Limerick Project

Gortdrum Block

BIENNIAL REPORT FOR

PROSPECTING LICENCE AREA 4498

Period ending 11th February 2021

David Furlong PGeo
Dr. Mark Holdstock PGeo

Figures

Tables

Appendices

Introduction

This report summarises exploration work carried out by Group Eleven Mining & Exploration Ltd (Group Eleven) on Prospecting Licence Area (PLA) 4498 in County Tipperary during the 2-year period ending 11th February 2021.

PLA 4498 is being explored as part of a small group of licences which comprise of PLAs 4498 and 350, informally termed the Gortdrum Block by Group Eleven. The ground is contiguous with Group Eleven's 'Emly Block' which lies to the west. The license is located 5 km north of Tipperary town, and 40 km southeast of Limerick City. PLA 4498 covers an area of 23 sq. km. (Figure 1). PLA 4498 is a new licence (awarded in 2015 to Group Eleven) whose boundaries are the same as former mining lease SML89, which expired on 31st December 1986. No PLA was issued upon expiry of SML89 until the issue of PLA 4498 to Group Eleven in February 2015.

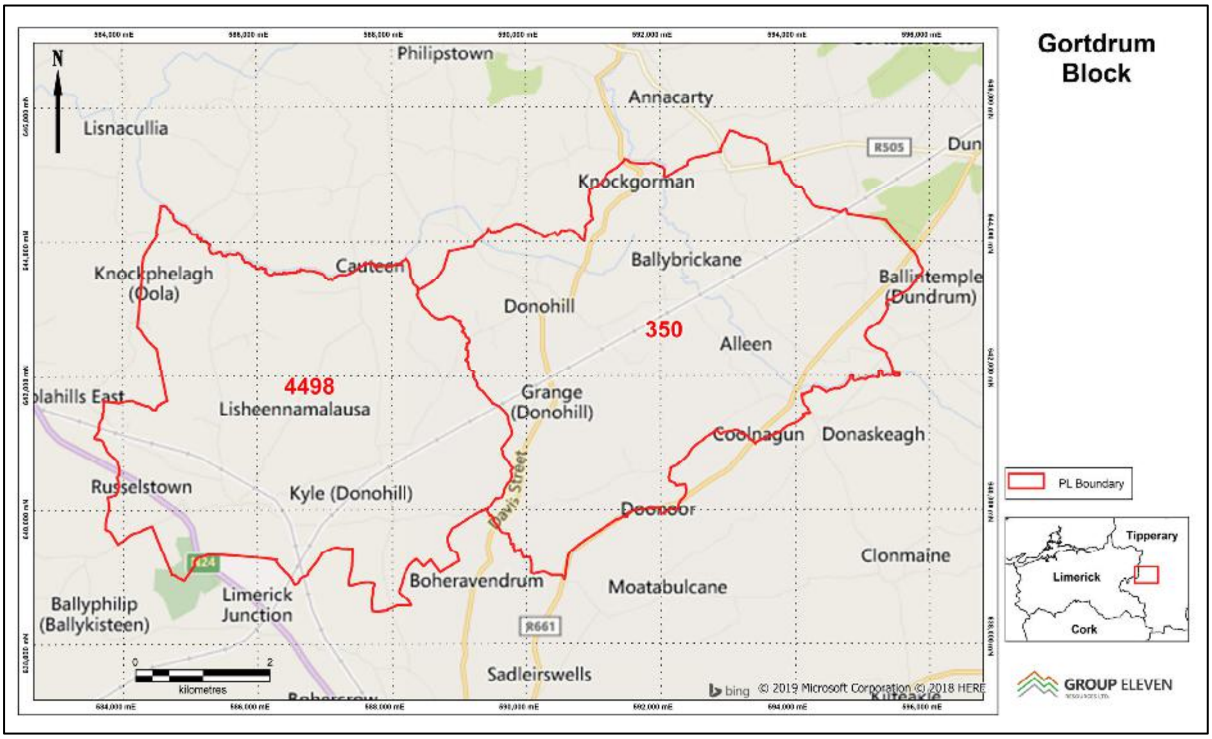


Figure 1: Map showing location of the Gortdrum Block

The licence is characterised by gently undulating lowland terrain with some gentle rolling hills. The land is primarily in agricultural use, mostly grazing, with a few areas of poorer scrubland, where bedrock is closer to the surface. The town of Tipperary lies to the south of the area and farms and ribbon development occur along roads throughout the area. Access to the area is via the N24 national primary route and a network of secondary roads and farm tracks. The main Dublin to Cork railway and a spur line to Limerick City, also pass through the area.

The Gortdrum project area is considered to be prospective for Lower Carboniferous hosted Cu-Ag deposits, similar to that mined at Gortdrum and discovered at Aherlow in Co Tipperary and Tullacondra, Mallow, Co Cork.

Exploration History

PLA 4498 is a new licence with no previous exploration work. However, the area was extensively explored by Gortdrum Mines Ltd and Irish Base Metals from 1962 to 1976 when the area was held under PLA 69 and various mining leases, the last of which was SML89. During this time the Gortdrum Cu-Ag/Hg deposit was discovered and mined. The key milestones were as follows:

- Discovered in 1962 by soil and stream geochemistry and geophysics (IP)
- By 1966, 16,000m drilled
- Pre-mining resource of 4.2mt @ 1.2% Cu, 23 g/t Ag
- Mining commenced in 1967 – open pit
- Produced copper/silver concentrates and mercury until closure in 1975
- Total production was 38,000t Cu, 2.9Moz Ag and 271t Mercury
- Mining Lease lapsed in 1986

The exploration history of PLA 4498 is summarised in the table below:

TABLE 1: SUMMARY OF EXPLORATION HISTORY OF PLA 4498

Year	Company	Activity
1962	Gortdrum Mines Ltd	Discovery of Gortdrum deposit as a result of reconnaissance geological and geochemical exploration followed by drill target delineation from IP surveys
1963-66	Gortdrum Mines Ltd	Delineation drilling (G series holes), definition of Gortdrum orebody
1965-66	Gortdrum Mines Ltd	Exploration drilling immediately adjacent to deposit (B series holes)
1966	Gortdrum Mines Ltd	Extension of soil geochemistry to north east of mine area
1969	Gortdrum Mines Ltd	Exploration drilling to north east of mine along Gortdrum Fault (E series holes)
1972	Gortdrum Mines Ltd – Irish Base Metals	Conclusion of exploration drilling in Gortdrum area (focus shift of exploration north to Coonagh Castle and other Zn/Pb prospects)

Exploration in the Gortdrum area, since discovery of the Gortdrum deposit, was effectively in 4 phases:

- Phase 1: Discovery and delineation of the Gortdrum orebody (1962-66)
- Phase 2: Exploration immediately adjacent to the deposit (1965-66)

- Phase 3: Exploration north-east of the mine along strike of the Gortdrum Fault (1969-72)
- Phase 4: Exploration to the north of Gortdrum for Waulsortian hosted Zn-Pb mineralisation (1972 onwards)

No significant exploration has taken place in the area now covered by PLA 4498 since the early 1970's.

Geology

Regional Geology

The regional geology of the Limerick Basin area is well known following the work of Shepard-Thorn (1963), Philcox (1984), Strogen & Sommerville (1992), and more recent authors such a Blaney & Redmond (2014). This work has most recently been summarised for Group Eleven by Kelly (2018).

The Gortdrum Block lies at the south-eastern margin of the Limerick Basin and just to the southeast of the Limerick Volcanic centre and overlies a variable bedrock geology, which ranges in age from Devonian to Tournaisian (Figure 2).

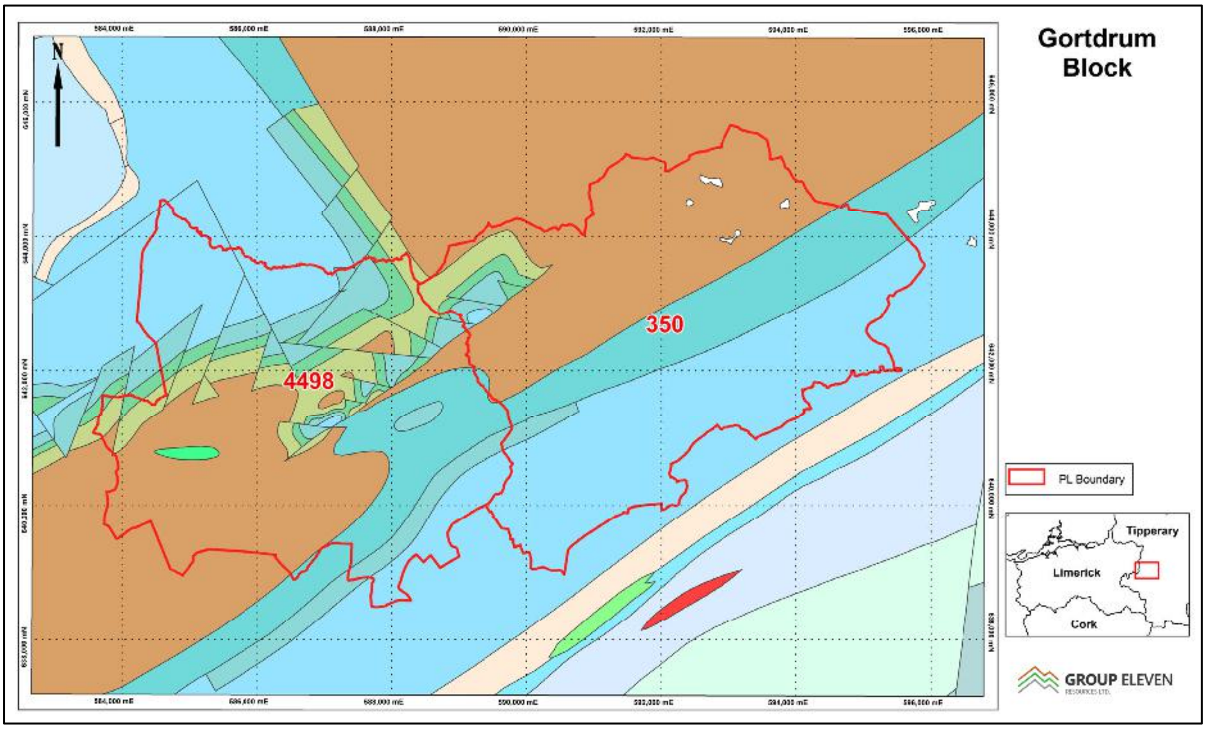


Figure 2: Gortdrum Block – Bedrock Geology

The stratigraphic sequence is described below:

Devonian Clastic Sequence

The oldest part of the stratigraphy exposed in the Limerick District is the uppermost Old Red Sandstone beds. These are Devonian to early Carboniferous in age and the lithologies are described as consisting of massive structureless sandstones and red to green siltstones, which are overlain conformably by the Lower Limestone Shales.

Lower Limestone Shale Group

The Lower Limestone Shale Group represents the initial marine flooding at the start of the Carboniferous transgression over the Old Red Sandstone continent. The Lower Limestone Shale sequence in the Limerick area (Philcox 1984) is largely understood from coastal sections and the Pallaskenry borehole (Somerville and Jones, 1985). The Lower Limestone Shale Group is sub-divided into the Mellon House Formation, the Ringmoylan Formation and the Ballyvergin Formation.

Mellon House Formation

The Mellon House Formation succeeds the pale-cream and white terrestrial sandstones of the uppermost Old Red Sandstone facies and is composed of dark-grey laminated siltstones, grey fine-grained sandstones and calcareous shales. Flaser-bedding and cross-stratification are common as are desiccation cracks. The Formation is 34.4m thick in the Pallaskenry borehole (LI-68-10), and is known to thicken to the north, but it thins to the northeast and east, being 12.5m in thickness at Ballyvergin.

Ringmoylan Formation

The Ringmoylan Formation is largely composed of dark-grey to black calcareous shales, with subordinate thin beds or bands of bioclastic limestone which are estimated to form only 20 – 30% of the formation. The formation is 31m thick at Pallaskenry but thickens northwards where 47m is recorded at Shannon and then thins north-eastwards, with 23.5m at Ballyvergin.

Ballyvergin Formation

The Ballyvergin Formation (or Ballyvergin Shale) overlies the Ringmoylan Formation and is composed of a distinctive green-grey non-calcareous mudstone with siltstone laminae. The formation varies from about 5m to 10m and marks a distinctive transition from argillaceous dominated sequence below to a carbonate dominated sequence above.

Argillaceous Bioclastic Limestone Group

The Argillaceous Bioclastic Limestone Group is composed of two formations, the Ballymartin Formation and the overlying Ballysteen Formation.

Ballymartin Formation

The Ballymartin Formation is composed of thinly-bedded pale-grey muddy limestones and dark-grey calcareous shales. The proportion of shale to limestone is approximately 1:1. The formation varies between 11.45m and 45.6m in thickness in the Limerick area. It is equivalent to the Lower Pale Limestone at Gortdrum and the Lower Ballysteen Limestone at Silvermines. It is distinguishable in core, but rarely outcrops and in mapping is generally shown as included within the Ballysteen Limestone Formation.

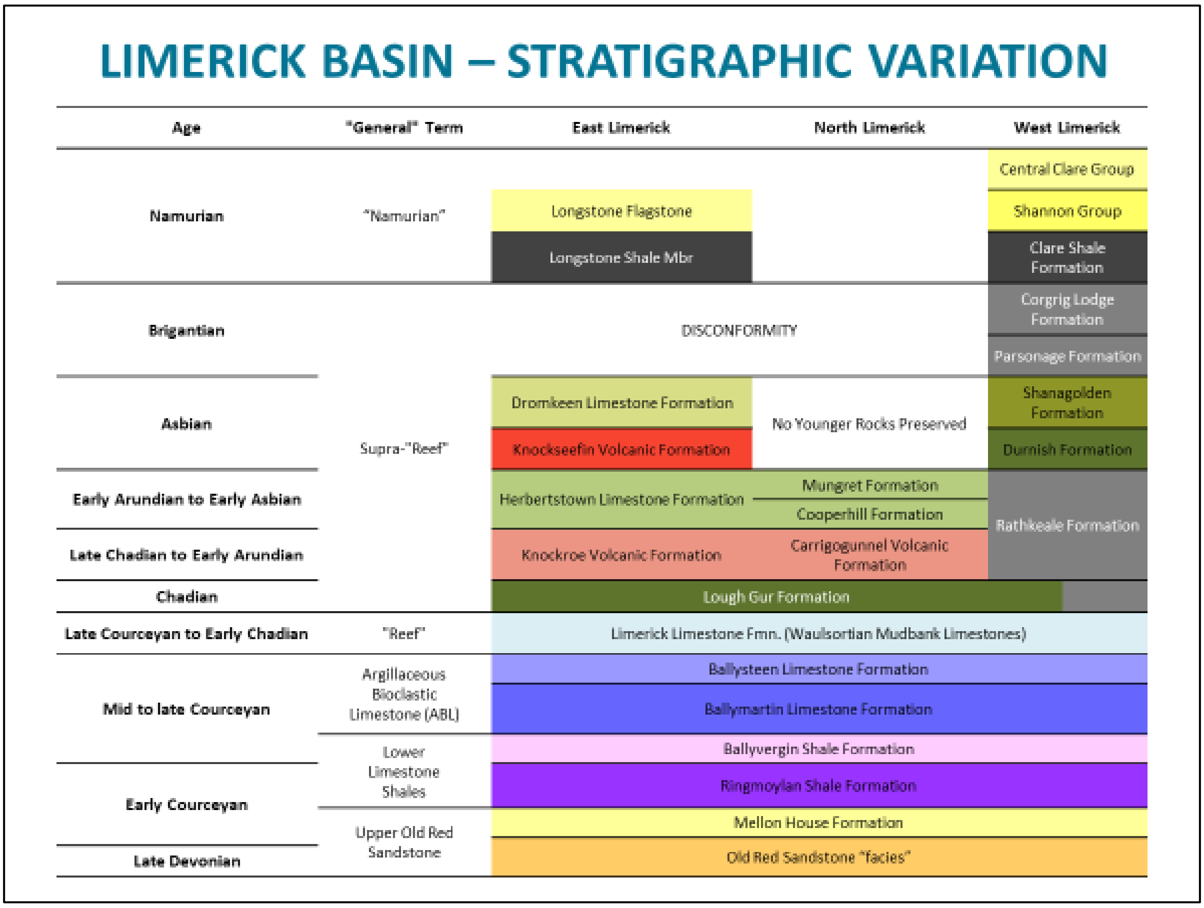


Figure 3: Stratigraphic Variation in Limerick

Ballysteen Formation

The Ballysteen Formation is distinguished from the underlying Ballymartin Formation by the development of thick, rather than thin, bedded, bioclastic, slightly argillaceous limestones with the initial unit forming a distinctive carbonate rich (>90% limestone) marker (Pallaskenry Member of Somerville and Jones, 1985). Above this, the formation can be sub-divided into three separate units, a lower unit of dark, well-bedded argillaceous wackestones, an upper unit of more markedly argillaceous limestones and a formally named uppermost unit, the Ballynash Member (also termed the Wavy Nodular

Limestone or Nodular Micrite Unit), composed of nodular micrites (frequently cherty) and shales that immediately precedes the onset of Waulsortian limestone deposition.

Waulsortian (Limerick Limestone Formation)

The Waulsortian limestones (Limerick Limestone Formation) form the primary host rock for hydrothermal alteration and base-metal mineralization in the southern Irish Midlands (Stonepark, Pallas Green, Silvermines, Lisheen, Galmoy, Tynagh etc.). The Waulsortian forms a complex composed of stacked mounds, sheets or tabular bodies of massive to poorly bedded biomicrite wackestone with large cavity spaces (stromatactis) infilled with reworked calcite muds and fibrous or later blocky calcite spar cements (Lees and Miller, 1995). These clean limestone units may be separated by slightly argillaceous to argillaceous (frequently cherty) "intermound or offbank" beds referred to as Waulsortian equivalent facies by some workers.

Drilling in the Stonepark and Pallas Green areas and interpretations from work in other areas of the Limerick Basin, indicates a highly variable thickness pattern in the Waulsortian on the northern limb of the Limerick syncline, from 140m to 440m, almost certainly related to both consistent westwards deepening and thickening of the formation, but also due to more local differential subsidence across syn-depositionally active structures.

The beds overlying the Waulsortian show considerable variation across the Limerick region (Figure 3).

Supra-Waulsortian Sequence – East and North Limerick

Lough Gur Formation

The Waulsortian limestones are overlain by dark-grey to black, cherty, argillaceous wackestones of the Lough Gur Formation. The Lough Gur Formation is equivalent to the Crosspatrick Formation in the Rathdowney Trend (Lisheen/Galmoy) and the Oldcourt Cherty Limestone Formation (Silvermines District). Formation thickness is variable, probably initially infilling relict topography on the upper surface of the Waulsortian mound complex, but thickness variations recorded suggest that a significant amount of lateral thickness variation in the Lough Gur and the underlying Waulsortian limestone is controlled by structurally influence facies variations.

The Lough Gur thickness is estimated at 100m in the east of the Limerick syncline, appearing to thin westwards. The upper part of the formation may contain tuffs and lavas associated with the onset of volcanism and the lavas and volcanogenic sediments of the Knockroe Volcanic Formation.

Knockroe Volcanic Formation

The Knockroe Volcanics consists of a complex package of volcaniclastic sediments, lavas and igneous intrusives of alkali basalt to trachytic composition. The initial phase of alkali basalt activity is marked by the emplacement of a significant number of large diatremes ranging from 100-500m in diameter and related to surface Maar cone development on the Carboniferous land surface at that time. The Knockroe volcanics vary in thickness from 250 to 500m and dating of interbedded limestones indicates a largely Chadian age for the volcanism, younging from west to east. Intrusives consist of a swarm of alkali basalt sills and dykes hosted within the Waulsortian and Lough Gur Formations and a late stage suite of porphyritic trachyte-syenite dykes and plugs. Blaney and Redmond (2015) clearly indicate that timing relationships determined from drilling in the Pallas Green and Stonepark areas show evidence for pre, syn and post mineralization volcanism.

Herbertstown Limestone Formation

The lower part of the Herbertstown Limestone Formation was deposited during the end of the Knockroe volcanism and is composed of coarse grainstones, composed of oolitic and coralline limestones. Deposition of Herbertstown facies continued for a significant period, from the late Chadian to the early Asbian and a total thickness of 500m is estimated for the formation. North of the Stonepark area at Mungret and Cooperhill, the formation can be sub-divided into informal sub-units (the Cooperhill and Mungret Formations) based on carbonate shelf facies. The Herbertstown Formation is of Arundian to early Asbian age.

Knockseefin Volcanic Formation

The Knockseefin volcanics represent a second major phase of volcanism in the east Limerick area in the Asbian. They are petrologically similar to the Knockroe volcanics, being composed of ankaramitic lavas and tuffs, but unlike the Knockroe volcanics, there are no trachytes recorded.

Dromkeen Limestone Formation

The Dromkeen Limestone Formation is distinguished from the Herbertstown Limestone by the more massive bedded, finer-grained and paler grey colour of the limestones. They are described as being similar lithologically to the Ballyadams and Clogrenan Limestones present further east in the Tipperary area. Where the Knockseefin Volcanic sequence is absent, the Dromkeen directly overlies the Herbertstown Limestones, otherwise it overlies the Asbian volcanic rocks of the Knockseefin Formation.

Namurian

The Lower Carboniferous carbonate dominated sequence is overlain by a sequence of clastic-dominated sedimentary rocks marking a major change from marine carbonate conditions to deltaic clastic sediments. Beds of Namurian age are mapped by the Geological Survey in the southern part of PLA 2654 to the southwest of Tipperary town and within the Limerick volcanic centre (Longstone Formation).

Local Geology, Structure and Mineralisation

Prospecting licence area 4498 is underlain primarily by Devonian clastic rock and the overlying Tournaisian carbonates, consisting primarily of the Lower Limestone Shales and Ballysteen Limestone (Figure 4). The major Gortdrum Fault, which is a regionally significant structures traverses the centre of the area, striking ENE-WSW, and downthrows to the northwest, bringing in the younger carbonates.

The historical literature (Steed 1986, Thompson 1966) describe the carbonates in terms of the Dark and Pale Limestone. These units are considered to be the Ringmoylan Shale and Ballysteen Limestone (Table 2).

TABLE 2: STRATIGRAPHIC NOMENCLATURE GORTDRUM

Current Stratigraphic nomenclature (Philcox)	Gortdrum Stratigraphic nomenclature (Steed, Thompson etc.)	Lithology	Unit thickness (m)
Waulsortian Limestone	*Not seen in mine area*	Clean micritic limestone	~ 400 +
Ballysteen Limestone Formation	Middle and Upper Pale Limestone	Argillaceous Bioclastic Limestones	290
Ballymartin Formation	Lower Pale Limestone?	Thin bedded, slightly argillaceous limestone	40
Ballyvergin Shale	Mudstone	Grey-green non-calcareous mudstone	3
Ringmoylan Shale	Dark Limestone	Bioclastic limestone with interbedded black shale	25
Mellon House Beds	Transition Beds	Calcareous shale and sandy limestones	32
Upper Old Red Sandstone	Upper Old Red Sandstone	Pale dolomitic sandstone with red and green siltstone & shale	270

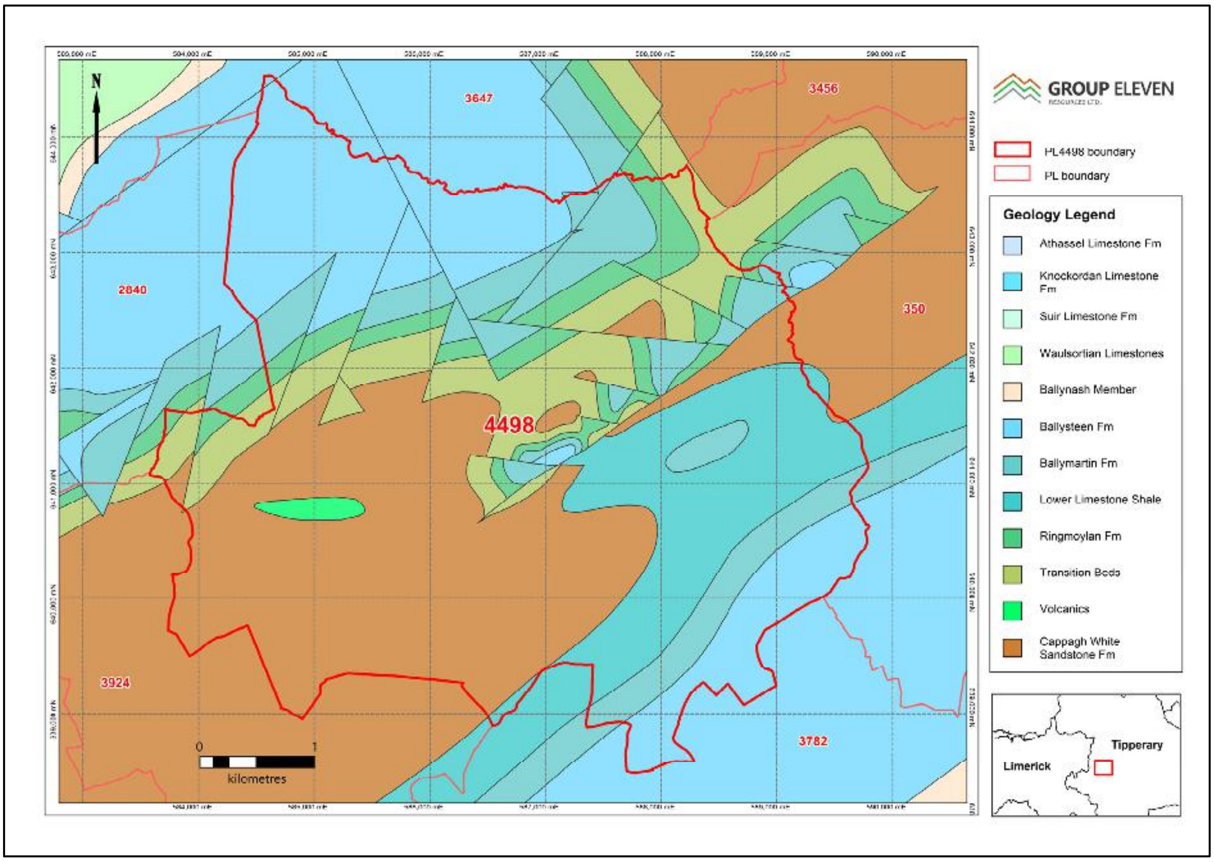


Figure 4: Map showing the bedrock geology of PLA 4498

Gortdrum Deposit Geology, Structure and Mineralisation

The following section on the geology of the deposit is compiled from Steed, Thompson and a number of other authors, such as Tyler, who have provided informal descriptions of the deposit. The Gortdrum Fault (Figure 5) is by far the most important factor controlling the distribution of mineralisation at Gortdrum.

It is genetically related to the regional folding and appears to have developed primarily to accommodate the intersection of three opposing folds in the hanging wall of the fault. These are the east-west Pallas syncline to the north, the north-south Slieve Phelim anticline to the north-east and the ENE Emly perianticline to the south-west. The Pallas syncline is eliminated against the fault approximately 8000 feet ENE of the mine. The north-south axis of the Slieve Phelim anticline is rotated to join with the ENE axis of the Emly anticline. This is achieved in the hanging wall of the Gortdrum Fault by a series of small dextral offsets of the N-S fold axis, along east-west and WNW striking faults, which are subsidiary or secondary to the main Gortdrum Fault. Both the Slieve Phelim and Emly anticlines have well-developed crestal synclines. Gortdrum is located in a small structural basin formed where the crestal syncline of the Emly anticline is intersected by the much offset crestal syncline of the Slieve Phelim anticline. A second, although only weakly mineralised structural basin occurs 8000 feet east of Gortdrum, where another section of the offset Slieve Phelim crestal syncline intersects the east-west Pallas Syncline. Figure 6 below shows the position of the Emly and Slieve Phelim anticlines.

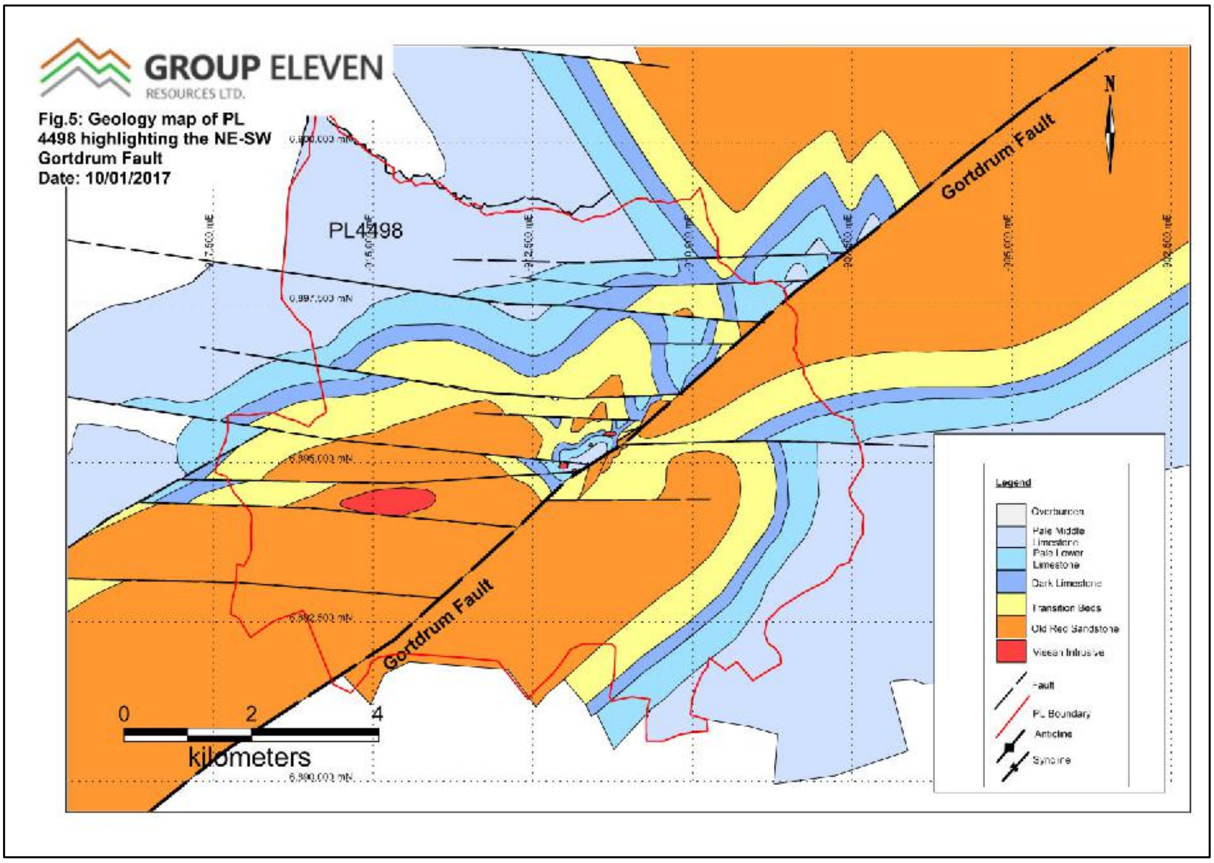


Figure 5: Geological map of PL4498 highlighting the NE-SW Gortdrum Fault

There is no evidence at Gortdrum to suggest that the Gortdrum Fault was active during sedimentation. In the case of the Pallas syncline the Visean succession contains 2000 to 2500 feet of basic lavas, tuffs and agglomerates. Associated with these extrusive rocks are a swarm of close spaced east-west striking dykes and small plugs of basalt. Gortdrum is close to the southern edge of this dyke swarm and at least 3 small plugs and ten dykes were exposed in the open pit. All of these small plugs and dykes have been subjected to hydrothermal alteration. In many cases this has progressed to the point where the basalt has been reduced to a rock composed essentially of clay minerals and carbonate. Within the deposit these dykes were referred to as Buff Alteration Zones. In places this alteration was accompanied by extensive dolomitisation and silicification of the wall rock limestones. Post-dating basalt dyke intrusion and hydrothermal alteration was a period of tuffisite or igneous breccia formation. These breccias are nearly always closely associated with the earlier dykes and plugs; they occur as thin dykes often no more than a few millimetres thick, and small irregular plug-like bodies. All of this intrusive material is, without exception, pre-faulting and folding.

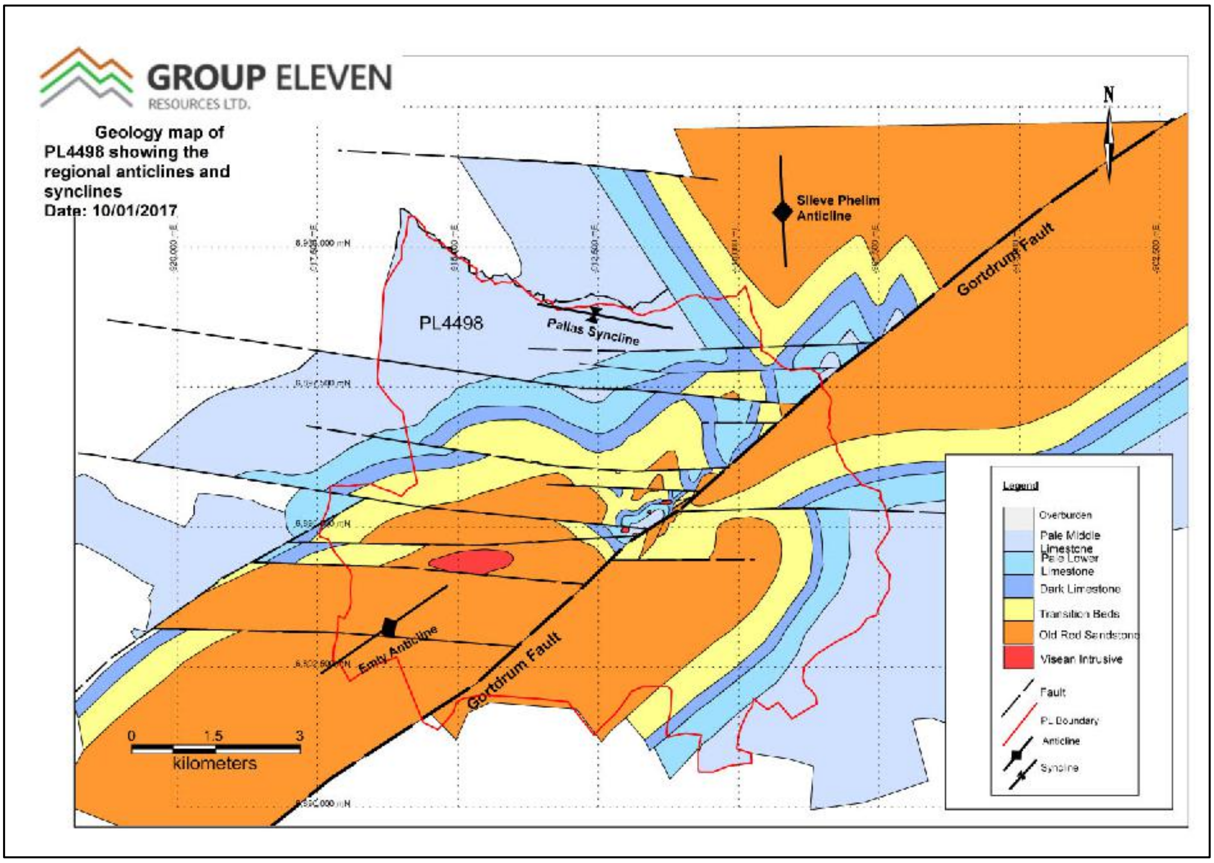


Figure 6: Geology map of PL4498 showing regional anticlines and synclines

Orebody Geology

The orebody is clearly divisible into two halves (Figure 7). The western ore zone cross-cuts severely deformed limestone and shales in the hanging wall of the Gortdrum Fault. The southern boundary of the ore is the Gortdrum Fault: the northern boundary is an assay wall. The western ore zone can be further divided into two sub-zones. The main sub-zone is adjacent to the fault. The smaller sub-zone is centred on a wide altered dyke, the main Buff Alteration Zone. This dyke zone is severely faulted and sheared. Such deformation along dykes in the hanging wall of the Gortdrum Fault is typical, the dykes having provided obvious planes of weakness, along which stress release could be channelled during movement along the main fault. Mineralisation along the dyke dies out rapidly westwards as the dyke and Gortdrum Fault diverge.

The eastern ore zone is in the footwall of the Gortdrum Fault and is contained within a narrow wedge of severely deformed limestones bounded by the Gortdrum Fault to the north and a subsidiary structure, the South Wedge fault to the south. East, beyond the limits of the open pit, this structure re-joins the Gortdrum Fault. The limestones within this fault wedge dip very steeply to the north-west.

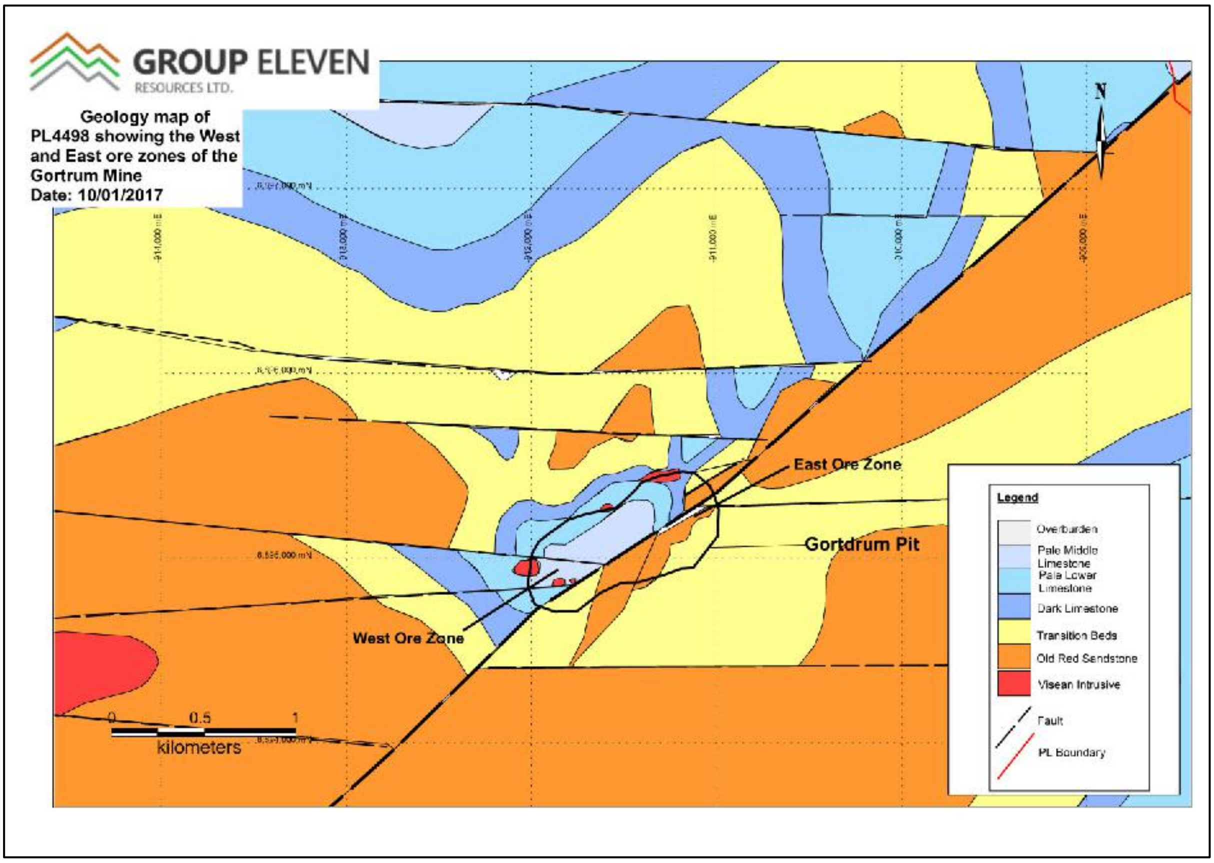


Figure 7: Geology Map of PL4498 showing the position of east and west ore zones

The South Wedge fault and wedge structure are cut off above, at the eastern end of the deposit, by an over thrust block of Old Red Sandstone and Transition Beds. The thrust plane in turn, is dislocated by the Gortdrum Fault, which is the only fault structure known to offset the thrust, and a small saucer of over thrust material is isolated north of the Gortdrum Fault. To the south-east the thrust most likely passes into bedding slip within the Old Red Sandstone. The South Wedge fault is almost certainly an over-steepened bedding slip, initiated originally within the very shaly units of the Transition Beds. Both wedge development and thrusting are interpretable in terms of secondary stress release structures during strike slip movement along the main Gortdrum Fault; they do not imply more than one period of major tectonism. The absence of major mineralisation in the hanging wall of the Gortdrum Fault, immediately north of the wedge, can be most easily explained by late, post-mineralisation, sinistral movements along the Gortdrum Fault, of the order of 1000 feet. This would mean that at the time of mineralisation the west end ore zone was located immediately north of the east end ore zone. Figures 8 and 9 show cross sections through the West and East orebodies, respectively

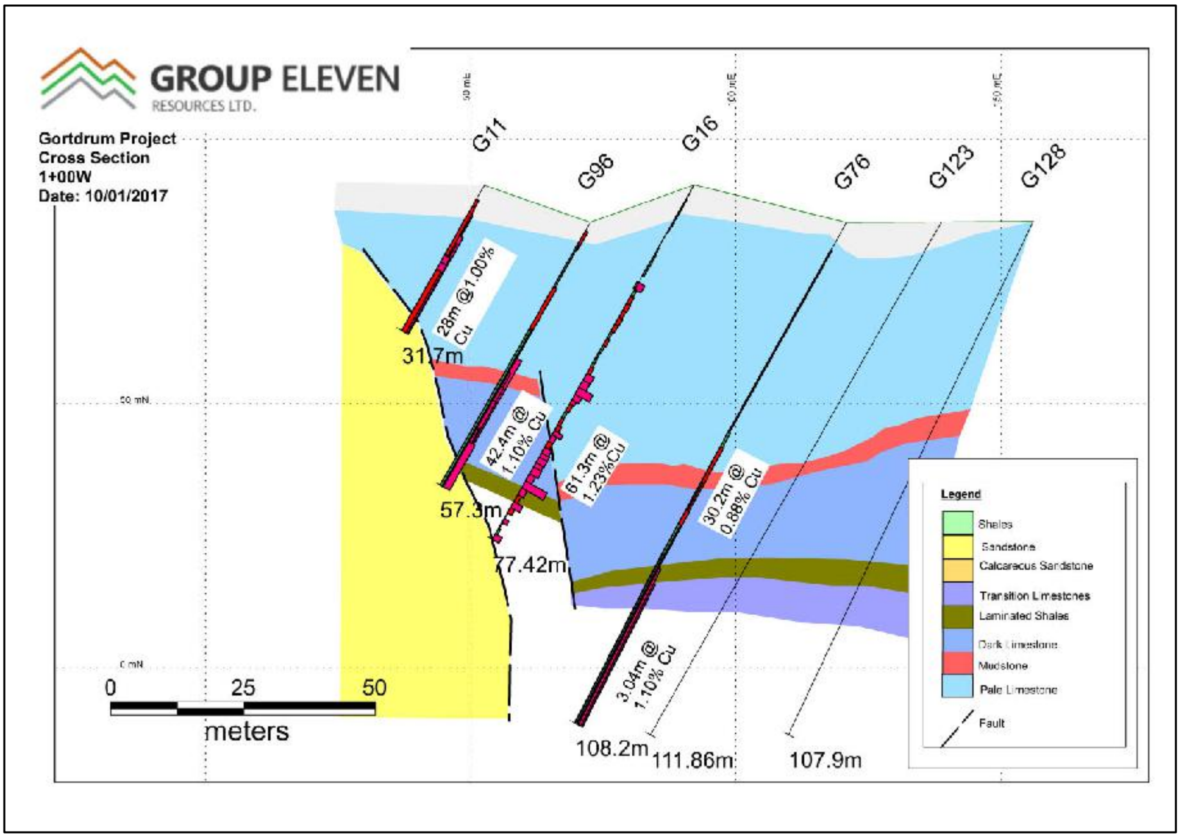


Figure 8: Cross Section 1+00W, West orebody

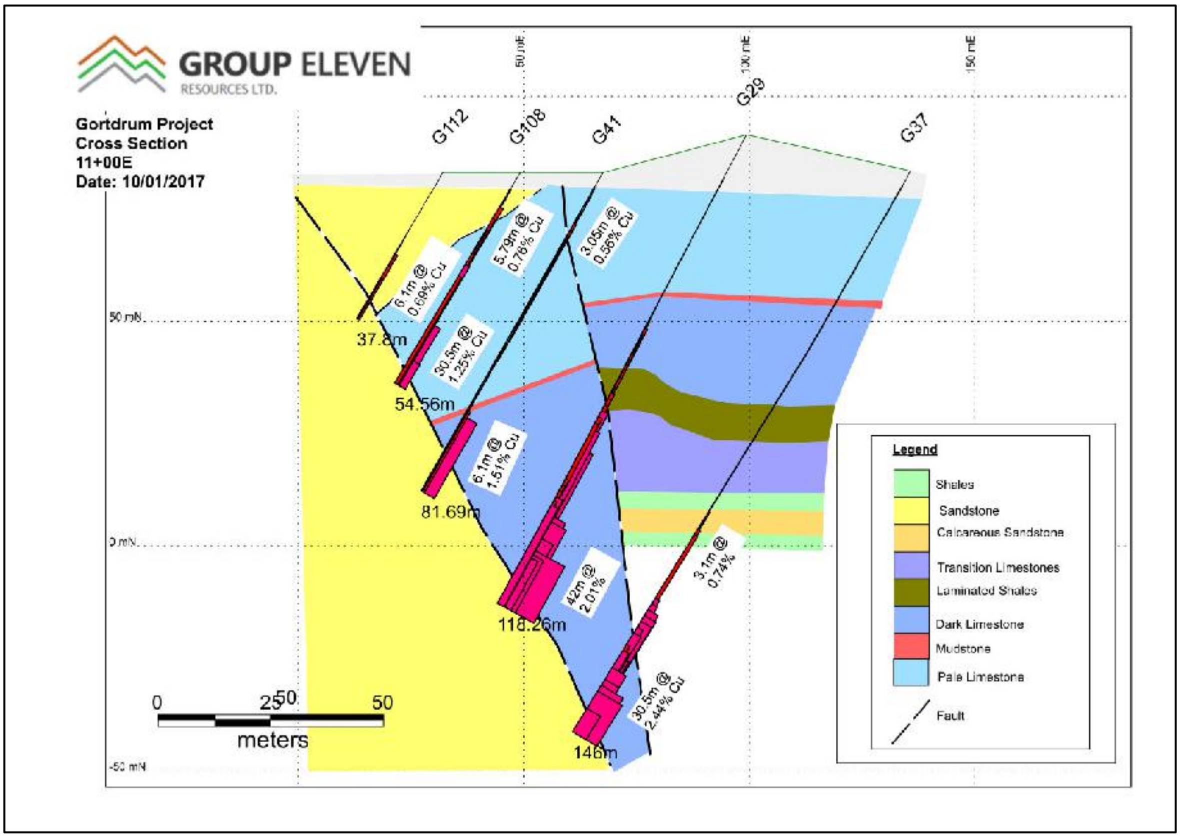


Figure 9:Cross Section 11+00E, East orebody

Mineralisation

The copper mineralisation occurred in four sulphide phases. These in order of decreasing abundance were bornite and chalcocite in eutectic intergrowths, chalcopyrite and tennantite. In general, bornite and chalcocite increased with depth at the expense of chalcopyrite and tennantite. Tennantite is the only significant host of arsenic and antimony in the deposit. This makes it possible to use assay data for these two elements to quantify the amount of tennantite in the deposit at any one point. At any one level the tennantite content of the ore decreased with increasing copper grade, which in turn increased with increasing severity of deformation of the host rocks. Hence the ore with the lowest tennantite content at any given elevation within the western ore zone, was adjacent to the Gortdrum Fault.

The tennantite became more arsenious with depth. The mean arsenic: antimony ratio increased from 3:1 to 7:1 between 100 and 200 feet below surface. Most of the mercury was contained within the tennantite. This is demonstrated by the constant antimony to mercury ratio throughout the orebody. Mercury therefore decreased in depth in step with the tennantite.

Previous work by the current Licensee

As there had been no licence holder for this area since 1986 when SML89 expired, and no exploration carried out on the ground since 1972, work by Group Eleven during the first two year period of the licence term (2015-2017) focused on compiling the relevant data necessary to guide its future exploration programme. A huge amount of non-digital data exists for the area, mostly held in scanned reports and maps.

Two primary data sources were used to develop a database for the project:

- The Mines Records database (GSI)
- PL reports database (EMD)

The Mines Records database contains details of Gortdrum Mines Ltd activities from 1962 – 1976. This includes:

- Drill logs of all 'G' and 'B' series holes drilled in the mine area (approximately 13,000m)
- Annual reports for Gortdrum Mines Ltd
- Drill Plans (mine area)
- Geochemistry and geophysics maps
- Groundwater reports
- Mercury studies report
- Uranium Study Report
- Ore Reserves and concentrate shipments reports

- Ownership and royalty reports
- Underground mining study
- Open pit Stability review

The EMD database of previous exploration reports contained a number of historical reports for the area (Table 3).

TABLE 3: AVAIALBLE REPORTS

Year	Company	Primary exploration activities
1964-65	Gortdrum Mines Ltd	Geochemistry
1965-66	Gortdrum Mines Ltd	Drilling and IP
1966-67	Gortdrum Mines Ltd	Drilling and geochemistry
1967-68	Gortdrum Mines Ltd	Drilling and IP
1968-69	Gortdrum Mines Ltd	Drilling and geochemistry
1969-70	Gortdrum Mines Ltd	Drilling and geochemistry
1970-71	Irish Base Metals	Geochemistry, geophysics, drilling
1971-72	Gortdrum Mines Ltd	Geophysics and drilling
1972-73	Gortdrum Mines Ltd	Geochemistry, geophysics, drilling
1973-74	Gortdrum Mines Ltd	Geochemistry, geophysics, drilling
1974-75	Gortdrum Mines Ltd	Geochemistry, geophysics, drilling
1975-76	Irish Base Metals	Geophysics and drilling

Given the huge amount of data available, Group Eleven has focused on three key areas for data compilation, with a view to guiding its future exploration work. These were:

- Compilation of 'E' series drill hole information (north –east of Gortdrum)
    - Reason: to examine the exploration potential east from Gortdrum along the Gortdrum Fault

- Compilation of 'G' and 'B' series drill hole information
    - Reason: To examine the distribution of mineralisation in relation to the Gortdrum Fault

- Analysis of data around the 'Wedge Ore Zone'
    - Reason: to understand the potential volumes of high-grade ore remaining under the Eastern Pit

Data for 210 holes from the 'G' and 'B' and 'E' series was compiled into a database. Table 4 gives a summary of the drill hole compilation to date:

TABLE 4: SUMMARY OF DRILL HOLE COMPILATION TO DATE, PLA'S 4498 AND 350

Hole Series	Total number of holes captured	Collar Info (total holes)	Survey Info (total holes)	Assay Info (total holes)	Lithology Info (total holes)	Total meterage
'G'	136	136	136	104	0	11,749m
'B'	28	28	28	13	0	1,202m
'E'	40	40	40	9	0	2,938m

In addition to compilation of the drill hole data outlined above, numerous geological, geophysical and geochemical maps have been georeferenced, and a new geology map covering PL4498 and PL350 has been compiled from the best and most accurate geology information.

During the second period of the licence term (2017-2019) the following work was carried out:

- Capture of Historical Soil geochemistry
- Rock & Tailings Sampling
- Review of Structural Setting
- Regional Stratigraphic Review
- Regional Structural Interpretation
- Regional Airborne Magnetic survey.

Work by current licensee during reporting period

Following on from a mostly regional exploration focus during the previous reporting period, Group Eleven's exploration focus during the current period was more localised, focusing more on the immediate area around the Gortdrum Mine area with a view to refining and testing targets, which resulted in drill testing the first target on PL 4498 in December 2020/January 2021.

In addition, Group Eleven commissioned iCrag to carry out a study on the chemistry and paragenesis of sulphide ores from the Gortdrum Cu/Ag deposit. This study was commissioned with a view to further understanding these ores and also to examine of there was any link between the paragenesis of these ores and the Zn/Pb ores elsewhere in the Limerick Basin e.g Group Eleven's Stonepark Project.

iCrag Study - To determine the chemistry and paragenesis of sulfide phases from surface samples at the Gortdrum Cu deposit

iCrag were commissioned in April 2019 to carry out a study on the chemistry and paragenesis of sulphide samples from the Gortdrum deposit.

Methodology

Twelve samples from spoil heaps derived directly from the Gortdrum deposit were received by iCRAG from Group Eleven Resources. The samples were inspected and areas of interest were selected (based on texture, mineralogy, and alteration). These areas were then cut and mounted in 25 mm round epoxy blocks and polished. These were then inspected in order to provide a brief synopsis of the mineralogical associations within the sample. Unfortunately, some samples had pervasive alteration and oxidation to the point where sulphides were no longer present or would be compromised for analysis. However, 9 samples were deemed to be suitable for analysis. Samples were then analyzed for trace elements at the iCRAG Analytical Facility. A Photon Machines ANALYTE G2 193 nm excimer laser ablation system coupled with a ThermoFisher iCAP Q- ICP-MS was used for all analyses (Analytical parameters are summarized in Table 1). A range of elements were analysed: Mn, Fe, Co, Ni, Cu, Zn, As, Se, Mo, Ag, Cd, Sn, Sb, Te, W, Au, Tl, Pb and Bi. For quantification Fe was used as the internal standard element.

Petrography

9 samples were then examined under polished section – an example of which is shown in Figure 10 below:

Sample GRTD-039

Sample of exhibiting a wide variety of major sulphides and featuring pervasive dolomite and minor interstitial calcite. Sulfide component comprised of coarse, euhedral pyrite with chalcopyrite inclusions, large, euhedral chalcopyrite with bournite and late tennantite overgrowths supergene, covellite forms on the edge and in cracks of some grains.

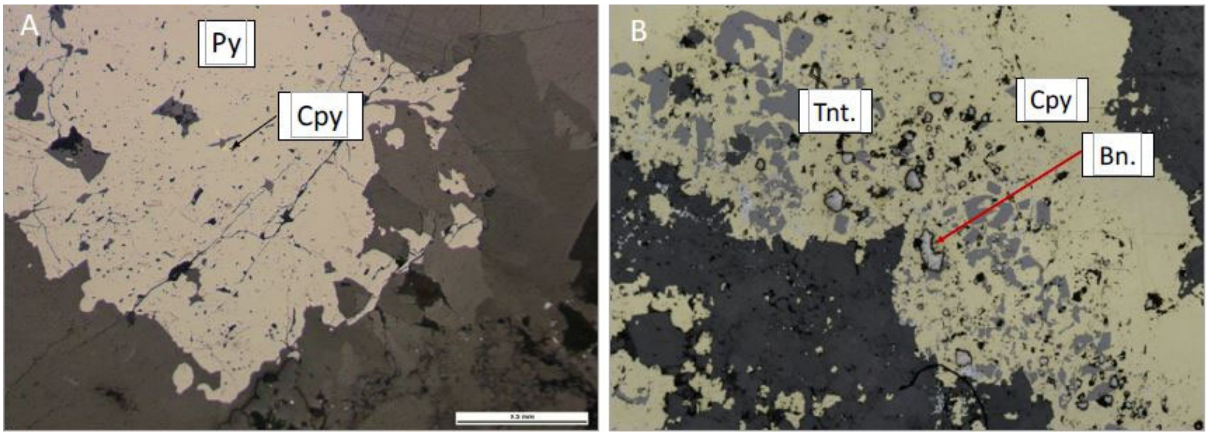
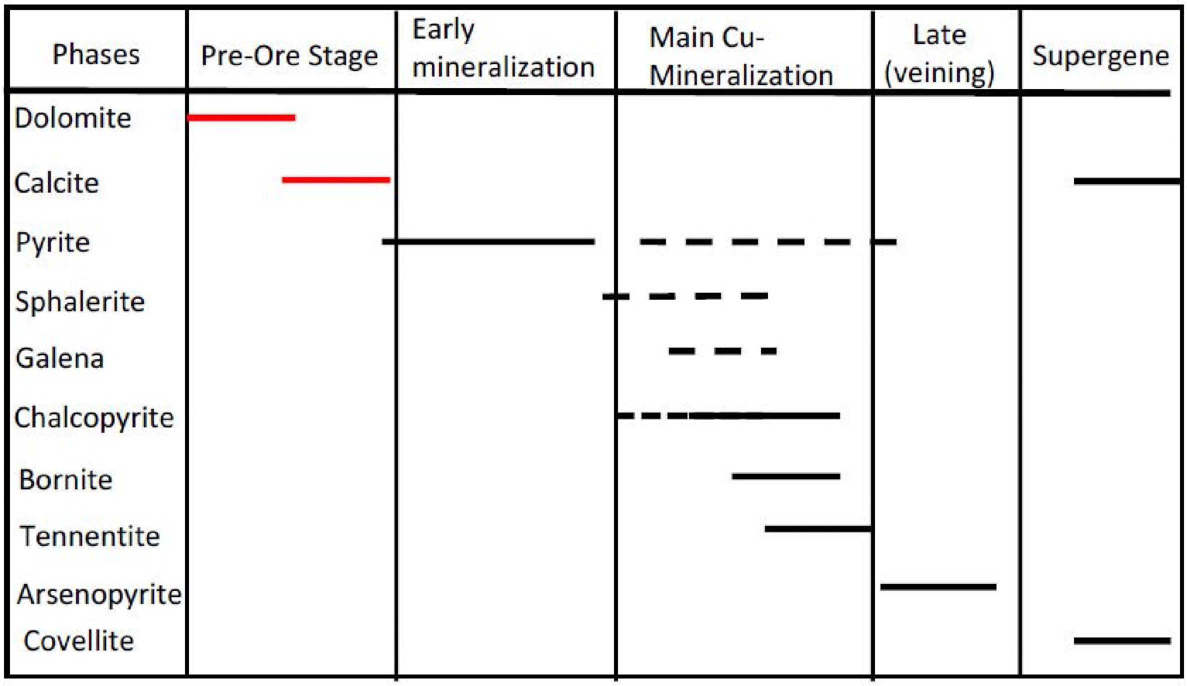


FIGURE 10 **POLISHED SECTION FOR SAMPLE GRTD -039**
A – Euhedral- subhedral pyrite with Cpy inclusions and supergene covellite in cracks. B- Chalcopyrite with minor pyrite inclusions and bournite interspersed within the chalcopyrite. Tennantite overgrowth on Cpy.

Paragenesis

After examination of the polished sections, the paragenesis proposed was an adaptation of that by Duane (1998). The modified paragenesis is shown in the diagram below:



Trace Element Analysis

Trace element analysis (via LA-ICP-MS) was conducted on each mineral present in each sample.

The sulphide minerals examined were:

- *Pyrite*

- *Chalcopyrite*
- *Bornite*
- *Tennantite*
- *Arsenopyrite*
- *Covellite*

The distribution of trace elements relative to mineral phases is shown in the Figure 11 below:

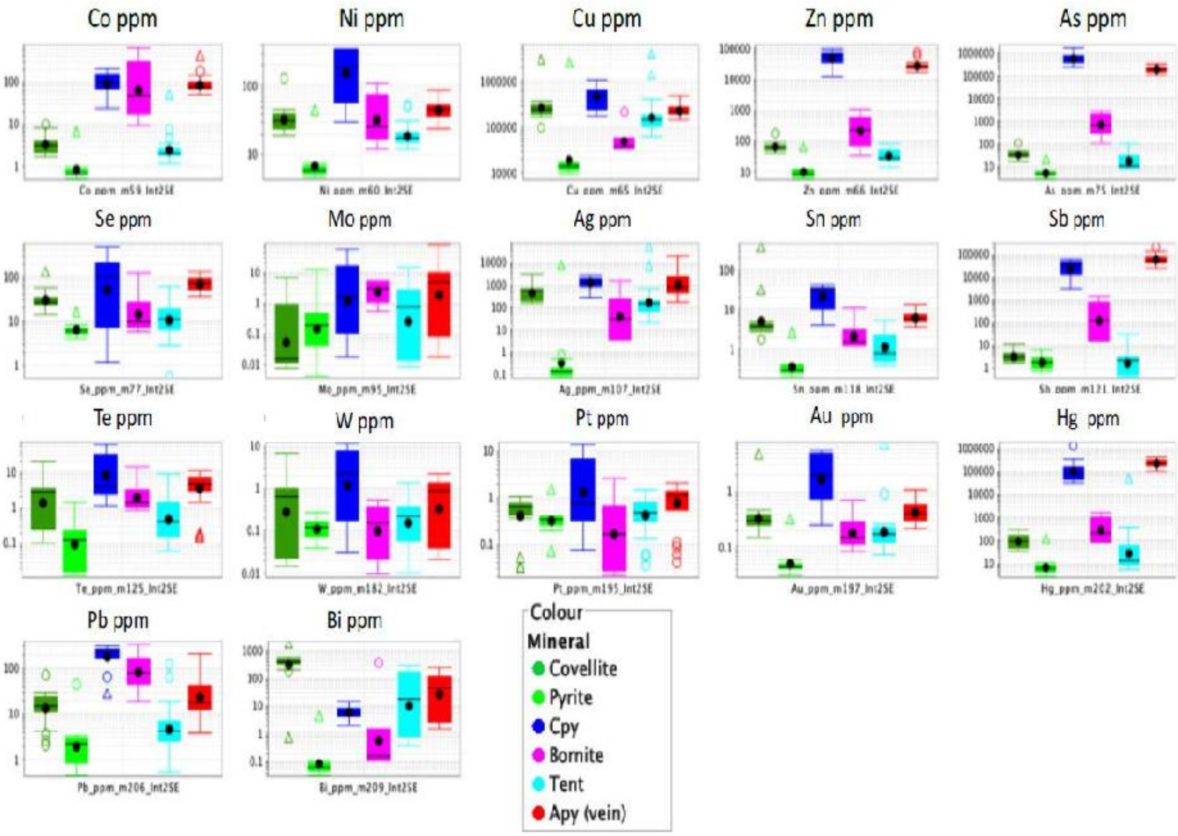


FIGURE 11 TRACE ELEMENTS RELATIVE TO MINERAL PHASES

A number of interesting observations were made from the trace element analysis:

- the stabilization of chalcopyrite first incorporated much of the Cu, Zn, (Pb), As, Au, Ag, Te, and Sb in the system
- the earlier pyrite phase is trace element poor. This is an interesting feature as typically pyrite tends to host a wide range of elements and is capable of doing so in high concentrations. Therefore, it suggests that pyrite forming at this time was not forming from a fluid rich in metals and that chalcopyrite was the main host for metals during formation

- the textural evidence suggests that the arsenopyrite was the last in sequence to form
- Chalcopyrite and pyrite are stable across a range of temperatures and sulfur fugacity, however the formation of arsenopyrite towards the end of the mineralization event would require an increase in sulfur fugacity or change in pH and temperature

The report in its entirety is presented in Appendix 1.

Drilling

Background

Group Eleven has spent a considerable amount of time compiling historical exploration data for the Gortdrum area with a view to establishing drilling targets. A review of this data compilation suggests the following:

- Exploration potential (Cu) lies mostly to the north east of the former open pit on both PL's (4498 and 350)
- Copper mineralisation has been intersected in historic drilling (intermittently from 1970-1976)
- This mineralisation is shown to extend to ~3km along strike from the former open pit
- Mineralisation is associated with fracturing of limestones in hangingwall of Gortdrum Fault
- Historic exploration holes mostly intersected chalcopyrite and tennantite
- Historic drilling was set out on a local grid – baseline approximately parallel to Gordrum Fault with section lines perpendicular
- 13 section lines, covering a strike length of approximately 3km were drilled
- Section lines drilled are not evenly spaced, but are mostly 150-200m apart
- Not all sections were drilled
- Approximately 34 historic holes drilled; average depth 70m; total metreage ~2400m
- 16 hole intersected significant copper mineralization, all <100m vertical depth

The area described above is shown in Figure 12 below.

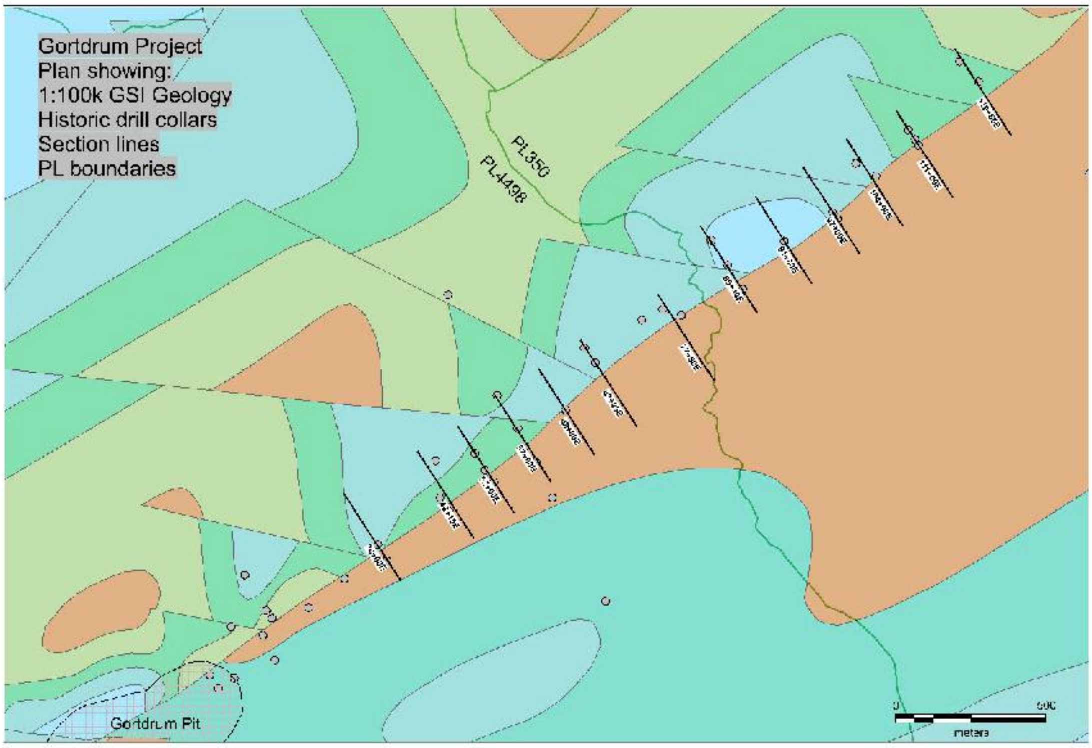


FIGURE 12- AREA OF INTEREST

Analysis of the drillhole data by Group Eleven has identified three areas of interest for follow up drilling. These areas are highlighted in Figure 13 below.

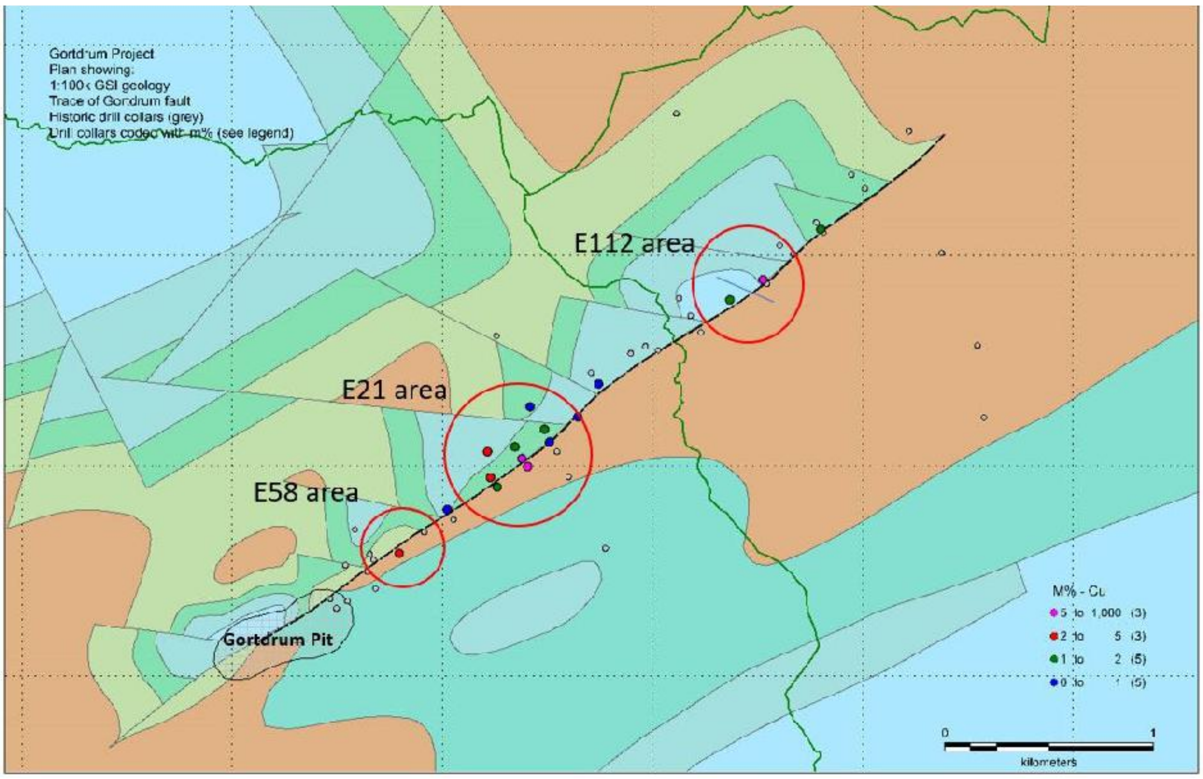


FIGURE 13- TARGET AREAS

Two of the areas of interest are on PL4498 – ‘E18 area’ and ‘E21 area’.

G11-4498-01

Aims of Hole

Aim of the hole was to examine the geological structure to the east of Gortdrum and test for mineralisation within the carbonate and clastic rocks in the hangingwall of the Gortdrum Fault, approximately 1.2km northeast of the old mine.

The hole is located between several historical holes (E21 to 23 and E24 to E25), all of which had traces of low-grade mineralisation, with the best mineralisation seen in holes E21, which has grades of 0.99% copper over 6.4m (28.3-34.7m downhole), and E26 which has grades of 0.78% copper over 7m (36-43m downhole).

The hole is situated 1.2 km southwest of hole G11-350-01, which was also drilled as part of an examination of the potential mineralisation along the eastward’s extension of the fault. This is the first drilling to take place in the area since 1976.

Historic drilling was set out on a local grid with the baseline approximately parallel to the Gortdrum fault and section lines perpendicular to the baseline. The current hole is drilled between historic sections 46+15E and 52+00E.

Details of Drilling

Set-up: Azimuth 148, Dip -45°. Target Depth: c.150m. Final depth: 176.25m. Location: ITM 588290.2953 E: 642089.3204 N (VRS RTK)

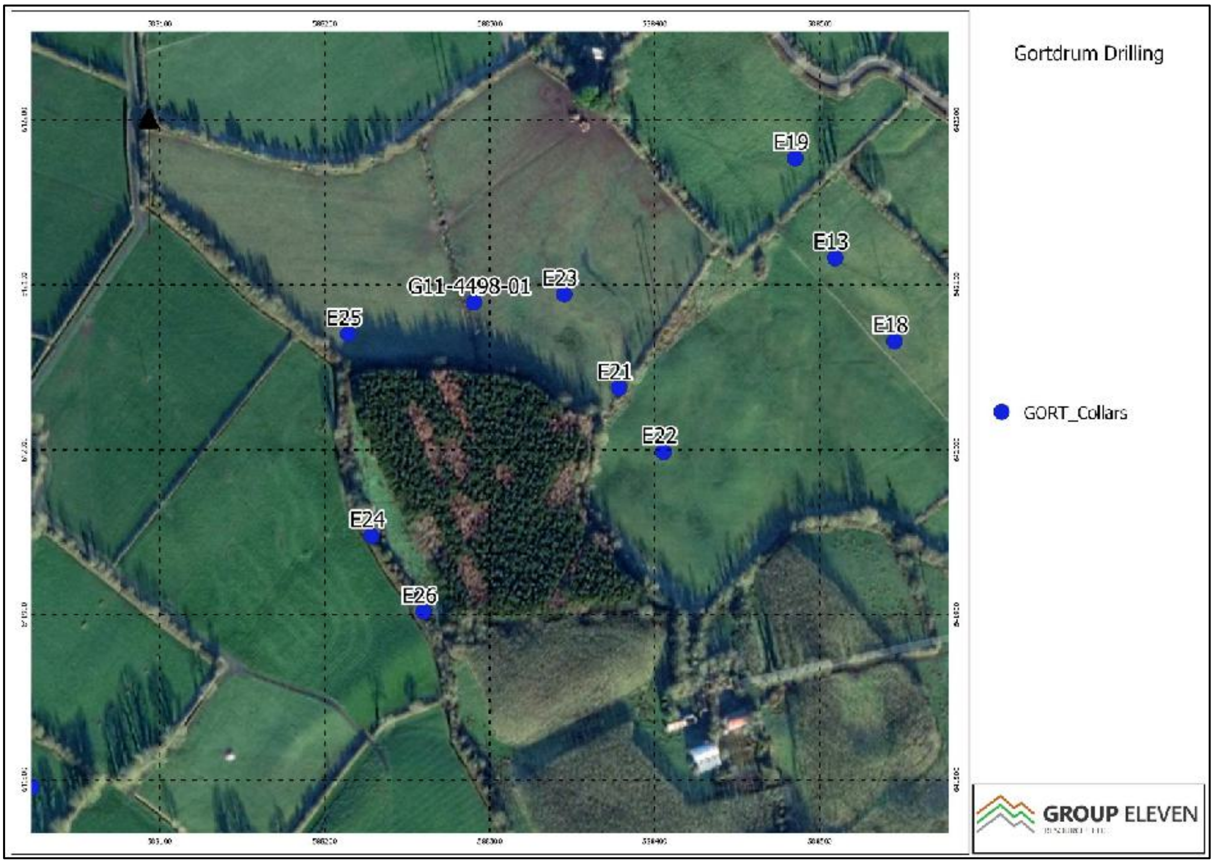


FIGURE 14 DRILLHOLE LOCATION

Geology

The hole collared in the Ringmoylan shales, referred to as the "Dark Limestones" in the Gortdrum mines stratigraphic nomenclature. This was beneath 21m (32.1m downhole) of overburden. The beds consist of dark grey to black shale with medium grey calcarenite/calcsiltite interbeds. The rock contains abundant fossil debris of crinoids, brachiopods and bryozoa. The limestone beds often contain muddy wisps and are occasional nodular. The upper 10m of the formation contains roughly 30% shale but this increases to about 50-60% at 40m. The beds also steepen at this point and at 45m to 49m the bedding is approximately parallel to the core axis.

FIGURE 15: OVERVIEW OF RINGMOYLAN SHALES (48-56M)

A possible marker horizon occurs at 62-67.5m which is approximately 80% shale and contains abundant brachiopods. The beds between 65-67m are again approximately parallel to the core axis. The shale content drops to about 30-40% below these beds. The fossiliferous debris decreases in size and frequency towards the bottom of the formation. From 78m the beds show some minor laminations. The base of the formation is marked by a 1m thick, fairly clean medium grey calcarenite bed.

FIGURE 16: SHALE AND BRACHIOPOD RICH HORIZON @64M

The distinctive beds of the Laminated Shales unit can be seen from 79.3m. This marks the top of the Mellon House Beds. The unit contains dark grey to black, slightly calcareous shale with silty/sandy laminae. The beds show evidence of soft-sedimentary deformation, burrowing and possible de-watering features. A burrowed shale unit occurs from 84.5-85.2m.

FIGURE 17: LAMINATED SHALES @ 80M

The base of the Laminated Shales is taken at 88.05m where the rock changes to a light grey, weakly calcareous sandstone with occasional shaley laminae. A 10cm calcarenite bed is seen at 92.6m which has an irregular contact with a shale bed below.

FIGURE 18: CALCARENITE BED @ 92.7M

The Gortdrum mine stratigraphy refers to this unit as the "Transition Limestone", and although it does contain some limestone beds, it is predominantly a sandstone. Visual comparison with hole E102, from photos in the GSI photo database, show this is likely the same unit.

The shale bed, termed the Upper Shale in accordance with the Gortdrum mine stratigraphy, seen at 92.7m continues to 94.3m and shows evidence of faulting. The base of the shale is laminated and the contact is non-conformable with the lower sandstone, suggesting minor, possibly soft sedimentary, faulting.

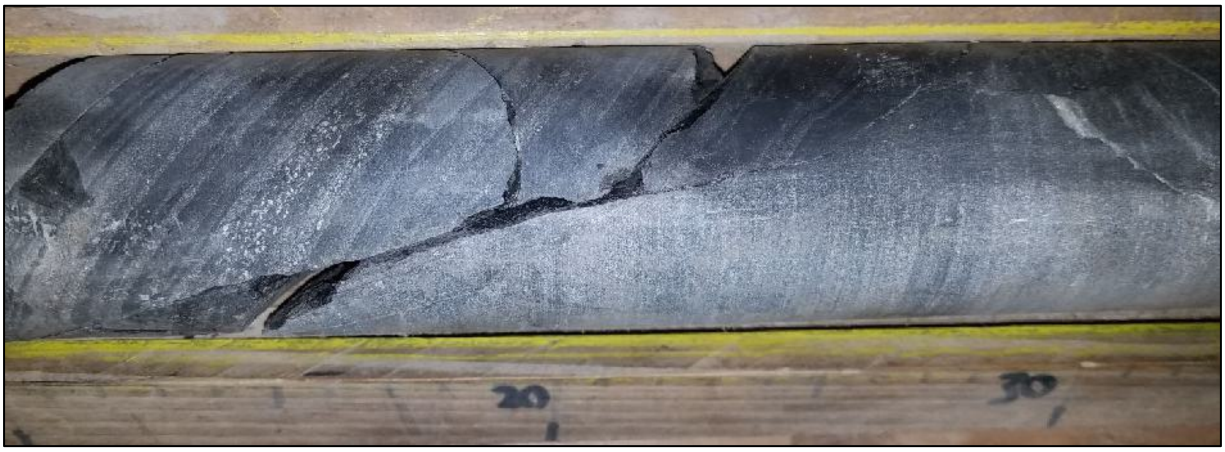


FIGURE 19: NONCONFORMITY @ 94.1M

The sandstone below is medium to coarse grained, slightly calcareous with occasional silty or shaley interbeds. Another shale marker, termed the Lower Shale, is seen from 102.25-105.85m. The shale calcareous with occasional burrowed horizons and some 1-2mm sized gastropod fossils.

Below this the lithologies vary but is predominately a non-calcareous, light grey sandstone. It contains common shaley or silty horizons, sometimes bioturbated. From 112.8-113.05m a conglomerate, or possibly a calcrete, bed is seen. Below this is a dark grey calcarenite bed with occasional crinoid fragments which becomes coarser at the base at 115.2m. The silty and sandy transition beds to the Old Red Sandstone are slightly greenish grey.

FIGURE 20: CALCRETE? BED @112.9M

The top of the Old Red Sandstone (ORS) is taken at the first greenish and red beds and the beds initially comprise greenish mudstone with a distinctive calcrete horizon of rounded, red concretions in a light green muddy matrix.

FIGURE 21: CALCRETE BED AT TOP OF ORS @ 116.7M

The ORS package varies between sandstone, mudstone and conglomerate beds and can be light green, grey or red in colour. From 127-135.9m a thick, non-calcareous light grey sandstone is seen which may be equivalent to that seen from 173.8 to 188.5m in hole G11-350-01. The sandstones become increasingly gouged and fractured downhole. From 150.4-152.1m the sandstone appears to have been bleached, possibly by hydrothermal alteration.

A significant breccia occurs from 152.1-164m. The breccia is polymictic with angular-subangular clasts of black shale, light grey sandstones, pale beige volcanics and slightly greenish grey shales/siltstones. The matrix appears to be a light grey sand. The whole breccia is frequently sheared and highly broken.

FIGURE 22: EXAMPLE OF THE BRECCIA @ 155.8M

Below the breccia the hole goes back into light grey sandstone, which is coarse grained with rare darker laminae. The rock is very broken with frequent shearing and veining. A pale, slightly greenish dyke is seen from 174.1-174.7m with the sandstone either side heavily veined. The contacts appear to be very steep. The hole finished at 176.25m in grey sandstone.

FIGURE 23: ALTERED DYKE @ 174.1M

Stratigraphic Correlation & Thickness

Unfortunately, the hole collars in the Ringmoylan Shales, missing the Ballyvergin shale which is a useful horizon for correlation. The Ringmoylan Shales appear to be approximately 30m thick (true thickness), however as mentioned above, the dip of the beds seems the vary dramatically downhole. This is likely due to faulting and could indicate the hole drilled through a repetition in the sequence.

The units in the Mellon House Beds, as defined by the Gortdrum mine stratigraphy, have a combined thickness of about 24m. This seems to be thinner than would be expected and given the frequency of faulting in the sequence it is likely that some has been removed.

Structure

Where possible, the core was orientated to record structural measurements. Given the broken and often faulted nature of the core, lining up consecutive orientation marks was difficult meaning most of the readings were based on just one mark. This would cast some doubt on the veracity of the readings, however the measurements from the beds indicate relatively consistent dip directions. The upper beds of the Ringmoylan Shales dip to the southwest. Readings further downhole indicate the beds swing northwards with the sandstones in the Mixed beds dipping to the WNW. Dip angles vary, as can be seen in the core, ranging from 5-50°.

Several minor faults can be seen throughout the upper 150m. Many are bedding plane slips or shears although some cross-cut the beds. Unfortunately, few measurements could be made on the faults given the state of the core. In the Ringmoylan Shales minor faults appear to be responsible for rotating the beds where they appear parallel with the core axis. A fault within the Upper Shale unit of the Mellon House Beds brings a 5cm sheared wedge of light grey sandstone into contact with the shale.

The mineralisation appears to be related to minor flexures and bedding plane shears within the Ringmoylan Shale, developed in relation to the movement on the Gortdrum Fault and the minor hangingwall structures (see Figure 16). The best grades occur with the Ringmoylan Shales and Ballysteen, with this zone of deformation.

FIGURE 24: FAULT @ 93.1M

The most significant structure is the fault breccia encountered from 152.1-164.1m, which has been interpreted as the Gortdrum Fault. The throw on the fault is difficult to discern since the lithologies above and below the fault are roughly the same, although the variation in the ORS package suggests these units could be many metres apart.

Rose diagrams

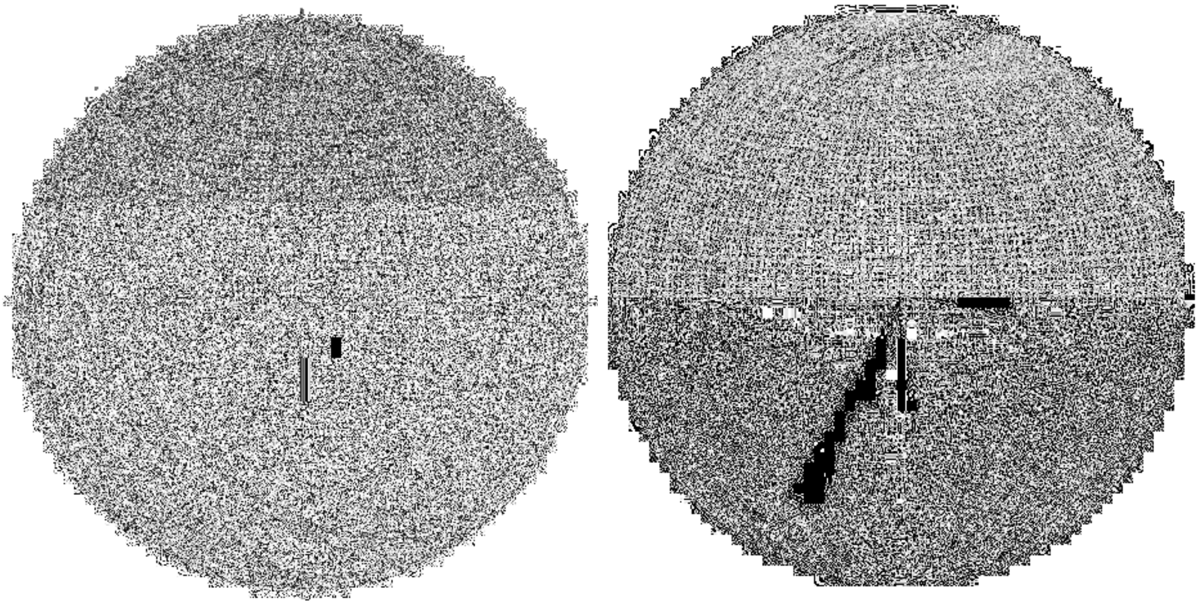


FIGURE 25: STEREONET PLOTS FOR BEDDING (LEFT) AND FAULTS (RIGHT). ROSE DIAGRAM PLOTTED FOR STRIKE.

Log

The log for G11-4498-01 is presented in Appendix xx

FIGURE 26: LOCATION MAP

Mineralisation

The first signs of mineralisation occur as trace pyrite disseminated in the limestone beds of the Ringmoylan Shales from 35.3-36.2m. Below this, from 41-41.9m and 43.8-44m, are two horizons with abundant arsenopyrite needles. Trace amounts are seen to about 45m.

FIGURE 27: ARSENOPYRITE @ 41M

Chalcopyrite first appears from 46.6m in blebs within thin calcite veins and occasionally finely disseminated within the shales/limestone beds. Brachiopod fossils often appear partially replaced by chalcopyrite. It also occurs in smears along shear surfaces. The chalcopyrite appears to drop out around 61m although trace amounts could continue to about 67m. A 2-3mm calcite vein with a grey copper mineral, possibly tennantite, is seen at 64.55m.

FIGURE 28: EXAMPLE OF CHALCOPYRITE IN CALCITE VEINS @ 59.75M

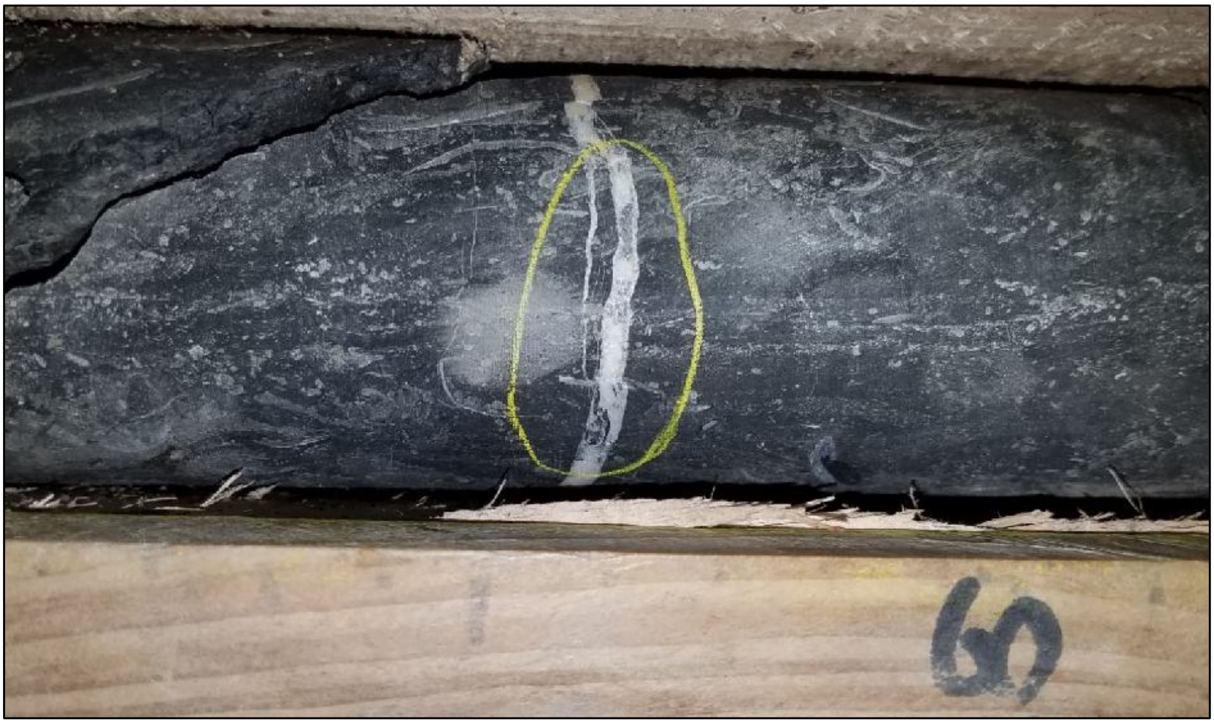


FIGURE 29: GREY COPPERS @ 64.55M

At 92.6m what appears to be sphalerite is seen finely disseminated in a calcarenite bed.

No significant mineralisation is seen until the fault breccia, which contains trace disseminated chalcopyrite in the matrix and in thin veinlets from around 155m. The sandstone below also contains trace chalcopyrite in veins, last seen at 169.3m.

pXRF data

Spot readings were taken with a pXRF at roughly 1m intervals in the upper 43m of the core, from 32-75m downhole.

Hole_ID	Depth_m	Cu ppm	As ppm	Au ppm	Hg ppm	Zn ppm	Pb ppm	Fe pct	Sr ppm	Mn ppm
G11-4498-01	32.2	9	9	6	13	60	102	3.23	426	1356
G11-4498-01	33.4	27	13	6	9	29	135	2.32	312	962
G11-4498-01	35.3	313	34	0	13	22	53	2.33	268	557
G11-4498-01	36	616	46	0	11	37	153	3.77	279	935
G11-4498-01	37	76	14	0	0	35	189	4.34	336	958
G11-4498-01	38	13	10	0	10	85	252	1.33	529	1681
G11-4498-01	39	11	11	0	14	297	323	1.15	534	1747
G11-4498-01	40	14	10	5	8	25	174	1.91	496	593
G11-4498-01	41	28	43	0	11	22	174	1.99	383	348
G11-4498-01	42	9	65	0	8	25	243	2.40	248	382
G11-4498-01	41.4	18	2901	65	0	31	113	2.45	213	241
G11-4498-01	41.55	15	607	20	6	24	111	2.37	217	315
G11-4498-01	43	21	71	0	8	20	90	1.97	147	270
G11-4498-01	43.9	22	3901	82	0	46	102	2.60	161	363
G11-4498-01	44.3	8	66	0	7	24	38	2.57	187	484
G11-4498-01	46	57	20	0	8	15	8	1.90	111	509
G11-4498-01	47	88	17	4	9	19	16	1.61	169	558
G11-4498-01	49	2289	26	0	16	34	11	2.43	168	1121
G11-4498-01	49.5	6434	15	6	13	24	13	2.29	407	3020
G11-4498-01	49.8	210	27	5	6	9	8	0.92	385	3050
G11-4498-01	50	1300	17	0	7	25	27	1.98	121	429
G11-4498-01	50.13	2691	15	0	8	38	25	2.40	202	754
G11-4498-01	50.47	36399	15	8	15	139	17	7.27	268	1623
G11-4498-01	50.72	1691	9	0	9	21	13	1.67	113	306
G11-4498-01	51	420	18	0	0	30	13	2.34	202	878
G11-4498-01	51.62	16	0	0	8	10	12	1.05	364	2565
G11-4498-01	52	137	33	0	6	14	19	2.05	192	428
G11-4498-01	52.2	1032	11	4	0	20	10	2.04	266	1699
G11-4498-01	53	634	50	5	10	22	21	2.55	195	642
G11-4498-01	54	2144	10	0	8	26	13	2.62	340	1636
G11-4498-01	55	81	13	5	8	14	12	2.15	275	1814
G11-4498-01	56	450	37	0	8	22	11	2.39	196	535
G11-4498-01	57	91	4	5	0	12	8	1.21	441	2056
G11-4498-01	58	398	45	0	6	23	12	2.05	114	286
G11-4498-01	58.6	332	10	0	0	33	6	2.94	229	1673
G11-4498-01	59	57	10	0	8	16	4	1.26	138	404
G11-4498-01	60	1463	11	0	0	20	8	2.19	290	871
G11-4498-01	61	204	21	0	0	18	12	3.54	237	2860
G11-4498-01	62	270	48	0	10	24	20	2.59	136	664
G11-4498-01	63	42	9	5	10	50	12	1.85	250	1453
G11-4498-01	64	26	31	0	8	24	28	2.94	213	761
G11-4498-01	65	82	52	0	10	22	114	2.64	228	736
G11-4498-01	66	34	64	5	13	26	282	3.06	359	799
G11-4498-01	67	121	62	0	9	21	28	2.21	146	479
G11-4498-01	68	0	35	0	0	37	94	2.68	298	743
G11-4498-01	68	18	27	0	11	62	129	3.17	330	1198
G11-4498-01	69	10	29	0	7	21	32	2.47	110	574
G11-4498-01	70	28	41	0	13	28	173	3.67	279	852
G11-4498-01	71	25	81	4	9	25	38	2.62	103	407
G11-4498-01	71.36	16	9	0	12	21	10	2.10	340	1326
G11-4498-01	72	13	35	5	9	38	39	2.73	174	505
G11-4498-01	74	0	11	0	0	31	18	3.11	246	1492
G11-4498-01	75	15	34	0	10	33	19	2.15	174	241

TABLE 5: pXRF DATA FROM THE RINGMOYLAN SHALES

Sampling

The core was sampled from 34.75m to 67.75m to provide an overview of the distribution of copper within the sequence. The samples were mostly taken over 1m intervals, sometimes split into smaller intervals where mineralisation was concentrated. Samples have been submitted to ALS Laboratories, Loughrea and results will be interpreted and reported in the next reporting period. A later batch of samples is also planned, covering the fault breccia and the sandstone below which contains trace mineralisation.

Section

A northwest-southeast section through the hole is shown in figure below. When the hole is examined in the context of three historical holes drilled to the east (E21-E22-E23) there is reasonable correlation. A zone of disturbance occurs in the hangingwall of the main Gortdrum faults with a number of minor structures, some showing inversion, and rotation of the bedding related to movement within these fault blocks.

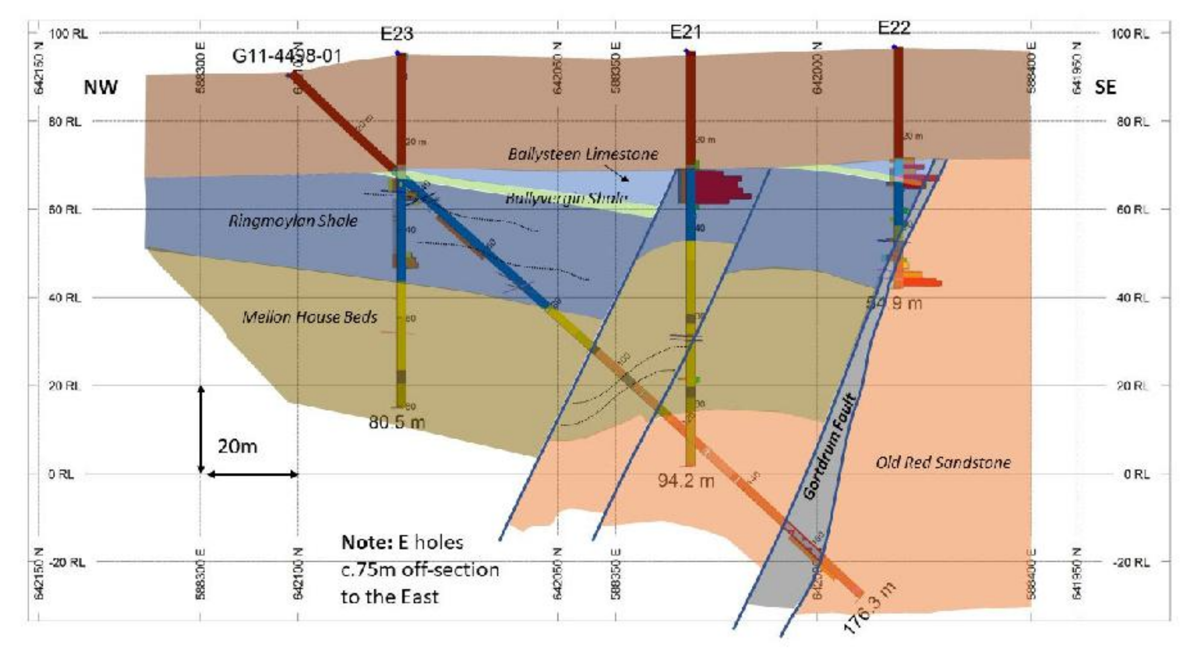


FIGURE 30: NW-SE CROSS-SECTION (INCLUDING HOLES TO EAST OF G11-4498-01)

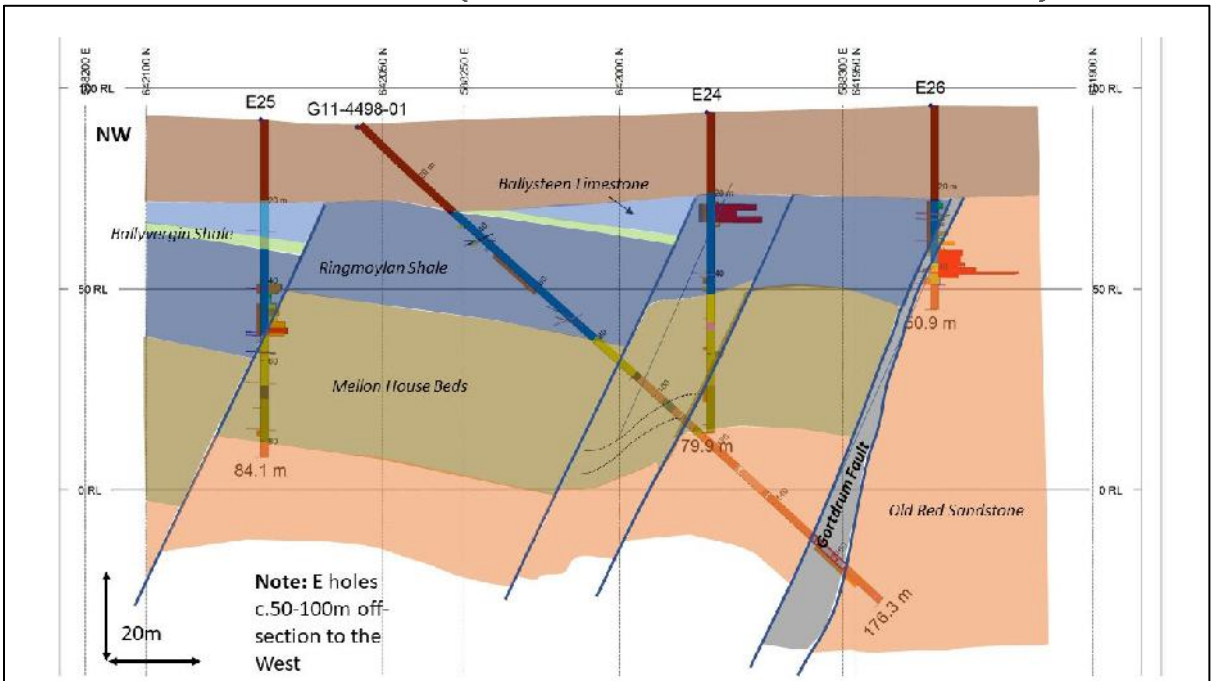


FIGURE 31: NW-SE CROSS-SECTION (INCLUDING HOLES TO WEST OF G11-4498-01)

A very similar interpretation is possible to explain the holes to the West of G11-4498-01, again showing the mineralisation to be associated with the same structures, where they intersect the carbonate rich units.

Gravity Survey

Since the completion of the regional geophysical interpretation (for Group Eleven's entire licence holding in the Limerick – Tipperary region), field work has been completed to help fill some of the larger gaps in the regional gravity coverage and to help tie in and level additional historical gravity datasets, in order that they can be included in the Limerick regional dataset.

In PLA 4498 a number of gravity stations, which form part of DIAS regional network were available, as well as a series of north-south lines of stations completed by Pasminco in the southern half of the licence. Coverage was not as extensive for the northern half of the licence and a total of 10 new gravity stations have been surveyed across the licence area. The DIAS stations in the area have been used to help level the new roadside data. The gravity data was collected using a Scintrex CG-6 gravity meter with topographic data collected using a VRS RTK differential GPS system, which provides elevation accuracy within 10cm. The new data has been reduced and tied to the National DIAS gravity data by consultant geophysicist Hernan Ugalde and been incorporated into the regional Limerick gravity database.
The data was processed and levelled by geophysicist Dr Hernan Ugalde. Processing included;

- Drift and conversion to absolute gravity (input: Reading; output: Closure and Gravity)
- Process repeats. Output: Gravity_Avg (average absolute gravity) and Rep_Diff (a measure of the difference between stations. Stations with high Rep_Diff values could be removed and the average recalculated, but the data was good, and this procedure was not necessary).
- Calculate of Free Air anomaly (output: FreeAir_Anom).
- Calculate of Bouguer anomaly (output: Bouguer_267). A density of 2.67 g/cc was utilized to match the DIAS database for the area
- A terrain correction was applied utilising a 30 m SRTM DEM for the local topographic effects and Sandwell's 500 m resolution topographic & bathymetry compilation was used for the more regional ones.
- The DIAS grid was sampled into a database, and the difference between DIAS and each individual station was computed.

- A histogram was calculated for the "Boug_to_DIAS_difference channel", and an appropriate constant difference was applied to each historical survey. The following are the values used to calculate the final Bouguer_267 for each survey:

The new and newly levelled historical datasets have been incorporated into the regional Limerick gravity database which now consist of 13,143 gravity stations. Figure 32 below shows the location of gravity stations on PL4498.

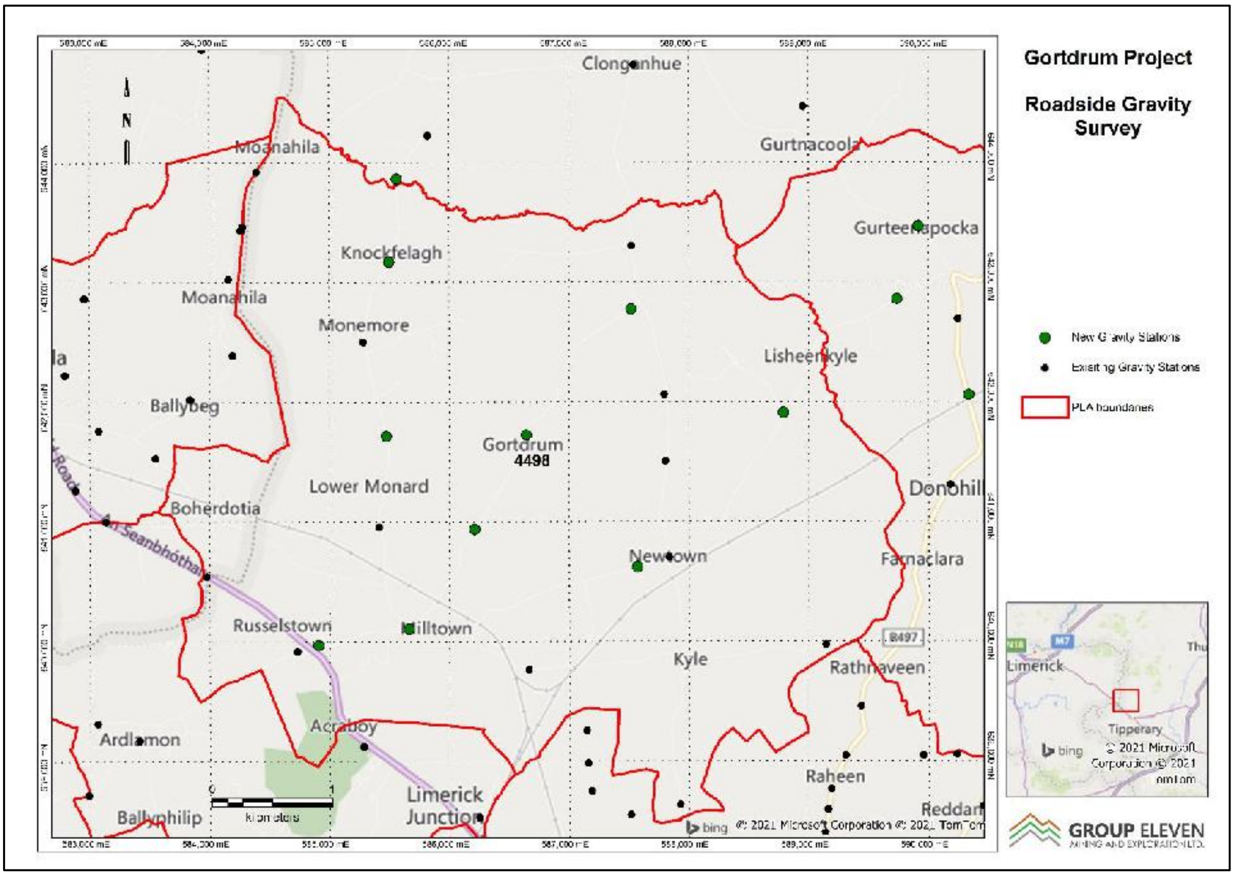


FIGURE 32 LOCATION OF GRAVITY STATIONS

Environmental

Group Eleven is committed to conducting all exploration activities within environmental guidelines. A review of specifically protected sites in the Emly Block was undertaken with information compiled from the National Parks and Wildlife Service. This includes a review of SPAs, SACs and NHAs;

- An NHA is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection.

- A SAC is an area of conservation value for habitats and/or species of importance in the European Union designated internationally under the Habitats Directive.
- A SPA is an area of conservation value for birds of importance in the European Union designated internationally under the Birds Directive.

There are currently no protected areas within or immediately adjacent to PLA 4498 (Figure 19). The nearest SAC is related to the River Suir catchment in PLA 350 to the east.

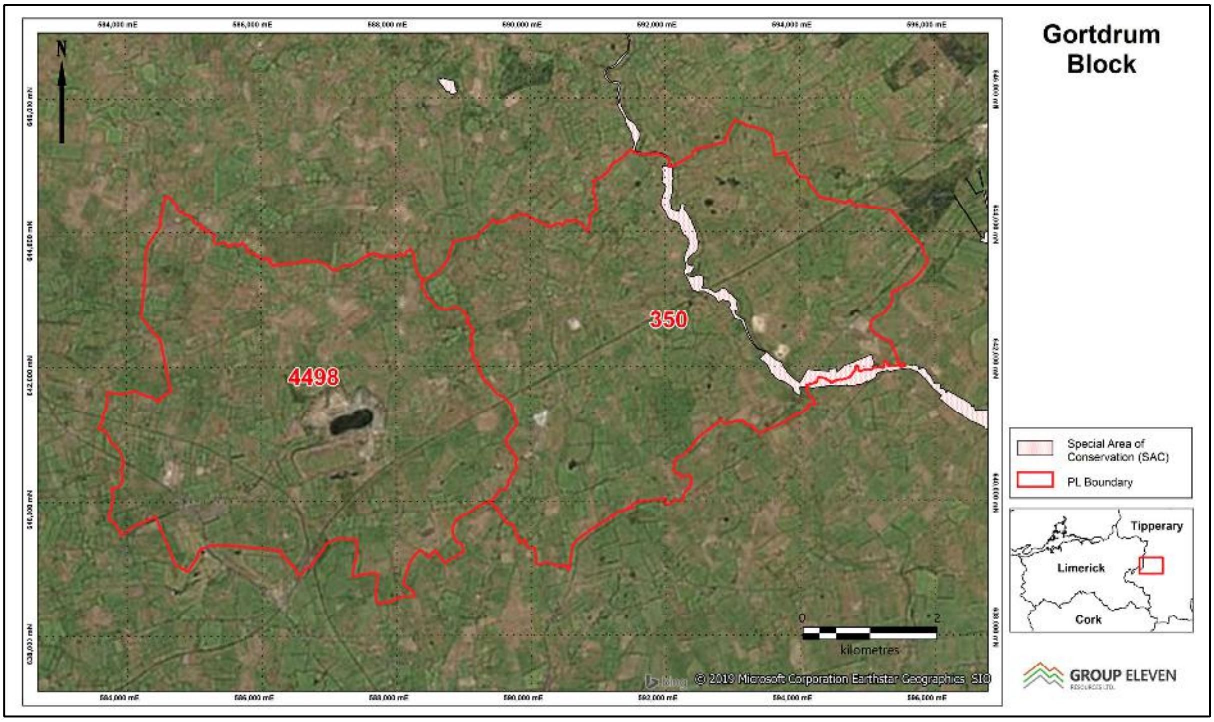


FIGURE 33: PROTECTED SITES IN PLA 4498

To date, exploration activity on PLA 4498 has had no environmental impact. Group Eleven has also proven their commitment to undertaking work which complies with all environmental regulations by submitting an appropriate assessment screening report prior to sampling in the vicinity of Protected Sites. Furthermore, the proposed work programme for the upcoming reporting period will be undertaken in a manner to minimise any potential impact on the protected areas outlined above.

Results and Discussion

Drilling by Group Eleven on PL4498 has indicated that significant copper mineralisation exists adjacent to the Gortdrum Fault, both on PL4498 and the adjacent PL350 (also held by Group Eleven). Historical drilling in the area also shows significant copper mineralisation. Further exploration along and adjacent to the Gortdrum Fault is merited in order to determine the extent and tenor of the copper mineralisation on PL4498.

Conclusions and recommendations for further work

Recommended further work includes:

- Analysis of drill core from ddh G11-4498-01, including assay
- Further analysis of historical data for PL4498, including geophysics
- Ground geophysics, if merited
- Further drilling

References

Blaney, D. and Redmond, P.B., 2015, Zinc-Lead Deposits of the Limerick Basin, Ireland. Current Perspectives on Zinc Deposits, IAEG.

Kelly J. 2018, Limerick Carboniferous Basin. Regional Assessment Stratigraphy, Structure & Basin Evolution. Consultants' report to Group Eleven Resources Ltd.

Murphy F. X. 2018, Structural study of an area centred on Group Eleven's prospecting Licences in Co. Limerick, Ireland. Consultants' report to Group Eleven Resources Ltd.

Philcox, M.E., 1984, Lower Carboniferous lithostratigraphy of the Irish Midlands. Dublin: Ir. Assoc. Econ. Geol.

Pointon, M.A., Chew, D.M., Delcambre, B. and Sevastopulo, G.D. 2018, Geochemistry and origin of Carboniferous (Mississippian; Viséan) bentonites in the Namur-Dinant Basin, Belgium: evidence for a Variscan volcanic source. Geologica Belgica (2018) 21/1-2:1-17

Shephard-Thorn, E. R. 1963. The Carboniferous Limestone succession in north-west Co. Limerick, Ireland. Proc. R. Ir. Acad., Vol.62, No.17, 267-294.

Somerville, I.D. and Strogen, P., 1992, Ramp sedimentation in the Dinantian limestones of the Shannon Trough. Co. Limerick, Ireland. In: Sellwood, B.D., (ed.), Ramps and Reefs. Sedimentary Geology. 79,59-75.

Steed, G.M. 1986. Gortdrum Cu-Ag-Hg orebody. Geology and Genesis of Mineral Deposits in Ireland, Ir. Assoc. Econ. Geol.

Thompson, I.S, 1966, the Discovery of the Gortdrum Deposit, Co. Tipperary, Ireland. Trans. Can. Inst. Min. Metall.