly ferruginized).	35	40	5
4	6	2			9353							Pale weathered crenulated shale, porcellaneous carbonate		•	
***************************************							. 41 1 - 1 - 1 . 1 - 1					and orange clay.	38	44	6
6	8	2			9354							Pale, slightly limonitic, weathered shale, grey clay and			
												white calcareous material.	37	42	5
8	10	2			9355	7	68	68	26	20	120	As above (minor manganese).	34	45	11
10	12	2			9356							Pale to dark grey, weathered and limonitic shale plus minor white calcareous material (manganese dendrites).	40	43	3
4.0					0055				·····			A - a - a - a - a - a - a - a - a - a -			
12	14	2			9357							As above but with considerable amount of carbonate and quartz vein material.	40	40	0
Drilled Logged	by J.	H. Wri	ght	Sa	unpled by	, <u>M</u>	. Ki	lkell	у	R.L.	of Co	ollar Core Recovery % NO. OF HOLE BD	H - 2		
Co-ords	of Collar	A,	prox.	624	0E/33	60N		11-18-11-11-11		11 11 11 11 11 11 11 11 11 11 11 11 11	Bearin	ng Inclination Vertical LOCATION TE	non	aly II - Ge	ochem,

												FIELD DRILL RECORD			· · · · · · · · · · · · · · · · · · ·
From	То	Sample	Recover	<u> </u>	Sample No.		77.1	Assa Ni	ys (p	pm)	7n	Geological Log	Angle to core	Estimated Grade	
		Length		%		3 6	Cu	1/1	CU	10	2111				
Me		Metres			ESR							As for 10 - 12m (shale slightly crenulated).	41	47	6
14	16	2			9358							110 101 10			······································
16	18	2			9359	7	80	70	24	16	114	Dark, partly bleached, phyllitic shale with quartz and carbonate.	39	46	7
												A 1 -	39	41	2
18	20	2			9360							As above.			.,
20	22	2			9361				· · · · · · · · · · · · · · · · · · ·			As above, (very little vein material).	40	47	7
								ļ				Black, micro crenulated, phyllitic shale, slighfly			
22	24	2			9362	13	72	70	26	16	120	carbonaceous in part, plus quartz vein material.	39	48	9
		<u> </u>						ļ							
24	26	2			9363	ļ	72	70	28	20	120		40	41	1
						 			ļ			(approx. 5%) "bedded" pyrite.	-10		
							ļ								
26	28	2		.,	9364							Black, carbonaceous, phyllitic shale and grey phyllitic	37	38	1
											ļ	shale with quartz vein material and minor pyrite.		J0	ļ
												l little shalo with "bodded" pymite	ļ		
28	30	2			9365	7	72	76	28	20	120	Black, carbonacœus phyllitic shale with "bedded" pyrite seams.	37	39	2
			<u> </u>									Bearins,			
						1		ļ				End of Hole.			
												Drilling Record: $0 - 1m + 8\frac{3}{4}$ Rotary Blade Bit.			
												Drilling Record: $0 - 1 \text{ in}$ $6\frac{1}{4}$ Mission Cross Hammer			
			1			1	<u> </u>		<u>.</u>		ļ		ļi.		
												Casing Record: Collar piece : recovered.			
								!		<u></u>					
												Water Record: Depth: Minor water at 30m.	ļ		
		1													
Drilled	_{by} Afra	Drilli	ng		Type of D	rilling	Rot	/Per	·c.	Dat	e Star	ted 9.8.76 Date Completed 9.8.76 Depth of Hole 30m ft/ Record BDI	d Com	pleted J. A	
		. Wrigh					IVI. J	K11K6	uy	R.L	of C	ollar Core Recovery % NO. OF HOLE BUT			hem.

Co-ords, of Collar Approx. 6240 E / 3360 N

Inclination Vertical LOCATION TE Anomaly II - Geochem.

												FIELD DRILL RECORD			
From	То	Sample Length	Recovery	9	Sample No.	U, O,	C., 1	Assa	ys (r	pm Pb	7n	Geological Log	Angle to core	Estimated Grade	
Met	res	Metres		-	ESR	3 8	Cu	191	00	10	2111			Instrument	•
10101														Spectrome	
														GIS-3 No.	
				ļ	:										
													ck-	Sample Reading	Sample Minus
												· · · · · · · · · · · · · · · · · · ·	ound	c.p.s.	Back-
														c.p.s.	ground.
0	2	2			9366	11	68	42	24	30	80	Orange to red ferruginous clay with quartz pebbles,		 	
												ferruginous shale pebbles and laterite nodules.	43	52	9
			///				1								
				·	9367							Pale greeny grey to red, weathered, crenulated phyllitic			
2	4	2			9301							shale with fragments as for 0 - 2m.	43	52	9
														ļ	
,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								.,				1 1-3 1-1122		• • • • • • • • • • • • • • • • • • • •	
4	6	2			9368							Pale greeny grey to red, weathered, crenulated phyllitic shale with grey to white clay and white porcellaneous.			
												carbonate clays?	41	46	5
		.,		ļ								Carbonace clays .			
	<u> </u>						ļ								10
6	8	2		:	9369							As above.	42	52	10
8	10	2			9370	6	98	30	16	18	78	As above.	40	52	12
						1									
												122 - 122 - 122 - 122	44	53	9
10	12	2			9371				İ			As for 4 - 6m but without the white carbonate clays.	*.*]	
						ļ	ļ		ļ				4.5	50	0
12	14	2			9372		ļ	ļ				As for 10 - 12m.	45	53	8
]				.						
14	16	2			9373	5	120	38	22	22	54		43	57	14
								<u> </u>				part.	ل	<u> </u>	<u> </u>
Drilled I	by Afr	ic Drill	ing	T	ype of Di	rilling	F	lot/l	erc	• Dat	e Start	$_{ m ed}$ $10.8.76$ Date Completed $10.8.76$ Depth of Hole $20{ m m}$ ff. Reco	rd Com T = 21	pleted J. b.	<i>3</i>

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 10.8.76 Date Completed 10.8.76 Depth of Hole 20m ff.

Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 26

Co-ords, of Collar Approx. 7460 E/2600 N Bearing Inclination Vertical LOCATION TE Anomaly II - Laterite.

												LIEFD RUILT ULAGUA			
		Sample	Recover	Y	Sample			Assa	ays	ppm		Geological Log	Angle	Estimated	
From	To	Length	11000101	<u>1 %</u>	No.	ti o	Cu		<u> </u>	Ph	7.n	Georgical Log	to core	Grade	
		Length		 ~	1100	1 3 E	l Cu	777	CO	10	2411			<u></u>	
T. A	etres	Metres		1	ESR	ן " '	1		ļ	i					
171	erres	Mence		.	11011										
1.0	10				9374	١.	1			İ		As for 14 - 16m plus quartz fragments.	42	56	14
16	18	2			9314					ļ		UP TOT 13 - Totte bigg deer to traditions			
		ļ			i	i				1			- 1		
										1					.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
18	20	2			9375	5	116	64	22	26	150	Greenish to dark grey, crenulated (cross crenulated in part)			·
							1					shale(slightly phyllitic appearance to shales in this hole,			
			1		1							share(slightly phytitic appearance to shares in this hold,			l
												with abundant quartz vein material and some hematite			
		į			1	1		ĺ			I .	replacement of darker shale varieties.	40	52	12
							1		1		····	replacement of darker share varieties.	1.0		
			l	1		į	1	l			l				
							1								I .
		·	l		i	i			i		1	End of Hole.			
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			<u> </u>		1	ł							i i		ŀ
						·									
		l '	1		i	1			1			Drilling Record: $0 - 1m = 8\frac{3}{4}$ Rotary Blade Bit.	l		
						·	·····					$1-20$ m $6\frac{1}{2}$ " Mission Cross Hammer.			
			1	1		1	1					1- 20m 02 Wission Cross nammer.	 		
							·····								
			ĺ			1			l						
									1						
					i	ŀ	}			1		Casing Record: Collar piece : recovered.			I
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		1	•		1	i			ļ			77	I		
						· [· · · · · · · · ·		ł		1	1	Water Record: No water encountered.			
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							T)	1 D			C	10.9.76 Date Completed 10.9.76 Depth of Hole 20m ft. Recor	d Com	leted \\\\\\	1.4.

Drilled by Afrac Drilling Type of Drilling Rot/ Perc. Date Started 10.8.76 Date Completed 10.8.76 Depth of Hole 20m %. Record Completed 10.8.76 Depth of Hole 20

												FIELD DRILL RECORD			
	Ţ 	Sample	Recovery		Sample	T		Assa	ivs (nnm	1		Angle	Estimated	
From	To	Length		T %	No.	TI O	Cu	Ni	Co	Ph	7.n	Geological Log	to core	Grade	
	 		 	+	 	1 5	, ~~	-14	-		2311				
N/I o	res	Metres	1		ESR									Instrument	
Mie	ires	Merres	······		TOTAL										F
	i	ļ				1 .								Spectrome	
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		1		1		ļ	ļ ļ					Ba	k	Sample	Sample
]				1	1	1. 1					grd	und	Reading	Minus
												c.p		c.p.s.	Back-
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	· · · · · · · · · · · · · · · · · · ·			1											ground.
		1	1								l			U-Th-K	11
^	2	2			9376		104		90	0.0	احدا	Ferruginous weathered red-grey phyllitic shale, grey clay	54	75 U-Th 5	
0	4	4	!		9310		104	38	20	26	56		J-2	and the second of the second	and the second s
		1	i			1						and quartz.		Th less	
			j							ļ				than 1	
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2	4	2	i		9377	1	1 1					As above.	51	61	10
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	İ	1				ì	!			1					1
4	6	22	ļ	4	9378		. t]		As above with minor white calcareous clay?	50	60	10
	1	ł				1				1	1 1				
	ļ					1	ļ			ļ	1				
6	8	2			9379	1 5	106	34	20	24	60	As for 4 - 6m.	50	60	10
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			1		1	1	'			l	1				
8	10	2			9380		ļ!					As for 4 - 6m.	50	61	11
			Į.		1	ŀ									
		· • · · · · · · · · · · · · · · · · · ·	j		1				ļ		····				
10	12	2	l	}	9381		1. !					Purple to red ferruginous phyllitic shale with minor			
					1.5.5.5							quartz and calcite.	53	64	11
	1	1	i	1		1	1		·	<u> </u>		quartz and careite.	00	. 04	L 1
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							'			ļ					
12	14	2	i]	9382	٦	150	50	24	28	92	As above.	52	62	. 10
14	1.4		!	.	2304	· [1700	00		120	1 22	TO White .		0.4	1.0
		1	1	ĺ	1	1	'	!		ì					
					1	1	†·····		†	1	·				
14	16	2	1		93.83	ļ]			1.	Grey to dark grey phyllite with quartz and minor ferruginous			
#		T #	[1			I	I	1	T			50	58	8
	.]			.								phyllite.	30	1 0	[O
		1	1		1		1				1 '	i i			
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2 11 1	A.C	D 33		7			70 - 4	/Dec		D-4	- Ce	-4 10, 0, 70. Data Commisted 10, 9, 70. Death of Hale 20m. fd. Recover	Cam	Li F hereld	.1.1

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 10.8.76 Date Completed 10.8.76 Depth of Hole 20m fg. Record Completed 10.8.76 Record Completed 10.8.76 Depth of Hole 20m fg. Record Completed 10.8.

						-						FIELD DRILL RECORD			
		Sample	Recover	у	Sample	Γ		Assa Ni	ys (p	pm)		Geological Log	Angle to core	Estimated Grade	
From	То	Length		%	No.	$\frac{U_1 O_2}{3}$	Cu	Ni	Co'	Pb	Zn		10 05/0		
Me	200	 Metres			ESR]]		
16	18	2			9384	•						Hematite and limonite stained, yellow to grey phyllitic	·		
10	1	-			0001							shale with dolomitic shale or carbonate veined phyllite	, ,	p p	9
				ļ								plus quartz and carbonate vein material.	46	55	9
													45	52	7
18	20	2	L		9385	9	78	78	24	24	280	Red to dark grey phyllitic shale.	"		
		İ	<u> </u>		1			İ							
]							End of Hole,			.]
												in the state of th			
										<u>.</u>		all n to Dit			
												Drilling Record: $0 - 1m$ $8\frac{3}{4}$ Rotary Blade Bit. $1 - 20m$ $6\frac{1}{2}$ Mission Cross Hammer			
										ļ		1 - 20m 03 Mitspion Closs Hammer	•		
								<u> </u>	<u> </u>		. [-		
		1										Casing Record: Collar piece: recovered.	.]		
	· · · · · · · · · · · · · · · · · · ·	1		1									1		
]								Water Record: No water encountered.			
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D :11. I	<u> </u>				Type of F	hilling	Dot	/ Do	***	Da	te Star	ted 10.8.76 Date Completed 10.8.76 Depth of Hole 20m	ard Com	pleted 🐧 🕅	.W.

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 10.8.76 Date Completed 10.8.76 Depth of Hole 20m ft. Record Completed 10.8.76 Depth of Hole 20m ft.

NORANDA AUSTRALIA LIMITED

Estimated Grade	le ore	Contrated Lag	1)	(ppn	ys)	Assa			Sample	/ T	Recovery	Sample	To	1
strument:			Zn	Pb	Co	Ni	Cu	U_2O_2	No.	%		Length	10	rom
ectrometer S-3 No. 208-	S								ESR			Metres	res	Me
,			. . .	ļ			•							
Sample Sar Reading Mir	d	Bad gro									·			
c.p.s. Ba	•	с.р												
72	4	Grey clay, dark red to brown limonite rich nodules, quartz and weathered shale.	90	36	30	40	58	7	9386			2	2	0
59 -	7	Grey to pale green crenulated shale with quartz and white porcellaneous carbonate nodules.							9387			2	4	2
57 -	9	As above with phyllitic appearance and cross crenulation.							9388			2	6	4
60 -	4	Grey to dark grey crenulated phyllite with quartz.	140	18	26	14	20	4	9389			2	8	6
55 -1	5	Grey to pale green crenulated phyllite with quartz and minor carbonate.							9390			2	10	.8
64 -	3	Grey to pale green to red, cross crenulated phyllite with quartz.							9391			2	12	10
62 -	88	Grey to greenish cross crenulated phyllite with quartz.	120	16	32	44	84	5	9392			2	14	12
66 -	70	As above.							9393			2	16	14

Bearing

Co-ords, of Collar Approx. 7345 E/ 2600 N

Inclination Vertical

LOCATION TE Anomaly II - Laterite.

	To	Sample	Recov	ery	Sample	T		Ass	ays (ppm		Geological Log	Angle	Estimated	1
m	10	L.ength		%	No.	U ₃ O	Cu	Ni	Co	mqq d'q	Zn		to core	Grade	+
Me	res	Metre	5		ESR	```	1					1	ļ		
					9394							As above.	68	65	. <u>-</u>
.6	18	2			9394	1						anove,			
					0005	1	60	50	20	30	100	Grey to greenish phyllite and phyllitic shale, cross			
8	20	2 2			9395	4	60	50	40	20	1100	crenulation is present, one crenulation set being the result			1
						.						of a very strong crenulation cleavage, quartz and minor			
		tet							ļ		,	calcitic phyllite material.	68	64	
							.,								
												End of Hole.			
							ļ		·····			n un n 1 n 1 n 1 n 1 n 1 n 1 n 1 n 1 n 1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
						ļ				· · · · · · · · · ·		Drilling Record: $0 - 1 \text{ m}$ $8\frac{3}{4}$ Rotary Blade Bit. $1 - 20 \text{ m}$ $6\frac{1}{2}$ Mission Cross Hammer	4		1
		ļ							ļ			1 - Zoin 02 Mission Closs Henrica	· · · · · ·		
		<u>.</u>]						
						1						Casing Record: Collar Piece: recovered.			
		ļ							1						
		İ					†····					Water Record: No water encountered.			
	·					-					1	Water Record: No water encountered.	1		
							:								
		ļ											<u> </u>		
	 						1								
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												1000	1	<u> </u>	ᆣ
lled i	y Afra	ac Drill	ing		Type of [rilling	R	ot/P	erc				rd Comp 7 - 28	leted 1. H	٠٠٠,
gged	_{by} J.H of Colla	Wright			Sampled I	y M.	Kill	cettà		R,L	of C	ollar Core Recovery % NO. OF HOLE BDF ing Inclination Vertical LOCATION TE Ano		FT 1-1	 4 a

										•		FIELD DRILL RECORD			
From	To	Sample Length	Recover	ry %	Sample No.	ν	. Cu	Assa; Ni	Co	(ppm Pb	ı) Zn	Geological Log	Angle to core	Estimated Grade	I
М	etres	Metres			ESR	33						•		Instrumen Spectrome	
						•								GIS-3 No.	
												Bac gro	k- und	Sample Reading	Sample Minus
								 }				9	p.s.	c.p.s.	Back- ground
0	2	2			9396	24	50	20	20	130	120	Quartz fragments, red limonitic dust, brown sandy			
						ļ						ferruginous fragments and ferruginous quartzite.	30	28	- 2
2	4	2			9397		42	18	12	330	220	Yellow sandy dust with fragments as above plus minor			
												grey clay.	27	27	0
4	6	2			9398		46	18	8	270	170	Yellow sandy dust, quartz fragments, yellow to white clay,			
, , , , , , , , , , , , , , , , , , , ,												ferruginous quartzite fragments and quartzite?	28	30	2
6	8	2			9399	6	76	20	22	280	390	Yellow sandy dust, brown ferruginous quartzite, quartz			
											:	and minor white clay.	30	31	1
8	10	2			9400		88	12	10	280	210	to a company to the company of the c			
										ļ		with high sphericity, brown ferruginous sandstone and	ļ		
				-								white clay, (coarse sandstone?).	32	29	- 3
10	12	2			9401		130	30	20	800	270	Yellow sandy dust, brown ferruginous sandstone, with			
												minor sandstone, quartz and quartz sand grains.	31	28	- 3
	.						-								
								/=	<u> </u>		<u></u>	10 9 76 0 0 10 10 8 760 4 444 30m d		pleted 1.3.	<u> </u>
Drilled Logged	by A.	H. Wri	ght	S	Type of Dr Sampled by	y	коt 1. Кі	/Per ilkell	c. ly	R.L	of C	ollar Core Recovery % NO. OF HOLE BDH	- 29	ON Anomal	

Co-ords. of Collar Approx. 9036E/4035N Bearing Inclination Vertical LOCATION

9000E/4000N Anomaly

om I	l To	Sample	Recovery		Sample	L			ays (p)			Geological Log	to core	Estimated Grade	1
		Length	<u> </u>	%	No.	P30	Cu 8	+Ni	1.Co	+Pb	+ Zn $+$		to core	Graue	
\mathbf{M}^{f}	etres	M etres	4		ESR		1	1	1'	.1'				·	
12	14	2	f '	1	9402	.7	86	12	1 18	360	1270	Yellow sandy clay with quartz grains (as for 8-10m),			
14	1	, 4 ,	†	· · · · · · ·	10.10-		100	1	ſ .,	1		brown ferruginous sandstone and quartz vein material.	29	30	1
	ļ	.[· •					fJ	f'	†	+		1-1	 1	
	.	.l'	1	ļ'				.[]	.ļ'		. [,		-	 I	4
14	16	2	1	'	9403		38	14	6	360 ¹	60	Fine grained yellow sand with quartz vein material, quartz	1	·	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	1	ſ	,	,		1	1	1	j. '		grains (2-3mm) and white shale.	29	25	-4
	1	ł	1	·				1	ſ,	1		1		! !	
, <u>!</u>	 		1	<i>'</i>	ļ	ļ	1 20	1 20	1	326		(2 3 3 3 3 3 3	1	 I	
16	18	2			9404	7	106	30	18	1320	220	Fine grained yellow sand with quartz grains (2-3mm),	31	35	1 4
	1	·	1	1	7	.1	1'	1'	1'			quartz, ferruginous sandstone and white clay.	3.1	1	
,	[·	,			'		1	1'	1	1 '	1	1			
* • •	0.0				9405		120	18	10	280	180	Fine grained yellow to orange sand with quartz grains		i	
18	20	2			9400 1		140;	1 20,	1	1200,	1.00	(2-3mm), sandstone chips, ferruginous sandstone chips	1)	<i>i</i>	ļ
	1						1	ļ	4′	·[and clay with quartz grains (2-3mm).	28	30	2
	1						'	'	1	[and cray wrong quarter grant (·	
,				'	· '		· '	1	1	1		r ·		L	
20	22	2			9406		120	18	10	420	150	Yellow to orange sandy clay with quartz grains (2-3mm),	1)	6	
 ,	Ţ		4	-	, , , , , , , , , , , , , , , , , , , ,	1		†	1	f	+	coarse grained arkosic sandstone chips, ferruginous sandy	1	·	
					· · · · · · · · · · · · · · · · · · ·	.		4				claystone with very minor white shale	28	29	
	1						'					4		t	
22	24	2			9407		86	18	10	390	114 ر	Yellow sandy sludge with fragments of quartzite, quartz		29	
	.				,		,	1.		\(\)		and ferruginous quartzite? plus 2-3mm sand grains.	30	1	
								f		1	1		1	1	
/				-	1	1-	· · · · · · · · · · · · · · · · ·	· '	1	1		(*) - 1 - i	29	35	7
24	26	2			9408	7	170	30	16	460°	230	As above plus minor white phyllitic shale (weathered).		1	
		1	1				'	1				1		1	
26	28	2			9409	. [170	20	1 18	3 500	ا 250م	As for 22-24m, quartzite chips abundant and have white		·	
4 V	4.9	1	· [ft . »		0.0.	120.	mica sheen in part.	29	31	
		·			.	-		+		··································	+	1	1	í	
											- 			f	
28	30	2			9410	<u></u>	180	20	18	540	J 230	Yellow sandy sludge with abundant fragments of coarse		+	
				Ï			1	1)	sandstone, ferruginous sandstone, quartz grains (2-3mm) ted and minor yein quartz ted 10.8.76 Depth of Hole 30m /t. Recording Core Recovery % NO. OF HOLE BDH	30	pleted $\frac{30}{\sqrt{3}}$	

Co-ords, of Collar Approx. 9036 E / 4035 N Bearing Inclination Vertical LOCATION 9000 E/4000 N Anomaly.

											•	FIELD DRILL REGORD			
From	То	Sample	Recover		Sample			Assa	ys			Geological Log	Angle to core	Estimated Grade	
1 1000		Length		%	No.								to core	Gade	
			ŀ									1			
							1					Drilling Record: 0 - 1m 8311 Rotary Blade Bit.			£
				ļ								Drilling Record: $0 - 1m$ $8\frac{3}{4}$ Rotary Blade Bit. $1 - 30m$ $6\frac{1}{2}$ Mission Cross Hamme			
			,	1											
												Casing Record: Collar piece: recovered.			
		,							1						
								ļ	}			Water Record: Depth - Approx. 23m.	ļ		
				<u>.</u>			ļ		ļ			Flow - Minor,			
				l		1									
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	A.E	1 Drill	1			<u>i</u>	L B	/Pe	rc	ــــــــــــــــــــــــــــــــــــــ	ل	1 ted 10.8.76 Date Completed 10.8.76 Depth of Hole 30m /tl. Reco	rd Com	nleted 7.3	12.
Drilled I	y Afr	acuriii Wata	ung ht	I	ype of D	rilling M	Ki	kell	v	Dati	e Star	Core Recovery % NO. OF HOLE BD	H- 29	pleted \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
Logged	by JH of Collar	Ann	nov 0∩	ን 36 ነ	ampled by	5 N	1 2-4-			K.L	, or C	Oliar		000 N Anoi	
Co-ords.	of Collar	. դ.իիլ	9A1 00		-1	·					bear	ing incrination Lock Both		.,	

From To Sample Length No. UO CU NI CO PD Zn Metres Metres ESR Metres Back- Sample Back- Sample Angle Estimated Grade Instrumer Spectrome GIS-3 No.	ter
Metres Metres ESR Instrumer Spectrome GIS-3 No. Back- Sample	ter
Back- Sample	
ground Reading	Sample Minus
c.p.s. c.p.s.	Back- ground.
0 2 2 9411 7 86 30 20 170 180 Red to orange sandy clay, very large lumps of quartz, quartzite and ferruginous sandstone, chips of ferruginous sandstone, quartz and laterite nodules. 23 27	4
2 4 2 9412 90 20 14 320 260 Coarse grained quartzite chips. 25 25	0
4 6 2 9413 68 24 18 340 270 As above. 28 27	-1
6 8 2 9414 6 130 38 24 330 380 Yellow sandy clay, brown ferruginous sandstone, coarse grained quartzite, white saccharoidal quartz, red ferruginous clayey sandstone and quartz. 25 27	2
8 10 2 9415 54 18 12 510 200 Yellow sand with coarse grained quartzite, white sericitic	1
shale (phyllite?) and quartz chips. 26 27	<u>-</u>
10 12 2 9416 106 18 20 850 240 Yellow sand containing quartz grains (2-3mm), coarse sandstone, quartz and limonitic sandstone. 27 27	0
12 14 2 9417 270 50 54 1500 450 Yellow/brown sand containing brown quartzite and quartz. 26 25	-1
Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 10.8.76 Date Completed 10.8.76 Depth of Hole 30m ft. Record Completed 10.8.76 Date Completed 10.8.76 Depth of Hole 30m ft. Record Completed 10.8.76	ly.

Metres 14 1 16 1	Me	etres	Recovery %	ESR 9418	0,0 6	Cu 130	Ni 34		Pb	Zn 320	Dark yellow sand with white clay containing chips of brown limonitic quartzite, quartz and quartz grains (2-3mm).	to core	Grade	7
16 1	16	2		9418	6			20	370	320	anno de la como Escala de como como como como como como como com	22	29	7
16 1	16	2		9418	6			20	370	320	anno de la como Escala de como como como como como como como com	22	29	7
16 1											anno de la como Escala de como como como como como como como com	22	29	7
	18	2		9419		62								
	18	2		9419		62	•							
						L	20	10	380	112				
10 2											fracture, quartzite, quartz and minor coarse grained			
10 2			1								sandstone. (cont.?)	26	26	0
19 9														
10 2	20	2		9420		112	24	16	330	160				l
					1						possibly arkosic, quartzite, quartzite, ferruginous	26	25	1
											banded quartzite and quartz.	20	<u> </u>	
20 2	22	2		9421	5	170	38	18	280	330	Yellow silty clay containing chips of coarse grained			
											quartzite (possibly arkosic) with minor content sericite]		İ
											and quartz.	27	28	1
					ļ						Transit and the second and the secon			
22 2	24	2		9422		120	30	18	350	190	Yellow silty clay containing chips of fine grained quartzite with manganese globules and thin veins plus brown quartzite			l
											and quartz chips.	26	25	l1
											and quartz emps.	-		<u> </u>
24 2	26	2		9423		88	20	10	270	h140	As above and minor coarse grained Arkosic quartzite.	25	26	1
44 2	20			7150	·		=0			0-19				
26 2	28	2		9424		78	20	12	180	92	Yellow clayey sand with minor fragments of manganiferous			
											sandstone, ferruginous quartzite and quartzite.2-3mm			
					ļ	ļ					sand (quartz) grains are also present.	25	24	-1
28	30	2		9425	6	72	24	12	180	92	As above.	25	26	1

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 10.8.76 Date Completed 10.8.76 Depth of Hole 30m ft/ Record Completed 10.8.76 Depth of Hole 30m ft/

												FIELD DRILL RECORD			
From	To	Sample Length	Recover	γ %	Sample No₊		Cn	Assa Ni	ays (p	pm)	1Zn	Geological Log	Angle to core	Estimated Grade	
		Length	 	76	NO	73 ~0	100		-	1.5			10 0010	Ciage	
									ļ			•	ļ		
														.,	
										<u> </u>		Drilling Record: $0 - 1m = 8\frac{3}{4}$ " Rotary Blade Bit. $1 - 30m = 6\frac{1}{2}$ " Mission Cross Hamme			
]		1 - 30m $6\frac{1}{2}$ Mission Cross Hammer	r.		
	<u> </u>		İ			1						Casing Record: Collar piece; recovered,			
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				İ		ļ						Casing Record, Collar picce, recovered,			
						.									
									}			Water Record: Depth: 27m Flow: less than 500 gal/hr.			
				,				ļ	ļ			Flow: less than 500 gar/hr.			
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			}												
Drilled	by Afra	c Drilli	ng	Т	ype of Dr	rilling	Rot	Per	c	Date	e Start	ed 10.8.76 Date Completed 10.8.76 Depth of Hole 30m ft. Recor	d Com	leted of 14	Wangh
Logged	by J.H.	Wright	t	S:	ampled by	M	. Ki	lkell	У	R.L.	of Co	ollar Core Recovery % NO. OF HOLE BDF Vertical LOCATION 9000 E/	I- 30	ON Anomal	. I
Co-ards.	of Collar	Appro	ж, 90	7 A T	n/ 4011	a N		in and repeat	oner and		Beari	ng inclination Vertical LOCATION 9000 R/	400	OTA WHOHIST	y *

												FIELD DRILL RECORD			
From	То	Sample Length	Recover	y 72	Sample No.	11.0	Cul	Assa NI:		ppm Pb		Geological Log	Angle to core	Estimated Grade	
M e	res	Metres		70	ESR	3 8	Cu	INI	Co	FU	Z.111			Instrument Spectrome GIS-3 No.	er
												•			
												Bac gro		Sample Reading	Sample Minus
												с.,	.s.	c.p.s.	Back- ground
0	2	2			9426	6	190	36	28	310	180	Brown ferruginous quartzite, white chalcedonic quartz, yellow clay and limonite nodules.	28	26	- 2
2	4	2			9427		114	30	24	300	190	Coarse grained quartzite, ferruginous quartzite, quartz and limonitic sandy clay.	25	22	-3
4	6	2			9428		74	30	32	480	220	Coarse grained quartzite, with red limonitic quartzite and cherty quartz (or fine grained quartzite), with black mineral (manganese?).	27	24	-3
6	8	2			9 42 9	6	54	30	14	170	70	Orange/red sand, white clay plus chips as above (4-6m).	22	27	5
8	10	2			9430		72	24	18	270	130	As for 6-8m .	21	26	5
10	12	2			9431		64	24	14	210	170	Red sand, containing coarse grained quartzite, ferruginous fine grained sandstone with brown jaspery veins, quartz grains (2-3mm) and minor vein quartz.	24	21	-3
12	14	2			9432	5	50	28	10	220	78	Red sand, fine grained, conchoidal fracture, quartzite, coarse grained quartzite, minor white clay and ferruginous quartzite.	22	24	2
Logged	by J.H.	ac Drill Wrigh Appro	t	Sa		M	. Kil	kell;	y	R.L.	of Co	Ollar Core Recovery % NO. OF HOLE DIT	-91	oleted	

om	To	Sample	Recovery		Sample			Assa	ys (ppm	\sum	Geological Log	Angle	Estimated	Γ
JIN		Length		%	No.		Cu	Ni	Co	Pb	Zn		to core	Grade	<u> </u>
Me	res	Metre	3		ESR	3 8									
14	16	2			9433		42	40	16	25.0	98	Red hematite rich sand containing brown ferruginous			
							ļ					quartzite, fine grained and coarse grained quartzite			
,												varieties, vein quartz and white clay.	22	20	2
16	18	2			9434		98	30	24	150	330	Red hematitic sand, with brown to red fine grained			
		· · · · · · · · · · · · · · · · · · ·										ferruginous, jaspery , quartzite, coarse grained			
										ļ		sandstone, quartz vein material and minor massive			
											ļ	specular hematite	25	22	-3
															1
10	P.A.		· · · · · · · · · · · · · · · · · · ·		0405	4	94	40	20	220	260	Red to orange clayey sand, brown fine grained, jaspery,			
18	20	2		ļ	9435		34	40	20	230	200	quartzite, limonitic micaceous siltstone, coarse grained			
				<u> </u>					<u> </u>	<u> </u>		sandstone, quartz and fine grained quartzite.	24	24	
												sandstone, quartz and time gramed quartzite.	24	27	ľ
20	22	2		1	9436		64	40	18	240	88	Red clay with small pellets of white clay and containing			
4U	44			. [3430						00	fragments of coarse to fine grained quartzite and quartz.	23	27	4
										ļ	ļ	magnicina of coarse to fine granica quarteste and quarts.			
														٠	
22	24	2			9437		80	18	20	270	140	Red clay containing fragments of fine grained brown		. •	
				·						•		ferruginous quartzite, coarse to fine grained quartzite,			
									ļ	ļ		hematite and quartz.	22	26	4
															ļ
24	26	2			9438	7	48	30	16	180	86	As above.	21	2 5	4
						ļ									
						ļ			.						
26	28	2			9439		50	50	14	120	90				ļ
										l		and brown fine grained ferruginous quartzite.	24	25	1
						1		[
28	30	2		·[9440		42	50	10	54	46	Pale orange to yellow silty clay containing fragments of			1
40	30	4			9440					"	- 0	coarse grained arkosic sandstone, quartz and fine grained			
]										ferruginous quartzite.	24	22	ļ <u>.</u> 5
]										Tota demons dum symp	"		~
	İ			1		ļ	1					End of Hole.			1
3412 4 1	Afr	ac Drill	ing	<u></u>	pe of Dr	:11:	Rot	/Per	<u></u>	J			ord Comp	leted \ H v	7
illed t	y	. Wrigh	:::5 !	1) 	ype of Dr ampled by	uung M	. K	ilkel	lv			ollar Core Recovery % NO. OF HOLE BD	ла Сотр Н- 31	uerea Trus	
gged I	yy	Appro	0000	38	impred by	/ 			∵J	K.L.	OT C	ng Inclination Vertical LOCATION 9000E/		Anom	

<u></u>	To	Sample	Recover		Sample		,	Ass	ay s				Geological Log	Angle to core	Estimated Grade	
		Length		%	No.	 		<u> </u>						LO COPE	State	
											>,					ļ
									ļ			Drilling Record:	$0 - 1$ m $8\frac{3}{4}$ " Rotary Blade Bit. $1 - 30$ m $6\frac{3}{2}$ " Mission Cross Hammer.	! !		
				4									$1 - 30 \text{m} + 6\frac{1}{2}$ Mission Cross Hammer.			
]						.]	ļ							ł		
												Casing Record:	Collar piece; recovered.			ļ
									1					1		
		ł										Water Record:	Depth; 24m			
	·											water Record:	Flow: less than 500 gal/hr.			.
			1			1							riow: less than ood gar/in.		,	
			1													
		Į			1		ļ		†							
		 			Į											
		1					<u> </u>					PETROLOGY:	ESR 9435 Report No. 2839			
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		c Drill	J	1_	<u> </u>		1		<u> </u>			<u> </u>	ed 10.8.76 Depth of Hole 30m ft. Reco		<u> </u>	<u> </u>

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 10,8 76 Date Completed 10,8,76 Depth of Hole 30m ft. Record Completed 1,8,00 Depth of Hole 30m

											FIELD DRILL RECORD			
From	То	Sample	Recovery	Sample			Assa	ays (I	opm)			Angle	Estimated Grade	
7.5 -	 _ _	Length	%		143.A	Cu	N1	<u> Co</u>	PD	Zn		to core		
lvie	etres	Metres	 	ESR			ļl	ļl	ļl	ļ <u>ļ</u>			Instrume Spectrom	
						ļ!	ļJ	 	ļ			ļ	GIS-3 Bo.	
						ļ!	ļ	ļ!	ļ!			ļI		
			<u> </u>			!	ļ!	ļ!	<u>[</u>]		Bad	1 1.	Sample	Sample
						.]!	<u> </u>	ļ!	<u> </u>		gro c.p	1 1	Reading c.p.s.	Minus Back-
	T					!	1!				· , i		c.p.s.	ground
						,								8
0	2	2		9441	14	118	88	108	2600	700	Brown hard limonitic quartzite, coarse grained quartzite,			
							[]				quartz and massive limonitic fragments,	35	35	0
			ļ						<u> </u>			<u> </u>		
2	4	2		9442		72	52	18	190	200	Orange sand, coarse grained quartzite, vein quartz and			
	-						ļļ				minor brown limonitic quartzite.	34	33	-1
						ļ!		ļ			minor brown minoritie quarter.	~		- *
	+			2440		115]1		200			-		
4	6	2		9443		114	60	22	38 u	330	Red/orange sandy clay, white clay plus chips of quartzite,			
			.				ļ ¹	ļl	ļ	ļ	coarse grained ferruginous quartzite and quartz.	34	35	1
			ļ			.	ļ!	ļ	ļ					
6	8	2		9444	9	110	50	36	410	340	Orange/brown sandy clay, coarse grained quartzite chips			
							<u> </u>	ļ!	ļ	ļ	with ferruginous quartzite, white clay and sand grains	30	35	5
						<u> </u>	<u> </u>	ļ!			(2 - 3 min).			
8	10	2		9445		150	48	40	470	540	Coarse grained quartzite chips with ferruginous quartzite			
							[]				and minor quartz.	30	38	8
10	12	2		9446	9	230	52	36	750	500	Brown ferruginous sandstone chips, white clay, sand grains			
					- L	 					(2-3mm), quartz and minor quartzite (note: speckled			
					-	·	ļ!				manganiferous variety present - see 4-6m BDH-31).	30	45	15
						-	'	ļ	ļ		manganuerous variety present - see 4-om DDH-51/.	30	40	10
							ļ!	ļ	 	ļ				
	Ι	frac Dri	illing	Type of D		L '	F/Pe	re-		ليل	ted 11.8.76 Date Completed 11.8.76 Depth of Hole 30m ft. Record		leted J. y.	. w.
Drilled	-,	H. Wrig		Sampled b							ollar Core Recovery % NO. OF HOLE BDF			
roggeo	оў	****		Jampied L			mant.J.		Niki	. 01 C0	Olle Necovery William Mor of Hole			1

Bearing

Inclination Vertical

9000E/4000N Anomaly

....LOCATION

Co-ords, of Collar Approx. 8981E/3981N

rom -	То	Sample	Recovery		Sample			Assa	у (р	pm)		Geological Log	Angle	Estimated	
rom	''	Length		%	No.	ᡁ᠐	Cu	Ni	Co	Рб	Zn	GONOSITAL LOS	to core	Grade	<u> </u>
M	etres	Metres			ESR]	:				•			
10	4 4				0447	1 4	250	E 0	40	000	500	Yellow clayey sand containing fragments of coarse grained			
12	14	2			9447	14	ავი	90	40	900	500	quartzite, white sericitic clay, brown ferruginous quartzite			
												and quartzite.	28	38	10
												and quartzite.	20		10
14	16	2			9448		86	50	18	650	64	As above plus sand grains (2-3mm).	25	33	8
16	18	2			9449		78	50	18	470	48	Yellow clayey sand with coarse grained arkosic sandstone.	30	26	-4
18	20	2			9450	6	160	48	24	470	230	Pale clayey sand with white clay pellets and coarse grained arkosic sandstone.	34	30	-4
					: :::							arkosic salidstolle.	34	30	
20	22	2			9451		140	80	22	200	250	Yellow clayey silt with large fragments of coarse grained			
												arkosic sandstone and small fragments of fine grained	ļ		
				1								brown ferruginous, jaspery, quartzite and quartz.	26	30	4
22	24	2			9452		40	56	10	80	48	Pale pinky to pale yellow clayey silt and fragments as for			
												20-22m.	32	25	-7
24	26	2			9453		38	5 <i>0</i>	10	102	52	As for 22-24m, Arkosic sandstone finer grained and			
<i>2</i> 4	40				9400		30	១០	10	102	24	harder (quartizite).	28	25	-3
												nardor (quartano).			
26	28	2			9454	4	66	34	12	180	78	Pink silty clay with fragments of coarse to fine grained			
												arkosic quartzite and sandstone, quartz and ferruginous			
												sandstone.	25	23	-2
														90	
28	30	2			9455		26	62	8	40	46	As above.	23	20	-3
										 		ed 11.8.76 Date Completed 11.8.76 Depth of Hole 30m ft. Recor		0	

Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH-32

Co-ords, of Collar Approx. 8981 E/3981 N Bearing Inclination Vertical LOCATION 9000E/4000N Anomaly.

NORANDA AUSTRALIA LIMITED

		•										FIELD DRILL RECORD			
From	То	Sample	Recover	γ	Sample	l		Assa	y s			Geological Log	Angle	Estimated	
I-ton;	10	Length		%	No.							Octobation Log	to core	Grade	
									ĺ			•			
						ļ				·			ļ		
				}								Drilling Record: $0 - 1m$ $8\frac{3}{4}$ Rotary Blade Bit. $1 - 30m$ $6\frac{1}{2}$ Mission Cross Hammer	I		
						1						$1 - 30$ m $6\frac{1}{2}$ Mission Cross Hammer	1 1		
												e sanna ann ann an ann an ann ann ann ann	İ		
				,											
											.	Casing Record: Collar piece : recovered.			<u> </u>
				1								•			
					l	·····				ļ					
								,		ļ		Water Record: Depth: 20m			
		}		j		1						Flow: approx. 1,000 gal/hr.			i .
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Drillad b	y Afrac	Drilli	ng	<u></u> т	voe of De	illing	R	ot/P	erc.	L Date	Star	ed 11.8.76 Date Completed 11.8.76 Depth of Hole 30m /t. Recor	d Com	leted 9,4	W.
Jonas de la constitución de la c	_{ру} Ј.Н.	Wright		ا د	amalad b	, ∵iM	[Ki	lkell		<i>D</i> a(i	of C	ollar Core Recovery % NO. OF HOLE BDH	[- 32	1.000	ti a.
Logged	of Collar	Appro	v βαρ1	 ਸਿੱਧ	анріва ву / даят	vtii Ni	a.A.A.A		ل	Parie	01 6	ng Inclination Vertical LOCATION 9000E/	4 0 0 0 1	N Anoma	lv.
Co-ords.	of Collar	** bbr o	A, UJU-	- 14	1 930+	AT					beari	ng inclination volution LUCATION 30003/			T.V

										FIELD DRILL RECORD			
From To	Sample	Recovery	Sampl	77-7	Cu	Assa KI	ys (p	pm)	75	Geological Log	Angle to core	Estimated Grade	
7.5	Length Metres		% No.		8 04	TAT	Co	Pu	211			Instrumen	:
Metres	Metres		12/2									Spectrome	ter
												GIS-3 No.	208-198
										Bac gro		Sample Reading	Sample Minus
										gro-		c.p.s.	Back-
													ground
													_
0 2	2		9456	7	150	60	42	190	390	Fine grained limonite veined white saccharoidal quartz			
										(quartzite?), coarse grained ferruginous quartzite, quartz			
									·····	and laterite nodules.	31	31	0
	,												
2 4	2		9457		100	76	22	230	330	Brown to yellow quartzite, quartz vein material and quartz			*
										grains.	30	31	1
										<u>B</u>			
			0450		42	64	1 2	120	0.0	Saccharoidal quartz with limonite veins, quartz grains,			· .,, .,
4 6	2		9458		44	04	14	120	90		30	28	-2
										quartz vein material and quartzite.	30	40	
6 8	2		9459	5	68	84	36	230	380	Brown quartzite, fine grained white quartzite and vein			
										quartz.	32	32	0
8 10	2		9460		42	92	26	270	380	Fine grained quartzite, saccharoidal quartz with limonite			
										veins (contamination?) and quartz.	31	34	3
10 12	2		9461		26	72	18	78	250	Coarse grained (arkosic) quartzite, quartzite, vein quartz			
·····		1								and white clay.	33	35	2
	1												
12 14	2		9462	5	40	24	24	70	250	As above.	33	31∖	-2
	c Drill	ing	Type of	Drill in	g Ro	./P	erc.			ed 11.8.76 Date Completed 11.8.76 Depth of Hole 26m . Record			17.
	H. Wr			by I	I. Ki					Ilar		- 33	

Bearing inclination Vertical

LOCATION 9000E/4000N Anomaly

Approx. 8660E/9640N

Co-ords, of Collar

rom	То	Sample	Recover	γ	Sample				ays (P			Geological Log	Angle	Estimated	1
OIII		Length		%	No.	U, O	Cu	Ni	Co	Pb	Zn		to core	Grade	-
\mathbf{M}	etres	Metres			ESR	' '	1					1			.]
14	16	2			9463		36	80	40	48	340	Green to yellow silty clay with fragments of coarse grained			
<u> </u>	·	· · · · · · · · · · · · · · · · · · ·				1						sandstone, white clay with quartz grains (decomposed			
						 					ļi	arkose?), limonitic arkose, quartzite and quartz.	32	35	
							ļ								ļ:
16	18	2			9464		36	80	30	60	250	Greenish clayey silt with fragments of hard coarse grained			
10	10				0101							arkosic quartzite, coarse grained arkosic sandstone,			
							ļ		<u> </u>			quartzite, quartz grains, friable earthy limonite and quartz.	31	31	

18	20	2			9465		60	28	34	76	320	As above with jaspery limonite.	29	32	
			,,,				<u> </u>								
20	22	2			9466	38	150	104	140	40	1500				
											ļ	massive jaspery limonite, coarse grained arkosic quartzite,			
												quartzite and minor quartz.	33	54	
				-	0400				10	1.00	4.00	Greenish sandy silt with large fragments of coarse grained			-
22	24	2	•••••		9467		74	40	40	130	490	arkosic quartziemassive jaspery limonite, arkosic			
	<u> </u>	Ì	,					ļ				sandstone, quartz and granular hematite/quartz rock.	32	38	
]									1		sandstone, quartz and granutar hematite/quartz rock.			
24	26	2			9468	31	104	66	84	360	820	24-25m as above, 25-26m water washed cave material			
		1										containing fragments as above plus some black, banded			1
				-								pelitic rocks, possibly shale/siltstone.	28	36	
												End of Hole.			
							<u> </u>						ļ		
	1														.
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Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 11.8.76 Date Completed 11.8.76 Depth of Hole 26m ff.

Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery No. OF HOLE BDH - 33

Co-ords, of Collar Approx. 8660 E/9640N Bearing Inclination Vertical LOCATION 9000E/4000N Anomaly.

——		Sample	Recover		Sample	_		Assa	av s		1		Angle	Estimated	Т
From	То	Length	Necover	%	No.	\vdash	1	1	,,,			Geological Log	to core	Grade	
				ļ			ļ					2311 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			-}
				Ì		.						Drilling Record: $0 - 1m = 8\frac{3}{4}$ " Rotary Blade Bit. $1 - 26m = 6\frac{1}{2}$ " Mission Cross Hammer			
												I - 26m 6½ Mission Cross Hammer	ŀI		1
			1												
				·							.,	Galler misses massyand			
•							ļ					Casing Record: Collar piece: recovered.			
		<u> </u>	<u> </u>	<u> </u>											
						1						Water Record: Depth: 14 m			-
				1	İ	.,	· · · · · · · · · · · · · · · · · · ·					Flow: 1,000 to 5000gal/hr.			
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Drilled h	y Afra	c Drill	ingt	Т	ype of D	rilling	Re	μ/\mathbf{P}	rc.	Date	e Start	ed 11.8.76 Date Completed 11.8.76 Depth of Hole 26m /tt. Recor	d Comp	oleted J.M.	. W.

Co-ords, of Collar Approx, 8660 E/ 9640 N Bearing Inclination Vertical

9000E/4000N Anomaly.

LOCATION

From	То	Sample	Recovery		Sample			Assa	ays (ppm			Angle	Estimated	1
- Toni		Length .		%	No.	ক্রিণ	H Cu	Ni I	TCo'	Pb'	Zn		to core		1.
Met	res	Metres	4	1	ESR	1 '	1 1	1	1 '	1′	1 1			Instrumen Spectrom	i
	[1			1	<u> </u>		1	1	[GIS-3 No.	
	1	1	1	ſ	1	1	ļ	1	† <i>!</i>	1	ļ	1	· · · · · · · · · · · · · · · · · · ·		200-100
J				1	t/	· ['	41	ţJ	† '	 	+			1 2 1-	1
			.[įJ			J	4	 '			Bad		Sample	Sample Minus
1	1	!		1)	. ([4!	ļ'	.		gro	una o.s.	Reading c.p.s.	Back-
1	1	,	\int	1	1	1 '		1	1 '	1	1.	· · ·	P. B.	(c.p.s.	ground
					1	1	1	-							ground
	2	<u>-</u>			9469	8	58	60	30	ar.	130	O			
0	1	2		ļļ	9405	1 0	20	041	30	יטס	130			1	4
				4				 '	ļ'	ļ	1	nodules and grey silty material.	35	45	10
<u>.</u>			.[]	<u> </u>	.			<u> </u>			.[]	<u> </u>		<u> </u>	
2	4	2		1.1	9470	1	1	1 '	ĺ'	1 '		Greenish grey to red, quartz injected, partly limonitic,]	1	1
	-	,		1	1	1		['	'	[crenulated phyllitic shale, grey clay and sandstone	!		
	1			1	f	f	+	f1	fi	ļ	ļ).	fragments with minor laterite nodules.	35	40	5
			-	ļI	1	4	4	{	ļ'		 	<u> </u>	 	 	
	1				1		4	{					ļ		
4	6	. 2		1	9471)	4'	. (Grey to dark grey phyllitic shale with crenulation cleavage,		<u> </u>	
,	1	<u> </u>		1	1'	1)	<u>.</u> ['				grey clay and minor limonite nodules from above.	32	40	8
,		,		'	1		1	∫ '			$\int \int$			ĺ	
6	8	2			9472	5	86	86	52	28	250	Limonitic shale, grey clay and quartz.	36	44	8
	1		ļ	†	1 3716)	"	1001	1.00	102	40	400	Limonitic share, grey clay and quartz.	ایرین		1
!	ļ	!	.		1		+1	· ['							
8	10	2	.[J	4	9473			'		4	. 1	Grey cleaved shale (phyllitic) with limonitized variety,	. .		
·	1]	1'	1						<u> </u>	grey to red clay and porcellaneous carbonate nodules.	35	42	7
			1	1	1 '		1	1 '					ļ!		
10	12	2	<u> </u>	,	9474	1	1 7			1	1	Grey phyllitic shale (crenulated) with minor grey clay.	36	48	12
	1		-	ļ)	1 3414	1	- 	† <i>'</i>			+	Grey physitic share (of chalacter) with maker grey cast.		7.0	*.*
	4		.]1	1	1		1						·[
12	14	2		. '	9475							Red to greeny grey crenulated phyllitic shale.	35	48	13
					.1)	1	<u>.</u>	<u> </u>	
		,	,	'	1		1				1	1			
Drilled !	by A	frac Dril	Illing	T	ype of D	/rilling	Ro	t/Pe	rc.	Dat	le Starr	ted 11.8.76 Date Completed 11.8.76 Depth of Hole 30m fr. Record	d Com	pleted J.W	, W

Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 34

Co-ords. of Collar Approx. 6900E/6468N Bearing Inclination Vertical LOCATION TE Anomaly I

		Sample	Rocover		Sample	Т		Arc	ays (]	mm		FIELD BRILL RECORD	Angle	Estimated	
From	То	Length	143COVE	7%	No.	σ_{0}	Cu	Ni	Co	Pb	Zn	Geological Log	to core	Grade	
M etı	es	Metre	S		ESR	3-6						,			
14	16	2		· i	9476	7	72	76	32	20	340	As above plus hard silty phyllite, (phyllitic siltstone.)	32	47	15
16	18	2			9477							As for 14-16m with minor vein quartz.	32	48	16
18	20	2			9478							As for 12-14m plus minor green talcy phyllite.	29	42	13
20	22	2			9479	6	28	30	16	20	90	Black, graphitic, crenulated shale with pyrite.	32	46	14
22	24	2			9480							As above.	33	50	17
24	26	2			9481		40	36	20	28	98	As above.	33	50	17
26	28	2			9482							As above.	33	41	8
28	30	2			9483	6	48	44	26	10	86	As above.	30	52	22
												End of Hole.			
												Drilling Record: $0 - 1m - 8\frac{3}{4}$ Rotary Blade Bit. $1 - 30m - 6\frac{1}{2}$ Mission Cross Hammer			
												Casing Record: Collar piece: recovered.			
												Water Record: Depth: 25m Flow: less than 500 gal/hr.			
Daillad b	Λ επο	o Dnilli	<u> </u>	<u></u>	You of De	1	L	+/100	1	Date	Store	and 11/8/76 Date Completed 11/8/76 Depth of Hole 30m & Recov		lored A 13 1	<u> </u>

NORANDA AUSTRALIA LIMITED

												FIELD DRILL RECORD		·	
From	То	Sample Length	Recover	y %	Sample No₊	TI O	C.,	As sa Ni		opm Dh		Geological Log	Angle to core	Estimated Grade	
Me	tres	Metres			ESR	3 8		JVI			-2111			Instrumen Spectrome GIS-3 No.	ter
						•						Bac gro c.p	ind	Sample Reading c.p.s.	Sample Minus Back- ground
O	2 .	2			9484	18	54	92	28	28	210	quartzite, white clay and chips of phyllitic shale with			
												minor quartz.	31	44	13
2	4 .	2			9485							White porcellaneous carbonate with quartz fragments, chips of quartzite plus ferruginous clay?	34	40	6
4	6	2			9486							Grey to yellow, limonitic, phyllite with porcellaneous carbonate and white to red clay.	30	42	12
6	8	2			9487							Grey to brown shale with white clay.	32	45	13
8	10	2	-1-111		9488							Grey shale.	28	40	12
10	12	2			9489	17	38	40	30	26	120	Grey to dark grey phyllitic shale.	31	46	15
12	14	2			9490	8	58	76	50	18	270	As above plus minor quartz.	29	52	23
14	16	2			9491	8	42	46	38	16	170	As for 10-12m.	26		24
Lagged t	, J.H	. Wrigh	nt	Sa	ampled by	. W	l. K1	TKeII	.У	R.1 .	of Co	ed 11.8.76 Date Completed 18.8.76 Depth of Hole 90m ft. Recorpollar Core Recovery % NO. OF HOLE BDH TE and Inclination Vertical LOCATION	- 35		, د ا

												FIELD DRILL RECORD		-	·
From	То	Sample	Recovery	-	Sample			Assa	ys (£	pm		Geological Log	Angle to core	Estimated Grade	
From	''	Length		%		ЦQ	Сu	Ni	Co.	Pb_	Zn.		to core	Crade	
M	etres	Metres			ESR	۱۰۹	[]					•			
16	18	2			9492	8	36	70	38	18	270	As for 10-12m.	35	52	17
	1											·			
18	20	2			9493	7	50	70	32	40	260	As for 10-12m.	30	48	18
10					3330										
				ļ	0404		**********	,-,	· · · · · · · · · · · · · · · · · · ·			Grey to black crenulated phyllitic shale.	31	41	10
20	22	2			9494							Grey to mack cremutated physitic share.	-		
					<u> </u>								ļ		
22	24	2			9495					ļ		Black shale and silty shale, crenulated, phyllitic and			
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·]		slightly graphitic.	32	37	5
		1		ļ							100		32	41	9
24	26	2		ļ	9496	5	24	30	16	20	120	Grey to black phyllitic shale, possibly graphitic.	3.4		<i>3</i>
			ļ	ļ			ļ								_
26	28	2			9497	1						Black phyllitic, cross crenulated, shale, graphitic.	32	35	3
					İ					1					
28	30	2		1	9498							As above with minor pyrite layers.	33	46	3
			·	†····			1			İ					
		2		. 1	9635	-					1	Black, crenulated, graphitic, phyllitic shale, with minor		,	
31	33	4			9033					ļ		quartz/pyrite veins.	33	41	8
4				ļ					ļ			4	ļi		
	· ·]]											
33	35	2			9636	7	44	80	34	16	260	As above plus black chert.	29	47	18
				1											
35	37	2		· † · · · ·	9637	7	50	90	30	14	130	As for 31-33, much more quartz (thicker and more veins)/			
ა ა	31				10001	 	100	00	00		1.00	pyrite veins, some pyrite in shale.	25	48	23
											.]				
37	39	2			9638	6	54	64	28	20	120	As for 31-33, approx. 5% pyrite in veins and shale.	28	46	18
		· [·													
						1	1		1		-				
Delled	by Afra	Doill	ing	بساد	Type of O	<u> </u>	Rot	/Pe	rc	L Dat	te Star	ted 11.8.76 Date Completed 18.8.76 Depth of Hole 90m ft. Recor	d Comp	leted	. 44.
Loaced	hy J. H	. Wrigh	it	· · · · · · · · · · · · · · · · · · ·	Sampled b	y M	Ki	lkel	ly	R.L	of C	ollar Core Recovery % NO. OF HOLE BDF	I - 35	<u>)</u>	
												Inclination Vertical LOCATION TE	Anon	naly I	

Co-ords, of Collar Approx. 6900 E/ 6488 N

Bearing Inclination Vertical LOCATION TE Anomaly I

												FIELD DRILL RECORD			
From	То	Sample	Recove		Sample		,		ays (p			Geological Log	Angle	Estimated	
	 	Length	ļ	%	No.	$\frac{V_3 V_6}{V_3 V_6}$	Cu	Ni	Co	Pb	Zn		to core	Grade	<u> </u>
Me	res	Metres			ESR								. [
39	41	2			9639	7	54	60	26	10	130	Black, graphitic, shale with pyrite, pyrite/quartz, minor			*
		1			0000	·······	77.		40		1.50	thin quartz/orthoclase veins and grey to greeny grey			
	ļ 			.		ļ						greywacke sandstone with green chloritic specks, minor			
						<u> </u>						pyrite and approx. 10% large quartz grains (Tuff?).	2.8	4.6	18
		İ	ļ			1								·]
	4.0				0040	7	44	en	22	10	120	Disale graphitic anonylated phyllitic chalc with project			
41	43	2			9640	ļ <u>1</u>	44	00		10	130	Black, graphitic, crenulated, phyllitic shale with pyrite blebs, smears and veins, (possibly also silvery sulphide -			
		ļ				ļ			.,.,						
			1			l						arsenopyrite?), plus minor grey greywacke sandstone, (Tuff?).	28	48	20
												(Tuff;).	20	40	20
43	45	2			9641	5	48	70	28	12	90	Dark grey to black, very minor graphite, phyllitic shale	1		
43	40	1 4			3041		10				00	with pyrite cubes, blebs and stringers and quartz vein			[
												material.	28	42	14
		Į	1		1							material.	1 "		
												-			
45	47	2			9642		ļ					As above, approx. 5% pyrite.	30	38	8
		ļ <u>-</u>	ļ		0010							FU			
										• • • • • • • • • • • • • • • • • • • •					
47	49	2	Į.		9643		28	50	22	4	96	As for 45-47m, 0.3-0.5cm pyrite veins.	31	36	5
					.,										
4.0	e 1	1			9644	7	42	72	9/	26	120	As for 43-45m, minor pyrite.	26	32	6
49	51	2			9044		44	14	34	40	130	As for 45-45th, inflor pyrice.	1 20	34	ļ
	<u> </u>					.	<u> </u>								
51	53	2		ĺ	9645	5	50	78	24	ลก	140	As for 47-49m.	28	35	7
	J	4			3043	1	U.W	1.0	U.X.		1	101 11 10111	1 "		
					}	ļ			ļ					,	
53	55	2			9646	}		ļ				Black, graphitic, crenulated, phyllitic shale with minor			
		1			1					l		quartz and pyrite.	32	35	3
						I									
						ļ									
	ļ		. [ļ	ļ	.							
						ļ			ļ						
٠						1			}						1
Deithod I	w Afno	o Drilli	ing	 -	vne of Dr	illing	Rot/	Per	Ċ.	Dare	Start	red 11.8.76 Date Completed 18.8.76 Depth of Hole 90m ft. Reco	ord Comp	deted 7.4	. 74.

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 11.8.76 Date Completed 18.8.76 Depth of Hole 90m ft. Record Completed 1.4. W Logged by J. H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 35.

Co-ords, of Collar Approx. 6900 E/6488 N Bearing inclination Vertical LOCATION TE Anomaly 1.

					1 6 .			Assa		ppn			Angle	Estimated	1
From	То	Sample Length	Recover	ny %	Sample No.	ΠO	Cu		Co	Pb	$\frac{1}{Zn}$	Geological Log	to core	Grade	
Met	res	Metres			ESR	3 6		- 1.77				•			
55	57	2			9647	5	50	78	34	30	140	Black, graphitic, crenulated, phyllitic shale with approx. 5% pyrite and minor quartz. Sample also contains pale green phyllitic shale and pale brown ferruginous phyllitic			
												siltstone/shale, contamination from above to 61m.	29	34	5
57	59	2			9648							As for 55-57m.	32	4.0	8
59	61	2			9649	· · · · · · · · · · · · · · · · · · ·						As for 55-57m.	32	37	7
61	63	2			9650		-					As for 55-57m.	30	39	9
63	65	2			965 1	4	26	64	36	32	140	As for 55-57m.	28	42	14
65	67	2			9652	6	46	44	18	10	56	As for 55-57m, minor quartz in pyrite veins.	32	46	14
67	69	2			9653	14	44	58	30	14	52	As for 55-57m, banding in pyrite veins.	31	54	23
69	71	2			9654	15	28	36	22	8	46	Black, graphitic shale with poorly developed crenulation and containing approx. 5% pyrite as veins, smears and cube			
												in shale plus very minor quartz (thin veins).	32	45	13
71	73	2			9655	5	36	44	24	8	56	As above but crenulation better developed.	30	48	18
73	75	2			9656	<u> </u>						As for 71-73m.	34	44	10
75	77	2		.	9657							As for 71-73m.	32	37	5

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 11.8.76 Date Completed 18.8.76 Depth of Hole 90m. /t. Record Completed 14.50 Date Started 11.8.76 Date Completed 18.8.76 Depth of Hole 90m. /t. Record Compl

From	To	Sample	Recove	ry	Sample.			Assa	ya (j	ppm)	Geological Los	Angle	Estimated	
,=rom	10	Length		%	No.	U O	Cu	Ni	Co	Pb	Zn		to core	Grade	
Me	tres	M etres			ESR							•			
77	79	2			9658							As for 71-73m.	30	44	14
79	81	2			9659	5	38	48	32	14	84		29	48	19
						<u> </u>						pyrite veins.	23	-10	
81	83	2			9660	4	30	46	2 6	16	46	As for 71-73m, with increased white vein quartz.	30	41	11
					9661	5	24	40	26	10	40	As for 71-73m, plus minor green phyllite (contamination?)			
83	85	2			9001		41	- 10	20			and black orthoquartzite. (Contact 84.5m - drilling change).	30	49	1:
85	87	2			9662	-						Sheared black orthoquartzite with quartz and minor pyrite.	31	30	-1
87	89	2			9663		14	60	14	38	20	Partly sheared dark grey, coarse to fine grained,	32	32	
												orthoquartzite with pyrite, minor quartz vein material.	34		υ
89	90	1			9664	4	14	30	20	10	34	As for 87-89m, plus minor shaley material.	29	33	4
												End of Hole.			
						<u> </u>									
													· · · · · · · · · · · · · · · · · · ·		
	<u> </u>							<u> </u>							
							1							۸	

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 11.8.76 Date Completed 18.8.76 Depth of Hole 90m ft. Record Completed Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 35

Co-ords. of Collar Approx. 6900 E/6488 N Bearing Inclination Vertical LOCATION TE Anomaly I

From	То	Sample	Recove	егу	Sample			Assa)	/5			Geological Log	Angle	Estimated	
1-form	''	Length		%	No.								to core	. Grade	╁
						ļ						0311 70 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
												Drilling Record: $0 - 1m = 8\frac{3}{4}$ Rotary Blade Bit.			
					ļ	<u> </u>						1 - 30m $6\frac{1}{2}$ Mission Cross Hammer.			
			<u> </u>									0 - 12m 8 ³ / ₄ " Rotary Blade Bit -			
												(Reamed for PVC casing).			.
					Ì					***********		30 - 60m $5\frac{1}{2}$ Mega Cross Hammer.			
												0 - 60m 6311 Rotary Rock Bit -			
												(Reamed for $6\frac{1}{2}$)! Hammer).			
			İ									$60 - 90 \text{m}$ $6\frac{1}{2}$ Button Bit Hammer.			
					-		***********								
			ļ									Casing Record: Collar piece - recovered.			
			İ									0 - 12m of 83 PVC Casing (Not Recove	red).		
				····		1						0 - 12m length PVC recovered before			
. 1411-1461-211-1			•			1						reaming to 60m (written off as			
***************************************					· .	1						unuseable).			Ī
			l									Water Record: Depth - 27m.			
	†		1			-						Flow - 1,000 to 2,000 gal/hr.			
	·										,				ľ
												Note: Hole drilled 0 - 30m 11/8/76.			
***************************************												Hole extended from 30m to 90m			1
		1	ļ				·				,	17/8/76 to 18/8/76.			
			ļ			·}	ļ		·			Interval 30 to 31m not sampled.			
							ļ					TOTAL OCCUPANT OF THE PROPERTY			-
					ļ		ļ					PETROLOGY: ESR 9639 Report No. 2839			-
		.					ļ								
		ac Dril	<u> </u>		<u> </u>						<u> </u>	rted 11.8.76 Date Completed 18.8.76 Depth of Hole 90m /t. Rec		oleted J.W	Ļ

Drilled by Afrac Drilling Type of Drilling Rot/Perc, Date Started 11.8.76 Date Completed 18.8.76 Depth of Hote 90m /t. Record Completed Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Coltar Core Recovery % NO. OF HOLE BDH - 35

Co-ords. of Collar Approx. 6960 E/6488 N Bearing Inclination Vertical LOCATION TE Anomaly I

											FIELD DRILL RECORD			
From	То	Sample Length	Recovery %	Sample No.	по	Cu	Assa Ni		ppm Ph		Geological Log	Angle to core	Estimated Grade	
Met	es	Metre	5	ESR	3 8		-11-	<u> </u>			•		Instrument Spectromet	[
•													GIS-3 No.	208-198
											Bac: gro		Sample Reading	Sample Minus
					,						c.p.		c.p.s.	Back- ground.
0	2	2		9499	7	28	44	18	18	130	Orthoquartzite rubble and chips of pale green, slightly phyllitic shale.	32	39	
2	4	2		9500	8	50	44	2 6	40	130	Pale green to grey, slightly phyllitic, weathered shale.	27	38	11
4	6	2		9501	5	54	44	28	38	120	As above.	31	42	11
6	8	2		9502	7	46	58	28	16	160	As above plus grey clay.	28	39	11
8	10	2		9503	7	34	38	26	8	106	As for 2-4m plus hard, black siltstone.	33	35	2
10	12	2		9504	7	104	140	230	16	260	As for 8-10m.	26	40	14
12	14	2		9505	24	140	200	210	40	360	Yellow clay with minor fragments of pale greenish shale.	32	54 U-K-Th	22
14	16	2		9506	18	180	180	230	56	290	As for 12-14m.	29		7 53 1.5
16	18	2		9507	34	220	250	330	32	380	As above.	33	90	57
18	20	2		9508	1			ļ		1 1	As above.	39	100	61
Drilled b Logged b Co ords,	y J.H.	c Drilli Wrigh Appro		Type of D Sampled b E/6500	rilling y N	M,F	Kilke	lly	Date R.L.	Start of Co Beari	Ore Recovery % NO. OF HOLE BDH	- 3	pleted J.H. 5 maly I.	

-rom	То	Sample Length	Recover	y σ _i ,	Sample No. (J. O.	Cu	Assa N1	ys (r Col	pm Pb	Zn	Geological Log	Angle to core	Estimated Grade	
2.6		 	<u> </u>	Αυ	ESR	3~8	00		-						
	res 22	Metres	· · · · · · · · · · · · · · · · · · ·		9509	28	170	200	290	28	300	As above.	36	64	28
20	24		i	ļi	2002		-						······································		.,,,
22	24	2			9510	4	190	140	310	32	240	Grey, slightly phyllitic shale.	32	60	28
24	26	2			9511	14	140	120	130	64	340	As above plus orthoquartzite fragments.	35	49	14
26	28	2			9512	24	150	108	180	40	300	Grey to black micaceous shale, siltstone and dark			
												siliceous rock, chert?/orthoquartzite?	32	43	11
28	30	2			9513	20	86	66	80	50	190	Black siliceous rock, very fine grained, chert?/orthoquart	zite	-	
												(slide), fine grained grey quartzite and grey/green phyllitid			
												shale and minor quartz.	34	61	2'
						ļ									
30	32	2		ļ	9514	24	92	70	70	50	390	Grey, fine grained quartz injected quartzite with grey and		PA	
												black shale fragments.	30	52	2:
32	34	2			9515	18	90	70	90	50	310	As above plus black chert fragments. (Caved ground).	30	51	2
												End of Hole.	·		
										· · · · · · · · · · · · · · · · · · ·		Drilling Record: 0 - 1m 8311 Rotary Blade Bit.			
												$1 - 34$ m $6\frac{1}{2}$ " Mission Cross Hammer.			
												Casing Record: Collar piece : recovered.			
								İ							
						1						Water Record: Depth: 19m Flow: greater than 500 gal/hr. PETROLOGY: ESR 9513 Report No. 2839.			
	byA				<u> </u>		<u></u>	1	Ц	L				leted 1.1	

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 11.8.76 Date Completed 11.8.76 Depth of Hole 34m /t. Record Completed Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery 8 NO. OF HOLE BDH - 36 Co-ords, of Collar Approx. 6900 E/6500 N Bearing True North Inclination Approx. 85 North LOCATION TE Anomaly I

n	Ι	Sample	Recove	гу	Sample	1	Cu	Ass	ays (p	pm)		Contaginal Log	Angle to core	Estimated Grade	1
	То	Length		67,0	No.	v_3	Cu	Ni	Co	Рb	Zn		ro core	Glade	
Me	tres	Metres			ESR			!	İ		<u> </u>				
111	1													,	ļ
		l			NT.	ŀ						Dark grey orthoquartzite.			ļ.
	1	1			No				ļ		ļ	Dain gicy of modularization			1
					Samp	j e	ļ								ļ
]				!	1]
			,	1								Drilled for standpipe only - hole stopped following			
									1		1	identification of quartzite in the bottom of BDH-36.			
		.			ļ	ļ						identification of qualityte in the bostom of BBM 33			1
					1			ļ					ļ		
								1			1				ļ
															<u>.</u>
						1				1					1
								ļ		ļ		0111 751 - 2 - 11			
												Drilling Record: $0 - 1$ m $6\frac{1}{2}$ " Mission Cross Hammer.	1		.
			-	-				i				$0-1$ m $8\frac{3}{4}$ " Rotary Blade Bit, (Ream	ng)		
									1					·	1
												Casing Record: Collar piece - recovered.			1
										ļ		Casing Record.		 	1
														,	
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		1											<u> </u>	ر ہے۔۔۔۔ا	╌┸╌
Orilled	by A	frac Dri	lling		Type of [Drillin	g P	erc.		Da	te Star			oleted J. r	3 a A
0 2 2 2 0	iby J	.H. Wri	ght	!	Sampled I	by No	san	ple	take	n R.I	_, of C	Julia: Core recovery)H -	maly I	

Co-ords, of Collar Approx. 6900 E/6550 N Bearing Inclination Vertical LOCATION TE Anomaly I

											•	FIELD BRILL RECORD			
From	To	Sample Length	Recover	ry %	Sample No.	0.0.	Cu	As sa Ni	ys (p Co	ipm] [Pb	Zn	Geological Log	Angle to core	Estimated Grade	
Me	tres	Metres			ESR	3 u								Instrument Spectrome GIS-3 No.	
												Bac gro c.p	und	Sample Reading c.p.s.	Sample Minus Back-
															ground
0	2	2			9516	53	20	34	22	10	26	Buff clay with fragments of ferruginized shale, ferruginized			
												sandstone, quartz, quartzite and grey shale.	120	115	- 5
2	4	2			9517	18	30	68	32	4	38	Pale yellow to pink sericitic sandstone, quartz vein	.		
												material and minor phyllite,	121	102	-19
4	6	2			9518	9	18	50	16	4	30	Coarse grained sericitic sandstone, with greenish	ļ		
												crenulated phyllitic shale, white clay and vein quartz.	115	85	-30
6	8	2			9519	25	24	74	26	4	42	As above.	98	75	-23
8	10	2			9520	20	24	32	38	4	30	As above.	100	90	-10
10	12	2			9521	19	10	52	22	6	36	Pale sericitic sandstone, white clay with sericite and vein			
												quartz.	90	90	0
12	14	2			9522	35	10	70	22	4	40	As for 10 - 12m, plus grey to white banded cherty rock and minor dark grey phyllitic shale. Minor surface			
												contamination.	80	83	3
14	16	2			9523					<u> </u>		Sericitic sandstone and quartz with white sericitic clay.	82		-12
Orified t Logged		rac Drill H. Wrigh	ght	S	Type of Dr Sampled by	, М.	Rot Kil	/Per kellj	.е. У			Ollar Core Recovery % NO. OF HOLE BD	Н -	pleted 38	

Bearing

Co-ords, of Collar Approx. 3480 E/17840 N

Inclination Vertical

..... LOCATION

Anomaly 77 South.

		Sample	Recovery	,	Sample	т		Assa	ys [ppm) :	FIELD DRILL RECORD	Angle	Estimated	
From	То	Length		%	No.	пò	Cu			Pb		Geological Log	to core	Grade	<u> </u>
Me	tres	Metres			ESR	3_8									
16	18	2			9524							Quartzite, sericitic quartzite and quartz.	78	64	-14
18	20	2			9525	11	22	110	20	4	54	As above, plus fine grained grey banded quartzite.	71	55	-16
20	22	2			9526		12	80	18	6	36	Banded grey, very fine grained quartzite, white quartzite, sericitic quartzite (some feldspar), vein quartz and			
												sericitic clay.	65	65	. 0
22	24	2			9527	12	22	94	38	8	42	As above.	130	135	5
24	26	2			9528		30	104	40	10	54	As above, plus minor pale green shale, (collapse from above?).	120	95	-25
26	28	2		•••••	9529		14	44	14	6	24	As for 24-26m.	118	75	-43
28	30	2			9530	7	16	40	14	2	14	As for 24-26m.	98	60	-38
30	32	2			9531		40	48	18	8	24	pale green shale (phyllite?) with arkosic sericitic			
	*					·						sandstone and quartz.	95	79	-16
32	34	2			9532		62	42	14	10	30	As above.	82	62	-20
34	36	2			9533	4	116	80	42	8	60	crenulated phyllite and hard grey banded, fine grained			
												cherty quartzite (interbedded phyllite/quartzite - hard/soft drilling).	89	66	-23
36	38	2			9534	<u> </u>			<u> </u>			Dark green to black crenulated phyllite, quartz and quartzite	. 87	65	-22
		ac Drill Wrigh	_	T	ype of Di ampled by	rilling y M	Rot Ki	t/Pei lkell	 у	Date R.L	Star of C	otlar Core Recovery % NO. OF HOLE BDH	- 38	leted J.4	ω.

Co-ords, of Collar Approx. 3480 E / 17840 N Bearing Inclination Vertical LOCATION

Anomaly 77 South.

												FIELD DRILL RECORD			
From	To	Sample	Recovery		Sample			Assa	ys (p	pm)		Geological Log	Angle	Estimated	
		Length		%	No.	ЩQ	Cu	Ni	Co	Pb	Zn		to core	Grade	
Me	tres	Metres			ESR		1								
38	40	2			9535		550	130	72	10	112	Hard quartz-chlorite-feldspar rock, banded in part,	1 1		
												chloritic phyllite, quartz and minor very fine grained			
	-											quartz (possibly quartzite), note - small chips with			
							ļ					green to bluey green mineral coatings (Malachite and			
				ļ								Chrysocolla),	80	60	-20
•		i				l							1		
40	42	2		1	9536	3	430	112	76	x	98	Hard quartz-chlorite-feldspar rock, with incipient			
		· · · · · · · · · · · · · · · · · · ·					ł					schistocity.	76	50	-26
												-			
									,						
42	44	2			9537		220	160	96	8	102	As above, (approx. 10% contamination - slow, hard,		52	
												drilling).	65	52	-13
				-											
	40	1		ļ	0500		100	108	66	37	78	As above.	70	40	-30
44	46	2			9538		100	100	00	X	10	As above.	• •		
	.,							.,							
46	48	2			9539]	150	94	66	2	84	As above plus minor green chloritic phyllite.	63	58	-5
]		<u> </u>
48	50	2			9540	6	80	150	68	4	86	Hard quartz-chlorite-feldspar rock and green chloritic			
												phyllite.	64	58	-6
	.														
													-		
				ļ								End of Hole.			
			1]	Ì		1			.]		
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, 1411/4/21]	.				
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		· [1					1	
Dellad	by A Pro-		ا	T	vne of Di	rillin s	D _C +	/Por	<u> </u>	Dat.	Star	ted 12 8 76 Date Completed 13 8 76 Depth of Hole 50m ft. Reco	rd Comp	leted 9.4.	v 0.

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 12.8.76 Date Completed 13.8.76 Depth of Hole 50m ff. Record Completed 3.4.00.

Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 38

Co-ords. of Collar Approx. 3480 E/ 17840 N Bearing Inclination Vertical LOCATION Anomaly 77 South.

	То	Sample	Recove	ry	Sample	T		Asse	ys			Geological Log	Angle	Estimated	1
n	10	Length		%	No.								to core	Grade	┿
											i	•	1 i		
												D. 111 Dotony Plade Rit			
							ļ	ł				Drilling Record: 0 - 1m 8311 Rotary Blade Bit.	J		
					.							$1-30$ m $6\frac{1}{2}$ " Mission Cross Hammer	k		
												$0-31$ m $6\frac{3}{4}$ " Rotary Rock Bit, (ream	ung)		1
		1418161613111-1										$31 - 50$ m $5\frac{1}{2}$ Mega Cross Hammer.	}		
		·											l[
				1	1			l					1		
												Casing Record: Collar piece - recovered.	}		
													†		
			i			}]	<u> </u>				23m of 6" casing - recovered.	ļ		
						1									
													1		
	at				ļ							Water Record: Depth: 18m			
												Flow : approx. 5,000 gal/hr.	1		
													1 1		
							- 								
				.						.,					
						1						PETROLOGY: ESR 2535 Report No. 2839	1 1		
			<u> </u>			· [· · · · · · ·		·					1 1		
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		1	1				1	1	ļ				1		
	<u> </u>	<u> </u>	1		 _		J	1 + /D^	<u></u>		L	ted 12.8.76 Date Completed 13.8.76 Depth of Hole 50m ft. Reco	rd Como	leted 9. 14	
iled l gged l	y Afr	ac Dril	ling	1	ype of D	rilling	T.C	<i>14/1</i> 76	TC.	Date	o Stari	ollar Core Recovery % NO. OF HOLE BDI	I - 38	e.ea4: 13	

Bearing Inclination Vertical

Co-ords, of Collar Approx, 3480 E / 17840 N

Anomaly 77 South.

LOCATION ...

	г	Sample	Recovery	7	Sample	·		Assa	ys ([pm		Geological Log	Angle	Estimated	
From	То	Length		%	No.	$\mathbb{L}_{Q_{i}}$	Cu	Ni	Co			OsotoŠica: Foš	to core	Grade	
ħΛ	tres	Metres			ESR									Instrument	:
141 .	LICS	Metres			24,319									Spectrome	er
						ļ	ļl							GIS-3 No.	208-198
						ļ!	ļ!				ļ				
		ŀ				'						Bac	α-	Sample	Sample
												gro	ınd	Reading	Minus
		ļ										c.p.	s.	c.p.s.	Back-
															ground.
		1										·			
_	1	1			0543	1,,,	10	170	co	0	116	Durant and (limenite) gendetene and guartz nabbles		 	·
Q	2	2			9541		TO	.a.a.y.	D.Q	Q	. Ι . Ι. Ι.				
							ļ				ļ	clay and ferruginized shale (surface rubble), fragments	155	172	17
						<u> </u>				.		of yellow limonitic shale.	100	112	4.1
						'							. !	!	
					9542		10	200	00	0	170	Yellow sericitic clay, abundant chips of yellow to pale			
2	4	2	-1-101010/010101011	ļ	9542	33	10	400	00		110	brown limonitic phyllite and white, black speckled,			
				,									153	148	-5
						'						porcenaneous carbonate.	200		
	c	1 ,			9543	41	Ω	150	42	4	112	Yellow sericitic clay, sericitic quartzite (possibly slightly	1		
4	6	2			9040	<u>*</u>		130	72				158	139	-19
	j		<u> </u>	ļ						ļ		ar Rosic) and illifolitic phyllic.			
]			(ļ		
6	8	2			9544	22	8	80	26	8	56	Yellow sericitic clay and sheared, arkosic, sericitic			
Ū	o	<u> </u>			2044	1 22	<u>v</u>		<u></u>	ļy		quartzite.	160	132	-28
				ļi			ļ								
						<u> </u>									***************************************
8	10	2			9545	31	16	72	26	10	50	Yellow sericitic sandy clay, sheared, arkosic, sericitic	;		
9		ļ	l		0010		1					quartzite and minor yellow limonitic silty shales with			
						ļ				ļ	ļ		155	146	-9
					.,]				ļ			· · · · · · · · · · · · · · · · · · ·		
		i											i		
10	12	2		1	9546	60	32	86	32	6	74	Yellow sericitic clay, sheared, arkosic, sericitic quartzite	1		
	ļ 	ļ		-	1					ļ			136	155	19
	.			.						ļ				ļ	ļ
	i	1]	<u> </u>	l						<u> </u>
Drilled I	y Afr	ac Drill	ing	T	ype of Dr	illing	Rot/	Perc	3.	Dat	e Start	ed 14.8.76 Date Completed 14.8.76 Depth of Hole 50m /t. Record	l Com	pleted	٠٤٠, ١

Drilled by Afrac Drilling Type of DrillingRot/Perc. Date Started 14.8.76 Date Completed 14.8.76 Depth of Hole 50m /t. Record Completed 14.8.76 Depth of Hole 50m /t. R

	 -	Sample	Recover	γ	Sample			Assa	ys (p	pm	1	Geological Log	Angle	Estimated	ļ
From	To	Length		%	No.	U.O.	Cu			Pb	Zn	ocorogical cos	to core	Grade	
Met	res	Metres			ESR	3 8									
12	14	2			9547	53	28	114	40	x	76	Yellow sericitic clay, sheared, arkosic, sericitic			
10							I					quartzite, yellow silty shale with manganese dendrites,			
				-								manganese balls and quartz.	148	163	15
										· · · · · · · · · · · · · · · · · · ·					
14	16	2		1	9548	35	32	80	28	12	60	As above, poor recovery.	140	145	5
14	10				0010										.1
16	18	2			9549	55	34	60	32	10	46	Sericitic, arkosic? quartzite and quartz with minor			
		}#	1		99.48	"						green phyllitic shale.	135	135	0
					! <u>.</u>							8			
18	20	2			9550	24	14	3.0	22	4	26	Sericitic, slightly arkosic, quartzite and quartz, minor			
												limonite specks in quartzite.	135	135	0
	.4-13-1.28114711281		,			ļ									
20	22	2			9551	11	8	22	18	2	26	Pink sericite, arkosic, quartzite and quartz.	122	122	0
22	24	2		-	9552	55	10	20	28	4	18	As above.	138	85	-53
24	26	2			9553	ļ	12	24	16	x	26	Pink sericitic arkose, quartz and siliceous grey/white			
						1	ļ <u>.</u>					banded rock, possibly quartzite. (Top conglomerate?)	170	165	-5
						1-1-1-1-								·.	
26	28	2			9554		8	22	16	x	16	Pink sericitic arkose, quartz and grey/white speckled and			
						ļ					ļ	banded quartzite?	148	110	-38
]							ļ		
28	30	2			9555	4	8	58	20	4	18	As above with white quartzite.	152	98	-54
										ļ	ļ			105	
30	32	2			9556	-	10	32	18	X	24	As for 28-30m.	154	105	-49
	<u> </u>	rac Dril	<u> </u>	يـلــ	ype of Dr	1		1	<u> </u>	<u></u>	ل	ed14.8.76 Date Completed 14.8.76 Depth of Hole 50m /t. Recor	J	leted J. vd.	<u></u>

Co-ords, of Collar Approx. 3495 E / 17840 N Bearing Inclination Vertical LOCATION Anomaly 77 South.

· · ·	Sample	Recove	ry	Sample	ı		Assa		(ppn		Geological Log	Angle	Estimated	1
10	Length		%	No₊	ЦQ	C_{Π}	Ni	Co_	Pb_	Zn		to core	Grade	
res	Metres			ESR	3 8						•			
34	2			9557		12	24	16	x	18	As for 28-30m.	152	118	-3
36	2			9558	7	10	60	20	6	18	Pink sericitic arkose, pale green crenulated phyllite and quartz.	148	105	-4
38	2			9559							As above and minor fine grained grey quartzite.	150	130	-2
40	2			9560							As for 34-36m.	154	115	-3
42	2			9561	8	44	78	30	2	46	Dark to pale green chloritic crenulated phyllite with sericitic arkose and quartz fragments.	142	111	_{
44	2	· · · · · · · · · · · · · · · · · · ·		9562							As above.	139	102	-:
46	2			9563							Dark green, crenulated, chloritic phyllite with quartz and contamination from hole above.	156	120	
48	2			9564		210	76	42	8	76	Dark green sheared, hard, chlorite-orthoclase-quartz rock, chloritic phyllite, quartz and up hole contamination.	145	115	
50	2			9565	6	38	96	112	4	60	Dark green sheared, hard, chlorite-orthoclase-quartz rock and above hole contamination.	144	120	-
										1				
	34 36 38 40 42 44 46	16 Length res Metres 34 2 36 2 38 2 40 2 42 2 44 2 46 2 48 2 48 2	16 Length	16 Length % res Metres 34 2 36 2 38 2 40 2 42 2 44 2 46 2 48 2	To Length % No. res Metres 2 9557 36 2 9558 38 2 9559 40 2 9560 42 2 9561 44 2 9562 48 2 9564	To Length % No. II O S S S S S S S S S S S S S S S S S	To Length % No. II O Cu res Metres	To Length % No. U O Cu Ni res Metres ESR 3 8 34 2 9557 12 24 36 2 9558 7 10 60 38 2 9559	To Length	To Length	Tes Metres	res Metres ESR S S S S S S S S S	res Metres	Test

Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Co-ords, of Collar Approx. 3495 E/ 17840 N Bearing

Core Recovery

..... % NO. OF HOLE LOCATION

BDH - 39
Anomaly 77 South.

												FIELD DRILL RECORD			
From	To	Sample	Recover		Sample	Ι.,				pm)		Geological Log	Angle to core	Estimated Grade	
		Length	ļ	%	No.	$\frac{10^3}{6}$	Cu	Ni	Co	Pb	Zn_				
															
												Drilling Record: 0 - 1m 8311 Rotary Blade Bit.	ļ		
						ļ			ļ			$1 - 50$ m $6\frac{1}{2}$ " Mission Cross Hammer.			
						<u> </u>			ļ						
												Casing Record: Collar piece; recovered.			
				1											
***************************************		1		·				†				Water Record: Depth: 15m			1
			<u> </u>				ļ		·		·	Flow: approximately 5000 gal/hr.	1		
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		ļ						ļ					.		
		<u> </u>						ļ		ļ	ļ	PETROLOGY: ESR 9564 Report No. 2839	ļ		
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Drilled	byAfr	rac Dr	illing	T	Type of D	rilling	Rot	/Pei	r.c	Dat	e Star		rd Com I - 3		
Logged	byJ., I	HWri	ight	S	sampled b	уІ	и. К	ılkel	шу	R.L	., of C			77 South.	

Bearing Inclination Vertical

Approx. 3495 E / 17840 N

Co-order of Coller

Anomaly 77 South.

LOCATION

												FIELD DRILL RECORD			
From	То	Sample	Recovery	\Box	Sample				ays (p			I Geological Log	Angle to core	Estimated Grade	·
		Length	 '	%	No.	U_2O_2	Cu	Ni	Co	Pb_	Zn_		10 Core	Grade	,
M et	res	Metres	1		ESR	ا ن	l	L]					Instrument	
,			[[]			Spectrome	
	.,					1								GIS-3 No.	208-198
			ļļ.				ļl	ļ	ļI						
			ļ				ļ				.[]				[<u>.</u>
					.						<u> </u>	Bae		Sample	Sample
												grq	1	Reading	Minus
	\							ļ			!	с. д	.s.	c.p.s.	Back-
			ļ				ļ!		ļl						ground.
		<u> </u>				<u> </u>		ļ			.				
0	2	2			9566	83	32	58	22	4	22	Limonitic sandstone, limonitic red shale and limonitic	, ,	1	[
		<u></u>		···· [ļ .		quartz, surface rubble and shale?	68	95	27
					i				ļ	ļ					f · ····· ·
,								ļ	ļ!	ļ					
2	4	2			9567	32	36	56	20	x	30	Red siltstone, quartz and white porcellaneous carbonate.	65	112	47
													, ,	· /	ĺ
		1			25.00	ma		64	1 na	ļ	4.4	C	ne.	140	65
4	6	2			9568	73	30	64	24	2	44	Orange sericitic clay, red to orange silty shale and quartz.	75	140	65
	<u> </u>									ļ			إ!		.
6	8	2]	ļ	9569	67	28	60	24	2	44	Red to orange sericitic clay, red to orange clayey siltstone	l		<u> </u>
				1							1	(phyllitic?) and minor quartz.	80	155	75
									ļi	ļ			i		
	.				ļ		. 	ļ							
8	10	2			9570	71	34	66	28	2	54	As above with white clay.	75	150	78
										İ			i '		l
								1	1	1	1			(K-Th-U	
10	12	2			9571	121	34	76	28	X	70	As for 8 - 10m.	100	215(Th-U	
	.]								ļ	ļ			 	(Th	2)
				, j									İ		1
12	14	2			9572	42	22	50	18	4	36	Orange to yellow clay with small chips of clayey siltstone			-
			-				ļ					and sericitic quartzite.	95	132	37
										ļ			ļ		
				1!			-			L					
.,		•	1											1	
Drillod	$\frac{1}{2}$ Afra	ac Drilli	.l .ng	لبــــــــــــــــــــــــــــــــــــ	Les of Di	-illina	R	$\frac{1}{\text{ot/P}}$	erc.	L	- Stac	ted 14.8.76 Date Completed 14.8.76 Depth of Hole 50m ff. Record	d Com	pleted \.\\	W
			nt									Core Recovery % NO. OF HOLE BDH			
Loggea	ру . М		<u>251</u> 2				*	515 TO 15	ال	IXIL	. 0. 0.	O1.01		77 South	

Co-ords. of Collar Approx. 3510 E/ 17840 N

Bearing Inclination Vertical LOCATION Anomaly 77 South.

											FIELD DRILL RECORD			
From	To	Sample	Recovery	Sample			Assa	ys (p	pm)		Geological Log	Angle to core	Estimated Grade	
		Length	%	ESR	$\frac{170}{100}$	Cu	Ni_	Co	Pb	Zn.				
Met	res	Metres		ESK							· •			
14	16	2		9573	33	14	42	18	6	3.6	Pale yellow sericitic clay with small chips of sericitic quartzite.	94	115	21
							• • • • • • • • • • • • • • • • • • •							
10	10	2		9574	34	20	50	18	2	40	As above plus chips of pale green phyllite.	80	105	25
16	18			3314	37	20		1	<u>-</u>					
					ļ									
18	20	2		9575	66	46	66	24	2	56	Pale yellow sericitic clay with green chloritic phyllite and	55	75	20
					<u> </u>		<u></u>				sericitic arkosic chips, (small).	55	10	20
								•			·			
	0.0			9576	46	50	62	18	10	48	Yellow clayey sludge with sericitic, arkosic, quartzite			
20	22	2		93.10	7.7		"-		1.5.		fragments.	62	66	4
					-]		
						ļ			ļ					
22	24	2		9577			ļ		ļ		As above.	78	70	-8
							,,							
24	26	2		9578					l		As above with quartz and pale silty phyllite.	70	68	-2
26	28	2	1	9579	4	14	54	12	6	20	Quartzite, sericitic arkosic quartzite and large number of		•	
20	20		····	100.0		 -	1		1		quartz fragments.	72	62	-10
									ļ					
								ļ						
28	30	2		9580		16	18	10	4	28	Sericitic, arkosic, quartzite and quartz with very minor	82	58	-24
				1	ļ			<u> </u>	<u> </u>		green shale fragments.	84	90	-24
					1]		
				9581		12	40	14	4	12	As above.	90	60	-30
30	32	2		9501	.	12	1 70	1 - 1	1		As above.			
			 				.		ļ		a little substitute and anover			
32	34	2		9582	11	14	16	16	X	12	Quartzite, sericitic, arkosic, quartzite, quartz and grey fine grained banded quartzite.	88	80	-8
						<u> </u>					The gramed banded quartzhe.	"		
						<u>L</u>				<u> </u>			<u> </u>	<u> </u>
Drilled	y Afra	acDrilli		Type of D	rilling	Ro	t/Pe	rc			ted 14.8.76 Date Completed 14.8.76 Depth of Hole 50m. ft. Reco	d Comp	eleted 9.1	.w.
Logged	hy J.H	. Wrigh	nt	Sampled b	γ	M. K	Cilke	lly	R.L	of C	ollar		77 South.	
Co-ords.	of Collar	Appr	ox, 3510	E/ 1784	10 N					Beari	ing Inclination Vertical LOCATION Ano	mary	i poulli	

NORANDA AUSTRALIA LIMITED CICIA NOLLI RECORN

												FIELD DRILL RECORD			
From	То	Sample	Recover	y	Sample			Ass		(ppn	1)	Geological Log	Angle	Estimated	T
11011		Length		970	No.		Cu	Ni	Co	Pb	Zn	oppositor Fox	to core	Grade	<u> </u>
Met	res	Metres			ESR	3 8									
34	36	2			9583							As above, very minor buff phyllite.	88	68	-20
									ļ						
36	38	2		ļ	9584	ļ					ļ	Quartzite, sericitic, arkosic, quartzite, fine grained grey quartzite and buff to pale green phyllite.	50	45	-5
•				ļ			<u>.</u>		ļ	ļ	ļ	quartizite and built to pare green physice.		10	
38	40	2			9585	3	12	30	19	4	12	As above but very little of the grey quartzite.	50	45	-5
30	1 40				3300		. 12	30	1-2	T	12	ins above but very little of the grey quarteries.			
40	42	2			9586							Pale green chloritic phyllite, sericitic, arkosic, quartzite,			
												quartzite and quartz.	58	45	-13
				-	0.00	ļ	*							: 	
42	44	2			9587				ļ			As above.	60	51	-9
44	46	2			9588	5	76	56	28	14	54	Green chloritic phyllite and quartz, with very minor hard,			
				ļ		ļ						black siltstone &fine grained sandstone.	66	52	-14
46	48	2			9589						ļ	Green chloritic phyllite and quartz.	72	60	-12
											ļ				
48	50	2		-	9590	5	170	80	40	18	70	Green chloritic and dark grey phyllites and quartz with minor massive chlorite rock (phyllite still?)	90	70	-20
												minor massive emorne rock (phymice sem :)	"		-20
				1				 				End of Hole.			:
											İ	End of Hore.			
			ļ												
				-			ļ		ļ	ļ					
	<u> </u>	<u> </u>	<u></u>	<u></u>	1	<u>L</u>	<u> </u>	,		<u> </u>	<u> </u>		لــــــــــــــــــــــــــــــــــــــ		<u> </u>

Drilled by Afrac Drilling Type of Drilling Rot/Perc Date Started 14.8.76 Date Completed 14.8.76 Depth of Hole 50m ft. Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 40 Co-ords. of Collar Approx. 3510 E/ 17840 N

Bearing Inclination Vertical LOCATION

Record Completed

Anomaly 77 South.

												FIELD DRILL RECORD			
From	To	Sample Length	Recover	ry %	Sample No.	<u> </u>	1	Ass	ays			Geological ≟og	Angle to core	Estimated Grade	
	ļ	Length		+~	1101	 	 								· · · · · · · · · · · · · · · · · · ·
		<u> </u>										Drilling Record: $0 - 32$ m $6\frac{1}{2}$ Mission Cross Hamme	<u> </u>		
•												$0-30$ m $6\frac{3}{4}$ ll Rotary Rock Bit (ream	ing)		
		· [· · · · · · · · · · · · · · · · · ·	1									$32-50 ext{m}$ $5rac{ ilde{1}}{2}$ Mega Cross Hammer.			
				+											
									<u> </u>			G-11			
			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		1	.						Casing Record: Collar piece - recovered. 28metres of 6" casing - recovered.	,		
				1					. ,.,			20 metres of 0 casing - recovered.			
															1
		1										Water Record: Depth: 20m		,	
		ļ										Flow: 5,000 to 10,000 gal/hr.			
										ļ	ļ				
		<u> </u>						<u>.</u>							
					1								ļ	<u> </u>	
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	1				1										
	.						†			1	1		1		
	. 4.0		111			1	I B	 	arc	<u> </u>		ted 14.8.76 Date Completed 14.8.76 Depth of Hole 50m #. Reco	d Com	Distant 4 1	
Drilled	byAIX	ac Dru	uing	اا	iype of D	rilling Th	T. IX	ilkel	lv	Dat	e otar	collar Core Recovery % NO. OF HOLE	I - 40	pleted	ļui V S4. das samas
Logged	by J.H	giayy Ammr	11t 95					ente Mit	÷.J	. A.L	, of C	toolination Vertical LOCATION And	mals	777 South.	

Bearing

Co-ords, of Collar Approx. 3510 E/ 17840 N

LOCATION

Anomaly 77 South,

												FIELD DRILL RECORD			·
From	To	Sample	Recover	<u> </u>	Sample No.	77.7	<u> </u>	Ass		(ppn	1)	Geological Log	Angle to core	Estimated Grade	
		Length		%		ហ្វូប	Cu	N1	Co	PD	211		to core		
Me	tres	Metres			ESR									Instrumen Spectrome	
						•								GIS -3 No.	
		,.,.,.,.,													
												Bac		Sample	Sample
												grou		Reading	Minus
				1			**********					c.p.	S	c.p.s.	Back-
															ground.
	_													0.4	•
0	2	2			9591	1	8	26	6	X	6	Pale yellow sandy clay, quartzite and quartz.	33	34	1
2	4	2			9592	4	8	10	6	X	12	Very coarse grained, conglomeratic, sandstone with	26	33	7
												sheared sericitic portions.	20	. JJ .	
4	6	2			9593	7	14	26	14	10	20	Pale greeny grey, crenulated, phyllitic shale, quartz			
												boulders from the conglomerate of 2-4m, and quartz.	25	50	25
										-					
					0504	1	14	5.A	12	4	20	As above with phyllitic shales, partly limonitic.	28	37	9
6	8	2		·	9594	. '1	14	34	14	-41	40	As above with phyllicic shares, partly inholicic.	20		J.,
					 		ļ					1 1 15:11			
8	10	2			9595	8	24	74	26	4	48	Orange sericitic clay with greeny to pale brown phyllitic	26	28	2
. ,												shale and quartz.	20	40	
10	12	2			9596	5	68	80	28	4	50	As above plus minor chips black to brown quartzite.	28	30	2
													:		
12	14	2			9597	17	66	80	28	10	50	As for 10-12m, quartzite has minor sericite.	27	32	. 5
			<u> </u>				1 .7.5								
14	16	2		·	9598			ļ				Pale buff sericitic clay and fragments of sericitic quartzite			
14	1.0	4		-	9990	1						plus minor shale and quartz.	28	31	3
						ļ	ļ				ļ				
	<u></u>	<u> </u>	<u> </u>		<u> </u>	<u> </u>		<u> </u>	<u> </u>	<u> </u>	<u>l</u>	10.0.70		1	
	-	e Drill	-									ed 16.3.76 Date Completed 16.8.76 Depth of Hole 60m /t. Record	Comp	pleted 9.18	1797
		. Wrigh Appro										77		777 South	
Co-ards.	of Collar	whhre	റയ്ത്തി	9 4	41. 4.163	Y		45.64.5			Beari	ng Inclination Vertical LOCATION And		and the state of t	

											•	FIELD DRILL RECORD			
From	То	Sample Length	Recover	γ %	Sample No.	U, O,	Cu		ys (i Co	ppm Pb	Zn	Geological Log	Angle to core	Estimated Grade	
Me	res	Metres		1	ESR	3 8									
16	18	2		ļ	9599	•						Pale yellow, sericitic, arkosic?, sandstone, grey phyllitic	2.0		. 0
10	+			-								shale and quartz.	29	32	3
	. 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1					İ									
18	20	2		1	9600							As above.	30	36	6
10	20			·	1				1						
20	22	2		· · · · · ·	9601							As above.	32	3.9	7
20				·					ļ						
22	24	2		·	9602	17	26	30	14	x	40	As above.	32	43	11
44	44	4			3002	1.5.			ļ						
24	26	2			9603	12	34	38	14	16	46	As above - note: pale greeny phyllitic shale occurs as thin			
- 24					5000							bands and structually disconnected blebs within yellow		47	15
				·				ļ				coarse grained, arkosic?, sandstone.	3.2		
					9604	ļ						Fine grained, yellow to brown quartzite with pale green			
26	28	2			9004				·			phyllitic shale and quartz. (Note, quartzite is banded and		~~	
						ļ				ļ		may be cross bedded).	29	32	3
				·	0005				-		łi	As above but very minor shale with minor sericitic			
28	30	2			9605		ļ					sandstone.	30	30	0
	•							1							
						_	10	40			20	Yellow fine grained quartzite, sheared sericitic, arkosic?,			
3.0	32	2			9606	8	16	48	8	6	40	sandstone, pale grey, spotted (manganese?), phyllitic			
	ļ						ļ			ļ		shale and quartz.	30	25	-5
			<u></u>				ļ	ļ		ļ	ļ				
•			i			ļ			ļ			Coarse to fine grained sericitic, arkosic?, sandstone,			
32	34	2			9607		ļ					(sandstone pores are stained yellow with limonite-sulphide)		
												minor white to pale green sericitic phyllite and quartz.	3.0	28	-2
							ļ		-				29	25	-4
34	36	2	<u> </u>		9608	<u></u>	15	 >+7D	ore	<u></u>	<u></u>	As above.		i	1
Drilled b	•	ac Drill			ype of Di	riiling Tot	r.c Kil	الامال:	ere.	Dat	e Start	Allow (Ora Recovery % NO. DE HULE	-		
Logged	Dy J.L	I. Wrigl		3	rampred by	Y ,¥¥3 ∗ -1 Ω - 16 π.	12.41	iensent,	J	N.L	. 0; (Vertical Anor	naly	77 South.	

Bearing Inclination

Co-ords. of Collar Approx. 3578 E/ 17840 N

Vertical

LOCATION ...

Anomaly 77 South.

												FIELD DRILL RECORD			
From	То	Sample	Recover		Sample			Assa	ys (t	pm)		Geological Log	Angle to core	Estimated Grade	
		L.ength		%		$\Pi^{\mathcal{Q}}$	C _{II}	Ni	Co.	Pb_	Zn		to core	Grade	
Me	tres	Metres			ESR	,	[,				•			·
36	38	2			9609	·6	16	32	8	10	22	As above.	29	29	0
						· · · · · · · · · · · · · · · · · · ·									
					0010		,				· · · · · ·	As above plus quartzite.	29	29	0
38	40	2		ļ	9610							As above plus quartizate.			
	<u> </u>			1											
40	42	2			9611	Į						As for 32-34m.	28	26	-2
				1											
				·									0.1	28	-3
42	44	2			9612	5	12	30	10	14	24	As for 38-40m.	31	48	-3
				<u> </u>											
44	46	2		1 1	9613	ı						As for 38-40m, plus quartz fragments, possibly			
						1				1		conglomerate cobbles?	30	27	-3
	}						ļ								
· · · · · · · · · · · · · · · · · · ·				ļ ļ			ļ								
46	48	2			9614							As for 32-34m, greatly increased pale green phyllitic			ļ
•				1								shale.	30	30	0
										ļ		A . C	25	25	0
48	50	2		.	9615	ļ _.				}	ļ	As for 46-48m.	4.0	a.	· · · · · · · · · · · · · · · · · · ·
						[ļ							·	
50	52	2			9616	8	14	18	8	18	20	Pale green, crenulated phyllitic shale, with quartzite			
							1					and coarse grained chloritic, arkosic,quartzite (alternate			1
	l			-					1			hard/soft bands).	33	37	4
						ļ									
			[ļ	ļ	,				
52	54	2			9617		14	34	10	26	24	Pale green, crenulated, manganese spotted, phyllitic shale,			
						1		ļ				sericitic sandstone, quartz and minor quartzite, (hard/soft	.,,	3.7	1
			l									bands).	3.6	:	J
	ļ				0010	ļ						Pale green, crenulated, phyllitic shale, pale greenish to	ļ		
54	56	2			9618	ļ	12	40	10	20	20	white quartzite with green chloritic specks and minor pyrite			
											1	and minor dark grey phyllite, grey to white dolomite & quar	9		
		1	1									and initiof dark grey physitic, grey to write defermine a quar-	30	32	2
Drilled	Afr	ac Drill	ing	—— Т	vne of Da	illina	Ro	t/Pe	rc	Dat	e Stari	red 16.8.76 Date Completed 16.8.76 Depth of Hole 60m /t. Recor	d Comp	leted 4,4	
		I. Wrigh		S	ampled by	, M.	, Kil	kelly	y			Core Recovery % NO. OF HOLE BUT			
Coard	of Caller	Appr	ox. 35	78 I	$\mathbb{E}/ 1784$	40 N			••••••		Reari	ng inclination Vertical LOCATION Ano	maly	77 South.	
Co-ords.	, or Corrac	t tree	· · · · · · · · · · · · · · · · · · ·	: :							Dearl	ng			,,

		•										FIELD DRILL RECORD			
From	То	Sample	Recover	ry .	Sample			Ass	ays (p	pm)		Geological Log	Angle	Estimated	
1 10111		Length		%		U,O	Cu	Ni	Co	Pb	Zn		to core	Grade	
Met:	res	Metres			ESR		1					•			
56	58	2			9619					1		Pale green to green to dark grey, chloritic phyllite with			
υo		- 4			1 0010		 		ļ			minor quartz and quartzite.	33	31	-2
	:					ļ		ļ	ļ	ļ					
]		1			ļ	ļ							
58	60	2			9620	4	40	60	32	26	88	Dark green to black (slightly graphitic), crenulated		•	-
				1		1	1					phyllite.	33	31	-2
						!	ļ								
						ļ		ļ. .							
						1	1	<u> </u>	<u>.</u>	<u></u>		End of Hole.			
													1		
****** ******** ********			,,,.,.,	-								Drilling Record: $0 - 1m = 8\frac{3}{4}$ " Rotary Blade Bit.			
										ł		$1 - 37$ m $6\frac{1}{2}$ Mission Cross Hammer			
***************************************						,				ļ		0 - 37m $6\frac{3}{4}$ Rotary Rock Bit (Reami	ng).		
					i	l	l			l		$0 - 60 \text{m}$ $5\frac{1}{2}$ " Mega Cross Hammer.	J.		
			,					1-140114474				0.11			
												Casing Record: Collar piece - recovered.			
												36m of 6" casing - recovered.			
		1						į							
				1		Ī						Water Record: Depth: 14m			
						· · · · · · · · · · · · · · · · · · ·						Flow: 5,000 to 10,000 gal/hr.			
	.					ł		ļ	ļ	ļ		12011 1 0, 000 00 - 1, 000 00 - 1		ii	
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	1			Ì		1									
								Ī				PETROLOGY: ESR 9618 Report No. 2839			
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		ac Drill		T	ype of Dr	rilling	Ro	t/Pe	rc.	Date	e Start	ed 16.8.76 Date Completed 16.8.76 Depth of Hole 60m /t. Record	Comp	leted 1. A	11
. Logged	by J.H	. Wrigh	nt	Si	ampled by	/N	1. K	ilkel	lу	R.L	of Co	Ollar Core Recovery % NO. OF HOLE BDH	- 4i	77 South	·

Bearing Inclination Vertical

Co-ords, of Collar Approx. 3578 E/ 17840 N

Anomaly 77 South.

LOCATION .

												FIELD DRILL RECORD			
From	To	Sample Length	Recovery		mple No.	ຫຼວ	Cu	Ass: Ni	ys () Co	ppm Pb	Zn	Geological Log	Angle to core	Estimated Grade	
Met	res	Metres		E5		3-8								Instrumen	t:
														Spectrome	d and the control to the control of
														GIS-3 No.	
							 :					Bac		Sample	Sample
		ļ										grou		Reading	Minus
											ļ	c.p.		c.p.s.	Back-
						***************************************								~.p.~.	ground.
0	2	2		96	21	11	10	30	16	14	14	Red to pale brown to grey phyllitic shale plus quartzite			
<u>V</u>		2		- "				30				and quartz rubble.	35	40	5
														,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
2	4	2		96	322	25	20	44	20	4	26	Pale orange to buff sericitic clay, weathered phyllitic			
												shale, hard, brown , limonitic phyllite and minor quartz.	34	46	12
		_							00			Dilitary and application along with minor limonities			
4	6	2		96	323	51	34	60	22	4	38	Bright orange/red sericitic clay with minor limonitic phyllite fragments.	40	67	27
												·			
6	8	2		96	624	72	44	64	22	4	46	As above plus grey clay and very minor sand particles.	43	110	67
													41	158	117
8	10	2		96	325	117	66	66	20	2	52	As for 6-8m.	41	130	111
10	12	2		90	626	165	58	58	20	2	46	Bright orange/red sericitic clay with fragments of phyllitic			
		<u> </u>										shale and sericitic siltstone (both limonitic).	54	176	122
12	14	2		9(627	106	56	74	24	x	46	As above.	70	148	78
			<u> </u>												
						l					1		} 	Ν.	
Drilled l		ac Drill		Туре							e Start	ed 17.8.76 Date Completed 17.8.76 Depth of Hole 27m #. Record			W.

Co-ords, of Collar Approx. 3522 E/ 17840 N

Logged by J.H. Wright Sampled by M.Kilkelly R.L. of Collar

Bearing

Core Recovery % NO. OF HOLE
Inclination Vertical LOCATION

BDH - 42

Anomaly 77 South.

•												FIELD DRILL RECORD			
From	То	Sample:	Recovery	/ %	Sample No.	UΟ	Cu			pm) Pb	Zn	Geological Log	Angle to core	Estimated Grade	
Met	res	Metres			ESR	3 8	Cu	7.41	00	, ,	7-111				
14	16	2			9628	38	38	46	18	6	38	Pale orange to buff sericitic clay with fragments of phyllitic shale (grey to red) and minor hard phyllitic siltstone.	51	104	53
16	18	2			9629	46	36	44	16	10	38	Pale greeny buff sericitic clay with sericitic sandstone			O.F.
										ļ <u>.</u>		and grey phyllitic shale fragments.	53	90	37
18	20	2			9630	75	44	46	16	10	40	As above but very minor shale.	50	101	51
	9.0				9631	54	44	44	16	10	40	Pale yellow to buff sericitic clay with fragments of			
20	22	2			9031	34	77	-11	10	10	70	sericitic sandstone and quartz with minor fragments of pale grey phyllitic shale.	30	53	23
			•••••				ļ					pare groy physiciae braze.			
22	24	2			9632	21	44	42	14	10	40	Aș above.	40	68	28
24	26	2			9633	31	48	46	10	8	36	As above.	40	55	15
26	27	1			9634	29	32	20	10	10	30	As above, plus minor hard quartzite.	49	50	1
												End of Hole.		•	
												Drilling Record: $0 - 27 \text{m}$ $6\frac{1}{2}$ Mission Cross Hammer			
												Casing Record: Collar piece - recovered.			
						<u>.</u>						Water Record: Depth: 20m Flow: 500 to 1,000 gal/hr.			
		ac Drill I. Wrig	_									Ollar % NO. OF HOLE BDH	- 42	leted \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	

Co-ords, of Collar Approx. 3522 E/ 17840 N Bearing Inclination Vertical

Anomaly 77 South.

LOCATION

ground Reading Minus 0 2 2 9665 9 38 52 30 76 100 Pale-yellow silty material with fragments of ferruginized quartzite, ferruginized at rubble). Red silty clay with fragments of quartz and red ferruginous sandstone. 39 48 9 Red silty clay with fragments of quartz, quartzite and hard dark brown limonite. 4 6 2 9667 Pink to white clay with fragments of quartz, fine grained quartzite and hard dark brown limonite. 5 8 42 9668 6 Pink to white clay with fragments of quartz, fine grained quartzite and hard dark brown limonite. 6 8 2 9668 8 70 80 24 260 580 Grey to yellow to red mottled clay with slightly limonitic sandstone, quartz, dark brown limonitic jasper and red platey textured clay - decomposed bedrock? 8 10 2 9669 Pink to white pale grey to yellow to red clay. 8 30 -8 Mottled pale grey to yellow to red clay. 3 30 -6 As above with quartz fragments. 3 6 30 -6 As above with quartz fragments. 3 6 30 -6 Doi:10d by Afrac Drilling Type of Drilling Rof/Perc. Date Started 19, 8, 76 Date Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Lord Recovery 9, 5, 80, 06 Hole 50 Hill + 38 Hilled By H. Wilkelly R. (cf Collar Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Comeletts (A) whilely Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Congleted 19, 8, 76 Depth of Hole 30 mm. At Record Co													FIELD DRILL RECORD			
Metres	From	То			%		ПО	Cul					Geological Log	٠ ١		
Spectrometer Spec	Me	tres	 	;				Cu	111							-
Back-ground Back-ground Back-ground Back-ground Reading Minus Back-ground Reading Minus Back-ground Reading Minus Back-ground Reading Minus Back-ground Reading Minus Back-ground Reading Minus Back-ground Reading Minus Back-ground Reading Read																
ground Reading Minus c f s. C.p.s. Back- ground 0 2 2 9 9665 9 38 52 30 76 100 Pale-yellow silty material with fragments of ferruginized quartzite, ferruginized arkose, arkose and quartz, (surface rubble). Red silty clay with fragments of quartz and red ferruginous sandstone. 39 48 9 2 4 2 9666															GIS-3-No	208-198.
0 2 2 9665 9 38 52 30 76 100 Pale-yellow silty material with fragments of ferruginized quarticite, ferruginized arkose, arkose and quartz, (surface rubble). Red silty clay with fragments of quartz and red ferruginous sandstone. 39 48 9.													Вас	k-		Sample
ground 0 2 2 9 9665 9 38 52 30 76 100 Pale yellow silty material with fragments of ferruginized quarticite, ferruginized arkose, arkose and quartz, (surface rubble). 1 9665 9 38 52 30 76 100 Pale yellow silty material with fragments of ferruginized quartz, (surface rubble). 1 9665 9 38 52 30 76 100 Pale yellow silty material with fragments of quartz, (surface rubble). 1 9665 9 38 9 52 30 76 100 Pale yellow silty material with fragments of quartz and red ferruginous sandstone. 39 48 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9													gro	und		
9665 9 38 52 30 76 100 Pale vellow silty material with fragments of ferruginized quartzite, ferruginized arkose, arkose and quartz, (surface rubble). Red silty clay with fragments of quartz and red ferruginous sandstone. Red silty clay with fragments of quartz, quartzite and hard dark brown limonite. 39 48 9. Red silty clay with fragments of quartz, quartzite and hard dark brown limonite. 9667 Pink to white clay with fragments of quartz, fine grained quartzite and hard dark brown limonite. 97 9668 8 70 80 24 260 580 Grey to yellow to red mottled clay with slightly limonitic sandstone, quartz, dark brown limonitic jasper and red platey textured clay - decomposed bedrock? 8 10 2 9669 Mottled pale grey to yellow to red clay. 8 10 12 9669 Mottled pale grey to yellow to red clay. 8 30 -6 Mottled pale grey to yellow to red clay. 8 30 -6 10 12 2 9670 As above with quartz fragments. 96 30 -6 As above with quartz fragments. 97 80 0 FMOLE BIDLY 43 According to the plant of the source of the plant of the source of the plant of the source of the plant of the source of the plant of the source of the plant of the source of the plant of the source of the plant of the source of the plant of the source of the plant of the source of the plant of the source of the source of the plant of the plant of the plant of the source of the plant of the source of the plant of the plant of the plant of the plant of the plant of the plant of the plant of the plant of the plant of the plant of the plant of the plant of the pl								· · · · · · · · · · · · · · · · · · ·				······································	c. I	.s.	c.p.s.	
Quartetite, ferruginized arkose, arkose and quartz, (surface rubble). Quartetite, ferruginized arkose, arkose and quartz, (surface rubble). Red silty clay with fragments of quartz and red ferruginous sandstone. 39 48 9. 48 42 4 48 49 49 49 49 49 49		***************************************														ground.
Quartite, ferruginized arkose, arkose and quartz, (surface rubble). Quartite, ferruginized arkose, arkose and quartz, (surface rubble). Red silty clay with fragments of quartz and red ferruginous sandstone. 39 48 9. 48 42 4 48 49 49 49 49 49 49	n	9	ŋ			9665	a	38	52	30	76	100	Pale-vellow silty material with fragments of ferruginized			
2 4 2 9666 Red silty clay with fragments of quartz, quartzite and hard dark brown limonite. 38 42 4 4 4 4 4 4 4 4		4					······ •						quartzite, ferruginized arkose, arkose and quartz, (surface			
2 4 2 9666										· · · · · · · · · · · · · · · · · · ·		·····	rubble).			
2 4 2 9666																
dark brown limonite. 38 42 4	,	1-1411-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	•										sandstone.	39	4.8	9
dark brown limonite. 38 42 4	Ω		n			0666							Red silty clay with fragments of quartz, quartzite and hard		я ,	
Coreged by J. H. Wright Sampled by M. Kilkelly. R.L. of Collar Quartzite and hard dark brown limonite. 39 38 -1	4		<u>4</u>			3000		*********			*********			38	42	4
	4	6	2			9667				***********			Pink to white clay with fragments of quartz, fine grained			
sandstone, quartz, dark brown limonitic jasper and red platey textured clay - decomposed bedrock? 8 10 2 9669													quartzite and hard dark brown limonite.	39	38	-1
sandstone, quartz, dark brown limonitic jasper and red platey textured clay - decomposed bedrock? 8 10 2 9669																
B 10 2 9669 Mottled pale grey to yellow to red clay. 38 36 -2	6	8	2			9668	8	70	80	24	260	580				
8 10 2 9669							.			.411 115171		<u> </u>	sandstone, quartz, dark brown limonitic jasper and red	- 0	66	3
10 12 2 9670 As above with quartz fragments. 36 30 -6 12 14 2 9671 5 40 44 12 50 260 Pale green to white sticky clay and possibly weathered doler te. Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 19.8.76 Date Completed 19.8.76 Depth of Hole 30m ft. Record Completed Logged by J. H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery 70 NO. OF HOLE BDH - 43												,	platey textured clay - decomposed bedrock?	30	30	
10 12 2 9670 As above with quartz fragments. 36 30 -6 12 14 2 9671 5 40 44 12 50 260 Pale green to white sticky clay and possibly weathered doler te. Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 19.8.76 Date Completed 19.8.76 Depth of Hole 30m ft. Record Completed Logged by J. H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery 70 NO. OF HOLE BDH - 43														20	20	0
10 12 2 9670 33 28 -5 12 14 2 9671 5 40 44 12 50 260 Pale green to white sticky clay and possibly weathered doler te. Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 19.8.76 Date Completed 19.8.76 Depth of Hole 30m 4. Record Complet	8	10	2			9669				ļ			Mottled pale grey to yellow to red clay.	38	30	-0
12 14 2 9671 5 40 44 12 50 260 Pale green to white sticky clay and possibly weathered doler te. Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 19.8.76 Date Completed 19.8.76 Depth of Hole 30m ft. Record Completed 19.8.76 Depth of Hole 30m f	10	19	,			9670							As above with quartz fragments.	3 6	30	-6
12 14 2 9671 5 40 44 12 50 260 Pale green to white sticky clay and possibly weathered doler te. Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 19.8.76 Date Completed 19.8.76 Depth of Hole 30m ft. Record Completed 19.8.76 Depth of Hole 30m f	10	1 10			ļ ļ	""		<u> </u>	<u>.</u>		····			33	20	5
Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 19.8.76 Date Completed 19.8.76 Depth of Hole 30m %. Record Completed 3.4 W. Logged by J. H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 43							5	40	44	12	50	260	Pale green to white sticky clay and possibly weathered doler	te.		
Logged by J. H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery 8 NO. OF HOLE BIRTHER AND ADDRESS TO A DESCRIPTION AND ADDRESS TO A DESCRIPTION OF THE PROPERTY OF	Drilled	ov Afra	ac Drill	ing	T	ype of Dr	illing	Rot	/Per	cc.	Dat	e Start	ed 19.8.76 Date Completed 19.8.76 Depth of Hole 30m #c. Recor	d Com	pleted 3.4	W
1 295 True Annroy 83 Annroy 85 B500 E/5500 N Anomaly.	Logged	by J.H.	Wright	t	Sa	ampled by	/M	Ki	lkell	у	R.L	, of C	Ollar Core Recovery % NO. OF HOLE BDH			
Co-ords, of Collar Approx. 8616 E/ 5717 N Bearing 225 True Inclination Approx. 83 LOCATION 8500 E/5500 N Anomaly.	Corards	of Callar	Appro	x. 8616	E	/ 5717	N					Beari	ng 225 True Inclination Approx. 83 LOCATION 8500	E/5	DUU N Ano	mary.

												FIELD DRILL RECORD			
From	To	Sample Length	Recovery	%	Sample No.	TT (A)	Cu	Assa	ys (I	pm		Geological Log	Angle to core	Estimated Grade	
M e	tres	Metres			ESR	3 8	Cu	N1	Co	PD	211	•			
14	16	2			9672							Pale to dark green mottled clay with fragments of hard			
	1	1										fine grained quartzite and pale grey decomposed feldspathic			
	ļ											rock.	36	30	-6
i											· · · · · · · · · · · · · · · · · · ·				
16	18	2			9673							As above plus sheared green decomposed feldspathic rock.	34	28	-6
18	20	2			9674	6	26	30	12	14	140	Pale green to yellow clay with fragments as for 14-16m.	36	29	-7
10	20	-			3017	<u>v</u>	20	30	-4		110	Tale green to yellow clay with fragments as ion 21 1000.			
20	22	2			9675							Greeny yellow clay with fragments of manganese spotted			
		1 -										decomposed clayey, partly chloritic, phyllite, quartz and			
										•		green massive claystone.	35	30	-5
														a'	
22	24	2			9676							Green spotted, decomposed and clayey, phyllite, hard grey			
												to yellow fine grained quartzite? decomposed dolerite,			
												green claystone and quartz.	34	32	-2
0.4					9677	6	60	36	32	50	300	Black to dark brown iron stained dolerite with fragments of			
24	26	2			9011	<u>'</u>	00	30	34	30	300	decomposed clayey dolerite, claystone, quartzite, quartz			
.,					· · · · · · · · · · · · · · · · · · ·							and limonitic jasper.	32	32	1 0
		:													
		2			9678		38	CO	38	29	290	Dark green dolerite with pyrite dissemination and thin			
26	28				9010		30	00	30	34	230	quartz pyrite veining, other chips as per 24-26m.	32	28	-4
				ļ				·•••••				, and the second			
							ļ								
28	30	2		ļ	9679				.,		ļ	Dark green dolerite with pyrite dissemination and thin veining, very fine grained dolerite (" chilled margin") and	ļ		
			<u> </u>							,		above hole contamination . (note some fine grained decomp-			
			.		<u> </u>		<u></u>	<u></u>				osed clavey rock possibly decomposed fine grained			<u> </u>
Drilled		ac Drill								Date	Star	ted $19.8.76$ Date Completed $19.8.76$ Depth of Hole 30 m ft. Reco	d Comp		
Logged	by J.I	I. Wrigh	nt 00	Sa	empled by	, M.	Kil	kelly		R.L.	of C	olidi a	I - 43	5500 N Ar	nomalv
Co-ords	of Colla	, Appr	ox, go	īρ	E/ 571	ı i N					Beari	ing 425 Trite Inclination Approx. 65 LOCATION 650	· 11/	2000 IA WI	

												FIELD DRILL RECORD			
From	то	Sample	Recove		Sample			Ass	ays (ppm)	Geological Log	Angle	Estimated Grade	
		Length		%		U ₃ O ₂	Cu	Ni	Co	Pb	Zn		to core	Grade	
Met	res	Metres			ESR]			<u> </u>		•			
28	30	2			9679					ļ		chilled margin type dolerite).	34	31	-3
					(cont')		l				<u> </u>				
						l						End of Hole			•
				1			İ								
						ļ	ļ				ļ				
]		ļ	ļ			Drilling Record: $0 - 30$ m $6\frac{1}{2}$ " Mission Cross Hammer			
			İ	<u> </u>		<u> </u>		ļ							
												Casing Record: Collar piece - recovered.			
							ļ					Water Record: Depth: 19m			
.,,,.		ļ				ļ	ļ			ļ. .		Flow: 1,000 to 2,000 gal/hr.	ļ		
		1						<u>.</u>	ļ	ļ					
						1									
			•												
*						·····		ļ	!		-	PETROLOGY: ESR 9679 Report No. 2839		***************************************	
	 											PEIROBOGI: ESR 3013 Report No. 2033	ļ <u>i</u>		
						· · · · · · · · · · · · · · · · · · ·		ļ		ļ	ļ				
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	<u></u>	1	<u> </u>		<u> </u>	<u></u>	Щ.	1/75		Ь		10.0.76		leted \	<u> </u>
Drilled	_{by} Afr	ac Drill	ling	Т	ype of D	rilling	Ro	t/Pe	rc	Dat	e Star		d Comp [_ 43		wi
Logged	by J.H	[. Wrig	nt	S	ampled b	у <u>М</u>	, Ki	ıkell	У	R.L	of C			5500 N An	omaly
-Co-ords	of Collar	Appr	ox. 86	10	E/ 571	7 IN		····			. Bear	ing 220 1Fue Inclination Approx. 63 LOCATION 8500		7,000 14 1111	

		r 2	0		Samula I			A	ys (p	nm I	т	FIELD DRILL RECORD	Angle	Estimated	Τ
From	То	Sample Length	Recovery	%	Sample No.	UO	Cu	Ni	Col	Pb	Zn	Geological Log	to core	Grade	
TVT c	tres	Metres			ESR	3 8	<u> </u>	- 1						Instrumen	1
141		1,101101										The second secon		Spectrom	
							,							GIS-3 No.	208-198
											1			l	i
												Bac	l	Sample	Sample
												gro		Reading	
											,	gro c.p		c,p,s,	Back-
									'			С.р	ъ.	c.p.s.	ground
															groun
											100	a a la la la la la la la la la la la la			
0	2	2			9680	19	56	62	36	210	160				
												quartz fragments, (surface rubble).			
			. 41. 21. 12. 21. 11. 12. 1. 1. 1. 1									Red silty clay with ferruginous sandstone and quartzite	35	45	10
					,			1 - 7 - 1 - 1 - 1 - 1				plus quartz.	.	7.0	1
									ļ						
2	4	2	!	1	9681	15	40	44	36	130	130	Orange silty clay with large angular cobbles of coarse			
												grained arkose and ferruginous arkose plus small chips of			ļ
												quartzite, ferruginous quartzite and quartz.	39	52	13
4	6	2			9682	31	52	62	50	80	240				
				.,,,,,,,,								ferruginous quartzite, quartzite and quartz fragments.	42	55	13
]			ļ]					
						j									
6	8	1 2			9683	1		·				Red sticky clay and grey to white mottled sticky clay plus			
							1					contaminant sandstone fragments from above.	39	41	2
							ł								
		<u>.</u>										Red to yellow to grey to white mottled sticky clay and			
8	10	2		1	9684	1			1			contaminants from top hole and red lateritic sandy clay			
						•							38	44	6
	ļ		. 41 41 41 41 41 41 41 41 41				ł					fragments.			
			ļ	ļ		ļ	ļ		ļ	 .	 				
10	12	2	İ		9685	14	50	72	68	24	450	Grey to pale brown sticky clay.	35	45	10
		1	I	T				[
	·	-		·	·····		·			ļ; ·					
12	14	2			9686		ļ		ļ	ļ		Browny yellow clay with minor small quartz and siliceous	41	38	-3
			1		1							fragments.	L		<u> </u>
Drilled	by Afr	ac Dril	ling	T	ype of Dr	illing	Ro	t/Pe	rc.	Date	Start	ed 19.8.76 Date Completed 19.8.76 Depth of Hole 31m It. Recor	d Com	pleted	M
		I. Wrig								R.L.	of Co	Olfar			
منده د		Appr	OV 860								Reari	ng Inclination Vertical LOCATION 8500) E/	5500 N And	omaly.

Bearing Inclination Vertical

Co-ords, of Collar Approx. 8600 E/ 5700 N

												FIELD DRILL RECORD			
From	То	Sample	Recovery	_	Sample	11-17	, Cu	As sa	ays (I	pm)	75	Geological Log	Angle to core	Estimated Grade	
Mo	tres	Length Metres		%	ESR	3	Cu	1/1	CO	FD	2.111				
												As above, sample not collected consequent of drilling	, 1		
14	16	2		ļ	9687							difficulties, i.e. clay building up in hole - no return.			
								,				difficulties, i.e. cray building up in note - no resurn.			
·											400	TY 13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	40	41	1
16	18	2			9688	13	50	78	80	20	480	Yellow clay with chips of decomposed dolerite.	20		
													<u> </u>		
18	20	2			9689					ļ		Green to yellow clay with large fragments of decomposed	<u> </u>		
												medium to fine grained dolerite.	39	38	-1
				ļ			ļ								
20	22	2			9690					ļ		Greeny to yellow clay with fragments of medium to fine			
						L				<u> </u>		grained dolerite.	40	37	-3
		l								<u> </u>					
22	24	2		1	9691	8	44	64	50	26	400	As above.	40	40	0
						1						•			
24	26	2			9692			,				As above - black joint coating, possibly manganese.	40	42	2
										1				l	
2 6	30	4		· · · · · ·	9693			1				As for 24 - 26m.	45	41	-4
							<u> </u>							1	
30	31	1		-	9694	7	42	42	36	44	280	Decomposed medium to fine grained dolerite and large			
				1					1	1		fragments of pale green, manganese spotted, decomposed			
						ļ	·	ļ			1	phyllite. (contact zone, dolerite/sediment).	38	37	-1
												End of Hole.			
							ļ				ļ				
						ļ	-				ļ	Drilling Record: $0 - 31$ m $6\frac{1}{2}$ Mission Cross Hammer.			
				.		.		ļ				Casing Record: Collar piece - recovered.			
				.			ļ				.	Water Record: Depth: 14m			
	<u></u>		<u> </u>		<u></u>	<u></u>	<u> </u>	<u></u>	<u> </u>		ــــــــــــــــــــــــــــــــــــــ	Flow: less than 500 gal/hr.	d Comp	oleted T.W	<u> </u>
Drilled	by Afi	rac Dril I. Wrigl	ling it	T	ype of Dr	rilting M	Kot и к	/Pe	rc. Nv	Dat	e Stari	ted $19.8.76$ Date Completed $19.8.76$ Depth of Hole $31\mathrm{m}$ ff. Recorbliar Core Recovery % NO. OF HOLE	a Comp 3DH -	- 44 d	
Logged	by Mini	Annr	ov 861				1.1 t 1.3		tit J	N.L		Ulfal comment of the control of the		00N Anoma	ly

Bearing

Co-ords, of Collar Approx. 8600 E/5700 N

Inclination Vertical

LOCATION

												FIELD DRILL RECORD			
From	To	Sample	Recover		Sample	, ,	. 29 !	Assi	ys (ppm		Geological Log	Angle	Estimated	
		Length	<u> </u>	%	No.	$h^3 \Omega^6$	Cu	Ni	Co	Pb	Zn		to care	Grade Instrument	
Met	res	Metres			ESR									Spectrome GIS-3 No.	lér
												Bac gro		Sample Reading	Sample Minus
											l	c.p	s.	c.p.s.	Back- ground
0	2	2			9695	7	52	42	26	80	110	Pale fine grained sand plus ferruginous sandstone, quartz,			
												quartzite, arkose and limonite fragments (surface rubble).			
												Pale pink clayey silt with fragments as above plus chips of			
												grey to white partly banded chert or very fine grained			
												quartzite.	40	42	2
2	4	2			9696	11	104	40	26	290	180	Yellow, clayey, silty sand with fragments of limonitic fine			
												grained quartzite or chert and quartz fragments.	40	46	6
4	6	2			9697					***		Greeny yellow sand with fragments of granular chert/fine			
								**********				grained quartzite?, quartz, sandstone, red clay and			
		· · · · · · · · · · · · · · · · · · ·								•••••		manganese nodules.	42	38	-4
	.414														
6	8	2	;		9698							Green to buff clayey sericitic sand with fragments of quartz,			
					:							phyllite (ferruginized), medium to coarse grained sandstone,			
												red clay and limonite, (jaspery in part).	41	43	2
8	10	2			9699	9	46	38	26	40	130	Yellow to dark (manganese?) greeny brown clay with chips			
												of granular surfaced quartz vein? material, manganese,			
	. 11									***************************************		quartz and possibly sandstone.	38	51	13
10	12	2			9700							Greeny yellow damp clay with fragments of sandstone,			
					İ							phyllitic sandstone and quartz.	42	49	7
		ac Drill			ype of Dr								J Com		N
		[. Wrigl			ampled by			lkell	У			Core Recovery % NO, OF HOLE)H -		
Co-ords.	of Collar	A	prox.	858	$85 \mathrm{E}/50$	6 79 1	<u> </u>				Bearin	ng Inclination Vertical LOCATION 850	UE/	5500 N And	omaly

												FIELD DRILL RECORD			
From	То	Sample Length	Recovery	% S	Sample No.	mor	Cu	As sa		pm) Pb	75	Geological Log	Angle to core	Estimated Grade	
Me	tres	M etre			ESR	~3~0	Cu	IAI	CO.	FU	211	,			
						1 5	38	40	24	20	180	Grand and the second			
12	14	2		9	9701	19	30	40	24	40	100	Greeny yellow damp clay with fragments of sandstone, phyllitic sandstone, quartz, phyllite and limonite.	42	53	11
										************		phymitic sandstone, quartz, phymite and minomite.	74		**
14	16	2		9	702	16	36	64	40	30	250				
					1							vein material with sandy outer texture, quartz, sand grains			
												and limonite.	41	56	15
											1-1.1				
16	18	2			703							Dark brown clay with phyllite, phyllitic sandstone,			
	10				,,,,,							sandstone and quartz fragments. (limonitic phyllite.)	42	49	7

18	20	2	•	9	704	12	44	70	48	34	260				
												phyllite and sandstone plus quartz and quartz grains.	39	51	12
20	22	2	i	c	705							As above.	42	43	1
	20	l		- -	,,,,,,					i		no above,			
22	24	2			706	19	20	84	26	10	220	As above plus friable limonitic and manganiferous? sandsto			
. 44	24			t	2100	19	40	04	30	10	220	As above plus irrable limonitic and manganiterous: sandston	34	52	18
L										ļ]				
)						
24	26	2	l ·	5	9707				-/			Brown clay and friable limonite, spotted sericitic (partly			
												sheared) arkosic, sandstone and quartz.	42	49	7
									ļ	1	,				
26	28	2			9708							As above.	40	49	9
20	40	1 4			0011							As above,	1.49		ļ
													ļļ.		
28	30	2	ļ		9709	15	24	90	28	20	200	1	40	45	5
]]						psammitic schist.	10	4 0	J ,
				-				[1			End of Hole		Α	
Drilled I	y Afra	ac Drill	ing	Тур	e of Dri	illing	Rot	/Per	cc.	Dat	e Start	red 19.8.76 Date Completed 19.8.76 Depth of Hole 30m ft. Recor	d Comp	leted 🛴 🕽	,lD,
Logged	byJ. Н	. Wrigh			pled by		Kil	k.ell	y			ollar Core Recovery % NO. OF HOLE BDH	45.	500 N An	

Co-ords. of Collar Approx. 8585 E/ 5679 N

Bearing Inclination Vertical LOCATION 3500 E/ 5500 N Anomaly.

												FIELD DRILL RECORD			
From	То	Sample	Recover	y	Sample			Assa	ıy s			Geological Log	Angle	Estimated	
rom		Length		%	No.								to core	Grade	
		_										•			
											. ,	D. 111 D		* .	-
				ļi				·				Drilling Record: $0 - 30 \text{m} 6\frac{1}{2}$ Mission Cross Hammer.			
	i		.												
												Casing Record: Collar piece - recovered.			
												D. H. 15			
								· 				Water Record: Depth: 15m			
			ļ	1								Flow: less than 500 gal/hr.			
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	Afra by J.H.	C 15611	ing		جب ا	1	Dot/	Don		T	. C	led 19.8,76 Date Completed 19.8,76 Depth of Hole 30m ft/ Recor	d Com	pleted Q 3A	<u>~~</u>
Drilled b	y Alla	Wrigh	: <u>::</u> :'5	ا	ype of Di	rilling T	nor/ VI. K	ilkel	ы П v	Date	a star	oflar Core Recovery % NO. OF HOLE BDH	- 45	pleted	
Logged b	by S.H.	Anna	OE 0	S	ampled by מימא / ה	yt			::∀	. K.L	. of C		E/	5500 N An	omaly.
Co-ords.	of Collar	Appr	OX. 000	ا دن:	3/ 0018	, 11					Bear	ng Inclination Vertical LOCATION 8500			

FIFI D BRILL RECORD

From	То	Sample	Recover		Sample				ys (p	pm)		Geological Log	Angle	Estimated	
		Length		%	No. 1	၂, ဝ,	Cu	Ni	Co	Pb	Zn		to core	Grade Instrumen	
Me	tres	Metres			ESR									Spectrome GIS-3 No.	ter
												Ba	k- und	Sample Reading	Samp Minus
										-1,-1,		5.]).ຮ.	c.p.s.	Back groun
0	2	2			9710	7	94	60	38	22	106	Pink silty clay with fragments of quartzite, fine grained			
				ļļ								quartzite, quartz and hematitic quartzite.	51	48	-3
2	4	2			9711			· · · · · · · · · · · · · · · · · · · ·				As above with white cherty rock for 1m, then green clayey			.,
		1										sand with fragments of hard, fine grained cherty rock			
	*											(possibly quartzite), quartzite with manganese? spotting,			
												and brown limonitic jasper.	48	43	-5
4	6	2			9712							Pink silty clay with fragments of fine grained quartzite		a	
												with limonite veins and manganese? spotting, quartz and			
												manganese.	53	47	-6
6	8	2			9713	6	190	64	24	10	102	Yellow silty clay with fragments as above.	40	42	2
8	10	2			9714	12	150	58	38	10	100	Red clay with fragments of very fine grained cherty?			
	10											quartzite, ferruginous sandstone and quartz.	47	56	9
10	12	2		1	9715							Pink to pale yellow clay, with white clay, very fine			
10	1				0120	1						grained cherty? quartzite with limonite banding,			
			* .									ferruginous (limonitic) sandstone and quartz.	51	50	-1
													ļ		
				ļ							ļ				
Drilled I		Afrac Dr	<u> </u>		<u> </u>		<u>L</u> .	/D -	<u>L.</u>	<u> </u>	<u></u>	ed 19.8.76 Date Completed 19.8.76 Depth of Hole 30m ft. Recor	<u> </u>	pleted 1.is	. w.

Bearing Inclination Vertical

LOCATION

8500 E/5500N Anomaly

Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar

Co-ords. of Collar Approx. 8570 E/5659 N

												FIELD DRILL RECORD	IA	Epster - 1	T
From	То	Sample Length	Recove	ry %	Sample No.	U, U.	Cu	Assa Ni	y. []	pm Pb	Zn	Geofogical Log	Angle to core	Estimated Grade	
M	tres	Metres		1	ESR	3 6			~~			•			
12	14	2			9716							As above.	51	51	0
14	16	2			9717	6	44	48	16	38	106				
												white granular quartz (quartzite?), small manganese nodules, white phyllitic siltstone, quartz grains and quartz.	50	42	-8
-,															
16	18	2	·		9718					ļ		Green silt with fragments of hard limonite, quartz, banded	52	46	-6
												cherty material and quartz grains?	52	40	-0
18	20	2			9719					ļ		Green silt with fragments of pale grey, sheared, hard,			
					1							claystone, quartz, medium to coarse grained sandstone,			ļ
								i 				very fine grained banded quartzite? and minor limonitic sandstone?	51	44	_7
1401-1400-1001-1009141400															
20	22	2			9720	7	78	70	24	40	160	Yellow to green silt with fragments of grey to white, fine grained, banded quartzite, limonitic phyllitic siltstone,			
					A							sandstone, quartz grains and quartz.	52	47	-5
22	24	2			9721							As above.	51	46	- 5
	21				3,21					ļ					i
24	26	2			9722	ļ						As above.	51	44	-7
											ļ				
26	28	2			9723							As above.	51	47	-4
28	30	2			9724	6	60	52	26	26	160	As above.	51	45	-6
Drilled	by Afr	ac Drill	ling	<u></u>	Type of Di	rilling	Rot	/Per	rc.	Dat	e Star			eleted J. H	,2
		H. Wrigh										Office and the second s	I = 46	5500 N Ar	nomely.

Co-ords. of Collar Approx. 8570 E/ 5659 N

Bearing Inclination Vertical LOCATION 8500 E/ 5500 N Anomaly.

From To Sample Record								·····					LIEFD AUTE VEGANA			
Drilling Record: 0 - 30m 6½" Mission Cross Hammer Casing Record: Collar piece - recovered. Water Record: Depth : Approximately 25m, Flow : Tacky clay. Polited by Africa Drilling Type of Drilling Rot/Perc Date Started 19,8,78 Date Completed 18,8,76 Depth of this 30m 74 Record Completed 18,8,74 19,8,75 19,8,	From	То		Recover				· · · · · · ·	Ass	ay s			Geological Log			
Casing Record: Collar piece - recovered. Water Record: Depth: Approximately 25m, Flow: Tacky clay, Flow: Tacky clay, Dellide by Afrac Drilling Type of Drilling Rol/Perc Date Started 19,8,76 Depth of Hole 30m f/s. Record Completed 19,8,76 Depth of Hole 30m f/s. Record			Length	}	76	No.								to core	Grade	
Casing Record: Collar piece - recovered. Water Record: Depth: Approximately 25m, Flow: Tacky clay, Flow: Tacky clay, Dellide by Afrac Drilling Type of Drilling Rol/Perc Date Started 19,8,76 Depth of Hole 30m f/s. Record Completed 19,8,76 Depth of Hole 30m f/s. Record						ļ				l			,			
Casing Record: Collar piece - recovered. Water Record: Depth: Approximately 25m, Flow: Tacky clay, Flow: Tacky clay, Dellide by Afrac Drilling Type of Drilling Rol/Perc Date Started 19,8,76 Depth of Hole 30m f/s. Record Completed 19,8,76 Depth of Hole 30m f/s. Record													Duilling Booonds 0 20m 6111 Miggion Change Hammer			
Dutted by Afrac Drilling Type of Dalling Rot/Perc Date Started, 19,8,76 Date Completed 19,8,76 Depth of Hole 30m 1/2. Record Completed 19, 19,10 Date of the Started S													Driffing Record: 0 - 30m 0 mission Cross Hammer			
Dutted by Afrac Drilling Type of Dalling Rot/Perc Date Started, 19,8,76 Date Completed 19,8,76 Depth of Hole 30m 1/2. Record Completed 19, 19,10 Date of the Started S									,							
Dutted by Afrac Drilling Type of Dalling Rot/Perc Date Started, 19,8,76 Date Completed 19,8,76 Depth of Hole 30m 1/2. Record Completed 19, 19,10 Date of the Started S				•	1 .								Casing Record: Collar piece - recovered.			
Dulled by Afrac Drilling Type of Drilling Rof/Perc Date Started 19.8.76 Depth of Hote 30m f/2 Record Completed 19.8.76					†·····								9			
Dulled by Afrac Drilling Type of Drilling Rof/Perc Date Started 19.8.76 Depth of Hote 30m f/2 Record Completed 19.8.76																
Drilled by Afrac Drilling Type of Drilling Rot/Perc Date Started 19.8,76 Date Completed 19.8,78 Depth of Hole 30m 1/2 Record Completed 1.0 to													Water Record: Depth: Approximately 25m.	l		
Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 46					1								Flow: Tacky clay.			
Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 46				l			ļ						т опискательный принципальный		·····	
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Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 46			,]												
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Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 46]									
Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 46								l						1 1		•
Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 46													. при порежина полиция на полици на полици на полици на полици на полици на полици на полици на полици на поли С		VI-11-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	
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Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 46					1			İ								
Logged by J.H. Wright Sampled by M. Kilkelly R.L. of Collar Core Recovery % NO. OF HOLE BDH - 46		A P.:	176-114	<u>L</u>		<u> </u>		L	1.144	1	<u> </u>	<u> </u>	10 0 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	لــــا		
logged by J.H. Wright Sampled by M. Kilkelly R.I. of Collar Core Recovery 8 NO. OF HOLE BDH - 46	Drilled b	y Airac	Drilli	ng	T	ype of Dr	i!!!ng	Ko	t/Pe	rc	Date	Star	ted 19.8.15 Date Completed 19.8.16 Depth of Hole 30m f/. Record	1 Comp	leted J. /5	<i>~</i> 3
Co-ords, of Collar Approx, 8570 E/ 5659 N Bearing Inclination Vertical LOCATION 8500 E/ 5500 N Anomaly,	Logged b	у <u>Ј.Н</u> .	Wrigh	ī.	S	ampled by	M.	KUL	cetty		R.L.	of C	ollar	46		
	Co-ords.	of Collar	Appro	ox. 85	70	E/ 565	9 N					Beari	Inclination Vertical LOCATION 8500	E/ :	ob00 N Ano	maly.

												FIELD DRILL RECORD			ļ
From	To	Sample	Recovery		Sample			Assa		ppm		4 Geological Log	Angle	Estimated	
, 1011.		Length		%	No.	U,O,	Cu	Ni	Co	Ph	Zn		to core	Grade	<u> </u>
Met	tres	M etres			ESR	3 0						•		Instrument Spectrome GIS-3 No.	ter
									<u> </u>			Bae	nlr_	Sample	Sample
												gr¢	und	Reading	Minus
												c.p	. S.	c.p.s.	Back- ground.
0	2	2		-	9725	5	4	26	4	6	8	Pale silty dust with large quartz and quartzite pebbles and pebble fragments, some white clay and dark fragments of	:		
												unweathered quartz-biotite schist with pyrite (contamination?	42	50	8
2	4	2			9726	4	2	30	2	4	8	As above but without contaminants.	45	6 2	17
4	6	2			9727	2	2	30	6	6	8	Pale yellow sericitic clay and tacky clay plus quartz fragments and clasts from conglomerate horizon.	39	47	8
6	8	2			9728	2	2	28	4	x	10	Pale sericitic clay with fragments and clasts of quartz,			
												sandstone, granular quartz with hematite, hard black cherty material, arkosic and sericitic sandstone.	34	60	26
8	10	2			9729	9	18	34	10	8	20	Pale to orange sericitic clay, white clay lumps, decomposed			
										ļ		white to yellow shale and vein quartz.	33	61	28
10	12	2			9730	44	60	48	22	10	38	Mottled orange to red clay with sericite and fragments of decomposed limonitic, sericitic, shale (phyllite) and quartz			
······································					!							vein material.	36	84	48
		ac Drilli Wrigh	-									ted 2/10/76 Date Completed 2/10/76 Depth of Hole 30m ff. Record ollar Core Recovery % NO. OF HOLE BDH		pleted J.#	W

Co-ords, of Collar Approx. 3550E/ 17840 N

Bearing Inclination Vertical LOCATION Anomaly 77 South.

NORANDA AUSTRALIA LIMITED FLELD DRILL RECORD

				•								FIELD DRILL RECORD			
From	То	Sample	Recovery		mple					pm)		Geological Log	Anglei	Estimated	
	.,	Length		%	No.	U O	Cu	Ni	Co	Pb	Zn		to core	Grade	
Ме	res	Metres		E	SR	აგ						•			
12	14	2		97	731	77	66	58	28	8	56	Orange clay with soft highly decomposed shale (minor	1 1		
								:			,,,,,,,,,	manganese? spotting) plus thin grey quartz vein material.	52	145	93
14	16	2		97	32	112	88	62	32	10	64	As above, shale limonitic and sericitic.	44	180	136
											:				
16	18	2		97	33	64	68	68	22	4	48	Orange clay with grey/yellow decomposed shale fragments.	44	160	116
18	20	2		97	34	4.5	56.	58	1.8	10	.44	Orange sericitic clay with fragments of limonitic siltstone,			
									· · · · · · · · · · · · · · · · · · ·			quartz and sericitic sandstone.	40	100	60
20	22	2		97	735	42	28	50	. 12	10	.32	, , ,	1		
												fragments.	30	60	30
22	24	2		97	36	35	30	38	.12	.10	.38.	As above.	31	50	19
24	26	2		197	37	34	36	40	12	12	40	Pale sericitic clay with fragments of sericitic sandstone and quartz.	22	60	38
											İ				
	90					-		40				A h	26	54	28
26	28	2		9.6	38	5	20	42	4	8	22	As above plus quartzite and minor sericitic phyllite.	40		40
28	30	2		97	39	6	14	38	4	10	16	As above plus quartzite and sericitic phyllite.	25	32	7
												End of Hole.			
		1												, · · · · · · · · · · · · · · · · · · ·	
														L	
Drilled I	_{by} Afra	e Drilli	ng	Type	of Dri	lling	Ro	t/Pe	rc.	Date	Start	$_{ m red}$ $2/10/76$ Date Completed $2/10/76$ Depth of Hole $30{ m m}$ f. Reco	rd Comp	leted	W. 6

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 2/10/76 Date Completed 2/10/76 Depth of Hole 30m ft. Record Completed Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Co-ords. of Collar Approx. 3550 E/17840 N Bearing Inclination Vertical LOCATION Anomaly 77 South/

To													FIELD DRILL RECORD			
Drilling Record: 0 - Im 82 Rotary Blade Bit. 1 - 30m 75 Mission Cross Hammer. Casing Record: Collar piece. Water Record: Depth - 18m Flow - less than 1000 gal/hr. Plow - less than 1000 gal/hr. Onlies by Afrac Drilling Type of Drilling Record: Depth - 18m Flow - less than 1000 gal/hr. Onlies by Afrac Drilling Type of Drilling Record: Depth - 18m Flow - less than 1000 gal/hr.	From	To	Sample	Recover	у	Sample			Ass	ays			Geological Log	Angle	Estimated	
Casing Record: Collar piece. Water Record: Depth - 18m Flow - less than 1000 gal/hr. Prive - less than 1000 gal/hr. Depth - 18m Flow - less than 1000 gal/hr. Depth of Hole 30m ft. Record Completed 1.4 AS. Logged by J.H. Wright. Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE 3DH - 47			1_ength		%	No.						ļ	OCCIVETOR LVE	to core	Grade	
Casing Record: Collar piece. Water Record: Depth - 18m Flow - less than 1000 gal/hr. Prive - less than 1000 gal/hr. Depth - 18m Flow - less than 1000 gal/hr. Depth of Hole 30m ft. Record Completed 3.0 M. A.S. Logged by J.H. Wright. Sempled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47											l					
Casing Record: Collar piece. Water Record: Depth - 18m Flow - less than 1000 gal/hr. Prive - less than 1000 gal/hr. Depth - 18m Flow - less than 1000 gal/hr. Depth of Hole 30m ft. Record Completed 3.0 M. A.S. Logged by J.H. Wright. Sempled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47																
Casing Record: Collar piece. Water Record: Depth - 18m Flow - less than 1000 gal/hr. Prive - less than 1000 gal/hr. Depth - 18m Flow - less than 1000 gal/hr. Depth of Hole 30m ft. Record Completed 1.4 AS. Logged by J.H. Wright. Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE 3DH - 47														J		
Casing Record: Collar piece. Water Record: Depth - 18m Flow - less than 1000 gal/hr. Prive - less than 1000 gal/hr. Depth - 18m Flow - less than 1000 gal/hr. Depth of Hole 30m ft. Record Completed 3.0 M. A.S. Logged by J.H. Wright. Sempled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47			Sample Acade Aca													
Water Record: Depth - 18m Flow - less than 1000 gal/hr. Drilled by Afrac Dr illing Type of Drilling Rot/Perc. Date Started 2/10/76 Date Completed 2/10/76 Depth of Hole 80m ft. Record Completed 3.4 A.S. Logged by J.H. Wright Sumpled by C. Knox R.L. of Collar Core Recovery % NO, OF HOLE BDH - 47				İ							·		1 - 30m $7\frac{1}{2}$ Mission Cross Hammer.			÷
Water Record: Depth - 18m Flow - less than 1000 gal/hr. Drilled by Afrac Dr illing Type of Drilling Rot/Perc. Date Started 2/10/76 Date Completed 2/10/76 Depth of Hole 80m ft. Record Completed 3.4 A.S. Logged by J.H. Wright Sumpled by C. Knox R.L. of Collar Core Recovery % NO, OF HOLE BDH - 47				Angle Estimated to core Grade Drilling Record: 0 - 1m 8 1 Rotary Blade Bit. 1 - 30m 7 2 Mission Cross Hammer. Casing Record: Collar piece. Water Record: Depth - 18m												
Water Record: Depth - 18m Flow - less than 1000 gal/hr. Drilled by Afrac Dr illing Type of Drilling Rot/Perc. Date Started 2/10/76 Date Completed 2/10/76 Depth of Hole 80m ft. Record Completed 3.4 A.S. Logged by J.H. Wright Sumpled by C. Knox R.L. of Collar Core Recovery % NO, OF HOLE BDH - 47					% No. Drilling Record: 0 - 1m 8\frac{3}{4}\text{!' Rotary Blade Bit.} 1 - 30m 7\frac{1}{2}\text{!' Mission Cross Hammer.} Casing Record: Collar piece. Water Record: Depth - 18m											
Drilled by Afrac Dr illing Type of Drilling Rot/Perc, Date Started 2/10/76 Date Completed 2/10/76 Depth of Hole 30m A. Record Completed All All Logged by J. H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO, OF HOLE BDH - 47					ļ		.		ļ		1	.	Casing Record: Collar piece.			
Drilled by Afrac Dr illing Type of Drilling Rot/Perc, Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO, OF HOLE BDH - 47						İ	1	1								
Drilled by Afrac Dr illing Type of Drilling Rot/Perc, Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO, OF HOLE BDH - 47			l		ļ								Weter Donald Doub 10m			
Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 2/10/76 Date Completed 2/10/76 Depth of Hole 30m ft. Record Completed AMAD Legged by J. H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47				Drilling Record: $0 - 1m$ $8\frac{3}{4}$ " Rotary Blade Bit. $1 - 30m$ $7\frac{1}{2}$ " Mission Cross Hammer. Casing Record: Collar piece. Water Record: Depth - 18m												
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47			Water Record: Depth - 18m													
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47			Casing Record: Collar piece. Water Record: Depth - 18m													
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47					İ						İ		Commence of the commence of th	1		
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Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47]		
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47														1 1		
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47										1						
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47		j						- i	!				and the second s			
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47							,.,									
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47									ļ							
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Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47					····			†								,
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47																
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47															-	*
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47								1								
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47											†					
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47								ļ		ļi				[
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47			. ,-,			,			<u> </u>							
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47																
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47				İ						1			· · · · · · · · · · · · · · · · · · ·			
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47									ļ					.		
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47											ļ					
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47																
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47								1		1		1		1		
Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 47	D.: 11 - 2 1	. Afno	o Dr ill	ing	-		<u> </u>	Rot	Pan	<u> </u>		. Co.	2/10/76 page Company 2/10/76 page 4 2 2	<u> </u>	<u> </u>	
O TOTAL TOTA					. 1)	ype of Ur	iiiing	Trock	Vner	.¥.• •	Date	e Stari	red =1+0/10 Date Completed =/ +0/10 Depth of Hole Source ft. Reco	α Comp Γ _ Δ'	oreted	
Co-ords, of Collar Approx. 5550 12/ 11040 14 Bearing Inclination Vertical LOCATION Anomaly 11 Bouting	Logged b	oy .dTh.	Anne	ს ეღ 9ნ	. SE SA	ampied by ಫ್/1೧೦	40 N									
	Co-ords.	of Collar	white	രം ഉദ	JU	14/ 110	10 1		*** * **		,	Beari	ng Inclination VCI IICAT LOCATION 1110		Double	

									-			FIELD DRILL RECORD			
From	То	Sample	Recovery		Sample			Assay		ppm)		Gentagical Log	Angle to core	Estimated Grade	
Metr		Length Metres		%	ESR	U_O	Cu	Ni	Co	Pb	Zn			Instrumen Spectrome	ter
appa.						<u> </u>				[GIS-3 No.	208-198.
				1				1				Back grou		Sample Reading	Sample Minus
									ļ	ļ		c.p.		c.p.s.	Back- ground.
0	2	2			9740	8	4	24	8	10	8	Yellow silt with fragments of quartz, sandstone, ferruginous			
<u></u>				'								sandstone, ferruginous shale and quartzite.	24	48	24
2	4	2			9741	5	2	28	3 4	10	10	Yellow sericitic silt, small quartz pebbles, sericitic sandstone, decomposed arkosic sandstone.	25	52	27
4	6	2			9742	2	2	30	6	10	10	As above with much larger quartz pebbles and white clay.	27	42	15
6	8	2			9743	2	2	36	6	10	8	Pale greenish sericitic clay, coarse grained sericitic sandstone, small quartz pebbles and fine grained quartzite,			
												(few small chips of hard fine grained black material - tourmaline?).	26	37	11
8	10	2			9744	2	4	34	4	2	8	Pale sericitic clay, fine grained quartzite, sericitic sandstone, quartz vein material (end run thick quartz vein), plus fine grained hard, black material (tourmaline?).	26	47	21
10	12	2			9745	5	4	30	0 4	10	10	1 Line and for amounts	29	50	21
				1											
Drilled	by Afr	rac Drill	lling	<u></u>	Type of D	 Drillin/	R Rc	t/Pe	rc.	Dar	te Star	ted $2/10/76$ Date Completed $2/10/76$ Depth of Hole $30\mathrm{m}$ ft. Record	d Con	npleted J.H.	7

Drilled by Afrac Drilling Type of Drilling Logged by J.H. Wright Sampled by C. KNOX R.L. of Collar Co-ords of Collar Approx. 3555 E/ 17890 N Bearing

Core Recovery % NO. OF HOLE BDH - 48
nation Vertical LOCATION Anomaly 77 South. Inclination Vertical

NORANDA AUSTRALIA LIMITED FIELD BRILL RECORD

	,											FILLD DIGILE REVOND			
From	То	Sample Length	Recover	γ %	Sample No.			As sa Ni	ays (ppm Db	720	Geological Log	Angle to core	Estimated Grade	1
			!	+-*-		13	Cu	INT	Co	PD	Z.II.		10 00.0	Orace	
Me	tres	Metres	.	1	ESR	[l				l		l		
12	14	2			9746	13	32	64	24	4	40	12-13m, grey, speckled, phyllitic shale, white clay, quartz	1		•
		· · · · - · · · ·				1			 .	····-		13-14m, orange sericitic clay with fragments of ferruginous			
								,				phyllitic shale and quartz.	30	75	45
			1		Ì							phyllitic shale and quartz;	, ⁰⁰	.0	1 1
1 4	10			1	0747		4.0					Yellow/orange clay with yellow limonitic phyllitic shale,	1		
14	16	2		4	9747	21	48	82	28	2	58		20	51	21
						l						(decomposed), siltstone and fine grained sandstone.	30	91	21
		1											1		
													ı ··· · · · · · · · · · · · · · · · · ·		
16	18	2			9748	12	84	108	40	2	68		.		.]
					ł							siltstone and quartz injected shale.	27	42	15
					<u> </u>										
			ļ							ļ			Į .		
18	20	2	1	1	9749	14	92	110	44	2	76	As above.	26	30	4.
			1							· · · · · · ·	7.7				
			l										ļ ļ		
20	22	2	İ		9750	48	106	112	44	4	94	As above.	30	56	26
			1										1 1		
					0051	20	38	64	20	6	50	Wallands and contains along with grow abole fragments	28	45	17
22	24	2			9751	40	38	04	20	ס	อบ	Yellow to grey sericitic clay with grey shale fragments.	40	40	11
					ŀ	l]					
24	26	2		1	9752	22		0.0			0.0	Yellow to grey sericitic clay with grey shale fragments.	26	61	35
44	20	4			3104	22	50	bb	22	8	66	Tenow to grey serience eray with grey share magnitudes.			
	1					l									
0.0					0250						ь.	Wellt			
26	28	2			9753	1.7.	44	b.Q	2.0	34	76		26		
												quartz and greeny white sericitic shale.	20	54	28
			l	ŀ		1					·		i 1		j
		1				t									
28	30	2		.	9754	13	22	40	8	16	34				
		1		1					1	İ		sericitic shale and quartz.	26	40	14
					1				1		1		ļ	,,	
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		1				l		l			<u>.</u>	End of Hole.	1 1		1
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	<u> </u>]	<u> </u>	<u> </u>		<u> </u>				<u>L</u>				
Drilled b	y Afr	ac Drill	ing	T	ype of Dr	illing	Ro	t/Pe	rc.	Date	Start	$_{ m ted}$ $2/10/76$ Date Completed $2/10/76$ Depth of Hole $30{ m m}$ ft. Record	d Compl	eted 1.11	,い.

Drilled by Afrac Drilling Type of Drilling Rot/Perc. Date Started 2/10/76 Date Completed 2/10/76 Depth of Hole 30m ft. Record Completed 3. Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 48

Co-ords, of Collar Approx. 3555 E/ 17890 N Bearing Inclination Vertical LOCATION Anomaly 77 South.

												FIELD DRILL RECORD			
From	То	Sample	Recover		Sample			Assa	ys (pm)		Geological Log	Angle to core	Estimated Grade	
		Length	<u> </u>	%	No.										[
		j										A commence of the commence of	ļ		
												Drilling Record; $0 - 1m = 8\frac{3}{4}$ Rotary Blade Bit.	1 1		
	,			ļ j								$1 - 30 \text{m}$ $7\frac{1}{2}$ Mission Cross Hamme	1.		
]]					1 - John 72 Hilbston Cross 1	}		
					İ										
					************							Casing Record: Collar piece.		-	1
.,	ļ											Casing Record; Conar piece.			
		j.]								
		ŀ		'	1	ĺ						Water Record; Depth - 23m,			
				1								Flow - less than 1000 gal/hr.	1 1		
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Drilled	by Afra	Drilli	ng	7	Type of D	rilling	Rot,	Per	C.,	Dat	e Star	ted 2/10/76 Date Completed 2/10/76 Depth of Hole 30m Reco	rd Com 1 - 48	pleted	
Logged	by J.H.	Wrigh	 .t	. S	Sampled b	у	CI	Knox	•	. R.L	of C	e it di la constant di constan	4(, 77 Carella	
		A marra	988	5 E	1/ 1799	n N					Rase	ing Inclination Vertical LOCATION And	omary	77 South	

Bearing

Cords of Cally Approv 3555 E/ 17890 N

Inclination Vertical

LOCATION

FIELD BOILL BECORN

		Metres														
From	То		Recove	ery		<u></u>						丁	Control to a	~ 1	1 - 1	
From	1	Length	<u> </u>	<u></u> 7%		UQ	Cul	_Ni_	'ــمـکم	Ph	12	n		1	Instrumen	:
Metr	∤es ˈ	Metres	4	<u> </u>	ESR /	[]		<u></u> J	1′							
	ĺ	}		· · · · ·	,	('	$\int_{-\infty}^{\infty} J$	i J	1 ,	1						
	f		··········		1	1		1	1					J	<u> </u>	
I					.	[]	† +	······	Í'				Back-	. ,	Sample	Sample
	1					4		įl								
, i	1	, '		<u>'</u>	1	.1'		1	ļ				- 1			Back-
,		·		1	,	1	1	i = 1	1			.		1	1	ground.
			,		ļ,	ſ,	11	l	-						1	
!	4	· · · · · · · · · · · · · · · · · · ·				 '		1	ļ	1			the state of the s	,	· '	
o	2	2			9755	18	8	26	10	1 70	4.	12	Orange silty material with quartz and minor retruginous	22	50	28
					·	· [, '	\!	1	1				sandstone fragments - surface ruppie.		1	
		1		1	ļ,		'	1 '	[, [,]		
					3750	1		30	_	, _	,	1 9	The consoitie clay with sericitic sandstone, arkose, fine	!		1
2	4	2			9756	4	4.	32	, <u>o</u>	l p		12		27	42	15
			<u> </u>										grained quartzite and quartz.			
	1	1				1	'	1′	1					'		
 I		-			0057	 		96		. 4	1	12	Dala compatio eilt with green to brown sericitic sandstone,	.		
4	6	2			9757	·	4	3.0		A		1.6	Pale sericitic sitt with given and fine grained hard black	('		
	1												forments (possibly quartz tourmaline rock).	28	55	27
					1			\	l				Iragments (possion) quarter to	1		
 I		.]							ļ				f			
ı	1				2758	1,	. †		.† 7	1 F	<u>.</u>	10	Char sericitic arkosic, conglomerate, sericitic sandstone	1	· i	
6	8	2			9.190	.		40	-			-10	and quarte (nossibly in part clasts).	24	52	28
i	ļ												and quarte (possess) P	f		
						1	'					J				
	10				9759	. ا	- A	2 72	. 2	9 .	v	46	Brown sericitic sandstone, quartz, fine grained quartzite,	1		
8	10	2			9100	40	4 3	1		#	-	1	minor coarse grained arkose and quartz. Approx. last 30cm	26	70	44
	l												orange clay with yellow decomposed shale fragments.	1		,
1												J	Orango ciaj man j			
1							1					J		1		
1	10				9760) 11	1 0	180	_ F	58 x		140	Orange to purple (hematitic) clay with quartz and limonitic	ſ		
10	12	2			8100		1 .	# 100	1 -	0			decomposed shale.	24	36	12
1				1]						,	decompose	1		
							<u> </u>				ŀ	,			1 - 0 -	1,
Dellad	Λ ε	rac Dril	11122		Type of D	ا Orillip	Ro	±/Pe	$r_{C_{\bullet}}$	D	ate	Starr			mpleted 3.11	7:1 M
		rae brii H. Wrigl			Sampled	hv	C	Kno	X	R	L.	of C	Collar Core Recovery % NO. OF HOLE BDH			·
		A nna						****	,2	***			ing Inclination Vertical LOCATION Anon	maly	y 77 South.	

Bearing

C de of Callar Approv 3535 E/ 17890 N

Inclination Vertical

NORANDA AUSTRALIA LIMITED

									757	T			Angle	Estimated	T
From	To	Sample Length	Recover	у %	Sample No	110	Cu	Ni	ys (pr Co	Ph	Zn	Geological Log	to core	Grade]
Met	res	Metres			ESR	3 8		***				,			1
12	14	2			9761	7	82	200	52	×	180	Orange clay with limonitic decomposed shale and minor	1 {		
					0.0-			200				quartz.	23	28	5
1 /	16	2			9762	9	120	200	60	x	140	As above.	21	19	-2
14	10				9102		120	200				220 00000			
											0.4		22	24	2
16	18	2		.	9763	33	104	150	54	4	94	As above.			
		l			07.04		0.4	150	1		116	Yellow to orange clay with yellow to grey decomposed			
18	20	2			9764	59	04	150	46	.	110	limonitic shale.	24	72	48
					ļ	ļ									
					OFOR				9.4	10	94	Yellow clay with decomposed shale - last metre of run			
20	22	2		·	9765	3.3	54	96.	24	10.	94	in sericitic sandstone.	24	40	16
,	. 1471 141 147 147 147 1											•			
												TT-11 / Nite - I			
22	24	2			9766	27.	36	56	2.0	x	1.4	Yellow/white clay with sericite, sericitic siltstone, sericitic sandstone and quartz.	22	66	44
	,						ļ				0.0	g : ::: and the minor			
24	26	2			9767	6	88	38	4	66	2 6	Sericitic sandstone, quartzite and quartz with minor sericitic shale and a limonitic pseudomorph after pyrite	25	41	16
				-		1	ļ		 			(0.4mm).		,	
				-		l	 		1.0	0.0	4.0				
26	28	2			9768	35	24	36	10	3.0	46	Sericitic sandstone, quartz, quartzite and pale sericitic shale.	25	39	14
												Share,			
28	30	2			9769	8	8	36	6	6	24	Sericitic sandstone with minor quartz and white sericitic			
40	30				13,03	<u> </u>	<u>-</u>					shale,	27	32	5
	.		l					ļ	·		1				
								1	 	1		End of Hole,			
D (1)) A fra	no Duill	ing	٠	Type of D	rilling	· Ro	/Pa	re	L Dat	e Stari	red 2/10/76 Date Completed 2/10/76 Depth of Hole 30m	rd Comp	pleted	W. H

Co-ords, of Collar Approx, 3535 E/ 17890 N

Bearing Inclination Vertical LOCATION Anomaly 77 South.

NORANDA AUSTRALIA LIMITED FIELD DRILL RECORD

												FIELD DRILL RECORD	Angle	Estimated	r
From	То	Sample	Recovery		Sample			Assa	y s			Geological Log	to core	Grade	
r rom	10	Length		%	No.						-		1		
								İ	-			,			
				····								1			
												2 .			
												Drilling Record: 0 - 1m 8311 Rotary Blade Bit.			
												Drilling Record: $0 - 1m$ $8\frac{3}{4}$ Rotary Blade Bit. $1 - 30m$ $7\frac{1}{2}$ Mission Cross Hammer.	.]		
													1		1 -
				.				.,.,					-}		
		į	i			i						Casing Record: Collar piece.			
													i		1
													1		1
		1	Í		ļ	•	i '					Water Record: Depth - 20 m			
												Flow - less than 1000 gal/hr.			1
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Drilled	by Afr	ac Dril	ling	7	Type of D	rilling	R	${ m ot/P}$	erc.	Dat	e Sta	rted 2/10/76 Date Completed 2/10/76 Depth of Hole 30m %. Rec	ora Con	pretea	
Logged	by J.H	. Wrigh	ıt	5	Sampled b	у	C	. Kr	ox	R.L	., of (Collar	.n±*x	y 77 South	

Inclination Vertical

Anomaly 77 South

LOCATION

Logged by J.H. Wright Sampled by C. Knox R.L. of Collar Co-ords of Collar Approx. 3535 E/ 17890 N Bearing

NORANDA AUSTRALIA LIMITED

	То	Şample	Recovery	,]	Sample			Assay	/s (p	pm)		Contacted Los	Angle to core	Estimated Grade	1
From	10	Length		%	No.	U,Q	Cu	Ni (20	<u>₽</u> b }	2n		m core		
Met	res	Metres	' 		ESR	١٥٩	'						[Instrumen	1 7
					\ \	1 .							!	Spectrome GIS-3 No.	
					·	 	1						1	G12-3 MO.	200-190,
		ļ ·			\\		1					Bac	k-	Sample	Sample
·					·	\	١					gro		Reading	Minus
					¹	!	۱				·	c.p		c.p.s.	Back-
	1		1		' '		¹ <u> </u>				`]				ground
				1. 1				p				· · · · · · · · · · · · · · · · · · ·			ļ
	ļ	_			0070		100	20	2.0	140	240	Yellow to orange silt with ferruginous sandstone, quartz,			
0	2	2		ļ ļ	9770	4	120	32	20	140	440	quartzite and very fine grained cherty siliceous rock.	27	24	-3
	ļ	.,			t ₁		ł	`		' 	\	1	1		1
					ŧ ,		<u> </u>	`		·	·		 		
2	4	2	1		9771		120	5.0	26	270	420	Orange silt with ferruginous (limonitic) sandstone and			1
	***************************************		Ţ		ţ,	1		١		'	١. ا	phyllite, quartz and quartzite.	27	28	1
		ļ			ļ	1	1	· · · · · · · · · · · · · · · · · · ·)	'''''	۱ · · · · · ا				
				-[1	1		ا م	, ,	15	100	Pale sericitic silt with fragments of ferruginous phyllite,	1		
4	6	2			9772		90	30	12	150	Tan	quartz and medium to coarse grained arkosic sandstone	1		
			ļ	.]	\]		١		·	!	with minor white phyllitic shale and white clay.	30	35	5
					1 ,	ļ		١	·)	۱	<u>ا</u>	mane antico	1		
			·			ļi		!	l	<u>'</u>	<u> </u>				
6	8	2			9773	4	52	34	8	106	300	Pale yellow silt with fine grained quartzite (granular			
	†	····			[1		!	i	ļ	ţ	quartz?), medium to coarse grained ferruginous sandstone			
		ļ	1					ł	''l	1		and white clay plus minor sand grains and ferruginous	25	36	11
					ļ	-		ļ	·	ļ ₁	}	phyllite.	45	30	
	ļ	ļ							· · · · · · · · · · · · · · · · · · ·	ļ	ļļ				
8	10	2	.		9774		40	30	12	60	260	Orange to red, coarse grained sand, coarse milky quartz	28	37	9
							1	 -	1	ļ ,		grains, white clay and coarse grained sandstone.	48	31	
			 			1	1	1	ţ	١					1
		ļ			0000							Orange to red clayey coarse grained sand with fragments			
10	12	2			9775.		22	30	8	50	90	of coarse grained sandstone, white clay, limonitic phyllite	1		
							ļ		[ļ	[]	and quartz.	31	35	4
			1			1	L. 1						1	1	
Drilled I	y Afr	ac Dr ill	ling	T	Type of Dr	rilling	Rot,	/Per	c			ed = /, = 91 Date Completed /	rd Com H = 5	npleted	Liv. Kr.
1 naged	hy J.H	I. Wrigh	ht	S	Sampled by	у	C .	Knox		. R.L.	, of Co	Ilar Core Recovery % NO. OF AULE		y 9000E/40	20N
Countrie	of Collar	. Appr	ox. 89	50 l	E/ 395	7 N	*** *** * ***				Bearin	ng Inclination Vertical LOCATION Ano.	11121)	, 2000m/40	₩ ₩ # .

NORANDA AUSTRALIA LIMITED FIELD BRILL RECORD

												FIELD DRILL RECORD		·	
From	То	Sample Length	Recover	у %	Sample No.	по	Cu	Assa Ni		ppm Ph		Geological Log	Angle to core	Estimated Grade	
Met	res	Metres			ESR	3 8		-414	<u></u>			•			
12	14	2			9776		12	20	8	34	56	Pink clayey sand, medium to coarse sand grains and white clay.	29	36	7
14	16	2			9777	4	36	2 6	14	40	140	Pink clayey sericitic sand, medium to coarse sand grains, friable coarse grained sandstone, arkosic in part, with ferruginized coarse grained sandstone.	25	38	13
16	18	2			9778		24	28	10	48	104	As above with some sheared? sericitic coarse grained sandstone.	26	33	6
18	20	2			9779		28	28	8	32	98	As for 14-16m.	25	29	4
20	24	4			9780	5	20	40	14	42	170	Coarse grained poorly sorted sandstone with manganese? spotting, siliceous veining, claystone, and sericite after feldspar?	26	27	
						ļ				ļ		arter leluspart		<u>_</u>	
24	25	1			9781		14	30	10	32	92	As above.	32	28	-4
												Hole Abandoned			
						1									
Drilled !	by A	frac Dr	l illing	 T	ype of D	rilling	\mathbf{R}_{0}	t/Pe	erc.	Dat	e Start	Let $2/10/76$ Date Completed $4/10/76$ Depth of Hole $25 \mathrm{m}$ ft. Reco	ord Comp	leted 4. #	. W .

Drilled by Afrac Drilling Type of Drilling Rot/Perc Date Started 2/10/76 Date Completed 4/10/76 Depth of Hole 25m ft. Record Completed 3.4.4.

Logged by J. H. Wright Sampled by C. Knox R.L. of Collar Core Recovery % NO. OF HOLE BDH - 50

Co-ords, of Collar Approx. 8950 E/3957 N Bearing Inclination Vertical LOCATION Anomaly 9000 E/4000N

NORANDA AUSTRALIA LIMITED FIELD DRILL RECORD

								Š				FIELD DRILL RECORD		·	
· · · · · · · · · · · · · · · · · · ·		Sample	Recovery	,	Sample			Assay	/ S			Geological Log	Angle	Estimated Grade	
From	То	Length		%	No.								to core	Grade	
						1		[1			
									·····†			During David On 1m 93" Potany Blade Bit			
												Drilling Record: $0 - 1m + 8\frac{3}{4}$ Rotary Blade Bit. $1 - 25m + 7\frac{1}{2}$ Hammer with Button Bit			
												$0 - 24 \text{m} 6\frac{1}{2} \text{Rotary Rock Bit run}$			
						ļ			į			with mud in attempt to			
												· restore circulation and			
												clear hole.		Z	
												Hole abandoned 25m, continual hole			<u> </u>
									l						
.,.,,				ļ								collapse.			
												O 11			
				:								Casing Record: Collar piece.			
													. [
,												Water Record: Depth - 13m.		-	
*******			ļ	. .						,		Water Record: Depth - 13m. Flow - greater than 1000 gal/hr.			
			· ·									Flow - greater than 1000 gai/m.			
			.,	Ī											
							ļ			**********					
						l			·	l					
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1-1 14141119111		ļ											1		
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	† · ····		· [·····	1	1								Į.		
			 												
	<u> </u>						1		ļ					·	
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]			1					1			l		
	by Afra	1 Dwd1		<u> </u>	Luna of D	حصل.	Rote	Peri		Det	e Star	ted 2/10/76 Date Completed 4/10/76 Depth of Hole 25m ft/ Rec	ord Com	pleted \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Jw.
Drilled	by Aira	10. DFH	rriig	ا	ype or Di	aring	C 1	.+HA! Knov	∞.•	R I	of C	Core Recovery % NO. OF HOLE DD	H - 5	0 7	
Logged	by J.H.	wrigi	11ac	S	ampied D)	Y	لسياب	ZHUA		IX.L		Transical Al	omaly	7 9000E/40	00N
Coords	of Caller	Anpr	ох 895	t U	r/ 9A91	ΤA					Bear	ing Inclination Vertical LOCATION			

NORANDA AUSTRALIA LIMITED FIELD DRILL RECORD

From	то	Sample	Recover	₃ry ,	Sample			Assa	AYS []	ppm)	4	Geological Log	Angle to core	1 - 1	ł
rrom ,		Length		%	No.		Cu	Ni	Co	Pb '	$\frac{ Zn }{ }$	 	-	-	
Μe	etres	Metres	4	'	ESR	1	1 1	1 1	1 '	1	1	1.		Instrumen	
	İ		1	,	1	1	† 1	11	ſ,	<u> </u>	1	1		Spectromet	
	f		1		1	· [+1	ļ	t	į ······)	ţ	ſ	1	GIS-3 No.	208-150
!	1								{	12	4J	1	¢k-	Sample	Sampl
	1	1	1	'	.1		,	1!	.1		_{J	The contraction of the contracti	dund	Reading	Minus Back
1		1	<u> </u>	_ '	1	1	1	1	1	1	1	(r.s.	c.p.s.	groun
	1		f	†***	,		1	()	(′ ′	1	1	1 '	· · · · · · · · · · · · · · · · · · ·	
0	2	2			9782	6	34	20	10	48	62	Orange clay with quartz, decomposed ferruginous shale			
	1	,	1	1 7	ļ,	ļ		{	1	1	, , , , , , , , , , , , , , , , , , ,	and ferruginous quartz vein material.	23	23	0
			1		4	1		1	[ļ	1		1		
		_			1		100	1)	10	0.0	54	1 17 1	24	28	4
2	4	2			9783		20	16	10	28	54)	Yellow clay with quartz vein fragments.	-		
					2704		14	1-14	ļ'	26	34	Yellow clay with fragments of vein quartz and decomposed	25	26	1
4	6	2	1		9784		141	14	8	20	9#1		1	20	
	[, , , , , , , , , , , , , , , , , , ,	1	·	<u> </u>)	1	1'		1 1	friable medium to coarse grained "dirty" sandstone.			
	1	Ĭ ,		1	· ['			1	Ĺ'	()	1				
6	8	2	1		9785		14	24	10	30	48	Dark yellow clayey sand with fragments of coarse grained			
				- T,		1	1	,	ſ '		1	arkosic sandstone, coarse grained sandstone, coarse	1		
	1		1				1	1	[1	Ţ,	grained ferruginous sandstone and quartz.	26	26	0
	+						+	*		1	ļ,	gramed torraginous	1		
	10				9786	2	4	20) 4	40	18	Yellow/white clayey sand, coarse grained arkosic	1		
8	10	2			3.00		* * *	40,	- T	10	1,		25	5 29	4
							- · · · · · · ·	'				sandstone and quartz,	40	40	王
								'							
10	12	2			9787	i]	20	28	3 8	42	2 46				
			1		l]	·	·	1		1	sandstone, coarse grained sandstone, quartz and minor			
	1						1 ,		Ī		<i>'</i>	sandstone with clay partings.	26	3 23	-3
								1	1	-					
		,									· † '		1		
											'		-		
	1							.				rted 4/10/76 Date Completed 5/10/76 Depth of Hole 43m th. Record		mpleted J. N.	

Bearing

Co-ords of Collar Approx 9105 E/4105 N

Inclination Vertical LOCATION Anomaly 9000E/4000N

NORANDA AUSTRALIA LIMITED FIELD DRILL REGORD

	To	Sample	Recovery	, [Sample			Assa	ys ()	pm,		Geological Log	Angle	Estimated Grade	
From	10	Length		%	No.	ЦQ	Cu	Ni	೧೦	Pb	Zn		o core	Grade	
Me	res	Metres			ESR	3 6	·					•			
12	14	2			9788		56	60	38	180	340	Green-vellow clayey sand with:- to 13m, coarse grained sandstone and arkosic sandstone with greeny white decomposed shale? 13-14m, fragments of brown limonitic coarse grained sandstone and massive jaspery			· · · · · · · · · · · · · · · · · · ·
												limonite.	23	30	7
14	16	2			9789		64	74	44	400	350	Brown limonitic sludge and limonitic coarse grained sandstone, massive jaspery limonite, coarse grained sandstone.	25	28	3
16	18	2			9790	. 9	84	76	42	340	340	As above.	25	39	14
18	20	2			9791		92	44	2 6	290	260	Copious water - fragments of limonite, lumps of manganese coarse grained sandstone, ferruginous sandstone and manganiferous sandstone.	23	32	9
20	22	2			9792		120	62	48	440	520	Chips of fine grained banded quartzite with probable cave material of limonite, quartz, ferruginous phyllite and quartz.	25	32	7
22	24	2			9793		260	180	58	400	560	Coarse quartz fragments, pale yellow to red banded fine grained quartz rock (quartzite? bands in form of folds or pseudo folds partly looks like banded chalcedonic quartz), fragments of ferruginous sandstone, massive hard limonite, white fine grained quartzite, friable medium			
												to coarse grained sandstone.	30	27	-3
24	26	2			9794	13	250	250	80	420	900	Massive hard limonite, fine grained banded quartzite (see above), quartz and minor coarse grained sandstone	24	42	18

Co-ords. of Collar Approx. 9105 E/4105 N Bearing Inclination Vertical LOCATION Anomaly 9000E/4000N

NORANDA AUSTRALIA LIMITED

,]	To	Sample	Recover	·	Sample				ys (P		أحيروا	Geological Log	to core	Grade	1
		Length		%	No. U	₉ O ₈	Cu	Ni	Co	Pb	∠n				
Me	res	Metres	ļ		ESR		ļ						24	24	ļ
	28	2			9795		110	120	52	310	490	As above, slightly more coarse grained sandstone and sand.	44	#T	ļ
					·										
	30	2			9796		104	92	38	220	330	Sand, white coarse grained sandstone, hard limonite,			
			·i									limonite replacement of coarse grained sandstone and contaminants from bottom casing area.	26	25	
				1			1					Contaminants from bottom casing area.			
												, , , , , , , , , , , , , , , , , , ,	23	32	
	32	2		1	9797		110	100	52	170	430	As above, (sandy material predominates).	23		
				-									<u>.</u>		
	34	2			9798		140	90	48	140	450				.]
												behind the casing (sandy material predominates).	24	29	
													ļ		
	36	2			9799	7	220	140	70	40	720		<u> </u>		
												(hard limonitic material predominates).	28	45	ļ
										ļ					
	38	2			9800		70	52	40	80	220				.}
				1				}				arkosic sandstone with manganese and manganiferous sand-			
			1								Į	stone, approx.15% contamination of hard limonite and red	25	27	
				-		}				1		clay.			
 	40	2		1	9801	1	66	50	32	40	220	Coarse grained sand, coarse grained slightly arkosic			
		ļ				1				1		sandstone, manganiferous sandstone and 10 - 15%			
		- 						ļ			1	contamination of hard limonite and limonitic phyllite.	24	26	
			1	··						1	ļ				
	46	1 .			9802	ļ	28	36	24	24	104	Coarse grained sand, coarse grained slightly arkosic		,	
)	42	2			3002		"			Ţ <u>-</u> .		sandstone, manganiferous coarse grained sandstone,			
		· •		-				1		-		very fine grained banded quartzite, quartz - 10% hard			
					· · · · · · · · · · · · · · · · · · ·	1		1		1	1	limonite, contamination?	24	21	
	<u> </u>	ac Dril					D -	t/Da	<u></u>	<u>ــــــــــــــــــــــــــــــــــــ</u>			rd Comp)H - 5	leted	w. d

Bearing

Inclination Vertical LOCATION Anomaly 9000E/4000N

TICLE ROLL PECORN

	FIELD DRILL RECORD														
	To	Sample	Recovery	/ 	Sample			Assa	ys (p	pm)		Geological Log	Angle to core	Estimated Grade	
From	l a	Length		9%		UQ	Cu	Ni	Co	Pb	Zn		10 00107		
Met:	res	Metres			ESR]	•			
42	43	1			9803	6	36	40	24	46	140	As above.	21	22	1
44	1 13					· · · · · ·	00			7. 7					
												End of Hole.	· · · · · · · · · · · · · · · · · · ·		
						ļ						End of note.	 		
	\ ·				<u> </u>					ļ 1					
					Í		1			ŀ			ļļ.		
							1					Drilling Record: 0 - 1m 83" Rotary Blade Bit.			
						ł						$1 - 25 \text{m}$ $7\frac{1}{2}$ Hammer with Button Bit.			
					ļ			ļ		ļ		$25-43$ m $5\frac{1}{2}$ " Hammer Mission Cross B	₩ ,		
					1	ļ							l		
						1	-						 		
						1		1		[Casing Record: Collar piece - Recovered			
				· · · · ·		1	-	†	 	1		25m of 6" metal casing - not recovered	1.	. :	
				ļ				ļ							
		.,						ļ	ļ	ļ					
				, 	1	1			1			Water Record: Depth - 13m.			
,,					-	1	1	1		1		Flow - less than 5000 gal/hr.			
		-	1			1			1						
, man							-			·					
]		.	ļ	ļ	.								
	1	1				1				.	:. 				
					1	1									
								1			Ì	PETROLOGY: ESR 2630 } 24 - 26m. ESR 2631)	1		
	1											ESR 2631)		31 [:]	
					4		- 		1	1		Report No. 2880]
			1,											1	
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,					ľ	1	1		1	1					ļ
	1												.	3	<u>k</u>
		[-						V.	1]
						- 	-				· · [··· ···				k
		<u> L.</u>	<u> </u>	\bot		ــبـــ	1_	1/5:	1	<u></u>		ted 4/10/76 Date Completed 5/10/76 Depth of Hole 43m % Reco	rd Com	aleted 4.4	w.
Drilled	by Afr	ac Dril	ling	1	Type of D	rillin	g Ko)[/P6	erc.	Da	te Sta	Collar Core Recovery % NO. OF HOLE BDI	I - 51	4	
Logged	by J.F	I. Wrigh	T 014	S	oampled b	ру Б. ТМТ	Q .	VII(/ X	K.I	L. 01 (ing Inclination Vertical LOCATION And	maly	9000E/400	ON
- 1	C H	Annr	ויץ ייחי	սու	e/ 41U	n 1A					H ar	ine Inclination Vertical LOCATION And			

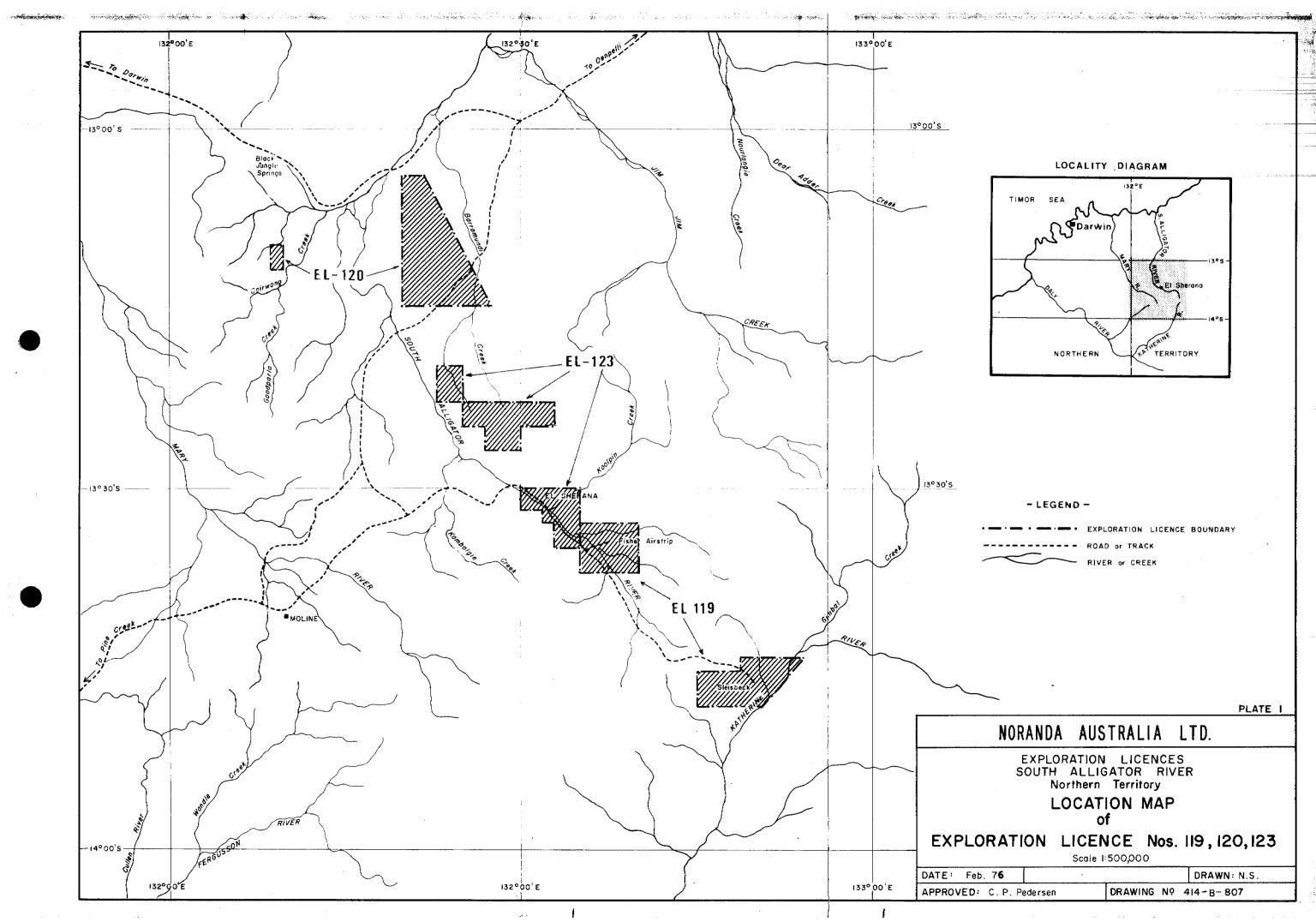
EXPLORATION LICENCE NO. 120

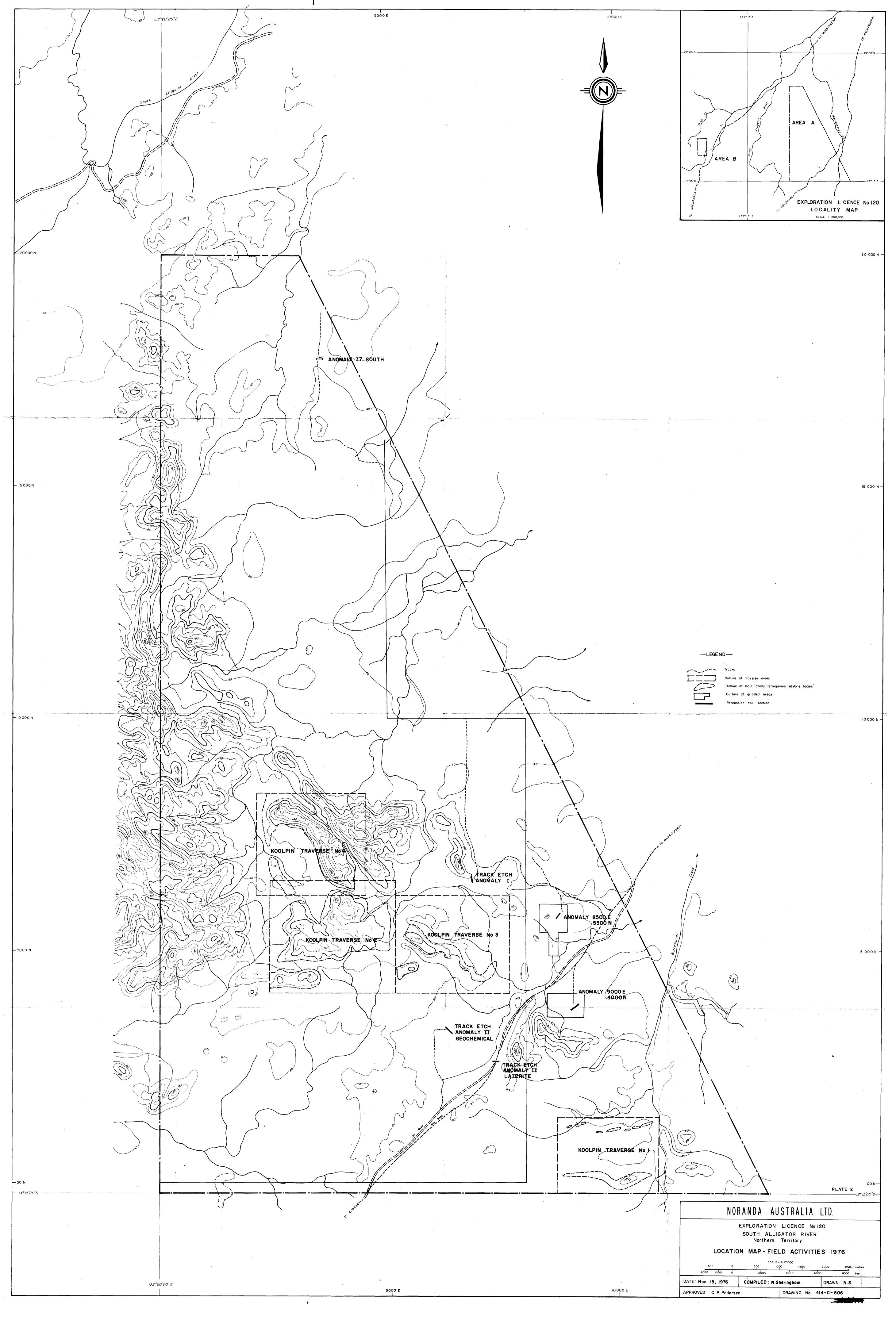
NORTHERN TERRITORY

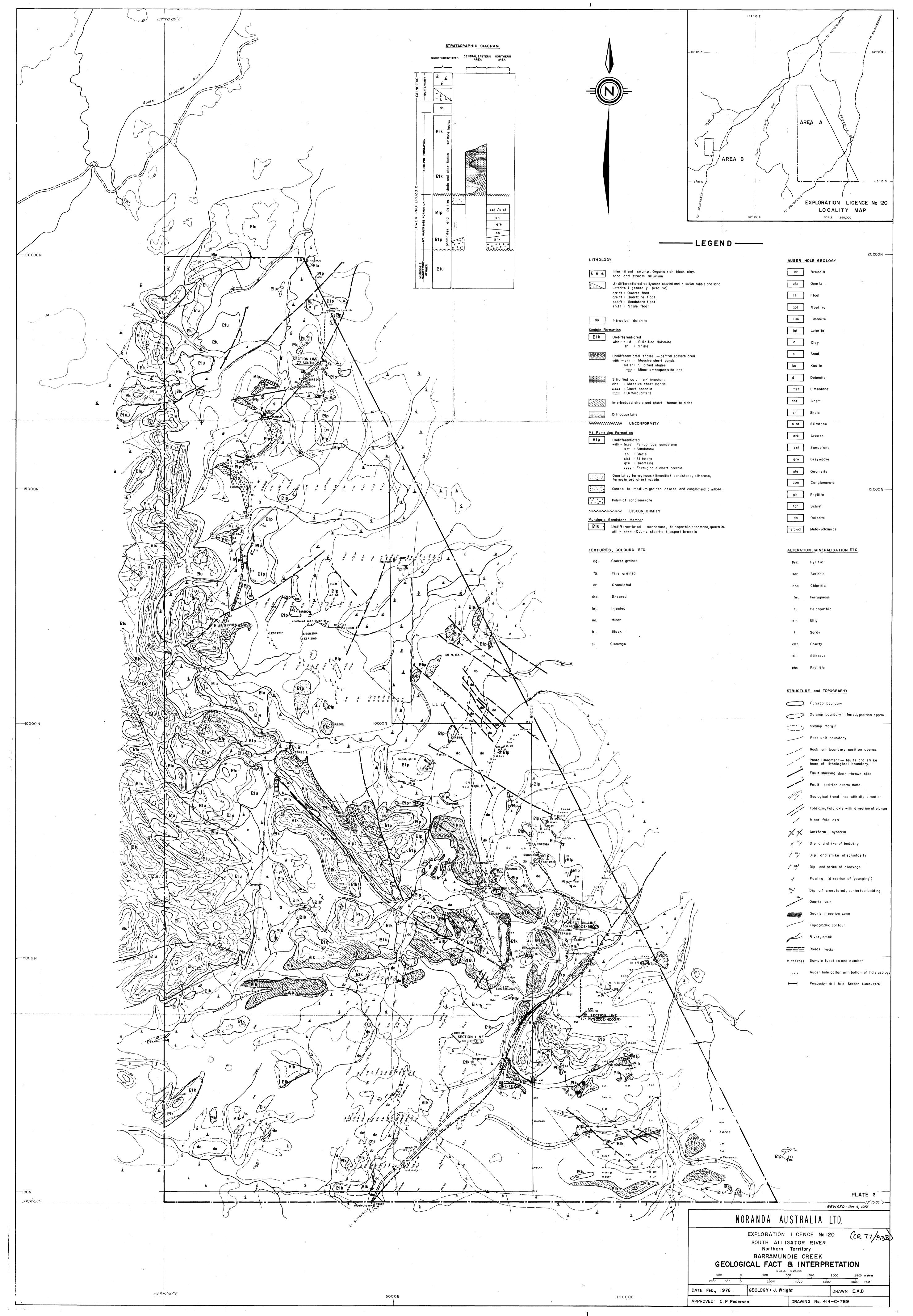
APPENDIX NO.1

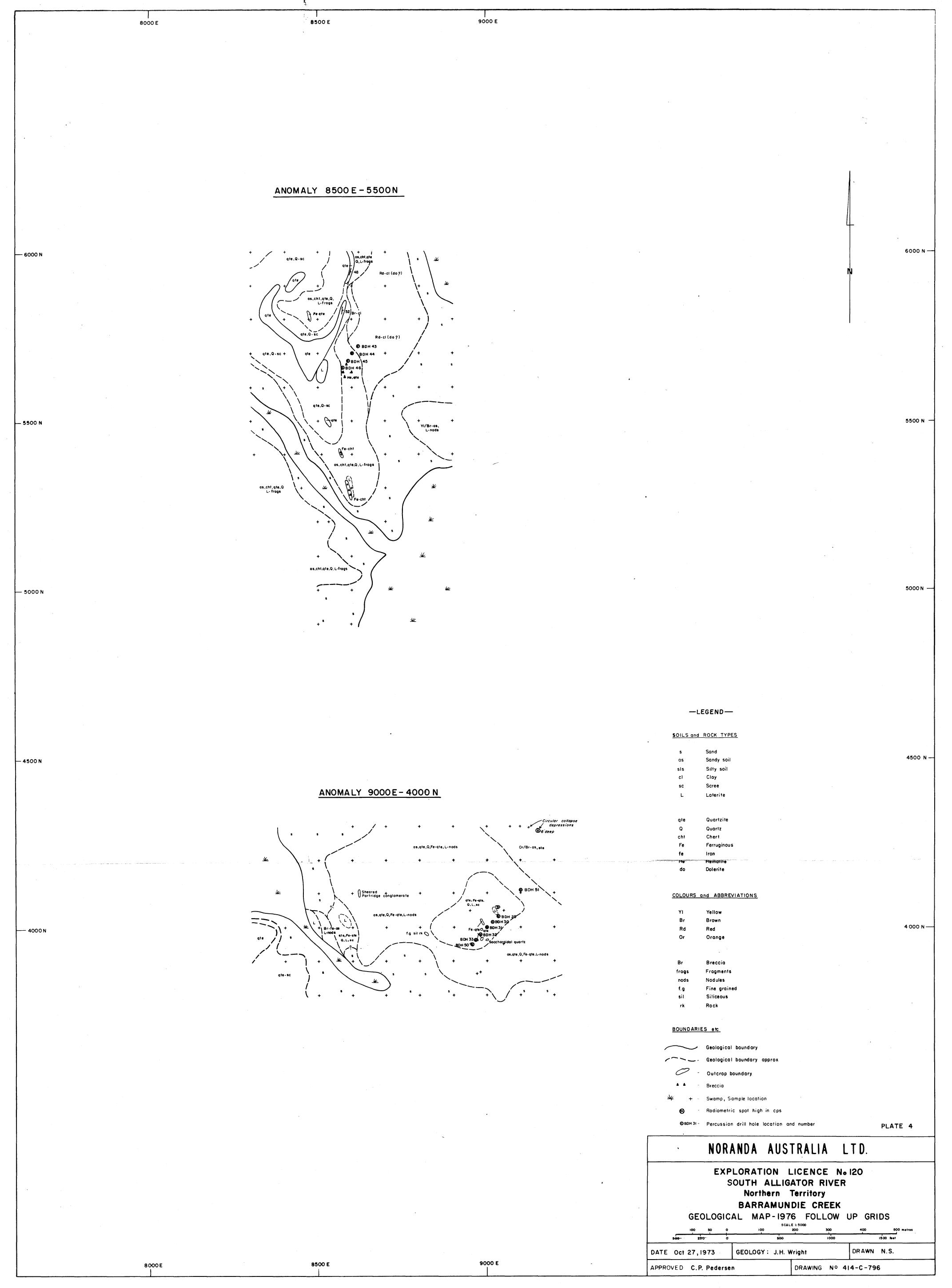
Maps to Accompany

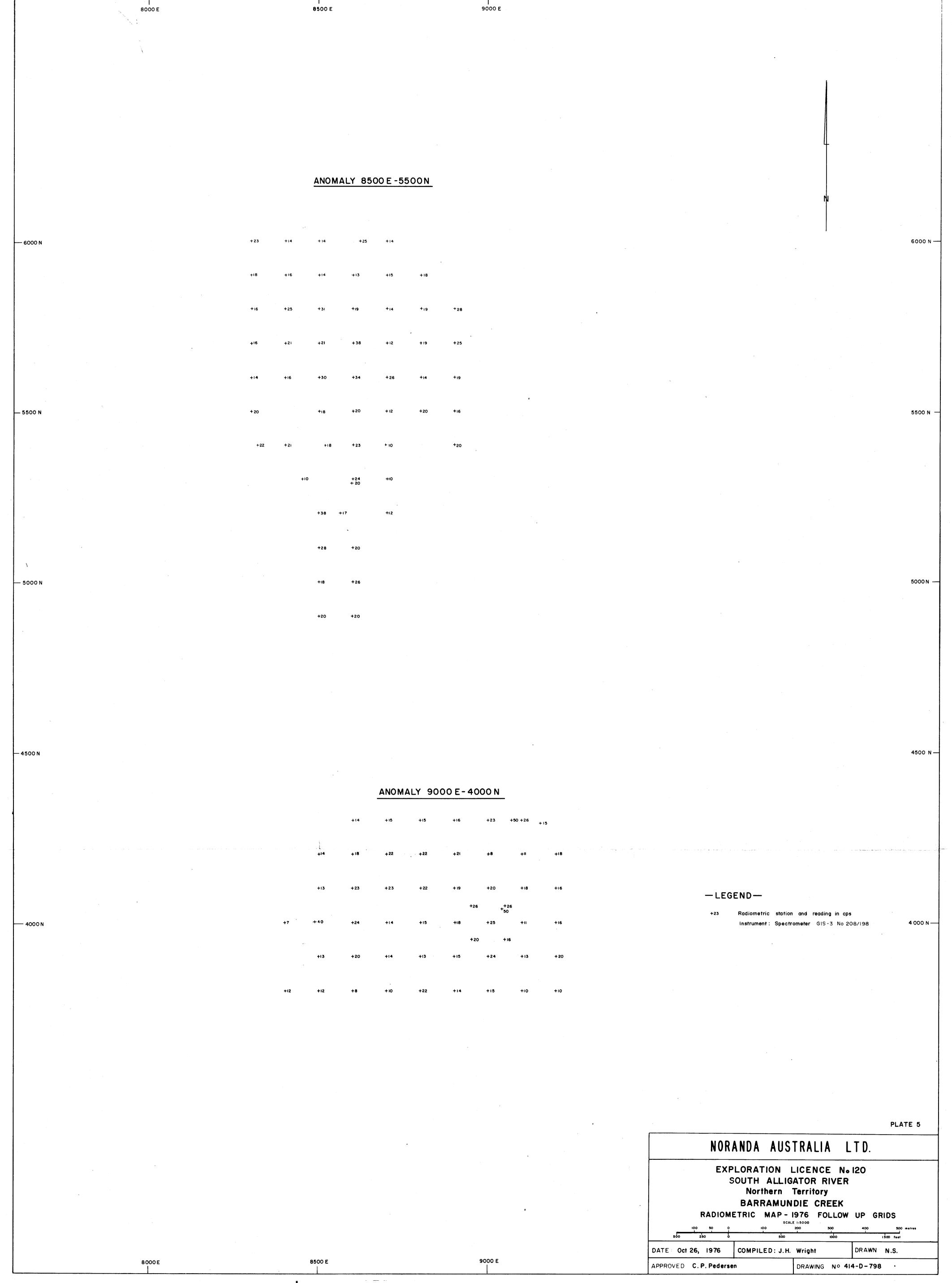
Report No. 260

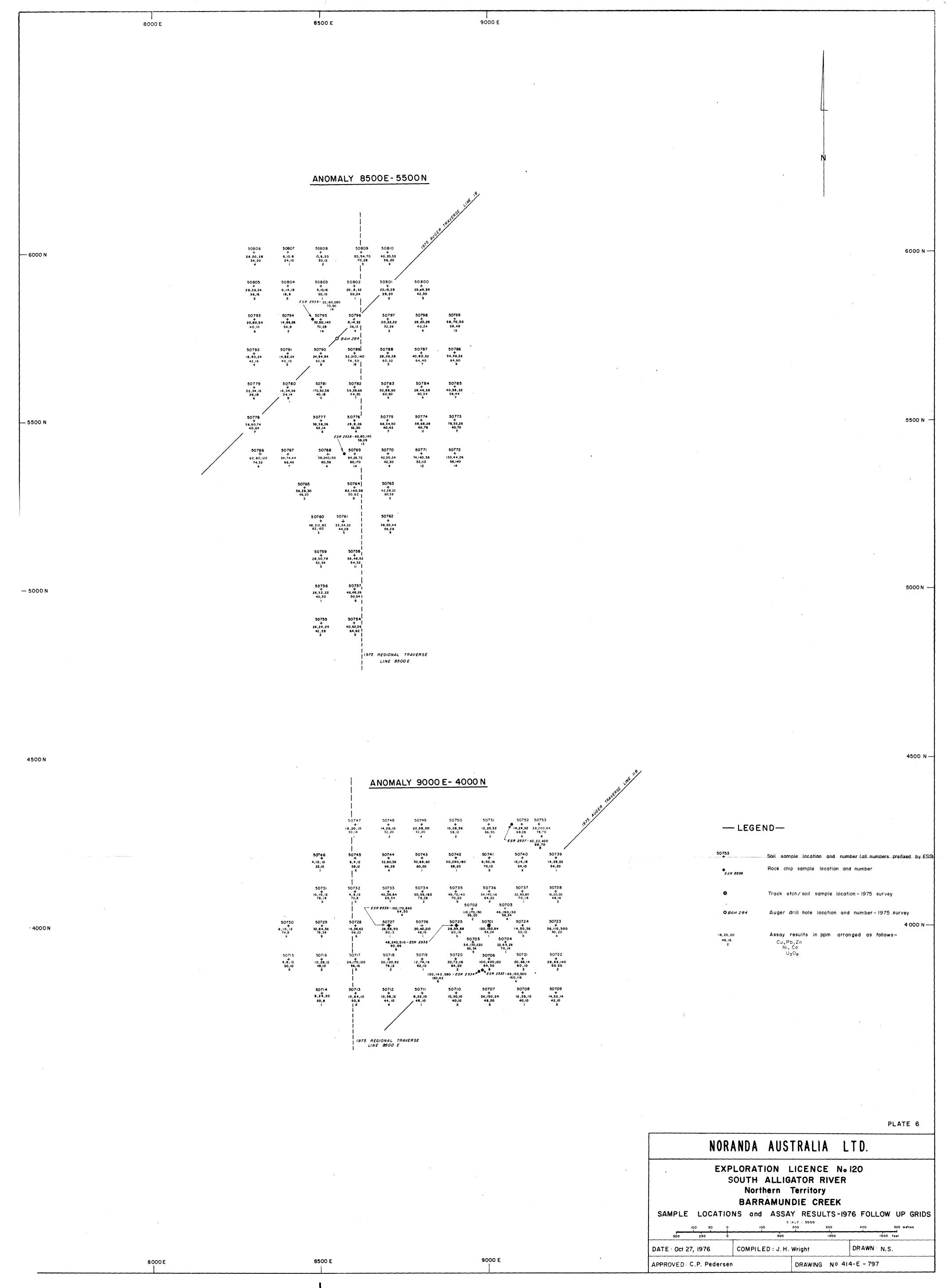


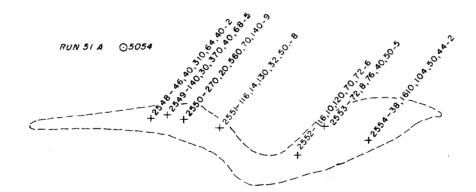












-- LEGEND --

Outcrop boundary - Basal Koolpin shale, siltstone and chert

+2545 Rock chip sample location and number (All numbers prefixed by ESR)

-38,16,120,40,10-2 Assay results in ppm arranged as follows- -Cu,Pb,Zn,Ni,Co-U $_3$ O $_8$

-05054 Photo principle point and number

PLATE 7

NORANDA AUSTRALIA LTD.

EXPLORATION LICENCE No.120

South Alligator River

Northern Territory

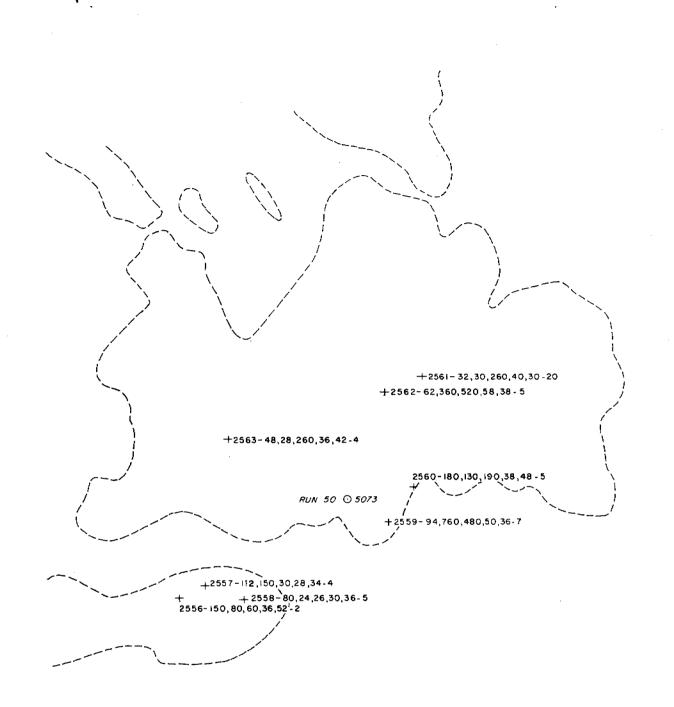
BASAL KOOLPIN TRAVERSE No. 1

ROCK CHIP SAMPLE LOCATIONS and ASSAY RESULTS

PHOTO SCALE - 1:16700 approx-

DATE: May, 1976 COMPILED: J.H. Wright DRAWN: N.S.

APPROVED : C. P. Pedersen DRAWING No. 414-E-792



-LEGEND-

Outgrop boundary - Basal Kaolpin shale sittstone and chert

x²⁵⁴² Rock chip sample location and number (4) numbers prefixed by ECR1

-62,36,57,20,17-5 Assay results in ppm arranged as follows— $-\text{Cu},\text{Pb},\text{Zn},\text{Ni},\text{Co-U}_{3}\text{O}_{8}$

05054 Photo principle point and number

PLATE 8

NORANDA AUSTRALIA LTD.

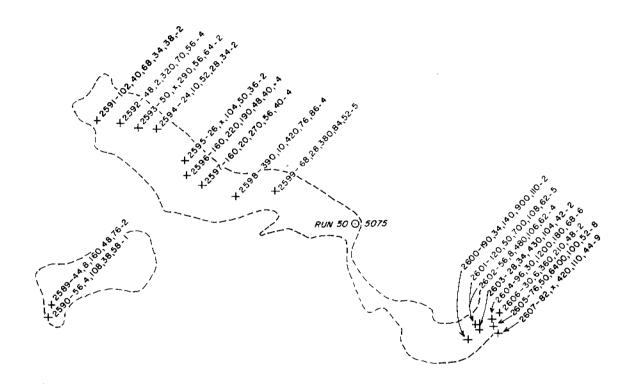
EXPLORATION LICENCE No.120
South Alligator River
Northern Territory
BASAL KOOLPIN TRAVERSE No. 2

ROCK CHIP SAMPLE LOCATIONS and ASSAY RESULTS

PHOTO SCALE - 1.16700 approx

DATE May 1976 COMPILED: J H Wright DRAWN N S

APPROVED: CIP Pedersen DRAWING No 414-E-793



--- LEGEND ---

Outcrop boundary-Basal Koolpin shale, siltstone

Rock chip sample location and number (All numbers prefixed by ESR)

-82,x,34,10,16-1 Assay results in ppm arranged as follows-

-Cu,Pb,Zn,Ni,Co-U3O8

© 5075 Photo principle point and number

PLATE 9

NORANDA AUSTRALIA LTD.

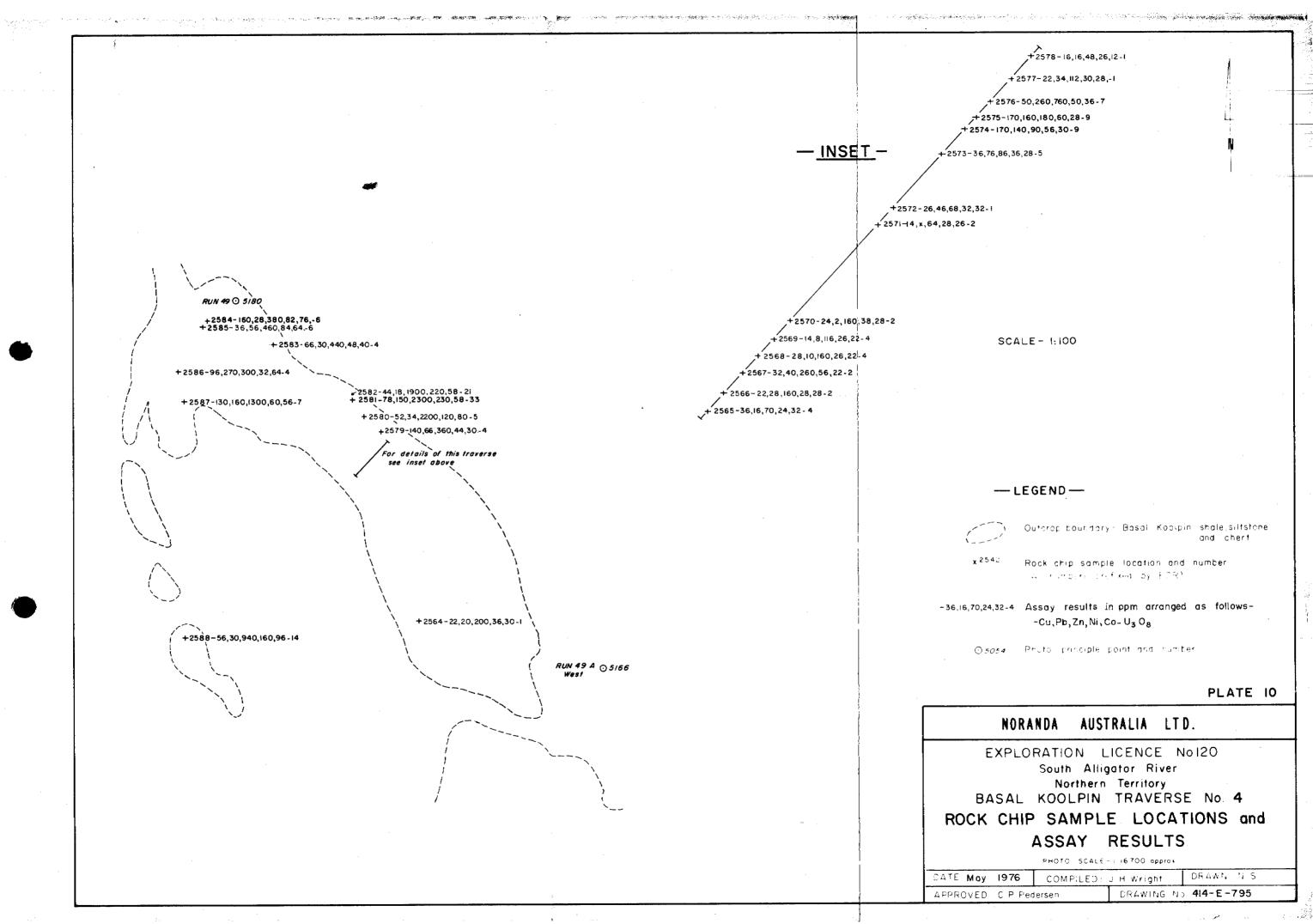
EXPLORATION LICENCE No.120 South Alligator River Northern Territory BASAL KOOLPIN TRAVERSE No 3

ROCK CHIP SAMPLE LOCATIONS and ASSAY RESULTS

PHOTO SCALE - 1:16700 approx.

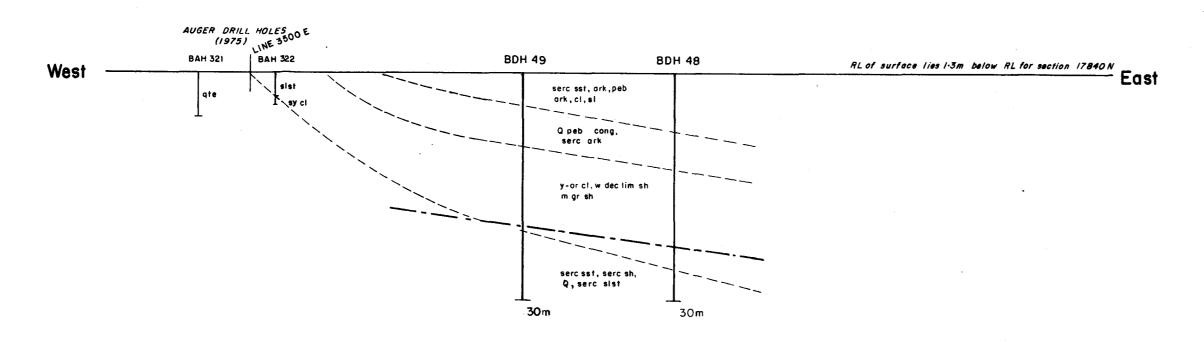
DATE: May, 1976 COMPILED: J.H. Wright DRAWN: N.S.

APPROVED: C.P. Pedersen DRAWING No. 414-E-794



BARRAMUNDIE AREA ANOMALY 77 SOUTH - SECTION 17890 N PERCUSSION DRILLING

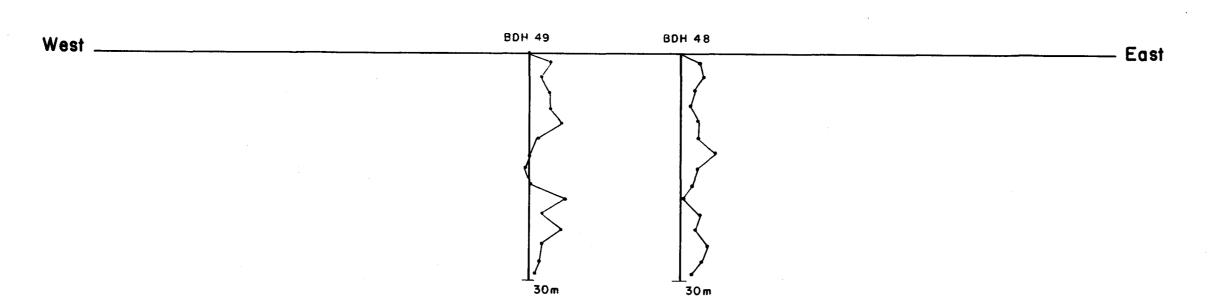
- GEOLOGICAL SECTION-



-ASSAY SECTION-

NAT A	BDH 49	BDH 48	•
West -	8,4,10,8,24,8	18,8,10,12,26,10	East
	5, 2,10,10,28,4	4,4,6,12,32,6	•
	2,2,10,10,30,6	2,2,4,12,36,4	
	2,2,10,8,36,6	4,4,6,10,28,4	
•	2,4,2,8,34,4	25,42,x,46,72,22	
	5, 4, 10, 10, 30, 4	11,94,x,140,180,58	:
	[13,32,4,40,64,24	7,82,X,180,200,52	1, 5,
	21,48,2,58,82,28	[2,120,X,140,200,60	
	12,84,2,68,108,40	33,104,4,94,150,54	
	14,92,2,76,110,44	59,84,X,116,150,46	
	48,106,4,94,112,44	33,54,10,94,96,24	
	20,38,6,50,64,20	27,36,X,74,56,20	
	22,50,8,66,66,22	6,8,6,26,38,4	
•	17,44,34,76,60,20	35,24,30,46,36,10	
	13,22,16,34,40,8	8,8,6,24,36,6	.
	30 m	30 rn	Fig.

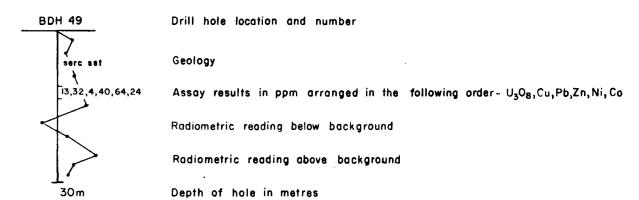
- RADIOMETRIC SECTION -



- LEGEND-

Soil and Ro	ck Types	Minerals	
cl,clst	Clay, claystone	lim	Limonite
sd,sy	Sand, sandy	Q	Quartz
sl,sly	Silt, silty		
sist	Siltstone	Alteration	•
sh	Shale	dec	Decomposed
ark,arkc	Arkose, arkosic	serc	Sericitic
cong	Conglomerate		
qte,0-qte	Quartzite, ortho-quartzite		
s st	Sandstone		
Textures		Miscellaneo	<u>us</u>
peb	Pebble/s	m	Minor
		w	With
Colours		Boundaries	etc
gr	Grey		Geological interpretation
or	Orange		Approx. water table
у	Yellow		

DRILL HOLE DATA



NOTE: Radiometric value plotted is bulk sample reading on the ground minus background reading in cps Scale- lcm = 10 cps

INSTRUMENT: GIS-3 Spectrometer N° 208-198

PLATE II

NORANDA AUSTRALIA LTD. EXPLORATION LICENCE Nº 120

Northern Territory ANOMALY 77 SOUTH- SECTION 17890 N

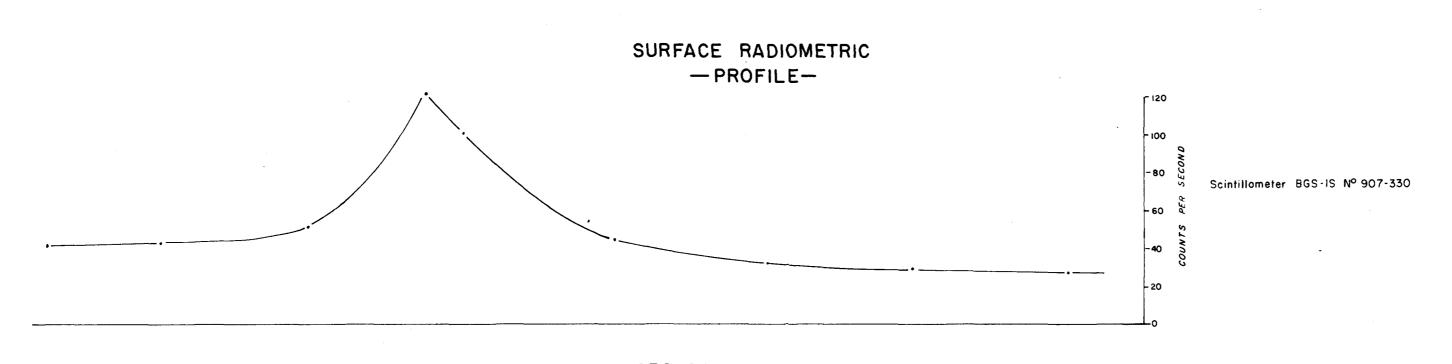
GEOLOGY, ASSAYS and RADIOMETRICS

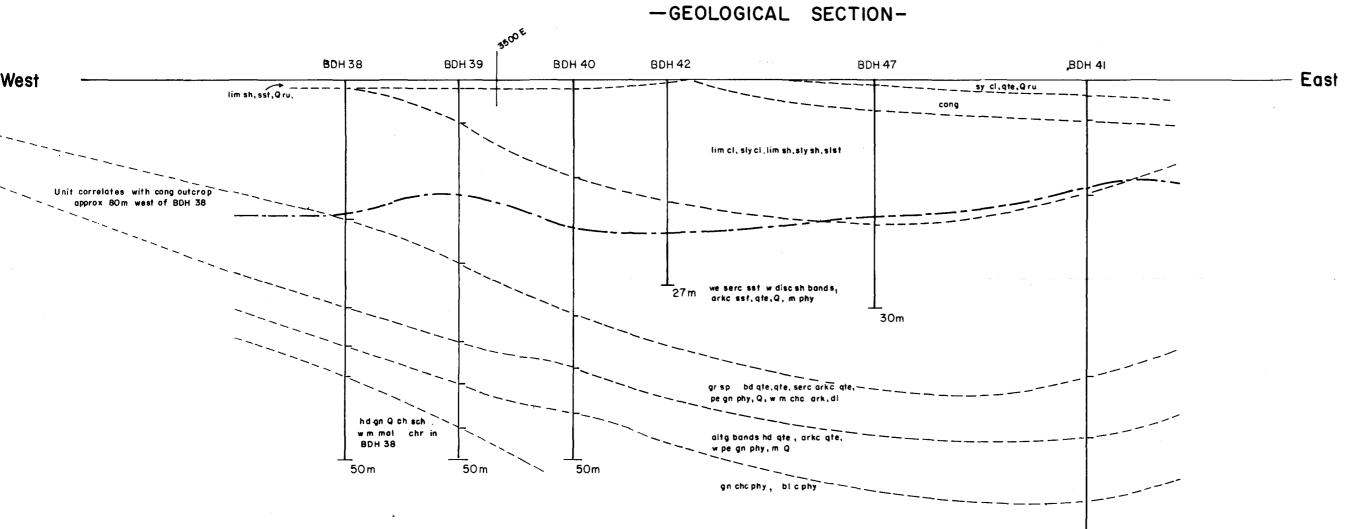
DATE: Nov 9, 1976 GEOLOGY: J.H. Wright DRAWN: N.S.

APPROVED : C.P. Pedersen

DRAWING Nº 414-C-801

BARRAMUNDIE AREA ANOMALY 77 SOUTH - SECTION 17840 N PERCUSSION DRILLING

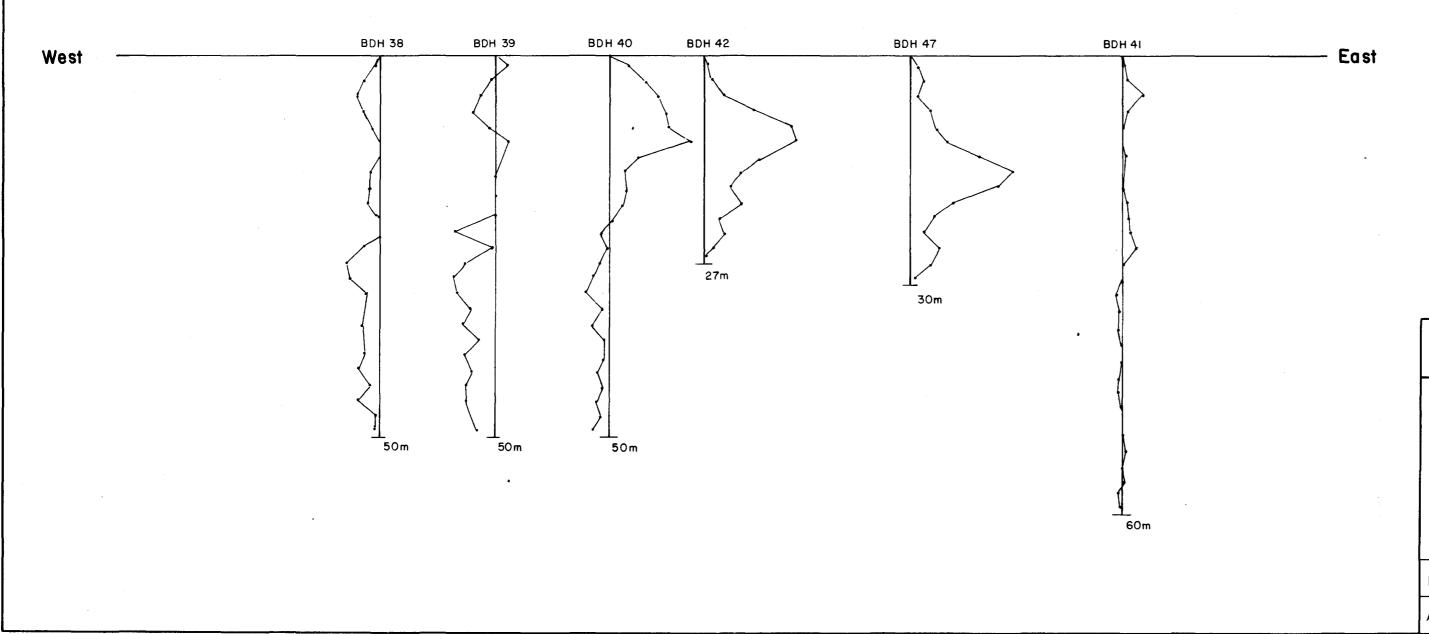




-ASSAY SECTION-

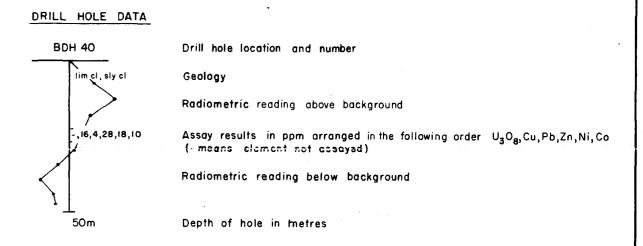
Most	BDH 38	BDH 39	BDH 40	BDH 42	BDH 47	BDH 41	
West —	53,20,10,26,34,22	17,18,8,116,170,68	83,32,4,22,58,22	11, 10, 14, 14, 30, 16	5,4,6,8,26,4	1,8,x,6,26,6	—— East
	18,30,4,38,68,32	33,10,8,170,280,88	_	F	4,2,4,8,30,2	4,8,x,12,10,6	
	9,18,4,30,50,16	41,8,4,112,150,42	73,38,2,44,64,24	51,34,4,38,60,22	2,2,6,8,30,6	7,14,10,20,26,14	
	25,24,4,42,74,26	33,8,8,56,80,26	67,28,2,44,60,24	4 72,44,4,46,64,22	2,2,X,10,28,4	4,14,4,26,54,12	
	20,24,4,30,32,38	31,16,10,50,72,26	71,34,2,54,66,28	3 117,66,2,52,66,20	9,18,8,20,34,10	8,24,4,48,74,26	
	[19,10,6,36,52,22	60,32,6,74,86,32	121,34,X,70,76,28	165,58,2,46,58,20	44,60,10,38,48,22	- 5,68,4,50,80,28	
	[35,10,4,40,70,22	53,28,x,76,114,40	42,22,4,36,50,18	106,56,X,46,74,24	77,66,8,56,58,28	[17,66,10,50,80,28	
		35,32,12,60,80,28	33,14,6,36,42,18	38,38,6,38,46,18	112,88,10,64,62,32		
	L	55,34,10,46,60,32	34,20,2,40,50,18	46,36,10,38,44,16	64,68,4,48,68,22		
	11,22,4,54,110,20	24,14,4,26,30,22	66,46,2,56,66,24	4 75,44,10,40,46,16	45,56,10,44,58,18		
	-,12,6,36,80,18	11,8,2,26,22,18	46,50,10,48,52,18	54,44,10,40,44,16	42,28,10,32,50,12	L	
	t2,22,8,42,94,38	5,10,4,18,20,28	Γ	21,44,10,40,42,14	35,30,10,38,38,12	[17,26,X,40,30,14	
	-,30,10,54,104,40	-,12,X,26,24,16		31,48,8,36,46,10	34,36,12,40,40,12	12,34,16,46,38,14	
	-,14,6,24,44,14	-,8,X,16,22,16	4,14,6,20,54,12	<u></u>	5,20,8,22,42,4	ſ	
	7,16,2,14,40,14	4,8,4,18,58,20	-,16,4,28,18,10	27 m	6,14,10,16,38,4		
	- 40,8,24,48,18	-,10,X,24,32,18	-,12,4,12,40,14		 30m	8,16,6,20,48,8	
	-,62,10,30,42,14	-,12,X,18,24,16	[11,14,X,12,16,16				
	4,116,8,60,80,42	7,10,6,18,60,20				Ĺ	
	[L			6,16,10,22,32,8	
	-,550,10,112,130,72		3,12,4,12,30,12				
	3,4 30,x,98,112,76	8,44,2,46,78,30				L	
	-,220,6,102,160,96					5,12,14,24,30,10	
	-,180,x,78,108,66		5,76,14,54,56,2	8			
	-,150,2,84,94,66	-,210,8,76,76,42	L			(
	<u></u>	6,38,4,60,96,112	5,170,18,70,80,4	10		Ĺ	
	50m	50m	50 m			8,14,18,20,18,8	
						-,14,26,24,34,10	, et
						-,i2,20,20,40,i0	
						k	
						4,40,26,88,60,32	

--- RADIOMETRIC SECTION-



-- LEGEND-

Soil and Ro	ock Types	Minerals	
cl,cist	Clay, claystone	ch	Chlorite
sd,sy	Sand, sandy	feld	Feldspar
sl,sly	Silt, silty	lim	Limonite
С	Carbonaceous	Q	Quartz
chc	Chloritic	dl	Dolomite
phy	Phyllite	chr, mal	Chrysocolla, malachite
sch	Schist	Alteration	
sist	Siftstone	serc	Sericitic
sh	Shale	we	Weathered
ark,arkc	Arkose, arkosic		
cong	Conglomerate	Miscellaneo	us
qte,0-qte	Quartzite, ortho-quartzite	altg	Alternating
sst	Sandstone	disc	Discontinuous
		hd	Hard
Textures		, w	Minor
bd	Banded	rk	Rock
ru	Rubble	w	With
sp	Spotted		
Colours		Boundaries	etc
ы	Black		Geological interpretation
gn,gr	Green, grey		Approx water table
pe	Pale		



NOTE: Radiometric value plotted is bulk sample reading on the ground minus background reading in cps

Scale- lcm=50cps

INSTRUMENT: GIS-3 Spectrometer Nº 208-198

PLATE 12

NORANDA AUSTRALIA LTD.

EXPLORATION LICENCE N° 120
Northern Territory

ANOMALY 77 SOUTH- SECTION 17840 N
GEOLOGY, ASSAYS and RADIOMETRICS

	50	25	0	50	100 feet	-
ATE:	Nov 9,	1976	GEOLO	3Y: J.H. Wright	DRAWN	∜: N.S

APPROVED: C.P. Pedersen DRAWING Nº 414-C-800

									3 300) L .															
						•																		N Å	
28	34	38	28	20	30 23	3 2	0 34	30	32	28	18	20	20	22	22	20 .	16	18	16						
30	56 50	58 54	55	54	50 22	2 4	0 25	24	34	18	20	18	20	18	18	20	18	20	16						
22	3 2 32	46	54 54	45	41 2	3 3	2 23	3 22	2 24	20	20	20	18	16	18	18	18	22	18				,		
20	28	32	54	48	46 2	6 3	1 22	2 22	2 23	21	20	21	18	16	19	20	21	18	19						
24	22	24	54	49	38 4	2 3	sa 50	36	3 34	24	18	20	20	18	19	20	20	20	19			,		,	1800 N -
24	26	24	34	40	30 4		,0 50	, 30	, 31	24	10	20	20	.0	10	20	20	20							100011
24	26	40	48	44	40 3	8 4	9E 04	5 30 70	32	26	25	18	20	22	26	20	18	16	22						
20	24	30	32	36	42 3	2 5	52 48	9 64	4 40	34	36	3 O	28	2 2	20	24	20	18	12						
2 4	26	3 2	34	34	36 40	0 4	2 50	72	0 40	26	28	24	24	20	20	2 2	.21	. 17	16						
	. 22	20	30.	28	304	84	o_1 &) 110 21 120) De #561	38	0 55 4 6	022 T W	_ 22	26	28	28	. 22	. 18	L 6					و المراجع المراجع المراجع المستعمل المراجع الم	. J. J. Williamson and J. W. J. W. W. W. W. W. W. W. W. W. W. W. W. W.
 The second of th	The manifest of		The sale of the sa				3.9	130	BAH320 44 BAH321 048	275	0	0												•	
18	22	22	28	34	32 5	ю •	50 HA 56	95	BAH BAH	4 26 4 38	26	26 -	30	2 4	30	28	20	20	18						
20	20	20	26	28 /	હેતું 26 4 ુર્ગ ુર્વ	4 4	0 42 ص ر	2 ⁶ 10 50	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9 AH 3	70 32	⊙ 30 30	⊙ ∓ 28-	28	3 4	30	28	20	20						
24	26	24	34	28 (6	01 28 5	0 .	15 \$ 5 16 43 8 16 43 8	BAH317	BAH312, 8AH313, 67, 91st	BAH310	ी 22	25	2 0	26	30	2 5	22	20	20					•	
. 16		16	16	16	į	8 3	34 /30	BAH325	\$ BAH324	4808 30	() 20	18	18	20	2 5	30	38	30	22						
			,Æ		/			/ 40		BAH32														— L EGEND —	
17	16	20	18/09/	/2Č	16 2	4 2	24 46	5 45	36	32	28	22	22	22	26	29	36	32	24					Quartzite rubble	
18	18	20 /	(°,20 ′.	16	16 2	4 2	26 44	4 42	2 38	30	30	28	24	20	20	24	18	16	14					Conglomerate	
22	20	2.4%	24	12	14 2	2 2	28 44	36	3 8	36	38	34	30	32	30	24	26	22	24					Siltstone	
20	/ 16/0 /60	() () () ()	10	16	22 3	4 3	6 40	9 40	36	34	36	36	34	32	30	26	26	2 4	2 4					Quartz vein material	
26	ره ره رود کار	14	12	20	30 4	0 4	1 2 40	0 42	2 40	38	35	36	34	30	30	26	24	22	24					Geological boundary	
,																			-				3h OBAH212	Auger hole location with number	and qeology
29 6	9 22	18	10	8	16 2	0 2	20 3	0 30	38	34	34	34	32	32	28	20	22	22	24				46	Radiometric readings in c.p.s. Instrument—Spectrometer BGS—IS	No 907-330
24 ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °	16	8	8	10	22 2	2 2	.4 20	26	32	32	34	3 6	3 8	40	36	26	28	28	28				× 32	Dip and strike of bedding	
/s°/ /°/ 36	20	Ю	10	10	10 1	6 2	20 20	20) 18	6 550	20	34	34	28	28	30	24	26	26				AUGER H	OLE GEOLOGY	
28	12	10	8	10	10 1	0 1	6 20	0 22	2 20	20		30	34	29	30	30	26	22	22				sh	Shale	
26	10	10	10	10	14 2	0 2	20 20) 22	2 18	18	80 % 10%	ا اورة 20	16	.20	18	18	20	12	12				sit sh	Silty shale	
	,,	.0			., _		.0 20			10	20	1,67	۸.	.20	10	10	20	12	12				alst qte	Silt stone Quartzite	·
10	10	8	8	8	8 (8 2	24 24	4 28	3 24	18	18	20 %	%, 20 %, 4	20	18	. 16	14	12	12						PLATE 13
8	8	10	8	12	20 2	20 2	24 22	5 50	20	18	16	18	18	17	16	16	! 4	12	12	BAH 317 - D OW	70	17500 N		NORANDA AUSTRALIA	
																				⊕ BOH	·	Percussion and Auger drill hole location and number (Percussion drilling 1976)		EXPLORATION LICENCE SOUTH ALLIGATOR RIV Northern Territory	'ER
																				Θ ^{BDH 4}	_{ři} f	Percussion drill hole location and number	GEOLOGY	ANOMALY 77 SOUT	Н .
																							25	SCALE - 1: 2000 0 50 100	
									3500	E													DATE: Jan., 19	0 100 200 300 76 COMPILED: J Wright	400 500 feet DRAWN: E.A.B
																				•			APPROVED:	C P Pedersen DRAWING N	9: 414-C-772

DRAWING Nº: 414-C-772

APPROVED: C.P. Pedersen

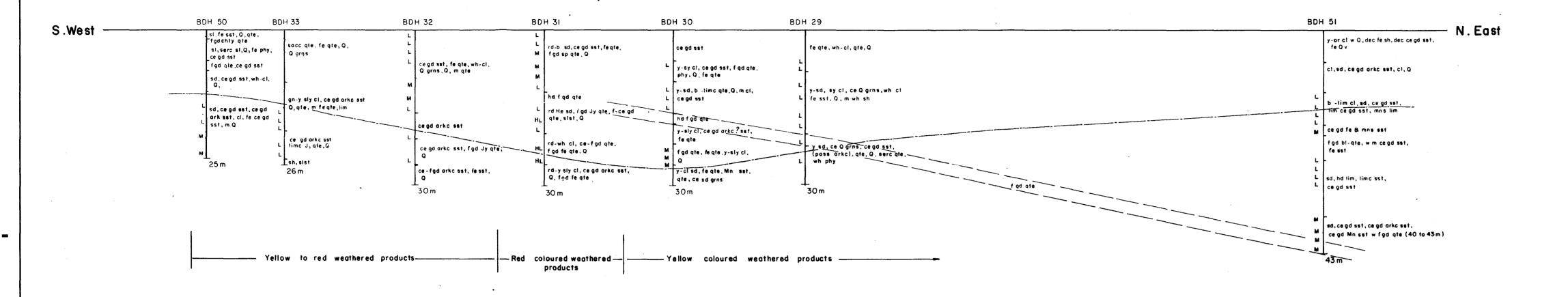
1 3 500 E

-1800N

--- 17500N

BARRAMUNDIE AREA ANOMALY 9000E 4000 N PERCUSSION DRILLING

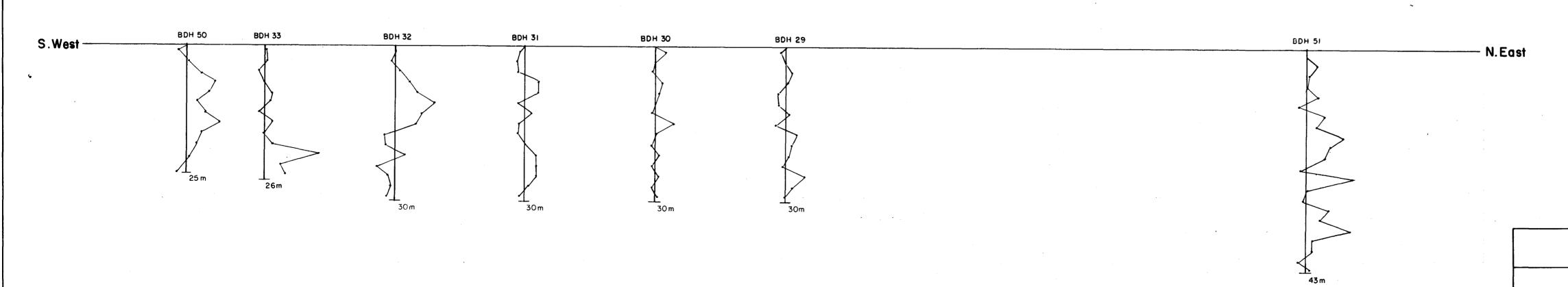
- GEOLOGICAL SECTION-



ASSAY SECTION

S. West	BDH 50	DH 33	BDH 32	BDH 31	BDH 30	BDH 29	BDH 51
D. WESI	4,120,140,240,32,20	7,150,190,390,60,42	14,118,0-26%,700,88,108	6,190,310,180,36,28	7,86,170,180,30,20	24,50,130,120,20,20	6,34,48,62,20,10 N. East
	-,120,270,420,50,26	_,100,230,330,76,22	,72,190,200,52,18	-,114,300,190,30,24	_,90,320,260,20,14	[-,42,330,220,18,12	-,20,28,54,16,10
	-,90,150,190,30,12	-, 42,120,98,64,12	-,112,380,330,62,22	-,74,480,220,30,32	-, 68,340,270,24,18	-,46,270,170,18,8	-,14,26,34,14,8
	4,52,106,300,34,8	5,68,230,380,84,36	9,110,410,340,50,36	[6,54,170,70,30,14	6,130,330,380,38,24	6,76,280,390,20,22	-,14,30,48,24,10
	-,40,60,260,30,12	, 42, 270, 380, 92, 26	-,150,470,540,48,40	-,72,270,130,24,18	-, 54,510,200,18,12	-,88,280,210,12, 1 0	2, 4, 40, 18, 20, 4
	-,22,50,90,30,8	-,26,78,250,72,18	9,230,750,500,52,36	-,64,210,170,24,14	-,106,850,240,18,20	-, 130, 800, 270, 30, 20	-,20,42,46,28,8
	-,12,34,56,20,8	5,40,70,250,24,24	[14,350,900,500,58,40	5,50,220,78,28,10	-,270,1500,450,50,54	7,86,360,270,12,18	-,56,180,340,60,38
_	4, 36, 40,140,26,14	,36,48,340,80,40	,86,650,64,50,18	-,42,250,98,40,16	6,130,370,320,34,20	-,38,360,60,14,6	-,64,400,350,74,44
	-,24,48,104,28,10	_, 36,60,250,80,30	[~,78,470,46,50,18	[-,98,150,330,30,24	-, 62,380,112,20,10	[7,106,320,220,30,18	9,84,340,340,76,42
	-,28,32,98,28,8	-,60,76,320,28,34	6,160,470,230,48,24	4,94,230,260,40,20	_,112,330,160,24,16	[-,120,280,180,18,10	~,92,290,260,44,26
	5,20,42,170,40,14	38,150,40,1500,104,140	[-,140,200,250,80,22	-,64,240,88,40,18	5,170,280,330,38,18	-,120,420,150,18,10	-,120,440,520,62,48
		-74,190,490,40,46	-,40,80,48,56,10	_,80,270,140,18,20	-,120,350,190,30,18	[-,86,390,114,18,10	-,260,400,560,180,58
	<u></u>	31,104,360,820,66,84	_,38,102,52,56,10	7,48,180,86,30,16	-, 88, 270, 140, 20, 10	7,170,460,230,30,16	[3,250,420,900,250,80
	25 m	26 m	4,66,180,78,34,12	-,50,120,90,50,14	-,78,180,92,20,12	[-,170,500,250,20,18	-, 110,310,490,120,52
			,26,40,46,62,8		6,72,180,92,24,12		-,104,220,330,92,38
	•	•	30 m	30 m	30 m	30 m	[-, 110,170,430,100,52
							-,140,140,450,90,48
					•		7,220,40,720,140,70
			·				-,70,80,220,52,40
				•		•	-,66,40,220,50,32
						•	-,28,24,104,36,24 -,36,46,40,40,24

RADIOMETRIC SECTION



---LEGEND ---

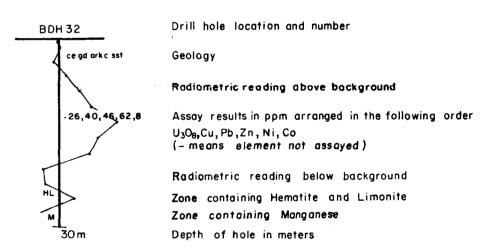
Soil and Ro	ck Types	Minerals	•
cl, cist	Clay, claystone	ch	Chlorite
sd, sy	Sand, sandy	lim '	Limonite
si, siy	Silt, silty	Mn	Manganese
cht, chty	Chert, cherty	Q	Quartz
- phy	Phyllit e		
sist	Siltstone	Structure	
sh	Shale	V	Vein /s
ark, arkc	Arkose, arkosic		
mns	Manganiferous	Alteration	
qte,0-qte	Quartzite , Ortho – quartzite	dec	Deconposed
sst	Sandstone	fe	Ferruginous
Textures	•	He	Hematitic
gd, grns	Grained, grains	J,Jy	Jasper, Jaspery
sacc	Sacharoidal	limc	Limonitic
æp	Spotted	serc	Sericitic

Colours		Miscellaneo	us
b,bI	Brown, black	c e	Coarse
gn	Green	f	Fine
or	Orange	hd	Hard
r,r d	Red	m	Minor
wh	White	poss	Possibly

w With

y Yellow

DRILL HOLE DATA



NOTE: Radiometric value plotted is bulk sample reading on the ground minus background reading in cps

Scale: | cm = 50 cps

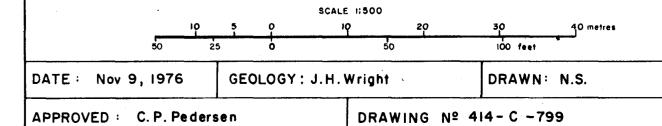
INSTRUMENT : GIS - 3 Spectrometer Nº 208-198

PLATE 14

NORANDA AUSTRALIA LTD.

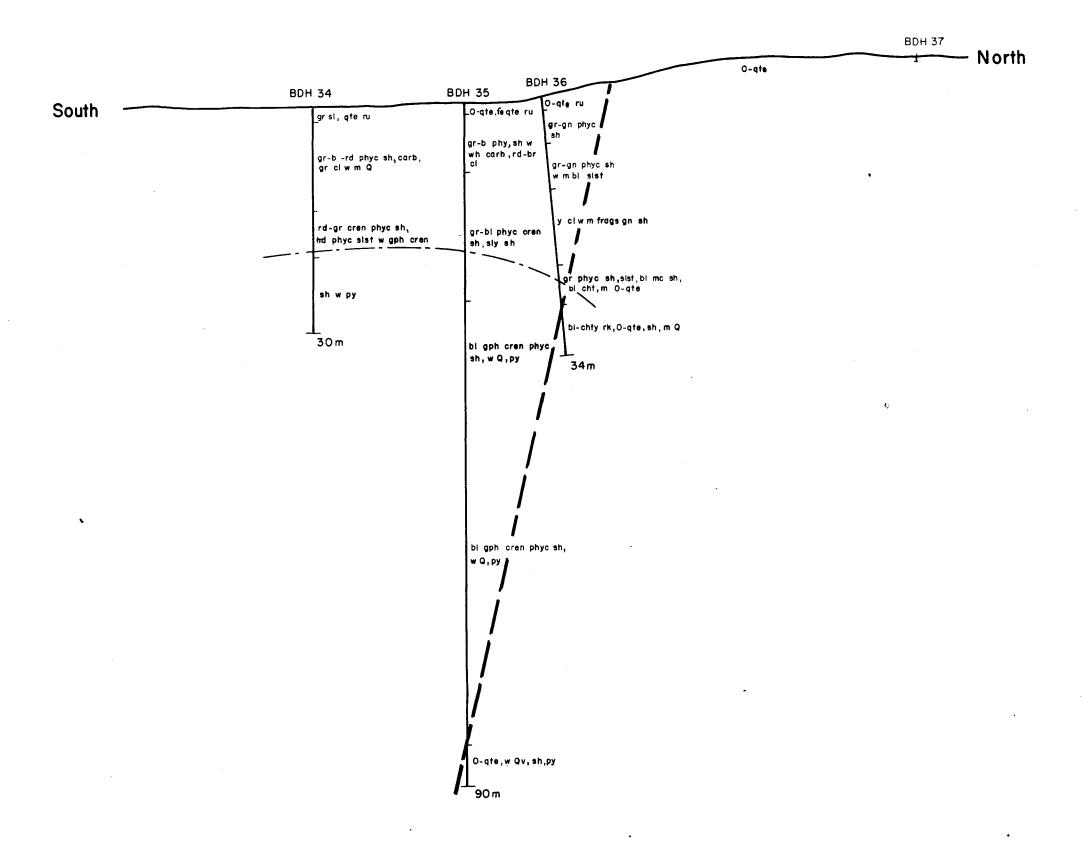
EXPLORATION LICENCE N° 120 Northern Territory

ANOMALY 9000 E - 4000 N GEOLOGICAL, ASSAY and RADIOMETRIC SECTION

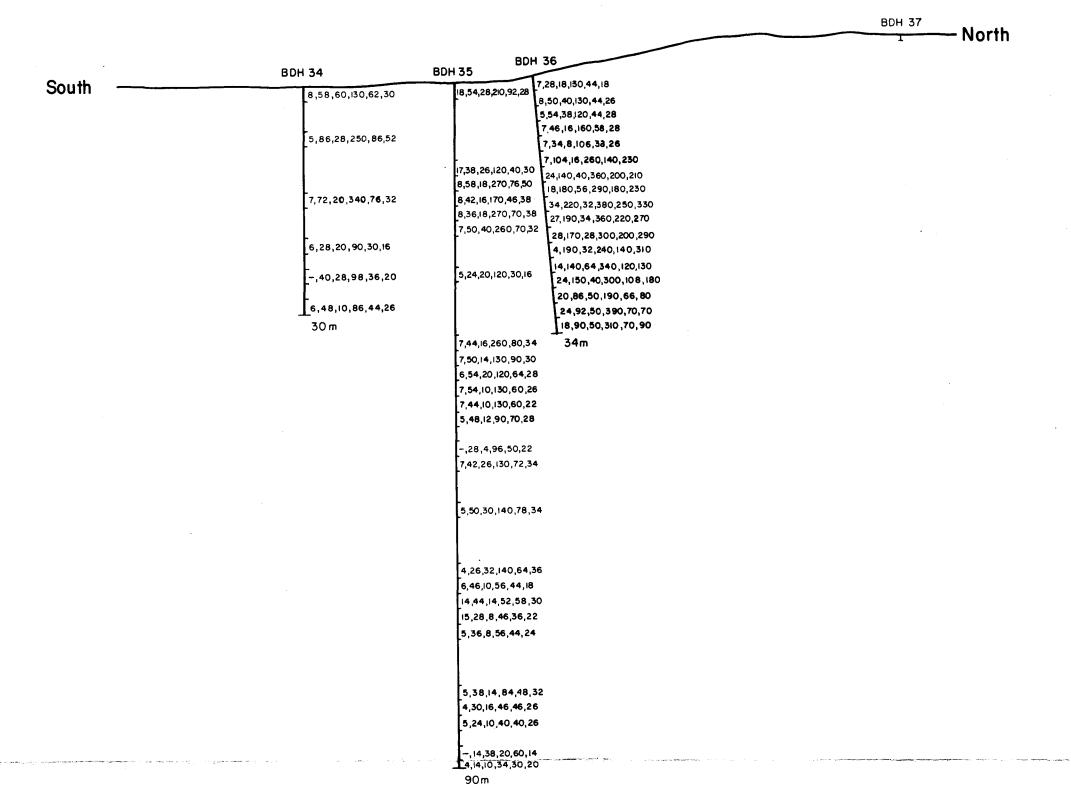


BARRAMUNDIE AREA TRACK ETCH ANOMALY No I PERCUSSION DRILLING

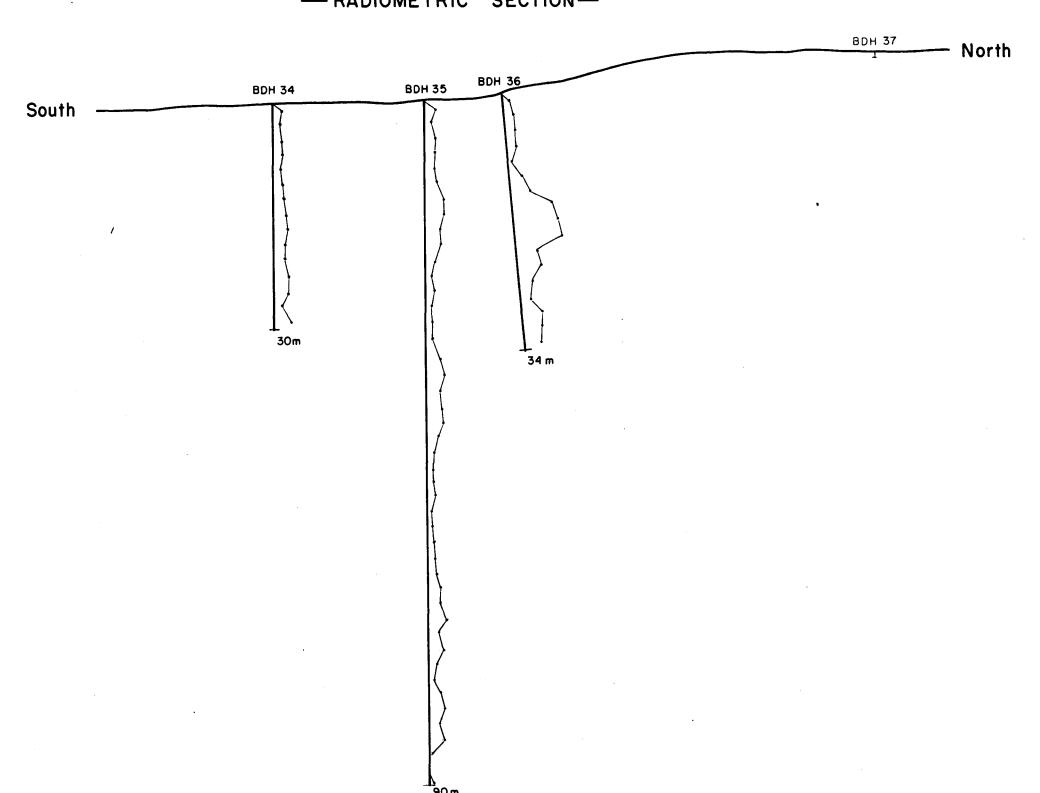
--- GEOLOGICAL SECTION -



- ASSAY SECTION-



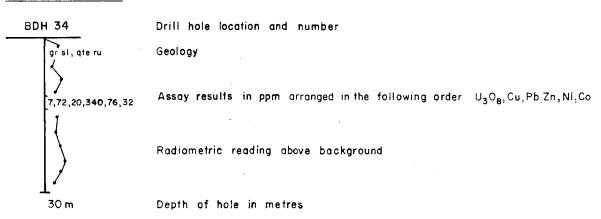
- RADIOMETRIC SECTION-



-LEGEND-

Soil and Ro	ck Types	Minerals	
carb	Carbonate	ру	Pyrite
cl,clst	Clay, claystone	Q	Quartz
sl, sly	Silt ,silty		
cht,chty	Chert, cherty	Structure	
gph	Graphitic	cren	Crenulated
phy	Phyllite	phyc	Phyllitic
sist	Siltstone	٧	Vein/s
sh	Shale		
тc	Micaceous	Alteration	
qte,0-qte	Quartzite , ortho-quartzite	fe	Ferruginous
Textures		Miscellaneo	<u>us</u>
frags	Fragments	hd	Hard
ru	Rubble	m	Minor
		w	With
Colours		Boundaries	
b,bl	Brown, black		Approx water table
gn, gr	Green, grey		Fault
rd	Red		
wh	White		

DRILL HOLE DATA



NOTE: Radiometric value plotted is bulk sample reading on the ground minus background reading in cps Scale- /cm = 50 cps

INSTRUMENT: GIS-3 Spectrometer N° 208-198

PLATE 15

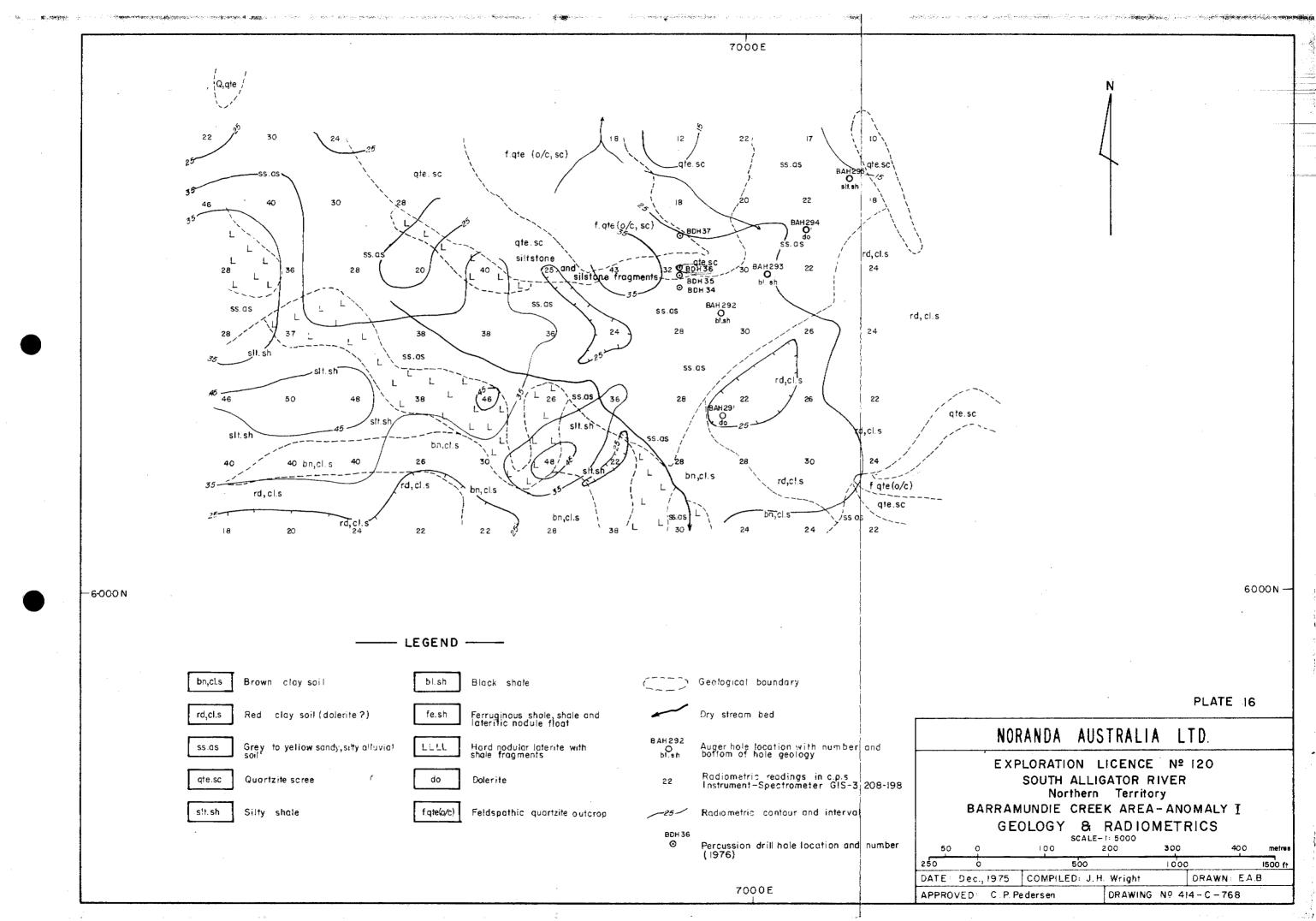
NORANDA AUSTRALIA LTD.

EXPLORATION LICENCE Nº120 Northern Territory

TRACK ETCH ANOMALY No I GEOLOGICAL, ASSAY and RADIOMETRIC SECTION

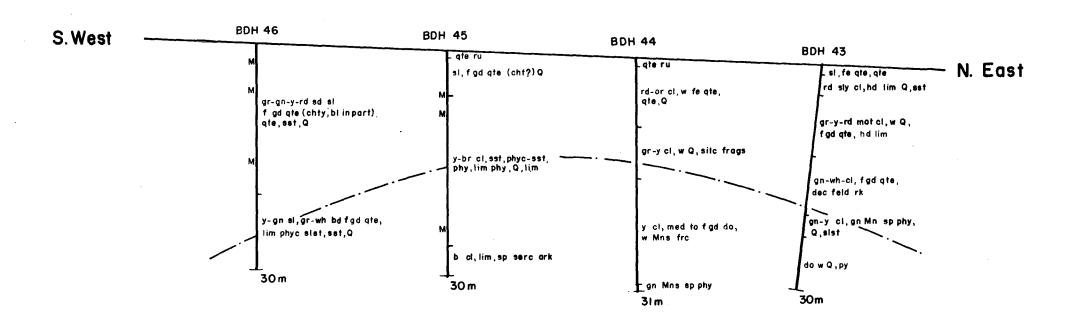
DRAWN: N.S. DATE: Nov 9, 1976 GEOLOGY: J.H. Wright

DRAWING Nº 414-C-803 APPROVED: C.P. Pedersen

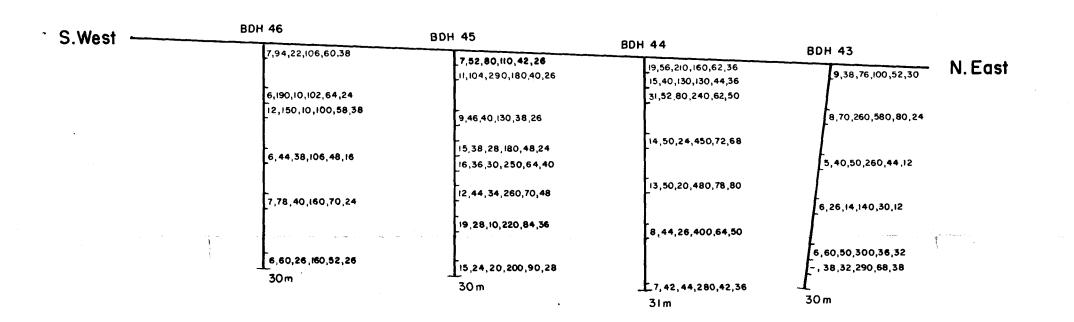


BARRAMUNDIE AREA ANOMALY 8500 E-5500N PERCUSSION DRILLING

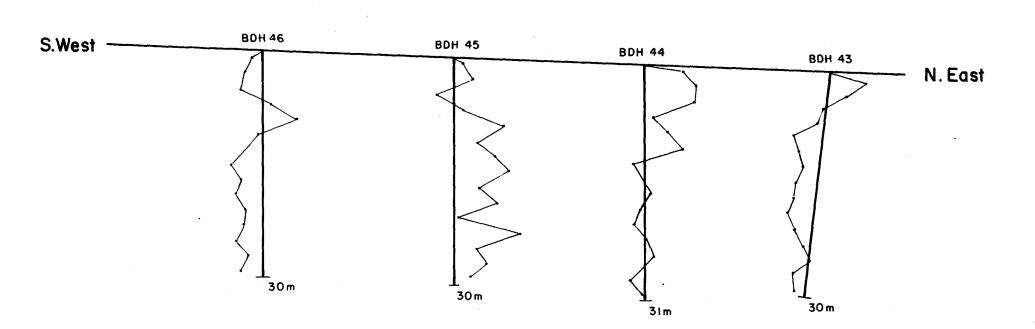
- GEOLOGICAL SECTION -



- ASSAY SECTION -



- RADIOMETRIC SECTION -



NOTE: Radiometric value plotted is bulk sample reading on the ground minus background reading in cps Scale- Icm = 10 cps

INSTRUMENT: GIS-3 Spectrometer N° 208-198

-LEGEND-

Soil and Ro	ck Types	Minerals	
cl,cist	Clay, claystone	feld	Feldspar
sd,sy	Sand, sandy	lim	Limonite
si, sly	Silt, silty	ру	Pyrite
	•	Q Q	Quartz
do	Dolerite	Mn	Manganese
		Structure	
cht, chty	Chert, cherty	frc	Fractures
p hy	Phyllite	phyc	Phyllitic
sist	Siltstone		
ark,arkc	Arkose, arkosic	Alteration	
Mns	Manganiferous	fe	Ferruginous
qte, 0-qte	Quartzite, ortho-quartzite	serc	Sericitic
sst	Sandstone .	dec	Decomposed
Textures		Miscellaneo	us
bd	Banded	f	Fine
frags	Fragments	med	Medium
gd,grns	Grained, grains	rk	Rock
ru	Rubble	w	With
sp	Spotted		
Colours		Boundaries	etc
b,bl	Brown, black		Approx. water tabl
gn, gr	Green, grey		
rd	Red		

DRILL HOLE DATA

Yellow

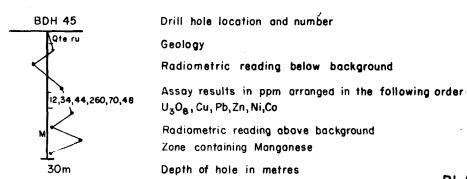


PLATE 17

EXPLORATION LICENCE Nº 120 Northern Territory

NORANDA AUSTRALIA LTD.

ANOMALY 8500E - 5500 N

GEOLOGICAL, ASSAY and RADIOMETRIC SECTION

DATE : Nov 9, 1976 GEOLOGY : J. H. Wright DRAWN: N.S.

APPROVED : C.P. Pedersen

DRAWING Nº 414-C-802

BARRAMUNDIE AREA

TRACK ETCH ANOMALY No II -GEOCHEMICAL-

PERCUSSION DRILLING

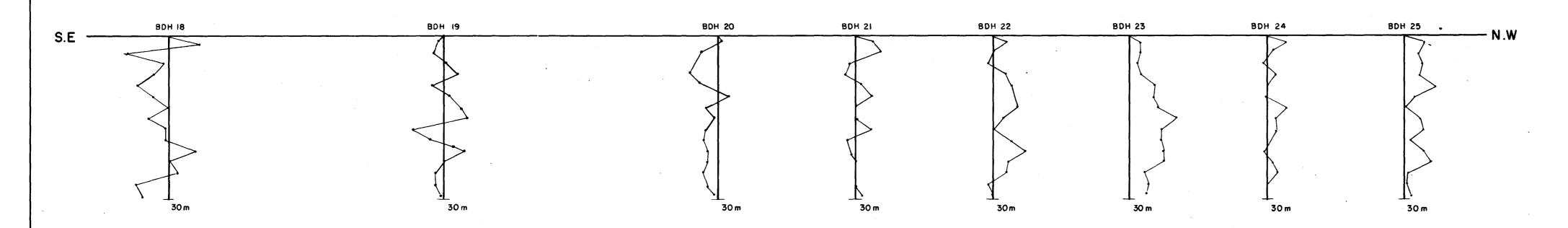
- GEOLOGICAL SECTION -

BDI	H I8	н 19	DH 20 B	DH 21 BC	DH 22 BI	DH 23 B0	H 24 BI	Tree with seds N.W
		gr-wh cl, w carbnods	or cl, w lim nods or-gr cl, w lim , carb nods	or cl, w lim nods & pipes gr cl, w carb nods	gr-or cl, w lim nods	fe cl, w lim nods	fe cl, w lim nods	fe cl, w tim nods gr cl, w carb nods
	gr-y cl, w wh carb, gyp		or-green, within, coro mods		wh-gr we sh, w carb frags, . Q	gr cl, w cal	gr cl, w carb nods (we sh)	we sh, w cl, wh carb
	-	gr phyc sh, w Q v	·	gr-bi phyc sh, dic sh, m sist, w Q , cal v	gr phyc sh, w Q,m cat v	bi sist, phyc sh w Q ,cal	gr phyc sh, dic sh w cal , Q	
	gr-bi sh, sist m Q	gi piye sii, w ee y	gr-bi phyc sh,w dic sh, Q,m carb v		gr-blah,w.O,colv,m.dicah	gr-bl phyc sh	gr biphyc sh, w Q,cai, m dic sh	gr phyc sh, w m lim, Q, cal v
	bl c sh, w py,Q	bl c,phyc sh w Q,py	bi phyc sh, dic phyc sh, w Q, cal, py	bl c sh, dlc sh, w carb,	bł c phyc sh, w Q,cai, py v	bl phyc sh, dic sh w Q,col,py	bl c phyc sh, w Q , py	bic phycish, w Q,py
~	30 m	30 m	30 m	30 m	30m	30m	30m	30 m

-ASSAY SECTION-

0.5	81 HD3	BDH 19	BDH 20	BDH 21	BDH 22	BDH 23	BDH 24	BDH 25
S.E	8,54,58,30,40,26	6,66,30,210,72,36	8,50,60,62,40,28	12,60,62,80,44,28	9,62,70,74,56,36	6,46,28,62,50,26	11,70,64,86,76,34	7,58,60,72,56,28
				9,78,30,170,72,30	ļ .	1		ł
	-	-	F. 40 04 070 44 04	F	6,48,24,110,52,24	6,96,20,160,70,34	5,52,18,72,60,26	ļ
	8,74,18,102,68,30	5,86,34,130,38,28	6,48,24,270,44,24	6,72,30,180,60,30]	Paragonius, open	25,52,16,72,60,20	7,68,20,120,68,26
			7,66,28,240,70,28	- 9,96,28,230,70,30		<u> </u>		7,00,20,120,00,20
	9,60,16,60,58,28	6,52,24,220,52,36		[3,30,20,200,10,30	5,60,30,160,70,28	Ł	6,80,22,94,70,30	
		7,70,26,290,60,40	1	Ĺ	Ī	9,94,38,240,100,36		L
		Ţ.		6,72,20,150,68,20	1	[<u> </u>	7,80,16,114,70,24
	L	Ĺ	Ĺ	j	Ļ	L	8,84,10,130,90,32	!
	7,64,10,94,48,24	8,130,46,150,40,26	8,88,30,180,66,26	<u> </u>	6,68,26,160,70,26	9,88,24,160,92,38	<u> </u>	L
	6,68,14,120,80,30	L		14,64,24,170,72,28		į	8,116,16,170,90,26	13,72,16,120,70,26
	7,52,16,310,64,32	-,190,50,240,76,34	1	L	1	<u>L</u>	<u>L</u>	-, 72,20,120,70,28
	Ĺ	-, 170, 78,250,116,40	Ĺ	-,74,52,270,74,28	7,78,30,280,68,24	~,74,24,150,80,32	7,76,16,120,88,28	L
	9,68,16,150,64,30	9,170,64,280,80,42	6,80,24,140,52,26	7,102,40,170,100,32		35,62,24,110,70,26		7,72,20,120,76,28
9.2	30 m	30 m	30 m	30 m	30 m	30m	30 m	30m

-RADIOMETRIC SECTION-



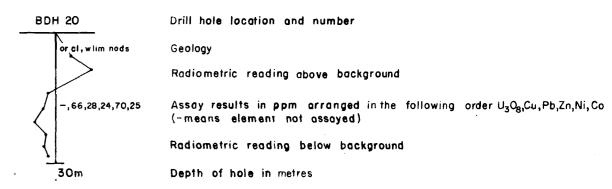
-LEGEND-

Soil and R	ock Types	Minerals	•
carb	Carbonate	cal	Calcite
cl, clst	Clay, claystone	дур	Gypsum
с	Carbonaceous	lim	Limonite
dlc	Dolomitic	ру	Pyrite
sist	Siltstone	Q	Quartz
sh	Shale	•	
Textures		Structure	
frags	Fragments	phyc	Phyllitic
nods	Nodules	v	Vein/s
Colours		Alteration	
ы	·Black	fe	Ferruginous
gn,gr	Green, grey	we	Weathered
or	Orange		
wh	White	Miscettane	ous
у	Yellow	m	Minor
	•	w	With
Boundaries	etc		

DRILL HOLE DATA

——— Geological interpretation

___ Lower limit of bleached shale



NOTE: Radiometric value plotted is bulk sample reading on the ground minus background reading in cps

Scale- | cm = 50 cps

INSTRUMENT: GIS-3 Spectrometer Nº 208-198

PLATE 18

NORANDA AUSTRALIA LTD.

EXPLORATION LICENCE N° 120

Northern Territory

TRACK ETCH ANOMALY No II- GEOCHEMICAL GEOLOGICAL, ASSAY and RADIOMETRIC SECTION

DATE: Nov 9, 1976 | GEOLOGY: J.H. Wright | DRAWN: N.S. |

APPROVED: C.P. Pedersen | DRAWING Nº 414-C-805

BARRAMUNDIE AREA

TRACK ETCH ANOMALY No II — LATERITE PERCUSSION DRILLING

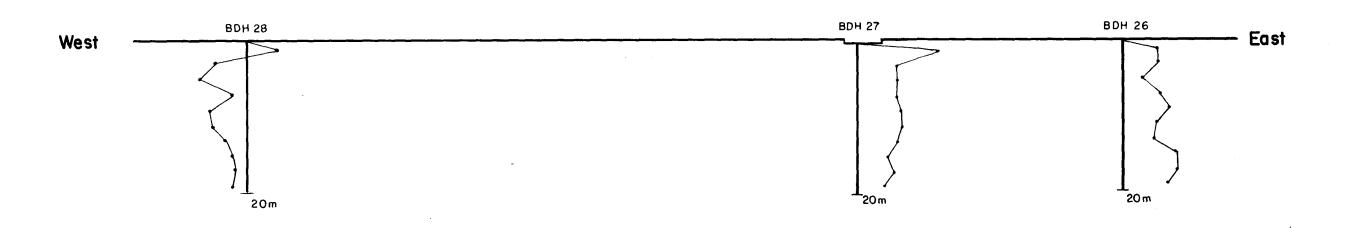
-GEOLOGICAL SECTION -

	BDH 28	BDH Nodular Ferruginov		BDH 26 East
West	gr cl, w lim nod, Q, we sh			or fe cl, w Q, sh frags,
			rd-grwe phyc sh, wm wh carticl	
	gr-gn cren phycish, phy w			gr-gn-rd we phyc sh, w m cl, carb
	m Q, cal v		perd fephycsh, wm Q,cal	<u>.</u>
			rd-gr fe phyc sh,	bliphycish, w Hireplish
			w dic sh, Q, cal v	ign-grphyc sh,Qv,w/m Hreplish
	20m			20 m

- ASSAY SECTION -

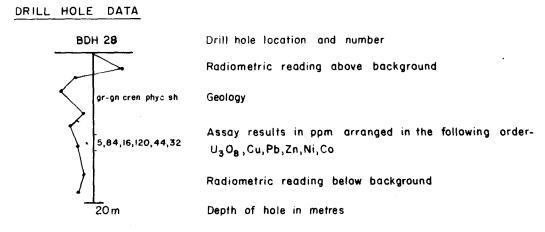
	BDH 28	BDH 27	BDH 26	- East
West -	7,58,36,90,40,30	7,104,26,56,38,20	11,68,30,80,42,24	- East
	4,20,18,140,44,26	5,106,24,60,34,20	6,98,18,78,30,16	
	5,84,16,120,44,32	5,150,28,92,50,24	5,120,22,54,38,22	
	4,60,20,108,50,26	9,78,24,200,78,24	5,116,26,150,64,22	
			20 m	

-RADIOMETRIC SECTION -



- LEGEND-

Soil and Ro	ock Types	Minerals	
carb	Carbonate	cal	Calcite
cl,clst	Clay, claystone	н	Hematite
dic	Dolomitic	lim	Limonite
phy	Phyllite	Q	Quartz
sh	Shale		
Textures		Structure	
frags	Fragments	cren	Crenulated
nods	Nodules	p hyc	Phyllitic
		V	Vein/s
Colours		Alteration	
gn,gr	Green, grey	fe	Ferruginous
or	Orange	repl	Replacement
pe	Pale	we	Weathered
rd	Red		
wh	White	Miscellanea	ius
		m	Minor
Boundarie	es etc — Geological interpretation	w	With



NOTE: Radiometric value plotted is the bulk sample reading on the ground minus background in cps

Scale - Icm = 10 cps

INSTRUMENT: GIS-3 Spectrometer No 208-198 PLATE 19

NORANDA AUSTRALIA LTD.

EXPLORATION LICENCE N° 120
Northern Territory
TRACK ETCH ANOMALY No II-LATERITE
GEOLOGICAL, ASSAY and RADIOMETRIC SECTION

	SCALE 1:500							
		10	5 	0	10	20	30	40 metres
	50	25		Ó		100	O feet	
DATE:	Nov 9,	1976		GEOL	OGY: J.H. V	Vright		DRAWN: N.S.
APPRO\	/ED : C.	P. Ped	erse	in		DRAWING	3 Nº 4	14-C-804

